Embracing Overdetermination

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Abstract
Nonreductive physicalism appears to be an attractive package in the philosophy of mind. Mental properties stand in a dependence relation to the physical world but remain irreducible to physical phenomena. Hence, mental phenomena enjoy an autonomy, both ontological and causal, over and above the physical. However, Jaegwon's Kim's Causal Exclusion argument questions the stability of this 'attractive' view, the outcome of which is that nonreductive physicalism is left with two unattractive options – either epiphenomenalism or, barring overdetermination, reductionism. Some non-reductive physicalists, in response, claim that overdetermination is not so unattractive after all. Mental causation, the claim goes, might be a case of genuine or systematic overdetermination. In the following, I claim that such moves consistently mis-characterise the claims of nonreductive physicalism by underplaying the ontological commitments central to nonreductive physicalism. In pressing the significance of these ontological commitments, I show that the nonreductive physicalist appeal to overdetermination is not a viable option. Finally, I consider some contemporary metaphysicians' appeal to grounding as a more stable version of nonreductive physicalism. However, physical grounding offers us a picture of the relation between the mental and the physical that does no more than undermine the central features of nonreductive physicalism.

Keywords: Nonreductive Physicalism, Causal Exclusion Argument, Overdetermination, Reductionism.

Introduction

Nonreductive physicalism still enjoys something of a consensus in debates concerning the relation between mind and body and the efficacy of mental properties. The attractions of nonreductive physicalism are rooted in its claim to secure the autonomy of the mental and mental efficacy within a physicalist framework. According to non-reductive physicalism, mental properties are

distinct from, and non-reducible to, physical properties, yet via a relation of supervenience or realization they are anchored in the physical realm. Nonreductive physicalism, thus, offers us the appealing combination of physicalism aligned with a respect for the role of the efficacy of mental properties that appears central to our conception of ourselves as human cognitive agents. Nonreductive physicalism secures a picture of ourselves as cognitive deliberating causal agents within a physicalist framework.

Jaegwon Kim, however, has argued that the principal fall-out of nonreductive physicalism is not as its proponents advertise it to be. Rather, nonreductive physicalism leads to the denial of causal efficacy to mental phenomena. His Supervenience Argument or Causal Exclusion Argument critically targets nonreductive physicalism by arguing that it is an unstable account of the mental-physical relation (Kim, 1998, 2005). According to Kim, if mental properties supervene upon physical properties without being reducible to them, they are, barring an implausible overdetermination, causally idle. The upshot is that the nonreductive physicalist must choose between embracing epiphenomenalism or endorsing the reduction of the mental to the physical realm. Thus, for Kim, the only options available to the nonreductive physicalist is the causal idleness of the mental or the reduction of the mental to the physical. In sum, if Kim is on the right track, nonreductive physicalism is shown to be an unstable position on the relation between mind and body and given the unattractiveness of epiphenomenalism, reduction has much to recommend.

Various nonreductive physicalists have responded critically to Kim's Causal Exclusion Argument on the grounds that nonreductive physicalism is a more stable position on the relation between mind and body than Kim claims. Kim offers the non-reductive physicalist the, for them, unattractive options, of either epiphenomenalism or reduction. However, in response, some non-reductive physicalists have appealed to the availability of a further option, namely, the option to accept the mental/physical causal overdetermination of physical effects. The proponents of this option claim that Kim has no convincing argument against the possibility that mental causation might be a case of genuine or systematic overdetermination. Nonreductive physicalists, as we shall see, have argued that there is nothing objectionable about a physical effect being overdetermined by both a mental and a physical cause. Hence, it turns out, they claim, that one of the central premises of the Causal Exclusion Argument is false, namely the denial of overdetermination.

In the first section, Kim's Causal Exclusion Argument against nonreductive physicalism is presented. I offer an account of the argument that is brief and suitable to my purpose. I suggest that there is a tendency to under- or mis-

characterise, as Kim sees it, the central commitments of nonreductive physicalism. The second section turns to look at those versions of nonreductive physicalism that embrace overdetermination. The outcome, the nonreductive physicalist claims, is that Kim's Causal Exclusion Argument does not leave us with the narrow options of causal idleness or reduction but widens to include ''either reduction or causal impotence or overdetermination'' (Walter, 2008: 683). I argue that when due attention is paid to the central ontological features of nonreductive physicalism, the attempt to widen the options beyond epiphenomenalism and reductionism fails. In the third section, I argue that the attempt to secure the overdetermination option on the back of supervenience fails. The issue of whether overdetermination is a viable option does not depend on supervenience securing an intimate relation between mental and physical properties. Supervenience turns out not to be the cure, but the source of the nonreductive physicalist's troubles. In the concluding section, I consider the attempt by contemporary metaphysicians to bolster the notion of supervenience by appealing to grounding as the appropriate relation between mental and physical phenomena. The result, they suggest, is a more robust and stable version of nonreductive physicalism. However, the outcome of the appeal to physical grounding is a picture of the relation between the mental and the physical that does no more than undermine some of the central features of nonreductive physicalism. More importantly, the appeal to physical grounding aligns itself with reductionism in the sense that it denies the ontological significance of mental properties. Note: throughout I assign, for convenience, causal efficacy to properties but this should be taken as an abbreviation for instances of properties or, if one prefers, events.

Nonreductive Physicalism

Nonreductive physicalists of whatever stripe are, at least, committed to something akin to the doctrine of mind-body supervenience as the means to anchor the mental realm in the physical and secure a role for mental causation. Jerry Fodor, a noted nonreductive physicalist, writes "If mind/body supervenience goes, the intelligibility of mental causation goes with it" (Fodor, 1987: 42). Various versions of supervenience have been proposed, but it is typically taken to be a relation among sets of properties and plays a central role in the nonreductive physicalist characterisation of the mind/physical relation. Kim characterises nonreductive physicalism as constituting a commitment to three fundamental doctrines: (i) mind-body supervenience (ii) the irreducibility/distinctness of the mental to the physical, and (iii) the causal efficacy of mental properties. Kim, regarding (i) appeals to strong supervenience (Kim, 2005: 33):

> Mind-body Supervenience: Mental properties strongly supervene on physical/biological properties. That is, if any system *s* instantiates a mental property M at *t*, there necessarily exists a physical property P such that *s* instantiates P at *t*, and necessarily anything instantiating P at any time instantiates M at that time.

Kim also importantly assumes a metaphysically beefed-up reading of supervenience. Supervenience is not to be cast merely in terms of co-variation between mental and physical properties. Rather, supervenience is an ontological thesis involving the notion of an asymmetric dependence between mental and physical properties. Thus, supervenience appeals to "a sense of dependence that justifies saying that a mental property is instantiated in a given organism at a time *because*, or *in virtue of the fact* that one of its physical "base" properties is instantiated by the organism at that time." (Kim, 2005: 34) Hence, central to Kim's notion of supervenience is the claim that physical properties are more fundamental than, have ontological priority over, mental properties.

Moreover, Kim does not understand the relation of supervenience as one that comes without ontological significance. On one reading of supervenience, to say that one phenomenon supervenes on another is to introduce no ontological addition to the subvening base. However, on Kim's reading, the supervening phenomena constitute an ontology 'over and above' the phenomena that subvenes it. Central to Kim's Causal Exclusion argument is the assumption that mental properties that supervene on their physical bases are fully suitable to play the causal role. They are ontologically equipped to bring about mental and physical effects. The failure to recognise that supervenient properties are an ontological addition to the properties that subvene them is one example of the mis-characterisation of Kim's reading of nonreductive physicalism. The problem, according to Kim is that Exclusion kicks in rendering mental properties causally idle. As Bennett neatly puts it: "It's one thing to be fit for work, and quite another to actually find a job." (Bennett, 2007: 325)

The second component of nonreductive physicalism is, of course a commitment to the irreducibility or distinctness of the mental to the physical:

> Irreducibility or Distinctness: Mental properties are not reducible to, and are not identical with, physical properties.

For Kim, the notion of reduction involves the claim that mental phenomena are 'nothing over and above' the physical. In contrast, the nonreductive

physicalist, typically under the influence of the doctrine of multiple realizability, denies the tenability of reductive type-identity. Rather, the nonreductive physicalist's appeal to irreducibility assumes "that physically irreducible properties remain outside the physical domain." (Kim, 2005: 34) Thus, again nonreductive physicalism is committed to a distinct ontological category suitable to sustain causal efficacy.

The third and final component of nonreductive physicalism concerns the causal status of mental properties:

> *Causal Efficacy*: Mental properties have causal efficacy – that is, their instantiations can, and do, cause other properties, both mental and physical to be instantiated.

Thus, the nonreductive physicalist aims to secure a distinct causal role for the mental over and above the physical thereby aiming to secure mental-to-mental and mental-to-physical causation.

Clearly, the components of Irreducibility/Distinctness and Causal Efficacy capture the nonreductive aspect of nonreductive physicalism. Such commitments may be assumed to be central to all those who favour a dualist approach to mental/physical phenomena whether physicalist or not. Thus, the central feature of nonreductive physicalism is their appeal to mind-body supervenience as a means to anchor Irreducibility/Distinctness and Causal Efficacy in the physical world. In sum, nonreductive physicalists, typically, demand that mental properties figure in real psychological kinds with its propriety laws, theories, and explanations. That is, the psychological realm enjoys its own *ceteris paribus* laws over and above the strict exceptionless laws of the basic physical realm. By figuring in these psychological laws, instantiations of mental properties play a causal role in bringing about mental and physical effects. Moreover, the doctrine of supervenience bears the burden of securing the physicalist credentials of the nonreductive physicalist. Is it up to the task? Does it succeed in bearing the burden?

If it is to succeed, according to Kim, it needs to account for two additional features to which all physicalists should plausibly adhere. Features, however, as we shall see, that make trouble for the nonreductive physicalist. Thus, in addition to these three founding components of nonreductive physicalism, Kim suggests that any physicalist should also accept two further principles. First, physicalists should accept the Causal Closure of the Physical, which tolerates a weak or a strong reading. The weak reading, which may be called Completeness goes:

Completeness: physical effects have a sufficient physical cause.

The stronger reading claims that not only do physical effects have a sufficient physical cause they *only* have a physical cause. Kim refers to it as Strong Closure (Kim, 2005: 50):

> *Strong Closure*: Any cause of a physical effect is itself a physical event – that no nonphysical event can be a cause of a physical effect.

The strength of the latter reading stems from the fact, that if accepted, the nonreductive physicalist commitment to the Irreducibility or Distinctness of the mental to, or from, the physical seems sufficient to undermine their claims to secure a distinct causal role for mental properties. Hence, though I believe Kim holds onto Strong Closure, we shall proceed with the weaker reading of Closure, namely Completeness.

One advantage of the weaker reading is that it gives substantive content to the second additional principle, the denial that the mental/physical causation can overdetermine a physical effect.

> *No Overdetermination*: no physical effect can have more than one sufficient cause at time *t*.

Thus, according to Kim, the nonreductive physicalist should be committed to the principle of the Completeness of the Physical if she is to hold onto her physicalist credentials, and the principle of No Overdetermination on the basis that it is highly implausible that in the case of mental causation, physical effects are the result of two overdetermining causes.

The Causal Exclusion Argument

The aim of Kim's Causal Exclusion Argument is to undermine the collective stability of these five commitments. The upshot, according to the argument, is that the adherence to these five commitments is far from stable. For example, if one starts with the Completeness of the Physical then one is committed to the idea that physical effects have sufficient physical causes. As it stands, such commitment does not rule out causes other than physical causes, but now No Overdetermination kicks in. No Overdetermination demands that physical effects cannot be overdetermined by mental and physical causes. Thus, in the absence of overdetermination, which, according to Kim, is to be welcomed, in the combination of *Supervenience*, *Distinctness*, *Causal Efficacy of the Mental*,

Completeness of the Physical, *No Overdetermination*, something must give. Thus, consider a simple case of mental to physical causation:

Mental property M causes physical effect P*

Given *Supervenience*, the putative causal relation between mental property M and physical effect P* involves a further subvenient physical property which is non-causally sufficient for M, say P. In such a scenario, we are perhaps driven to consider whether mental property M, or its subvenient physical base P is responsible for the physical effect P*. Given No Overdetermination the physical effect P* cannot be the result of two overdetermining causes, M and P. Given the *Completeness of the Physical*, the causal role of subvenient physical base P pre-empts the causal role of M. Hence, P undermines the causal role of mental property M. Mental property, M, is then either an epiphenomenal hangover that does no causal work or is one that requires reduction to its lower-level physical base.

Thus, once No Overdetermination is accepted, the Completeness of the Physical is incompatible with the Causal Efficacy of the Mental. The Completeness of the Physical, barring overdetermination, excludes the *Causal Efficacy of the Mental*. Unless we embrace overdetermination, either Distinctness or Causal Efficacy must go. In sum, according to Kim, the Causal Exclusion Argument leaves the non-reductive physicalist with only two options. The nonreductive physicalist can either accept epiphenomenalism, arguably surrendering their physicalist credentials by denying the causal efficacy of the mental or fully embrace their physicalism by reducing the mental to the physical. For Kim, the nonreductive physicalist has no other options.

Or do they? Supporters of nonreductive physicalism have responded to Kim's Causal Exclusion Argument in two notable ways. The responses diverge on how we should view Kim's claim that Irreducibility/Distinctness, Efficacy of the Mental, Completeness of the Physical, and No Overdetermination form an incompatible set. On one view, nonreductive physicalists have claimed, under the banner of 'compatibilism', that the five claims are in fact consistent (Bennett, 2003, 2008). However, in the 'compatibilist' literature there is a tendency to secure consistency at the explicit expense of surrendering central features of nonreductive physicalism. The other option, which will be our concern, is to embrace overdetermination and by doing so, it claims, safeguard a distinct causal role for mental properties. On this latter option, if No Overdetermination is false, then Overdetermination, Irreducibility/Distinct-

ness, Efficacy of the Mental, Completeness of the Physical are all secure and consistent with one another.

Nonreductive physicalists have proposed various means by which, in addition to their subvenient physical base, supervenient mental properties qualify as a cause of a physical effect. They have suggested, for instance, that supervenient mental properties make a causal difference in virtue of figuring in counterfactual dependencies (Lepore & Loewer, 1987, 1989; Kroedel, 2000) or in virtue of falling under non-strict or *ceteris paribus* causal laws (Fodor, 1987). On none of these accounts, the nonreductive physicalist claims, is overdetermination problematic. There is nothing objectionable *per se* about the idea that one *effect* counterfactually depends upon two or more events, that one effect is explainable by appeal to two or more events, or that there are causal regularities with the same consequent but different antecedents. These accounts are developed with the explicit goal in mind to make intelligible how a mental property can be causally efficacious in addition to its physical supervenience base. Thus, the response to the Causal Exclusion Argument is to place the possibility of overdetermination back into the ring. We can secure the causal efficacy of the mental by accepting overdetermination. For example, Fodor defends the efficacy of the mental by appealing to the role of mental and physical properties in their proprietorial laws. Fodor claims mental properties are causally sufficient for behavioural effects when they are subsumed under non-strict intentional laws. Such non-strict laws will be *ceteris paribus* laws whose *ceteris paribus* conditions are satisfied. Hence, when the *ceteris paribus* conditions of non-strict laws are satisfied, they can take their place alongside strict laws and subsume events under nomological relations. Both the intentional laws of psychology and the laws of basic physics can ascribe mental properties and physical properties respectively as playing a sufficient causal role in bringing about behavioural effects. He writes:

> . . . the properties projected in the laws of basic sciences are causally responsible, and so too are the laws projected in the laws of the special sciences. . . . The causal laws of the special sciences and causal laws of basic sciences have in common that they *both* license ascriptions of causal responsibility. (Fodor, 1992: 144)

In a similar spirit, Barry Loewer defends nonreductive physicalism by accounting for mental-to-physical causation in terms of counterfactual dependencies. Thus, Lepore and Loewer embrace overdetermination by promoting a counterfactual resolution to the problem of mental causation. On their view, the behavioural effects may be the outcomes of either subsumption

under physical laws or by appropriate counterfactuals, which they claim, *ceteris paribus*, are sufficient to secure a causal role for mental properties. (Lepore and Loewer, 1987) According to Loewer, we have no problem with overdetermination if we understand causation as counterfactual dependencies.

> On Lewis's account of counterfactuals, a particular event . . . can depend on many co-occurring events. The motions of one's body, for example, the motions of a person's arms and hands when reaching into the refrigerator, depend counterfactually both on her mental states (which snacks she wants) and on her brain (and other bodily) states and on a myriad of other states and events. (Loewer, 2007: 255-6)

In sum, once we have a proper account of causation whether in terms of Fodor's *ceteris paribus* psychological laws or in terms counterfactual dependencies, overdetermination is no longer an unattractive option. More recently, Krodel and Shultz (2016) and Stenwall (2021), appealing to the metaphysical notion of grounding, have supported Double Causation and Dual Causation respectively. Stenwall's Dual Causation (2021: 11784):

> Dual Causation. If [C]m is some mental fact and [E]p some physical fact such that [E]p is an effect of [C]m, then there is some physical fact [C]p that grounds [C]m and causes [E]p.

Hence, Fodor's psychological laws, Loewer and LePore's counterfactual dependencies, and appeals to metaphysical grounding find some common purpose in accepting that Overdetermination is compatible with Irreducibility/ Distinctness, Causal Efficacy of the Mental, and the Completeness of the Physical. However, is the acceptance of the causal overdetermination of physical effects by both mental and physical properties a plausible thesis?

Embracing Overdetermination

If this common purpose is on the right track, the overdetermination of physical effects by mental and physical causes is not as problematic or implausible as Kim claims. The recommendation is to embrace overdetermination as the means to stabilize nonreductive physicalism against Kim's unsettling diagnosis. If one is to embrace overdetermination then the first move is to identify the nature of overdetermination. What is overdetermination? More specifically, what is overdetermination in the mental/physical case? We shall begin by offering a traditional test for overdetermination.

There is a degree of consensus that we can offer a test for determining whether we have a genuine case of overdetermination by appealing to two relevant counterfactuals. Consider a case where a physical effect, P*, is overdetermined by a mental cause, M, and a physical cause, P. The following counterfactuals (A) and (B) are relevant to its truth:

P* is overdetermined by P and M only if:
(A) if P had happened without M, P* would still have occurred.
(B) if M had happened without P, P* would still have occurred.

The central idea is that the overdetermination test identifies the kind of reasoning we engage in when we consider a putative case of overdetermination. If we wish to decide whether a physical effect, P*, is overdetermined, we look to whether these two counterfactuals are true. That is, would the effect P* have occurred if M had happened without P or vice versa? If both or one of the counterfactuals are false, then the physical effect was not overdetermined. Thus, the truth of the counterfactuals plays a key role in our willingness to say that some effect is overdetermined. Our focus shall be on counterfactual (B) *'If M had happened without P, P* would still have occurred*.' Those nonreductive physicalists who embrace causal overdetermination will, at least, argue that (B) is true. But first, they shall make a distinction between bad and good cases of overdetermination.

Hence, the opening strategy of those who embrace overdetermination as a means to stabilize nonreductive physicalism is to make a distinction between bad sorts of overdetermination and good sorts of overdetermination. To speak of bad sorts of overdetermination is merely to note their unsuitability to the mental/physical case. The moral is that if we understand mental causation in terms of bad overdetermination then the possibility of mental causation looks bleak. But if we can outline an account of good overdetermination, then the nonreductive physicalist's options have been widened to include an acceptance of overdetermination. If successful, Kim's Causal Exclusion Argument no longer offers to the nonreductive physicalist the unattractiveness of either epiphenomenalism or reduction. Rather, good cases of overdetermination may be available.

The central ingredient of Kim's Causal Exclusion Argument is that mental properties are excluded by their physical competitors unless genuine overdetermination is possible. When Kim reaches for an example of overdetermination as analogous to the case of mental causation, he frequently cites the case of firing squads in which the unfortunate victim's death is the result of two simultaneous bullets. Thus, to treat mental-to-physical causation as a

typical case of genuine overdetermination, is to consider mental-to-physical causation as analogous to the case of a firing squad. Just as in a firing squad a victim is shot simultaneously by two or more independent members of the firing squad, a physical effect is brought about by two sufficient and independent properties, one which is mental, the other physical. Moreover, firing squad cases of overdetermination clearly pass the counterfactual test – they are both true. Kim's challenge is that if appeals to mental/physical causation are analogous to cases of firing squads, they pass the counterfactual test, then so much the worse for overdetermination in the mental/physical case. First, it is highly implausible that mental to physical causation is universally a matter of overdetermination. Second, and more importantly, to countenance mental to physical causation as a case of overdetermination is to violate the Completeness of the Physical. To endorse overdetermination is to tolerate the idea that mental properties may swing free from any physicalist base. Hence, the nonreductive physicalist undermines any claims to physicalism.

However, as a response to Kim's Causal Exclusion Argument, the nonreductive physicalist claims that the firing squad case is an example of bad overdetermination, which, they agree, renders any appeal to overdetermination in the mental/physical case more than problematic. First, such cases of overdetermination are either merely coincidental or, like the firing squad case, pre-arranged. Given the nonreductive physicalist's commitment to the ubiquity of mental causation, to claim that mental-to-physical causation is just a massive coincidence or to claim that mental-to-physical causation is a matter of some cosmic preestablished harmony is too implausible. Thus, on this notion of bad overdetermination we should agree with Kim that it is odd to think that every physical effect is overdetermined by two distinct sufficient, but independent, mental and physical causes. Second, cases of firing squad overdetermination appeal to overdetermining causes that are independent and dispensable. In such cases of overdetermination each cause is independently sufficient to bring about the occurrence of the physical effect. Hence, in such cases of overdetermination, and in the light of the Completeness of the Physical, the prospects for assigning a role to mental causation is less than promising. Fortunately, for the nonreductive physicalist a defence of overdetermination need not rely on such cases of bad overdetermination.

If the case of firing squads are examples of bad overdetermination, what is a good case of overdetermination? We have seen that cases of bad over-determination are cases of either coincidence or pre-arrangements. We have also seen that bad overdetermination traffics in independent overdetermining causes. Good determination, in contrast, are cases of overdetermination which are not coincidental, but systematic. The overdetermining causes are not

independent of each other or individually dispensable. Hence, cases of good overdetermination are cases of overdetermination which are systematic, allowing that physical effect can have more than one sufficient cause at a given time. Cases of good overdetermination do not countenance independent and dispensable causes. Hence, the nonreductive physicalist claims that over-determination is not in conflict with the Completeness of the Physical.

Thus, the nonreductive physicalist response to Kim's Causal Exclusion Argument is to embrace cases of good overdetermination. Nonreductive physicalism typically assumes that mental properties are anchored in the physical realm in virtue of supervenience or realization. Typically, this demands the denial that mental and physical causes are independent of each other. To embrace good overdetermination is to view mental and physical causes as an example of systematic overdetermination. In systematic overdetermination the two causes are neither coincidental nor pre-arranged. Rather, in systematic overdetermination the mental and physical causes share an intimacy such that a physical cause necessitates the presence of the putative mental cause, and vice versa. As a result, neither of the co-occurring causes is dispensable in the same sense as neither of the two shots of the members of the firing squad are dispensable in bringing about the victim's death.

Given the close intimate relation between mental and physical causes, as promoted by Supervenience, mental cause, M, will occur as long as its subvenient base and physical cause, P, occurs. Any attempt to rid us of mental property, M, requires also ditching physical property P. Thus, good cases of overdetermination are those in which the overdetermining causes are neither independent of each other nor individually dispensable. Given the commitments of nonreductive physicalism, cases of overdetermining causes are nonproblematic. For each mental property that plays a causal role in bringing about a physical effect, there is a non-competing, non-independent, physical property bringing about that physical effect. Supervenience, thus, bears the burden of securing a tight intimate relation between mental and physical properties such that it renders overdetermination unproblematic. Hence, as a response to Kim's Causal Exclusion argument, systematic overdetermination looks a much more promising strategy. Thus, counterfactual (B) is true on the basis that if M had occurred in the absence of its subvenient base, P, some other related physical event P^ would have occurred, which would have been sufficient to bring about physical effect P*.

According to Crisp and Warfield, the intimate relation between mental and physical causes underpinned by the appeal to supervenience not only allows us to embrace overdetermination but to show that overdetermination is no threat to the Completeness of the Physical. Due to supervenience, in the

counterfactual world, W, M retains a physical base P^. Hence, when we consider (B) '*if M had happened without P, P* would still have occurred*,' once supervenience holds, it turns out to be true. Moreover, its truth does not imply any violation of the Completeness of the Physical.

> It follows that M has a physical supervenience base P' in W. What is the causal status of P' vis-a'-vis P' in W? . . . if P' is a supervenience base for M and M causes P*, then P' is also causally sufficient for P*. If Supervenience holds in W, therefore, P* does have a physical cause in W, and Closure [Completeness of the Physical] therefore does not fail in W. (Crisp and Warfield, 2001: 314)

Moreover, the counterfactual (B) '*If M had happened without P, P* would still have occurred*' is not only claimed to be true, but something close to being vacuously true. To speak of the vacuous truth of (B) is to claim that property M cannot occur without a subvenient physical property. In a similar spirit, to countenance worlds in which M occurs without a physical base P, as guaranteed by supervenience, is to appeal to non-supervenient impossible worlds that are of no concern to the nonreductive physicalist. Crisp and Warfield write:

> . . . suppose further that, as Kim suggests, M causes P* in W without there being any physical cause of P*. Given these assumptions, Closure [Completeness of the Physical] does indeed fail in W. But recall that we have supposed along with Kim that the actual world is a Supervenience-world. It follows from this supposition that W is either nomologically or metaphysically impossible, depending on how we read the relevant model operator in the formation of Supervenience. So if W is a world in which Closure [Completeness of the Physical] is violated in the way Kim suggests, W is at least nomologically impossible. (Crisp and Warfield, 2001: 314)

Crisp and Warfield argue that nonreductive physicalists who embrace over-determination as a solution to Kim's Exclusion Argument need not concern themselves with such nomologically impossible worlds. The failure of the completeness of the physical in nomologically impossible worlds can be safely ignored. (Crisp and Warfield, 2001: 314)

Hence, the opponents of Kim argue that in the case of systematic overdetermination, we should not be worried about the Completeness of the Physical in remote possible worlds. (see also Loewer, 2001, 2002). Since the

nonreductive physicalist appeals to the supervenient relation between the mental and the physical, Kim demands that one must move beyond either nomological or metaphysically possible worlds to find a world W in which M has no physical property, P, that would play the causal role of bringing about physical effect, P*. But the nonreductive physicalists can argue that they are not required to be bothered by the failure of the Completeness of the Physical in such remote possible worlds. Once we restrict attention to those worlds pertinent to discussions of nonreductive physicalism, the Completeness of the Physical provides no reason for finding overdetermination objectionable. (Walter, 2008)

Overdetermination: An Option?

As we have seen, supporters of nonreductive physicalism typically respond to Kim's Causal Exclusion Argument by, first, offering an account of the nature of causation. Fodor claims that mental properties that figure in *ceteris paribus* psychological laws are sufficient to safeguard the efficacy of the mental. Loewer and LePore appeal to counterfactual dependencies to secure a causal relation between mental properties and physical effects. Secondly, their position is bolstered by an appeal to supervenience as the source of a close intimacy between mental and physical properties. The result, the nonreductive physicalist claims, is that we can embrace overdetermination. The non-reductive physicalist can now avoid the unattractiveness of reductionism and epiphenomenalism, secure in their claim that physical effects may be overdetermined by instantiations of mental and physical properties.

However, critics of nonreductive physicalism can point out that the proposals about the nature of causation are not up to the task of securing the causal efficacy of the mental. Fodor's claim that mental properties are causally efficacious due to their figuring in *ceteris paribus* laws appears merely to be a restatement of the nonreductive physicalist position. The claim fails to respond to the challenge as to how such properties play their causal role. Recall that Kim's Exclusion Argument grants that mental properties are equipped to be causally efficacious. Thus, the problem of how mental causation is possible given the nonreductive physicalist commitments remains. The problem with counterfactual accounts of causation is that we have a weakening of the relevant notion of causation in the philosophy of mind. If a Cartesian dualist and a physicalist equipped with a counterfactual reading of causation find common ground, then suspicions should arise as to whether we are providing a substantive account of the mind-body relation. Moreover, counterfactual accounts of causation have a problem with 'fork cases.' Situations may arise in which an effect depends counterfactually on a property but that property is

an epiphenomenal consequence of properties that do the genuine causal work. In sum, appeals to psychological laws or counterfactual dependencies do no more than re-state the 'how possible' question. Leaving aside such concerns and assuming they can be improved, is the embrace of overdetermination in itself a plausible tactic for the nonreductive physicalist?

As we have seen, proponents of nonreductive physicalism who embrace overdetermination reason that the truth of the counterfactual (B) *if M had happened without P, then effect P* would still occur* is one where mental property M is realized by some other physical property P^. On David Lewis' account of counterfactuals, a counterfactual, say, R > Q is true if there are worlds at which R & Q are true that are more similar to the actual world than to a world at which R is true and Q fails to occur. On Lewis' proposal we evaluate counterfactuals by looking at worlds identical to the actual world which then briefly diverge and then continue in accordance with the actual world. For example, *if Sam had struck the match, it would have lighted* is true in the worlds identical to the actual world up to the moment just before a small violation occurs and Sam strikes the match and it lights is more similar to a world at which Sam strikes the match and it fails to light. Hence, it seems that we should judge the truth of the counterfactual (B) '*if mental property M happens without P, then effect P* would still occur*' in terms of a world at which neither supervenience nor the Completeness of the Physical breaks down. For such a world is more similar to the actual world than Kim's world at which mental properties no longer supervene on the physical and we have a violation of the causal closure of the physical. According to the nonreductive physicalist, supervenience buys us the intimacy that permits the over-determination of physical effects whilst remaining committed to Irreducibility/ Distinctness, Causal Efficacy of the Mental and the Completeness of the Physical.

Kim, as noted earlier, works with a metaphysically weighted account of supervenience that goes beyond a mere statement of co-variation between mental and physical properties. Kim agrees that supervenience ontologically ties mental properties to their ontologically more fundamental physical bases. However, even though supervenience secures an intimate relation between mental and physical properties, it cannot secure overdetermination without violating the Completeness of the Physical. The truth of counterfactual (B) '*If M had happened without P, then physical effect P* would still have occurred'* depends on whether we can point to a world, as close to the actual world as possible, in which M occurs without P and P* causally follows without violating the Completeness of the Physical. Kim claims it cannot.

With regard to the truth of counterfactual (B), Kim is in full agreement with those, like Crisp and Warfield who argue, that in line with supervenience if we have a case of M without its subvenient base, P, another physical base P^ is present. However, he notes that in counterfactual world W we have a replay of the situation in which P^ threatens to pre-empt M in being the sufficient cause of P*. That is, Causal Exclusion strikes again.

> As long as *Supervenience* is held constant, there is no world in which M by itself, independently of a physical base, brings about P*; whenever M claims to be a cause of P*, there is some physical property waiting to claim at least an equal causal status. (Kim, 2005: 47)

Kim's response is significant in the debate over whether overdetermination is a plausible option. The standard notion of overdetermination, the firing squad case, for example, is where each overdetermining cause plays a distinct causal role. However, in a situation where Supervenience holds, contra those who view it as opening up the overdetermination option, the possibility of over-determination is ruled out. Because Supervenience holds overdetermination is not a genuine possibility. To point at a counterfactual world W in which if P is absent, yet M has another physical base P^ is to undermine any case in support of the causal sufficiency of M. The notion that in a supervenient world M is always subvened by one physical property or the other is to treat mental property, M, as epiphenomenal.

As to the suggestion that counterfactual (B) is vacuous because it points to an impossible world that the nonreductive physicalist can ignore, Kim argues that since the nomological impossibility of W is due to the failure of mental properties to supervene on physical properties, physicalists should very much care about what happens at W.

> For consider a world in which the physical cause does not occur and which in other respects is as much like our world as possible. The overdetermination approach says in such a world, the mental cause causes a physical event – namely that the principle of causal closure [Completeness] of the physical domain no longer holds. I do not think we can accept this consequence: that a minimal counterfactual supposition like that can lead to a major change in the world. (Kim, 1998: 45)

Kim is suggesting that if a physical effect P* were overdetermined by M and P, then in a possible world W where M occurs but neither P nor any other

physical cause P_n of P* occurs, M would still cause P*. Hence, the acceptance of overdetermination violates the Completeness of the Physical. According to Kim, if we are to countenance the possibility of overdetermining causes, then we need to consider a world at which mental cause, M, occurs bringing about a physical effect without physical cause, P, occurring. Hence, we have a violation of the Completeness of the Physical. Thus, we have a reminder that central to nonreductive physicalism is the claim that mental properties are ready to play a causal role. But due to their supervening on physical bases, they cannot do so unless they violate the Completeness of the Physical.

Kim's reasoning is that the truth of the counterfactual (B) '*if M had happened without P, the effect P* would still occur*' involves considering a world at which M occurs without P. In such a scenario, M causing physical effect P* would constitute a violation of the Completeness of the Physical. Hence, given Lewis-style evaluation of counterfactuals, the truth of the claim that *if M had happened without P, the effect P* would still have occurred* constitutes a gross break with the actual world. For to countenance such worlds is to countenance the violation of the Completeness of the Physical. The result is that the embrace of overdetermination is not consistent with the Completeness of the Physical. If one is required to choose between them, the physicalist is far more likely to embrace the latter.

The upshot is that proponents of nonreductive physicalism who embrace overdetermination in their response to Kim's Causal Exclusion Argument are guilty on two fronts. First, typically, as in both Fodor and Loewer and LePore, they rely on weakened accounts of the nature of causation that fail to offer a distinctive, ontologically grounded, account of mental causation in the physical realm. Such an outcome, perhaps, should encourage us to embrace more substantial accounts of causation. Perhaps, Kim and other's appeal to productive or generative accounts of causation are on the right track. Second, as we have seen, the embrace of overdetermination fails to avoid the violation of the Completeness of the Physical. The embrace of overdetermination either leads to a mere restatement of the problem or a failure to appreciate the commitments of nonreductive physicalism. As I have noted, a marked feature of those who embrace overdetermination is that they under-describe the doctrine of nonreductive physicalism. The primary fault-line is a failure to acknowledge that central to nonreductive physicalism is a commitment to an ontology of the mental fully equipped to play a causal role. This failure is further evident in the appeals to metaphysical grounding as a resolution of the Causal Exclusion problem.

Hence, I would like to conclude with a few brief comments on the more recent appeal to physical grounding as a way to escape the Causal Exclusion

Argument (see Kroedel and Shultz, 2016; Stenwall, 2021). Physical grounding, nonreductive physicalists have argued, is a welcome addition to the metaphysician's toolkit that goes beyond supervenience. The appeal to physical grounding resolves the Exclusion Problem by acknowledging that the mental not only supervenes on the physical but is grounded in the physical. Furthermore, the metaphysics of physical grounding allows us to embrace overdetermination.

Thus, the proposal is that the source of Kim's Causal Exclusion Argument can be traced to the failure of supervenience to characterise properly the dependency relation between the mental and the physical. Proponents of physical grounding argue that supervenience merely captures a modal covariation between mental and physical phenomena that under-describes the dependency relation between the mental and the physical. In contrast, whilst supervenience tracks patterns of modal covariation, physical grounding is an explanatory notion that combines the irreducibility of the mental to the physical with an emphasis on the ontological priority and the more fundamental nature of the physical. Physical grounding is an explanatory notion that takes us from the mental – the less fundamental – to the physical – the more fundamental.

According to Kroedel and Shultz, "The main idea behind the notion of grounding is that a grounded layer of reality behaves the way it does because its grounds behave in a certain way." (Kroedel and Shultz, 2016: 1913) With respect to mental properties, mental phenomena have their causal properties because the physical events that ground them have those causal properties. Hence:

> *Causal Grounding*: Let *m* be a mental event, and let *e* be a physical effect of *m*. Then there is a physical event *p* such that *p* grounds *m* and *m* causes *e* because *p* causes *e*.

According to Kroedel and Shultz, the principle of causal grounding says, "that if a mental event possesses properties of causing such-and-such physical events, then they are due to a physical event that grounds the mental event." (Kroedel and Shultz, 2016: 1914) The central idea is that the relation of grounding is understood in terms of the transitive relation 'in virtue of' or 'because' which links the fundamental with the non-fundamental. Thus, a mental property causes a physical effect in virtue of the physical property.

Consequently, it is claimed, the principle of physical grounding permits an unobjectionable form of overdetermination. "Physical effects of mental events always have two simultaneous causes, for we may assume that grounding

physical events occur simultaneously with the grounded mental events." (Kroedel and Shultz, 2016: 1915) Hence:

> *Double Causation*: Let m be a mental event, and let e be a physical effect of m. Then there is a physical event p that grounds m and causes e.

We now seem to be on familiar territory in that physical grounding claims to secure a close intimacy between mental and physical phenomena such that it is impossible for a mental property M to occur without its physical grounding P occurring. Since physical grounding yields metaphysical necessity between the grounding property and the grounded property, necessarily, a physical property is instantiated whenever a mental property is instantiated, and that, necessarily, whenever one of the grounding properties of a mental property is instantiated, that mental property is instantiated.

The grounding physicalist claims to be in a better position to embrace overdetermination than the traditional appeal to supervenience. With physical grounding the intimate relation between mental and physical is characterised in terms of the fact that they share a common fundamental ground. (Stenwall, 2021) Thus, the mental property M and the physical property causing the physical P* share a common fundamental ground. Because mental and physical properties may share a common fundamental ground overdetermination is harmless. Stenwall writes:

> For in those cases where a mental fact is grounded by some physical fact, the transitivity of grounding guarantees that they share the same fundamental ground. By combining Dual Causation with the transitivity of grounding, we thus get the desirable result that if some mental fact [C]m causes some physical fact [E]p, then there is a physical fact [C]p such that the fact that [C]m causes [E]p and the fact that [C]p causes [E]p share the same exact fundamental ground. (Stenwall, 2021: 11787)

The upshot is that the physical effect P* is not harmfully overdetermined by mental property M, and physical property P. Furthermore, a consequent of physical grounding is that "Neither of these causal facts is anything 'over and above' the fundamental facts and so, is not an addition in being to the facts occupying the fundamental level of reality." (Stenwall, 2021: 11787) Hence, the intimacy required between the mental and the physical is one in which the dependency relation between them adds nothing to the being of the physical cause on which the mental depends.

The result is that the nonreductive physicalist aims to resolve Kim's Causal Exclusion Argument through the advocacy of physical grounding. Physical grounding is taken to characterise a dependency relation between the less fundamental and the more fundamental. The intimacy of the dependency relation between the less fundamental mental properties and the more fundamental physical properties is claimed to render overdetermination benign. And finally, the transitivity of physical grounding enables one to characterise that which is grounded as 'nothing over and above' that which grounds. Non-fundamental facts or properties are no ontological addition to the fundamental physical facts or properties.

However, first, as we have noted, Kim also works with a metaphysical strong dependency between the mental and the physical. One that acknowledges the fundamentality of the physical and the relation of asymmetry between the mental and the physical. But perhaps more importantly, when one considers the physical-grounding motivated version of nonreductive physicalism, it seems clear that it is quite different from Kim's characterization of the core features of nonreductive physicalism. Central to nonreductive physicalism is a commitment to the idea that mental properties have a distinct ontological status that is sufficient to bring about effects in the world. They are not only irreducible to the physical but are in a position to play a causal role distinctive of mental properties. Contrary to physical grounding, mental properties constitute an ontological commitment 'over and above' their physical base. Moreover, the distinct causal role of the mental is said to operate outside the physical domain. The problem, however, according to Kim, is these hopes are pre-empted by the commitment to physicalism and the completeness of the physical. These considerations, I suggest, should make us view physical grounding as promoting an interesting, thoroughly physicalist account of the relation between the mental and the physical. Moreover, proponents of physical grounding can still honour the irreducibility of the mental. Perhaps, as Heil once wrote "If the mental-physical distinction is not ontologically deep there is no question of reducing the one to the other." (Heil, 2012: 1) Hence, physical grounding manages to combine its physicalists credentials with the irreducibility of the mental. However, in so doing, it has moved considerably from the commitments of nonreductive physicalism to the degree that it is no longer a version of nonreductive physicalism. The appeal to physical grounding may allow us to embrace overdetermination, but it fails as a response to Kim's Causal Exclusion Argument.

To conclude, the non-compatibilist nonreductive physicalist response to Kim's Causal Exclusion Argument can only hope to succeed if they undermine a central feature of nonreductive physicalism, namely the commitment to the

ontological significance of mental properties and mental causation. However, the nonreductive physicalist's embrace of overdetermination as a way to avoid the pitfalls of reductionism and epiphenomenalism requires that supervenient properties are a distinct ontological addition to their physical bases. Hence, the appeal to overdetermination of physical effects leads to a violation of the Completeness of the Physical. The upshot is that the nonreductive physicalist trades in her physicalist credentials to safeguard the efficacy of the mental. The lesson, illustrated by our brief comments on physical grounding, is that physicalism, if it wishes to embrace some version of overdetermination, is required to deny any deep ontological significance between the mental and the physical. The outcome is not a resolution of Kim's Causal Exclusion Argument but ultimately an acceptance of one of Kim's proposed options – reductionism.

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