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Excluding the Problem: Does Supervenience Resolve the Exclusion Problem?

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EXCLUDING THE PROBLEM:
Does Supervenience Resolve the Exclusion Problem?

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Abstract

The exclusion problem challenges views that hold that the mental is distinct from and irreducible to the physical. I follow Karen Bennett's formulation of the exclusion problem, which is unique in that it sets up the problem as a set of five inconsistent claims, where at least one of which must be denied: DISTINCTNESS, COMPLETENESS, EFFICACY, EXCLUSION, NON-OVERDETERMINATION. In brief, the issue is that if the mental and physical are distinct, and each is causally sufficient to bring about their effects, then our actions would frequently be overdetermined. However, since mental overdetermination isn't something that happens frequently, the five claims are inconsistent. Throughout this work, I consider two solutions to the exclusion problem that focus on the nature of overdetermination and whether mental causation should be counted as overdetermination. The first solution is inspired by Jonathan Schaffer. The "Schaffer-inspired" solution is that, because overdetermination is not inherently problematic, the exclusion problem does not present an inconsistency—the truth of the five claims do not provide any reason to think that mental causation poses an actual problem. In motivating this solution, I detail Ted Sider's motivations for NON-OVERDETERMINATION, explain the Schaffer-inspired solution, and raise an objection to this solution employing some work done by Sarah Bernstein. The second solution, proposed by Karen Bennett, is to deny that mental causation is overdetermination by creating a counterfactual test for overdetermination. In motivating the solution, I explain Bennett's counterfactual test for overdetermination, show the different ways in which a person could deny EXCLUSION using these counterfactuals, and explain and motivate a recent objection to Bennett's solution by Chiwook Won. In formulating both solutions to the problem, I appeal to supervenience of the mental and physical and conclude that these solutions both solve the exclusion problem. I ultimately conclude that both solutions are equally acceptable, that the exclusion problem does not dissolve the non-reductivist framework into inconsistency, and that deciding between the solutions requires future work in determining the true nature of overdetermination.

Excluding the Problem

1. Introduction

The exclusion problem challenges views that hold that the mental is distinct from and irreducible to the physical by attempting to show that these views are incoherent.[1] There are different formulations of the exclusion problem, which usually involves creating an argument with the conclusion that non-reductive physicalism must result in epiphenomenalism. However, in this paper, I follow Karen Bennett's formulation of the exclusion problem, which is unique in that it's not a pointed argument against any one particular view. Rather, Bennett's formulation sets up the problem as a set of five inconsistent claims, where at least one of which must be denied: DISTINCTNESS, COMPLETENESS, EFFICACY, EXCLUSION, and NON-OVERDETERMINATION. In brief, the issue is that if the mental and physical are distinct, and each is causally sufficient to bring about their effects, then our actions would frequently be overdetermined. However, since mental overdetermination isn't something that happens frequently, the five claims are inconsistent.[2]

Throughout this work, I consider two solutions to the exclusion problem that focus on the nature of overdetermination and whether mental causation should be counted as overdetermination; I will look at one solution that claims that mental causation *is* overdetermination (but non-problematic overdetermination) and another solution that claims that mental causation is *not* overdetermination. The goal of this paper is simply to show that there are two ways in which a non-reductive physicalist can respond to the exclusion problem that still allow them to accept all five claims. Someone who is not a non-reductive physicalist might not

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[1] The problem is most commonly brought up in response to non-reductive physicalism.
[2] The typical formulations of the exclusion problem would then come to the conclusion that, in order to get rid of the inconsistency, one of the purported causes would have to be excluded from the causal story: the mental cause.

feel swayed by these arguments, but, since the exclusion problem attempts to show that non-reductive physicalism is incoherent, all one needs to do to solve the problem is show that something already exists in the non-reductivist framework that allows for the truth of all five of these claims without resulting in inconsistency.

Before examining the two responses to the exclusion problem, I first provide an in-depth explanation of each claim in the exclusion problem. As part of this explanation, I provide a definition, some motivations for believing the claim, and the costs of denying the claim (where relevant). After establishing a thorough understanding of the problem, I move on to the two solutions to the problem.

The first solution is inspired by Jonathan Schaffer's work in "Overdetermining Causes." In brief, the solution is that, because overdetermination isn't inherently problematic, the exclusion problem does not present an inconsistency—the truth the five claims do not provide any reason to think that mental causation poses an actual problem. The target claim in this solution is NON-OVERDETERMINATION, with a focus on whether the motivation for this claim is true. In motivating this solution, I detail Ted Sider's motivations for NON-OVERDETERMINATION, explain the Schaffer-inspired solution, and raise an objection to this solution. The objection I consider claims that the solution does not provide positive reasons to believe mental causation would be non-problematic overdetermination. I respond to this objection by appealing to supervenience and conclude that supervenience would save the Schaffer-inspired solution from this objection.

The second solution is proposed by Karen Bennett in her paper "Why the Exclusion Problem Seems Intractable, and How, Just Maybe, to Tract It." The aim of this solution is to deny EXCLUSION by creating a counterfactual test for overdetermination, which is meant to show

that the non-reductivist account of mental causation does not result in rampant overdetermination. In motivating the solution, I begin by explaining Bennett's counterfactual test for overdetermination and show the different ways in which a person could deny EXCLUSION using these counterfactuals. Next, I explain and motivate a recent objection to Bennett's solution by Chiwook Won. Won's charge is that Bennett's counterfactuals are not necessary for overdetermination. However, I show that Won does not assess the counterfactuals in Bennett's test correctly and, thus, Bennett's solution remains viable.

I ultimately conclude that both solutions are equally acceptable, that the exclusion problem does not dissolve the non-reductivist framework into inconsistency, and that deciding between the solutions requires future work in determining the true nature of overdetermination. It is worth restating the modest goal of this paper: I am not attempting to convince anyone to believe any of the five claims, nor to believe in the necessary supervenience of the mental and physical; I am simply attempting to show that something already exists in the non-reductivist framework (supervenience) that allows for the truth of all five of these claims without the view resulting in inconsistency.

2. The Problem

According to Bennett's formulation of the exclusion problem, the point of the problem is to show that the non-reductivist framework is inconsistent. The issue is that if the mental and physical are distinct, and each is causally sufficient to bring about their effects, then our actions would frequently be overdetermined. However, since mental overdetermination isn't something that happens frequently, the five claims are inconsistent. Bennett sets this problem up as a set of five individually plausible yet jointly inconsistent claims:

> **DISTINCTNESS:** Mental properties (and perhaps events) are distinct from physical properties (or events).
> **COMPLETENESS:** Every physical occurrence has a sufficient physical cause.
> **EFFICACY:** Mental events sometimes[3] cause physical ones, and do so in virtue of their mental properties.
> **EXCLUSION:** No effect has more than one sufficient cause unless it is overdetermined.
> **NON-OVERDETERMINATION:** The effects of mental causes are not systematically overdetermined; they are not on a par with the [standard cases of overdetermination].[4]

All five of these claims are purported to be inconsistent; the truth of the first four claims would have it that overdetermination happens frequently in cases of mental causation, but the fifth claim clearly states that overdetermination does not happen frequently in cases of mental causation. Thus, it appears that we have to let one of these claims go for consistency's sake.[5] In the subsections to follow, I explain each of the individual claims that make up the exclusion problem, explain why the claim is thought to be true, and explain the costs of denying each claim (where relevant). Finally, I end the section by providing a more in-depth analysis of why the set of claims are inconsistent, noting that one of the claims must be denied in order to avoid inconsistency. Note, again, that the point of this section is not to convince you of the truth of the five claims; in this section I am only attempting to show why a non-reductive physicalist might find these claims reasonable and why they would hesitate to deny these claims.

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[3] Bennett says 'sometimes' here to leave open the idea that some physical human events are not caused by mental events. For example, involuntary actions such as breathing might only rely on physical processes to occur. Also, this leaves open the possibility physical events aren't the only kinds of events caused by mental events, mental events can cause other mental events as well.
[4] Bennett, (2008) 1-2.
[5] For ease of explication, after this point, I will refer to the exclusion problem by talking about mental and physical properties and events only. Everything I say about the exclusion problem, however, can also be applied to mental/physical substances and states as well.

2.1. Distinctness

DISTINCTNESS is the claim that the mental is distinct from, not identical to, and/or not fully explainable in terms of the physical. Before going further, it's important to understand what it means for two things to be distinct from each other. If A is distinct from B, A and B *cannot* be identical. There are two ways in which we can understand identity: numerical identity and qualitative identity. A and B are *numerically identical* when they are the same exact thing; they are one instead of two.[6] An example of numerically identical things would be my computer at t_1 and at t_2; while my computer may have aged between t_1 and at t_2, it would still be the same (numeric) computer. If something is *not* numerically identical to something else (i.e. they are numerically distinct), then you have two distinct things instead of one. Qualitative identity, on the other hand, is a weaker relation. Two things are *qualitatively identical* when they share all relevant qualities (color, texture, shape, etc.).[7] In other words, qualitative identity means that two things are indistinguishable, whereas numerical identity is more than just indistinguishability. *DISTINCTNESS* does not make a qualitative distinctness claim; it makes a claim about numeric distinctness. Although *DISTINCTNESS* says that the mental and the physical are not the same, this does not mean that the mental is not importantly related to the physical. *DISTINCTNESS* certainly allows for there to be a strong relationship between the mental and the physical; it would even allow that the mental is dependent on the physical. All that is claimed here is that the mental is not the same thing as (i.e. numerically identical to) the physical.

In order to see how *DISTINCTNESS* is made reasonable, consider the features that mental properties have and physical properties appear to lack. There are a number of mental properties

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[6] Olson, (2010).
[7] Two qualitatively identical things would be non-identical in respect to at least one quality: location.

that can be discussed, but for simplicity, I will only discuss *qualia*, which refers to the subjective, introspectively accessible qualitative character of experience.[8] For example, when I look at a strawberry, I have a specific experiential property of seeing red; I will see a particular color that we have all agreed to call 'red' and that experience of red is the qualia. Or, whenever a person is depressed, they have a subjective feeling of what-it-feels-like-to-be-depressed; we describe the feeling as a sad mood, lack of interest in things that once were interesting, fatigue, etc., but the qualia of depression is the actual qualitative experience of being depressed. More generally, "qualia" describes the properties had by perceptual experiences, bodily sensations, emotions, and moods.[9]

DISTINCTNESS is often supported by thought experiments regarding qualia. Consider the following example: hundreds of years in the future, after we completely understand the human mind, humans discover an intelligent alien species whose biological composition is unlike any other we've ever seen. After translating our languages and forming a good relationship with them, humans are able to study this new life form in hopes of understanding their mental processes. Eventually, we discover the biological processes that go into their perception, sensation, language, decision, emotion, memory, etc. We find out that the alien species visually perceives the world in a radically different way than we do. Instead of experiencing the world through the visible-light portion of the electromagnetic spectrum, the alien species constructs a mental image of the world by receiving thermal information from objects in the world. Since this way of perceiving the world is radically different from the way we perceive the world, it seems safe to say that their way of experiencing the world is unattainable to us due to the limitations of

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[8] Tye, (2013); Kind, *Internet Encyclopedia of Philosophy*.
[9] Tye, (2013).

our perceptive system. Built into the definition of qualia is the idea that qualia is subjective and only introspectively attainable, so it seems that even if we were to learn everything physical about the way these aliens experience the world, we would still be unable to understand the qualia of their experience because qualia seems to be different and inaccessible from just knowing about the physiology of the alien.[10] Simply put, knowing about the experience of an alien would require experiencing its qualia first hand.

Those who support *DISTINCTNESS* argue that *other* mental properties are also necessarily subjective and inaccessible. Consider belief states, for example. Let's say that neuronal sequence B_F could be associated with a specific belief about France (e.g. that the French Revolution began in the 1780's). It doesn't seem right to say that neuronal sequence B_F is itself about France; neurons don't fire *about* anything. It seems more reasonable to say that the belief has the property of being about France, whereas neuronal sequence B_F isn't about anything. So, there must be something about the beliefs state about France that is distinct from B_F. Like qualia, it seems like there is something *more* than (i.e. distinct from) just the neuronal sequence.

Denying *DISTINCTNESS* would require claiming that we could understand everything about mental properties just by knowing the physical facts. From the examples above, it seems intuitive to say that knowing everything about the alien physiology or about neural sequence B_F would not give us all the information; so denying *DISTINCTNESS* would undermine that intuition.

2.2. Completeness

COMPLETENESS is the claim that every physical event has a sufficient physical cause. *COMPLETENESS* is not the claim that physical events *only* have physical causes (this would be the

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[10] This parallels the arguments given by Frank Jackson and Thomas Nagel. See: Jackson, (2003); Jackson, (1968); Nagel, (1974).

causal closure of the physical and a complete denial of *EFFICACY*);[11] *COMPLETENESS* does not say that every single event has a physical cause; *COMPLETENESS* also does not require that one knows the actual, complete cause(s) of a physical event—it does not require epistemic omniscience. Rather, *COMPLETENESS* is concerned with physical events and what kind of sufficient causes they have and leaves open whether there are mental events and how those events are caused. *COMPLETENESS* is the claim that if an event is physical it definitely has a sufficient physical cause (regardless of whether we know what that cause is). In other words, there are no gaps in the physical causal story.

David Papineau provides two reasons as to why we ought to believe *COMPLETENESS*: a conceptual reason and an empirical reason.

According to the *conceptual reason*, *COMPLETENESS* is an *a priori fact*. Specifically, once we analyze the concept of *physics*, the correct analysis of the concept would have built into it that all physical effects have sufficient physical causes. David Papineau says, "If 'physics' means the contemporary physics of textbooks and laboratories, then [*COMPLETENESS*] is probably false… [but] if we take 'physics' to mean the science of whatever categories are in fact needed to account for all paradigmatically physical effects… [this would make] [*COMPLETENESS*] true by definition… the completeness of PHYSICS[12] is analytically true."[13] In other words, if we say that PHYSICS does not necessitate that at least every physical event has a sufficient physical

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[11] Bennett, (2006) 332.
[12] 'PHYSICS' refers to the correct concept or definition of physics that would analytically entail *COMPLETENESS,* whereas 'physics' (in lowercase letters) refers to textbook physics that probably does not entail *COMPLETENESS*.
[13] Papineau, (1991) 38.

cause, then it seems like the definition would be operating under a fundamental misunderstanding of the nature of PHYSICS and physicality.[14]

According to the *empirical reason*, *COMPLETENESS* is an empirical, *a posteriori fact*, or a fact discovered by science. Following the empirical reason, Papineau argues that we have a lack of evidence of any gaps that would justify us in saying some physical events do not have physical causes. So far, all of our empirical observations have all shown that every physical event has a physical cause; even all the seemingly odd events. If there were events that do not have sufficient physical causes, there would have to be a gap in the physical causal story. But we have witnessed no such gaps. For example, we have found no physical anomaly in explaining the revolution of the Earth around the sun; there are no oddities in physics that seem to imply that the physical event (Earth's revolution) does not have sufficient physical causes. We have a complete physical story of what's going on when the Earth revolves around the Sun—there are no gaps. We have witnessed again and again that every physical event has a complete physical causal story repeatedly; therefore, we ought to believe that physics is causally complete.[15,16]

Denying *COMPLETENESS* would appear to stand opposed to science and the scientific project of seeking out physical causes and explanations. If *COMPLETENESS* is an empirical claim, then it seems like a claim that scientists would have to make and verify. Philosophers denying *COMPLETENESS* would make it seem like they're stepping outside of the boundaries of their expertise—and we're already walking on eggshells with many scientists. The denial of

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[14] For more on the conceptual reason for *COMPLETENESS*, see: Crane, (1991) 32–7; Papineau, (1993); Lowe, (1996) 56.
[15] Papineau, (1991) 38.
[16] Papineau's appeal to no physical anomalies in "The Rise of Physicalism" is actually more of a denial of *EFFICACY* and a point of support for *Closure*. So I made his idea more general and in terms of regular physical events and *COMPLETENESS*.

COMPLETENESS would entail that some things could happen that would not have a complete physical story. This seems extremely counter to the goals of science; what scientists strive to do is to figure out what the cause *is—not whether there was* a cause. Whether there are always sufficient physical causes is rationally taken for granted, and it's always worked out for us.

2.3. Efficacy

EFFICACY is the claim that mental properties can and do causally interact with physical properties—not just any type of interaction, *causal* interaction. According to *EFFICACY*, mental properties are more than just causally inert or merely causally changing other mental properties; they can actually cause physical events to occur.

The major reason we ought to believe that mental properties actually cause physical properties is because it's an important part of the way we explain our behavior.[17] The field of psychology was founded on understanding the reasons behind our behavior, and appealing to mental events is one way they have done this. For example, clinical psychologists appeal to mental events causing events in the physical world (e.g. feeling depressed causes sleep disturbances, anxiety and fear lead to avoidance behaviors, etc.).

Additionally, we appeal to *EFFICACY* even in everyday explanations of our behavior. I can say, "I laughed (physical behavior) because I thought the joke was funny (mental state)" or "Smith proposed to Jones (physical behavior) because Smith loves Jones (mental state)" or "I reached for the bowl of soup (physical behavior) because I believed it was there (mental

[17] Heil and Mele, (1991) 61.

state)."[18] In each of these examples, if *EFFICACY* is correct, then the mental events *caused* the physical events.

Not only do we *just* do and say these things, we think all of these explanations are good explanations. We actually believe that inner feelings and states really do cause the physical behaviors. It seems to be impossible to describe behavior otherwise. We usually hesitate to say that these mental events simply correlate with these actions; we want to say that these mental events actually *cause* the actions. We think that saying that mental properties are causal properties is correct and importantly different from saying the sun rises. We say the sun rises because of a lingering mistaken belief that we once held—that the sun revolves around the Earth. Saying that the sun rises is simply a colloquial way of explaining what we observe; but when we say that mental properties are causal properties we think that it is an accurate way of explaining what is going on in reality.

Jerry Fodor explains what we have to lose by denying *EFFICACY* in the following quote:

> If it isn't literally true that my wanting is causally responsible for my reaching, and my itching is causally responsible for my scratching, and my believing is causally responsible for my saying… if none of that is literally true, then practically everything I believe about anything is false and it's the end of the world.

EFFICACY is largely how we explain behavior, so if we deny the mental of its causal powers, an extremely large part of what we believe, as Fodor points out, will be false. By denying *EFFICACY*, we would have to change the way we explain behavior or continue to explain it incorrectly. We would have to discredit any claims that appeal to the mental to explain our behavior—explanations that we actually believe are accurate. Denying *EFFICACY* would require us to change

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[18] Heil and Mele, (1991) 61.

the way we have a strong intuition as being the correct way; we would lose being able to say that we did something *because* of our mental properties.

2.4. Exclusion

EXCLUSION simply defines what it means for an event to be overdetermined. According to *EXCLUSION*, an event is overdetermined when it has more than one distinct and sufficient cause (i.e. a cause that guarantees its occurrence). Specifically, an event E is overdetermined by both A and B when A and B both caused E and the occurrence of A alone would have been enough to guarantee the occurrence of E and the occurrence of B alone would have been enough to guarantee the occurrence of E. In such a situation, either event A or B seem to be superfluous or 'redundant,' and thus is considered overdetermination.[19]

We can contrast overdetermination with events with jointly sufficient causes. Jointly sufficient causes involve two things causing one event—so does overdetermination—so what's the difference? The difference lies in the fact that overdetermination requires that two separate events are each *individually* sufficient for the effect, whereas two things are a jointly sufficient cause when neither cause is enough to bring about the occurrence of the event on their own. So, consider that A and B are *jointly sufficient* for event E; this means that A and B are *both* needed to occur together to guarantee the occurrence of E because the occurrence of E cannot be guaranteed without both A *and* B. A alone is simply not enough and B alone is simply not

[19] Schafer, (2003) 24.

enough. In the case of causes being jointly sufficient, A needs the help from B and vice versa to guarantee the occurrence of E.

We can also contrast overdetermination to preemption. *Preemption* is a causal story where either A or B alone would have been enough to guarantee the occurrence of E, but only one (let's say A) was the *active* cause of E. One common example of preemption comes from Jonathan Schaffer.[20] In this example, he prompts us to imagine a world where magic is real and, in this world, there is a law of magic where if two people cast a spell around the same time, the first spell cast causally trumps the later one (even if the spells are the exact same!). Now suppose Merlin and Morgana both want to turn the prince into a frog at midnight exactly—but Merlin casts the spell first, closely followed by Morgana casting the spell. But due to the laws of magic, Merlin's spell trumps Morgana's spell. While both Merlin and Morgana cast the same spell at midnight exactly, only Merlin's spell was causally efficacious—only Merlin's spell was the cause of the prince turning into a frog at midnight. Merlin's spell preemptively turned the prince into a frog. There are different varieties of preemption (e.g. early and late preemption and trumping preemption), [21] but what differentiates them from overdetermination is that overdetermination requires that *both* A and B are *active*, distinct causes of event E.

Now that we have differentiated overdetermination from joint sufficiency and preemption, we can now look at overdetermination in more detail. Examples of overdetermination include:

(i) Firing Squad: Two people shoot at one person at the same exact time, the bullets both hit their mark at exactly the same time, killing the person.[22] The death of the person was overdetermined.

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[20] Schaffer, (2000) 165.
[21] Menzies, (2014).
[22] Mackie, (1980) 44.

(ii) Burning Bale: Lightning strikes a hay bale at the same time that a person throws a burning cigarette onto the same bale, causing it to catch fire. [23] The bale catching fire was overdetermined.
(iii) Window Shattering: Two people throw rocks at a window and each rock hits the window at the same exact time, shattering it.[24] The window shattering was overdetermined.

Each of these cases involve two distinct, sufficient causes for one event; every case includes situations where one cause would have been enough to guarantee the resulting event, but a second active cause occurred, overdetermining the resulting event. *EXCLUSION* is not making a claim about how often overdetermination happens or a judgment on how often it should happen; rather, *EXCLUSION* just defines what overdetermination is and claims that any situation that fits these conditions is overdetermination.

2.5. Non-Overdetermination

NON-OVERDETERMINATION is the claim that overdetermination of the mental and physical does not happen frequently. The motivation behind this claim seems to be that overdetermination, in general, is problematic, and thus cannot be a common occurrence in any domain of causation. Ted Sider gives us 3 clearly defined reasons why we ought to believe *NON-OVERDETERMINATION*: a metaphysical reason, an epistemic reason, and an argument by coincidence.

The metaphysical reason for *NON-OVERDETERMINATION* is the idea that overdetermination itself is precluded by the correct theory of causation. This reason states that frequent overdetermination simply conflicts with our intuitions regarding causation—whatever it is. Sider argues that we can metaphorically think of "causation [as] a kind of fluid divided among the potential causes of an effect. If one potential cause acts to produce an effect, that fluid is used up,

[23] Ibid.
[24] Thomasson, (2007) 9-22; Schaffer, (2003) 23.

and no other potential cause can act."[25] If any theory were to allow for frequent overdetermination, then it seems like that theory would be operating under a fundamental misunderstanding of causation.

The epistemic reason to believe *NON-OVERDETERMINATION* is simply that we are not justified in believing that overdetermination occurs frequently. According to Sider, postulating a second cause would be 'gratuitous' and unjustified as it goes against Ockham's razor.[26] Overdetermination causes us to seemingly unnecessarily multiply (causal) entities by positing the existence of causal mental properties, to posit the existence of two separately sufficient causes. According to the epistemic reason, if we were to posit rampant overdetermination, we would do this without proper justification and thus have no real epistemic reason to think that overdetermination frequently occurs.

The coincidence reason for *NON-OVERDETERMINATION* is the idea that rampant overdetermination seems to be akin to rampant bizarre coincidences. While it doesn't seem odd to say that two things are jointly sufficient for an effect, it seems superfluous to think that there is more than one sufficient cause. Overdetermination inherently seems to be a fantastic coincidence or a "massive, unexplained correlation between the multiple causes."[27] Sider compares thinking overdetermination happens frequently to the thought process of a paranoid man:

> Imagine a paranoiac who thinks that every time someone is shot, there are in fact two causally independent shooters. He is crazy, but why? One reason (not the only one) is that it would be a great coincidence that all these sharpshooters just happen to fire at the same places at the same times. This great regularity would need an explanation, and none could be given.[28]

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[25] Sider, (2003) 3.
[26] Sider, (2003) 5.
[27] Ibid., 4-5.
[28] Sider, (2003) 4.

If overdetermination were to occur regularly, there would have to be some good explanation for why it happens. If we add the metaphysical reason, then it seems like we would be unable to give a good causal story of why overdetermination would happen. And if we can't give a good causal explanation of frequent overdetermination, then we would just seem like the paranoid man who thinks that bizarre coincidences happen regularly.

Furthermore, consider how improbable cases such as Firing Squad, Burning Bale, and Window Shattering are—let's call this the improbable reason. How likely is it that two causes that were sufficient for the very same event would occur exactly at the same time? With the Firing Squad case, to people would have to shoot their guns at the same time, even more precise than at the same millisecond, and the wind resistance would have to be constant for both paths that the bullets travel, nothing would have to fly in the way of one bullet and not the other, and so on. It sure seems overdetermination would happen rarely, and if it did happen, it surely would be a bizarre, newsworthy case.

Everything I've said above supports the claim that overdetermination, in general, is not something that occurs often; and if this is true, then the same holds for the mental. *NON-OVERDETERMINATION,* as it defined by Bennett, directly refers to the mental and physical; specifically, if the mental causes the physical, it doesn't do so in a way such that there is frequent overdetermination. *NON-OVERDETERMINATION* alone makes no commitment to whether the mental is causally active, but it claims that (if the mental is causally active) mental causation cannot occur in such a way that, every time, there is another distinct sufficient cause.

2.6. The Inconsistency

Why can't all of the five claims be true—why are they inconsistent? *DISTINCTNESS* just is the claim that there are two fundamentally different kinds of properties: mental and physical. If *DISTINCTNESS* is true, then there must be something about the mental that is irreducible to the physical; there must be something that is numerically distinct from physical properties. *COMPLETENESS* focuses on the physical and claims that all physical events always have sufficient physical causes. So, adding *COMPLETENESS* to *DISTINCTNESS*, we get the claim that the mental is distinct from the physical, but, every physical event must have a sufficient cause that is physical. *EFFICACY* focuses on the mental and claims that mental properties, too, can cause physical events. Adding *EFFICACY* to the previous two claims, we are left with thinking that not only does every physical event have a sufficient physical cause, but they often have distinct mental causes as well. If we want to say that (at least some of) the events that mental events cause are physical events, these three claims entail that there are physical events that have two distinct and sufficient causes: a mental cause and a physical cause. These three claims entail that any time we have a physical event that has a mental explanation (which happens frequently), that event will also have a sufficient physical explanation.

The problem begins to become evident when we add both *EXCLUSION* and *NON-OVERDETERMINATION* to the previous three claims. According to *EXCLUSION*, an event is overdetermined when it has two distinct and sufficient causes. If the previous three claims are true, then nearly all human physical behaviors will have distinct mental and physical causes. This, according to *EXCLUSION*, is overdetermination. Additionally, since we usually claim that mental events frequently cause physical events, it seems that overdetermination would happen often. However, according to *NON-OVERDETERMINATION* (which is supported by the claim that

overdetermination is something that occurs only in rare, odd situations—not frequently), overdetermination of the mental and physical does not and cannot happen frequently.

Putting it all together, *DISTINCTNESS*, *COMPLETENESS*, and *EFFICACY* say that whenever there is a physical event that was caused by a mental event, there was also a distinct physical cause to that physical event. Adding *EXCLUSION* to the mix, the previous claims would entail that overdetermination occurs very frequently. But, according to *NON-OVERDETERMINATION*, overdetermination of the mental and physical can't happen frequently. And thus, we have an inconsistent set of claims.

All of these five claims cannot be true. If we accept *DISTINCTNESS*, *COMPLETENESS*, *EFFICACY,* and *EXCLUSION*, then we are left with the conclusion that overdetermination is something that occurs very frequently. But, if we add the very intuitive claim that overdetermination of the mental and physical is not something that occurs frequently (*NON-OVERDETERMINATION*), we get an inconsistent set of claims.

Rejecting *DISTINCTNESS* would require one to say that the mental and physical are not distinct, and are therefore the mental can be reduced to the physical. Denying *COMPLETENESS* requires claiming that "physics is causally incomplete" (i.e. that sometimes physical events do not have sufficient physical causes) and that sometimes we need to appeal to something beyond the physical to explain physical events. Denying *EFFICACY* would mean that the mental does not cause physical events, leaving us with either epiphenomenalism or parallelism as possible mind-body relationships.[29] Denying *EXCLUSION* would mean that there can be events that were caused

[29] Recall that Bennett defines *EFFICACY* in terms of the mental's ability to causally affect the physical. Given that the typical formulations of the exclusion problem lead to epiphenomenalism as the conclusion (which is the view that the mental has no causal powers whatsoever), Bennett's definition of *EFFICACY* is a bit more modest. This leaves more options available to the non-reductive physicalist if their view really is incoherent,

by distinctly sufficient causes and, yet, not be overdetermination in the way that firing squads and rocks hitting windows are. Finally, denying *NON-OVERDETERMINATION* would be equivalent to claiming that overdetermination of the mental and physical does occur often; but this leaves the question open of whether overdetermination of the mental and physical is the same as the overdetermination of the firing squad.[30] Clearly, something has to give—not all of these claims can be true—but figuring out which claim to deny will not be easy.

2.7. Moving Forward

In the following sections, I will look at two solutions to the exclusion problem that focus on the nature of overdetermination and whether mental causation would be overdetermination. The main two suspect claims will be *NON-OVERDETERMINATION* and *EXCLUSION.* We will look at one view that claims that mental causation *is* overdetermination (but non-problematic overdetermination) by way of denying the underlying motivation for *NON-OVERDETERMINATION*. The other view claims that mental causation is *not* overdetermination, by way of denying the definition of overdetermination from *EXCLUSION*.

3. Is Overdetermination Inherently Problematic?

The focus of this portion will be on the claim that the motivation for NON-OVERDETERMINATION is false, which amounts to the claim that overdetermination *can* non-problematically occur. I address a solution inspired by Jonathan Schaffer's work in "Overdetermining Causes," where he claims that overdetermination is ubiquitous; if correct, the exclusion problem does not present an inconsistency for the non-reductive physicalist views. In the following sections, I re-summarize

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but neither epiphenomenalism nor parallelism are going to be acceptable to the non-reductive physicalist. The non-reductive physicalist is going to want the mental to be able to cause physical events and other mental events.

[30] Bennett, (2006) 11-15.

Ted Sider's motivations for NON-OVERDETERMINATION, explain the Schaffer-inspired solution, and raise an objection to this solution. The objection I consider claims that the solution does not provide positive reasons to believe mental causation would be non-problematic overdetermination. I respond to this objection by appealing to supervenience and conclude that supervenience would save the Schaffer-inspired solution from this objection.

3.1. What's So Bad About Overdetermination?

The underlying assumption for *NON-OVERDETERMINATION* seems to be the idea that overdetermination is problematic, and thus could not occur frequently in cases of mental causation. Recall that Sider, in "What's So Bad About Overdetermination," provides three reasons to support *NON-OVERDETERMINATION.*

According to the metaphysical reason for *NON-OVERDETERMINATION*, overdetermination is precluded by the correct theory of causation—whatever it is. The second reason for *NON-OVERDETERMINATION* is an epistemic reason, which simply is that we are not justified in believing overdetermination occurs frequently. According to Sider, postulating a second sufficient cause would be 'gratuitous' and unjustified as it goes against Ockham's razor.[31] The third reason for *NON-OVERDETERMINATION*, the coincidence reason, is the idea that frequent overdetermination is akin to rampant bizarre coincidences or fantastic coincidences. Prach Panchakunathorn argues that, "since we should not believe in a bizarre coincidence [or massive, unexplained correlation], we should not believe that physical effects of mental causation are systematically overdetermined."[32] If overdetermination were to occur regularly, there would have to be some good explanation for why it happens.

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[31] Sider, (2003) 5.
[32] Panchakunathorn**,** 3l; Funkhouser, (2002) 335-351; Carey, (2010) 251–262.

3.2. A Schaffer-Inspired Solution

I use Shaffer's reasoning in "Overdetermining Causes" to argue that our intuitions for *NON-OVERDETERMINATION* do not come from some deep underlying truth about overdetermination, but from being misled by thinking about cases of overdetermination. Schaffer argues that there are some kinds of overdetermination that are problematic, while others kinds are not. In this section, I explain and motivate Shaffer's claim that overdetermination is much more common than we typically think. While Schaffer does not explicitly apply his discussion on the different types of overdetermination to the exclusion problem, in what follows I use his reasoning to formulate a solution to the problem: overdetermination is not inherently problematic, so the truth of the five claims do not provide any reason to think that mental causation poses an actual problem.

3.2.1. Overdetermination is Everywhere

Schaffer argues that, beyond the standard examples of overdetermination, there are other kinds of genuine overdetermination that happen *all the time.* Schaffer distinguishes between four different kinds of overdetermination, whose names I borrow from Sara Bernstein:[33]

1. **Standard Overdetermination:** When two causally independent events cause another event.
   Firing Squad, Burning Bale, and Window Shattering (discussed in Section 2.4) are all examples of this kind of overdetermination.
2. **Mereological Overdetermination:** When one proper part of an object is more than needed to be sufficient for the occurrence of an event.
   Consider a hammer breaking a walnut. J.L. Mackie argues, "[e]ven if part of the hammer-head had been absent, this result would have still come about."[34]
3. **Constitutive Overdetermination:** When the collection of atoms that make up the object and the object itself overdetermine an event.
   Consider the atoms that make up a rock. Since we plausibly should

[33] Bernstein, (2015) 3-4.
[34] Mackie, (1980) 43.

not consider the rock to be *just* the atoms that compose it,[35] it seems that the atoms making up the rock in conjunction with the whole rock itself overdetermine the window shattering.

4. **Quantitative Overdetermination:** When more force than was needed caused an event.

   Considering a hammer breaking a walnut. Schaffer argues that "the whole of the blow was not necessary for [the flattening of the walnut] though it was more than sufficient: a somewhat lighter blow would have sufficed."[36]

Because there are more kinds of overdetermination than just standard overdetermination, overdetermination of one sort or other happens *nearly every time a physical event occurs*.[37]

Schaffer argues that we tend to think *all* overdetermination is problematic because the popular examples primarily focus on standard overdetermination, but if we acknowledge ubiquity of overdetermination we should be able to accept that overdetermination is really not inherently problematic. Considering the common example of a firing squad shooting at a single person (where the multiple shooters overdetermine the death of the individual), we will find that all four types of overdetermination are present: standard overdetermination (if there are two bullets), overdetermination on the mereological level (if one proper part of one bullet were missing the person would still die), on the micro level (the collection of atoms making up one bullet and the bullet itself overdetermined the death of the person), and the quantitative level (surely a bullet going so fast was over-kill). According to Schafer, we think overdetermination is bizarre (when we do) because we lack examples of the other kinds of overdetermination, which

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[35] This is a direct denial of the mereological identity theory, which claims that an object is identical to the substance that composes it. The common example against this theory comes from Judith Jarvis Thompson (1998) where she talks about a block of clay that was turned into a statue. She argues that the block of clay at time t1 was one object, and the statue at t2 is another distinct object. Why is the statue a distinct object from the block of clay? Because once you begin molding the clay into a statue, you are changing the arrangement of the shape and thus the status of the object itself. The statue is not identical to the block of clay, but rather the statue is the block of clay plus the important kind of arrangement that makes that statue a statue.

[36] Mackie, (1980) 43.

[37] Schaffer, (2003) 28.

has made us feel uncomfortable when we hear the term 'overdetermination' in general.

3.2.2. Mental Causation Would Be Non-Problematic Overdetermination

Because overdetermination isn't inherently problematic, the underlying assumption that motivates *NON-OVERDETERMINATION*, that the overdetermination of the mental and physical would be problematic, is undercut. Thus, because we support this claim based on the assumption that overdetermination is inherently problematic, our reasons for believing *NON-OVERDETERMINATION* are misguided. However, as Schaffer argues, overdetermination *isn't* inherently problematic—overdetermination can and does non-problematically happen all the time—and its ubiquity shows that it is non-problematic.[38] Using Schaffer's reasoning, one can form a solution to the problem: because overdetermination isn't inherently problematic, the exclusion problem does not present an inconsistency—the truth of the five claims do not provide any reason to think that mental causation poses an actual problem. While there might be kinds of overdetermination that are problematic, overdetermination isn't inherently bizarre, so supporters of the exclusion problem need to provide a positive reason to think mental causation would be problematic overdetermination to show that non-reductive physicalism is incoherent.

3.3. Objection: Mental Causation Would Be Very Problematic Overdetermination

In this section, I address two potential objections to the Schaffer-inspired solution: simply appealing to the existence of non-problematic kinds of overdetermination, that happen to occur frequently, does not provide a reason to believe mental causation would be a non-problematic kind of overdetermination. Furthermore, mental causation might be an even worse kind of overdetermination than standard overdetermination because removing the mental cause would

[38] For more on this view, see: Bernstein, (2015) 4; Loewer, (2007); Pereboom, (2002); Schaffer (2003); Sider, (2003).

not change the way the ensuing event occurred, as Sara Bernstein argues in "Overdetermination Underdetermined." I agree with the first objection, so in the subsequent sections I will attempt to show how mental causation is non-problematic overdetermination by appealing to supervenience, which resolves Bernstein's worry as well.

Bernstein argues that mental causation seems *worse* than the other kinds of overdetermination because, at least in these cases of overdetermination, both causes affect the way the event occurs and there is a noticeable difference in the way the event occurs if we take away one of the causes. [39] But this is not the case for mental causation. Bernstein most closely understands "the way the event occurred" in terms of *modal fragility*, which involves understanding the event in terms of the exact properties it possesses.[40] Reconsider the Window Shattering example: removing one rock from the causal story will change the way that the window shatters—and this is because "each rock contributes a specific force to the shattering of the window, such that removing one rock removes a force from the shattering of the window."[41] However, Bernstein argues that this is not the case for mental causation. With mental causation, Bernstein argues that we would normally assume, like in cases of standard overdetermination involving two distinct physical objects, that removing the mental cause would change the way that ensuing event occurs. However, because *COMPLETENESS* holds, the ensuing physical event would have to occur in the same way with or without the mental cause. Unlike cases of standard overdetermination, which, for example, involves the additive force of two rocks shattering a

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[39] Bernstein, (2015) 14.
[40] Bernstein, (2015) 7-8. We could also understand "in the same way" in terms of *modal robustness*, which allows for a numerically identical event to have some different properties. For example, removing one rock in the rock throwing example would "bring about the effect in roughly the same way that it would have occurred without the presence of the other [rock]" and thus overdetermination would still occur.
[41] Ibid. 14.

window, physical events involving mental causation should intuitively happen the same without the mental event.[42] Thus, it appears that mental causation is a worse kind of overdetermination than standard overdetermination.

3.4. Response: Supervenience

In this section, I respond to Bernstein's objection by appealing to the supervenience of the mental and physical (m and p). There are two ways one could do this: compare supervenience of m and p to constitutive overdetermination, or argue that there should be a fifth kind of overdetermination: supervenience overdetermination.

Supervenience is a relationship between two things, A and B, such that when A supervenes on B, there cannot be a change in A without a change in B. This relationship, however, is not symmetric; when A supervenes on B, that means there cannot be a change in A without a change in B, but *not* vice versa; there could be a change in B without a change in A. In terms of mental states, non-reductive physicalists argue that mental states supervene on physical properties, which means that there cannot be a change in mental states without there also being a change in physical states. Supervenience *requires* that a change in mental states *must* be accompanied by a change in physical states and that no two beings could be exactly alike physically while being different mentally.[43]

3.4.1. Constitutive Overdetermination

In responding to Bernstein's objection, one could make an analogy between constitutive overdetermination (a non-problematic kind of overdetermination) and mental causation to show that mental overdetermination is non-problematic. Recall the example from Section 3.2.1 that

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[42] Ibid. 14-16.
[43] Bennett, (2006) 4-10.

constitutive overdetermination occurs when the collection atoms that make up an object, in conjunction with the object itself, both cause and overdetermine the occurrence of an event. Using Window Shattering as an example, if the atoms that constitute a rock AND a rock are causes of a window shattering, then does the event change if we remove the atoms from the causal story? If we consider the fact that removing the collection of atoms means there is no rock, we can see removing the atoms *does* change the way the event occurs – no collection of atoms means no rock, so the window would not shatter.

If there were some sort of relationship between the mental and physical that is analogous to this, then Bernstein's worry would be alleviated. The mental and physical *do* have a relationship (that seems) parallel to constitutive overdetermination: supervenience. Since physicalists can hold the truth of the mental supervening on the physical, they would also have to hold that, without the physical existing in the way it does, there would be no mental. If we're worried about removing the mental cause not changing the way the event happens, supervenience holds that if the mental cause was removed, then the physical cause must also have been removed as well,[44] resulting in the ensuing event not occurring. Similarly, with constitutive overdetermination, if we remove the atoms, the rock disappears as well, so the ensuing event cannot occur. Thus, it seems like we can draw a potential analogy between mental causation and constitutive overdetermination: if constitutive overdetermination is non-problematic, and mental causation is like constitutive overdetermination, then mental overdetermination would be non-problematic. This is both unlike cases of standard overdetermination and resolves the worry about removing one cause causing the event in the

[44] Supervenience holds that there cannot be a change in the mental without also a change in the physical. Consequently, there cannot be a removal of the mental without a removal of the physical.

exact same way (removing one cause means there is no event).

3.4.2. Supervenience Overdetermination

However, I argue that this analogy isn't a very good one because I side with the claim that constitution requires an identity claim, whereas mental causation (as understood by the non-reductive physicalists trying to deny the exclusion problem), does not.[45] One may argue that, for example, a rock *must* just be identical to the collection of atoms because two numerically distinct objects cannot occupy the same space at the same time. While it is still a live debate as to whether objects are identical to their constitutive parts, [46] the possibility that constitution of material objects requires the identity of the constituting parts leads me to hesitate to accept the analogy between constitutive overdetermination and mental causation.

However, although this analogy doesn't work entirely, this doesn't provide a reason to deny the Schaffer-inspired solution; siding with this claim would simply leave us having to find a new reason that mental causation is non-problematic overdetermination. What seems to be the only way to do this would be to argue that mental causation doesn't *need* to be analogous to one of the three non-problematic kinds of overdetermination to be a non-problematic kind of overdetermination. Instead we can simply add an additional kind of overdetermination to Schaffer's list of four kinds: *Supervenience Overdetermination*. Adding supervenience overdetermination to Schaffer's list would result in the claim that, when there are events with

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[45] The whole reason constitutive overdetermination is a kind of overdetermination, according to Schaffer, is because he does not believe that constitution requires identity. Thus, he would disagree with this objection. This is simply where my view and Schaffer's view diverge.

[46] This seems intuitively plausible, but there might be an important difference between a collection of atoms and a rock: perhaps some people might draw attention to the different temporal properties, persistence conditions, non-categorical properties, etc. for being a rock and collection of atoms. Wasserman, (2015) and Thomson, (1998).

two distinct causes that have a supervenience relationship, then this kind of causation is supervenience overdetermination.

By now, we should understand standard overdetermination to be a problematic kind of overdetermination; the question of the exclusion problem, as understood by the Schaffer-inspired solution, is whether mental causation is similar enough to standard overdetermination that it is a problematic kind of overdetermination. Because of supervenience, that answer is no. Standard overdetermination involves events caused by distinct causally independent events; supervenience overdetermination would be different from standard overdetermination because it involves two distinct, yet not causally independent events. Supervenience distinguishes mental causation from standard overdetermination because it means mental causation does not involve completely causally independent causes, whereas standard overdetermination does. Because of this, mental causation would be non-problematic overdetermination. Thus, while it appears to me that this analogy between constitutive overdetermination and mental causation isn't a very good one, the Schaffer-inspired solution still stands because supervenience makes mental causation wholly unlike standard overdetermination, and thus a non-problematic kind of overdetermination.

3.5. Concluding the Schaffer-Inspired Solution

The Schaffer-inspired solution rests on the claim that our intuitions for *NON-OVERDETERMINATION* do not come from some deep underlying truth about overdetermination, but from being misled by thinking about cases of overdetermination. Schaffer distinguishes between four different kinds of overdetermination: standard overdetermination, mereological overdetermination, constitutive overdetermination, and quantitative overdetermination. Because of the existence of these others kinds of overdetermination, overdetermination would happen all the time. Furthermore, there would almost always be a redundant or over-kill cause of events, so our

reasons for believing that overdetermination is inherently problematic are incorrect. One could use Schaffer's reasoning to form a solution to the problem: because overdetermination isn't inherently problematic; the claims in the exclusion problem provide no positive reason to even believe, if mental causation were overdetermination, that it would be a problematic kind of overdetermination. One could object to this solution by saying that merely appealing to the fact that overdetermination isn't inherently problematic won't solve the problem; mental causation is either too similar to standard overdetermination or it is worse because removing the mental cause wouldn't change the way the ensuing event occurs. However, I appeal to supervenience to show how mental causation is unlike standard causation and rids us of Bernstein's worry of the way the event occurs. Thus, the final conclusion of this Schaffer-inspired solution would be that mental causation is non-problematic overdetermination.

4. Bennett On Counterfactual Tests and Backtracking

In this section, I explain and motivate Karen Bennett's solution to the exclusion problem. Bennett creates a counterfactual test for overdetermination, which is meant to show that the non-reductivist account of mental causation does not result in rampant overdetermination. Next, I explain and motivate a recent objection to Bennett's solution by Chiwook Won in which he argues that Bennett's counterfactuals are not necessary for overdetermination. However, I will show that Won does not assess the counterfactuals in Bennett's test correctly and, thus, Bennett's solution remains viable.

4.1. Bennett's Solution

In her paper "Why the Exclusion Problem Seems Intractable, and How, Just Maybe, to Tract It," Bennett defends her version of a view that Terence Horgan calls "causal compatibilism" (just

"compatibilism" from here, on).[47] All supporters of compatibilism agree with *DISTINCTNESS*, *COMPLETENESS*, *EFFICACY* and *NON-OVERDETERMINATION*, but deny *EXCLUSION.* The denial of *EXCLUSION* amounts to the claim that the mental and physical can be distinct, sufficient causes without resulting in overdetermination. To support her view, the compatibilist needs to show that, while the 'textbook examples' (e.g. firing squads) would count as overdetermination, normal situations involving mental and physical causation do not count as overdetermination. According to Bennett, "The compatibilist needs to *break the analogy* between the two types of cases."[48]

4.1.1. Bennett's Counterfactual Test for Overdetermination

Bennett's solution involves providing a counterfactual test detailing a necessary condition for overdetermination and using this test to show that cases of mental causation do not meet the counterfactual conditions.[49] Recall from *EXCLUSION* that overdetermination occurs when an event has two distinct and sufficient causes. With this in mind, Bennett creates the following counterfactual test:

> c1 & c2 overdetermine some event ε only if:
> 1. If c1 happened without c2, ε still would have happened, and
> 2. If c2 happened without c1, ε still would have happened.[50]

This test *only* provides a necessary condition; thus, it can only be used to figure out which cases of causation do *not* qualify as overdetermined. Since this test is not sufficient for overdetermination, some events may fit the requirements and yet not be overdetermined.

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[47] Horgan, (1987); Goldman, (1969); Blackburn, (1991); Burge, (1993); Horgan, (1997); Mellor, (1995) 103-104; Noordhof, (1997); Pereboom and Kornblith, (1991); Yablo, (1992b, 1997).
[48] Bennett, (2003) 474.
[49] Bennett, (2003) 473-474.
[50] Bennett, (2003) 480.

It is important to note that this particular counterfactual test should be assessed in a non-typical way; counterfactuals are typically assessed by removing a part of the conditional and *replacing* it with something different (i.e. backtracking), whereas Bennett's counterfactuals are to be assessed by *deleting* part of the conditional (one cause) and not replacing it with anything else (not another cause, or a cause similar to the deleted one).[51] Consider the following example, "if I didn't say that one thing, I would have nailed that interview." There are two ways we can think of this counterfactual. The first way of thinking about this counterfactual would look like this: "In a world where I didn't say that one thing, I would have awkwardly rambled, so I would have ruined that interview too;" this way of looking at the counterfactual involves backtracking. But, the second way of looking at this counterfactual involves keeping this world exactly the same and entirely deleting the fact that I said that one thing—then determining whether I would have succeeded in the interview. This way of looking at counterfactuals is how Bennett thinks we should assess the counterfactuals in her test. She argues that, in some contexts, backtracking is "definitely inappropriate"—and her test is one of those situations.[52]

Since the goal of her test is to determine whether mental causation results in frequent overdetermination, Bennett considers her counterfactuals in terms of the mental and physical. Bennett replaces c1 with "m" for "mental cause," and c2 with "p" for "physical cause." Her test, using these variables, is as follows:

> m & p overdetermine some event ε only if:
> (O1) If m happened without p, ε still would have happened,
> and
> (O2) If p happened without m, ε still would have happened.[53]

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[51] Ibid. 482, 483, 484, and 488.
[52] Ibid. 478.
[53] Ibid. 480.

Using this test, Bennett aims to deny *EXCLUSION* by showing that cases of mental causation do not result in frequent overdetermination.[54] To show this, Bennett argues we must show that at least one of the two counterfactuals is either false or vacuously true.

4.1.2. Showing the Falsity of the Counterfactuals

Bennett first considers denying that mental causation is overdetermination by showing that at least one of the counterfactuals is false. However, she argues that this attempt is not favorable because the falsity of these counterfactuals undermines *EFFICACY* and *COMPLETENESS*.

The falsity of (O1) entails that mental events need to be coupled with physical events to cause a physical event. This is not optimal, Bennett argues, because it undermines *EFFICACY*.[55] By denying *EFFICACY*, we would have to dramatically change the way we explain behavior. We explain behavior in terms of the mental, sometimes, because we actually think these explanations are correct and importantly different from saying "the sun rises." Saying "the sun rises" is simply a colloquial way of explaining what we observe; but when we say that mental properties are causal properties, we think this is literally true and an accurate depiction of reality.

The falsity of (O2) entails that the physical needs help from the mental to be causally efficacious. This, though, seems to go against *COMPLETENESS*. If we were to deny *COMPLETENESS*, we'd appear to stand opposed to the scientific project of seeking out physical causes and explanations. What scientists strive to do is to figure out what the cause *is* not *whether there was* a cause.

4.1.3. Showing the Vacuity of the Counterfactuals: Bennett's Preferred Solution

Bennett then considers denying that mental causation is overdetermination by showing that at

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[54] Ibid. 4.
[55] Ibid. 481.

least one of the counterfactuals is vacuously true.[56] Bennett's final solution ultimately sides with arguing for the vacuity of (O2).

For (O1) to be vacuous, one needs to argue that it is *impossible* for m to occur without p. This, however, undermines *multiple realizability*, which is the idea that the same kind of mental state can be realized by different physical states. [57] By arguing for the vacuity of (O1), we are claiming that a certain mental state can *only* happen when a creature is in one exact physical state *and* that any creature that is not in this exact physical state is not experiencing the mental state in question. Without mental states being multiply realizable, we cannot claim that different people or species have the same mental states as us. For example, if our mental states are not multiply realized in other species we could not say that our dogs feel sad when we leave home or that our cats enjoy it when you pet them because their brains have different structures than ours.[58]

For (O2) to be vacuous, one needs only to argue that it is impossible for p to happen without m *also* occurring. This, according to Bennett, seems more reasonable than the previous options because it coincides with the typical non-reductivist claim made in regards to the mind-body relationship: that there is an "upwards necessitation relation" between the physical and mental. According to Bennett, physicalists of *all* varieties must argue that once the physical facts are set, all the facts about mental states are set and that it is metaphysically necessary for

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[56] All conditionals that start with a false antecedent will be true, regardless of their consequent—and these are the conditionals that are vacuous. While they may be true, their truth is negligible because of the false antecedent.

[57] Bennett, (2003) 483; Bickle, (2013).

[58] Another potential drawback of claiming the vacuity of (O1) is that this denial entails that physicalism is *necessarily* true. But, Bennett argues that physicalism is plausibly only contingently true; it seems at least possible for physicalism to be false in other possible worlds (Bennett, (2003) 483-484; Lewis, (1983) 362; Chalmers, (1996) 41-42; Jackson, (1968) 11-12). Additionally, the necessity of physicalism means that there can be no universe where there are mental states alone, which implies that it is impossible for immaterial souls to exist.

everything to globally supervene on the physical. According to supervenience, in any possible world where A supervenes on B, it is impossible for there be a world with B and not A. Supervenience *requires* that no two beings could be exactly alike physically while being different mentally.[59] This view is exactly what claiming the vacuity of (O2) entails: that there is no possible world where p occurs and m does not occur. Given this, Bennett argues that all physicalists must claim that (O2) is vacuously true.[60]

By claiming the vacuity of (O2), Bennett shows that mental and physical causes can still be distinct and sufficient causes without resulting in overdetermination. Mental causation does not result in frequent overdetermination because the mental and physical are not independent of each other due to the necessary supervenience relationship—they are distinct, but necessarily linked.[61] Using this reasoning, Bennett establishes a difference between firing squad overdetermination and mental causation; where the firing squad members are independent causes, mental and physical causes are not. According to Bennett's solution, *EXCLUSION* is false, normal cases of mental causation are not cases of overdetermination, which resolves the inconsistency in the exclusion problem.[62]

4.2. Objection: Bennett's Test Is Not Necessary for Overdetermination

Chiwook Won, in "Overdetermination, Counterfactuals, and Mental Causation," argues that

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[59] Bennett, (2006) 4-10.
[60] Ibid.
[61] Bennett, (2003) 6-7.
[62] Does Bennett's solution count as a denial of DISTINCTNESS? It does not; two things can be distinct and still dependent on each other. Consider the equation $E = mc^2$; this defines how we calculate the kinetic energy of an object (by multiplying the object's mass by the speed of light squared). According to this equation, the kinetic energy that an object has is dependent on the object's mass and the speed of light; if the mass of the object were different or the speed of light were different, an object's kinetic energy would be different. While kinetic energy depends on m and c, an object's kinetic energy is not identical to the objects mass and the speed of light (it is distinct from these things). Thus, it appears that there can be dependence relation two things and the things still be distinct.

Bennett's test is not necessary for overdetermination. Thus, Won's charge is that her solution relies on a false premise.[63]

Won presents cases that he claims are cases of overdetermination, yet they do not satisfy Bennett's counterfactuals. Won uses an example similar to the standard preemption examples: [64]

> *Bottle Shattering:*
> Two children, Billy and Sally, throw rocks at a glass bottle. Unbeknownst to Billy and Sally, there's a bystander: Charlie. Charlie knows that Billy has a sensitive ego and that if Sally's rock breaks the bottle and Billy misses, he will be really upset. So, Charlie plans that if Billy's aim is not accurate, he will throw a rock to stop Sally's rock from hitting the bottle. But, Billy's aim is true and both of their rocks hit and shatter the bottle.[65]

Won argues that Billy's and Sally's rocks overdetermine the bottle shattering because both of their rock-throwing events are distinct and sufficient causes for the bottle shattering. But, this situation does not satisfy Bennett's counterfactuals because of Charlie's inactive presence. It is true that if Billy's rock hit the glass bottle and Sally's did not, the glass bottle would have shattered. However, because of Charlie, if Sally threw the rock with good aim and Billy didn't, Charlie would have intervened with Sally's rock and the bottle would not have shattered. Charlie's intended interference precluded the truth of one of the counterfactuals. Thus, with *Bottle Shattering*, it looks like Bennett's test doesn't properly diagnose overdetermination.

Won argues that there are also cases of overdetermination that involve additional trumping causes that don't directly interfere with either of the overdetermining causes.[66] To show this, he slightly modifies Schaffer's trumping example: [67]

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[63] Won, (2014) 217-220.
[64] For examples of preemption, see: Schaffer, (2000) 165; Menzies, (2014).
[65] Won, (2014) 213-214.
[66] For more on trumping, see: Schaffer, (2000) 165; Menzies (2014).
[67] Schaffer, (2000).

> *Major Trump:*
> Two sergeants give orders to a squad of soldiers. Both the sergeants shout "Advance" at the same time, and the soldiers advance. Now suppose that a major was standing there too. He was actually about to order a retreat. But the major hears the two sergeants ordering an advance, so he does nothing. However, if only one of the sergeants had ordered the advance, he would have ordered a retreat, which would have caused the soldiers to retreat.[68]

In this case, according to Won, the advancing of the soldiers is overdetermined but neither of Bennett's counterfactual is true because, if only one sergeant ordered an advance, the major would have ordered the soldiers to retreat. The major, unlike the case involving prevention above, does not directly interfere and cut off the sergeants' orders to advance; rather, if one of the sergeants didn't order, the major would trump the other's order.

Bennett's test is supposed to show that situations that don't satisfy her test are not overdetermination, but Won purports to show that there are cases of genuine overdetermination that do not satisfy the conditions of her test. If Won's counterexamples successfully show what he argues, then Bennett's test does not show that mental causation isn't overdetermination.

4.3. Response: Backtracking and Independence

Won's argument involves adding third parties into the causal stories that, while causally inactive, prevent the truth of one or both of the counterfactuals. While this would be a good strategy if these counterfactuals were able to fall prey to backtracking, Bennett explicitly states that backtracking is not the appropriate way to think of her counterfactuals in the following quote:

> Now, backtracking evaluations are not always and everywhere wrong, but they are definitely inappropriate in some contexts, and I hereby claim that this is one of them. To get the proper results from the overdetermination test, you cannot backtrack, looking for the *reason* the one event failed to occur. You can just imagine its

[68] Won, (2014) 217-218.

> failure to occur, period. So even in this case [where the first gunman didn't shoot causing the second gunman to miss], if the first gunman had not fired but the second had, the victim *would* still have died. This case does not constitute a counterexample to the necessity claim.[69]

Bennett argues that (in terms of the mental, m, and physical, p), when thinking about m happening without p, we shouldn't think of this as meaning removing p and replacing it with something similar to p (p*), nor should we think about the nearest worlds where p doesn't take place, nor should we add any additional reasons or causes to explain why p doesn't occur. Rather, we should think of this as *deleting* p from the story and leaving it empty.[70] Bennett's counterfactuals simply should not be analyzed using backtracking.

Won seems to indirectly address Bennett's claim above, but he thinks that such a move is *ad hoc*. Bennett doesn't give reasons to support why one shouldn't backtrack when thinking about her counterfactuals; she just "hereby claim[s]" that one shouldn't—and moves on.[71] This may make it seem like she's only making the claim to protect her test from backtracking counterexamples, which is *ad hoc*. The onus should be on the compatibilist (Bennett) to *argue* and explain *why* backtracking isn't appropriate when thinking about her counterfactuals. Bennett's whole reason for writing her initial paper was based on the claim that compatibilists must argue and explain why the view is true. However, it may be that she makes the same mistake when she doesn't adequately support her claim that backtracking would be inappropriate for her counterfactuals.

However, Bennett's claim is not *ad hoc*. Since Bennett doesn't explicitly note why one shouldn't backtrack, I provide a novel and helpful way to understand Bennett's counterfactuals.

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[69] Ibid.
[70] Bennett, (2003) 478.
[71] Ibid.

One should not backtrack when assessing Bennett's counterfactual test because her test is best thought of as testing the *independence* of the causes. Her test is meant to show that an event can have two distinct yet sufficient causes without resulting in overdetermination; this happens when distinct and sufficient causes are *necessarily non-independent* causes.[72]

By appealing to the necessary supervenience relationship between the mental and physical, Bennett shows that the mental is necessarily *non-independent* from the physical. Because it is impossible for the mental to exist without the physical, the mental does not exist *independent* of the physical. Since *independence* is being tested in Bennett's counterfactuals, adding or replacing causes muddles the story, which makes it impossible to show how c1 was *independent* from c2. We can make an analogy between this and how we do science. When conducting scientific experiments, researchers try to limit for all (or as many as possible) confounding variables, or variables that could interfere with the object of study. For example, if a psychobiologist wanted to study whether testosterone, independent of serotonin, influenced aggression, the researcher would manipulate *only* the levels of testosterone and hold the serotonin levels constant—they would *not* manipulate both variables. If you manipulated both variables, you would then be unable to conclude whether testosterone, individually, was the source of the change (or lack thereof) in aggression. When determining whether two things are able to be causes independent of each other, only one cause can be manipulated or changed while the other cause and variables must remain constant. Similarly, backtracking (manipulating and

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[72] For the rest of the discussion on Bennett, we should understand '*independence'* as not *necessarily* bound together. The "necessary" part is important because, at best, Bennett only shows that cases of mental causation, where the mental and physical are *necessarily non-independent* causes, is not overdetermination. I am using *independence* to denote things that are necessarily non-independent due to some necessary relationship. However, the mere fact that there are some cases where two causes are contingently independent may not be enough to save these cases from being overdetermination. See: Won, (2014) 211-212.

adding extra variables) should not be used when assessing Bennett's counterfactuals.

Bennett's emphasis on supervenience and *non-independence* breaks the analogy between mental causation and the firing squad. The mental and the physical have a necessary supervenience relationship that makes them *non-independent* of each other; whereas the individuals in the firing squad are not necessarily linked and are thus *independent* causes. While the individuals in the firing squad could have a relationship such that, if one didn't fire, then the other didn't fire, or perhaps if they are related in that they will only shoot if ordered to, this is only a contingent relationship. Bennett's test shows that only cases where both causes are *necessarily* dependent on each other will not result in overdetermination.

4.4. Concluding Bennett's Solution

Bennett's solution to the exclusion problem sets out to deny *EXCLUSION* by showing that there are cases where an event is caused by two distinct and sufficient causes without resulting in overdetermination. To show this, Bennett uses supervenience to show that the mental and physical are necessarily not *independent* of each other. This necessary link, which bars *independence*, is what keeps mental causes from being cases of inherent overdetermination, systematic or not.

The upshot of Bennett's argument is that distinct and sufficient causes don't result in overdetermination when they're not *independent* causes. Thus, a revised and more appropriate definition of *EXCLUSION* would be:

> *EXCLUSION*:* No effect has more than one *independent* sufficient cause unless it is overdetermined.

This formulation of *EXCLUSION* would allow mental causation to avoid the exclusion problem while still maintaining the integrity of the textbook cases of overdetermination. Bennett's

counterfactual test sets out to show that, while mental and physical causes are distinct and sufficient, the necessary link barring *independence* between the mental and physical results in the vacuity of (O2). And, since her test is necessary for overdetermination, the vacuity of (O2) shows how mental causation does not result in overdetermination.

Won's criticism, because it relies on backtracking, does not properly assess Bennett's counterfactuals. Bennett's counterfactual test aims to demonstrate the *independence* of causes, and backtracking is not appropriate for testing whether something is *independently* sufficient for an event. Therefore, Bennett's solution to the exclusion problem is not threatened by Won's criticisms and remains a viable solution to the exclusion problem.

5. Conclusion: The Inconsistency is Resolved, But There's More Work to be Done

In this paper, we've looked at two solutions to the exclusion problem. The goal of this paper was simply to show that, given the set of claims that non-reductive physicalists hold to be true, there are two ways in which a non-reductive physicalist can respond to the exclusion problem that still allow them to accept all five claims.

The first solution is inspired by Jonathan Schaffer's work in showing that the underlying support for NON-OVERDETERMINATION is undercut. Schaffer argues that because of the ubiquity of overdetermination, there is no reason to believe overdetermination is inherently problematic. I used Schaffer's reasoning to form a solution to the problem: because overdetermination isn't inherently problematic, the claims provide no positive reason to even believe, if mental causation were overdetermination, that it would be a problematic kind of overdetermination. I appealed to supervenience, claiming that we should add an additional kind of overdetermination—supervenience overdetermination—to Schaffer's list of kinds of overdetermination. Additionally,

I claimed that, because supervenience distinguishes mental causation from standard overdetermination, mental causation would be non-problematic overdetermination.

The second solution I addressed was proposed by Karen Bennett, in which she creates a counterfactual test for overdetermination to show that mental causation is not overdetermination. Bennett relies on what she takes to be the necessary truth of supervenience to ultimately claim that the counterfactual "If p happened without m, ε still would have happened" is vacuous. I also argued that one ought not use backtracking in assessing Bennett's counterfactuals because the counterfactuals are best understood as showing whether two causes are *independently* sufficient for the ensuing event and her test is merely *one* necessary condition for being overdetermination. Thus, Bennett's solution results in the conclusion that mental causation would not inherently be overdetermination.

One might object to using supervenience to solve the exclusion problem based on the claim that a solution to the problem must also explain the relationship between the mind and body, and supervenience does not explain how mental causation works. However, a non-reductive physicalist doesn't have to do this, in order to solve the problem, according to Bennett:

> The point of the exclusion problem is not that there is a special problem establishing the causal efficacy of the mental, but instead that the assumption that it is efficacious leads to trouble …[R]esponding to the exclusion problem…does not require providing a positive story about how the mental manages to be causally efficacious. Telling such a story is of course required by a full defense of mental causation from all challengers, but not by a defense from the exclusion problem in particular.[73]

In other words, Bennett argues that the heart of the exclusion problem is not *how* the mental causes the physical, but rather, the heart of the problem is on what room is left for the mental to

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[73] Bennett, (2008) 2.

have causal powers if the physical can do all the work.[74] Given this, an appeal to supervenience can solve the exclusion problem because it shows where the mental factors into the causal story; it must exist if the physical exists in the way it does. While this doesn't explain *how* the mental causes physical events, explaining mental causation isn't necessary to solve the exclusion problem.

It seems that both solutions, then, would be acceptable for a non-reductivist response to the exclusion problem. The problem was supposed to show that the claims that a non-reductivist is committed to are inconsistent, but both of these solutions use additional claims that the non-reductivist already accept (supervenience) to show that the view isn't inconsistent. Someone who is not a non-reductive physicalist might not feel swayed by these arguments, but, since the exclusion problem attempts to show that non-reductive physicalism is incoherent, all one needs to do to solve the problem is show that something already exists in the non-reductivist framework that allows for the truth of all five of these claims without resulting in inconsistency.

It should be clear that both solutions cannot be true; mental causation cannot be both non-problematic overdetermination and not overdetermination. Thus, to find a final solution to the problem, there is more work to be done to figure out what overdetermination, in fact, is. It seems that overdetermination exists, and the final solution to the exclusion problem relies on figuring out what overdetermination really is. Is overdetermination like how Schaffer described it or like Bennett described it? While each solution to the problem relies on competing accounts of overdetermination, I feel I have enough here to show that we can exclude the exclusion problem from our list of worries for mental causation—at least, as far as non-reductive physicalism is

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[74] Bennett, (2008) 2; Bennett, (2003) 471-472.

concerned. Regardless of which account of overdetermination you hold—that it happens ubiquitously (and thus mental causation is non-problematic overdetermination), that Bennett's counterfactuals capture a portion of the nature overdetermination (and thus mental causation is *not* overdetermination)—the exclusion problem is not a problem for non-reductive physicalists. Either the supervenience of the mental and physical means mental causation is a non-problematic kind of overdetermination, or it means mental causation is *not* overdetermination. The burden is now on metaphysicians concerned with overdetermination to figure out what the true nature of overdetermination is. Non-reductive physicalists, however, can rest assured that, regardless of the nature of overdetermination, their view does not dissolve into inconsistency.

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Vita

Katelyn “Katie” Hallman was born on [redacted] For Katie, the phrase “it takes a village to raise a child” defined her life. Katie was raised by her parents – Deborah Nolan and Christopher Hallman – her grandparents – Richard and Margaret Hallman – and a conglomeration of aunts and uncles. Katie attended high school at Mulberry Senior High School in Mulberry, Florida. While attending [redacted] High School Katie was a member of the National Honors Society, the choral program, and participated in multiple scholarly competitions, including National History Fair and Moody's Mega Math Challenge.

Katie pursued a Bachelor of Art in Philosophy at the University of North Florida. While at the University of North Florida, Katie was President of the UNF Philosophy Club, presented at over 10 academic conferences, and published two papers and one book review in academic journals. Katie was awarded the Florida Philosophical Association 2015’s Gerrit and Edith Schipper Award for Outstanding Undergraduate Philosophy Paper and the UNF Phi Beta Kappa Alumni Association Scholarship. In addition to her studies, Katie was an Intercollegiate Ethics Bowl participant from 2014-2016 and went on a six-week study abroad trip to China where she studied Chinese religion and philosophy. Katie completed her Honors Thesis, “Excluding the Problem,” in Spring 2016. Katie was accepted to 10 out of the 12 MA programs she applied to, and was awarded full rides to 6 out of those 10 programs. Katie plans to pursue a graduate degree from Georgia State University’s Master of Arts in Neurophilosophy, where the Neuroscience Department awarded her the Brains and Behavior Fellowship and a full tuition waiver. After attending GSU's program, Katie plans to attend University of Georgia's Master of Science in Artificial Intelligence, where she was offered a research assistantship and full tuition waiver.