

# WHAT IS A PROBLEM FOR ALL IS A PROBLEM FOR NONE: SUBSTANCE DUALISM, PHYSICALISM, AND THE MIND-BODY PROBLEM

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Substance dualism is both an ontological theory and a theory of mind. The ontological theory asserts the existence of two kinds of thing in the world capable of instantiating properties: mental entities (typically called “souls”) and physical entities. These mental and physical entities constitute distinct substances in the sense that each is capable (at least in principle) of existing without the other. The theory of mind asserts that human beings are integrated composites of a material body and an immaterial soul that can causally interact with each other in both directions.<sup>1</sup>

Substance dualism is almost universally rejected among people who work in philosophy of mind and the cognitive sciences.<sup>2</sup> While there are a number of arguments purporting to show the falsity of substance dualism, none is thought to be more damaging than the following argument (henceforth the “mind-body argument”). On this line of reasoning, if substance dualism is true, then it is conceptually impossible for minds and bodies to causally interact; it is just not possible for a non-spatial, non-extended object to causally interact with a spatial, extended object. Since it is, however, clear that the mental and physical causally interact, substance dualism is false.

Though it is taken for granted that substance dualism is refuted by the mind-body argument, theorists of mind frequently acknowledge that physicalist theories have yet to give a theoretically adequate explanation of mental-physical causal interaction. As David Chalmers puts the point:

We know, for example, that the subjective experience of vision is closely linked to processes in the visual cortex. It is the link itself that perplexes, however. Remarkably, subjective experience seems to emerge from a physical process. But we have no idea how or why this is.<sup>3</sup>

Indeed, Colin McGinn goes so far as to suggest that the problem will never be solved: “We have been trying for a long time to solve the mind-body problem. It has stubbornly resisted our best efforts. The mystery persists. I think the time has come to admit candidly that we cannot resolve the mystery.”<sup>4</sup>

This essay argues that physicalism is no less vulnerable to the mind-body argument than substance dualism. In particular, this essay argues that the various conceptual moves that distinguish the various physicalist theories of mind from one another and from substance dualism do nothing to make the mind-body problem any easier to solve; the mind-body problem is thus no worse for substance dualism than it is for physicalism.

## I.

It seems obvious that the mental and physical causally interact in both directions. A particular physical pattern of photons hits one's eyes and causes one's mind to instantiate a visual experience of seeing a pencil. One's mind forms a particular volition that causes one's hand to grasp the pencil. Reflecting on ordinary experience, it seems indisputable that mental events cause physical events and that physical events cause mental events: the pencil seems to have had a causal effect on one's mind and one's mind seems to have had a causal effect on one's body.

As it turns out, it is notoriously difficult to explain such causal interaction—a problem that seems especially acute for substance dualism. Jaegwon Kim's formulation of the problem is representative:

[I]t simply does not seem credible that an immaterial substance, with no material characteristics and totally outside physical space, could causally influence, and be influenced by, the motions of material bodies that are strictly governed by physical law. Just try to imagine how something that isn't anywhere in physical space could alter in the slightest degree the trajectory of even a single material particle in motion. (*PM* 4)

As the last sentence in the passage suggests, the problem seems conceptual in character: the idea that an entity that is not physical could causally interact with an entity that is paradigmatically physical seems incoherent.<sup>5</sup>

What creates the problem for substance dualism is that there seems to be no overlap between the class of defining properties instantiated by physical substances (i.e., those that constitute something as physical) and the class of defining properties instantiated by mental substances (those that define something as mental).<sup>6</sup> Think of the conceptual difficulties involved in trying to understand how a ghost could knock on a door. Since the door instantiates, while the ghost doesn't, so-

lidity and extension, the ghost's "fist" would not encounter any resistance and would hence go through the door. Indeed, it is difficult to conceive of how an immaterial, non-extended ghost could dislodge even one atom from one's body, much less figure into the cause of a complex neurophysiological state. It is difficult to understand how something with none of the characteristics associated with bodies could, as a conceptual matter, cause any kind of change in something that has all of the characteristics associated with bodies.

Contrast this situation with mental-to-mental and physical-to-physical causation. Though there are deeper Humean worries about physical-to-physical causation, it is easy to make intuitive sense of causal interaction among physical entities because they instantiate the same sorts of properties; there is nothing that jumps out as especially troubling about the idea that one thing instantiating extension, solidity, and location in space can causally interact with another thing instantiating these properties. One can make a sound with one's hand by striking it against a door because both of these entities are solid and extended. Likewise, it is easy to make intuitive sense of causal interaction among mental entities because they instantiate the same sorts of properties; there is nothing that jumps out as especially troubling about the idea that, for example, a desire or belief might be causally linked in some way with another desire or belief. One comes to believe that Socrates is mortal because one believes that Socrates is human and every human is mortal. The difficulty presented by the mind-body problem has entirely to do, then, with trying to conceive of how an entity that has extension, spatial location, and solidity could causally interact with an entity that lacks those properties.<sup>7</sup>

It is important to be clear on the character of the problem this presents for substance dualism. If it is indeed true that it is conceptually impossible for material substances and im-

material substances to interact, then substance dualism, as outlined at the beginning of this paper, is conceptually incoherent and hence false at every conceptually possible world. In other words, there is no conceptually possible world in which the following claims are all true: (1) immaterial substances exist; (2) material substances exist; and (3) immaterial and material substances causally interact with one another in both directions. While there may be worlds in which immaterial and material substances exist, those substances do not causally interact; at such worlds, the mental and physical may or may not coincide in ways that suggest a regular interaction between the two realms.

Here it is worth noting that the argument does not depend on any assumptions about the particular causal laws that apply in this or any other conceptually possible world. The idea is not that, given the causal laws that are true in this world, material and immaterial substances cannot causally interact. Rather, the idea is a conceptual one that appeals to vague intuitions about causation that purport to apply across conceptually possible worlds: regardless of what substantive causal laws are true in a world, entities that have extension, mass, solidity, and location in space cannot causally interact with entities that lack extension, mass, solidity, and location in space.

For this reason, the mind-body problem cannot be resolved without a conceptual argument of some kind. In particular, such an argument would need to show, at the very least, that there is some conceptually possible world *W* in which the mental and physical causally interact in both directions. Once this is done, the causal interaction of the mental and physical can be explained in this world: to the extent that this world resembles *W* in relevant respects and contains certain psychophysical bridging laws that make possible such interaction, those bridging laws will explain mental-physical causation. While a full explanation will require a description of

those bridging laws, no solution can even get off the ground without resolving the conceptual difficulty.

## II.

Strictly speaking, the conceptual issue at the root of the mind-body problem presents one of the most important theoretical questions for any theory of mind. According to the ordinary intuitions that inform ordinary conceptual commitments,<sup>8</sup> mental states and physical states have very different defining properties. What constitutes a particular state as a physical state, on these intuitions, is that it has some of the following properties: being extended, solid, located in space, and publicly observable. What constitutes a particular state as a mental state, however, is that it has some of the following properties: being non-extended, non-solid, non-located in space, privately observable, and something-it-is-like-to be-in. Indeed, as far as these ordinary intuitions are concerned, no entity can simultaneously instantiate a defining physical property and a defining mental property. The idea that there could be, for example, an extended object that is exclusively private seems conceptually incoherent. While the lists above might require mutual adjustments, the adjustments would take place with an eye towards formulating ordinary mental and physical concepts to ensure that they exclude one another.

Further, ordinary experience suggests that mental states and physical states causally interact in an interesting way. It is, for example, the firing of C-fibers with extension, location, and mass (properties common to only physical states) that cause the felt hurtfulness of pain (a property that is common to only mental states). Conversely, it is the felt hurtfulness of pain that causes the physical sequence of events among extended, located, solid neurological entities which culminates in aversive behaviors. Mental states and

physical states interact, on this view, in a way that directly engage the defining properties of the two states.

The challenge to which these ordinary intuitions give rise, then, is to tell a theoretical story about mental-physical causation that harmonizes with as many of the following intuitions as possible: (1) there exist mental states and physical states; (2) the characteristic properties of mental states and physical states mutually exclude each other; (3) mental states and physical states causally interact in both directions; and (4) the causal interaction between mental and physical states engages the defining properties of the two kinds of state. This, of course, should not be taken to mean that a successful solution to the problem of mental causation *must* cohere with all these intuitions; there is no reason to think that folk theories and ordinary intuitions must be entirely correct. But, given the stubbornness of these intuitions, any theory that entails the rejection of one of these intuitions should provide a compelling independent reason for doing so—reasons that will probably have to make reference to other intuitive commitments if they are to be convincing.

### III.

This section of the paper canvasses a number of conceptual theses about the nature of mind in order to determine whether and to what extent they contribute to solving the mind-body problem. It is argued that none of these theses represent any real progress in solving the mind-body problem. Some simply do not help to explain the mind-body problem, while others explain mental causation but at the cost of creating other intuitive conceptual difficulties that are at least as worrisome. In the latter case, the situation is analogous to what happens when one smooths out a wrinkle in one part of a fabric and winds up creating an equally large wrinkle in another part; if the goal is a wrinkle-free fabric,

no progress has been made. At the end of the day, then, substance dualism is no worse off with respect to the mind-body problem than any other conceptual theory of mind.

Before proceeding, a couple of observations are in order. First, the following discussion is concerned only with the various analyses that have been given for the concepts of mind and of various mental states. It is argued below that the conceptual claims that distinguish the various physicalist theories of mind from one another and from substance dualism do not make it any easier to explain for those physicalist theories to explain mental-physical causation. Indeed, the most that any of them accomplish is simply to move the intractable conceptual difficulties from one question associated with mentality to another and thus do nothing to facilitate any real progress in explaining mind. To the extent that the various accounts of mental-physical causation fail, as many theorists believe, it is ultimately because the conceptual moves that distinguish the various physicalist theories from one another and from substance dualism do nothing to make it any easier to explain mental-physical causation.

Second, it is important to note that the various conceptual theses considered below do not necessarily exclude each other. It is true, of course, that some physicalist theses are inconsistent with others; for example, eliminative materialism is logically incompatible with property dualism. But a number of the theses discussed below are clearly consistent with other such theses. For example, a functionalist analysis of mental states is, strictly speaking, consistent with both reductive and non-reductive versions of physicalism; the thesis that mental states are defined in terms of the functional roles they play in causally linking certain sorts of inputs to specific dispositional outputs, by itself, says nothing about whether mental states are identical with brain states or whether mental states

have properties that the corresponding brain states lack.

### *A. Eliminating Mental States*

Eliminativist materialists assert that it is misguided to think that a rigorous theory of mind should harmonize with intuitive folk theories of mind because the ordinary folk concepts on which they rests are radically misleading.<sup>9</sup> Just as the concepts of phlogiston and witches were eliminated from the stock of scientific concepts because these concepts did not refer to existing entities under any plausible ontology, the folk concepts that purport to denote private, non-extended mental states should be eliminated because there is nothing in the world to which these concepts apply. Strictly speaking, there are no such things as perceptions, beliefs, feelings, intentions, volitions, desires or motivations, as these notions are commonly understood. If these concept-terms are retained as part of a scientific vocabulary, they must be understood as referring to purely physical states or behavioral dispositions.<sup>10</sup>

In effect, the eliminativist “solves” the mind-body problem in the same way that the occasionalist does—namely, by denying one of the central claims that give rise to the problem. The occasionalist solves the problem by denying that there is any causal interaction between immaterial minds and material bodies, arguing instead that the apparent correlation between the mental and physical is brought about by the continual intervention of God.<sup>11</sup> Likewise, the eliminativist solves it by denying there are any entities or states that have the defining properties thought to be associated with mental states; in effect, the eliminativist solves the problem by denying the existence of minds and mental states.

Though each account is internally coherent, both fail for the same reason. The reason there is a problem in the first place is that most people have extremely stubborn intuitions that

generate a logical conflict: mental causation is a problem because basic intuitions about causation and the physical world are in tension with basic intuitions about the nature of mental experience that are grounded in direct experience. Indeed, it is difficult to imagine how one could ever really accept either the claim that there are no mental states<sup>12</sup> or that they are causally impotent. The eliminativist and occasionalist views are not much more likely to elicit a consensus than an idealist who solves the mind-body problem by denying the existence of the physical world.

From the standpoint of ordinary intuition, the mistake made by each of these theories is in thinking that common intuitions about causation are significantly more persuasive, basic, or reliable than the other intuitions giving rise to the problem. If pressed, however, most people would probably express far more confidence in the intuition that there are mental states (which, of course, is stubbornly grounded in immediate experience of what seems to be such states!) than in intuitions about the causal interaction of mental and physical or about causation generally. Indeed, it is reasonable to hypothesize that most people would express more confidence in the idea that mental states and physical states causally interact (clearly, physical sensory input causes sense experience) than in the general intuitions about causation that create the problem in the first place. The eliminativist maneuver of denying the existence of mental states simply shifts the conceptual difficulty by abandoning a more basic—and hence more stubborn—conviction about mind. This isn’t a solution; it is a surrender—and one that strikes many theorists and students alike as poorly motivated and ad hoc.

### *B. Identifying Mental States in Terms of their Casual or Functional Roles*

Causal and functional theories of mind analyze mental states in terms of the causal



or functional roles they play in producing certain behavioral dispositions. David Armstrong, for example, rejects the behaviorist view that mental states are identical with behavioral dispositions; instead, he argues that someone who is in a particular mental state is, in virtue of being in that mental state, disposed to behave in certain ways.<sup>13</sup> Rather than equating mental states with behavioral dispositions, Armstrong defines them as the *inner cause* of those dispositions. According to Armstrong's causal theory, a mental state is, as a conceptual matter, a state of the person that is causally related to a particular set of dispositions to behave in various ways.

Functionalist theories add a normative element to the analysis of mental states by explaining them in terms of the psychological functions that they play in producing behavioral dispositions.<sup>14</sup> It is not just that, for example, pain produces aversive dispositions; it is rather that the point of pain is to produce these dispositions because pain is a response to the proper activation of physical systems that function to detect damage to tissues and thereby enable the organism to avoid further damage. Thus, a functionalist would analyze pain in terms of its functional relations to certain neurophysiological-environmental inputs and behavioral outputs.

It is important to note that the causal and functionalist theses do not even purport to provide material that would help to solve the problem of mental causation. The conceptual claim that pain is a mental state caused by the activation of tissue damage detection mechanisms implies nothing about *how* pain is caused by those mechanisms; likewise, the conceptual claim that pain is a mental state that causes aversive behaviors implies nothing about how pain causes the relevant behaviors. Since the causal and functionalist theses do no more than define mental concepts in terms of the causal roles the corresponding states play in producing behavioral dispositions, they do

not purport to assert anything about how those causal transactions take place.

Indeed, the causal and functionalist theses are agnostic with respect to the ontology of mental states. Since functionalism and causal theories assert nothing about the character of mental states beyond the roles they play in producing behavior, the two theories are compatible with substance dualism and with physicalism. As Armstrong puts the point, the causal theory of mind "is meant to be simply a logical analysis of consciousness, and none of it entails, although it does not rule out, a purely Physicalist account of what these inner states are."<sup>15</sup> Such theories, then, could not show anything about the nature of such causal transactions because the relevant mechanisms will obviously differ depending on which ontology is correct. This, of course, is not a criticism of the theories since they do not purport to describe or explain the nature of such transactions. But it does mean that the causal and functionalist theses contribute nothing to an explanation of mental-physical causal interaction.

Accordingly, the conceptual move from a substance dualist view to a physicalist theory of mind that analyzes mental-state concepts in terms of the causal and functional roles they play in producing behavioral dispositions does not make possible any progress in solving the mind-body problem. Since the causal and functional theses assume that mental-physical causal transactions take place without implying anything that would explain how this is possible, they cannot contribute to solving the mind-body problem. At the very least, such theories must be supplemented by some other conceptual move.

### *C. Identifying Mental States with Brain States*

Identity theories hold that, as a conceptual matter, mental states are identical with brain states. According to identity theories, every

conscious mental state or process is nothing more than some physical state or process instantiated by the brain—the relevant sense of “is” being the “is” of strict identity. Accordingly, mental terms like “Ken’s pain” and neurophysiological terms like “firing of C-fibers” refer to exactly the same thing. While it is true that the intensions of such concept-terms might be different, the extensions must be identical because there is no ontological distance between mental states and brain states.<sup>16</sup>

At first glance, the problem of mental-physical causation would seem to be quite easy to solve under identity theories: if mental states *are* brain states, there is no conceptual difficulty with the idea that mental states can cause physical states because there is no conceptual difficulty with the idea that *brain states* can cause physical states. As is true of any other physical state, the causal properties of brain states can ultimately be explained in terms of the causal properties of the basic material elements of which a functioning brain is composed at any time (e.g., the atoms or molecules that make up the various neurological constituents). Since these causal properties are ultimately shared by the basic material elements making up every other physical object that happens to be in some particular state at a given time, there is no conceptual difficulty with the idea that one physical event in the brain can causally produce some other physical event in the brain or elsewhere in the body. At bottom, then, mental-physical causation is explained in terms of the causal properties of the basic physical constituents that are the subject matter of theoretical physics.

Consider, for example, what an identity theorist would say about the causal relationship between a person’s being in pain and being disposed to engage in certain aversive behavior. Regardless of whether the identity between brain and mental states is token-token or type-type, *her* being in pain is identi-

cal with a state of *her* brain that consists of a firing of C-fibers. This brain state is causally related to a sequence of further physical states that constitutes *her* being disposed to engage in certain aversive behaviors in virtue of the causal interactions of the basic material constituents making up that person’s brain and body. Identity theory explains the relationship between *her* being in pain and *her* being disposed to aversive behaviors, then, entirely in terms of the causal properties of the most basic elements making up the neurological and other physical entities in *her* brain and body.

Identity theories thus solve the problem of mental causation, in effect, by arguing that mental-physical causation is simply a species of physical-physical causation. Since mental states are brain states *and nothing more*, mental-physical causation can ultimately be explained in terms of the causal relations between the basic constituents of certain physical states (i.e., those that are mental states) and the basic constituents of other physical states (i.e., those that are not mental states). If the precise nature of the causal connection between basic constituents remains unclear,<sup>17</sup> it is clear that such constituents can and do causally interact. At the end of the day, mental-physical causation is nothing more than material entities interacting with other material entities in the prototypical ways described by theoretical physics.

From an intuitive standpoint, however, this conceptual maneuvering falls well short of solving the mind-body problem because it assigns no causal role whatsoever to the felt qualities of mental states. It is the *hurtfulness* of pain that, according to ordinary intuitions, disposes a person towards aversive behaviors. Though it is true that these aversive behaviors will usually result in *her* withdrawing from the source of injury and hence in avoiding further injury (this, after all, is the job pain is supposed to do), it is the hurtfulness that *her* behavior is consciously intended to avoid. Re-

ducing pain to a firing of C-fibers implies that her aversive dispositions can be explained entirely in terms of the causal properties of the basic material entities that constitute physical states of her brain—regardless of whether the reduction is conceptual or nomological; and these properties do not include the hurtfulness of pain. Whatever it turns out to be, hurtfulness is clearly not a property of atoms, molecules, neurons, or sets of neurological entities.

This is true regardless of whether the existence of such phenomenal characteristics is logically compatible with identity theory. Even if the reduction of mental states to brain states is compatible with attributing the phenomenal property of hurtfulness to pain, the phenomenal property of hurtfulness can play no causal role, according to identity theory, in the production of the relevant behavioral dispositions. Assuming that sense can be made of the idea that a brain state can be hurtful and hence that hurtfulness is a property of brain states, it is clearly not a causal property of brain states. The causal transition from a brain state consisting of a firing of C-fibers to a brain state consisting in the realization, so to speak, of aversive dispositions is fully explained in terms of the causal properties of the various physical constituents of those brain states, which clearly do not include any phenomenal properties like hurtfulness.

Accordingly, identity theory's defining conceptual move solves one conceptual problem associated with mental-physical causation only by creating another of equal intuitive significance. Eliminating the ontological distance between mental states and brain states by reducing the former to the latter solves the conceptual puzzle of how the mental and physical can interact because there is no conceptual mystery about how one physical state can cause another. But it solves this puzzle only by ruling out, as a conceptual or nomological matter (depending on the character of the reduction), any causal role

for the hurtfulness of pain. As far as ordinary intuitions are concerned, no theory that solves the mind-body problem by denying a causal role to phenomenal properties like pain has taken even a step in the right direction. By rearranging the conceptual landscape, then, identity theories accomplish no more than to push the conceptual difficulties from one end of the landscape to the other. Metaphorically put, identity theories smooth out a wrinkle in one part of the theoretical fabric only by creating an equally large wrinkle elsewhere.

While one can conjoin identity theory with a functionalist or causal theory, this does not enhance the capacity of either to solve the mind-body problem in a manner that harmonizes with ordinary intuitions. Since, as shown in the last section, the causal and functionalist theses assume mental-physical causation without saying anything about its nature, they simply do not contain any information that would facilitate an understanding of the causal properties, if any, of phenomenal states (e.g., hurtfulness) and hence cannot augment the identity theory's capacity to explain mental-physical causation in a way that harmonizes with ordinary intuitions. Conjoining either thesis with identity theory does nothing that would entail—or even permit—a causal role to the phenomenal properties of mental states.

#### *D. Property Dualism*

While all physicalists accept the claim that all facts about mentality are grounded in physical facts, they disagree about the relevant sense of “grounded.” Reductive physicalist theories, like identity theory, hold that the relevant sense of “grounded” is “reduction” and that folk theories about mind can be reduced to physical theories expressed in the language of theoretical physics. In contrast, non-reductive physicalist theories deny that mental facts are analytically or nomologically reducible to facts about brain



states, holding instead that mental facts are grounded in physical facts in only the weaker sense that mental events supervene on physical events.

It is important to note that the move from reductive to non-reductive physicalism is purely conceptual in character. For the most part, the difference between the two theories consists in a different conception of the way in which facts about the mental are “grounded” in facts about the physical. In effect, non-reductive physicalists simply reformulate the content of the concept-term “grounding,” replacing the concept of intertheoretic reduction with the weaker concept of supervenience. While the sophistication and complexity of such an abstract move should not be underestimated, making the move is simply a matter of rearranging the conceptual landscape.

As it turns out, the conceptual move from reductive to non-reductive physicalism helps to bring the theory of mind closer in line with ordinary intuitions. Abandoning the idea that mental states and properties can be reduced to physical states and properties makes it possible for theorists to attribute in an unproblematic way different sets of properties to mental states and brain states. If, as seems reasonable, one’s mental state of being in pain is ontologically distinct from the state of one’s brain on which it supervenes,<sup>18</sup> then there *must be* some property that distinguishes the two states. If, as also seems reasonable, mental states are conceptually distinguishable as a kind from physical states, then the two classes of states *must* differ with respect to some set of distinguishing properties.

Property dualists seize on this conceptual opportunity to bring the theory of mind back into line with the very stubborn intuition that mental states and properties are radically different from physical states and properties. Acknowledging that mental and physical properties belong to different logical kinds, property dualists argue that mental properties (such as the throbbingness of a headache)

are higher-level properties that cannot be *described* in terms appropriate for lower-level physical properties (e.g., such as a descriptive mapping of the atoms or neurological entities involved in a particular brain state); thus, mental properties cannot be reduced to or identified with physical properties. Accordingly, these properties are genuinely novel in the sense that they cannot be described using the language of theoretical physics, chemistry, or biology: the concepts that apply to the relevant physical entities simply do not apply to mental states.

Unfortunately, though the relevant conceptual moves help to bring the theory of mind back into line with ordinary intuitions grounded in direct experience, they come no closer to solving the problem of mental-physical causation. The mind-body problem arises for substance dualism because the defining properties of mental and physical substances do not overlap. It seems impossible for something that lacks extension and materiality to causally affect something that has extension and materiality. As we have seen, the fact that a door instantiates, while a ghost does not, solidity and extension seems to preclude the possibility of a ghost’s knocking on a door.

But exactly the same problem faces the property dualist. The property dualist concedes that two non-intersecting sets of predicates are needed to describe the properties of mental states and physical states because sentences expressing mental properties cannot be expressed in the language of theoretical physics, chemistry, and biology. Since this means that the defining properties of mental and physical states are mutually exclusive, the same problem arises with respect to understanding mental-physical causation. How can two states interact when their defining properties are so different they require different sets of predicates?

Indeed, the problem is exacerbated by the altogether reasonable observation that the

most appropriate language for describing mental properties is the traditional one that presupposes that mental states are immaterial, private, non-extended, etc. Here it is worth noting that, from the standpoint of ordinary intuition, bodily states seem to instantiate exactly the same set of defining properties that bodily substances do: bodily states are material, non-conscious, extended, and spatial. Likewise, according to property dualism, mental states instantiate exactly the same set of defining properties as mental substances are thought by dualists to instantiate: mental states are non-physical, conscious, non-extended, and non-spatial. Thus, mental states, on this natural conception, have all of the properties that seem to render ghostlike mental substances conceptually unable to causally interact with material entities and states.

There is, of course, one difference between the two conceptions: the property dualist denies that mind constitutes a substance capable of existing independently of body. But it is not clear how this is supposed to help the property dualist with the mind-body problem. Indeed, by rendering mentality less *substantial*, it renders the idea of mental-physical causation *more* difficult to grasp conceptually. If it is difficult, continuing the metaphor, to conceive of how a substantial ghost (a ghostlike entity that can exist independently from physical entities) could knock on a door, it is more difficult to conceive of how an insubstantial ghost (a ghostlike entity that can't exist independently from physical entities) could do so.

Nor would the claim that the relevant mental properties are higher-order properties that "emerge" from lower-order physical properties provide much help here. The emergentist thesis simply assumes it is conceptually possible for these different higher-order mental properties to arise out of physical properties without saying anything about *how* this is conceptually possible. Notice that the conceptual difficulties in explaining physi-

cal-to-mental causation are exactly the same difficulties that arise in explaining mental-to-physical causation. The idea, for example, that the physical world could cause a change in an immaterial ghost is no less problematic than the idea that an immaterial ghost could cause a change in the physical world: if there are conceptual difficulties in understanding how something that lacks extension and solidity could cause a change in something that has those properties, then there are exactly the same difficulties in understanding how something that *has* extension and solidity could cause a change in something that *lacks* those properties.

The difference, of course, is that the fact that one's perceptions change in response to changes in physical stimuli seems conclusively to show that physical-to-mental causation occurs and is hence conceptually possible. But this does not work in distinguishing property dualism from substance dualism. First, since the conceptual obstacles to mental-to-physical causation are exactly the same as the conceptual obstacles to physical-to-mental causation, the occurrence of the latter is enough to show that such obstacles, by themselves, don't logically preclude the occurrence of the former and hence show that mental-to-physical causation is conceptually possible under substance dualism. Second, the epistemic difficulties associated with understanding physical-to-mental causation aren't alleviated merely by knowing that such causation can occur. Just knowing that physical-to-mental causation *can* occur does not imply anything about *how* it occurs, and merely dividing the world into higher-level and lower-level properties does not help in the least to clear up the latter mystery.

Accordingly, non-reductive property dualist approaches are in exactly the same boat with substance dualism with respect to the mind-body problem. If, on the one hand, the conceptual impossibility of causal interaction between *substances* with non-overlapping

defining properties is sufficient to refute substance dualism, then the conceptual impossibility of causal interaction between *states* with non-overlapping defining properties is sufficient to refute property dualism. Thus, insofar as the verification of physical-mental causation shows that mental-physical interaction is conceptually compatible with property dualism, it also shows that mental-physical interaction is conceptually compatible with substance dualism. If, on the other hand, the difficulty in understanding *how* substances with non-overlapping defining properties can causally interact is sufficient to refute substance dualism, then the difficulty in understanding *how* states with non-overlapping defining properties can causally

interact is sufficient to refute non-reductive physicalist views.

As it turns out, then, the conceptual moves that distinguish the various physicalist theories from one another and from substance dualism have provided nothing that would help make intuitive sense of mental-physical causation. Of course, one can always deny the common intuition that the phenomenal properties play any causal role in producing behavior, but one needs a reason for thinking this intuition is less plausible or trustworthy than the intuitions about material-immaterial causal interaction that give rise to the problem.

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#### NOTES

The author is indebted to C. Stephen Layman, Phil Goggans, Patrick McDonald, and Andrew Jeffreys for very helpful comments on an earlier draft.

1. Strictly speaking, the claim that mind and body causally interact is not a tenet of substance dualism. Leibniz believed that mind and body are two distinct substances that are incapable of causal interaction. What explains the apparent correlation of mind states and body states is that God has established two separate causal series that were synchronized to run in “pre-established harmony.” As used here, however, the term “substance dualism” connotes a commitment to this thesis that mind and body causally interact.
2. Such theorists consider substance dualism to have been so decisively refuted that even introductory texts devote little space to the topic. As Jaegwon Kim puts the point in his popular introductory text, “[t]here has been a near consensus among philosophers that the concept of mind as a mental substance gives rise to too many difficulties and puzzles without compensating explanatory gains.” Jaegwon Kim, *Philosophy of Mind* (Boulder, Colo.: Westview Press, 1998), p. 4. Hereinafter *PM*.
3. David Chalmers, “The Puzzle of Conscious Experience,” *Scientific American* (December 1995), pp. 30–37. Hereinafter *PC*.
4. Colin McGinn, “Can We Solve the Mind-Body Problem?” *Mind*, vol. 98, no. 891 (1989), pp. 349–366, 349.
5. Clearly, the problem is not nomological in character; the issue is not to identify some law of nature that would correlate physical and mental events.
6. Of course, physical and mental substances, if such there be, will have some properties in common: both, e.g., instantiate the property of being self-identical; but this has nothing to do with the characterization of an entity as either mental or physical.
7. As Princess Elizabeth puts the matter in her correspondence with Descartes: “[A]ll determination of movement takes place by the propulsion of the thing moved, by the manner in which it is propelled by that which moves it, and by the qualification and shape of the surface of this latter. Contact is required

for the first two conditions, and extension for the third. You yourself entirely exclude extension from the notion you have of mind, and a touching seems to me incompatible with an immaterial thing.” See *Descartes’ Philosophical Writings*, ed. and trans. Norman Kemp Smith (London: MacMillan & Co., 1952), p. 270. This appears to be the first statement of the mind-body problem.

8. One’s conceptual commitments are determined by the conventions governing use of the relevant concepts, which are informed by shared intuitions about the nature of the things to which they purport to apply. See, e.g., Frank Jackson, *From Metaphysics to Ethics: A Defence of Conceptual Analysis* (Oxford: Oxford University Press, 1998).

9. As Paul Churchland puts the matter: “As the eliminative materialists see it, one-to-one match-ups will not be found and our common-sense psychological framework will not enjoy an intertheoretic reduction, because our common-sense psychological framework is a false and radically misleading conception of the causes of human behavior and the nature of cognitive activity.” Paul Churchland, *Matter and Consciousness*, 2nd ed. (Cambridge, Mass.: The MIT Press, 1988), p. 43.

10. One example of an eliminativist view is behaviorism. According to certain versions of behaviorism, mental states are publicly observable behavioral dispositions—and nothing more; in particular, there are no states that instantiate the defining properties traditionally associated with inner mental states. While such behaviorists continued to talk using traditional mental concepts of a sort that Paul and Patricia Churchland believe should be eliminated, it is clear that they share the eliminativist view that the ontology of the universe does not contain any inner episodes.

11. This merely pushes back the problem one step, as the occasionalist must still explain how an immaterial God could interact with the physical world, e.g., by bringing it into existence.

12. David Armstrong, for example, rejects behaviorist theories for exactly this reason: “When I think, but my thoughts do not issue in any action, it seems as obvious as anything is obvious that there is something actually going on in me that constitutes my thought. It is not simply that I would speak or act if some conditions that are unfulfilled were to be fulfilled. Something is currently going on, in the strongest and most literal sense of ‘going on,’ and this something is my thought. Rylean Behaviourism denies this, and so it is unsatisfactory as a theory of mind.” David M. Armstrong, *The Nature of Mind and Other Essays* (Ithaca, N.Y.: Cornell University Press, 1981), p. 139.

13. See David M. Armstrong, *A Materialist Theory of Mind* (New York: Humanities Press, 1968).

14. See Hilary Putnam, “Minds and Machines,” in Sidney Hook, *Dimensions of Mind* (New York: Collier Books, 1960); and Jerry A. Fodor, *Psychological Explanations* (New York: Random House, 1968).

15. Armstrong, *The Nature of Mind*, p. 143.

16. While the difference is not important here, there are two different versions of identity theory. Whereas token identity theory simply holds that every token of a mental state is nothing more than some particular brain state, type identity theory holds that every mental state belongs to some particular kind of brain state; token theories, unlike type theories, are consistent with a particular mental state being realized by different kinds of brain states. Thus, for example, where a token theory maintains that a mental state of having a headache is nothing more than a particular brain state that consists in some firing of C-fibers, a type theory maintains that the mental state of being in pain is nothing more than instantiating a brain-state consisting of a firing of C-fibers.

17. Of course, the nature of the causal connection remains unclear. For a helpful description of the relevant issues, see, e.g., Jonathan Schaffer, “The Metaphysics of Causation,” *Stanford Encyclopedia of Philosophy* (available from <http://plato.stanford.edu/entries/causation-metaphysics/>).

18. This should not be taken to imply that mental states are either substantial entities or are properties of substantial entities.