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What Is the Exclusion Problem?
Jeff Engelhardt

The philosophical literature contains at least three formulations of the problem of causal exclusion. Although each of the three most common formulations targets theories according to which some effects have ‘too many determiners’, no one is reducible to either of the others. This paper proposes two ‘new’ exclusion problems and suggests that exclusion is not a single problem but a family of problems unified by the situations they problematize. It is shown, further, that for three of the most popular attempts to solve one or another of the ‘old’ problems, each remains vulnerable to one of the ‘new’ exclusion problems.

Keywords: causal exclusion, non-causal exclusion, mental causation, overdetermination.

The problem of causal exclusion is very familiar to philosophers working on mental causation and, perhaps, to most living Anglophone philosophers. There are reasons to doubt, however, that it is well-understood. Although there is superficial agreement about the sorts of theories that face the exclusion problem (e.g. non-reductive accounts of mental causation), there is no consensus about *what is problematic* about these theories such that exclusion of one cause or another should appear plausible. Some say the problem is akin to preemption: the physical cause of my arm’s going up *preempts* the would-be mental cause of same. (E.g. (O’Connor and Churchill, 2010), (Goff, 2011)) Others think the problem is a matter of ‘ontological profligacy’: the would-be mental cause does no more ‘causal work’ than the physical cause of the same effect, so it *need not* be posited and thus, by Ockham’s razor, *should not* be posited. (E.g. (Wilson, 2012)) Yet others believe the problem is that effects of mental causes appear to be systematically overdetermined on the relevant theories; and, *prima facie*, overdetermination is a coincidence. Just as it is ridiculous to suppose that every time someone is shot, there are two independent shooters, it would be ridiculous to suppose that every time someone’s arm goes up, there are two independent causes—one mental and one physical. (E.g. (Sider, 2003), (Bennett, 2003)) I take it as obvious that although these problems may be related, they are non-equivalent.

Rather than defend any one account of the problem, I take it as obvious that each is a genuine problem and that each may rightly be called an ‘exclusion problem’. After surveying the literature in section 1, I’ll argue that (i) there are at least two other versions of the exclusion problem (section 2), and

that (ii) none of the solutions to the exclusion problem proposed in the literature can escape every version of the problem (section 3).

I do not wish to defend here an account of what exclusion problems are—of, say, the necessary or sufficient conditions for being a problem of exclusion—but it may be helpful for the reader to know why I suppose that all of the problems discussed here are exclusion problems. I take it that if a problem (i) arises for cases in which some effect has multiple alleged determiners and (ii) has the upshot that some determiner excludes some other(s), then it is an exclusion problem. As we shall see below, I think there can be both causal exclusion problems and *non-causal* exclusion problems, as well as ‘mixed’ exclusion problems.

In what follows, I will often speak generally of mental and physical ‘phenomena’ or ‘entities’ rather than specifically of mental/physical *properties* (as in, e.g. Yablo (1992) and Wilson (2011)) or *events* (as in, e.g. Sturgeon (1998) and Yates (2012))¹. In this way, I follow many other philosophers, including Jaegwon Kim (1998) Ted Sider (2003) and Karen Bennett (2003), in taking the essential features of exclusion to be sufficiently similar whether it arises for tropes, objects, or facts, and in thinking that we can talk generally of exclusion problems without committing to one or another view on the ontology of mental causation.²

1. Three Exclusion Problems

The problem of causal exclusion is commonly characterized as a set of independently plausible but jointly inconsistent propositions (see, *inter alios*, Sturgeon (1998), Bennett (2003), Wilson (2011), Wilson (2012)); in every case, versions of these four propositions are included in the set:

(Efficacy) At least some mental phenomena are causally efficacious.

(Closure) Every effect has a sufficient physical cause.

(Overdetermination) Not every effect of a mental cause is overdetermined.

(Non-identity) Causally efficacious mental phenomena are not identical to physical phenomena.

But this common characterization serves to mask how philosophers differ in their accounts of the problem. Rather than follow the established practice, then, let me focus on the situations that give rise to exclusion problems. By ‘building’ such situations, it becomes clear that there are at least three distinct accounts of the problem. If it helps to have a metaphor here: philosophers seem to believe the inconsistent set of propositions is merely a symptom of a deeper problem, and they differ in the deeper problems they diagnose.

1.1 The ontological profligacy problem

In the simplest situation, there appear to be three non-identical entities, M, P, and E, and both M and P appear to cause E³:

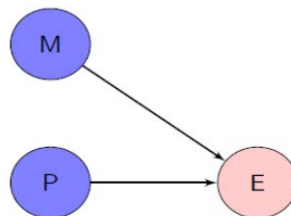


Figure 1

Suppose neither M nor P has any other effects and there aren't any uncontroversial differences between ‘them’. Why, then, should we say that both M and P exist and $M \neq P$?

This, roughly, is the worry about ontological profligacy in mental causation. The thought is that every case of mental causation is like the case represented by figure 1. For any effect, E, that a particular mental entity, M, might be said to cause, there is some physical entity, P, that also causes E. And, it is a matter of controversy what grounds the claim that $M \neq P$, so it seems that positing both affords us no more explanatory power than positing just one or the other. Positing P alone will explain E's occurrence,

so M is unnecessary for that purpose. *A fortiori*, positing both is unnecessary and, according to some, ‘ontologically profligate’. Furthermore, given **closure** (above), there could be no effect that M *would* be needed to explain, since there could be no effect without some sufficient physical cause. On this specification, then, mental causes are either identical to physical causes or ontologically excluded.

This account of the problem is explicit in Wilson (2012) with respect to the view that instances of physical properties are determinates of mental properties (in the sense that *being scarlet* is a determinate of *being red*):

The concern, in the first instance, is that the powers associated with determinate properties already suffice to do any causal work that determinable properties are posited as doing, such that the further posit of determinables would lead to ontological ‘profligacy’. (Wilson, 2012: 6)

Gillett and Rives (2005) appeal to David Armstrong to support a similar intuition about determinable properties generally (cited in Wilson, 2012: 6):

[M]any philosophers [...] accept what Armstrong calls the “Eleatic Principle” [stating:] Everything that exists makes a difference to the causal powers of something. (Armstrong, 1997: 41-2) If determinable properties do not contribute causal powers to individuals, nor otherwise determine such powers, then it appears that they fail the Eleatic Principle and hence do not exist. (Gillett and Rives, 2005: 487)

Notice that neither Wilson nor Gillett and Rives thinks that the ontological profligacy problem is defused simply by positing that mental causes depend in some sense on their physical correlates⁴. Rather, the problem looms so long as instances of mental properties are non-identical to instances of physical properties.⁵ (I’ll discuss Wilson’s (2012) attempt to show that determinable properties are not in fact ontologically profligate in section 3.1.)

1.2 The metaphysical preemption problem

Aside from worrying that there’s no need to posit both M and P, one might worry that there’s no basis for saying that both M and P are in fact causes of E. Some suggest that M *merely appears* to cause E. On this specification of the problem, it is accepted (at least conditionally) that both M and P exist, but doubt

is raised as to whether both M and P are genuine causes of E. On this view, then, mental would-be causes are not *ontologically* excluded, but excluded only as causes. ⁶

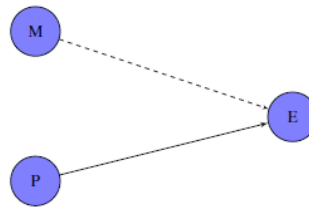


Figure 2

It's not clear how best to justify the intuition at work here, and little has been said in the literature to defend it. We can start by noting that what many say about exclusion seems to be driven by an implicit analogy to 'late preemption', wherein an earlier cause preempts a later would-be cause, as when one runner breaks the tape at the finish line just before the silver medalist arrives. In breaking the tape, the first runner has left nothing for the second-place finisher to do. Compare the following remarks:

As it is often put, the physical does all the work, and there is nothing left for the mental to do. (Bennett, 2003: 471)

...since at the same time of my intention there is and must be (due to closure) a physical cause, there is no work left for the mental event to do. (Ney, 2007: 487)

As M's realizer, P must do all the causal work... apparently leaving nothing for M to do. (Yates, 2012: 1)

Similar remarks may be found in Eric Yang (forthcoming), Markus Eronen (2012), Lei Zhong (2011), and many others.⁷ Notice that the stated problem here is not overdetermination—where the mental cause 'does work' that is redundant—but preemption, so that the mental 'has no work to do'. Perhaps the analogy may be extended by claiming that physical phenomena, according to physicalism, have *metaphysical priority* over mental phenomena. In the interest of avoiding confusion with late preemption, wherein the causes occur at different times, call this 'metaphysical preemption'.

1.3 The problem of systematic coincidence

A third class of philosophers claim that the problem in exclusion is systematic coincidence. We can think of this as a way of accounting for why it's true that not every effect of a mental cause is overdetermined. In broad strokes, it is because (i) overdetermination is a coincidence, and (ii) if *every* effect of a mental cause has two causes, this is no coincidence. Here is Ted Sider illustrating this view nicely:

Imagine a paranoid 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 be at the same places at the same times. This great regularity would need an explanation, and none could be given. (Sider (2003: 722) ⁸

Notice that this problem doesn't arise if we're looking at just one instance of mental causation. Rather, systematic coincidence becomes a worry only once we consider multiple cases of mental causation—enough to make the overdetermination systematic. In terms of 'building' the problem, then, we need to add some proviso to the effect that the situation with M, P, and E is not an isolated occurrence. It is of course very difficult to make this proviso exact, but let it suffice here to say simply that on the offending theories, *every* effect of a mental cause is alleged to have both a mental and a physical cause, and let this suffice to entail that effects of mental causes are systematically overdetermined. If overdetermination is a coincidence, these theories face the problem of systematic coincidence.

2. Previously Unrecognized Exclusion Problems

In this section, I argue that the proponent of mental-physical dependence and non-identity faces at least two more exclusion problems. After briefly introducing the cases in which these additional problems arise, 'mental chain' cases, and making explicit two background assumptions, I propose two exclusion problems that have not been discussed in the contemporary literature.

In mental chain cases, a mental cause brings about a mental effect—maybe thinking about dinner causes you to think about buying tomatoes. If mental causes depend on their accompanying physical

causes, and if, more generally, mental phenomena depend on physical phenomena, then there are at least three determination relations in these cases.

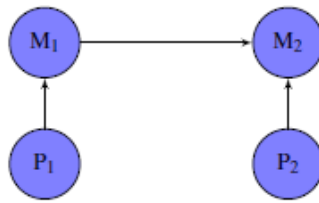


Figure 3

I take it that there are at least *three* determination relations here thanks to the first background assumption. To put it generally: if X (fully or partially) depends on Y, then Y (fully or partially) determines X. When it is accepted, then, that mental phenomena depend on physical phenomena, one thereby commits to the determination (partial or full) of mental phenomena by physical phenomena. So, in addition to the causal determination relation, there are also two *non-causal* determination relations. I take it that there are *at least* three determination relations in these cases because many philosophers have proposed that these cases also involve either (i) P1's causing P2, (ii) P1's causing M2, or (iii) M1's causing P2. I'll entertain these additional considerations when they become relevant along the way.

The second background assumption is that our intuitions about overdetermination, preemption, ontological profligacy, etc.—cases in which an effect appears to have multiple causes—generalize to cases in which an effect appears to have multiple *determiners*. In defense of this assumption, let me point out that, *prima facie*, the specifications of the exclusion problem just surveyed turn on features of causation *qua* determination relation. That is, the problems do not turn on peculiarities of causation that it doesn't share with other determination relations. Ontological profligacy is a worry because mental phenomena don't seem to make a difference, they don't *determine* anything novel. Similarly, the preemption problem is the concern that mental would-be causes have no work, no determining, to do. Finally, the problem with systematic coincidence is simply that allegedly independent entities systematically occur together. The overdetermination that results is merely a symptom of this systematic

coincidence, and it is obviously inessential to the problem that the overdetermination be *causal* overdetermination. Positing systematic overdetermination by independent non-causal determiners would be just as crazy as positing independent shooters for every gunshot fatality.

With this assumption in hand, I propose that just as exclusion problems arise where an effect has multiple *causal* determiners, exclusion problems arise where an effect has multiple determiners of any sort—causal or non-causal.

2.1 The new preemption problem

The concern in the ‘original’ preemption problem is that a would-be mental cause doesn’t get a chance to make a difference because, necessarily, whatever difference it would make is ‘already’ made by some physical cause. As this problem is typically understood in the literature, this is because one of the following three principles holds:

[Causal inheritance] If mental entity M occurs (or is instantiated) because physical entity P occurs (or is instantiated) and P non-causally determines M, then M causes nothing that P doesn’t cause.

[Upward causation] If P1 causes P2, then for any entity X that P2 determines non-causally, P1 causes X.

[Downward causation] If M1 causes M2, then for any entity X that determines M2 non-causally, M1 causes X.⁹

As applied to the mental chain case, each of the first two principles entails that P1 causes M2. According to the metaphysical preemption problem, then, P1 preempts M1 vis-à-vis M2.

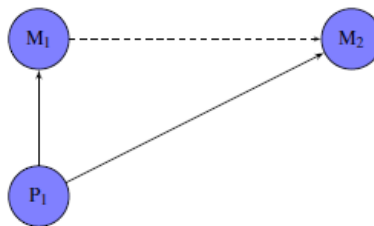


Figure 4

It follows from the third principle, on the other hand, that M1 causes M2 only if M1 causes P2. By **Closure**, however, P1 (or some other non-mental entity) causes P2; as a result, P1 is alleged to preempt M1 with respect to P2.

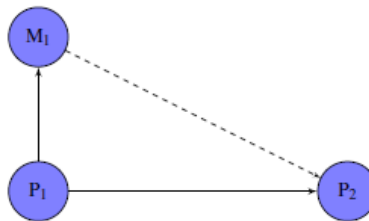


Figure 5

So far as the literature is concerned, then, the ‘threat’ to M1’s causing M2 comes from P1. Given that P2 non-causally determines M2 (as in figure 3), though, M1 may also have to compete with P2.¹⁰

Indeed, for anyone who accepts that P1 and M1 do or could compete, there is little reason to deny that M1 and P2 also do or could compete. When philosophers say that P1 and M1 ‘compete’ to be the cause of either P2 or M2, the sort of competition they have in mind is *explanatory* competition. The thought, according to Jaegwon Kim, is that ‘no event can be given more than one *complete* and *independent* explanation,’ (Kim, 1989: 79; emphasis in original) and thus, if two independent explanations both purport to explain a single event, then at most only one of them is in fact a complete explanation. The completeness of the one explanation leaves all other proposed explanations with ‘no work to do’. In the widely discussed exclusion problems, the competing explanations are both causal explanations, but any two independent explanations can compete if at least one of them purports to be complete. Do M1 and P2 offer independent explanations, and does either purport to explain M2 completely?

Prima facie, M1 and P2 are independent—at the very least, they are no less independent than are the ‘original’ competitors, M1 and P1. Anyone who accepts that M1 and P1 are independent enough to compete cannot reasonably say that M1 and P2 do not compete because of some dependence between them. Similarly, since M1 and P1 are *both* thought to offer complete explanations of M2 in the old

preemption problem, anyone who takes the old problem seriously has no ground for denying that *at least* M1 purports to explain M2 completely when faced with the new problem. M1 and P2 are independent, and at least M1 purports to explain M2 completely; there is good reason, then, to suppose that they compete over M2. (I justify these points further in 3.2.2.)

Given, then, that M1 and P2 do compete to explain M2, it is unclear which of them wins the competition. P2 might preempt M1 *or vice versa*. In giving his supervenience argument, Kim considers a case like this one and thinks it obvious that P2 prevails. Substituting our variables for his:

M2 occurs because its supervenience base P2 occurs, and as long as P2 occurs, M2 must occur no matter what other events preceded this instance of M2—in particular, regardless of whether or not an instance of M1 preceded it... (Kim 1998, 42)

Kim then uses this assumption to push the non-reductive physicalist toward the more familiar exclusionary competition:

Given this, the only way anything can have a role in the causation of M2 would have to be via its relationship to M2's supervenience base P2, and as far as I can see, the only way of reconciling the claim of M1 to be a cause of M2 with the fact that M2 has P2 as its supervenience base is to accept this:

(vi) M1 caused M2 by causing P2. (Kim, 1998: 42)

But one might also argue by appeal to causal proportionality that M1 or its causal profile is more proportional to M2 than is P2, and more proportional determiners trump their less proportional competitors. Stephen Yablo, for instance, appeals to causal proportionality to explain why we should say that it was Socrates' *drinking* hemlock rather than his *guzzling* it that caused his death, even if Socrates' drinking wouldn't have occurred without his guzzling.

Imagine that Socrates, always a sloppy eater, had difficulty drinking without guzzling, to such a degree that if the guzzling hadn't occurred, the drinking wouldn't have either...Intuitively, it appears that not *all* of the guzzling was needed, because there occurred also a lesser event, the drinking, which would still have done the job even in the guzzling's absence. By hypothesis, of course, without the guzzling this lesser event would not have taken place; but that doesn't stop us from asking what would have happened if it had, and evaluating the guzzling on that

basis...what disqualifies the guzzling is that, given the drinking, the death did not require it. (Yablo, 1992: 276; see also Shoemaker, 2001)

Similarly, suppose that P2 is a specific neural event and M2 is a thought realized by P2—a thought about, say, buying tomatoes. Although P2 realizes M2, there is much about P2 that is, in Yablo's terms, not needed. The neural event involves calcium ions, electrical depolarization, and so on. Like the specificity of Socrates' guzzling, not all of the specificity in the neural event is required for bringing about a thought about tomatoes. Now suppose that M1 is a thought about red fruits one has come to the grocers to buy. This event is a 'lesser event' than P2 in that it is less specific. If M1 and P2 compete over M2, then the spoils go to whichever one is more proportional to M2. Plausibly, M1, the thought about red fruits one will buy, is the more proportional contender. It seems we should say of the neural event P2 what Yablo says of Socrates' guzzling: given the thought about red fruits, M1, the thought about buying tomatoes, M2, did not require P2. Indeed, if M2 is multiply realizable, we have further good reason to think M2 didn't require P2, namely, that another physical event, P2*, might have realized M2 in P2's absence. On this view, far from being obvious that mental causes are preempted by the grounds of their effects, mental causes sometimes have a better claim to be determiners than do their physical competitors.

But the problem, in fact, doesn't turn on whether mental causes can win the competition or not. And it doesn't turn on whether physical determiners win or lose. It's *that* they play the game. If *either* loses, then the dominant view of non-reductive mental causation turns out to be false. For this would mean either that there are no mental causes or that the effects of mental causes aren't determined by physical phenomena—here, either P2 leaves M1 with no work to do or M1 leaves P2 without any work to do vis-à-vis M2. If, in general, (alleged) causes like M1 'do no work' to bring about effects like M2, there is no mental causation. On the other hand, if, in general, the effects of mental causes like M2 aren't determined by physical phenomena like P2, then many mental phenomena are independent of physical phenomena. That is, physicalism is false. Again, if one takes the original preemption worry seriously, then *prima facie* one should also take the 'new' worry seriously. This forces one to choose between mental causation and mental-physical dependence. And, again, the problem isn't to figure out which one

wins; the problem is *that they compete*. When they do, non-reductive physicalism loses. This is the ‘new’ metaphysical preemption problem. It’s another problem of exclusion.

2.2 The new problem of systematic coincidence

In section 1, we saw that any theory committed to unexplained systematic coincidence should be rejected. We focused on cases in which the effects of mental causes are systematically overdetermined. A similar problem arises in mental chain cases: M2 has two independent determiners. M1 causally determines M2, and P2 non-causally determines the same. Prima facie, M1 and P2 are independent, so that their convergence on M2 is without a ready explanation. Further, since a similar situation holds for everything that has both a cause and a non-causal determiner, the situation does seem to be systematic. Again, positing this is just as implausible as positing two shooters for every gunshot death.

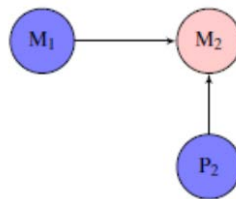


Figure 6

This is yet another exclusion problem. It is the new problem of systematic coincidence.

Furthermore, it’s worth noting that for some philosophers, coincidence might not be the only feature of these situations that calls out for explanation. If one thinks that causes bring about the existence of their effects and that grounds do the same, then M2’s existence is brought about twice. That is, M1 brings about the existence of an entity, M2; P2 brings about the existence of an entity as well, and this entity is *also* M2. On such a view, then, M2 is brought into existence by two separate occurrences; and, both M1 and P2 take credit for M2’s existence. On its face, an ontology that permits such situations commits to an idiosyncratic conception of existence which would require clarification and defense.

3. No Proposal Solves All Exclusion Problems

In this section, I consider in detail three attempted solutions to exclusion problems. First, I'll show that Jessica Wilson's attempt to solve the ontological profligacy problem incurs a systematic coincidence problem. Second, I'll consider two strategies that appeal to a Humean account of causation; I'll show that the first faces a dilemma between the new preemption problem and the new problem of systematic coincidence while the second must solve the new preemption problem.

3.1 Response to the ontological profligacy problem

In recent work, Jessica Wilson has proposed an account of the determinate-determinable relation between properties with the following commitments:

[Power conferral] Property instances confer powers on the individuals that instantiate them.¹¹

[Determinables are subsets] The powers a determinable property instance confers make up a proper subset of the powers conferred by its determinate instances.¹²

[Shared power tokens] '[E]very power of a determinable instance is numerically identical to a power of its associated determinate instance...' (Wilson, 2012: 8)

[Necessitation] Determinate properties asymmetrically necessitate the determinable properties they specify.

[Fundamental determinables] Determinables are not ontologically grounded in their determinates.^{13,14}

Taking it that physical properties are determinates of mental properties, Wilson argues that these commitments enable her view to resolve the ontological profligacy problem without committing to overdetermination.

In response to the charge of ontological profligacy, Wilson draws a distinction between two versions of the Eleatic Principle that stands behind the problem. On one version, it is profligate to posit a property that confers no new *power* on its hosts, no power the host doesn't have 'already'. On this version, Wilson's determinable mental properties are profligate, since the powers they confer are a subset of the powers 'already' conferred by their determinates. On the other version of the Eleatic Principle, it is

profligate only to posit a property that doesn't confer a new *set* of powers on its bearers. Since Wilson's determinable mental properties confer a proper subset of the powers conferred by their physical determinates, and since a set is not identical to any of its proper subsets, mental properties are not profligate on this version of the Principle. So, if one accepts the second version of the Eleatic Principle, Wilson's account does indeed defuse the problem of ontological profligacy. (See Wilson, 2012: 7)

Since physical property instances necessitate mental property instances (by Wilson's **Necessitation**), and since every power conferred by a mental property instance is also conferred by its physical determinate (by ...**subsets**), whenever a mental property is relevant to bringing about some effect, *e* (or *e*'s being *F*), a physical property is also relevant to bringing about that effect. Is every effect of a mental cause overdetermined, then? No—Wilson's view has a solution here as well. By her **Shared power tokens**, even though there are two properties relevant to bringing about a mental effect, there is only one power involved, so that the effect doesn't have two causes:

...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)

Furthermore, since a mental property instance and the physical property instance with which it is correlated share their causal powers, it doesn't make any sense to say that one preempts the other. It would seem, then, that Wilson's view escapes the ontological profligacy worry, the old problem of systematic coincidence (since there's no apparent overdetermination), and the old preemption problem.

This view, however, is vulnerable to yet another specification of the exclusion problem. First, note that when a property instance confers a power on its bearer, this is a determination relation.¹⁵ Wilson calls it a 'truism' that 'what a particular can do (cause) *depends* on how it is—that is, on what features it has.' (Wilson, 2011: 7, emphasis added) An individual's properties *explain* why it has its powers. But, as Paul Audi has argued in criticizing subset accounts of realization generally, 'one thing explains another only if the one plays a role in determining the other.' (Audi, 2011: 8) This is plausible at least insofar as

the sorts of explanations at hand are concerned; if it holds, then an individual's powers are determined by its properties.

From **Power conferral** and **Shared power tokens**, then, it follows that mental and physical property instances together overdetermine an individual's having the powers conferred by the mental property. Suppose, for instance, that mental property instance M confers power 1. According to the view that mental properties are determinables of physical properties, then, there is some physical property instance P that determines M; and, by **...subsets**, P confers the same token of power 1 that M does. Whenever some individual instantiates M, then, a single token of power 1 is conferred upon it. Twice: once by M and once by its determinate, P. So for every individual, c, that instantiates a mental property, it is overdetermined that c has the powers associated with the mental property. Since this is the case every time a mental property is instantiated, it is certainly systematic.

Is this systematic overdetermination coincidental? In at least some cases, it is. By **Fundamental determinables**, at least some determinable properties are ontologically independent of their determinates. In these cases, an instance of a determinable property is an 'ontological addition' to its determinate instance. (Wilson, 2012: 9) Nonetheless, these pairs of property instances will confer some of the same token powers on an individual, so that the individual's possession of those powers is overdetermined. Since the conferring property instances are ontologically independent, this overdetermination is coincidental. And since it is also systematic, Wilson's view is thus committed to systematic coincidences. That is, her view faces the new problem of systematic coincidence.

Might Wilson escape the problem by denying that an individual's properties determine its powers?¹⁶ Not without paying high costs. Given that properties are 'associated with' powers and ruling out that properties determine powers, there are three other broad options available for explaining property-power relations: (i) there is no dependence/determination relation between properties and the powers with which they're associated; (ii) powers determine their associated properties; (iii) properties are identical to the powers with which they're associated. I take it that the first option is a nonstarter. If there

is no explanation for why properties and powers are associated, it is a massive coincidence that, for instance, the powers associated with reflecting light in such and such a frequency always come along with the property *being red*. Far from explaining why some individual has the powers it does, the association itself stands in need of explanation and none is available. The property-power correlation itself becomes the sort of systematic coincidence that Wilson's appeal to **Shared power tokens** was meant to avoid.

The second alternative is the most attractive for Wilson, but it still faces serious difficulties. For this view leaves properties with nothing to do. Suppose that individual *c* has powers 1, 2, 3. On this view, it is then by virtue of having these powers that *c* instantiates physical property *P* and mental property *M*. As usual, it's the powers, here, that explain why *c* stands in the causal relations it does, *but it is also the powers that account for which properties c has*. What, then, do properties *P* and *M* do? The difficulty isn't just that properties purport to do some explanatory 'work' that some other entities do 'already', as is the worry in exclusion scenarios. Rather, it's that, on this view of property-power relations, properties don't even *purport* to do any explanatory work. So why include properties—even fully determinate physical properties—in one's ontology? And even if this question is answered, Wilson still faces a further question: why include *both* determinate and determinable properties as *fundamental* entities in one's ontology?

The concerns about including determinate physical properties in one's ontology, at least, may be assuaged by adopting a view advocated by Carl Gillett (Gillett, 2002). According to Gillett, *only realizer properties* confer powers to their bearers; these powers then determine which further realized properties an object will instantiate. Given that physical properties are realizers and mental properties are realized, this view gives an explanatory role to physical properties: an individual's bearing some physical properties explains why it has the powers it does. Individual *c*'s having physical property *P* explains why it has powers 1, 2, and 3; in turn, it is by virtue of having, say, power 1 that *c* has mental property *M*. But then, Gillett's realizee properties don't play any explanatory role or even purport to do. *M* explains neither why *c* has the powers it does nor why it stands in the causal relations it does. So if Wilson were to

accept Gillett's view and to accept that mental properties are realized by physical properties, she would commit again to several of the problems above: mental properties are explanatorily inert, and including explanatorily inert properties in one's fundamental ontology calls out for justification.

Alternatively, if Wilson were to accept Gillett's account but claim that mental properties are *realizers* not realizees, she would escape the charges of fundamental inertness. In our toy example, it would then be that if *c* has both *M* and *P*, then *P* confers powers 1, 2, and 3 while *M* confers 1. This would mean, then, that the powers associated with mental properties are again twice-conferred—1 is conferred once by the mental property and once by the physical property asymmetrically necessitating the mental property. Thus, Wilson would again face the new problem of systematic coincidence. The token power 1 would be determined by two independent property instances.

If powers determine properties, then, mental properties most plausibly come out epiphenomenal. Of course, Wilson can't hope to ground a view of mental causation in mental epiphenomena.

Finally, Wilson might claim that property instances are identical to their associated token powers. Suppose, then, that *P* = powers 1, 2, 3, and *M* = power 1. This would of course explain why properties are associated with certain powers, but it would force Wilson to reject either **Fundamental determinables** or **Shared power tokens**. We can see this point in two ways. First, notice that since property instances on this view *just are* collections of token powers, it follows from **Shared power tokens** that every mental property instance is part of a physical property instance. If *M* above is 1 and *P* is 1, 2, 3, then *M* is just part (or a proper sub-collection of) *P*. But if this is so, then surely it can't be that *M* and *P* are ontologically independent. That is, **Fundamental determinables** can't hold of *M* and *P*. Indeed, it can't hold for any pair of properties of which **Shared power tokens** is true. On the other hand, if **Fundamental determinables** does hold and *M* and *P* are independent, it can't be that *M* is part (or a proper sub-collection of) *P*.

Second, since the collections of powers *are* the property instances on this view, it would seem that the property instances stand in causal relations. Thus, if token power 1 is a part of both property

instance M and instance P, and if 1 is responsible for bringing about some effect e (or e's being F), then both M and P are responsible for bringing about e (or e's being F). If M and P are ontologically independent, though, then it's a coincidence that they should both bring about e (or e's being F) at the same time. Further, since this coincidence occurs every time an independent mental property is involved in bringing about an effect, it is systematic. In other words, if we take **Fundamental determinables** seriously, this approach seems to face the old problem of systematic coincidence. But, if we take **Shared power tokens** seriously, this appearance is dispelled. There's nothing coincidental about a single token power 1 bringing about e (or e's being F). There's only the one cause, power 1. The old problem of systematic coincidence is solved, but only via the implicit rejection of the claim that M and P are ontologically independent. That is, taking **Shared power tokens** seriously here forces us to deny **Fundamental determinables**. If properties *are* their powers, then, Wilson must reject either **Fundamental determinables** or **Shared power tokens**. If mental-physical pairs of property instances are ontologically independent, then they do not share token powers, and they overdetermine the effects of mental causes. If mental-physical pairs of property instances do share token powers, then they are not independent.

Given the unattractive alternatives just sketched, I take it that Wilson ought to accept that an individual's properties determine its powers. But if she does, her view faces the new problem of systematic coincidence outlined above.

3.2 Responses to the preemption problem

Many philosophers have responded to the old preemption problem by appealing to a Humean account of causation. There are at least two versions of this response. I'll rehearse the first and show that it faces either the new preemption problem or the new problem of systematic coincidence; then, I'll give the second and show that it incurs the new preemption problem.

3.2.1 First Humean strategy

The thought behind the first Humean strategy is that if causation isn't productive, if it's merely a matter of (say) counterfactual dependence, then an effect, E, may 'still' depend on a mental cause M even 'after' a physical cause, P, has 'already' brought E about. There is, for instance, nothing to stop E from depending counterfactually on both M and P. Thus, according to O'Connor and Churchill (2010a and 2010b), if causation is Humean, then 'there is nothing strange or objectionable' about an effect's having multiple causes. (O'Connor and Churchill, 2010a: 48)¹⁷ Philip Goff thinks so too (like most philosophers up to now, though, he isn't clear about the different specifications of the exclusion problem, and he treats the preemption problem as a looming 'threat' of overdetermination):

...if causation is simply a matter of certain regularities obtaining, or certain counterfactuals being true, then it is difficult to see why overdetermination is a concern...there is no need to suppose that the two [causal] stories need compete to be the *real* causal story. ([Goff, 2011])

If this is right, then perhaps the old preemption problem is no trouble for anyone who endorses the first Humean strategy.

But when we're clear about how this response works, we see that it can't avoid both the new preemption problem and the new problem of systematic coincidence. As we saw in section 2.1, the preemption problem takes it that physical and would-be mental causes 'compete', where this competition is explanatory competition. The response here denies that there is any such competition on grounds that causation is 'simply a matter of certain regularities obtaining'. Note that the response does not challenge the idea of explanatory competition; rather, it challenges the assumption that causes enter into such competitions. Recall that there is explanatory competition whenever (1) multiple independent explanations are offered for the same event and (2) one of the explanations purports to explain the event completely. Again, this Humean response doesn't dispute this. Further, the response doesn't say anything about the dependence or independence of the explanations on offer, so the thought must be that on the Humean account of causation, causes do not purport to fully explain their effects. Otherwise, claiming that causation is Humean would do nothing to undermine the claim that causes compete. It will be

important for us to keep this in mind: if she denies that causes compete, the Humean cannot help herself to the claim that causal explanations are complete explanations. We are to regard the obtaining of a Humean causal relation, rather, as nothing more than the obtaining of certain regularities.¹⁸ As O'Connor and Churchill tell us:

[I]f, in seeking an explanation for the occurrence of token event *y*, we're seeking knowledge of *what made y occur*, then the Humean must deny that there is any such item of knowledge. And while, e.g., X- and Y-type events may conform to a pervasive pattern of a specified sort (whether actual or counterfactual), for Humeans there will either be no explanation as to why that pattern holds, or else the explanation will itself bottom out in unexplained pattern facts. (O'Connor and Churchill, 2010b: 266)

This view of causal explanations seriously limits the Humean when it comes to dealing with other exclusion problems. We can get a sense for these limitations by asking whether the Humean also thinks that the mental-physical relation is simply a matter of certain regularities obtaining. The question poses a dilemma for the Humean, such that choosing either horn leads her to exclusion problems. Further, by considering Humean mental-physical dependence, we will see that appealing to Humean causation cannot explain the coincidence in the new problem of systematic coincidence.

Suppose, then, that the Humean says the mental-physical relation is like her causal relations in being a mere regularity. As with her solution to the old preemption problem, she thus denies that the mental-physical relation purports to fully explain mental occurrences by appeal to physical occurrences. Their correlation is merely a regularity we find in the world. This on its own should trouble the non-reductive physicalist; it conflicts with her commitment to physicalism. She must say that physical phenomena completely explain mental phenomena, and she must say that this is because the former fully determine the latter. Adapting a remark of Jessica Wilson's, even if the Humean's regularity is asymmetric metaphysical necessitation from physical to mental, this does not suffice to establish the ontological dependence of mental upon physical. A Malebranchian occasionalist might say that God brings about mental property instances upon the occurrence of certain physical properties in the same pattern in every metaphysically possible world, but the Malebranchian would not thereby be a physicalist.

(Wilson, 2012: 9) The non-reductive physicalist who is Humean about mental-physical relations is no more physicalist than the Malebranchian. Indeed, whereas the Malebranchian at least has God to explain mental-physical correlations, this non-reductive physicalist has just the brute correlation.

But this isn't the only problem for the Humean about mental-physical relations. She also faces the return of the old problem of systematic coincidence. That problem, you'll recall, is that the non-reductive physicalist claims that every behavior has both a mental and a physical cause. If mental and physical causes are independent, this is a coincidence; and, since this coincidence occurs every time a mental cause makes one act, this coincidence is systematic. But there are no systematic coincidences. An explanation is needed, then, to dispel the appearance of coincidence in these cases. A popular approach is to say that mental causes *depend on* physical causes. Just as we explain the great regularity that baseballs and their parts always break the same windows at the same times by pointing to the fact (if it is a fact) that baseballs depend on their parts, one can explain the regularity that mental and physical causes overdetermine certain effects by pointing to mental-physical dependence.¹⁹

But if one's view holds that the relation between mental and physical causes is merely a matter of some regularity obtaining, this explanation is unavailable. Just as the Malebranchian would have only God to explain the regularity, the Humean response under consideration has only *the regularity itself* to explain the regularity. This, of course, is no explanation at all. We'll see that this explanatory failure reappears when, on the other horn of the dilemma, the Humean faces the new problem of systematic coincidence.

So the advocate of this Humean response should deny that the mental-physical relation is a mere regularity; otherwise, she sacrifices her physicalism and faces the old problem of systematic coincidence. On the other hand, if she holds onto her physicalism and says that physical phenomena do fully explain mental phenomena, she faces another dilemma. Thus far, we've characterized the Humean response only as denying that Humean causes purport to give complete explanations of their effects—this much is necessary to circumvent the competition between causes; but, we've left unspecified whether Humean

causes purport to explain their effects *at all*. Given that Humean cause M1 doesn't *fully* explain M2, it may be that M1 purports to explain M2 only partially or that M1 doesn't purport to explain M2 at all. In this choice, the Humean faces a dilemma with the new preemption problem on one horn and the new problem of systematic coincidence on the other.

First, suppose she accepts that causes purport to give partial explanations of their effects. In this case, she faces the new preemption problem. For she claims that in mental chain cases, there are two independent explanations and one of them purports to be complete, thus meeting the conditions for an explanatory competition.²⁰ To be a physicalist, she must accept that M2 has some complete explanation that adverts to a physical ground; call the ground P2. And, on this branch of the dilemma, she claims that M1 also purports to explain M2. As we saw above, the Humean doesn't deny that such cases meet the sufficient conditions for an explanatory competition; she denies only that two Humean causes enter into such competitions. On pain of denying physicalism, then, she must accept that mental causes compete with physical grounds. As I discuss in the next subsection, it doesn't matter which competitor wins; if either loses, then non-reductive physicalism has no account of mental causation.

On the other horn, suppose the Humean accepts that causes don't purport to explain their effects at all. In this case, the Humean faces the new problem of systematic coincidence. Recall that in the new problem of systematic coincidence, the determiners are an earlier mental cause, M1, and the physical non-causal determiner, P2, of M1's causal effect. Let M2 be what M1 and P2 converge on (See figure 6). According to the problem, it is a coincidence that independent determiners M1 and P2 should bring about M2 at the same time. Worse, since this is what happens every time there's a mental chain, this coincidence is systematic. If one's view commits to regularities like this, we should want some explanation for this massive coincidence. If there is no explanation, the view is dubious.

As we saw above, one popular explanation for overdetermination regularities is to claim that one of the determiners depends on the other. With the new problem of systematic coincidence, one might hope to appeal to a causal dependence between M1 and P2. If P2 causally depends on M1, then it's no

surprise that P2 occurs whenever M1 does, and the regular overdetermination in question is no more surprising than the overdetermination involved when a baseball and its parts break a single window. But this response isn't available to the Humean; she discarded such explanations when she claimed that causes are mere regularities. If she says that M1 causes P2, the Humean does not say that M1's occurrence explains P2's occurrence; so, she cannot say that M1's causing P2 explains why they occur together and overdetermine M2.

In explaining why some effect occurs, the Humean says there's no metaphysically deep explanation to be had—there's simply the regularity. This claim permits her to dodge the explanatory competition in the old preemption problem. But it's one thing to deny that there's a burden of metaphysical explanation to bear when it comes to a single entity's occurrence and quite another to deny an explanatory burden when asked to explain why two regularities (one mental-mental, the other physical-mental) are themselves regularly paired. The regularities here are part of the problem. Indeed, the problem is exactly *that the coincidence is regular*. Appeal to a Humean causal relation between M1 and P2 is appeal to the very thing that needs explanation. Again, this is no explanation at all.

If an advocate of the first Humean response is to maintain her commitment to physicalism, then, she must contend with either the new preemption problem or the new problem of systematic coincidence.

3.2.2 Second Humean strategy

According to the second Humean strategy, mental causes have a better claim to being *the* causes of mental and behavioral effects than do their accompanying physical causes. As a consequence, mental causes aren't preempted by physical causes. Rather, if there is a 'causal competition' between some mental entity, M, and its physical ground, P, to be *the* cause of some mental or behavioral effect, B, M wins the competition.

There are a few ways to specify this strategy. Stephen Yablo (1992) appealed to a principle of proportionality in support of an account of mental properties as determinables of physical determinates.

More recently, Christian List and Peter Menzies (2009, 2010) have pursued this strategy by appealing to a difference-making account of causation. Plausibly, List and Menzies update and further specify Yablo's proportionality principle²¹, so I shall focus on their popular account.

List and Menzies take it that a property instance G makes a causal difference to a property instance F if F depends counterfactually on G:

- (1) were F to occur, G would occur
- (2) were F not to occur, G wouldn't occur

1 is true iff the set of F-worlds nearest to actuality are G-worlds; 2 is true iff all the nearest non-F worlds are non-G worlds. (List and Menzies 2009: 481) When applied to multiply realizable properties, this simple understanding of difference-making has surprising results. Suppose that M1 is a mental property that is realized (or determined) by P1 in actuality and by P1* in the world nearest to actuality in which P1 fails to occur—call this world w. Suppose further that P1 causes P2, that P1* causes P2*, and that M2 is realized (or determined) by P2 in actuality and by P2* in w, assuming w is also the world nearest to actuality in which P2 fails to occur (since its cause, P1, is absent there). Thus:

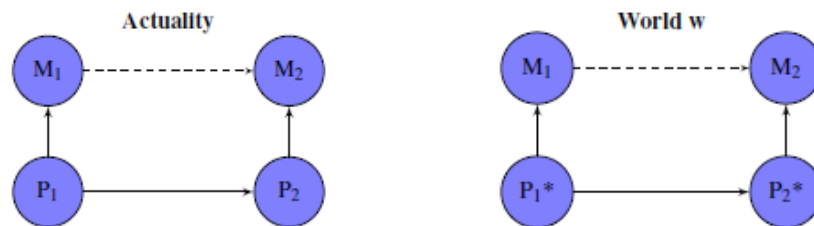


Figure 9

According to the preemption problem, P1 preempts M1 in causing M2 in actuality and P1* preempts M1 from causing M2 in world w. If we evaluate M1 and P1 by the propositions above, however, things look to be the other way around.

- (1) Were M1 to occur, M2 would occur.
- (2) Were M1 not to occur, M2 wouldn't occur.
- (3) Were P1 to occur, M2 would occur.
- (4) Were P1 not to occur, M2 wouldn't occur.

1 and 2 give sufficient conditions for M1's making a difference to M2; 3 and 4 give the conditions for P1's making a difference to M2. 1 and 2 are true. If M1 occurs, then either P1 or P1* occurs, and since either of these brings about one of M2's realizers, if either one occurs, M2 occurs as well. So 1 looks to be true. If M1 does not occur, then neither P1 nor P1* occurs; assuming that nothing else in the nearest non-M1 worlds would cause P2 or P2* and that M2 has no other realizers in the nearest non-M1 worlds, M2 wouldn't occur in any of these worlds. So 2 is true. Hence, M1 meets the conditions for making a difference to M2.

Now, since P1 causes P2 and P2 realizes M2, 3 is also true. But is 4 true? It seems it is not. Rather, in at least one of the nearest non-P1 worlds, P1* occurs; if P1* occurs, then P2* occurs and thus M2 occurs where P1 is absent. Thus, 4 is false. Hence, P1 doesn't make a difference to M2, but M1 does. Contrary to the preemption problem, it is the mental cause that 'wins the causal competition'.

While this strategy may solve the old preemption problem, however, it offers no help with the new one. Unlike the first Humean strategy, the second accepts that there are explanatory competitions; when it comes to competitions over intentional behaviors, chains of reasoning, etc., then, it solves the old preemption problem by claiming that mental causes win. In accepting that there are explanatory competitions, however, the second Humean strategy opens the door to the new preemption problem. According to the new preemption problem, remember, mental causes compete with *later* physical phenomena, viz., the physical phenomena on which their effects (the effects of the aforementioned mental causes) depend. And, recall that according to this problem, if *either* competitor loses, non-reductive physicalism fails to provide an account of mental causation. That is, if the (would-be) mental causes lose, then there is no mental causation; on the other hand, if the physical phenomena lose, then mental phenomena do not depend on physical phenomena, and it would thus seem that physicalism is false. Thus, picking a winner in explanatory competitions, as the second Humean strategy does, provides no relief.

Consider the problem, then, as it arises for the specific account proposed by Menzies and List. According to them, we should decide the winner of the competition between M1 and P2 by appeal to four counterfactuals.

- (1) Were M1 to occur, M2 would occur.
- (2) Were M1 not to occur, M2 wouldn't occur.
- (3) Were P2 to occur, M2 would occur.
- (4) Were P2 not to occur, M2 wouldn't occur.

As we saw with the old preemption problem, 1-3 are plausibly true, but 4 is false. As is depicted in figure 9, P2 does not occur in world *w*, but M2 does. According to the second Humean strategy, then, M1 makes a difference to M2 and P2 does not. But P2 was supposed to be the physical basis for M2. If M2 doesn't depend on P2, we should wonder whether the Humean proposal is a substance dualist view. After all, the same considerations that give M1 the competitive edge over P1 and P2 will give it an advantage over all other physical competitors. If M2 has no physical determiner, it is metaphysically independent of 'the physical'. But any view that says there are mental phenomena that do not metaphysically depend on physical phenomena is not a physicalist view, so the second Humean strategy cannot be a physicalist theory. Since it was meant, however, to give an account of non-reductive *physicalist* mental causation, this is a problem. The advocate of the second Humean strategy faces a dilemma. In competitions between mental causes like M1 and later physical determiners like P2, either M1 or P2 loses. If M1 loses, there is no mental causation. If P2 loses, physicalism is false.

You might now be trying to recall why the proponent of the second Humean strategy must accept that mental causes compete with later physical determiners. The reasons adduced have been spread throughout the paper, so it may be helpful to collect them here. At the beginning of section 2, I proposed that whatever reasons philosophers have to worry about *causal* exclusion are also reasons to worry about exclusion more generally—to worry not only about causal overdetermination but about *overdetermination* by any determiners, and to worry not only about causal competitions, but also about competitions

involving any determiners whatever. Menzies and List accept that there are causal competitions, so they should accept that there are competitions between determiners more generally. But must they accept that mental causes compete with the physical grounds of their own effects?

In 2.1, I followed Jaegwon Kim in proposing that determiners compete if they are independent and at least one of them purports to offer a complete explanation of their common determinee. In the test case at hand, then, M1 and P2 compete if they are independent and at least one of them purports to offer a complete explanation of M2. In the dialectic with the advocate of the second Humean strategy, it is unnecessary to argue directly that this is so. Rather, we may argue simply that *if M1 competes with P1*, then M1 competes with P2 as well. And we may do that by appealing to two other conditionals. First, if M1 and P1 are independent enough to compete, then so are M1 and P2. Since the non-reductive physicalist accepts that M1 metaphysically depends on P1, she accepts that they are not entirely independent. Since she thinks they compete, however, she must think that this dependence isn't 'tight enough' to keep them from competing. The relation between M1 and P1, though, is surely tighter than that between M1 and P2, so it's implausible to deny that they (M1 and P2) compete because they aren't independent.

The second conditional is: if either M1 or P1 purports to explain M2 completely, then so does either M1 or P2. Since the advocate of the second Humean strategy accepts that P1 and M1 compete, she accepts that either P1 or M1 purports to explain M2 fully. Does this then commit her to the belief that either M1 or P2 purports to explain M2 fully? Of course, if M1 purports to explain M2 completely (in the old preemption problem), then M1 purports to explain M2 completely (in the new preemption problem), and it competes with both P1 and P2. That much might be too obvious to mention. (If so: sorry.) But can one say that P1 purports to explain M2 completely and neither M1 nor P2 does? This would permit the Humean to say that M1 competes with P1 and not P2, but it's very difficult to see why it would be true. Presumably, if P1 purports to explain M2 completely, it is because P1 purports to be a cause of M2, and

causal explanations purport to be complete explanations. But if so, then since M1 also purports to cause M2, M1 purports to explain M2 completely.

Furthermore, there is independent reason to think that P2 purports to explain M2 completely, namely, that every mental phenomenon is thought to be fully explained by *some* physical phenomenon, and it's for this reason only that P2 is in the familiar mockup of mental causation. That is, all P2 stands for in the diagram is M2's physical determiner, and there are good reasons to think that the physical determiners of mental phenomena fully explain why those mental phenomena occur. A full discussion of this point would take us far afield, but the idea that physical phenomena leave nothing to be explained when it comes to the mental phenomena that depend on them should be very familiar to metaphysicians and philosophers of mind. Consider a very common way of characterizing physicalism:

[T]he mental nature of a thing is entirely fixed by its physical nature...the psychological character of a world is determined entirely by its physical character... (Kim, 2000: 11)

[O]nce God had done the work of fixing the micro features and laws of the universe, there was no work left to do; in fixing the world's micro nature, He had already determined all its macro properties as well. (van Gulick, 2001: 18)

Fixing the (distribution of) fundamental entities at a world fixes all else at the world. (Wilson, 2012: 2)

Notice that not only are mental phenomena often characterized as fully determined by physical phenomena, but that physical phenomena are sometimes even characterized as *leaving no work to do* in fixing mental phenomena. In the case at hand, this is just another way of saying that P2 completely explains M2 and thereby preempts any other alleged explanations. M1 and P2 are independent, and at least one purports to explain M2 completely; there is good reason, then, to suppose that they compete to explain M2. If they do, one of them must lose. But if one of them loses, there is no non-reductive physicalist account of mental causation.

4. Conclusion

Philosophers have written quite a bit about exclusion. Unfortunately, they haven't all been writing about the same problem. Worse, they don't seem to have recognized any differences in their specifications of exclusion. As a result, no complete picture of the exclusion problem has appeared in the literature. This paper provides something closer to a complete picture. The exclusion problem in the literature comprises three non-equivalent problems, each of which arises in cases where an effect has multiple determiners: (i) the ontological profligacy problem, (ii) the metaphysical preemption problem, and (iii) the problem of systematic coincidence. While these specifications of the problem have been widely discussed, other specifications have been overlooked. In section 2, I proposed a 'new' version of the metaphysical preemption problem and a new version of the problem of systematic coincidence. It is not a mere point of interest that these problems have been overlooked. For, as I showed in section 3, some of the more popular solutions to (i), (ii), or (iii) face the new problems. As I see it, exclusion is less like a specific problem that afflicts only one or another view of mental causation and more like the Homunculus Fallacy. Just as we seem constantly in danger of committing the Homunculus Fallacy when giving explanations of mentality, we must constantly be on the lookout for exclusion problems when giving accounts of mental causation.

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¹ Except when discussing a particular view that commits to one ontology or another, as when I discuss Wilson’s determinate-determinable view of mental causation in section 3.1

² If the reader finds this approach misguided, she might take comfort in this: all the references to entities here may be translated to references to Kimian events, i.e. triples of an n-tuple of constitutive individuals, an m-tuple of constitutive properties instantiated by the individual(s), and an l-tuple of times or intervals at which these instantiations occur. (Kim, 1993) Where events are spoken of, take them to be Kimian. Where individuals are spoken of, take this as shorthand reference to the events that these individuals partly constitute. Similarly, where property-instances are mentioned, take these as references to the events that the property instances partly constitute. I take Kimian events to be an anodyne choice for this discussion because (1) events are widely thought to be the causal relata and (2) since Kimian events are partly constituted by property instances, Kimian mental events are non-identical to Kimian physical events just in case mental properties are non-identical to physical properties. For similar remarks, see Yates (2012).

³ Even this situation isn’t all that simple, however, because if it’s meant to characterize *all* of the theoretical situations that lead to the problem of causal exclusion, the relationship between M and P can’t be specified further than $M \neq P$ —they may be spatiotemporally co-located in all metaphysically possible worlds; P might be a contingent realization of M; etc.

⁴ Not as determinables depend on determinates, anyway.

⁵ Similar remarks can be found in David Yates (2012). According to Yates, if M has no ‘causal work’ to do and ‘if causal novelty is necessary for robust ontological commitment, then mental properties aren’t really real.’ (1)

⁶ Of course, that M merely appears to cause E might move some to deny that M is real, but this is, nonetheless, a distinct worry.

⁷ Zhong reviews three non-equivalent arguments for exclusion, but each argument is in support of the preemption specification.

⁸ Each of the following plausibly understands the problem in this way: Simon Blackburn (1991), Derk Pereboom and Hilary Kornblith (1991), Tyler Burge (1993), D.H. Mellor (1995), Paul Noordhof (1997), D. Gene Witmer (2003: 204-5), Karen Bennett (2003), Sydney Shoemaker (2004), Amie L. Thomasson (2006: 353), Jeff Engelhardt (2012).

⁹ These are adapted from Zhong, 2011: 132-138.

¹⁰ Jaegwon Kim deserves credit for suggesting that a physical entity like P2 may compete with a mental would-be cause like M1 to determine a mental entity like M2. In his famous supervenience argument, for instance, Kim says

of such an arrangement (with slight changes to his variables to match ours), ‘M2 occurs because its supervenience base P2 occurs...This puts the claim of M1 to be a cause of M2 in jeopardy.’ (Kim, 1998: 42; see also (Kim, 2003: 154) It’s not clear, however, that Kim sees this as a problem except in that it leads to competition between M1 and P1. He doesn’t distinguish the problem under discussion here from the more general exclusion problem; and, after moving immediately from the quotation above to discuss the competition between M1 and P1, this latter competition is the focus of his discussion of the exclusion problem, of the replies to the problem, of Kim’s responses to replies, etc. Moreover, at least some of his remarks suggest that his view of the problem concerns the competition between M1 and P2. Consider: ‘The difficulty is exactly that the causal status of the dependent event [i.e. M1] is threatened by the event *on which it depends* [i.e. P1].’ (Kim, 1998: 53, emphasis and brackets added) It may be Kim’s view, then, that the competition between M1 and P2 serves only to push the issue or amplify the stakes of the competition between M1 and P1.

¹¹ For example: ‘it is in virtue of being massy... that a magnet falls to earth...’ (Wilson, 2011: 7)

¹² ‘instances of determinable properties...have a proper subset of the powers of their associated determinate instances.’ (Wilson, 2012: 7)

¹³ ‘Somehow or other, determinate as well as determinable properties must enter into a (relatively) fundamental base.’ (Wilson, 2012: 15) In a toy example, she tells us that in a world with only a scarlet red object, both *being scarlet* and *being red* are metaphysically fundamental—both are needed in order to ‘build’ the world. (Ibid: 13)

¹⁴ Wilson recognizes that this may look to be inconsistent with the previous commitment; she offers the following as explanation: ‘...the supposition that asymmetrical entailment/metaphysical supervenience suffices to establish a grounding [i.e. an ontological dependence] relationship is incorrect... The point can be colorfully made by appeal to a version of Malebranchian occasionalism: let God bring about mental properties upon the occasion of certain physical properties, and let God act consistently in every possible world. Then mental properties would supervene with metaphysical necessity on physical properties, but the former would clearly be an ontological addition to the latter.’ (Wilson, 2012: 9)

¹⁵ See Paul Audi (2011: 8, 15-17). Audi criticizes subset accounts of realization in general along the same lines I’m pushing against Wilson here. Since most advocates of the subset account accept that mental property instances depend on physical property instances, though, the overdetermination at issue for Audi is not coincidental. Thus, advocates of the subset account may respond to Audi to the effect that mental-physical dependence explains the systematic overdetermination inherent to the account. On Wilson’s view, by contrast, the ontological independence of determinables from determinates (as in **Fundamental determinables**) precludes this reply.

¹⁶ Thanks to an anonymous referee for pointing out that Wilson’s alternatives here deserve careful consideration.

¹⁷ It should be noted that, these claims and Goff’s endorsement notwithstanding, O’Connor and Churchill themselves (2010a, 2010b) do not accept a Humean account of causation.

¹⁸ Indeed, if Audi is right (cf. 3.1 above) that X explains Y only if X at least partly determines Y, then insofar as the Humean denies that causes are determinative, she denies that they are explanatory. Since her causes are not determinative at all—they are mere regularities—they are not explanatory at all. The problems I raise here are exacerbated if one accepts Audi’s reasoning, but they remain if one rejects it.

¹⁹ See Simon Blackburn (1991), Derk Pereboom and Hilary Kornblith (1991), Tyler Burge (1993), Paul Noordhof (1997), D. Gene Witmer (2003: 204-5), Karen Bennett (2003), Sydney Shoemaker (2004), Amie L. Thomasson (2006: 353), and Jeff Engelhardt (2012).

²⁰ While the Humean may deny that M1 and P2 are independent (e.g. perhaps the former causes the latter), she cannot plausibly deny that *the explanations* adverting to M1 and P2 are independent. The explanation of M2 that invokes P2 is a non-causal explanation while the explanation that invokes M1 is causal. The former explanation has as much need for M1 as it does for P1. Section 3.2.2 motivates this competition further.

²¹ See Yates (2012: 9)