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The Problem of Secondary Effects

Abstract: This paper argues that two principles held by many metaphysicians and philosophers of mind are inconsistent: (1) there is no systematic overdetermination and (2) some causal effects are also determined by their metaphysical grounds. Call this "The Problem of Secondary Effects". After introducing the problem and noting philosophical theories that face it, the paper offers further clarification by considering three potential strategies for solving it. All fail. An approach that sacrifices 'secondary effects' is briefly sketched as a solution.

Words: 6,439

1. The Problem

Metaphysical dependence relations have attracted a lot of philosophical attention lately.¹ In such relations, some entity or entities hold *in virtue of* others, some entity is *grounded in* another. Consider the singleton set consisting only of Socrates. Plausibly, the set depends in some metaphysically interesting sense on Socrates. And, plausibly, this generalizes: sets are *grounded in* their members. To say the same thing with a different emphasis: members *determine* a set. Similar dependence and determination relations have been proposed in a wide variety of philosophical contexts: social constructivists tell us that reality or some part of it is grounded in social practices; normative naturalists say that the non-normative properties determine the normative properties; Physicalists say all things are grounded in the physical.

These relations have a long philosophical history. They are plausibly implicated in the concept of substance: the substances determine the non-substances.² Similarly, such relations help to make sense of the *order* in metaphysical priority orderings: God is primary and everything else is secondary, according to Aquinas, *because God is the ground of all things*. The

physical is primary and all else is secondary, according to Physicalists, because the physical determines the non-physical. Further, it is arguable that the many philosophical views according to which some set of properties *supervenes* on some other set of properties implicitly commit to both a metaphysical ordering and a metaphysical determination relation: the supervenience base is (relatively) primary and the supervening set is secondary because the former determines the latter.³

Such relations are integral to philosophical theorizing. Philosophical positions that directly or indirectly rule out metaphysical determination bear an additional burden of explanation.⁴ This paper suggests that contemporary views on overdetermination and higher-level causation are together inconsistent with the holding of metaphysical dependence relations between concreta. I find this troubling for the former two views, but I do not argue here that a solution must reject either higher-level causation or the popular views of overdetermination. My aim is only to point out the inconsistency.

I use “secondary effects” to refer to metaphysically non-primary entities that are also causal effects. For Aquinas, for example, humans and human actions are non-primary (we’re secondary to God), so any human action with a cause is a secondary *effect*. For many Physicalists, mental events are secondary (to physical events), so any mental event with a cause is a secondary effect. Since secondary effects are secondary, each has a metaphysical determiner. And since they are effects, each also has a causal determiner. Jill’s going up the hill, for example, might be metaphysically determined by various physical processes *and* causally determined by

her intention to fetch a pail of water. The same holds for all secondary effects: they are both causally determined and non-causally determined.

In related contexts, many philosophers have thought that two determiners is one too many. When the dictator is brought before a firing squad, it might happen that two shots strike him simultaneously, each shot seeming to suffice for his death on its own. Although a dictator's death might be so overdetermined, philosophers have balked at the suggestion that overdetermination occurs *systematically*—it can't be that *every death* has two sufficient causes.⁵

Prima facie, if there isn't systematic overdetermination by multiple causes, there isn't systematic overdetermination full stop. In the case of secondary effects, however, there does seem to be systematic overdetermination. For, every secondary effect has two determiners, one causal and one non-causal.

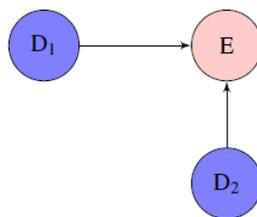


Figure 1: Secondary effects are systematically overdetermined

This is the problem of secondary effects.⁶ In broadest outline, it arises from the apparent inconsistency of two principles widely held by contemporary philosophers:

[Non-overdetermination] There is no systematic overdetermination.

[Secondary effects] There are secondary effects.⁷

The appearance of inconsistency may be confirmed if the following third principle holds:

[Mixed overdetermination] If there are secondary effects, they are systematically overdetermined.

Contemporary philosophers have hardly discussed this last principle, but given the similarities between secondary effects and familiar cases of causal overdetermination, it is not easy to argue against it without *ad hoc* complaints.

As a means to clarifying the problem of secondary effects and demonstrating its difficulty, I now consider attempted solutions.

2.1 There are no secondary effects

The problem of secondary effects is a problem only if there are secondary effects; and there are secondary effects only if there are entities that are both causally determined and determined by their grounds. However, there are no such entities: the relata of grounding relations belong to one ontological category and the relata of causal relations belong to another. On the most popular views, for instance, (1) facts are the grounding relata and (2) events are the causal relata. Since nothing is both a fact and an event, nothing is both caused and grounded. Hence, there are no secondary effects, and there is no problem.

2.2 Reply

First, we must note an ambiguity in philosophical uses of “grounding”, “metaphysical determination”, etc. On the one hand, these words are used to refer to any of a wide variety of

relations that involve, roughly, 'building' the bigger from the smaller: composition, constitution, realization, property determination, etc. On this usage, "grounding", etc. are generic terms covering various non-causal dependence relations. In this case, it makes sense to ask what, if anything substantive, unites these various relations (see e.g. Bennett 2011, Wilson unpublished). On the other hand, these words are also used to refer to a distinct relation that is similar to those just mentioned but which has been underappreciated in recent philosophical history, which is allegedly necessary for making sense of metaphysical structure and/or fundamentality, and which may be more fundamental than the 'building' relations just mentioned. (See Fine 2001, Schaffer 2009, Rosen 2010) On this usage, it makes sense to ask about *the* features of this special relation and to propose, as Schaffer does, that *it* holds between "entities of arbitrary ontological category". (Schaffer 2009, 375-6)

Note that on the first usage, it can be misleading to ask "What are the relata of grounding?"; the definite article might mislead one into thinking that some ontological category is privileged above others. But none is so privileged. Composition and constitution hold between objects; realization and determination hold between properties; constitution and realization also hold between events; etc. Suffice it to say that I'm using "grounding" and associated terms in the first way, so that grounding relations hold between a wide variety of ontological categories, and so that if there is a distinct or most fundamental grounding relation, I am referring to that as well.

Consider events, then. More specifically, consider Kimian events. They are triples of a particular or particulars, a property/ies or relation(s), and the time or interval at which the

particular instantiates the properties/relations: $\langle o, P, t \rangle$. Thus, the Kimian event of Fred's slicing bread at noon is *constituted* by Fred, bread, the slicing relation, and noon; given that $f = \text{Fred}$, $b = \text{bread}$, $Sxy = x \text{ slices } y$, and $n = \text{noon}$, the event is $\langle \langle f, b \rangle, S, n \rangle$. Assuming that Kimian events are the causal relata, the question of whether there are secondary effects turns on whether Kimian events stand in grounding relations. Of course they do! Constitution is a grounding relation, and Kimian events are constituted by particulars, properties, and times. These considerations along with the wide variety of grounding relations suggest that no matter what one thinks the causal relata are, some causal effects shall also be metaphysical dependees. These are the secondary effects.

Second, for those interested only in the allegedly distinctive, necessary grounding relation, it is still plausible that there are secondary effects. This is not only because Schaffer might be right in claiming that it holds between entities of any kind; rather, it is also because those who insist that grounding holds only between facts (or propositions or sentences) are plausibly talking about metaphysical *explanation* rather than metaphysical *determination*. Metaphysical *determination*, like causal determination, holds between entities, while metaphysical explanation, like causal explanation, holds between facts (or propositions or sentences) about entities. Jonathan Schaffer and Jessica Wilson have recently made similar observations:

One should distinguish the worldly relation of grounding from the metaphysical explanations between facts that it backs, just as one should distinguish the worldly relation of causation from the causal explanations between facts that it backs. (Schaffer 2012, 124)

[I]n specifying the relata relevant to grounding explanations, we metaphysicians should talk about the goings-on directly, rather than indirectly through the lens of explanation or associated representations; compare the case of causation and causal explanation, where theorizing typically cuts to the metaphysical chase... (Wilson 2014, fn 3)

Even as concerns the (alleged) distinctive grounding relation, then, it is plausible that there are secondary effects. A person making the objection under consideration could accept that the *fact* that Fred slices bread at noon is metaphysically *explained* by facts concerning certain fundamental physical processes. And she might accept that events like Fred's slicing bread are the causal relata. We may then push the objector into believing that there are secondary effects by asking her what backs the metaphysical explanation of Fred's slicing bread. If the foregoing points are right, it is a metaphysical determination relation, and one relatum of that relation is an event that is also a causal effect. Thus, that event is determined both causally and non-causally—it is a secondary effect.

3.1 Causal and non-causal determination do not 'compete'

One way philosophers express what is problematic about overdetermination is to say that allegedly overdetermining causes "compete".⁸ If one's metaphysics says that thunderclaps are caused by both lightning and Zeus' rage, one reason the theory is problematic (not the only reason) is that two causes are invoked in order to explain just one effect. But one cause would be enough to explain the effect, and perhaps there can be only one *real* cause, or perhaps only

one of the two can be *the* cause. If so, then the alleged causes might be said to compete to win the honor of being the *real* cause.

It is at best unclear, however, that a causal determiner and a metaphysical determiner thus compete. Surely the ground of Jill's going up the hill doesn't compete to be the *cause* of her going up the hill; and surely her intention to fetch a pail of water doesn't compete to be the *ground* of her going up the hill. But if there is no competition, there is no problem.

3.2 Reply

I should make two points here. First, it is worth pointing out that the appeal to 'causal competition' is not the only account of what's wrong with systematic overdetermination. Ted Sider, for example, proposes that *coincidence* is at the heart of the matter:

Coincidence Objection: systematic overdetermination would be a coincidence. Imagine a paranoiac who thinks that every time someone is shot, there are in fact two causally independent shooters. He is crazy, but why? One reason (not the only one) is that it would be a great coincidence that all these sharpshooters just happen to be at the same places at the same times. This great regularity would need an explanation, and none could be given. (Sider 2003, 722)

If we understand overdetermination this way, the remarks above leave the problem of secondary effects untouched. Indeed, if this is what's problematic about overdetermination, we can characterize the challenge at hand more clearly: for any given secondary effect, it would seem to be a coincidence that its cause and ground just happen to converge, each determining the same occurrence; and yet, this seeming coincidence doesn't happen just for some secondary

effects but for them all. This great regularity needs an explanation or else we should say it's an illusion.

Is there an explanation for the 'great' regularity' of secondary effects? Perhaps there is. One might claim that (i) it's essential to all secondary—i.e. non-fundamental, grounded, constituted, etc.—entities that they be determined by *something*. Since a house is a non-fundamental entity, it has to be made of bricks, wood, glass—something. It can't exist and yet be made of nothing. The same goes, *mutatis mutandis*, for bullets, baseballs, broken windows, and perhaps persons, thoughts, deaths, and intentions. For each of these things, if it's non-fundamental, its existence must be determined by some other things. It's not an accident that they're all so determined; it's essential to what they are. Moreover, one may add that (ii) for whatever reason, ours is a world with causation, such that later concreta in our world are causally determined by earlier concreta. If there's a house in our world, then, it has a cause. Is it an accident that it has a cause? Insofar as the house is in our world, no, it's no accident: that's the way things are here. Perhaps there's some sense in which it's an accident that our world is a world with causation, but given that it is, it's no accident that houses in our world are causally determined. Taking i and ii together, it is hardly a coincidence that secondary effects are determined twice, once by their grounds and once by their causes. Indeed, given that they're non-fundamental concreta in our world, they *must* be so determined. Given that a house is secondary, we can deduce that it shall be twice-determined from basic facts about our world and about the house itself. The great regularity is indeed explicable.¹

¹ Thanks to an anonymous referee for offering this compelling response.

But while this would indeed explain the overdetermination of secondary effects, I don't think we should find it satisfying. For it explains the apparent coincidence of overdetermination simply by positing that it is necessary (at least in a universe like ours). But we can pursue a similar strategy to explain the great regularity wherein every fatal shooting is brought about by independent shooters.

It's essential to fatal shootings that they involve two shooters. *What it is* to be a fatal shooting is to be a death brought about by independent shooters. Is it an accident, then, that every time someone is shot, there are two shooters acting independently? No. On the contrary, it's necessarily the case that if a shooting death occurs, it involved two shooters. Again, that's just what a shooting death involves. We can deduce the alleged coincidence of an overdetermined shooting death simply from the essence of the fatal shooting itself.

In both cases, the alleged coincidence is explained in part by appeal to some proposed essence. And, in both cases, the claim is that the systematic overdetermination at issue isn't an accident or a coincidence because, given the proposed essence, overdetermination is necessary for the occurrence of a secondary effect or of a fatal shooting. But of course, when it comes to fatal shootings, we are inclined to reject this response. Why? Perhaps there are many reasons, but it's intuitive to appeal to principles of theory-choice here: all else equal, choose the simpler theory. We *could* posit that it's essential to a fatal shooting that it involve overdetermination, but there's no good reason to do so. We have before us two theories. According to one, it is essential to a fatal shooting that it involve two independent shooters. According to the other, this is not essential to a fatal shooting. All else between the theories is equal. Principles of theory-choice recommend the latter theory—perhaps on grounds of parsimony, perhaps on grounds of elegance. Take your pick.

Can we say the same when it comes to houses and other secondary effects? The response under consideration proposes that it's essential to houses and all other secondary effects that they be determined by their grounds. Given that in our world, houses shall also be determined by their causes, it is necessary that houses shall be determined twice. An alternative theory may say that this is not essential to houses. Mereological nihilists deny that composites like houses are wholes determined by their parts. They say that houses are, rather, nothing more than mereological simples arranged house-wise. There is at least one alternative theory, then, according to which it is not essential to houses (or, to the referents of "house", anyway) that they be determined by their grounds. On this alternative, then, the overdetermination of houses is not a necessary feature of our world. Given that all else is equal between the theories, we face a choice about which sort of essence to posit for houses and other alleged secondary effects. We may posit essences that necessitate the occurrence of overdetermination in our world or we may posit essences that don't. If there is some good reason to choose the latter, we should be told what it is. The burden of proof falls on the theory that posits secondary effects.

The second point to make here is that there are good reasons to think that causes and grounds *do* compete—though they do not, of course, compete to be *the cause*. The sort of competition relevant here is competition over explananda. Where two causes compete to explain an effect, the winner provides the (*real*) explanation.⁹ In cases of causal overdetermination, the worry is that the loser is left without an explanandum of its very own, so that its status as a cause (and perhaps its ontological status) is in doubt. This sort of competition isn't specific to causal explanations, of course; it can occur wherever explanations

are sought. Suppose, for instance, that we want to explain the personhood of a particular person, call her “Adi”. What makes it the case that Adi is a person? When the Animalist explains that she is a person because she is an animal of a certain sort and the Immaterialist grounds Adi’s personhood in her (Adi’s) soul, we tend to think that the Animalist and the Immaterialist *disagree*. These are *competing* explanations, we say. I suspect that every active philosopher advocates for one explanation or another in a competition like this, but not all of us are giving purely causal explanations. I suggest, then, that focusing on competitions to be *the cause* or to be *the ground* is myopic; both are competitions to be *the explanation* for some explanandum.

The question for the problem of secondary effects is whether causal explanations and metaphysical explanations enter into the same competitions. As a start, we can say that they *can*. One might propose, for instance, that Adi is a person because she was made by God in God’s own image. Here, the explanation of Adi’s personhood appeals to the cause of her existence. And, *prima facie*, this causal explanation would compete with the metaphysical explanations offered by the Animalist and the Immaterialist. It will be convenient to have a simple way of referring to these competitions; call them “mixed competitions”—they mix causal and non-causal explanations. If we can find sufficient conditions for mixed competition, we can ask whether these conditions are met in the situations that produce secondary effects. I will argue that sufficient conditions for mixed competition are easy to come by and that they are indeed satisfied by the situations that produce secondary effects.

I propose the following sufficient condition for mixed competition between a causal explanation C and a non-causal explanation N, each proposed for an explanandum e¹⁰:

[Competition] Mixed competition arises if (i) either N or C purports to be a *complete* explanation of e and (ii) N and C are independent.^{11 12}

The idea is that if N or C purports to explain e completely, then the occurrence of either N (or C) is nomically or modally sufficient for e's occurrence. *Prima facie*, then, if N (or C) occurs, e's occurrence is explained, and if C (or N) *also* occurs and does so independently, the latter can't also explain e's occurrence without redundancy. The loser in the explanatory competition would indeed be left without a unique explanandum, so that its status as an explanans (and thus as a determiner) becomes dubious.

Consider, by way of illustration, philosophers who accept the doctrine that God creates and conserves everything in existence. If one interprets the doctrine as the claim that everything ontologically depends on God, then, *prima facie*, the doctrine rules out the possibility that some things also have causes. God leaves nothing undetermined. As Jonathan Kvanvig explains:

If the notion of bringing about is complete and irresistible...and if God brings about the existence of all events, then we have a complete causal explanation of the entire story of the cosmos, with no room remaining for any causal power to be exerted by anything distinct from God. An approach to the doctrines of creation and conservation that applies the notion of ontological dependence in a completely unrestricted fashion, then, risks occasionalism... (Kvanvig 2007, section 2)

If God determines an event completely, then there is nothing left for any alleged cause of that event to determine or explain. Similarly, if a cause completely explains its effect, then there is

nothing about the effect left for God to explain—if there were, the causal explanation wouldn't have been complete.

Compare some of the very familiar characterizations of 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; emphasis added)

[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)¹³

Fixing the (distribution of) fundamental entities at a world fixes all else at the world. (Wilson, 2012: 2)¹⁴

In each example, metaphysical determination is characterized as leaving nothing to be determined (and thus nothing to be explained). The physical nature of a thing X does not work with the causes of X's mental nature to explain X's mental properties; God's work fixes the macro properties on its own: He doesn't need any help from their causes; etc. Philosophers do indeed think metaphysical determination and explanation are complete.

Further, consider the most common example used to introduce grounding:

- Socrates grounds the set whose only member is Socrates; generally, a set depends on its members. (Fine 1995, 269; Schaffer 2010, 35; Koslicki 2012, 188)

Perhaps the fact that Socrates exists fully explains the fact that {Socrates} exists; but, if not, the full explanation appeals to other grounds for the set, not to any causes. Indeed, there doesn't seem to be a causal explanation available for the fact that a set exists. I take it, then, that in the paradigmatic case, metaphysical explanation is a complete explanation—there's no other source

of explanation. And, since there just isn't a causal explanation at hand, an exemplary case of metaphysical explanation is independent of any relevant causal explanation. Similar remarks hold for many other prominent examples of grounding:

- A disjunctive fact is grounded in its true disjuncts. (Rosen 2010, 117)
- Truths are grounded in ontology. (Cameron 2012, 1.)

Of course, these observations alone do not show that metaphysical explanation is meant to be complete explanation when it comes to causally-embedded concreta, but if the grounds of abstracta and those of concreta play different explanatory roles, we should expect authors at least to mention their differences. But such comments are nowhere to be found in the literature.¹⁵ Indeed, several of the most prominent advocates of metaphysical grounding assert outright that it is a unified relation. (Rosen 2010; Schaffer 2010; Bennett 2011) Where concreta are grounded, then, they would seem to be explained completely by their grounds. Thus, philosophers note no substantive differences between the grounding of sets and truths on the one hand and the grounding of smiles, colors, and objects on the other.

- A smile depends on the mouth that manifests it; in general, "a particularized feature depends on the particular in which it is found". (Fine 1995, 269; see also Koslicki 2012, 188)
- A ball is blue in virtue of being (say) cobalt blue; in general, "something's having a determinate property grounds its having the relevant determinable". (Schaffer 2012, 127; see also Rosen 2010, 126)

I do not claim to have shown that metaphysical explanation is incoherent if it is incomplete or that grounds *must* completely explain what they ground—only that many philosophers think of metaphysical explanations as complete explanations. If they are, and if the causal and metaphysical explanations of secondary effects are independent from one another,

then the two compete. Note that, *prima facie*, the two explanations are independent. The one is a causal explanation and the other is not. Even if the entities invoked in the explanations aren't independent, the explanations themselves have nothing to do with one another.

4.1 The determiners of secondary effects are not independent

Contrary to the claims of *prima facie* plausibility above, the determiners of secondary effects are not independent. Suppose that *e* is the thought that Aquinas was a philosopher, and suppose *e* was caused by the thought that Aquinas was not just a theologian, *C*. And let *N* be the physical basis of *e*. *e*, then, is a secondary effect; it is caused by *C* and grounded in *N*. What we typically think about events like *C* and *N* is that *C causes N*. To paraphrase what many, many philosophers have said, an earlier mental event brings about a later mental event *by bringing about its grounds*.¹⁶ If *C* causes *N*, then *N* causally depends on *C*. If *N* causally depends on *C*, then they are not independent. If they are not independent, then they do not meet the second conjunct of the condition for mixed competition given above. The causes and determiners of secondary effects, then, do not compete.

4.2 Reply

While this reply may be intuitively attractive to many, it is, in one way or another, ill-suited for solving the problem of secondary effects. I say "in one way or another" because there are two possible version of this reply: either (i) *C* causes both *N* and *e* *immediately* or (ii) *C*

causes N immediately and is alleged to *thereby* cause e—C causes e ‘through’ N, one might say. I consider each version in turn.

On the first version, the causal dependence between C and N doesn’t offer any help in easing the explanatory competition between the two. Since C causes e immediately on this view, it shall compete with N’s grounding e, even though N causally depends on C. Consider the analogous firing squad case. Revolutionary A fires a shot that both (i) fatally strikes the dictator and (ii) causes revolutionary B to fire a fatal shot of her own. The dictator’s death is determined by both fatal shots. If the usual firing squad cases involve explanatory competition, it’s hard to see why this one shouldn’t.² The two shots compete to be *the* cause of the dictator’s death. If we want to focus on the question of independence, we can say that while the two shots are not independent, they do offer independent explanations of the dictator’s death. Why did the dictator die? Given that each shot sufficed for the death, there are two sufficient explanations, and they can be offered separately: “he was shot by A” and “he was shot by B”. When it comes to secondary effects, if one says that cause C determines e both immediately *and* ‘through’ N, the case is analogous. C’s occurrence explains e’s occurrence, and N’s occurrence purports to do the same; and both explanations suffice, even though C’s occurrence also explains N’s occurrence.

On the other version of this reply, C and N are indeed dependent in a way that matters to their alleged causal competition. For it’s not only true on this view that N causally depends

² Karen Bennett uses a counterfactual test to decide that such cases involve problematic overdetermination. (Bennett 2003, 478-9)

on C, but it's also true that C's causing e depends on N. That is, since C causes e 'through' N, C's causing e is a composite that has N's grounding e as a part—a link in the causal chain from C to e. Indeed, it's intuitive to say that on this view there is just one determination of e. Both C and N are parts in the same chain of determination, and this is the only determination of e there is. Since the one determination of e doesn't compete with itself, there is no causal competition on this view.

But this version of the proposal doesn't save secondary effects because it denies their existence. For it denies that would-be secondary effects like e *have* causes. But if e doesn't have a cause, it can't be an effect, and if it isn't an effect, it isn't a secondary effect. How does this view deny that e has a cause? First, note that it is commonly supposed in the literature on causation that X causes Y only if X causes Y immediately or there is a chain of causes leading from X to Y.³ For any given claim that X causes Y, then, we may confirm the claim by asking whether X causes Y immediately or if there is a chain of causes from X to Y. In the case at hand, C is the alleged cause of e, so we should ask whether C causes e immediately or if there is a chain of causes from C to e. As we know, this version of the proposal denies that C causes e immediately; hence, if C causes e, there must be a chain of causes leading from C to e.

But there is no such chain of causes. The proposed view, rather, is that C causes N and N *non-causally* determines e. Jill's going up the hill, e, isn't caused by her intention to fetch a pail of water, C; rather, her intention (or her intention's physical basis) causes the ground of her action, N. Since N then determines her action, Jill fetches the pail of water. C's bringing it about that e

³ See, e.g., David Lewis (1973), p. 563; J.L. Mackie (1974), p. 46.

occurs is a composite process that involves *C*'s causing *N* and *N*'s grounding *e* (or something more complicated to the same effect). But if one says that this is a case in which *C* causes *e*, one must either reject the supposition found throughout the causation literature or else claim that non-causal relations—like grounding, constitution, and realization relations—can somehow be links in a causal chain. But both strategies, however, are implausible. (See Engelhardt forthcoming)

Perhaps, however, this strategy can be salvaged. An attractive feature of the second version sketched above was that it avoided explanatory competition by claiming that *C* and *N* are part of a single explanation. They do not offer independent explanations of *e*'s existence because they bring *e* into existence together. Perhaps there is a way to hold onto this claim without denying that *C* causes *e*. Perhaps one can accept that *C* and *N* both bring *e* into existence while still denying that *e* is brought into existence twice by claiming that *C*'s bringing *e* into existence is identical to *N*'s bringing *e* into existence. This is where the dependence between *C* and *N* becomes relevant. There may be some dependence relations 'tight' enough that if *A* so depends on *B*, then for at least some *C*, *A*'s bringing *C* into existence is identical *B*'s doing the same. Dependence like this would defuse any apparent competition between *A* and *B*—there would be only one competitor.

We can make the options available here vivid by supposing that there is a *brings into existence* relation; with our options made vivid, we'll be able to clarify the independence condition in **Competition** above. Quite plausibly, even if there is some dependence between *C* and *N*, they may still compete to bring *e* into existence just in case *C*'s bringing *e* into existence

is distinct from N's. On the other hand, if there is only one instance of bringing e into existence between C and N, then, again, there is only the one competitor. We might say, then, that mixed competition arises between N and C if (i) either N or C purports to bring e into existence and (ii) the instance of the *bringing into existence* relation that holds between C and e is distinct from that instance between N and e. Instances of the relation are distinct just in case they aren't identical and neither metaphysically grounds the other. Thus, if the relation between N and e *realizes* or *constitutes* that between C and e, then they are not distinct. Similarly, if the relations stand in the determinable-determinate relation or the parthood relation (as above), then they aren't distinct. And so on for other grounding relations. I don't claim that C and N don't compete in these cases, though, since I'm not offering a necessary condition on mixed competition. I claim only that the conditions above are sufficient. If N and C meet them, they compete. I'll argue below that the determiners of secondary effects do meet these conditions. Still, it may be that some values for C and N compete without satisfying the conditions given.

But while this is fine for the present case, it won't apply to explanatory competitions in which the explanans doesn't purport to bring the explanandum into existence. We might thus refer to explanations more generally: We might thus adopt the following condition on

[Competition₂] Mixed competition arises if (i) either N or C purports to be a *complete* explanation of e and (ii) N's explanation of e is distinct from C's.

I find this satisfactory for cases in which the explanation of e is some determination relation—i.e. for causal explanations, realizations, etc. I would like to withhold judgment about cases in which e is explained some other way, though. So let me put to one side non-determinative explanations. In determinative cases, the explanations are identical just in case there is one

determination relation that extends from something common to C and N to e. Jessica Wilson's account of mental causation uses this sort of strategy. It may thus provide the needed sort of solution.

According to Wilson, mental and physical properties are associated with causal powers, and the token powers associated with a mental property instance are a proper subset of the powers associated with the physical property instance that determines it. (Wilson 2012, 7-8) Thus, suppose a mental property instance M depends on a physical property instance P and both are associated with causal power 1. When power 1 is involved in bringing about some effect e, the causal relation is instantiated just once. Both M and P stand in that one relation. In this case, then, the relation between M and e is identical to that between P and e. So M and P do not compete.

Now, let me suggest that if there were two determination relations on Wilson's view, it would indeed commit to overdetermination. This won't show definitively that **Competition** accurately reflects our intuitions about explanatory competition, but should be suggestive. So, suppose the powers conferred by M and P are not token-identical but only type-identical. Continue to suppose that M depends on P, and let's add that each is instantiated by individual c. In this case, M confers one token of power 1 on c and P confers on c a distinct token of the same power-type. Now, if both tokens of power 1 are involved in bringing about some effect e, it seems that e is overdetermined. If at least one purports to fully account for e's existence, the other has no accounting to do. If causation is productive, then M's token of power 1 brings e into existence and P's distinct token of power 1 also brings e into existence. There are two

instances of bringing *e* into existence. But if *e* can't be brought into existence twice, then at most one of them can do the job. So we should take it that the two tokens of power 1 compete for it. Since the token powers act on behalf of their properties, this is tantamount to competition between the property instances, *M* and *P*.

Coming back to a secondary effect *e* determined by *C* and *N*, we should ask: could there be some dependence between *C* and *N* such that *C*'s bringing *e* into existence is indistinct from *N*'s? It's hard to see how this could be. If determination relations are partly individuated by their relata, then *prima facie*, the relation between *C* and *e* is not identical to that between *N* and *e*. After all, $C \neq N$. What one might hope, however, is that there is some way to give both *C* and *N* a common power or determiner, as Wilson did in having mental property instances share their token causal powers with physical property instances. If this determiner—call it *D*—belongs to both *C* and *N*, and if *D* determines *e* on behalf of both *C* and *N*, then *e*'s occurrence will be explained just once. So *C* and *N* won't compete.

One difficulty in pursuing this strategy is that *C* is a cause of *N*. Presumably, then, they occur at different times. If they occur at different times, it's dubious that they both have *D* at one and the same time. And yet, if *D* is to determine *e* on behalf of both, then when *D* brings *e* into existence, it must do so at a time when it is had by both. (Assuming that *D* brings *e* into existence "on behalf of" whatever possesses *D* at the time it determines *e*.) So it looks unlikely that *C* and *N* share a common determiner of *e*.

Alternatively, one might claim that it's the causal relation between *C* and *N* *itself* that determines *e*. In this case, there is indeed just the one instance of the *bringing into existence*

relation; it connects *e* to the causal relation between *C* and *N*. Thus, *C* and *N* would not compete to bring *e* into existence. But this view would also have to deny that *C* causes *e* and that *N* grounds *e*. If it were to accept either, then *e* would be brought into existence twice—once by the causal relation between *C* and *N* and once by either *C* or *N*. (And, as noted above, there's little hope of making good on the claim that *C* causes *e* 'through' *N*.) Moreover, this view seems to deny that each of *C* and *N* fully accounts for *e*'s existence. For neither suffices to determine *e*. It takes both. But if *N* doesn't fully determine *e*, then *e* isn't fully grounded in physical fundamentalia.

Finally, one might argue that although *C*'s bringing *e* into existence isn't *identical* to *N*'s, they are nonetheless indistinct. I don't want to foreclose this line completely, but it's difficult to see how it might work out. If *C*'s causing and *N*'s grounding are indistinct, then one constitutes or realizes or otherwise grounds the other. But as far as I know, there isn't an account of realization, constitution, or property-determination according to which *C*'s causing *e* might realize, constitute, or determine *N*'s grounding *e* (or vice versa). On most views, if *A* grounds *B*, then *B*'s existence depends on *A*'s. But while it may be that *N*'s existence depends on *C*'s, it doesn't seem that *N*'s grounding *e* depends on *C*'s causing *e*. Rather, it is supposed to be that *N* is fundamental, and *N*'s grounding *e* provides the fundamental physical explanation for *e*'s existence. If *N*'s grounding *e* gives the fundamental physical explanation for *e*'s existence, then there should be no explanation of *e*'s existence that is more fundamental. But if *e*'s grounding in *N* is, in turn, grounded in *C*'s causing *e*, then *C*'s causing *e* would be the more fundamental of the two determinations of *e*. It would be that *e*'s grounding in *N* is metaphysically explained by

C's causing e, and thus the explanation of e's existence that appeals to its cause, C, is more fundamental than that which appeals to its fundamental ground, N. Contrary to Physicalism, then, the fundamental physical explanations of e and other secondary effects would not be fundamental explanations. Such explanations, rather, would be grounded in causal explanations. This would be a strange view indeed.

Or, one might think that C's causing e is grounded in N's grounding e. First, note that while one might think that every causal relation depends on fundamentalia like N and their activities, this is immaterial here. The question is whether C's causing e is grounded in, specifically, N's grounding e. It doesn't answer this question to claim that C's causing e is grounded in relations *like* N's grounding e. Compare a standard case of overdetermination: two distinct shots seem to lead to the dictator's death. But instead of taking the shots to be the causes, suppose we ask whether the death is overdetermined by (A) one of the shots and (B) all the fundamental entities and activities that ground the other shot. It doesn't defuse the apparent competition between A and B to claim that A is grounded in things *like* B. The question is whether A's causing is distinct from B's.

The relevant question here, then, is: does N's grounding e ground C's causing e? The problem is that C causes N. So on this view, C brings N into existence, N grounds e, and N's grounding e grounds C's causing e. Prima facie, however, since N and e are not distinct (since N grounds e), C's causing e *just is* C's causing N. Suppose for instance that N and e stand in the determinate-determinable relation. If C causes the determinate property *being scarlet* to be instantiated, this causing is identical to C's causing the determinable property *being red* to be

instantiated. Similarly, suppose N constitutes e. If C causes the lump of clay to fall over, this is identical to C's causing the statue to fall over. But if C's causing N is identical to C's causing e, then on the present approach, N's grounding e is the grounds for the very causal relation that brings N into existence. N's existence would explain e's existence, then, and this explanation would in turn explain the determination of N's existence. This view would also be quite strange.

Thus, I take it that on any strategy where C is an immediate cause e, C and N compete.

5. Conclusion

The problem of secondary effects arises when one holds both that there are secondary effects and that there is no systematic overdetermination. One could avoid the problem, of course, by denying either of these, but it's unlikely that this is the most promising way out. Perhaps, rather, the best we can do is to deny the existence of secondary effects. As noted above, a view popular among philosophers of mind already seems committed to this. The view claims that C's bringing about e is a composite with 1 and 2 as parts: (1) C's causing N, (2) N's grounding e. If C's bringing about e is partly composed of N's grounding e, then C's relation to e has N's grounding as a part. If the C-e relation has N's grounding as a part, then the two are indistinct. If they aren't distinct, then the second condition in **Competition₂** is unsatisfied. Moreover, it's prima facie plausible that C and N do not compete in this case: N's grounding e is a link in the chain of determination that leads from C to e. We may still say that C explains e

in this case—perhaps ‘higher-level’ explanation remains intact—but we can’t say that *C causally* explains *e*. For, as argued above, secondary effects are uncaused on this view. Although one might say that *C* determines *e* indirectly, it is not true that *C* is a distal cause of *e*. If it were, then there would be a causal chain from *C* to *e*. But there isn’t. There’s a causal chain from *C* to *N*, but no *causal* link from *N* to *e*. If we’re to believe that causal chains may have non-causal links, we need convincing. Moreover, if we were to say that *C also* causes *e* immediately, then *C*’s immediate causing and *N*’s grounding would again compete. We seem stuck denying that secondary entities are also effects.

But this view is itself quite strange. For although secondary entities would be uncaused, they may themselves be causes. If *C* is a secondary entity, then it too should be uncaused, even though it causes *N*. So *C* and many other secondary entities would be uncaused causes. If secondary entities are uncaused, however, it would seem that none admits of causal explanation. If *e* isn’t causally explained, it isn’t causally explained by *C*. *C*’s explanation of *e*, then, seems to be limited to its role as a cause of *e*’s ground. But this is surely preferable to accepting that *e* is brought into existence twice or that *N* explains the existence of its own cause.

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¹ See, for example, Fine (1995), Schaffer (2008, 2009, 2012), Bennett (2011), Koslicki (2012).

² See Corkum (2008) for an argument that *grounding* makes sense of Aristotle's account of primary substances; see Schneider (2006) for a contemporary discussion of ground and substance.

³ See McLaughlin (1993), Loewer (1995), Sosa (1995), Kim (2000, 2008).

⁴ Consider, for instance, the view that where there appear to be ontological levels, there are in fact only "levels of description", so that (say) psychological and neurophysiological descriptions refer to the same entities, properties, and events. Such views must offer an account of what grounds the differences between the levels of description *without appealing to metaphysical differences* in what they describe. I won't argue here against the viability of projects like this; the point at hand is just that such approaches bear an additional explanatory burden: they cannot justify their divisions in levels of description by appealing to the intuitive claim that they track differences in the world described. (See, e.g., Heil 2003, Martin 2008.) Moreover, note that the problem posed here arises *whenever* some grounded particulars stand in causal relations. Thus, if one accepts reductivism in everyday ontology, morality, and the philosophy of mind, one may still face the problem if it is also accepted that, e.g., (i) events are grounded in properties and individual substances and (ii) events stand in causal relations. See the discussion of Kimian events in section 2.2.

⁵ See, for instance, Ehring (2003, 360); Witmer (2003, 204); Toner (2006, 551).

⁶ The idea is similar to that discussed briefly in Kim 1998, 42 and Kim 2003, 154.

⁷ To name just a few high profile examples, Karen Bennett, Jaegwon Kim, and Derk Pereboom have accepted both principles. Bennett accepts **Non-Overdetermination** in (2003) and (2008) with a qualification that the present problem respects (see 3.2, FN 10), and she accepts **Secondary Effects** in those same papers as well as in (2011). Kim's acceptance of **Non-Overdetermination** is well known (1989, 2000). As I point out in 2.2, he accepts **Secondary Effects** in claiming that, for example, events are *constituted* by properties, objects, and times, as in (1983). Pereboom (2002) accepts both principles with constraints on **Non-Overdetermination** that go no further than Bennett's do to defuse the problem under discussion here.

⁸ The metaphor probably originated with the same article that reinvigorated recent discussion of the problem of causal exclusion, Jaegwon Kim's "Mechanism, Purpose, and Explanatory Exclusion" (1989), where he says that he is interested in "situation[s] in which [causal] explanations with mutually consistent explanantia can yet compete against each other." (1989, 79)

⁹ In what follows, I will not be punctilious about distinguishing between either (i) causes and the causal explanations they back or (ii) grounds and the metaphysical explanations they underwrite. The conflation does not affect my argument (we can think of the 'competitors' as *either* the explaining facts *or* the determining worldly entities), and it makes the prose much less awkward.

¹⁰ Please note that for all I'm saying, there are many sources of mixed competition; I'm giving just one sufficient—but perhaps unnecessary—condition.

¹¹ Compare Kim's principle of explanatory exclusion: "No event can be given more than one *complete* and *independent* explanation." (Kim 1989, 79; emphasis in original)

¹² The qualification on Karen Bennett's acceptance of **Non-Overdetermination** mentioned in FN 5 is that the overdeterminers must be independent. Judging from what she has said in print, then, she would accept **Competition**.

¹³ Compare Schaffer (2004, 100) "To speak metaphorically, 'all God had to do' was to create the primarily real."

¹⁴ As exponents of this view, Wilson cites Dieks and de Regt (1998, 45): "[T]he physical state of the fundamental physical layers fixes the states of the higher levels."

¹⁵ Koslicki (2012) and Wilson (unpublished) discuss varieties of grounding/ontological dependence, but neither distinguishes between varieties that offer complete explanations and others, and neither Koslicki nor Wilson remarks on any difference in how abstracta and causally-embedded concreta are grounded.

¹⁶ See for instance Ned Block (2003, 135) "M can only cause M* by causing [M*'s 'vertical determiner'] P*"; Karen Bennett (2007, 326) "M₁ could cause M₂ by causing its supervenience base P₂ to be instantiated. It is independently plausible to think that this is the only way to cause a supervening property to be instantiated."; Ausonio Marras (2007, 310) "In order to cause M*, M must surely bring about the conditions upon which M* depends [i.e. P*]"; and, Sven Walter (2008, 676) "in order for M to cause M*, it must cause M*'s supervenience base P*".