

Supervenience is nothing modal

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Abstract

I argue that determination, the intuitive notion motivating attempts to capture technical notions of supervenience, is not usefully analysed in modal terms: all modal characterisations of determination on the market share some important drawbacks and face counterexamples. In a second, positive, part, I articulate a non-modal concept of determination: instead of explaining it in terms of modal covariance, I explain it in terms of essential ties between properties, taking the determinate/determinable relation as my paradigm case. Essence, not modality, is our clue to determination.

1. Here is what Robert Stalnaker (1996: 87, 89) says about the “intuitive ideas that motivate the attempts to articulate concepts of supervenience”:

“To say that the *A*-properties or facts are supervenient on the *B*-properties or facts is to say that the *A*-facts are, in a sense, redundant, since they are already implicitly specified when one has specified all the *B*-facts. *A*-facts are not facts ‘over and above’ the *B*-facts, not something ‘separate’. To state an *A*-fact, or ascribe an *A*-property, is to describe the same reality in a different way, at a different level of abstraction, by carving the same world at different joints.”

“The concept of supervenience is supposed to be a concept that helps to isolate the metaphysical part of a reductionist claim – to separate it from claims about the conceptual resources and explicit expressive power of theories we use to describe the world.”

In recent discussions, attempts to articulate this intuitive idea – which I will call “determination” – have usually tried to spell it out in modal terms: determination has been explained as a kind of modal covariation. Kim (1990: 140) identifies three key features of our concept of supervenience: covariance, dependency and non-reducibility (where “non-reducibility” means that the supervenience of *A*-features on *B*-features is consistent with the former not being reducible to the latter).

2. But all modal characterisations of determination on the market share some important drawbacks and face counterexamples. In particular, I’ll identify three problem areas:

1. Modal covariance is symmetrical: not only do properties of the singleton {Socrates} supervene on those of Socrates, but also do properties of Socrates supervene on those of his singleton. However, determination is (usually, at least) one-way: the way Socrates is determines the way his singleton is, not the other way round.
 2. It has proven very difficult to adequately capture the contingency of many determination claims: there are strong reasons to believe that quantifier restriction, which is the only option for those identifying determination with modal covariance, is in principle inadequate for this task.
 3. We have cases of determination which cannot be explained as cases of modal covariance: we talk of the supervenience of the modal upon the non-modal, of the dispositional upon the categorical, of wholes upon their parts and of God’s creation upon God; none of these claims can be adequately cast as a claim of modal covariance.
3. Modal covariance is not sufficient for determination because it may or may not hold in virtue of a grounding relation. Weak supervenience is not sufficient because it does not capture relational dependencies (the property of being among the tallest things weakly supervenes on height but is not determined by it) and does not support counterfactuals. Strong supervenience is not sufficient because it is symmetric in cases where determination is not (e.g. the surface area of a sphere determines its volume, and not conversely), while cardinality of worlds globally supervenes on every set of properties whatsoever.

4. Modal covariance is not necessary for determination, which is often contingent. Contingent determination, however, cannot be accounted for in terms of quantifier restriction, which is the only available option for the modal covariantist. Both Lewis and Jackson want to say that Descartes is wrong, but they do not want to say that he is necessarily wrong. We might be Cartesian egos, but we are not:

“Materialism is meant to be a contingent thesis, a merit of our world that not all other worlds share. Two worlds could indeed differ without differing physically, if at least one of them is a world where Materialism is false.” (Lewis 1983: 35)

“...physicalism is not a claim about every possible world, but only a claim about *our* world to the effect that its physical nature exhausts all its nature.” (Jackson 1998: 11)

To account for this feature, many analyses of e.g. materialism/physicalism – the thesis that everything qualitative is determined by the physical – have characterised it as modal covariance across a restricted range of possible worlds, i.e. in terms of conditional necessity:

“Among worlds where no natural properties alien to our world are instantiated, no two differ without differing physically; any two such worlds that are exactly alike physically are duplicates.” (Lewis 1983: 37)

“Any world which is a minimal physical duplicate of our world is a duplicate simpliciter of our world, where a minimal physical duplicate is what you get if you ‘stop right there’.” (Jackson 1998: 12)

As Hawthorne (2002: 112, fn. 8) has remarked, the two accounts are not equivalent, at least assuming an indexical reading of ‘actual world’ in Lewis’ criterion. Lewis’ but not Jackson’s account rules out a scenario where we have two worlds in which no alien properties are exemplified, which are not minimal duplicates of the actual worlds, but which are physical duplicates, though not duplicates simpliciter, of each other.

5. Lewis’ and Jackson’s definitions, however, do not capture what the physicalist wants to say. They oblige him to claim that the world about which Descartes is right is not a *physical* duplicate or contains *alien* properties. But the physicalist does not have to burden Descartes with these extra claims. What he and Descartes disagree about is whether the actually existing link between brain- and mental states is a determining one; both can agree that in some other possible world it might be absent, without there being extra properties of either the physical nor the mental kind. For Descartes asserted no such thing: he is not committed to the claim that a world where we are Cartesian egos differs in its distribution of *physical* properties, nor to the claim that in such a world properties are exemplified that are not exemplified in the actual world.

6. Having concluded that modal covariance is neither necessary nor sufficient for determination, I articulate in a second, positive, part, a non-modal concept of determination, explaining it in terms of essential ties between properties, taking the determinate/determinable relation as my paradigm case. Essence, not modality, is our clue to determination.

7. If we think of the qualitative characteristics of (actual and possible) things as locations within a property-space of as many dimensions as they are respects of independent variation among properties, the determination relation is topological inclusion with respect to that space. The determinable is literally ‘composed out’ of its determinates. The supervenience of the determinable on its determinates is then accounted for in robust ontological terms.