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## *Microphysicalism without Contingent Micro-macro Laws*

PHILIP PETTIT

In 'A Definition of Physicalism' [6], I sought to avoid an old dilemma for physicalism to which Tim Crane and Hugh Mellor [3] have recently given their support. Physicalism says, in their words, that the empirical world 'contains just what a true complete physics would say it contains'. The alleged dilemma is that physicalism is obviously false if 'physics' means 'actual physics', and that it is trivially true if it means 'ideal physics'. I argued that if we see the world as layered in different levels of composition, and if we identify the microphysical realm with the realm of subatomic (or whatever) levels, then we can define physicalism quite straightforwardly. Physicalism – better, perhaps, microphysicalism – is the doctrine that actually (but not necessarily) everything non-microphysical is composed out of microphysical entities and is governed by microphysical laws: and this, in a sense which means that the non-microphysical facts supervene contingently on the microphysical; more on supervenience later. Such a microphysicalist approach has no truck with talk of ideal physics and it only requires us to believe that actual physics is on track in postulating a microphysical realm, not in any matters of detail. On the face of it, the approach sails right through the horns of the dilemma.

In a reply to my paper, Tim Crane [2] does not discuss this apparent capacity of the microphysicalist strategy to avoid the older dilemma. But he directs attention to a different challenge, and one that he may well consider more important.<sup>1</sup> He suggests that 'if the macro and micro levels are systematically connected' – systematically but contingently connected, as in the microphysicalist picture – 'then the connections between them

<sup>1</sup> He makes other points too but generally the important ones are not independent of those raised here. The exception may be his claim that even if microphysicalism were true, this would not establish in the sense intended by him and Mellor that the empirical world 'contains just what a true complete physics would say it contains', for the microphysicalist admits that there are many entities in existence that will not be postulated in an explicit way by the true microphysics, or by physics of any variety. I think that the existence of entities that are not explicitly postulated is no problem, provided that their existence is suitably entailed by that microphysics: more on such entailment below. But if he chooses to understand physicalism and microphysicalism in the more demanding manner, then I can give a different name to the doctrine I attempted to define. And he also opposes that doctrine, as his main challenge makes clear.

will be laws', in particular contingent laws ([2], p. 227). Indeed he thinks that if the realms are systematically connected in this way, then it is 'obvious' that they are connected by contingent laws. But by his lights a connection via contingent laws would give the lie to microphysicalism. For 'since these laws are obviously not part of physics (non-trivially understood), they will not be physical laws – statements of these laws will mention irreducible mental properties. So there is room for the non-physicalist to argue that the physical-mental connections are just more non-physical laws, which undermines any non-trivial version of physicalism' ([2], p. 227). The supposed obviousness of the need for contingent laws, plus the alleged obviousness of the fact that these laws are not part of physics, means by Crane's lights that there is still 'no question of physicalism': non-trivial versions of the doctrine are obviously false.<sup>2</sup>

Even if this argument were thought to be persuasive – I do not address that matter here – I believe that there is no room for its deployment against microphysicalism. For it is demonstrable that the micro and macro realms can be connected systematically and contingently without any contingent micro-macro laws.

Suppose that it is logically possible for two-dimensional shapes to be made up by dots or by continuous lines or by both but that actually they are always made up by dots. The connection between the way the dots are in the actual world and the way the shapes are is contingent, in the sense that by introducing shape-making lines we could keep the dots-configuration but still change the shapes-configuration.<sup>3</sup> Equally, the connection between the ways the dots are and the way the shapes are is systematic, since in the absence of lines there is no way of keeping the dots unchanged without keeping the shapes unchanged, no way of changing the shapes without changing the dots. But the connection between the dots and the shapes does not involve contingent laws. It is not as if things might vary so that a given array of dots would make a different shape.

What is the connection between the dots-configuration in the actual world and the shapes-configuration? The dots-configuration does not entail the shapes-configuration, since two worlds that maintain the dots

<sup>2</sup> My aim in this paper and in [6] is to show that physicalism is neither trivially true nor obviously false. I endorse physicalism in [7].

<sup>3</sup> As I am using the phrases here, the way the dots are in the actual world is changed if extra dots are introduced and, similarly, the way the shapes are is changed if extra shapes are introduced; this is plausible to the extent, for example, that if you change the number of dots or shapes, you change the way the dots or shapes are. Nothing substantial hangs on the point but it is as well to make it explicit. A similar point applies to my way of speaking of the microphysical and non-microphysical way that things are in the actual world and of the microphysical and non-microphysical facts.

may not maintain the shapes, if the worlds differ in regard to lines: the extra lines may go to make up more and different shapes, even if they do not interfere with the dot-shapes. But something close to this entailment holds. For example, any two worlds that satisfy the actual dots-story and that are line-free will also satisfy the actual shapes-story. Imagine constructing two worlds by doing all that is required to replicate the dots in the actual world, and nothing else besides, including nothing in regard to lines; imagine, that is, constructing 'minimal' dot-duplicates of the actual world (Jackson [4]). Such duplicates are bound also to satisfy the actual shapes-story. In other words, if any two worlds satisfy the actual dots-story and if that story represents an adequate specification of them – if, being minimal dot-duplicates, the worlds involve no objects or properties other than those ascribed by that story or constituted in some way by the objects or properties ascribed by that story – then they will also satisfy the actual shapes-story.

I described the relation between the actual dots-story and the actual shapes-story as close to an entailment. It is close in this sense, that while the actual dots-story does not entail the actual shapes-story, the actual dots-story combined with the claim that there are no lines about or that the story is an adequate world-specification – this, in the sense explained – does entail the actual shapes-story; it gives us all that is needed to make the second story true (Jackson [4]). The connection involved here will be more familiar under the name of 'contingent supervenience': the contingent supervenience of the actual shape-facts on the actual dot-facts (Lewis [5]). One of the features marked by describing the supervenience as contingent is that the subvenient facts fix or entail the supervenient only under a certain contingency: the contingency, in our example, that there are no lines around or that the dots-story is an adequate world-specification.<sup>4</sup> The actual facts about the dots are sufficient to ensure the actual facts about the shapes, given the relevant contingency; fix the dot-facts and, under that contingency, the shape-facts come for free.

This example, however fanciful, is sufficient to show that systematic and contingent relations, in particular relations of contingent supervenience, need not involve contingent laws. The dot-facts fix the shape-facts, under

<sup>4</sup> The other feature marked by describing the supervenience as contingent is that while the subvenient-facts-under-the-relevant-contingency necessarily fix – that is, entail – the supervenient facts, it is contingent that they and not some other facts are the actual facts; thus it is contingent, for example, that the actual dot-facts-in-the-absence-of-lines, whatever those facts are, necessarily fix the very shape-facts that obtain in the actual world. (It will not be contingent, on the other hand, that they fix the actual shape-facts, whatever those facts are). I am grateful to Frank Jackson for discussions about this.

the contingency that there are no lines about or that the dots-story is an adequate world-specification. It is contingent, then, that the dot-facts fix the shape-facts. But that does not mean that the dot-facts contingently fix the shape-facts, in the sense that it is by courtesy of a contingent law that they fix them. To put the matter in a slogan, *fixing under a contingency is not contingently fixing*. That Socrates dies fixes it that Xanthippe becomes a widow, under the contingency that they were married at the time of his death. But Socrates' death does not contingently fix the widowing of Xanthippe; it is not as if the effect follows only by grace of a contingent law.

Back now to the microphysicalist claim. I say that according to the microphysicalist there is a systematic and contingent connection between the way things are in the microphysical realm and the non-microphysical way things are. As I put it in my paper, 'once the microphysical conditions and the microphysical laws have been fixed then' – as a contingent matter – 'all the crucial features of a world like ours will have been fixed; viz., all the other laws that obtain at the world, all the conditions – all the initial conditions – that engage those laws and all the things that happen in accordance with the laws' ([6], p. 219). Crane thinks – and indeed thinks it obvious – that the systematic and contingent connection alleged must involve contingent laws and that there is an opening therefore for his anti-physicalist argument. But he is wrong. According to the microphysicalist picture that I described, the actual microphysical facts fix the actual non-microphysical facts under the contingency, perhaps *inter alia*, that there is no spooky stuff around – such spooky stuff would correspond to the continuous lines in my analogy – or under the contingency, more generally, that the actual microphysical story is an adequate world-specification. But that does not mean that the microphysical facts contingently fix the non-microphysical facts; it does not mean that they fix those facts by grace of a contingent law.

How does Crane come to make the mistake alleged? He appears to think that there are only two possible options when it comes to explaining how non-microphysical laws and other facts allegedly depend on microphysical: they may be 'logically derivable' or they may be derivable via contingent laws. He thinks that 'they are not of course' logically derivable ([2], p. 227)<sup>5</sup> and so he is driven to the contingent-laws explanation. He simply overlooks the possibility that other philosophers register with talk

<sup>5</sup> In making this remark, incidentally, he quotes me as rejecting the reducibility of macro-laws (Crane [2], p. 227). But what I reject is only effective human reducibility. As I put it in my paper, 'a physicalist need not imagine that it is going to be possible for human beings, at least under some idealisation of their capacities, to reduce macro-laws to microphysical conditions and regularities' (Pettit [6], p. 219).

of contingent supervenience: the possibility, in my phrase, that the micro-physical facts fix the non-microphysical under a certain contingency; the possibility that in this sense the supervenient facts come for free. Further evidence for his overlooking that possibility is that in an earlier article, he comments as follows on the alleged dependence of the psychological (a part of the macro) on the physical (and ultimately the microphysical): 'the most natural explanation of the contingency of psychophysical supervenience is that the supervenience dependencies are in fact laws, and so do not hold at all worlds' ([1], pp. 240–41)<sup>6</sup>. But however natural he finds this explanation, it is not the only explanation available; and it is certainly not the explanation that defenders of contingent supervenience – my micro-physicalist among them – should want to endorse.<sup>7,8</sup>

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- [7] Philip Pettit, *The Common Mind: An Essay on Psychology, Society and Politics* (New York: Oxford University Press, 1993).

<sup>6</sup> Crane [1] actually rejects supervenience; see pp. 242–43.

<sup>7</sup> The explanation adopted by Crane may seem to derive support from Jaegwon Kim's anti-Davidson argument that supervenience dependencies are laws: this, perhaps mistakenly, since Kim allows that the laws may be necessary (see Crane [1], p. 242). The explanation may also be nurtured by an incautious reading of David Lewis ([5], p. x) on the contingency of various forms of supervenience. Lewis resorts to talk of the inner sphere of possibility in explaining the contingency and that may easily suggest an association with natural laws: these are often taken to identify a (distinct) sphere of relatively close worlds.

<sup>8</sup> My thanks to David Armstrong, Dave Chalmers, Frank Jackson, Cathy Legg, David Lewis, Brian McLaughlin, Peter Menzies, John O'Leary-Hawthorn, Jack Smart, Peter Smith and Galen Strawson for discussion of related matters. I owe an especial debt to Jackson [4].