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Causal Powers and the Necessity of Realization

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Abstract: Non-reductive physicalists hold that mental properties are realized by physical properties. The realization relation is typically taken to be a metaphysical necessitation relation. Here, I explore how the metaphysical necessitation feature of realization can be explained by what is known as “the subset view” of realization. The subset view holds that the causal powers that are associated with a realized property are a proper subset of the causal powers that are associated with the realizer property. I argue that the said explanation of the metaphysical necessitation feature requires a careful treatment of the relationship between properties and causal powers.

Non-reductive physicalism is typically understood as the view that mental properties are realized by physical properties. What counts as a case of realization is widely disputed.¹ According to a commonly-held view, realization is a relation between two properties, the realizer property *P* and the realized property *Q*, whereby something's having *P* somehow brings about its having *Q*. Surely, “brings about the instantiation of” is a predicate that can pick out many relations. What is distinctive about realization, according to the standard picture, is that such *bringing-about* is supposed to hold non-contingently and synchronically:

If *P* realizes *Q*, then, as a matter of *metaphysical* necessity, if *x* is a bearer of *P* at a time *t*, then *x* is also a bearer of *Q* at *t*.

On this understanding, if physicalism is true, insofar as *x* is a bearer of a physical realizer of a mental property *M*, there isn't anything that needs to be added to the intrinsic properties of *x* to make it the case that *x* has *M*. Thanks to taking realization as a metaphysical necessitation relation, we can easily distinguish a realization-based version of non-reductive physicalism from some non-physicalist views which also hold that mental property instances are brought about by physical property instances where such bringing-about holds only contingently.² It

¹ See Baysan (2015) for discussion of different accounts of realization.

² Noordhof (2003) persuasively argues for a related claim. As an example of such non-physicalist views, consider the view that phenomenal mental properties supervene nomologically, but not metaphysically, on physical properties (Chalmers 1996).

is not surprising then that many physicalist philosophers have taken realization to be a metaphysical necessitation relation.³

Before realization-based formulations of physicalism have become popular⁴, it was customary to understand physicalism in terms of supervenience. That is, physicalism was understood as the view that mental properties supervene on physical properties in some way or other.⁵ Many, including some early defenders of supervenience-based formulations of physicalism, have expressed their qualms about a supervenience-based formulation of physicalism with respect to its explanatory role. For example, Kim suggests that “the mere claim of mind-body supervenience leaves unaddressed the question what ... accounts for it” (1998, 13, emphasis deleted). Similarly, Heil argues that “[w]hen supervenience holds, the interesting issue is not that it holds but why it holds” (1998, 146, emphasis added). For similar reasons, Horgan (1993) maintains that physicalism should be formulated in terms of a relation that explains the supervenience of the mental on the physical in a physicalistically acceptable way, arguing that physicalists need “ontological supervenience that is robustly explainable in a materialistically explainable way” (ibid., 566). Now, if a realization-based formulation of physicalism is meant to be superior to its supervenience-based counterparts, it is reasonable to expect this formulation to illuminate psycho-physical supervenience. One way to ensure this is to take the realization relation itself to illuminate how a realized property is metaphysically necessitated by its realizer. I take these to support the following methodological claim: *a good theory of realization should provide the resources to explain how the instantiation of a realizer property metaphysically necessitates the instantiation of a property it realizes.*⁶ In what follows, I will examine what is sometimes called “the subset view” of realization (Wilson 1999, 2011; Shoemaker 2001; 2007) with this theoretical constraint in the background. In other words, I will examine whether the subset view has the resources to explain how realized properties are metaphysically necessitated by their realizers.

In a nutshell, the subset view holds the following

(S-Realization) A property P realizes a property Q if and only if the causal powers that are associated with Q are a non-empty proper subset of the causal powers that are associated with P .

As I shall argue, in order to understand how the subset view can explain the metaphysical necessitation feature of realization, we need to understand in what way properties can be associated with sets of causal powers. So, what is this association relation?

Sometimes, we see the use of the locution of a “power of a property”: the powers that are associated with a property P are those that are powers of P . But this is a misleading locution, as properties don’t have causal powers – their bearers do.⁷ There must be some relationship between P and the bearers of P that can explain why some causal powers of P ’s bearers are

³ E.g., Shoemaker (1981), LePore and Loewer (1989), Levine (2001), Melnyk (2006).

⁴ See Poland (1994), Melnyk (2003), Shoemaker (2007), Wilson (2011) for examples.

⁵ See Horgan (1982), Lewis (1983), Kim (1984).

⁶ See Morris (2010), Gibb (2014) and Baysan (2015) for related discussion.

⁷ See Baysan (2016, 386).

associated with P , whereas others are not. Can we appeal to “conferment” to explain this relation? That is, can we say that the powers that are rightly associated with P are the powers that P confers on its bearers? If P 's bearers have some other causal powers that are not conferred by P (but conferred by some other property), then those powers will not figure in the causal profile of P . However, the appeal to “conferment” is unhelpful. “Conferment” doesn't explain anything; it only gives a name to what needs to be explained.⁸ So, we need a precise formulation of the relationship that explains the association of properties with sets of causal powers. This relationship should play a central role in the understanding of realization according to the subset view. If so, then it is worth investigating what the subset view ought to say about how causal powers are related to properties.

In the discussions of the relationship between properties and causal powers, one central issue is whether there is a metaphysically necessary connection between properties and causal powers. Consider the following *necessity thesis* (NT):

(NT) For every (non-epiphenomenal) property F , there is a (non-empty) set of causal powers S such that, necessarily, any bearer of F has any causal power in S .

Whether NT is true is highly disputed. Dispositional essentialists, those who think that the causal profile of a property is essential to it, will have reasons to accept NT.⁹ Categoricalists, who hold that properties are non-dispositional and hence could enter in different causal laws in nomologically different worlds, and Humeans, who deny metaphysically necessary connections, will deny NT.¹⁰ I don't aim to settle whether NT is true; what I want to do here is to examine what relationship NT bears to the subset view.

If NT is true, then the association of properties with sets of causal powers can be understood as follows: the causal powers that are rightly associated with a property P are those that are the members of the set that is necessarily connected to P in the way specified in NT. Is this how the defenders of the subset view ought to understand the relationship between properties and causal powers?

One prominent defender of the subset view, Jessica Wilson (2011), holds that the subset view can be defended independently of anything along the lines of NT. Wilson argues that the subset view has no commitments whatsoever to any view about the relationship between properties and their causal profiles. She claims that “even a Humean categoricalist may endorse a powers-based account of realization and associated subset strategy” (ibid., 133). Humean categoricism is a view according to which all properties are categorical (non-dispositional) and the relationship between a property and its causal profile is contingent. Wilson argues that such views about properties are compatible with the subset view because even if there are non-causal features of properties, they are not relevant to the issues that a view about realization should be concerned with. Such issues are about the formulation of physicalism and the explanation of mental causation. If there are non-causal features of properties, they will not figure in the explanations regarding the formulation of physicalism or mental causation.

⁸ Thanks to an anonymous referee for helpful discussion about this point.

⁹ See Shoemaker (1980) and Bird (2007).

¹⁰ See Armstrong (1997), Lewis (1986).

In the same work in which she argues for this claim, Wilson takes realization as (at least) a *nomological* necessitation relation (ibid., 124). It is sensible to think that in order to explain the nature of a nomological necessitation relation, one doesn't have to endorse theses about the profiles of properties in all *metaphysically* possible worlds. The modal strength of the necessitation feature of realization that I am interested here, however, is metaphysical. So, my discussion will not target Wilson as much as it targets the subset view understood as a view about a metaphysical necessitation relation.¹¹

Let's call the thesis that the subset view (in the stronger, metaphysical, sense) is not committed to any theory about properties and their relationship with causal powers *the independence thesis*. In what follows, I will give reasons to suspect that the independence thesis is false. I believe that NT, or something along the lines of it, needs to be held in order to explain the metaphysical necessitation feature of realization.

Given that non-reductive physicalism requires the metaphysical necessitation of the mental by the physical and that realization is purported to occupy this role, if the subset view is to be viably used by non-reductive physicalists, then it should explain how realizer properties metaphysically necessitate the properties they realize. However, unless certain commitments are made, the subset view cannot explain the metaphysical necessitation feature of realization.¹²

Let us, for the sake of illustration, specify two properties *P* and *Q*, and two associated sets of causal powers:

P: {cp1, cp2, cp3}
Q: {cp1, cp2}

As far as (S-realization) is concerned, *P* realizes *Q* because {cp1, cp2} is a subset of {cp1, cp2, cp3}. It is sensible to think that *if* metaphysical necessitation is a feature of realization and the subset view is true, then *P* metaphysically necessitates *Q* because {cp1, cp2} is a subset of {cp1, cp2, cp3}. However, although having cp1, cp2 and cp3 necessitates having cp1 and cp2, we need an explanation of why having *P* necessitates having *Q*.¹³ What we need is an explanation along the following lines:

- (i) Having *P* metaphysically necessitates having cp1, cp2, and cp3.
- (ii) Having cp1, cp2, and cp3 metaphysically necessitates having cp1 and cp2.
- (iii) Having cp1 and cp2 metaphysically necessitates having *Q*.
- (iv) *Therefore*, having *P* metaphysically necessitates having *Q*.

¹¹ It is worth noting that Wilson is sceptical about the nomological-metaphysical distinction, at least as far as broadly-scientific properties are concerned.

¹² Here, I want to stress that the point that I am making is entirely different from the point that McLaughlin (2007; 2009) makes against Shoemaker (2003b; 2007) regarding the notion of backward-looking causal features of properties. McLaughlin's discussion doesn't address the subset view, but it addressed the conjunction of two theses that Shoemaker once held (e.g. 2003b; 2007) and does not hold anymore (see Shoemaker 2013). This is a side issue, and due to considerations of space, I am not able to articulate on this in this short piece.

¹³ Similar remarks are made by Melnyk (2006, 140-141) and Kim (2010, 108).

Since (ii) is analytically true, the viability of (i)-(iv) hinges on (i) and (iii). In order to make sense of (i) and (iii), we need to invoke principles that tie instantiations of properties to the causal powers that are associated with those properties.

Let us start with (i). There doesn't seem to be any thesis that can explain the relationship between P and cp1, cp2, and cp3 other than NT. If having a property metaphysically necessitates having some given causal powers, NT must be true.

What about (iii)? This step seems to require something other than NT. NT explains how having a property metaphysically necessitates having some causal powers. For (iii), we need the converse of this:

(NT*) For every (non-epiphenomenal) property F , there is a (non-empty) set of causal powers S such that, necessarily, any object that has the causal powers in S is a bearer of F .

It is difficult to see how the metaphysical necessitation feature of realization can be explained by the subset view unless NT and NT* are true. So, it seems to me that the independence thesis outlined above is false: a precise characterisation of the relationship between properties and causal powers is required if one wants to explain the realization relation in terms of properties and causal powers.¹⁴

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¹⁴ This article is a descendent of a paper entitled “With Power Comes Realizability” dating back to 2013. I am grateful to anonymous referees and the editor of this journal for their comments on the most recent version, as well as Sören Häggqvist and José Gusmão Rodrigues for their comments on the original version in 2013. This publication was made possible through the support of a grant from the John Templeton Foundation. The opinions expressed in this publication are those of the author and do not necessarily reflect the views of the John Templeton Foundation.

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