Hare's Supervenience Revisited and Re-explicated

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0. Explaining the title

The title of my talk is "Hare's Supervenience Revisited and Re-explicated". It is in no sense meant as an obituary. As you may know, Richard M. Hare died on the 29th of January this year.

Many times it has been said that although the term supervenience entered modern philosophy in 1952 with Richard M. Hare's book *The Language of Morals*, the idea of supervenience was introduced thirty years earlier in George Edward Moore's paper "The Conception of Intrinsic Value". I have no qualms about such a description, but since I find Hare more clear than Moore, I will primarily try to explicate Hare.

Apart from issues of clarity, the essential difference between Moore and Hare is that whereas Moore applies the idea of supervenience to value properties, Hare applies it to evaluative words. According to Moore, non-natural properties like *being good* and *being beautiful* supervene on natural properties; according to Hare, evaluative words like 'good' and 'beautiful' have a supervenient character in relation to purely descriptive words.

This difference is still part and parcel of the literature concerned with the supervenience relation. There is one group of philosophers who prefer to discuss the supervenience relation when its relata are entities like words, concepts, predicates or theories; and there is another group who prefer relata like properties, relations or states of affairs.

Normally, I belong to the latter group. For instance, I am interested in the supervenience relation as a relation that is relevant to the mind-body problem. My re-explication of Hare, however, is intended to be independent of what kind of relata the supervenience relation takes. First, I will show that well-known modern definitions of supervenience are not at all true to Hare's original idea. Then, I will point out that Hare's idea of a supervenience relation, now rightly understood, is, Hare notwithstanding, very interesting also when its relata are realistically conceived properties.

1. Desiderata of supervenience

Below, you can find a list of proposed desiderata of supervenience that I have assembled from the supervenience literature.

1. Supervenient properties are determined by their base properties.
2. Supervenient properties are dependent on their base properties.
3. An entity has supervenient properties in virtue of its having base properties.
4. Base properties underlie supervenient properties.
5. Base properties realize supervenient properties.
6. Descriptions of base properties do not entail descriptions of supervenient properties.
   (the non-entailment requirement)
7. Supervenient properties cannot possibly exist without being connected to base properties.
   (the existential dependence requirement)
8. A supervenient property may have different base properties.
   (the multiple realizability requirement)
9. If two entities have the same base properties, then necessarily they have the same
   supervenient property; or, base property indiscernibility entails supervenient property
   indiscernibility.
   (the indiscernibility requirement)
10. If two entities have different supervenient properties, then necessarily they have
    different base properties; or, supervenient property difference entails base
    property difference.
    (the converse indiscernibility requirement)

Because of my interests in ontological realism, I have chosen to formulate all the proposed desiderata with properties as the relata of the relation. I have presented the list mainly in order quickly to create associations in your minds. However, before I take the list away, I would like you to try to memorize especially desiderata number 6, 7 and 9. These desiderata I call the *non-entailment requirement*, the *existential dependence requirement*, and the *indiscernibility requirement*, respectively.

Note that the desiderata 9 and 10 are logically equivalent. Both of them entail that there cannot possibly be a many-to-one relation between a supervenient property and the corresponding base properties. A one-to-many relation is allowed by both of them, but it is made into a requirement only by desideratum 8; a desideratum which represents the so-called *multiple realizability* of supervenient properties.

With respect to mind-body supervenience, desideratum 8 says that the same kind of mental property can be borne by different kinds of neural properties. However, often when in overviews it is spoken of "the core idea of supervenience", this requirement of multiple realizability is neglected. Therefore, I will leave it out of account, too. Usually, it is only the covariation spelled out in desiderata 9 and 10 that is called the core idea of supervenience; it says that base property indiscernibility entails supervenient property indiscernibility, or, alternatively, that supervenient property difference entails base property difference.

Since, in my opinion, this requirement is only part of Hare's core idea, I have given it another name. I call it the *indiscernibility requirement*.

As far as I can see, there can be no doubt that Hare put forward both desideratum 6 and desideratum 9. Below, you find two quotations from *The Language of Morals*.

The non-entailment requirement:
"it is not the case that there is any conjunction C of descriptive characteristics such that to say that a man has C entails that he is morally good." (*The Language of Morals*, Oxford University Press: London, 1969, p. 145)

The indiscernibility requirement:
"Suppose that we say 'St. Francis was a good man' It is logically impossible to say this and to maintain at the same time that there might have been another man placed in precisely the same circumstances as St. Francis, and who behaved in them in exactly the same way, but who differed from St. Francis in this respect only, that he was not a good man." (ibid.)

In a paper called exactly "Supervenience", presented in 1980 (published 1984 in *Aristotelian Society Supp.* vol. 58, pp. 1–16), Hare presented some second thoughts on supervenience. In this paper, I would say, it is even clearer than in *The Language of Morals* that he regards the non-entailment requirement as being one of two requirements on supervenience.

2. David Armstrong and David Lewis

Perhaps here, in this room, no one doubts that Hare put forward a non-entailment requirement on supervenience and, by so doing, made his term 'supervenience' by definition connected to non-reductionist positions. However, at least two very prominent analytic philosophers, David Armstrong and David Lewis, have put forward definitions of supervenience that completely neglect Hare's non-entailment requirement.

Of course, they are free to do so, but I think they should have made it clear to their readers that their concepts of supervenience differ essentially from Hare's concept. Armstrong's concept, but not Hare's, fit reductionist positions; and Lewis' concept is in fact neutral with respect to issues of reductionism versus non-reductionism.

The brief presentation of Armstrong's and Lewis' concepts of supervenience that I will now put forward is a summary of a paper "Critical Notice of Armstrong's and Lewis' Concepts of Supervenience" that I have recently published in *SATS – Nordic Journal of Philosophy* (no. 1, 2002).

Armstrong defines supervenience for entities in general. His definition in *A World of States of Affairs* looks as follows:

"We shall say that entity Q supervenes upon entity P if and only if it is impossible that P should exist and Q not exist, where P is possible" (*A World of States of Affairs*, Cambridge University Press: Cambridge, 1997, p. 11),
and
"supervenience in my sense amounts to entity P entailing the existence of entity Q" (ibid.).

Two observations can easily be made. First, all entities that conform to Armstrong's definition of supervenience conform to Hare's indiscernibility criterion, too. If Q Armstrong-supervenes on P, then necessarily if two particulars have the same base entity P they have the same supervenient entity Q, too.

Secondly, no entity that conforms to Armstrong's definition can possibly conform to Hare's non-entailment criterion. In order to apply the term 'supervenient entity', Armstrong requires entailment whereas Hare requires non-entailment.

Armstrong's concept of supervenience is wholly distinct from Hare's concept. Their extensions cannot have one single entity in common. That follows from the definitions, and both Armstrong and Hare stick to their definitions when they give examples.

If it could be shown that mental properties supervene in Armstrong's sense on material properties, then it would be adequate to say that mental properties have been reduced to material properties; since then the mental properties are entailed by material ones. On the other hand, if it could be shown that mental properties supervene in Hare's sense on material properties, then it would be adequate to say that mental properties have been shown not to be reducible to material properties. Mental properties could then not possibly be entailed by material properties.

Next, Lewis' concept. He defines supervenience in the following way:

"To say that so-and-so supervenes on such-and-such is to say that there can be no difference in respect of so-and-so without difference in respect of such-and-such" (*Papers in Metaphysics and Epistemology*, Cambridge University Press: Cambridge, 1999, p. 29).

"Supervenience means that there could be no difference of the one sort without difference of the other sort. Clearly, this 'could' indicates modality" (*On the Plurality of Worlds*, Basil Blackwell: Oxford, 1986, p. 15).

Whereas most writers on supervenience are using formulations like 'base entity indiscernibility entails supervenient entity indiscernibility', Lewis is mostly using formulations like 'supervenient entity difference entails base entity difference'. He is not using the indiscernibility requirement

(desideratum 9), but the logically equivalent converse indiscernibility requirement (desideratum 10).

As you can see, Lewis does not in his definition take Hare's non-entailment requirement into account. The indiscernibility requirement, which for Hare is merely one of two requirements on supervenience, becomes for Lewis the whole definition.

With respect to Lewis-supervenience, I want you to note one thing. If it is shown that a certain kind of entity is Lewis-supervenient on another kind of entity, then this fact tells neither for nor against reduction, since if the entity in question is Lewis-supervenient it can be either a case of reductionist Armstrong-supervenience or a case of non-reductionist Hare-supervenience.

3. Jaegwon Kim and Double-Modal Supervenience

Now I will leave Armstrong and Lewis for quite another strand of definitions of supervenience, namely the kind of definitions that usually figures in conferences and anthologies dedicated specifically to the supervenience relation. As a typical representative, I have chosen Jaegwon Kim. Mostly, in this tradition, the proposed definitions consider the supervenience relation to be a relation that relates *sets* of something. Kim, usually, has as relata of the supervenience relation *sets of properties*.

If Lewis' definition is reformulated to fit this tradition, it would look as written down in my definition of the concept "single-modal supervenience" below. It will soon become clear why I want to stress that it contains only one modal operator:

Single-modal supervenience
a set of properties S supervenes on a set of properties B, if and only if, *it is necessary that*: any two individuals x_1 and x_2 that have the same properties in B have the same property in S.

Before I continue, I would like to add that Armstrong and Lewis seem never to have bothered themselves with the question how, in fact, Hare defined his concept of supervenience. But Kim has, and I guess that is one reason why he has never put forward such simple definitions as those of Armstrong and Lewis.

In Kim's latest book, *Mind in a Physical World* (1998, p. 9) he is using a concept of supervenience, or strong supervenience, which can be given the following general form:

Double-modal supervenience
a set of properties S supervenes on a set of properties B, if and only if, *it is necessary that*: (for any S_j, if x_n has S_j, then there exists a base property B_i such that x_n has B_i, and *it is necessary that*: (any x that has B_i has S_j)).

Kim's definition, in contradistinction to Lewis' definition, contains two modal operators. Since both operators can be interpreted as being either some kind of logical necessity or some kind of nomological necessity, we have in effect four different definitions:

(a) nomological-nomological supervenience
a set of properties S supervenes on a set of properties B, if and only if, *it is nomologically necessary that*: (for any S_j, if x_n has S_j, then there exists a base property B_i such that x_n has B_i, and *it is nomologically necessary that*: (any x that has B_i has S_j)).

(b) logical-logical supervenience
a set of properties S supervenes on a set of properties B, if and only if, *it is logically necessary that*: (for any S_j, if x_n has S_j, then there exists a base property B_i such that x_n has B_i, and *it is logically necessary that*: (any x that has B_i has S_j)).

(c) nomological-logical supervenience
a set of properties S supervenes on a set of properties B, if and only if, *it is nomologically necessary that*: (for any S_j, if x_n has S_j, then there exists a base property B_i such that x_n has B_i, and *it is logically necessary that*: (any x that has B_i has S_j)).

In relation to these first three definitions, Hare would, I think, have said the following. Nomological-nomological supervenience is too weak, whereas both logical-logical and nomological-logical supervenience are too strong. The first concept is too weak since every supervenience relation should essentially contain some kind of logical relationship, and the latter two concepts are too strong because the covariation that is spoken of (any x that has B_i has S_j) should not in itself be this logical relationship. Hare is in fact very strict on this last point (see his paper "Supervenience", pp. 9-11).

What then about the fourth definition?

(d) logical-nomological supervenience
a set of properties S supervenes on a set of properties B, if and only if, *it is logically necessary that*: (for any S_j, if x_n has S_j, then there exists a base property B_i such that x_n has B_i, and *it is nomologically necessary that*: (any x that has B_i has S_j)).

Logical-nomological supervenience cannot from a Harean point of view be dispensed with as easily as the other three double-modal definitions can. Of course, 'nomological' has here to be understood in such a way that it can qualify more than the laws described by the natural sciences. In order to fit Hare's example of supervenience, it has to be allowed to qualify descriptions of connections between values and value-making characteristics, too. But as far as I am concerned, such a use of 'nomological' is no problem.

The problem, as I see it, is that not even this more complex definition is true to Hare's simple *categorical non-entailment* requirement. That requirement has been replaced by a kind of *hypothetical nomological* requirement that is weaker than Hare's requirement.

4. Triple-modal supervenience

Having noted this, however, we can in a very simple way amend Kim's definition. We can just add Hare's categorical non-entailment requirement to Kim's double-modal definition, and then investigate what such a more complex definition may contain. Obviously, the new definition will contain three modal operators. It looks as follows:

Triple-modal supervenience
a set of properties S supervenes on a set of properties B, if and only if, (i) for any B_i, *it is logically possible that*: there exists an x such that $B_i x$ and, for all S_j, not-$S_j x$, and (ii) *it is logically necessary that*: (for any S_j, if x_n has S_j, then there exists a base property B_i such that x_n has B_i, and *it is nomologically necessary that*: (any x that has B_i has S_j)).

(S is a variable for sets; S_j is a variable for elements in the set S; B is a variable for sets; B_i is a variable for elements in the set B; x is a variable for individuals/particulars; x_1, x_2, and x_n are names of definite particulars.)

I think that this explication of supervenience **takes account of the whole of Hare's idea of supervenience**. It contains the indiscernibility requirement as well as the non-entailment requirement. But it contains something more. A third requirement on superveneince can be derived from this definition. Let me show.

First observation, conjunct (ii) in the definiens entails statement (iia):

(iia) it is logically necessary that: for any S_j, if x_n has S_j, then there exists a base property B_i such that x_n has B_i.

This sub-requirement is a kind of existential dependence requirement. It says that every supervenient property is for its instantiation dependent on the instantiation of some other property, a base property. And it means that even desideratum 7 of my desiderata list (the existential dependence requirement that I asked you to remember) is satisfied by this definition.

Second observation, since conjunct (ii) entails statement (iia) the following is true:

From (ii) and (i) the following two sentences are derivable:
(it is logically necessary that: for any S_j, if x_n has S_j, then there exists a base property B_i such that x_n has B_i)
and
(it is logically possible that: (there exists an x different from x_n such that $B_i x$ and, for all S_j, not-$S_j x$).

What do these sentences state? Before answering, let me point out a third observation: conjunct (i), which I have so far called the non-entailment requirement, can equally well be called an existential *in*dependence requirement. It says that it is logically possible for the base properties to be instantiated independently of the supervenient properties.

This means that we have from the triple-modal definition of supervenience derived *both* a dependence requirement *and* an independence requirement. In other words, we have derived something that fits the label a requirement of *one-sided* existential dependence. A supervenient property is for its existence be one-sidedly existentially dependent on base properties.

I think that in several philosophical respects this is a very important notion that is unduly neglected. However, there might be an implicit reason behind this neglect. The requirement (iia) represents no connection between *determinate* elements of the sets S and B. It says that *each* element of S is for its existence dependent on the existence of some element of B. In other words, *each* element of S is for its existence dependent on the disjunction of the elements of B. Therefore, it might be called a *disjunctive dependence*.

Now, that seems to be an odd notion when speaking of realistically conceived properties. I want to make it perfectly clear that, like other realists, I do not believe in the existence of disjunctive properties. And, surely, if there are no disjunctive properties it is odd to think that there can be any disjunctive property dependencies. However, there is another option available to the realist.

If one regards the concepts of the sets S and B of the definition as merely convenient ways of representing two realistically conceived *natural kinds* (the elements being their variations), then one can claim that a supervenient natural kind S may be one-sidedly existentially dependent on a subvenient base natural kind B. Similarly, if one regards the concepts of the sets S and B as representing two realistically conceived property-*determinables* (the elements being their determinates), one can claim that a supervenient determinable (e.g., being a mental property) may be one-sidedly existentially dependent on a subvenient base property-*determinable* (e.g., being a material property).

Let me now summarize: Triple-modal property supervenience entails one-sided existential dependence. It entails desideratum 7, i.e., the requirement that supervenient properties cannot possibly exist without being connected to base properties. In my opinion, this is no mystery. This desideratum is *implicitly* in work both in Hare's and in Moore's writings. Hare simply takes it for granted that evaluative statements are put forward only in contexts where descriptive statements

are around. Similarly, Moore just takes it for granted that moral goodness is a property that is ascribed to, or withdrawn from, entities that already have natural properties.

I take this triple-modal definition as being the true explication of Hare's *whole* idea of supervenience. It takes into account his two explicit requirements as well as his implicit requirement.

However, my concluding comments that now follow are not at all dependent on whether or not this triple-modal definition really is an explication of Hare's concept of supervenience. The mere fact that the definition is both well-formed and meaningful is in itself of philosophical interest.

With respect to the issue of mind-body supervenience, the first requirement in the definition states that zombies are logically possible, and the second requirement entails that ghosts and angels are logically impossible. This means that a claim to the effect that mental properties supervene on properties of matter contains a claim that nonreductive materialism is true. The definition shows that, whether or not such a claim is true, it is at least both well-formed and meaningful.

With respect to the issue of supervenient non-natural moral properties, the first requirement in the definition states that a world wholly without moral properties is logically possible, and the second requirement entails that free-floating moral properties are logically impossible. This means that a claim to the effect that moral properties supervene on natural properties contains a claim that there is a non-reductive axiology. The definition shows that, whether or not such a claim is true, it is at least both well-formed and meaningful.

This idea of a triple-modal supervenience, which I also take to be Hare's idea of supervenience, is an irreducibly non-reductionist idea.

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PS. The distinction between *one-sided* and *mutual* existential dependence is carefully worked out in subchapter 9.3 of my *Ontological Investigations* (1989, 2004). Chapter 9 ("Existential Dependence") does as a whole distinguish between ten different kinds of dependence relations.