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WHY INDEED? PAPINEAU ON SUPERVENIENCE

By TIM CRANE

DAVID PAPINEAU'S question, 'Why Supervenience?' [5], is a good one. The thesis that the mental supervenes on the physical is widespread, but has rarely been defended by detailed argument. Believers in supervenience should be grateful to Papineau for coming to their aid; but I think they will be disappointed in the argument he gives. In what follows, I shall show that Papineau's argument for supervenience relies on a premiss that is either trivial or as contentious as supervenience itself.

Papineau opens his case for supervenience by rehearsing a well-known argument for the token identity of the mental and the physical. Token identity is consistent with supervenience, but it does not entail it, though many philosophers (notably Davidson [2] p. 214) do believe both doctrines. But Papineau claims that the principle that underlies this argument — the 'completeness of physics' — can be used to motivate supervenience.

The argument for token identity is this. Suppose a token mental occurrence, Ψ^c , has a token physical effect, Φ^c . All physical effects have some physical causes too; so Φ^c must have some token physical cause, Φ^c . However, if this is so, then either Φ^c is causally overdetermined by two separate causes (Ψ^c and Φ^c), or Ψ^c must be in some sense the same cause as Φ^c . Since there is no causal overdetermination, we are obliged to conclude that Ψ^c and Φ^c are identical (or Φ^c 'realizes' Ψ^c , or 'constitutes' Ψ^c — variations I shall ignore here).

The argument only yields this conclusion if there is a threat of overdetermination. And obviously, overdetermination will only arise if Ψ^c and Φ^c each completely determine (or completely determine the chance¹ of) Φ^c . However, it is questionable whether Papineau can help himself to the assumption that Φ^c completely determines Φ^c . All he says when expounding the argument is that

¹ I will follow Papineau ([5], p. 67) in ignoring indeterminism, which is not to say I think it is irrelevant — see [1], pp. 205–6.

as well as sometimes being attributable to mental causes, 'physical effects are also attributable to physical causes' ([5], p. 66). But what the argument needs is the stronger claim that physical effects are always attributable to physical causes *alone*. But what entitles Papineau to this claim, in advance of his conclusion that Ψ^c and Φ^c are identical? (Cf. here E. J. Lowe's [4] criticism of Peacocke [6].)

After all, the argument as it stands leaves us another option: we could say that the causation of Φ^c by Ψ^c is a counterexample to the claim that Φ^c *alone* determines Φ^c (cf. [3], pp. 47–9). We could therefore say that Φ^c is determined by Ψ^c in addition to Φ^c . And we could say in general that the existence of causal interaction between the mental and the physical shows that not all physical effects are entirely determined by physical causes. So effects like Peacocke's ([6], p. 134) example of someone withdrawing their hand from a hot kettle, or Papineau's example of Eric Bristow throwing a dart, will be determined by purely mental causes (pains, beliefs and desires) as well as physical ones. I shall not argue for this position here; for the purposes of this note, I only need the assumption that it is coherent. (But see [1] §3 for more details.)

Papineau doesn't consider this response to the argument because of his commitment to the above-mentioned principle of the *Completeness of Physics* (CP for short):

(CP) All physical events are determined . . . entirely by prior physical events according to physical laws. ([5], p. 67)

It is this principle on which the above argument for token identity depends, since it obviously entails that that Φ^c alone determines Φ^c . But Papineau also thinks that supervenience can be derived from CP, via the principle of *No Independent Causal Powers* (NICP for short):

(NICP) Whenever any mental event causes another event, it does so entirely in virtue of its physical features, in the sense that in the context the effect is fixed entirely by the physical features of the mental cause. ([5], p. 67)

Papineau argues that CP entails NICP, as follows. If a mental cause Ψ^c has a physical effect, Φ^c , then by CP, Φ^c is entirely determined by prior physical events according to physical laws. So Ψ^c must have physical properties, and it must be in virtue of these properties that Φ^c occurs.² Hence NICP. If, on the other hand, Ψ^c

²It is important to Papineau's whole argument, despite what he suggests at [5], p. 66, that he takes causes and effects to be particulars (i.e. events in Davidson's sense). For how do we make sense of the physical properties of a mental *fact* being responsible for its effects? It is, for instance, a fact that I believe that Papineau is wrong about supervenience. But how can this fact *have* mental (or any other) properties? The belief is a mental property of a particular (me), not of any *fact*.

has a mental effect, Ψ^e , then if this Ψ^e has some physical effect, Φ^{e*} , Φ^{e*} must be wholly determined by physical features of Ψ^e . But these physical features in turn must, by CP, be wholly determined by physical features of Ψ^e 's cause, Ψ^c . Hence NICP. (Papineau does not consider the case where Ψ^c has no — mediate or immediate — physical effects, since he is only concerned with the mental insofar as it affects the physical. Epiphenomenalism is therefore untouched by his arguments.)

Papineau then argues that NICP entails supervenience. NICP means that two situations which share all their physical features, but differ mentally, must have exactly the same effects. But, he claims, a difference that has no possible causal manifestation is 'no difference at all' ([5], p. 67). So if two situations differ in the causal powers of their mental features, they will differ physically. Hence supervenience: no mental difference without a physical difference.

I shall not challenge the validity of Papineau's argument. Instead, I shall question his appeal to CP. Why should anyone who disbelieves supervenience believe CP? Papineau does not say. But surely he should: as I said above, it is possible to hold that physical effects are sometimes determined by mental as well as physical causes. Those who hold this view would deny that all physical effects are completely determined by physical causes. So they would no more accept CP than they would supervenience. It would therefore be premature for Papineau to take CP as an axiom; what independent argument can be offered on its behalf?

What CP says is that if any event is physical, it is entirely determined by physical events in accordance with physical laws; what this means depends on what 'physical' means. Suppose that an event is physical just in case it has properties that figure in physical theories. As Papineau notes ([5], p. 70), this presents a dilemma. Either 'physical' in CP refers to present physics, or it refers to the physics of the future. It cannot refer to present physics, since presumably present physics is neither complete nor (entirely) true. But if it refers to the physics of the future, then we cannot now rule out the possibility that some future complete physics will include mental properties and laws (see [1], p. 188).

Papineau's way out of this dilemma is to define 'physics' purely in terms of completeness, and so avoid any contentious assumptions about current or future physics. He says that for the purposes of his argument, 'physics' means 'the science of whatever properties are needed for a complete set of laws covering such effects as stones falling, darts hitting boards etc.' ([5], p. 70). This conception of physical science I shall label 'PHYSICS', so as not to confuse it with the more modest present-day activity carried out in our universities and factories, which I shall label '*physics*'.

The same would apply to Kim's conception of events as instantiations of properties, which are really facts by another name.

PHYSICS will be a science of all the laws and properties that are needed to explain paradigmatically physical effects (such as stones falling etc.). Defined in terms of PHYSICS, CP says that all paradigmatically physical events are entirely determined by other PHYSICAL events according to PHYSICAL laws. A PHYSICAL event is one that falls under PHYSICAL laws; a PHYSICAL law is one that incorporates PHYSICAL properties; and a PHYSICAL property is a property that is needed for a complete set of laws covering paradigmatically physical effects. Understood in terms of PHYSICS, therefore, CP is true by definition.

But thus understood, CP does not rule out *mental* properties and laws from being PHYSICAL. For suppose that to completely explain Eric Bristow's dart hitting the board, we need to refer to mental properties (his beliefs, desires and intentions) and the laws under which they fall. Then these properties and laws will be PHYSICAL. However, if this is so, Papineau's arguments for token identity and supervenience will lose their bite, since they depend on CP not applying to the mental. For if mental properties are needed in such a complete explanation, then they will be PHYSICAL by definition. Thus there will therefore be no mental difference without a PHYSICAL difference, since the mental will just be PHYSICAL. But these claims are trivial, and plainly not what Papineau wants to establish.

To avoid this trivial result, Papineau must show why PHYSICS will not incorporate mental laws and properties. Towards the end of his paper, he considers the possibility that a complete PHYSICS will include psychology, the science of the mental. But he dismisses it on the grounds that it is unlikely:

It is one thing to hold that the categories of current physics are going to be superseded. It is quite another to hold that they are going to be superseded (*inter alia*) by mental categories. ([5], p. 70)

But this response implicitly conflates *physics* with PHYSICS. PHYSICS incorporates all the laws and properties needed to explain events like stones falling etc. This definition does not say whether the sciences PHYSICS thus includes will *supersede* any particular current sciences. Of course, it is unlikely that mental laws and properties will supersede anything in *physics*. But this is not the issue. The issue rather is whether they will be *part* of PHYSICS: whether they will be needed to explain physical events like Bristow's dart throwing. And plainly, psychology could be a part of PHYSICS without invading or superseding *physics* at all.

So the claim that PHYSICS is complete is trivial, and entails no interesting supervenience thesis. And the claim that *physics* is complete is plainly false. But perhaps Papineau should say that it is neither PHYSICS nor *physics* that is supposed to be complete. Perhaps the science of which CP is true is neither the complete theory of everything, nor current physics, but something in between. This

science may be something like an ideal theory of the uncontroversially purely physical. The idea is this: take all the phenomena about whose *physical* status there is no dispute. Suppose there to be a theory, resembling current physics, that gives all the laws and properties needed to account for all these phenomena. Then the claim that this theory is complete is the claim that its laws and properties suffice to account for, or 'fix', *all other* phenomena, including mental and behavioural phenomena. Since this science takes its starting point from *physics*, I'll call it 'ideal-*physics*'.

This ideal-*physics*, unlike PHYSICS, will not be complete by definition; its completeness is not supposed to be an a priori thesis. What support, then, can be given to CP, defined in terms of ideal-*physics*? I anticipate an answer along the following lines. Ideal-*physics* includes micro-sciences — the sciences of the very small. Everything in spacetime has parts which are the subject matter of these micro-sciences. So everything in spacetime has *physical* parts. The wholes which these parts constitute are dependent on their parts, in the sense that if you 'take away' the parts, you 'take away' the wholes. It may then be said that what happens to an object's *physical* parts *determines* what happens to the whole object — if God fixes the state of the *physical* parts, he need do no more to fix the state of the whole. CP emerges, therefore, as a consequence of the fact that ideal-*physics* will include micro-sciences, coupled with the view that facts about micro-parts determine facts about wholes.

This view about the relation between the micro and the macro, and its application to physics, is certainly open to question (see [1], §2). But I cannot question it within the confines of this note. All I need to point out here is that the idea that the micro determines the macro, and its supposed consequence that the *physical* determines the non-*physical*, must be understood in terms of the idea that the behaviour of the micro-parts is *sufficient* for the behaviour of the macro-whole. But this idea now looks remarkably similar to the idea that there is no macro difference without a micro difference. And since the micro is by definition the *physical*, this claim just becomes a version of supervenience. So whatever one thinks of this macro-micro story, it clearly cannot constitute an independent argument for supervenience. Even in its most plausible version, therefore, Papineau's CP principle rests on something very close to the controversial thesis it is meant to support — supervenience.

I conclude that either 'physics' in CP means PHYSICS, in which case CP is trivial; or its means ideal-*physics*, in which case CP is as controversial as supervenience. In fact, I know of no sound, non-question-begging argument for supervenience, and it clearly has little or no empirical support. And, as Hugh Mellor and I have shown elsewhere, there are strong arguments against the doctrine, derived from some of the assumptions of current physics (see [1],

§5). When we consider all this, it is remarkable that Papineau (and many others) consider supervenience ‘intuitively obvious’ ([5], p. 69). If what I have said here is right, then neither supervenience nor the non-trivial reading of CP should recommend themselves to intuition. After all, we do have a folk psychological explanation of (e.g.) Eric Bristow’s action, rough-hewn as it may be. But we have no complete *physical* explanation of this action, nor of any other. So why do Papineau’s intuitions tell him that the former explanation, which works perfectly well, is essentially dispensable in favour of the latter, which does not exist?³

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³I am grateful to Peter Smith for useful discussion of this topic.

THE REASON WHY: RESPONSE TO CRANE

By DAVID PAPINEAU

IN ‘Why Supervenience’ [1] I argued from the completeness of physics (CP) to the thesis of no independent causal powers (NICP) and thence, via the assumption that any difference must show up in a difference in effects, to the supervenience of the mental on the physical.

Tim Crane [2] generously grants the validity of this argument, but is unhappy about the first premiss, CP. CP says that ‘all physical events are determined (or have their chances determined)