

Comments on Susse, "The Multiple Realization Argument"  
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Non-reductive physicalism is, broadly speaking, the view that mental properties are genuinely realized in physical structures, but that mental properties cannot be reduced to or explained in terms of physical properties, and so, that psychology cannot be reduced to physics. One popular motivation for non-reductive physicalism has been that it allows for the multiple realization of mental properties.

The "multiple-realization argument" for non-reductive physicalism is that since psychological properties are realized in disparate physical properties, psychology is not reducible to physics.

Susse argues that each of four challenges to the multiple realization argument fail to demonstrate the falsity of non-reductive physicalism. The thought is that we can reject (the soundness of) the multiple realization argument while still embracing a form of non-reductive physicalism: non-reductive physicalism does not entail the soundness of the multiple-realizability argument. Susse goes on to deflect an argument that advocacy of multiple-realizability commits one to reductive physicalism.

I will focus for the most part on Susse's first response to this "disjunctive move". Although she is right that simply citing connections between mental properties and disjunctive physical properties does not count as a full-fledged reduction of the mental to the physical, this move reveals facts that point us in the direction of such a reduction (along the lines of what is suggested in Kim (1984, section V)).

Susse's claim is that what she calls "metaphysical reductionism" fails to pose a threat to the non-reductive physicalist.

Metaphysical reductionism is cashed out as the thesis that:

An A-family of properties is metaphysically reduced to a B-family of properties iff there are nomologically necessary bi-conditional bridge connections between every property *a* in the A-family and some, perhaps complex, property *b* in the B-family.

Susse points out in footnote 14 that strong supervenience entails metaphysical reduction given multiple realization. If we understand physicalism as involving at least the acceptance of strong supervenience of the mental on the physical, then the

non-reductive physicalist, as Susse allows, is committed to a form of metaphysical reductionism. That is, if for each mental property,

necessarily, for each  $x$ , if  $x$  has some mental property  $a$ , then  $x$  has some physical property  $b$ , and necessarily, for each  $y$ , if  $y$  has  $b$ ,  $y$  also has  $a$ . (where we interpret "physical property" so as to allow for anti-individualism about the mental),

then given multiple realization the mental property  $a$  is necessarily equivalent to the disjunction of all the  $b$ s that necessitate  $a$ .

The charge is that accepting this kind of metaphysical reducibility commits one to a form reductionism because it allows for a translation of the mental into purely physical vocabulary. That is, it satisfies Nagel's criteria for intertheoretic reduction: explaining the reduced theory amounts to deducing the reduced theory from the reducing theory along with necessary bridge laws that we are committed to in virtue of metaphysical reduction.

Susse correctly points out that most contemporary philosophers should reject what Block (1997) also calls the "widespread positivist assumption" that such deduction is necessary and sufficient for explanation. But it may still be that such deduction is explanatory when it helps us to "systematize and unify our understanding of the world." The question is then whether statements of strong supervenience or metaphysical reduction help us to do that.

This might be thought a question about whether it's plausible to think that what we get at the level of the reducing theory counts as anything like a law. That is, are the connections between distinct disjunctive physical properties that realize different psychological states (a) plausibly regarded as lawlike, and (b) illuminating as regards the psychological laws? If so, reductionism seems plausible; if not, psychology remains autonomous.

Block (1997) argues that the answer is "yes" and "no", and I agree. Take an example of a particular psychological law,  $M1 \Rightarrow M2$ . Suppose that  $M1$  is realized by a simple disjunction of physical properties,  $P1$  or  $P1'$ , and that  $M2$  is realized by  $P2$  or  $P2'$ . Block claims that if there are two sorts of cases in which the psychological law holds---the unprimed and the primed cases---then we can explain one case of the psychological law by appealing to the physical law  $P1 \Rightarrow P2$ , and the other case by

appealing to  $P1' \Rightarrow P2'$ . That is, each case of  $M1 \Rightarrow M2$  can be explained by a lower level law.

But is this a genuine reduction of the psychological law to the physical law? In a sense, it is---if we have explained each "implementation" of the psychological law in terms of the physical, then we've succeeded in reducing it. But Fodor rejects just the claim that  $(P1 \text{ or } P1') \Rightarrow (P2 \text{ or } P2')$  amounts to a systematizing and unifying connection that could count as a law because the disjunctive properties that it invokes are not properly considered physical *kinds*. The question then becomes whether disjunctive physical properties count as kinds that could license nomologically necessary connections, such as  $(P1 \text{ or } P1') \Rightarrow (P2 \text{ or } P2')$ , as laws.

I certainly agree that such disjunctions or kinds and connections or laws don't serve the purposes of developing a physical science that attempts to describe the physical world in the simplest, most complete terms, but it may be that they count as perfectly acceptable physical properties that figure in perfectly accurate descriptions of the progressions of physical systems. Such descriptions may themselves be further explained in terms of more basic physical kinds and laws, but they seem to do much of the work that a reduction requires.

One reasonable point of view is that to ask for more is to raise the bar on reduction. David Lewis (1994) says:

Yet thousands say that what's good about stating materialism in terms of supervenience is that this avoids reductionism! There's no hope in settling this disagreement by appeal to some uncontested definition of the term 'reductionism'. Because the term *is* contested, and the aim of some contestants is to see to it that whatever position they may hold, 'reductionism' shall be the name for something else.

But I don't think that this is all that the non-reductive physicalist is up to. I agree with Susse that the disjunctive move does not *by itself* commit one to reductionism, because I think there is another sense of 'explanation' in which strong supervenience or metaphysical reduction does not, *all by itself*, meet what might be counted as reasonable epistemological expectations for explanation (again, cf. Kim (1995, V)).

However, once we recognize what seems to be a clear explanatory desideratum, we see the sort of explanation that might meet it and thereby commit one to reductionism.

In a recent paper, Ralph Wedgwood (2000) has argued that the disjunctive move (Kim's claim that if being in mental state M strongly supervenes upon physical properties, then being in M requires having some physical property that necessitates pain; and so the property of being in M is necessarily equivalent to a disjunction of all the physical properties that necessitate pain) fails to show that a given mental property M is reducible. This is because, on his conception of reduction, giving an *account* of what it is to have a mental property in entirely non-psychological terms requires more than just specifying a property definable in physical or topic-neutral terms that is necessarily coextensive with the mental property. Since not every such specification counts as reduction---in light of the necessary coextensiveness of properties like *being blue* and *having the property that is actually now my favorite color*---we should require not just that the equivalence can be explained in terms of contingent truths (such as that currently my favorite color is blue), but that it either be one of the fundamental necessary truths about the property in question or that it can be explained on the basis of such fundamental necessary truths. Wedgwood's account of reducibility is thus as follows:

A mental property is physically reducible just in case (i) it is necessarily equivalent to some physical property, and (ii) this necessary equivalence is either a fundamental necessary truth about the mental property, which needs no further explanation, or at least a truth that can be explained purely on the basis of such fundamental necessary truths.

Now, Wedgwood correctly points out that even if (P1 of) the disjunctive move is correct, there are many specific supervenience (or realization) facts that cry out for explanation. It would indeed be surprising if there were lots and lots of brute and inexplicable facts akin to:

necessarily, for all x, if x has P, then x has M;

and

necessarily, for all x, if x has P', then x has M.

Such a body of facts also hardly seems like the kind of thing that could help us to systematize our knowledge. The disjunctive move is only a step in that direction.

But suppose that such modal truths can be explained on the basis of more fundamental truths, perhaps, as Kit Fine (1994, 1995, 2002) has suggested, in terms of essences, or as Christopher Peacocke (1997, 2002a, 2002b) has suggested, principles of

possibility. Then, plausibly, explaining the specific supervenience facts could be a matter of deriving them (and the metaphysical connections between physical and mental properties) from more fundamental modal truths. Wedgwood suggests truths concerning "the natures or essences" of the physical properties and the relevant mental properties are candidates for such truths concerning modality which themselves hold necessarily. The idea is that we should arrive at fundamental modal truths that do not themselves require explanation (on the model of the "presumption of possibility" principle), from which other modal facts, such as specific supervenience facts, follow.

So suppose that the specific supervenience facts can be derived from fundamental necessary truths about the relevant mental properties, such as those that guarantee that a physical property meeting certain physical conditions (the "M-necessitating conditions") necessitates the mental property M, which themselves might require explanation in terms of other more basic necessary truths. If each case of M-necessitating can be explained in terms of necessary truths about when a physical property meets the M-necessitating physical conditions, then it is the M-necessitating conditions that determine whether a physical property can realize M.

But if we explain each of the specific necessities just in terms of fundamental necessary truths about M, then we have explained how something has M just in case it has "the complex physical property of having some physical property that meets one of these physical conditions" (Wedgwood (2000)), and the fundamental necessary truths about the M-necessitating conditions serve to unify the disjunction. If the "fundamental necessary truths about [M] imply that [M] is necessarily equivalent to this complex physical property" (Wedgwood (2000)), then it is plausible that the necessary equivalence has been explained in terms that what's required of an account of the mental property in terms of the non-mental.

And now we have something that goes beyond just metaphysical reduction. We have explained the metaphysical reductions to disjunctive physical properties in terms of more fundamental metaphysical modal facts and principles. And this explanation appears to count as something that provides the epistemological force that the intertheoretic reduction requires. On the other hand, the non-reductive physicalist is left with scores of modal facts---specific supervenience facts and metaphysical reduction facts---that are themselves left unexplained and unexplainable.

## References

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