The Fallacy of Property Causation[1]

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Is the mind reducible to the body? Despite the wide divergence of the philosophers' opinions, they seem to agree that the answer lies in whether or not there is a causal, psychophysical law linking the mental to the physical. If there is such a law, reductionism is inevitable. Otherwise, we have dualism, epiphenomenalism, intentional realism, anomolous monism or some other positions that deny the complete explicability of the mental by the physical. This rare accord among philosophers is based on the following line of reasoning:

(1) Laws are generalizations over properties.
(2) If there are psychophysical laws; that is, laws that link the mental to the physical,
(3) Then the physical properties as causes can completely explicate the mental properties,
(4) Therefore, reductionism is true.

Even if we assume the truth of the hardly intuitive thesis that a cause can completely explicate its effect, (3) would be a non-sequitur from (2) unless the existence of a psychophysical law implies that *the causal relation holds literally between properties*. I dub this implied part as a thesis of property causation. This paper will argue that property causation is simply a categorical mistake, which does not make much sense upon closer examination.

First, we will analyze some arguments that support property causation. And then we will explain why the thesis of property causation leads to fallacious and sometimes absurd results.

1. Soprano and Glass-Shattering

See an example from Dretske: A soprano's upper-register supplications may shatter glass, but their meaning is irrelevant to their having this effect. Their effect on the glass would be the same if they meant nothing at all or something entirely different.[2] This example illustrates how it is the property of being high-pitched (call it 'HP') instead of being meaningful that causes the glass to be shattered. Don't we consider it perfectly intelligible to say that the singing shatters the glass *in virtue of* being (sufficiently) HP instead of being something else? We seem to have a strong intuition to back up the thesis that being HP, in this case, is causally efficacious for the shattering effect.

It does make good sense to speak in the following fashion: '*c*'s causing

e's being G in virtue of *c*'s being F.'[3] It makes sense because the following counterfactual is true: were *c* not F it would not have caused *e*'s being G. Were the singer singing a lullaby, the glass would surely survive the event. But the significance of the truth of the counterfactual is often exaggerated. It misleads people to think that F is the true cause despite the fact that F has to materialize itself in *c* before causation starts. It misleads people to think that F *enables c* to cause *e*'s being G.

2. Counterfactuals and Relata of Laws

The truth of a counterfactual statement on a property in causal relation to an event does not prove that the property *grounds* the causal relation, for the counterfactual *presupposes* certain causal relation in order to be true. Consider how to verify the counterfactual "if the singer had sung with a low voice (i.e. NOT-HP), the glass would not have been shattered."[4] Since in the actual world, W*, the singer does not sing with a low voice, let's find another world in which she does. But there are many worlds in which the antecedent is true. In W_1, the singer sings gently and the glass is not shattered. In W_2, the singer sings gently but the glass is still shattered — assume that the singer sings with the same magnitude across W_1 and W_2. In which world, between W_1 and W_2, is the counterfactual confirmed? We go to W_1 because it is closer to W* than is W_2. Counterfactuals are always checked in the world which is the most similar, or the closest, to the actual world. Since in W_1 the antecedent is true and so is the consequent, the counterfactual is true.

But why is W_1 closer than is W_2? The answer: because W_1 is not only the same as W* in all other respects but it observes the same causal law as W* does at the place where they differ. It is a rule or law (*ceteris paribus*) in W* that whenever the singer reaches her soprano's upper-register supplications the glass will be shattered. In W_2, when all other things are the same as they are in W*, the glass is still shattered despite the small impact of the airwave from the singer — the law in W* is not respected here. Therefore, while the property of (sufficiently) HP being causally efficacious in this case assumes that the counterfactual 'Were the singing not HP, the glass would not have been shattered' is true, the truth of the counterfactual assumes that the causal law in question obtains.

Now the question is: what are the relata between which this causal law holds? If the relata are eventually singular events and the truth of the counterfactual assumes the fact that *c* causes *e*, it immediately follows that it is not F that *grounds* *c*'s causing e or *enables c* to cause *e*. Given the nomic relation between singular events *c* and *e*, the relation between the singular events must be ontologically

prior to the relation between the properties exemplified by those events.[5] That is to say, only singular events could be causes and therefore causally efficacious. Properties figure in causal laws only after (ontologically) the causation happens in the world. If the supporting causal laws are in turn supported by the singular causation, it would be a *petitio principii* to argue that *c* causes *e* is because *c* is F and F is causally efficacious, and that F is causally efficacious is because such and such counterfactuals are true.

If the relata of the law are properties, the truth of the counterfactual could lend support to the thesis of property causation, but, as I will show below, the property-level causation either is logically fallacious or has to be built upon singular causation again.[6]

3. Property as Relata: Overdetermination

It appears possible to argue that a property such as F is causally efficacious, if one construes, as Hume or Humeans do, causal laws as lawlike correlations between properties or generic events. As such, the statement that c causes *e* should be rendered as *c* of kind F is always followed by or nomically correlated to *e* of kind G, and eventually 'F –> G'. Using properties as relata of laws, the thesis of property causation is boosted by the elimination of the challenge from the singular causation: the singular causation does not ground laws, but laws ground it. This kind of move is often flanked by the following rhetoric: as long as the causation is not brute facts, events must cause in virtue of some properties they exemplify.

A difficulty for the property causation comes from the fact that there are too many, maybe infinite, properties any singular event can exemplify. Which pair of properties fixes a causal connection? A metal bar expands while heated. But when it is heated it is also simultaneously subjected to longitudinal stress. As a result, one can ask: which property, being heated or being subjected to longitudinal stress, is responsible for the metal bar's increase in length? If by flipping the switch, turning on the light, illuminating the room and also alerting a prowler to the fact that I am home, I do just one thing and, as a consequence, cause the prowler to panic, which property, among the above four, is responsible for the poor guy jumping out the window?[7] Certainly, you can not say that every property is causally efficacious at that occasion. That would be an extreme case of causal overdetermination.[8] One solution for this problem is, as what Kim (*op. cit.*) does, to distinguish generic, or constitutive property from the properties exemplified by an event. Brutus's stabbing Caesar falls into only one generic event–stabbing, which is different from the property of killing though the latter is

fix a causal connection. Socrates's drinking hemlock caused Socrates's dying, not his death occurring in prison, because the property of dying is the only generic property constitutive of the event in question while the property of occurring in prison is exemplified by the event. Kim's theory has many unwelcome side-effects: for example, the identification of events would be too dependent on linguistic descriptions; Brutus's stabbing Caesar would never be, as Davidson (*op. cit.*) complains, the same as Brutus's killing Caesar though Brutus's stabbing actually killed Caesar. However, proponents of the property causation may be willing to bite the bullet – the problem of event individuation is yet to be fatal to their theory.

4. Property as Relata: Different and Repetitive Instantiations

More serious problems for the property causation can be found, I believe, on the issues of how to handle property instantiations on *different* individuals or objects[9] and a selfsame property's repetitive instantiations. Before we explain what these problems are, it is important to note that a real, robust theory of a property causation must be committed to the formula 'F–>G'; anything less would be too feeble to sustain the claim on a property's causal efficacy. What is special about the thesis of property-causation is that it is of a reductive persuasion: it wants to *reduce* causes as complex entities (structured or unstructured) to causes as properties *simpliciter*. Token causation is secondary to type causation: that *c* of kind F causes *e* of kind G is no more than a special case and a materialization of the Platonic 'F–>G'. Presumably, 'a copper rod expands while heated' can be represented as '(*x*) (H*x*–>E*x*)' in which *x* ranges over metals or simply 'H–> E', given the nonempty domain of discourse. Some statements such as 'reading in the dark causes fatigue in the eyes' and 'running causes sweating' seem to wear their logical forms in their sleeves: they are sentences that directly relate properties.

However, the reason one can obtain 'H–> E' by leaving out the variable '*x*' in '(*x*) (H*x*–>E*x*)' is that H and E are instantiated by the *same* individuals. But there are many cases of causation "between events whose constitutive objects are different" (Kim, *op. cit.* p. 14). See the following example designed in Carroll's fashion. Compare 'smoking causes cancer' with 'joking causes hurt-feelings'. If the latter is represented as 'J–>F', it is usually false. Joking does not cause being hurt, but causes *other* people's feelings to be hurt. A stone hits the windowpane and causes it to break. The flying stone is not broken, but the windowpane breaks.

Formulae for property causation could lead to absurdities sometimes. It is *a priori* true that a thing can not cause itself. But when we use property formulae to represent the causation between repetitive events, violations of that

a priori truth intrude upon us. John's kissing Jane causes him to kiss her again and again. Though each kissing of John's is a different event, all his kissings instantiate the same property: John's kissing of Jane. That explains why a true observer could report the events by saying, 'John kisses Jane. That causes him to do it *repetitively*;' or, in an unnatural but perhaps more accurate way, 'the property of John's kissing of Jane is being instantiated again and again, due to his first kiss.' In contrast, a person of the property causation persuasion does not have the luxury of talking about property instantiation. His report would be something like this, 'the property of John's kissing of Jane causes the property of John's kissing of Jane, repetitively,' a gibberish indeed.

Kim (*op. cit.*) talks about causation between generic events, but he is not reductive. Ontologically, he is just another singularist as Ducasse and Davidson. For him, the cause of an event can never be just a single property, but rather an ordered triple [(x, t), P] in which *x* is the constitutive object and *t* is the time and P is the constitutive property. None of the three elements is dispensable in representing cause and effect events.

If *x*'s being F at *t* is causally related to *y*'s being G at *t'*, this must be so in virtue of some relation R holding for *x*, *t*, *y*, and *t'*. How else could the following two facts be explained? First, given that *x* is F at *t*, there are objects other than *y* that are not G at *t'*; and there are times other than *t'* at which the object *y* is not G. Second, again that *x* is F at *t* and this event causes *y*'s being G at *t'*, there can be (and usually would be) other individual events of kind G occurring at *t'* that are causally unrelated to *x*'s being F at *t*. (p. 14)

Certainly, e.g., if Brutus stabbed Caesar's dead body the day after Caesar was murdered, his stabbing would not have caused Caesar's dying. Facts like this can not be accommodated by theories of property causation unless they essentially take into account other factors such as individuals or times. As we mentioned before, the intuitive boost for property causation mainly comes from our talk of that *c* causes *e in virtue of c*'s being F. Actually, this talk could be misleading in two ways: it could mean that *c* causes *e*'s being G in virtue of *c*'s being F at that occasion; that is, for the occasion that *e*'s being G; or, it could also mean that F is the property in virtue of which *c* causes *e*. The first is much weaker than the second, for there could be many properties in virtue of which *c* could cause *e* in the first sense, but F's role is exclusive in the second sense. A flying stone hitting the windowpane causes it to break. We can say that the stone causes the pane to break in virtue of the stone's being rigid; but it would be unusual and also false to claim that rigidity is the property in virtue of which the stone causes the damage. A still stone would cause no damage.[10]

5. Reductionism and Psychophysical Laws

If the above arguments against the thesis of property causation are decisive, there will be no property causation at all. In that case, (3) would fail to follow from (2). If a causal relation never holds between properties at all, we can not say, as (3) does, that the physical properties as causes can completely explicate the mental properties. Even if we assume that there are psychophysical laws and a cause can completely explicate its effect, we could only get, in place of (3), (3'). Then the physical events as causes can completely explicate the mental events But from (3'), no longer does (4) ['Therefore, reductionism is true'] follow. For, in order for reductionism to be true, the physical *properties* must be able to completely explicate the mental *properties*. An intentional realist would scarcely hesitate to admit that all mental events are nothing but physical events. Total event subsumption overawes no one. Total property subsumption does, but a reductionist can not get it from the mere assumption that there are psychophysical laws.

NOTES

[1] This paper is meant to challenge the link between psychophysical laws and reductionism. It is not about the thesis of property causation itself. For this reason, the paper does not address who is, and how he or she is, actually defending the thesis of property causation.

[2] Dretske, F., *Explaining Behavior*, A Bradford Book: The MIT Press, Cambridge 1988, p. 79.

[3] To avoid complication, I will not use in the paper, as perhaps I should do, expressions like *c* 's causing *e* in virtue of *x*'s being F (and *y*'s being G)' (in which *x* and *y* are objects instead of events; *x* is a part of *c* and *y* is a part of *e*.) whenever I can use *c*'s causing *e* in virtue of *c*'s being F (and *e*'s being G).

[4] To simplify things, we just consider a possible world-approach to counterfactuals. There is also a nomic-derivational approach. But the two approaches are so closely related that the problem with one carries over the other. See Kim, J, "Causation, Nomic Subsumption and the Concept of Event" in *Journal of Philosophy* 70 (1973): 217-236, reprinted in Kim, 1993, *Supervenience and Mind*: Cambridge University Press.

[5] Here, this point holds no matter what positions you take on how to individuate singular events. For example, if you side with Ducasse and Davidson and believe that events have no specific inner structures, you will surely not dispute this point; if you are with Kim and believe that events have specific inner structures – each event falls into a unique generic event, you will eventually agree with this point too. See Ducasse, C. J. 1951, *Nature, Mind and Death*, La Salle: Open Court Publishing Co.; Davidson, D., 1980, "Causal Relations" in *Essays on Actions and Events*, Clarendon Press: Oxford; Kim, *op. cit.*

[6] A good example of taking properties seriously and finally building property-level nomic relations upon singular causation is Armstrong 1984, *What is a Law of Nature?*, Cambridge: Cambridge University Press. Armstrong believes that laws are relations between universals, laws are ultimately rooted in causation and causation is a relation between particulars. See especially Ch. 6.

[7] This example is a slightly changed version of Davidson's. But it is used for a different purpose there. See Davidson 1980, *op. cit.*.

[8] (No) Overdetermination principle is no doubt correct. But that does not entail the principle of explanatory exclusion. That is where Kim blundered.

[9] Both Kim *op. cit*, though indirectly, and Carroll, J. W., 1991, "Property-Level Causation" in *Philosophical Studies* 63, 1991: 245-70, has expressed similar views. My discussions here are indebted to both authors.

[10] Fodor, J. has explicitly drawn the distinction between 'in virtue of'$_1$ and 'in virtue of'$_2$. See his 1990, *Theory of Content and Other Essays*, A Bradford Book: The MIT press, p. 142.