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Powers and Properties: On Causal Relevance and the Metaphysics of Mind

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Contemporary trends in philosophy of mind have galvanized non-reductive physicalism, the thesis that (1) the world and its components are essentially physical, and (2) entities cannot be reduced to their fundamental physical parts. Reality is comprised of layers, each one metaphysically affixed to its neighbors while still retaining its own unique ontological status. Higher-level phenomena are thought to be dependent on, but not reducible to, lower-level occurrences. A levels-ontology ostensibly solves the problems bequeathed by a Cartesian worldview as well as those that come with strict physicalism. But ultimately we face the same questions that plague these views. How can disparate substances interact? How does the physical cause the mental, and vice versa? Moreover, can purportedly higher-level phenomena, such as beliefs, cause lower-level phenomena, such as neural reactions, as well as other higher-level phenomena, for instance other beliefs? Non-reductive physicalism precludes any causal junction between these realms whereby they produce effects in one other. “Non-reductive physicalism,” Jaegwon Kim says, “like Cartesianism, founders on the rocks of mental causation.”¹

John Heil addresses these questions in *From an Ontological Point of View*.² It is evident in this text that an adequate theory of causality, particularly of mental causation, must stem from an adequate theory of properties, something current non-reductionist theories overlook. In proposing a revisionary ontology of properties, Heil offers a promising account of causality and also avoids the problem of causal overdetermination, the premise that an event cannot have more than one sufficient cause.

In this paper I draw on emergentism, a prevalent non-reductionist theory, in order to present the problem of causal overdetermination in philosophy of mind. I attempt to

show that Heil's theory illuminates the issue of causal overdetermination by virtue of its ontological seriousness. By applying Heil's insights about the nature of properties, it becomes manifest that the requirement of a one-to-one relation between cause and effect is unwarranted. Therefore, causal overdetermination is fangless.

I. Non-Reductive Physicalism

Non-reductive physicalists in philosophy of mind hold that the mind is essentially physical. Because of its complexity, however, the mind is said to comprise various levels. Physical phenomena constitute the lower levels and so-called mental phenomena constitute higher levels. Higher-level properties are dependent upon but irreducible to, and for this reason ontologically distinct from, lower-level properties. Though being in pain involves a series of underlying physical activities, "being in pain" is something over and beyond them.³

Emergentism is a prevalent non-reductive physicalist theory and is helpful to my discussion of the problems non-reductive physicalism encounters *vis-à-vis* causation. On this account, mental properties are emergent properties, i.e., they are ontologically distinct, higher-level properties that emerge from complex physical systems. Mental phenomena, then, are the result of exceptionally complex brains which give rise to conscious experience. Jaegwon Kim explains:

[T]he intuitive idea of an emergent property stems from the thought that a purely physical system, composed exclusively of bits of matter, when it reaches a certain degree of complexity in its structural organization, can begin to exhibit genuinely novel properties not possessed by its simpler constituents.⁴

Beliefs, desires, intentionality, and emotional affect, then, allegedly emerge from neuronal substrata. Moreover, all mental phenomena are determined by configurations of neural events, such that "if the very same configuration of physiological events were to recur, the same mental phenomenon...would emerge again".⁵ The relationship between mental properties and their physical underpinnings, then, is one of necessitation. However, though emergent properties are dependent upon their lower-level properties, they are irreducible and thus cannot be explained in terms of physical properties.⁶

The irreducibility of emergent properties problematizes mental causation. All properties, physical and mental alike, have causal powers, for properties that do not contribute causally to their possessors contribute nothing at all. Therefore, just as they are ontologically irreducible, emergent properties have distinctive causal powers irreducible to the causal powers of their basal properties.⁷ To account for this, emergentists invoke causal laws. The ordinary laws of nature account for lower-level

physical events. The law of gravity, for instance, assures that objects within our physical universe fall at an average rate of 9.8 m/s^2 . But we can go further by positing additional laws that govern higher-level events (such as mental events on the emergentist account). These laws are neither reducible to nor derivable from the laws of nature (32).

Causally efficacious mental properties and a subsequent theory of level-specific laws lead to the alleged charge of causal overdetermination, the premise that no event can have more than one sufficient cause. Say that the physical state of dehydration, P_1 , causes my putative mental desire for water, M_1 . My desire for water then causes my intention to go to the refrigerator, M_2 . But M_2 is caused by its own underlying physical phenomenon, P_2 . Now M_2 has two sufficient causes, M_1 and P_2 , and thus is causally overdetermined.⁸

Though emergentism has merit regarding various technical problems in philosophy of mind, it fails with regard to mental causation. This pitfall is symptomatic of a deeper problem in all non-reductive physicalist theories. Their flawed notions of causation stem from mistaken concepts of the nature of *properties*. Despite an ostensible departure from Cartesian dualism, emergentism nonetheless maintains a distinction between the mental and the physical by an implicit allegiance to a *levels ontology*. On this view, reality comprises various levels, each ontologically distinct from and thus irreducible to one another, yet all of them dependent on their neighboring levels. *Prima facie*, it is an appealing theory, as it allows us to differentiate between ostensibly dissimilar properties such as having a belief and being an axon terminal. Inevitably, however, all theories that are anchored in this belief face problems regarding causation. They splinter the world into categories and cannot reassemble the theoretical pieces. Therefore we need a new ontology, one that restores cohesion among properties.

II. Heil's Ontology of Properties

In *From an Ontological Point of View*, John Heil proposes that properties are intrinsic powers or dispositionality.⁹ Properties are not aspects or parts of an object, but *ways* objects are. Put differently, they make objects the way they are by virtue of their standing in relation to one another at certain points of time. Objects are property-bearers, but not bundles of properties. A shirt, for instance, is not merely a bundle of threads. Rather, it occurs from the distinctive relation that the threads bear to one another during a given stretch of time of which the threads dispose the shirt to be a certain size and shape, the color red, and appealing to its wearer.

To be real, Heil says, is to possess causal powers (97). Properties are certainly not exempt from this dictum. A causally inert property would seem to make no difference at all to its possessor (77). The distinctive feature of properties, then, is their inherent capacity, or power, to dispose their possessors to behave in certain ways or to cause

certain effects in conscious observers. They make distinctive causal contributions to their possessors (76). Properties are not, however, *pure* powers, that is, exclusively dispositional. When we speak of properties, we must also speak of their qualitativity. Qualitativity refers to the intrinsic, categorical qualities an object possesses, such as color or shape. Dispositional and qualitativity, then, are the two characterizing facets of properties.

The distinction between these facets, though, goes no further than characterization. They are not *ontologically* distinct. In fact, Heil regards a property's dispositional and qualitativity as one and the same: qualities are dispositional and dispositions are qualitative. For instance, a baseball's sphericity is both an inherent quality of a baseball and a disposition to roll.

It is in divorcing dispositional and qualitativity that theories of properties, and ultimately theories of mind, founder. Allowing this fundamental distinction countenances a world of levels in which dispositional is thought to be grounded in or supervenient on non-dispositional, categorical (qualitative) properties. But by virtue of what does supervenience occur? Though we can separate dispositional and qualitativity for explanatory purposes, levels of explanation do not then translate to levels of reality without ensuing metaphysical issues. If there were indeed ontologically distinct levels of reality, then there could be no interaction among the levels. It follows, then, that there is one level of reality, and it is to this level that properties and objects and conscious agents belong.¹⁰

Most theorists subjugate the behavior of properties to the authority of unconditional laws of nature. The instantiation of properties and their subsequent behavior is contingent upon the presence of these laws.¹¹ Heil, however, inverts this relationship. All laws, he says, are themselves grounded in powers possessed by objects. Laws govern the behavior of objects, namely, they *cause* them to act in certain *ways* under certain conditions. Laws, then, contribute to the causal powers of their possessors by virtue of their mediating between the properties themselves and the effects that properties have. Thus, on Heil's view, causality is grounded in laws, which in turn are grounded in the dispositions of objects (36).

Causation is not a numinous interaction between ontologically distinct levels, as property dualists and emergentists maintain, nor is it a bridge between the levels, as functionalists contend. Rather, it is grounded in an object's properties *qua* powers *qua* qualities. By virtue of possessing certain properties standing in relation to one another, objects are disposed to behave in certain ways or to effect certain experiences in conscious observers.

With this more robust account of properties, we can better address mental causation. Properties are intrinsic dispositionalities/qualities of objects, i.e. particularized *ways*

objects are. Mental and physical properties *vis-à-vis* conscious agents are intrinsic powers that make distinctive causal contributions to their possessors. But just as Heil contends that distinctions between dispositionality and qualitativity are for the purpose of characterization only, and are not ontological divisions, I propose that distinctions between the physical and the mental serve similar purposes. Talk of physical properties and mental properties is a conceptual tool by which we characterize the world and experience.

Although such compartmentalization is useful for explanatory purposes, our conceptual and linguistic distinctions should not lead us to conceive of reality as myriad levels threaded together by a mysterious metaphysical stitching. There are not mental properties and physical properties, but only properties: qualitative/dispositional powers. Having height, mass, organs, nervous systems, consciousness, and beliefs are all *ways* familiar sorts of conscious beings are. These ways make distinctive causal contributions to their possessors. Having a certain mass disposes me to make footprints in mud. Having a highly complex nervous system disposes me to be conscious. Having beliefs about closet-monsters disposes me to demonstrate fearful behavior. For conscious agents in particular, brains have intricate neurophysiologic structures which dispose their hosts to behave in particular ways and to have experiences.

It is important to note that this view escapes the threat of reductionism, the theory that complex entities such as consciousness can be reduced to their constitutive parts (typically neurons and microphysical reactions in the brain, *vis-à-vis* consciousness). Reductionist tendencies reveal yet another linguistic mirage conceived of by modern philosophers. Heil locates our widespread tendency to interpret language literally in an implicit devotion to the Picture Theory of Meaning, or the idea that the character of reality can be ascertained from our linguistic representations of reality (6). This generates the notion that each predicate literally corresponds to the property it represents. The Picture Theory presupposes a one-to-one relation between predicates and their corresponding referents, therefore endorsing such a view would lead us to think that “being in pain” or “having a belief” refers to discrete neurophysiologic properties.

Instead of a one-to-one correspondence, Heil argues for imperfect similarity. Pains and beliefs manifest similarly enough among conscious beings and even across species to warrant use of the term “pain” or “belief”, but do so without being *perfectly* similar. Thus our predicates, attempting imperfectly to classify imperfectly similar events, designate what may seem to be one occurrence or one entity, such as being in pain, but what is in fact a multiplicity. Heil’s view, therefore, is not reductionism because Heil makes no move to reduce predicates to particular properties, or properties to particular neural configurations. A predicate denotes various kinds of properties, or even various combinations of properties. Likewise, a property need not refer to one particular entity.

III. Heil and Mental Causation

Through non-reductive physicalism in general and emergentism in particular, I have presented a common problem of mental causation, viz. causal overdetermination. The true test of Heil's ontology, then, is its ability to withstand this issue.

In the case of effect E having two or more sufficient and distinct causes X and Y , E is overdetermined.¹² If my desire for water, M_1 , causes an intention to go to the refrigerator, M_2 , and my intention is caused by its own physical groundwork, P_2 , then the intention is overdetermined: M_1 and P_2 are each sufficient to cause M_2 . Put another way, "independent overdeterminers can 'come apart' – that is, either one of those causes could occur without the other".¹³

Applying Heil's insights about the nature of imperfect similarity, this assertion is inaccurate. M_1 and P_2 cannot in fact *come apart* because they are not in fact separate causes. Recall Heil's contention that there is not a one-to-one relation between predicates and properties, though language misleads us into thinking that this is so. Neither, I argue, does there exist a one-to-one relation between dispositions and effects, that is, between properties and the ways in which they manifest. Saying that " M_1 causes M_2 " singles out a particular causal relationship is symptomatic of the mistaken theory of properties that Heil warns about (one which assumes that the properties we name pick out particular entities in reality). Instead, properties are ways standing in relation to one another. This does not imply that ways are particular entities or particular manifestations. For instance, if I note that the Macintosh apple in my hand is red, the predicate "red" does not identify a universal property. The red of the apple is different from the red of a cardinal, yet I can correctly say that both are red.

What bearing does this have on causal overdetermination? The absence of a one-to-one relationship between particular properties and particular manifestations would also mean the absence of one-to-one relationships between causes and effects. This would mean *no sufficient conditions*. Just as no single property entails a particular manifestation, no single condition entails a particular event. Instead there can be several necessary conditions (conditions in whose *absence* an event E cannot occur) that together comprise the sufficient condition (the condition in whose *presence* the event E must occur).¹⁴ Our language would lead us to believe that what we refer to as a sufficient cause is indeed one cause, when in fact there are likely several causes, conditions, properties, or events standing in relation to one another that make degrees of contributions, some more or less important than others (remote or proximate causes, for instance).

Consider a car accident. At first glance, it may seem that the Volvo that veered out of its lane was the singular cause for my crashing into the guard rail. But in fact, this ill-fated vehicle was merely the proximate cause. If Volvo's driver had gotten a reasonable

amount of sleep the previous night and so had not fallen asleep at the wheel; if I had not averted my eyes to speak to my passenger; if recent rainfall had not slicked the roads; then the event of hitting the guard rail could have been prevented. Yet the combination of these multiple necessary causes in fact led to catastrophe.

Without a levels ontology, overdetermination among the physical and the mental does not occur because both “physical” and “mental” refer to the same level of reality. Moreover, even without levels, there may be no single sufficient cause for any given event, but rather several necessary causes, some remote and others proximate. What we call property *X* does not refer to the same entity in every instance. We perceive imperfectly similar manifestations of various ways objects are (viz. properties), and we apply our limited vocabulary and conceptual repertoire in an attempt to categorize what we perceive. The redness of an apple is not the same redness of the apple two days later, and neither of these is the same redness of a fire truck. The tendency to oversimplify the associations between predicate and property, and between property and manifestation, likewise translates to the associations we make between cause and effect. By naming a sufficient cause *X* for a given effect *Y*, we identify *X* as the causal partner of *Y*. But *X* may in fact refer to various necessary causes, standing in relation to each other at particular times, all of which yield *Y*.

IV. Conclusion

The paucity of adequate theories of mental causation portrays causation as a mysterious force in the workings of the mind. It seems that immaterial entities, such as mental phenomena, can have no impact on their physical foundations, or vice versa, given the absolute disparity between the two. This comes from an erroneous levels theory that grants the theoretical physical/mental division too much ontological clout. Following Heil, viewing causality as grounded in laws, and laws as grounded in the powers or properties of objects, eliminates causation’s shadowy overtones. A view such as Heil’s eradicates the metaphysical bifurcation between the physical and the mental and instead espouses a physicalist view of properties as qualitative/dispositional ways that objects are. The imperfect similarity of these ways allows for plurality among properties, rather than an absolute correspondence between a particular property and its manifestation. Similarly, the lack of a one-to-one relationship between predicates and properties, or particular properties and particular manifestations, leads to the lack of one-to-one relationships between causes and effects. We need not fear, then, that having multiple causes “overdetermines” an effect since “cause” does not pick out one thing in particular. Rather, “cause” refers to the dispositions of the entity which possesses the properties in question.

¹ “The Non-Reductivist’s Troubles with Mental Causation” p. 193.

² Heil, John. *From an Ontological Point of View*. Oxford: Clarendon Press, 2003. Hereafter cited in text.

³ See Kim, Jaegwon. “The Non-Reductivist’s Troubles with Mental Causation.” *Mental Causation*. Ed. John Heil and Alfred Mele. Oxford: Clarendon Press, 1993.

⁴ Kim, Jaegwon. “Emergence: Core ideas and issues.” *Synthese* 151 (2006): 547-559. p. 548.

⁵ Ibid. 550.

⁶ Ibid. 551.

⁷ “Emergence.” 557.

⁸ If we are inclined to circumvent this problem by saying that P_2 does not exist and that M_2 (the intention) is accounted for by M_1 (the desire) alone, then we violate the principle of causal closure of the physical world because M_2 would lack a physical explanation.

⁹ Heil uses “powers” and “dispositionalities” interchangeably.

¹⁰ Heil posits that substance that composes this single level is the quantum field, or space-time. Though the nature of this one substance is itself a fascinating topic, it is not within the scope of this paper.

¹¹ D.M. Armstrong is a proponent of this view. See Heil, p. 121

¹² Funkhouser, Eric. “Three Varieties of Causal Overdetermination.” *Pacific Philosophical Quarterly* 83.4 (2002): 335-351. Web. <<http://comp.uark.edu/~efunkho/overdetermination.pdf>> p. 1.

¹³ Ibid. 8.

¹⁴ Cohen, Carl and Irving M. Copi. *Introduction to Logic*. 12th ed. Upper Saddle River: Pearson Prentice Hall, 2005. p. 470.