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Epiphenomenal Minds and Philosophers' Zombies: Where do mental properties originate?

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Abstract

Property dualism [PD], when adopted by physicalists, is the view that mental properties are irreducible and joined to the physical. Many property dualists who subscribe to physicalism hold epiphenomenalism—the view that the mind does not have a causal role in affecting physical events (e.g., bodily movements).[1] In this paper, I examine two possible origins of mental properties and the entailments of those origins if one is committed to physicalism. First, mental properties have a generative origin (e.g., emergence, neurophysiological, etc.). Second, mental properties are fundamental. If mental properties have generative origins, then physicalism has an epistemological problem. Namely, if physical facts determine all mental facts, then we have exceedingly little evidence to favor the widespread existence of epiphenomenal minds over

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[1] Jaegwon Kim and others convincingly argue that physicalism leads to various causal puzzles for mental efficacy.

philosophers' zombies.[2] Briefly, the self has mental properties, but the irreducibility of mental properties and their causal inefficacy means that we cannot know the mental status of others. Whereas to claim mental properties as fundamental could entail panpsychism (or proto-panpsychism) and no physicalist method to determine what possesses mental properties. Fundamental mental properties entail the possibility of widespread epiphenomenal minds and the possession of mental properties by unexpected entities so that all biological material and some inanimate objects may have a near equal claim to possessing mental properties.

Keywords: Physicalism, Property Dualism, Philosophers' Zombies, Causal Exclusion, Causal Efficacy

[2] Zombies have no mental life and are indistinguishable from humans because they function the same as humans.

Epiphenomenal Minds and Philosophers' Zombies: Where do mental properties originate?

George J. Aulisio

I. Introduction

In this work, I oppose a version of physicalism that accepts irreducible and causally inefficacious mental properties. I do this, in part, by exploring the origins of mental properties. Ultimately, I posit that physicalists should not be pleased with either of the two umbrella options (i.e., generation and fundamentality) because of their entailments. In his comparative study of property dualism and substance dualism, Lycan finds the origins of mental properties to be a puzzle for property dualists. By drawing from Chalmers and Churchland, he notes that mental properties must either be the result of strong emergence or they must be fundamental (Lycan, 2013: 540).[3]

Generally, strong emergence is the idea that the activity of a complex system generates higher-level properties, and those higher-level properties cannot be predicted from or located in the parts of the complex system.

[3] Lycan credits Chalmers for sharing in conversation the strong emergence objection. Lycan is quoting Paul Churchland's reference to the fundamental mental property view as "elementary property dualism" (Churchland, [1984] 2013: 20).

Strong emergentists hold that we do not know exactly *how* higher-level properties come to be generated. At this point, it is best not to go too far into the details of strong emergence, so let me simplify Lycan's dichotomy so that mental properties must either be generated or fundamental. For simplicity, to be generated means that a particular mental property comes into being at a particular time as an effect of some cause. Since we are working within the confines of physicalism, the cause must be physical activity. If the property dualist maintains that the cause is something other than physical activity, then the property dualist must deny physicalism. An intuitive example that should be acceptable to physicalists sympathetic to property dualism would be a particular type of activity in the nervous system generating a particular type of mental property (e.g., c-fibers firing generating pain). Before the neural activity occurred, the mental property was not experienced because it had yet to be generated.

Conversely, Churchland notes that if opposed to generation, then one holds that "mental properties are fundamental properties of reality, properties that have been here since the universe's inception, properties on a par with such properties as length, mass, charge, time, and other fundamental properties" (Churchland, [1984] 2013: 20). In other words, if the origin is fundamental, then mental properties are part of the framework of the universe and existed even when there were no conscious agents to experience them. For many naturalist-minded physicalists, such a view is less intuitive than generation. For instance, those skeptical of fundamentality might be puzzled by the prospect of holding that pain properties existed alongside mass properties in the universe before the first conscious entities. However, before going into

greater detail about generation and fundamentality, I must back up and set the stage by overviewing physicalism and property dualism.

II. Physicalism

A. Background and Overview

When Princess Elisabeth pressed Descartes to explain how immaterial souls interact with material bodies, she commenced a dialogue on the mechanics of mental causation.[4] Over the centuries, few have found Descartes's explanation convincing largely because he held that the mind and body were metaphysically distinct substances.[5] Descartes's stark metaphysical distinction between mind and body made interaction between the two substances unintelligible. Many philosophers have turned away from substance dualism and its troubled mechanics to focus on today's dominant worldview—physicalism. Though physicalism is today's dominant worldview, mind-body problems have not disappeared.

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[4] Princess Elisabeth writes, "[p]hysical contact is required for the first two conditions, extension for the third. You entirely exclude the one [extension] from the notion you have of the soul, and the other [physical contact] appears to me incompatible with an immaterial thing. This is why I ask you for a more precise definition of the soul than the one you give in your Metaphysics, that is to say, of its substance separate from its action, that is, from thought" (Elisabeth of Bohemia and Descartes, [1643] 2007: 61-2).

[5] For instance, Yablo writes, "Descartes launches with his reply a grand tradition of dualist apologetics about mind-body causation that has disappointed ever since. Apologetics are in order because, as Descartes appreciates, his conception of mental and physical as metaphysically separate invites the question, 'how, in that case, does the one manage to affect the other?'; and because having invited the question, he seems unable to answer it" (Yablo, 1992: 245).

Physicalism has been a leading conception of reality among contemporary philosophers and scientists since the early 20th century.[6] Physicalism inherits its principles from the natural sciences; for instance, Crane writes:

> [p]hysicalism must […] contain the idea that explanations of our world must come to an end with physical principles and the appeal to purely physical entities. Explanations of natural phenomena (of whatever form they take) must bottom out in terms of explanations in the physical sciences.[7]

Though physicalism follows suit from the natural sciences, the worldview holds physics in the highest regard. Witmer defines physicalism as:

> [e]very law of nature and every particular fact is either physical or to be explained by the physical in such a way as to imply that the nonphysical facts are nothing over and above the physical facts, where the physical facts include the actual distribution of physical properties and the laws of physics (2001, 69).[8]

Hellman and Thompson note that physicalism comprises two principles, they write:

> [t]here is first a principle of Ontological Physicalism, or what we have called the Principle of Physical Exhaustion, which provides a non-question-begging construction of the informal claim that everything

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[6] In his *Stanford Encyclopedia of Philosophy* article, Stoljar provides both the historical and contemporary context of physicalism (Stoljar, 2021).

[7] Crane (2010: 28-29).

[8] Please note that I originally located this quotation in White (2016: 5).

> is physical. […] The principle of Ontological Physicalism holds that the universe so delineated embraces everything there is.
>
> […] Physical Determination principles comprise the second part of Physicalist Materialism. Where the informal statement [of physicalism is] "Physical facts determine all facts" (1977, 310-1).

Hellman and Thompson describe physicalism as an all-encompassing worldview with both a metaphysical and epistemological basis. The principle of physical exhaustion is the metaphysical thesis that the physical comprises all of reality. The principle of physical determination speaks to the epistemological basis and explanatory power of physicalism.

Physicalism's two theses serve as a strong foundation, but they also burden physicalism with being a complete worldview. For instance, to posit that all things are physical suggests that if there are non-physical things, then physicalism is metaphysically incomplete. Furthermore, if physical facts do not determine all facts, then physicalism appears to be mistaken on epistemological grounds.

Physicalism appears to be a worldview without qualification, but its formulation is not universal. Stoljar writes, "many contemporary philosophers assume that they understand physicalism *somehow*, and concentrate instead on arguments for and against it" (2010: 530-1).[9] One gray area of physicalism is the hard-to-deny presence of mental aspects or properties that comprise our experience of reality.

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[9] Italics added for emphasis. Stoljar also describes the historical difficulties there have been with formulating what physicalism is exactly.

In the literature, it is common for physicalists to acknowledge the reality of mental experiences (e.g., what it is like to be in pain). I refer to philosophers that acknowledge mental experiences as *mental realists*. Kim defines mental realism as "[m]ental properties are real properties of objects and events; they are not merely useful aids in making predictions or fictitious manners of speech" (1993: 198). Kim's definition clearly articulates that mental properties are real properties and not linguistic constructs or ideas from folk psychology in place to help us make sense of mental experiences. Mental realists believe that mental experiences, and possibly other mental aspects, constitute real properties just as physical properties, such as mass and shape, are real.

The combination of physicalism and mental realism manifests as non-reductive property dualism in the literature. Lowe describes property dualism as "the doctrine that mental properties are distinct from and irreducible to physical properties, even if properties of both kinds may be possessed by the same thing, such as the human brain" (2008: 1018). The physicalist property dualist maintains "that the human brain possesses both mental and physical properties but that these properties are distinct and mutually irreducible" (2008: 1019). There are various arguments for the irreducibility of mental properties, such as the argument from introspection. Churchland, a devout physicalist, provides a good explanation for the appeal of property dualism. He writes:

> […] when you center your attention on the contents of your conscious, you do not clearly comprehend a neural network pulsing with electrochemical activity: rather, you apprehend a flux of thoughts,

> sensations, desires, and emotions. It seems that mental states and properties, as revealed in introspection, could hardly be more different from physical states and properties if they tried. The verdict of introspection, therefore, seems strongly on the side of some form of dualism — on the side of property dualism, at a minimum ([1984] 2013: 21-2).

To put the irreducibility of mental properties into motto form would be *physical facts do not capture mental facts*. In other words, even a complete neuronal mapping falls short of capturing the feeling of a stubbed toe, the experience of a panic attack, or the quality of being in love.

Despite property dualism's central position, the non-reductive property dualist can identify as a physicalist. Ultimately, some physicalists accept property dualism as a viable alternative to substance dualism because it is a metaphysically monistic theory of mind and is preferred over Cartesian or substance dualism. Vision notes, "[p]roponents acknowledge that there is at most one substance, but maintain that in addition to physical properties, that substance also has irreducible mental properties."[10] Even though non-reductive property dualists find mental properties irreducible and distinct, one can still maintain physicalism because mental properties exist contingently upon physical substances. Vision notes that the consensus among physicalists is that "our reality bottoms out in [the] material world."[11] Vision also notes that these physicalists hold that "[p]erhaps not everything is explicable; but to the extent that we have well-grounded explanations, they will contain at

[10] Vision (2011: 25).
[11] Ibid.

least traces of their physical origins."[12] Thus, despite mental properties being distinct and irreducible, property dualism can qualify as physicalism if mental properties exist contingently upon the physical.

One way to distinguish mental and physical properties is through how we know them. Physical properties, such as mass, acidity, and viscosity, can be observed objectively and quantitatively. Conversely, mental properties, such as being in pain or the taste of espresso, are experienced qualitatively in the private domain of one's mind. Both property types are real to the property dualist, but they are distinguishable in how we come to know and examine them. Notably, most property dualists doubt or outright deny the possibility of reducing mental properties.

Davidson lists "perceivings, rememberings, decisions, and actions" as mental experiences. Davidson also notes that those mental experiences "resist capture in the nomological net of physical theory" ([1980] 2001: 207). He writes:

> [a]nomalous monism resembles materialism in its claim that all events are physical but rejects the thesis, usually considered essential to materialism, that mental phenomena can be given purely physical explanations. Anomalous monism shows an ontological bias only in that it allows the possibility that not all events are mental, while insisting that all events are physical ([1980] 2001: 214).

Anomalous monism acknowledges a central tension between physicalism and the mental, namely that physical facts do not adequately explain mental

[12] Ibid: 25-26.

facts. The anomalous nature of mental properties is an epistemological problem for physicalism that confronts the possibility of it being a worldview without qualification.

However, the completeness of physicalism could also be called into question in other ways. Take, for example, the "hard problem" or the mystery of *why* some physical states come with qualitative experiential awareness. Chalmers writes:

> [w]hy is all this [neural] processing accompanied by an experienced inner life? Sometimes this question is ignored entirely; sometimes it is put off until another day; and sometimes it is simply declared answered. But in each case, one is left with the feeling that the central problem remains as puzzling as ever (1996: xxi).[13]

The hard problem asks why qualitative experience should exist when functionally (or otherwise) physical state changes without the corresponding mental experiences would be enough to explain transpiring events. In other words, biological robots with no inner mental life could function as successfully as, and behave identically to, humans with rich mental lives. These biological robots are typically referred to as Philosophers' Zombies, and I will return to them again after further setting the stage.

The hard problem is a serious challenge for physicalism because phenomenal mental experience comprises a major portion of reality for conscious humans. The hard problem indicates that qualitative inner experience (i.e., qualia) comes along for free, calling into question the epistemological completeness of

[13] Bracketed text added for clarity.

physicalism.[14] The physicalist may contend that answering the *why* of mental properties is an unfair expectation. That said, physics and the special sciences do not explain the *how* of mental properties either. Irreducible mental properties fall outside of the descriptions and principles available to physicalists. Robinson writes:

> […] within our present framework of concepts, theories, and basic principles. [...]. The difficulty will remain, therefore, so long as our conceptual framework maintains its present requirements for explanation. In other words, we will not be able to solve the Hard Problem unless we can come to accept something other than our present modes of explanation as providing something like the kind of intellectual satisfaction, or relief from the sting of curiosity, that we now get from explanations (1996: 15-9).

As it stands, physics and the special sciences do not explain mental properties. An inability to explain the *how* of mental properties should be even more troubling than the *why* of mental properties for a worldview that aims to be scientific and complete.

Physicalism's reliance on physics and the natural sciences is both its greatest strength and the root of its potential weaknesses. The fruitfulness and explanatory power of the natural sciences give physicalism considerable authority; however, even physicalists acknowledge that our best conception of physics is not final. Because of this shortcoming, some physicalists appeal

[14] McGinn believes that there is an answer to the hard problem, however, humans are simply cognitively closed to finding that answer (2004: *passim*).

to a moderately future physics that will explain unanswered questions about mental properties, but this is problematic in its own right. For instance, how can physicalism claim to be complete if it's based on something we do not even know yet and arguably may never know?[15]

Even though proponents of anomalous monism and the hard problem accept that physical facts cannot explain mental properties and facts, physicalists ultimately do not find this to be a refutation of the completeness of physicalism since they maintain that all events are physical. Anyone unsympathetic to physicalism could assess this as ignoring the epistemological problem by appealing to a claim that physicalism is metaphysically complete. However, to claim that physicalism's version of property dualism is metaphysically complete is not a well-justified position.

Mental properties are irreducible and therefore do not neatly fit into the ontological inventory of physical nature. Because the physicalist property dualist accepts the irreducibility of mental properties, they need to ensure that mental properties do have a place in the ontological inventory of physicalism. In place of reducibility, the next best thing for physicalism is a well-defined relationship.[16] Without a well-defined relationship, mental properties could be viewed as operating outside the confines and qualifications of physical theory. In brief, autonomous mental properties imperil physicalism because they entail that physicalism cannot be the whole story on both epistemological and metaphysical grounds. Therefore, physicalists must limit the autonomy

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[15] See Hempel's dilemma.

[16] Stoljar asks the completeness question. He writes, "[w]hat relation or relations must obtain between everything and the physical if physicalism is to be true" (2021)?

of mental properties so that their existence and causal role follow the principles and tenets of physical reality.

I contend that for physicalism to be complete, it must clearly define the relationship between mental properties and the rest of the physical world. Much of the literature focuses on physicalist relationship types, such as supervenience, grounding, identity theories, and emergence. All of these relationships maintain that mental properties exist, but they are not always clear on the origins of mental properties. The general sentiment—at least by non-philosophers—is that mental properties are generated by neurological activity. Still, if we look at this issue philosophically, one could contend that mental properties may best be understood as generated through other means or may even be fundamental. For this paper, I focus on exploring two possible umbrella origins of mental properties, namely (a) generation and (b) fundamentality. Before turning to the question of origins, I must set the stage for another limiting factor of physicalism, namely mental causation.

B. Mental Causation

An important physicalist position is that *all causes are physical causes*. Chalmers's notes:

> [t]he best evidence of contemporary science tells us that the physical world is more or less causally closed: for every physical event, there is a physical sufficient cause. If so, there is no room for a mental 'ghost in the machine' to do any extra causal work.[17]

[17] Chalmers (1996: 125).

In general, physicalists that are mental realists (henceforth MR physicalists) acknowledge the connection or presence of mental properties in causally connected events. For instance, the MR physicalist must accept that some physical causes precede and lead to mental events (e.g., a paper cut leads to pain), but mental properties do not have causal powers of their own.

Mental causation includes three figurative *directions* of causation. First, upward causation, where a physical cause leads to a mental effect. For example, dropping a stone on my foot causes me to experience various pain mental properties. MR physicalists generally find no issue with upward mental causation. In the case of upward causation, physicalists typically find mental properties to be epiphenomenal. To be epiphenomenal is to have no causal force and to be an after-effect of physical processes.

Second, lateral mental causation, where either (i) a mental cause leads to a mental effect or (ii) a mental-physical cause leads to a mental-physical effect. Physicalist property dualists subscribe to (ii) because doing so grounds the mental in the physical. Whereas (i) is problematic for the physicalist because there is no physical theory for mental-to-mental cause and effect. If we take (ii), then MR physicalists claim a lesser type of mental causation, namely "quausation."

By conjoining mental properties (*M*) to physical properties (*P*), *M* could be understood as identical with, reduced to, or realized by *P*. The physicalist then can identify *M*'s perceived causal role with *P*'s causal mechanics.[18] In

[18] Kim writes, "[t]o reduce a property, say being a gene, […], we must first 'functionalize' it; that is, we must define, or redefine, it in terms of the causal task the property is to perform. Thus, being a gene may be defined as being a mechanism that encodes and transmits genetic information. […]. Next, we must find the 'realizers' of the functionally defined property. […]. Third, we must have

essence, lateral causation of this sort is referred to as "quausation" because if M_1 qua P_1 and P_1 causes P_2, and P_2 instantiates M_2, then M_2 qua P_2 and *Mcause* qua *Pcause*.[19] However, if one looks beyond these mental gymnastics, you still have some form of epiphenomenalism since mental properties, in and of themselves, have no causal powers and cannot affect the physical.

Third, downward mental causation, where a mental property, state, or event causes a physical effect. For example, a volition, such as the resolution to exercise at 6:00 am on January 1st, causes me to run around a track at 6:00 am on January 1st. Downward causation still refers to preceding and underlying physical states in causal explanation so that the mental cause is not the only cause involved (i.e., neurons still fire), but the mental properties involved play an indispensable role in causing the effect (i.e., neurons fire but a mental cause is also necessary to cause me to run around the track).

By and large, MR physicalists deny the possibility of downward mental causation because of the causal exclusion argument. Jaegwon Kim explores the consequences of simultaneously holding four positions that MR physicalists typically maintain. The four positions:

1. Mental/physical property dualism: "the view that mental properties are irreducible to physical properties."[20]
2. Mind-body supervenience: "Mental properties strongly supervene on physical/biological properties. That is, if any system *s* instantiates

an explanatory theory that explains just how the realizers of the property being reduced manage to perform the causal task" (2005: 101). See Moore and Campbell for a helpful discussion of Kim's three forms of functional reductions (2010).

[19] See Horgan (1989).

[20] Kim (2005: 22).

a mental property M at *t,* there necessarily exists a physical property P such that *s* instantiates P at *t,* and necessarily anything instantiating P at any time instantiates M at that time."[21]

3. Causal closure of the physical: "If a physical event has a cause at *t,* then it has a physical cause at *t*."[22]
4. Principle of Causal Exclusion: "If an event *e* has a sufficient cause *c* at *t,* no event at *t* distinct from *c* can be a cause of *e* (unless this is a genuine case of causal overdetermination)."[23]

The first claim takes mental realism seriously and recognizes the distinctive nature of mental properties. The second claim establishes that there is a physical relationship with mental properties. As noted above, a mental-physical relationship is essential to physicalism. The third claim, the causal closure of the physical, is one of the cardinal tenets of physicalism. Causal closure ensures that all physical events must be tied to physical causes.[24] The fourth claim, the principle of causal exclusion, aims to eliminate the possibility of non-physical properties causing physical effects. If physical effects have physical causes (i.e., causal closure), and one sufficient cause is all that is required to explain physical effects (i.e., causal exclusion), then

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[21] Ibid, 33.
[22] Ibid, 15.
[23] Ibid, 17.
[24] Popper and Eccles note that physicalists take a strong position on the causal closure of the physical and their definition precludes the possibility of mental causes playing a role in physical effects. They write: "[…] physical processes can be explained and understood, and must be explained and understood, entirely in terms of physical theories. I call this the physicalist principle of the closedness of the [physical world]. It is of decisive importance, and I take it as the characteristic principle of physicalism or materialism" (1985: 51). Furthermore, White writes, the "strategy of rejecting [causal closure of the physical] is, […], typically viewed as simply too crazy to be taken seriously" (2017: 387).

mental properties are unnecessary to cause and effect and do not need to be referred to when explaining a physical effect, such as a person running around a track.

With physicalism overviewed, the stage is set to turn to a philosophical examination of the origin of mental properties and their entailments.

III. Generation and Fundamentality

In this section, I overview considerations about mental properties and whether we should regard them as generated or fundamental.

First, let us assume that mental properties are generated. If mental properties are generated, then at a certain point in this history of the universe, the first mental properties came into existence. In that initial generation, the universe created a new type of property that seems novel and categorically different from other physical property types. Physical properties are quantitative, public, and causally efficacious, whereas mental properties are qualitative, private, and causally inefficacious. Some may find it troubling, or at least metaphysically odd that the universe created mental properties nearly *ex nihilo.* For example, William James writes:

> […] we ought therefore ourselves sincerely to try every possible mode of conceiving the dawn of consciousness so that it may not appear equivalent to the irruption into the universe of a new nature, non-existent until then ([1890] 1910: 148).

This irruption that James refers to exponentially expanded the ontological inventory of reality and conceivably, from the interactions of physical properties wholly unlike mental properties.

If physicalism is to be a complete worldview (or at least aspires to be a complete worldview), then it needs to explain the generation of mental properties. Suppose physicalism appeals to concrete forms of generation, such as biology or neuroscience. In that case, the physicalist is on the hook to deliver a methodologically sound explanation for that generation. For instance, if the physicalist claims that neurophysiological activity generates mental properties, then the physicalist needs to provide a sound neuroscientific explanation for the existence and behaviors of mental properties.

Unfortunately, our best physics and all of the special sciences do not explain the generation of mental properties. At best, they predict the likelihood of a person reporting a particular type of mental property under certain physical conditions. If mental properties are irreducible, as most physicalists maintain, then they *cannot* be explained by reductive scientific methodologies. Conversely, if the physicalist denies irreducibility, they are on the hook to deliver a reductive explanation. But the reason most physicalists hold mental properties to be irreducible is that reductive approaches have proved fruitless.

Alternatively, the physicalist may avoid the problem of committing to irreducibility by appealing to the potential success of future science. Once the physicalist takes this alternative path, then they fall into the trap of Hempel's dilemma. Among other things, Hempel's dilemma suggests that if our current science does not reveal what we need, then we have no basis for

assuming that future science will reveal what is desired to be known. Arguably, to appeal to future science is to doubt current science (1969). This is a major problem for physicalism because it's a worldview based on the success of science, but if science cannot answer our questions, then appealing to future science undermines the epistemological basis of physicalism. Put simply, to appeal to future science is to question the legitimacy of physicalism as a complete worldview. If it is incomplete, then conclusions drawn from the tenets of the worldview become questionable, such as mental causal inefficacy.

Rather than be on the hook to provide an undeliverable technical explanation or appeal to future science, the physicalist could claim that mental properties are emergent. Emergence has a certain appeal because it recognizes that mental properties appear unique and seem to come about only from a complex system working in a sophisticated way (e.g., the human brain). However, on physicalist grounds, emergence is mysterious by definition. To be an emergentist is to find no good physical explanation for the *how* and *why* of what emerges.

It is fair to question the strangeness of emergence and press the physicalist. We should want to understand mental properties so that they are familiar, well-defined, and understandable. Whereas appealing to emergence seems to be throwing up one's hands in favor of the mystery. Taking this route might be acceptable to some, but it is difficult to see how emergentists find physicalism to be metaphysically complete. Our experience of mental properties is unlike that of physical properties. Even if we had compelling evidence that mental properties emerge from human brains, it does not

follow that we have sufficient ground to presume that mental properties only emerge from human brains. Furthermore, given the mystery of emergence and categorical differentiation between mental and physical properties (i.e., public/private, quantitative/qualitative, efficacious/inefficacious), we cannot presume that that which emerges automatically classifies as physical because it emerged from the physical. These conclusions imperil physicalism's metaphysical thesis.

One could argue that emergence is merely the culmination of physical theory's failure to explain more than the causal structure of the material world. Physical theory (i.e., physics and the special sciences) develops models for predicting the behavior and interactions of matter, but these methodologies do not examine the intrinsic nature of matter. On the other hand, mental properties are known to us entirely by their intrinsic nature—they are the "what it's like" to be in a particular mental state. Arguably, emergence is an attempt to posit a physical relationship for something that does not abide by the same physical causal structure as matter.

Lastly, if generation fails, the physicalist can claim that mental properties are fundamental. Doing so avoids many of the above-mentioned issues but it is a metaphysical gambit. It's a recognition that mental properties are real and that we do not know much about them other than their intrinsic experience. If the problems of generation cannot be tackled, then appealing to the fundamental existence of mental properties is the only other option. In essence, the primary reason to posit that mental properties are fundamental is the inability to resolve the problems of generation.

IV. Epiphenomenal Minds and Philosopher's Zombies

A. Epiphenomenalism

If we suppose that the causal exclusion argument is successful, as physicalists generally believe, it follows that we must find mental properties to be causally inefficacious. Physicalists may try to make mental properties causally relevant by identifying mental states with physical states, but ultimately the mind and mental properties have no causal powers.

I know that I possess mental properties because they are part of my phenomenal landscape and help construct my understanding of reality. Let me grant the causal exclusion argument and consign my fate to epiphenomenalism. Given the reality of epiphenomenalism, how do I determine that others possess mental properties as well?

If mental properties cannot affect the physical world, I cannot know mental properties that I do not directly experience.[25] For something to be observable or detectable, it must causally interact with the physical world. Given causal inefficacy, mental properties cannot be detected, discovered, or observed in others. So long as mental properties remain causally inefficacious, even future science cannot discover them.

The problem of who has mental properties is not unlike the related metaphysical problem of qualia. Is the blue that I perceive in today's sky the same blue that you perceive? Probably not. Does broccoli taste the same to

[25] This is arguably a causal problem of its own, if mental properties are causally inefficacious, what is being affected by mental properties to the point where they are detected?

me as it does to you? Even if we both like broccoli and tend to choose it over other vegetables, there's no way to know if we are experiencing the same taste properties. This particular problem is one of *knowing* and *comparing* qualia. The problem I am raising is more contentious, namely, how do I know that others even possess mental properties in the first place?

Ultimately, if the only evidence of mental properties is direct experience, then not only do I not know if your blue is the same as my blue, I cannot know if you experience blue at all. Because mental properties are causally inefficacious, there is no way to detect the presence of mental properties in others.

B. Philosopher's Zombies

One might retort that I'm being unfair by requiring observation or detection to prove mental properties. Every day others report their mental properties to me. They say, "This tastes amazing!" or "My presentation is causing me to feel anxious." People indeed report on what seem to be mental properties, but how do I know they are experiencing the mental properties they claim to experience?

I am, of course, setting up the possibility of philosopher's zombies. A philosopher's zombie behaves identically to a mental-property-possessing-human (henceforth, simply a human) but does not possess or experience mental properties. Chalmers writes:

> I confess that the logical possibility of zombies seems equally obvious to me. A zombie is just something physically identical to me, but which has no conscious experience— all is dark inside. While

> this is probably empirically impossible, it certainly seems that a coherent situation is described; […] (1996: 96).

Put simply, a philosopher's zombie is a sophisticated biological automaton that behaves identically to humans and, therefore would report on mental properties even though they are "all dark inside." It follows that though we may presume that we are interacting with humans, we may be interacting with philosopher's zombies. In a world of philosopher's zombies, we would easily and regularly be tricked and unable to differentiate between humans and zombies.

Most people quickly dismiss philosopher's zombies as whimsical and some deny their logical possibility. Even Chalmers notes that zombies are probably empirically unlikely, but I do not see how a physicalist can make that claim. If mental properties are causally inefficacious and irreducible, then the physicalist is equally unqualified to grant or deny the possession of mental properties to others. That is to say, if mental properties are causally inefficacious and the only evidence I have for them are the ones that exist in my phenomenal landscape, then why isn't it reasonable to postulate the existence of philosopher's zombies?

C.Generation Revisited

As noted, physicalism provides no clear explanation for how mental properties arise. Emergence, a leading position on generation, is mysterious. An appeal to emergence is to accept that we do not understand how mental properties are generated. If we do not understand *how* mental properties are

generated, then we cannot presume to know with any degree of certainty what possesses mental properties. It follows that the emergentist cannot explain how to differentiate between humans and zombies.

The problem is whether one believes mental properties are generated through emergence or evolutionary biology or by gray matter; the physicalist has no explanation beyond those appeals to beliefs about how mental properties *could be* generated. Even if, for example, we undertake a major study of gray matter to experiment on the presence of mental properties. The best we can get is the subject of those tests reporting on their mental experiences. But, a philosopher's zombie would give the same reports as a conscious human, despite being "all dark on the inside."

In reality, we tend to believe others when they report on their mental experiences (despite the zombie possibility), and we use this as a frame of reference for granting mental properties to others. In other words, our basis for granting the possession of mental properties comes down to similarity to humans. But physicalism complicates matters, leaving uncertainty when we draw lines between the mental status of lobsters and dolphins. We can point to the complexity of their brain, behavior, and our general sentiment (i.e., anthropomorphize them), but the status of mental properties under physicalism makes our judgments doubtful. If we are to call that into question, why not entertain the possibility that a house plant may also experience mental properties? In fact, talk about non-human animal minds and even plant minds continues to gain ground in the literature.[26]

[26] See Maher (2019) for a defense of plant minds.

D. Fundamentality revisited

Appealing to generation is problematic for physicalism, so let us revisit the possibility that mental properties exist fundamentally. Fundamentally existing mental properties eliminate the problem of *how* mental properties come to be because they are brute elements of the universe. Yet, fundamental properties provide little help to the question of *who* or *what* possesses mental properties.

Even if they are fundamental, the physicalist maintains mental properties as causally inefficacious and irreducible. Therefore, the problem of detection remains in effect. We cannot know for certain who or what possesses mental properties. Arguably, the physicalist opposed to philosopher's zombies might claim that given the similarity between all human brains, it is likely that all human brains possess mental properties. The claim is appealing because it eliminates the possibility of zombies among us, but I see no sound rationale for the position on physicalist grounds.

Furthermore, as we get farther away from the average human brain, we start having to make difficult choices about the presence of mental properties. Once again, how far down the food chain do we go before we stop granting the possession of mental properties? The problem remains that it becomes arbitrary without a way to differentiate between the possession of mental properties grounded in observation or physical theory. Since it is arbitrary, we could and should entertain the possibility of mental properties being possessed by systems vastly different from the human nervous system. After all, if mental properties are fundamental, then why can't they attach to non-humans and even non-animals?

V. Prospects

My argument begs the question, is there a third way or solution to this problem for philosophers sympathetic to property dualism and physicalism? I believe there is no easy choice for the physicalist property dualist. Once one accepts the existence of mental properties, major sacrifices to physicalism must be made.

For instance, the physicalist property dualist could reject the causal exclusion argument to open the door to mental causal efficacy under physicalism. By accepting mental causal efficacy, the physicalist accepts that mental properties can make their mark on the physical world and therefore could be detectable. I grant that mental properties are not currently detectable, but if physicalism does not preclude the possibility of mental causal efficacy, then mental-physical causal benchmarks can be established. Those benchmarks could, in turn dictate the possession of mental properties to others. In other words, these benchmarks, which could rely on observational, inductive, deductive, and probabilistic evidence, can provide a framework for granting the possession of mental properties. Furthermore, this framework might point to emergence, gray matter, or even fundamentality as the explanation for possessing mental properties.

Having benchmarks would help to resolve the dilemma for physicalist property dualists, but admittedly most physicalists will resist this option due to their adherence to the causal exclusion argument. One might contest that the physicalist that accepts downward causation rejects a cardinal tenet of

physicalism and, therefore cannot be a physicalist. Furthermore, even if the physicalist can reject or modify the causal exclusion argument without abandoning physicalism, the option is not foolproof. Even well-defined and established benchmarks would allow room to doubt whether we are erroneously granting (or not granting) mental properties to certain creatures.

Another option is to go even further and outright undermine physicalism. One can undermine physicalism without slipping into extreme views such as substance dualism or idealism. For instance, one might accept property dualism as a hybrid substance view.[27] One might also find physicalism a useful worldview that lines up with our best science while denying that it is an ultimate or complete worldview. Such a position could align with the possibility that ultimate reality is fundamental to the physical, such as Russellian or neutral monism. Under such a view, one could maintain that physicalism's principles are useful guides for how we experience reality. Still, they do not combine to form a metaphysically and epistemologically complete doctrine about the ultimate nature of reality.

VI. Conclusion

The problem with physicalism's take on property dualism is its insistence that mental properties are irreducible *and* causally inefficacious. If mental properties are causally inefficacious, then they do not affect the physical world, and therefore there is no prospect of attributing mental properties to

[27] For instance, in one of her articles, Schneider argues that "[t]he property dualist is instead left with either a form of Cartesian substance dualism or the position that the mind is a 'hybrid' substance, that is, a substance that is both physical and non-physical" (Schneider, 2012: 63).

others outside of oneself. Second, because mental properties are held to be irreducible, our physical methodologies will not provide theoretical evidence in favor of the presence of mental properties. If mental properties do not play a causal or relational role in the behavior of matter, then they also cannot have a role in physical theories and models of the world. Without efficacy and reducibility, all the theories of the special sciences look the same whether you are in a universe of philosopher's zombies, epiphenomenal humans, or conscious plants.[28]

Given the conclusions explored in this paper, the physicalist property dualist has limited options. First, they could resign themselves to the contradiction that they adhere to a metaphysically and epistemologically incomplete worldview while insisting that physicalism is a worldview without qualification. Second, they could try to refine physicalism so that it is open to the possibility of mental causal efficacy (i.e., downward causation) so that mental properties could affect the physical world and, therefore could be detectable and attributable to certain creatures. Third, the property dualist can abandon—or at least further undermine—physicalism so that it is not adopted as a metaphysically and epistemologically complete worldview. Under the

[28] I wish to express my sincere gratitude to Dr. Caleb Liang (梁益堉) who commented on and responded to the initial version of this paper at the joint NTU-Scranton Philosophy Symposium in Scranton, PA. I am grateful for his expertise and for opening my mind to new ways of looking at this issue. I must also thank the anonymous peer reviewer who provided critical feedback on the clarity of my paper and position. Notably, I am grateful for the opportunity to travel to Taiwan in May 2019 thanks to the invitation from the NTU philosophy faculty and the coordination of Dr. Ann Pang-White, and because of funding from The University of Scranton's Provost Office and National Taiwan University. Lastly, I wish to thank all of the attendees of both the first and second NTU-Scranton Philosophy Symposium who both served as gracious hosts and provided enriching feedback on all of the papers delivered.

third option, physicalism is a useful heuristic, but it does not have a claim on ultimate reality.

As I see it, combining physicalism and mental realism requires hard choices and concessions. So long as one is committed to the reality of mental properties, one must ask how far physicalism can go before it breaks.

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A Sellarsian Response to Aulisio

Caleb Liang*

In "Epiphenomenal Minds and Philosophers' Zombies: Where Do Mental Properties Originate?", Prof. Aulisio conducts an in-depth investigation on *property dualism*, one of the leading versions of physicalism in the contemporary philosophy of mind. According to property dualism, while everything that exists is physical, mental properties are "distinct from and irreducible to physical properties".[1] After laying out a background for the relevant concepts, Aulisio examines whether proponents of property dualism can provide a satisfactory account of the origins of mental properties. As he describes, there are two options available to the property dualist on this issue: either (1) mental properties have a generative origin, or (2) mental properties are fundamental. Aulisio argues that neither of these options is tenable.

According to Aulisio, Option (1) does not work because, on the one hand, physical sciences have failed to explain the generation of mental properties. As he emphasizes, "if mental properties are irreducible, as most physicalists maintain, then they *cannot* be explained by reductive scientific

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1 Lowe (2008: 1018).

methodologies."[2] On the other hand, appealing to the concept of emergence only pushes physicalism into the predicament of making mental properties look mysterious. Option (2) essentially takes mental properties to be brute facts, period. According to Aulisio, this option does not fare any better because it provides "little help to the question of *who* or *what* possesses mental properties."[3]

This paper is admirably clear and very well-written. I agree with many points that Aulisio makes in the paper. For example, I agree with the author that "the reason most physicalists hold mental properties to be irreducible is that reductive approaches have proved fruitless."[4] To put this in my own terms, I am convinced by this paper that the marriage between ontological physicalism and property dualism is not stable. Below, I raise two questions for the sake of further discussion. Both will draw on ideas from a famous essay by Wilfrid Sellars (1956/1997), "Empiricism and the Philosophy of Mind" (hereafter, *EPM*).

First, the distinction between physical properties and mental properties is important not only for property dualism but also for Aulisio's criticisms. The author characterizes the distinction between physical properties and mental properties as "categorically different", according to which "Physical properties are quantitative, public, and causally efficacious; whereas, mental properties are qualitative, private, and causally inefficacious."[5] Does "categorically different" mean "ontologically different"? Here, my focus will be on the public/private distinction. Is it an ontological distinction such that

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[2] Aulisio (2022: 285).
[3] Aulisio (2022: 292).
[4] Aulisio (2022: 285).
[5] Aulisio (2022: 284).

what is private can never be public and vice versa? If one thinks that mental properties are fundamentally different from physical properties, then one would probably hold a positive answer to this question.

However, in *EPM* Sellars provides a different way to consider the nature of mental properties. As it is well known that *EPM* is a difficult text. To avoid unnecessary exegetical digression, in the following I will mainly reply on the interpretation of *EPM* by Michael Williams (2001). A similar interpretation of *EPM* can also be found in the *Study Guide* of *EPM* by Robert Brandom (1997). According to Williams,

> Sellars suggests that we think of concepts relating to inner psychological states … as theoretical concepts, relative to an observational vocabulary relating to behaviour. … Now although theoretical entities are introduced as "unobservables", they are not beyond the reach of observational evidence. On the contrary, because theories invoke them specifically to explain observable phenomena, it is built into such theories that certain observations are indicative of what the theoretical entities are up to. Theoretical discourse is always introduced with built-in links to observation. … to speak of entities as "theoretical" is not to imply that they do not "really exist" … the observational/ theoretical distinction is methodological not ontological. … If the theory works, this is reason to think that the world really does contain what the theory postulates (2001, 181-182).

As Williams presents in this passage, Sellars' suggestion is that we can think of mental properties as some sort of theoretical entities. Once we make this

move, the relationship between mental properties that are usually characterized as private or inner, on the one hand, and public behaviors, on the other, can be regarded as the kind of relationship that holds between theoretical entities and observable phenomena. Since theoretical entities are posited only to explain observable phenomena, the former has "built-in links" with the latter. Likewise, since mental properties are posited solely to explain public behaviors, it is built into the nature of mental properties that they can be expressed by certain public behaviors. Thus, Sellars thinks that the public/private distinction is methodological rather than ontological. It is methodological in the sense that only I possess the first-personal access to my mental states. But such privileged access is not absolute, and it does not affect Sellars' point that there is no ontological gap between public behaviors and mental properties. If so, not only the proponents of property dualism but also its opponents, including Aulisio, would probably have to reconsider how to formulate the thesis of property dualism. Then, I suspect, more work needs to be done to see whether Aulisio's criticisms still hold.

Second, in the course of arguing against property dualism, Aulisio brings epiphenomenalism into discussion. He says that: "If we suppose that the causal exclusion argument is successful, as physicalists generally believe, it follows that we must find mental properties to be causally inefficacious."[6] Then he raises the following issue: "Given the reality of epiphenomenalism, how do I go about determining that others possess mental properties as well?"[7]

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[6] Aulisio (2022: 288).
[7] Aulisio (2022: 288).

Aulisio argues that accepting epiphenomenalism forces the property-dualist to face the zombie problem:

> If mental properties are causally inefficacious and irreducible, then the physicalist is equally unqualified to grant or deny the possession of mental properties to others. That is to say, if mental properties are causally inefficacious and the only evidence I have for them are the ones that exist in my phenomenal landscape, then why isn't it reasonable to postulate the existence of philosopher's zombies?" "In a world of philosopher's zombies, we would easily and regularly be tricked and unable to differentiate between humans and zombies.[8]

The idea is that if mental properties are causally inefficacious then one loses ground to attribute mental properties to others. One can only ascertain the existence of mental properties in one's own mind and be quarantined in the realm of solipsism. This seems to be a powerful criticism once property dualism admits accepting epiphenomenalism. Aulisio concludes that "Without efficacy and reducibility, then all the theories of the special sciences look the same whether you are in a universe of philosopher's zombies, epiphenomenal humans, or conscious plants."[9]

From my perspective, the criticism that Aulisio raises here is in effect a version of the other mind problem. That is, if mental properties are causally inefficacious, there is no way to find out whether others have mental properties at all. This seems to assume that the only kind of explanation that can establish

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[8] Aulisio (2022: 290).
[9] Aulisio (2022: 295).

mental realism in the case of other mind is causal explanation. However, in *EPM* Sellars offers another way to consider the other mind problem in general, which is later known as "the Myth of Jones". Again, I will use Williams' interpretation here:

> Sellars invites us to imagine a community—"our Rylean ancestors" … they go in for a lot of reporting-out-loud, wanting-out-loud, hoping-out-loud, and so on. As a result, they get on fairly well, anticipating each other's behaviour and coordinating their activities. However, an outstanding theoretical genius among them conceives the idea that they would get along even better if they saw each other as going in for more "speaking" than they give voice to. The model for such inaudible utterances—or, as they come to be called, "thoughts" —is of course speaking-out-loud. The model stresses that these covert episodes stand in the same logical relations to each other and to overt utterances and actions as do overt utterances. They also show the same variety, including seeings, wonderings, hopings, wishings, wantings, and so on. But the commentary stresses that they are inaudible, even to the person whose thoughts they are (2001, 182-183).

Consider thoughts as an example of mental states. The gist of this passage is that we can understand thoughts as a kind of theoretical entities. More specifically, Sellars suggests that we understand thoughts on the model of language. Just as the natural languages that we use in daily life consist of overt and public utterances, thoughts can be considered as some sort of covert and inaudible utterances. Once we make this move, Sellars' point about the

"built-in links" between theoretical entities and observable phenomena mentioned above can apply here again. Williams continues,

> This conception of thoughts solves the skeptical problem of other minds. The inner episodes we call thoughts are "hidden" only in the way that all theoretical entities are. They are not "logically private", in the sense that no one has more than the shakiest of inductive grounds for attributing them to other people. On the contrary, criteria for their application are built into the theory … And the theory works so well that we can be confident that inner episodes really exist (2001, 183).

On this view, the connections with public uses of language are built into the nature of thoughts. Suppose that positing thoughts in theory turns out to be successful in explaining public linguistic behaviors, this can serve as a reason to support mental realism in the case of other mind. Other people can be considered as having thoughts as long as they are competent language-users in a linguistic community.

To be sure, Sellars' goal in *EPM* was not to defend epiphenomenalism. But he does provide a very different way to cope with the other mind problem with respect to Aulisio's discussion. In this commentary, I am not arguing that Aulisio's attack on property dualism has failed in this regard. But, just like the first question that I raised above, I do think that both the proponents and the opponents of property dualism have more work to do once Sellars' view is taken into consideration.

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Reply to Liang

George Aulisio

I will begin by expressing my sincere gratitude to Dr. Liang for his close reading of my paper and thoughtful commentary. He has provided me with new directions, especially by introducing Sellars, whose work in the philosophy of mind I had not initially considered. In fact, the richness of the commentary would benefit from a discussion that is longer than I am able to provide here. In lieu of that discussion, I will focus on two items from Liang's Response.

First, to answer Liang's opening question that plays an important role throughout his response, I find the distinction between mental and physical properties to be an ontological distinction as opposed to a methodological distinction.[1] For mental realism to be a viable position, mental properties need to be, as Kim writes, "[…] real properties of objects and events; they are not merely useful aids in making predictions or fictitious manners of speech" (1993: 198). What is *ontologically real* can be a discourse of its own, but at minimum, I maintain that they need to surpass being, as Kim suggests, predictive aids and fictitious speech. I would add that they cannot be *mere* concepts, which is a more controversial claim and something that Kim

[1] In reference to the question posed by Liang (2022: 301-302).

himself debates in the context of functionally reducing mental properties.[2] Ideally, if mental properties were causally efficacious, then their inherent causal power would be clear indicators of their ontological realness.[3] Determining if and how mental properties are causally efficacious is, in my opinion, the primary objective of the study of property dualism.[4] Though causal efficacy is the ideal form of ontological realness, I concur with Liang that it might not be the only way of establishing mental realism.[5]

Second, because of the above reasons, I am not convinced by my initial reading of Sellar's "Myth of Jones" and his point about theoretical entities being real despite being hidden. Though I agree that some unobservable entities can be real because of the role they play in scientifically robust theories, I do not find that mental properties rise to the same level as other real unobservables. For instance, quarks are unobservable, but they are widely held to be ontologically real due to how well they cohere with physical theory. Whereas human and non-human behavior can be both intentionally and unintentionally deceptive and because of that, there is considerable variability from subject to subject. It is because of variability that I believe the science of human (and

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[2] Kim struggles between a disjunctive model and a conceptual model when he describes mental properties in his preferred method of functional reductions for property dualism. Kim writes, "moreover, I have been torn between the conceptual approach recommended in my book and the disjunction approach also discussed in the book" (2002: 678).

[3] Alexander's Dictum states that "to exist is to have causal powers." See Cargile (2003: 143) for an overview of Alexander's Dictum.

[4] Moore and Campbell seem to concur with me; they write, "the point of adopting non-reductive physicalism is to preserve the significance and autonomy of the mental […]." They go on to ask "if mental properties lack causal efficacy exactly how much autonomy and significance could they really have" (2010: 425)?

[5] Liang writes, "This seems to assume that the only kind of explanation that can establish mental realism in the case of other mind is causal explanation" (2022: 304-305).

animal) behavior to be unequivocal to theories that can successfully justify the existence of unobservables.

An additional point regarding the Myth of Jones, is that Sellars also relies heavily on the logical structure of language as a justifying framework for potentially ending the problem of other minds. Though I agree some aspects of mental properties are linguistic, there also appear to be mental properties that are non-linguistic. For instance, those mental properties which are marked by their intrinsic qualitative nature. The oft-cited quale being pain, of course. Even if I could state that "I'm experiencing an excruciatingly sharp pain in my abdomen," I do not believe that the utterance accurately describes and captures the qualitative experience of pain. Furthermore, I doubt that there are additional descriptors that would get me to the point of believing I've linguistically captured the pain quale I'm experiencing.[6]

In closing, I wish to re-express my sincere gratitude to Dr. Liang for his response to my paper. He's given me much to consider and has helped me to expand my thought processes about these questions and more.

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[6] Interestingly, there are also anecdotal reports of people that do not think in language at all. Though I know there to be at least one person with a monologue in their head (myself), the following newspaper article suggests that there are those with no language in their minds. See, for example, Nunn, 2020. I find this fascinating but have not done or explored any scholarly work in this area as of this writing.

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