# The Supervenience Argument, Levels, Orders, and Psychophysical Reductions

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**Abstract:** Kim's so-called "Supervenience Argument" is one of the most important arguments against nonreductive physicalism, the position that dominates current philosophy of mind. Kim has formulated various versions of this argument since the late eighties, and in his latest book (Kim 2005), he has defended it against various criticisms that have been raised by his opponents. The current paper assesses Kim's response to one of the most important criticisms, the so-called "Generalization Argument" according to which, if sound, the Supervenience Argument would not only show that there is no mental causation, but also that there is no biological, no chemical, no geological causation etc.

*Nonreductive physicalism* (NRP) dominates current discussions of the mind-body problem. According to NRP, all scientifically respectable entities which are not straightforwardly identical to physical entities are at least (asymmetrically) *dependent* upon physical entities, for instance by *supervening* upon them. Jaegwon Kim has argued for decades that NRP collapses either in epiphenomenalism, or in reductive physicalism. The punch line of his famous *Supervenience Argument* (SA) is that if mental properties

indeed supervened upon physical properties without being reducible to them, then they would be causally otiose; since epiphenomenalism is absurd, mental properties must thus be reducible to physical properties.

SA is one of the most important arguments against NRP. Kim has formulated various versions since the late eighties, and in Kim (2005), he has defended it against various criticisms. The current paper assesses Kim's response to one of the most important criticisms, viz., the *Generalization Argument* according to which, if sound, SA would not only show that there is no mental causation, but also that there is no biological, no chemical, no geological causation etc.

## 1. The *Supervenience Argument*

Suppose that (an instance of; I will omit this qualification from now on) mental property *M* causes mental property *M**. Given psychophysical supervenience, there must be a physical property *P** which is (non-causally) sufficient for *M**. Why does *M** occur? Given supervenience, as long as *P** is there, *M** will be there, no matter what happened before—even if *M**'s alleged cause, *M*, had not been present (Kim 1998, 42). According to Kim, if *M* is to cause *M**, it must do so by causing *P** (Kim 2005, 40). Hence, mental-to-mental causation is possible only if mental-to-physical causation is possible; yet, it seems, the latter is possible only if mental properties are reducible to physical properties. The reason is that *P** will also have a sufficient completely physical cause *P*, since the physical world is assumed to be causally closed. But then, how can *M* cause *P**, if *P* (which is allegedly distinct from *M*) is already a sufficient cause of *P**? If *P* is a sufficient cause of *P**, then there seems nothing left for *M* to do, unless *M* is

identical to *P* (barring genuine overdetermination). The alternative is thus: "reduction or causal impotence" (Kim 2005, 54). NRP is no longer a serious option.

## 2. The Generalization Argument

It has been argued that the argument just sketched cannot be sound since, if so, it would render all macroproperties causally impotent (Block 2003). What deprives mental properties of their causal status, according to SA, it is said, is their relationship to physical properties, viz., *supervenience without reduction*, and it seems that all macroproperties stand in this relationship to the properties below them in the micro-macro-hierarchy. Hence, if sound, SA would generalize, rendering all macroproperties causally otiose. This, Kim's critics allege, shows that it cannot be sound.

## 3. A *Reductio* of What?

Kim's first response is to stress that SA is intended as a *reductio*. Epiphenomenalism concerning mental properties is the absurdity that allegedly forces us to give up the irreducibility of mental properties. Hence, if this epiphenomenalism would indeed cover all macroproperties, that would only add to the force of SA because it would provide "us with one more reason to perform a *reductio* against the irreducibility premise" (Kim 2005, 69).

Yet, although one thing to dismiss as a result of the *reductio* is the irreducibility premise, another one obviously is Kim's assumption that *M* and *P* cannot *both* be causes

of *M**, and from the point of view of Kim's opponents, it is *this* assumption that is reduced to absurdity.

## 4. Levels, Orders, and Supervenience

Kim's second response draws on a distinction between *levels* and *orders* (Kim 1998). There are, he said, two kinds of macroproperties: higher-*level* and higher-*order* properties. SA does not apply to higher-*level* properties because they do not supervene upon lower-level properties. And since most higher-*order* properties can be *reduced* to lower-order properties, SA does not apply to them either. The only macroproperties threatened are *irreducible higher-order properties*, and since phenomenal properties of conscious experience are the only properties of this kind, the *Generalization Argument* fails.

Two issues are important here: *supervenience* and *reduction*. This section tackles supervenience, section 6 reduction.

SA, Kim claimed, would apply to higher-*level* properties only if the subvenient/supervenient distinction mirrored the relation between fundamental and higher-level properties, and this is not the case. A property's *level* depends upon what object it is a property of—properties of objects with parts are higher-level properties, properties of objects with no parts are fundamental properties. Yet, since supervenience is necessarily a relation between properties of the same objects, it only generates an *intra*level hierarchy of lower- and higher-*order* properties. Higher-level properties, in contrast, are *structural* or *microbased* properties of the form $R(P_1o_1, \ldots, P_no_n)$ which do

not supervene upon the properties $P_1$, …, $P_n$, and the relation $R$ that make up their microbase. Therefore, SA does not apply to them (Kim 2005, 57).

In an earlier paper, Kim himself characterized a relation between properties of objects in domains $D_1$ and $D_2$ that are coordinated by a mapping relation $R$ such that for each object $x$ in $D_1$, $R/x$ is the image of $x$ in $D_2$ (Kim 1988, 124). However, if $R$ is the part/whole relation, his characterization amounts to an *inter*level notion of *mereological supervenience* between the properties of wholes and those of their parts. The result is that SA would apply to higher-level properties, too.

## 5. Determination

What prevents a microbased property $P$ from being causally preempted by other properties? $P$ cannot be preempted by the structural property $R(P_1o_1, \ldots, P_no_n)$, because it is *identical* to it (Kim 1998, 117–118). But what prevents $P$ from being preempted by the (appropriately related) properties $P_1$, …, $P_n$? Kim's answer is that microbased properties are not *determined* by the properties in their microbase:

> We clearly cannot think of $P_1$, …, $P_n$, and $R$ taken together as determining $P$. For to say that the properties 'determine' $P$, in the usual sense, is to say (at least) that necessarily any object that has them has $P$. But this condition is at best vacuous in the present case: an object that has $P$ cannot be expected to have any of the $P_i$s or $R$. The reason of course is that the $P_i$s are the properties of the object's proper parts, and $R$ is a relation, not a property. (Kim 1999, 117)

Hence, microbased properties fail to be determined by the properties in their microbase for the same reason they allegedly fail to supervene upon them: they are exemplified by distinct objects. And just as in the case of supervenience, the question is why a notion of determination which restricts determination to properties of the same object is the (only) correct notion to adopt. There seems to be a straightforward sense of "determines" in which microbased properties *are* determined by the properties in their microbase: a table's having a mass of ten kilograms (Kim's example) seems to be determined by its consisting of a six kilo top and a four kilo pedestal. (For further, more detailed, discussion see Walter 2008.)

## 6. Reduction

What remained to be addressed after section 4 was the possibility of an *intra*level causal drainage, where the higher-order properties at each level are preempted by the first-order properties of that level. Kim's response was that higher-order properties immune against SA because they are reducible, and where there is only one property, there can be no competition, and thus no preemption: "Reduction is the stopper that will plug the cosmic hole through which causal powers might drain away" (Kim 2005, 68).

But how are these reductions to be accomplished? Kim (1998) held that most higher-order properties are reducible by means of *functional reductions* (Kim 1998, 98–99), so that each level contains (except for a few non-functionalizable exceptions like phenomenal properties) strictly speaking only first-order properties. Allegedly, this dissolved the problem of intralevel causal drainage.

Kim (2005) still defends the functional account of reduction, but he seems to have abandoned the explicit distinction between orders and levels, arguing that reduction is also the key to stopping inter*level* causal drainage:

> Let us say that the property of being $H_2O$ is the total micro-based property of water at the atomic level L (so having $M_L$ = being $H_2O$). So we have:
>
> (1) Being water = having $M_L$.
>
> At the next level down, L-1, say the level of the Standard Model, hydrogen atoms have a certain microstructural composition as do oxygen atoms, and water has a certain microstructural composition at this level; call it $M_{L-1}$. Then by the same reasoning that led us to (1), we have:
>
> (2) Being water = having $M_{L-1}$.
>
> At the level L-2, the one below the Standard Model (if there is such a level), water is again going to have a certain microstructure at this level; this is $M_{L-2}$. We then have:
>
> (3) Being water = having $M_{L-2}$.
>
> And so on down the line, to $M_{L-3}$ and the rest. These identities in turn imply the following series of identities:
>
> $M_L = M_{L-1} = M_{L-2} = M_{L-3}$ ….
>
> *Voilà!* These are the identities we need to stop the drainage. (Kim 2005, 68–69)

### 6.1 Reduction and Higher-*level* Properties

One problem with Kim's attempt to block causal drainage by appeal to reductions is that microbased properties seem to have "multiple compositions" (Block 2003, 146). Kim says the table's having a mass of ten kilograms is the microstructural property of being composed of a six kilo top and a four kilo pedestal, but it seems that the table could have the *same* property in virtue of being composed of a five kilo top and a five

kilo pedestal. This raises two problems. First, if microbased properties are multiply composable or realizable, the multiple realizability of mental properties does not seem to prevent them from being microbased properties in Kim's sense. Second, the identities Kim appeals to in order to stop causal drainage would be impossible: "Kim's plugging the draining with micro-based properties depends on assuming identities (such as 'water = $H_2O$') and multiple composition will exclude such identities" (Block 2003, 146).

In response, Kim insists that multiple composability does not preclude identities:

> First, in spite of jade's multiple composition, each instance of jade … is either jadeite or nephrite, and I don't see anything wrong about identifying *its* being jade with *its* being nephrite (if it is nephrite) or with *its* being jadeite (if it's jadeite). … All we need is identity at the level of instances, not necessarily at the level of kinds and properties … [Second, we can; S.W.] … identify jade with a disjunctive kind, jadeite or nephrite (that is, being jade is identified with having the microstructure of jadeite or the microstructure of nephrite). … On the disjunctive approach, being jade turns out to be a causally heterogeneous property, not a causally inert one. … To disarm Block's multiple composition argument, adopting either disjunctive property/kind identities or instance (or token) identities seems sufficient. (Kim 2005, 58–59)

First, if token-identities can secure the causal efficacy of jade, despite its multiple composability, then why can they not secure the causal efficacy of irreducible mental properties, despite their multiple realizability? If all we need is identity at the level of instances, not necessarily at the level of kinds and properties, then where is the problem for NRP? Second, one wonders why Kim thinks he himself can have instance-identity without type-identity. After all, for him property-instances are events, whose identity conditions entail that the instances are identical only if the types are identical.

Concerning Kim's second option, suppose that being jade is identical to a disjunction of two microstructural properties. Given what Kim acknowledges elsewhere, the causal powers of the properties in the two microbases that form the

disjunction determine the causal powers of being jade. Ascribing these properties to an object thus exhaustively fixes its causal potential, so that nothing is left for being jade to do, *even though it is identical* to a disjunction of two microstructural properties. Although being jade cannot be preempted by the disjunction of the two microstructural properties to which it is identical, it can still be preempted by the individual disjuncts.

Can multiply composable microbased properties be *functionally reduced*? No, because functional reductions are a non-starter for microbased properties, given that they are *eliminative*—as Kim has admitted in Kim (1998, 106), the property that is functionally reduced doesn't survive the reduction process.

Hence, the causal efficacy of multiply composable microbased properties can neither be vindicated by disjunctive identities, nor by token-identities, nor by functional reductions.

### 6.2 Reduction and Higher-*order* Properties

What about Kim's original suggestion that functional reductions can secure the causal efficacy of higher-*order* properties? As said above, functional reductions are *eliminative*. A functionally reduced property *F* has to be given up as a genuine property which can be exemplified in different species, and we retain only the predicate "*x* has *F*" and the concept *F* by which we equivocally pick out different properties in different species (Kim 1998, 106). It is thus a red herring to think that functional reductions can vindicate the causal efficacy of *the properties reduced*, because these get sundered into many different species-specific properties during the process of reduction. It is *these* that are identical to first-order properties. Hence, even if inter*level* causal drainage could

somehow be stopped, *they*, i.e., the first-order properties at each level, would be the only causally efficacious properties. If this is the only kind of causally efficacious property that the proponent of SA can protect from her own argument, her position will hardly look attractive—and definitely not like "a plausible terminus for the mind-body debate" (Kim 2005, 173).

## 7. References


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