

Measuring the simplicity of panpsychism

Taufiqurrahman

Abstract: Panpsychism has recently emerged as a promising approach to addressing the hard problem of consciousness. This view posits that consciousness is both fundamental and ubiquitous. A recurring argument in its favour is the simplicity claim – that panpsychism is the simplest theory compared to its alternatives. However, the specific criteria for judging panpsychism as the simplest among competing theories remain underexplored by both its advocates and critics. This paper seeks to identify these criteria and assess the simplicity of panpsychism in relation to other metaphysical theories of consciousness. Through a comparative analysis, the paper argues that panpsychism is neither inherently simpler nor more complex than rival theories. The monistic version of panpsychism, for instance, entails a simpler ontological commitment than functionalism, the most widely accepted theory of consciousness. However, when ideological commitments are factored into the evaluation, even monistic panpsychism loses its purported simplicity advantage, let alone the dualistic versions of the theory.

Keywords: panpsychism, simplicity, consciousness.

1. *Introduction*

One of the most pressing problems in the philosophy of mind nowadays is the so-called “hard problem of consciousness.” This problem compels us to address how and why certain physical systems, such as the human brain, give rise to phenomenal consciousness or what it is like to be human (Chalmers, 2010). Philosophers have been attempting to solve this problem for over two decades, and one proposed solution is panpsychism. According to this theory, human beings are conscious because microphysical objects, such as the electrons that make up the human brain, possess a simple form of consciousness. Panpsychism suggests that consciousness is a fundamental and ubiquitous aspect of physical reality (Goff 2019a; Seager 2009; 2016; 2020).

The panpsychist view is favoured over other theories because it aligns with our intuition that conscious experience is real and offers a simple yet non-trivial account of the intrinsic nature of the world. Other views, such as eliminativism and identity theory, conflict with our intuition by denying the reality of con-

consciousness. Although dualism is consistent with our intuitive sense of consciousness, it faces criticism for its ontological complexity, as it posits two different kinds of fundamental entities. Functionalism, while ontologically simpler and accommodating to our intuition regarding the existence of consciousness, fails to provide a non-trivial account of the intrinsic nature of physical entities. Instead, it explains consciousness in terms of functional and relational properties rather than intrinsic ones. As a result, adopting a functionalist stance risks leaving us ignorant of the intrinsic nature of the physical world.

Hence, Goff (2017a: 169) argues that “of all metaphysical theories consistent with the reality of ordinary consciousness, panpsychist forms of Russellian monism are the most simple, elegant, and unified.” He refers to this as the “simplicity argument” for panpsychism. While physics describes the causal, dispositional, and mathematical properties of matter, it does not address its intrinsic nature (Eddington, 1929, p. 259; Russell, 1927, p. 10). Consequently, there is a gap in our knowledge provided by physics. In contrast, panpsychism offers a more promising approach by proposing that the intrinsic nature of all physical entities is a form of consciousness. Given that we, as physical beings, have a consciousness-involving intrinsic nature, it is simpler and more unified to assume that the intrinsic nature of other physical entities is similar to ours, rather than different. This argument is also known as “the intrinsic nature argument” (Seager, 2006).

Additionally, the simplicity argument for panpsychism also manifests in the form of the anti-emergence argument. Proposed by Strawson (2006), the anti-emergence argument states that it is a miracle and, hence, unintelligible that emergent properties *Y* emerge from base properties *X* which are wholly non-*Y*. Since it is unintelligible that phenomenal properties emerge from physical properties that are intrinsically wholly non-phenomenal, the phenomenal properties must already be present at the micro level. Therefore, a real physicalist who tends to reject the magic of emergence should embrace the ‘micropsychist’ view (Strawson, 2006, pp. 24-25). This move is also driven by the simplicity principle: it is simpler and, hence, more reasonable to hold that *Y* emerged from *Y* or proto-*Y* than to hold that *Y* emerged from *X*, which is totally different from *Y*.

So, simplicity claim is pervasive to some arguments for panpsychism. However, the criteria for claiming that the panpsychist view is the simplest among other views remain underexplored. In this paper, therefore, I will identify these criteria and subsequently measure the simplicity of panpsychism relative to other metaphysical perspectives based on these criteria. Hence, I will structure this paper into five sections. Firstly, I will concisely explain the types of simplicity that are considered theoretical virtues (Section 2). Next, before

examining and comparing the simplicity of panpsychism to that of its rivals (Section 4), I will define the selected version of panpsychism and then identify its ontology and ideology (Section 3). In Section 5, I will summarize the comparison results and provide concluding remarks.

2. *Types of simplicity*

The principle of simplicity tells us that the simpler theory is preferable to the complex one, other things being equal. But how do we determine which theory is simpler and which one is more complex? The simplicity assumed in this principle is related to Quine's (1951) distinction between the *ontology* and *ideology* of a theory. Ontology concerns the entities a theory implies or postulates to exist. In other words, ontology is the list of what there is. For example, a theory that defines light as an electromagnetic wave propagating through a medium called 'ether' implies or postulates the existence of ether. Ideology concerns primitive concepts, i.e., undefined ones, used to formulate the assertions of a theory. For example, Platonic realism requires the concept of 'instantiation' to assert that 'a red apple *instantiates* redness'.¹

Building on the previous point, therefore, simplicity can be distinguished into *ontological simplicity* (OS) and *ideological simplicity* (IS). Whereas the former is related to the number of entities a theory postulates, the latter is related to the number of primitive concepts a theory uses – the less, the simpler. If, for example, theory T_1 postulates a single entity while theory T_2 postulates two entities, T_1 is simpler than T_2 ; likewise, in the context of ideological simplicity.

Besides the OS-IS distinction, there is also a distinction between the qualitative and quantitative aspects of each type of simplicity. Every entity postulated by a theory is of a certain kind. An entity and another might belong to the same or different kind. For example, Mars and Jupiter are of the same kind, i.e., Planet, while Mars and Alien are of a different kind. Every kind of entity has one or more examples. Planet, for instance, has several examples like Earth, Mars, Venus, Jupiter, Saturn, etc.

The qualitative aspect of OS concerns the number of *kinds* of entities postulated by a theory. The fewer the kinds, the simpler it is qualitatively. The simplicity of this sort is known as *qualitative ontological simplicity* (QLOS). The quantitative aspect of OS concerns the number of *examples* of all kinds postulated by a theory. The fewer the examples, the simpler it is quantitatively. The simplicity of this sort is known as *quantitative ontological simplicity* (QNOS). This distinction can be traced back to Lewis (1973), who attempted to defend

¹ For more about the distinction between ontology and ideology, see Cowling (2021).

his modal realism from an accusation of not being ontologically simple. He argued that his modal realism is complex only in terms of QNOS, not in terms of QLOS – and the type of simplicity that Lewis (1973, p. 87) recognized as a theoretical virtue is only QLOS, not QNOS. However, some philosophers like Nolan (1997), Baker (2003), and Jansson and Tallant (2017) argue that QNOS is also a theoretical virtue. Therefore, in this paper, I will take both QLOS and QNOS into account when evaluating the simplicity of panpsychism.

The quantitative-qualitative distinction is also true of IS (Cowling, 2013). In other words, but also *quantitative ideological simplicity* (QNIS) and *qualitative ideological simplicity* (QLIS) matters. However, this distinction does not play a significant role in this context because no primitive concepts employed by panpsychism and its rivals belong to the same kind.

3. *Constitutive Russellian Panpsychism*

In this section, I will identify the (kinds of) entities postulated and primitive concepts employed by panpsychism. As panpsychism has multiple versions, I will focus on the most complete and comprehensive version, *constitutive Russellian panpsychism* (CRP). Proponents of CRP suggest that it can eliminate various problems faced by other versions, such as the hard problem of consciousness and the possibility of strong emergence (Nagasawa, 2021).

3.1. *Definition*

CRP is a combination of three views: (1) the panpsychist view, (2) the constitutive view, and (3) the Russellian view. The panpsychist view contends that consciousness is fundamental and ubiquitous, assuming that it is present not only in macrophysical objects like humans and animals but also in microphysical objects like subatomic particles. The constitutive view, which is generally assumed in both common sense and science, claims that micro-objects make up or constitute macro-objects. For example, in physics, it is commonly accepted that subatomic particles make up macro-objects like human bodies and planets. The Russellian view combines the following three theses:

Structuralism about physics: the basic properties physics describes are structural/relational properties.

Realism about inscrutables: there are inscrutables, the natures of which are not wholly structural/relational.

(Proto)phenomenal foundationalism: at least some inscrutables are either phenomenal or protophenomenal properties. (Alter *et al.* 2012: 70-71).

Combining (1) and (2) yields what is called ‘constitutive panpsychism’. This view posits that micro-consciousness constitutes macro-consciousness, accounting for not only the ontological status of consciousness but also the relationship between micro and macro-consciousness. By incorporating (3) into constitutive panpsychism, CRP can also account for the relationship between consciousness and physical reality: the former is the intrinsic nature of the latter. Therefore, CRP proposes a picture of reality as depicted in the following illustration:

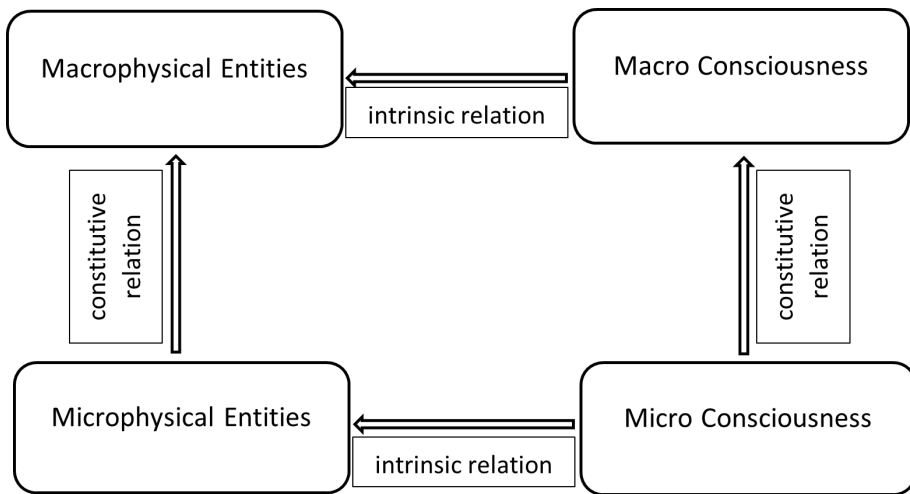


Figure 1: The picture of reality assumed by CRP

Based on the above description, CRP can be defined as a panpsychist view that believes micro-consciousness is an intrinsic nature of physical reality (*Russellian view*) and constitutes macro-consciousness (*constitutive view*). We can understand the ontology and ideology of CRP by relying on that definition.

3.2 Ontology

Figure 1 illustrates four entities: (a) macrophysical objects; (b) microphysical objects; (c) macro-consciousness; (d) micro-consciousness. (d) is an intrinsic nature of (b) while (c) is an intrinsic nature of (a), and (d) constitutes (c) while (b) constitutes (a). It is to those four entities CRP (and panpsychism in general) is ontologically committed. Yet, those four entities are just examples of two kinds of entities: (a) and (b) are examples of physical objects while (c) and (d) are examples of consciousness. Therefore, while quantitatively com-

mitted to four entities, panpsychism is qualitatively committed to two kinds of entities (See Table 1). Panpsychism of this sort is often called ‘monistic panpsychism’ because it eliminates physical properties from its ontology.

Monistic Panpsychism’s Ontology	
<i>Qualitative</i>	<i>Quantitative</i>
Physical Objects	Macrophysical Objects
	Microphysical Objects
Consciousness	Macro-consciousness
	Micro-consciousness

Table 1: Monistic panpsychism’s ontology

Does the fact that monistic panpsychism eliminates physical properties from its ontology imply a denial of the existence of physical properties such as mass, spin, and charge? Not at all. Monistic panpsychism does not include physical properties in its ontology because it has no ontological commitment to their existence. This does not imply that it denies their existence. A theory is ontologically committed to an entity only if it requires that entity to exist to be true. Monistic panpsychism does not require physical properties to exist for it to be true. Whether or not physical properties exist, if the four entities in question exist, monistic panpsychism can still be true. Therefore, we can say that monistic panpsychism is agnostic about physical properties. Dispositional properties (more precisely, what we apparently consider as dispositional properties) of a physical object rely on the consciousness that serves as an intrinsic and categorical property of that object. However, this could potentially lead to panpsychism collapsing into a form of idealism.

Therefore, to differentiate themselves from idealists, some panpsychists are ontologically committed to the existence of physical properties. So, panpsychists believe that there are mass, spin, and charge, but all those physical properties are forms of consciousness (Goff 2017b; 2019b). Chalmers (2015: 263) called this panpsychist view as ‘Russellian identity theory’ (RIT) because it assumed physical properties are identical to consciousness (a sort of inversion of physicalist identity theory that believes that mental properties are identical to physical properties). Because of this identification manoeuvre, this version of panpsychist views does not add any additional entities to its ontology: it counts physical properties and consciousness as a single entity. That is why, even though having recognized the existence of physical properties, RIT remains a form of monistic panpsychism.

Some people might say that RIT cannot draw a clear line between panpsychism and idealism. By identifying physical properties with consciousness, RIT can be classified as a form of idealism. Therefore, among panpsychists, some give a dualistic interpretation of panpsychism (Goff, 2019b). They believe that microphysical objects such as fundamental particles have two kinds of properties, i.e., physical properties on the one hand and consciousness on the other.² At glance, this view seems to be similar to property dualism, but it is fundamentally different. Property dualism contends that mental properties are only present in the complex system of macrophysical reality (Levin, 2022: 11) while dualistic panpsychism, like any form of panpsychism, maintains that mental properties are present in both macrophysical and microphysical reality. Therefore, dualistic panpsychism has an ontology which is more bloated than the monistic one's (See Table 2).

Dualistic Panpsychism's Ontology	
<i>Qualitative</i>	<i>Quantitative</i>
Physical Objects	Macrophysical Objects
	Microphysical Objects
Physical Properties	Macrophysical Properties
	Microphysical Properties
Consciousness	Macro-consciousness
	Micro-consciousness

Table 2: Dualistic panpsychism's ontology

What panpsychism means by 'consciousness' here is phenomenal property. In Nagel's (1974) term, it is what-it-is-likeness. When I see a red apple, for instance, there is something it is like for me to see a red apple. We can say that the phenomenal property of humans is what it is like to be a human. This type of consciousness is called 'phenomenal consciousness' and is usually distinguished from another type, i.e., 'access consciousness,' which is related to cognitive aspects (Block, 1995).³

² Dualistic panpsychism implies a rejection of the idea that all properties are dispositional (*dispositionalism*). According to dualistic panpsychists, in addition to dispositional properties, a microphysical entity possesses an intrinsic and categorical property, which is a form of consciousness. Consequently, they would also reject the possibility of bare dispositions, which are dispositions without distinct causal bases.

³ Every time I use 'consciousness' here, it means 'phenomenal consciousness'.

What justifies panpsychism, whether in its monistic or dualistic form, in including those entities in its ontology? Macrophysical objects like trees, tables, mountains, human bodies, and planets are recognized to exist based on common sense and perceptual experience. Microphysical objects such as electrons and quarks are claimed to exist based on empirical science, particularly particle physics. Similarly, macrophysical and microphysical properties are also claimed to exist based on physics. Panpsychists claim that macro-consciousness like our experience of pain is obviously present in our own introspective investigation, so it resists any doubt. Additionally, they postulate the existence of micro-consciousness belonging to microphysical objects as an explanation for the existence of macro-consciousness.

Among those entities, micro-consciousness is a special case. We recognize the existence of the other three entities based on a certain source of justifications like common sense, perceptual experiences, scientific theories, or introspective investigations. In contrast, micro-consciousness is included in the list of panpsychism's ontology without any justification. We have no perceptual experiences of micro-consciousness belonging to particles in our brain, and the best prevailing scientific theory in particle physics also does not prove that electrons or quarks have any form of consciousness. Neither can introspective investigations help us reach the external world, let alone its micro-level. Since these sources of justification cannot work for justifying the existence of micro-consciousness, the only remaining source of justification is theoretical justification. Micro-consciousness is postulated to exist to do a theoretical job: explaining macro-consciousness. As a theoretical postulate, it needs no justification for its existence. In metametaphysics, such entities are referred to as 'primitive entities' (Benovsky, 2021).

Panpsychism's ontological commitment, therefore, can be divided into two: a commitment to the entities that have been recognized as existing based on a certain source of justification, and a commitment to a kind of entity whose existence requires no justification (i.e., micro-consciousness). It is the second ontological commitment that sets panpsychism apart from other theories, such as property dualism.

3.3. *Ideology*

A theory's ontology concerns only which entities are posited to exist, and it cannot account for how those entities exist or relate to each other. To construct a coherent picture of these entities, a theory requires the use of concepts, ideas, or predicates, which we refer to as ideology. Quine (1951, p. 14) distinguishes between two types of ideology: the first concerns the use of

primitive concepts that cannot be defined in terms of other concepts, while the second concerns the use of derivative concepts that can be defined in terms of more fundamental concepts. However, in the context of ideological simplicity, only the former is relevant, as only primitive concepts represent a potential cost to theories (Cowling, 2013: 3892-3893). Therefore, this section will only consider primitive concepts.

Ontologically, CRP does not differ significantly from other forms of panpsychism. All forms of panpsychism share an ontological commitment to four or six entities. It is CRP's ideological commitment that sets it apart from other forms of panpsychism. CRP is ideologically committed to four primitive concepts: *fundamentality*, *ubiquity*, *intrinsicity*, and *constitution*. The concepts of fundamentality and ubiquity represent the ontological status of micro-consciousness. The concept of intrinsicity explains the relationship between micro-/macro-consciousness and micro/macrophysical objects, while the concept of 'constitution' describes the relationship between micro-consciousness and macro-consciousness.

Some might dispute that fundamentality is a primitive concept since it is usually defined in terms of another concept, specifically the concept of *independence*. An entity is deemed fundamental if it is metaphysically *independent* of any other thing (Tahko, 2018; Bliss, 2021: 212-13). Panpsychism posits that consciousness is fundamental, which means that it is metaphysically independent of any other entity. This suggests that panpsychism's commitment to the concept of fundamentality may not be primitive, but rather derivative.

However, a primitivist view of fundamentality challenges this assumption. According to this view, the concept of fundamentality can only be characterized by other concepts but cannot be defined in terms of them (Tahko, 2018). This means that independence is not a definition of fundamentality, but rather one of its characteristic features. In addition to independence, fundamentality can also be characterized by completeness: something is considered fundamental if it can serve as a *complete minimal basis* for describing the entire reality (Tahko, 2018). In other words, by providing a complete list of fundamental entities, we can describe the entirety of reality.

One reason to adopt the primitivist view of fundamentality is the inadequacy of the current definition. Defining fundamentality in terms of independence would result in a vague definition due to the various kinds of metaphysical (in)dependence, such as mereological (in)dependence, grounding, realization, existential (in)dependence, essential (in)dependence, and even causal (in)dependence. Faced with such a variety of (in)dependence relations, the attempt to define fundamentality in terms of independence eventually becomes divided into two different approaches.

The first approach holds that a thing is fundamental if and only if it is metaphysically independent of everything in *any* sense of metaphysical independence. That is one way to define fundamentality in terms of *absolute independence*. Yet, such a definition is regarded as too strict because it is hard to find a thing that is absolutely, metaphysically independent. An entity that is independent in one sense is ordinarily dependent in another sense. Take the quark as an example. Particle physicists believe that it is mereologically independent because nothing smaller is part of it. However, quarks never exist in isolation; they always co-exist in groups of two or three, such as in the case of mesons, protons, and neutrons. Therefore, even though they are mereologically independent, they are existentially dependent. Quarks constituting a proton, for instance, have symmetric, existential dependence on each other.

Trying to avoid the problem of the first definition, the second approach defines fundamentality in terms of *restricted independence*. According to this definition, something is fundamental if and only if it is metaphysically independent in *some* sense of metaphysical independence. However, this approach does not specify which types of metaphysical independence are relevant. Is only one or some types of metaphysical independence relevant? What then justifies one or some types of metaphysical independence having a special status to be definiens of fundamentality? Such questions are left unanswered. In light of these issues, some philosophers take fundamentality as a primitive concept; and so do I here.

The concept of ‘ubiquity’ is undoubtedly primitive. However, some people may believe that ubiquity can be defined as ‘being everywhere’: something is ubiquitous if and only if it is found everywhere. But there is symmetrical relation between them, as they are interdefinable. ‘Being everywhere’ can be defined in terms of ‘ubiquity’ just as ‘ubiquity’ can be defined in terms of ‘being everywhere’. In other words, we cannot define both concepts except in a circular way, making it challenging to determine which one is primitive, and which one is derivative.

In such a difficult situation, we have two choices: either take both ‘ubiquity’ and ‘being everywhere’ as primitive or derivative. If both were derivative, there should be other more primitive concepts that could define them. However, no other concepts can do so. Therefore, it is better to consider ‘ubiquity’ and ‘being everywhere’ as equally primitive, and given their interdefinability, we should also regard both as of the same ideological kind (Cowling, 2013; Finocchiaro, 2019).

The concept of “intrinsicity”, much like “fundamentality”, is still being debated as to whether it is primitive or derivative. Some have attempted to provide a reductive analysis of it. One such attempt was made by Kim (1982: 60), who analyzed intrinsic properties in terms of properties of being not rooted outside times at which it is had (PT) and properties of being not rooted

outside the objects that have it (PO). In other words, a property is intrinsic only if the objects that have it cannot exist before or after possessing it (PT), and the object's possession of it does not require the existence of another contingent object (PO).

Lewis (1983a) provided a counterexample of PO. According to PO, an object's possession of an intrinsic property enables it to exist alone, whereas its possession of an extrinsic property requires it to coexist with other objects. In other words, intrinsic properties are compatible with loneliness while extrinsic ones imply accompaniment. Consider now the properties of *being lonely* and *being accompanied*. Accompaniment is undoubtedly an extrinsic property, as objects that possess it require the existence of other objects accompanying them. Loneliness, on the other hand, should have been an intrinsic property since an object possessing it can exist lonely. However, in reality, loneliness is just as extrinsic as accompaniment (Lewis 1983a: 199). If an object is lonely, it is only so relative to a certain circumstance where no other objects accompany it. If an accompanying thing appears in another circumstance, the property of loneliness that the object previously possessed would disappear, but the object itself would still exist. This means that the object's possession of the loneliness property cannot meet the requirement of PT.

Lewis's counterexample shows that Kim's definition of intrinsicity is not sufficient. Due to this insufficiency, Lewis attempted to define intrinsicity in terms of duplication: a property is intrinsic to *x* if and only if it never differs between the duplicates of *x*. Fortunately, Lewis (1983b: 355) immediately recognized the problem he faced: by defining intrinsicity in terms of duplication, he would face the problem of interdefinability. The concept of intrinsicity can be defined in terms of duplication, as mentioned above. However, the concept of duplication can also be defined in terms of intrinsicity: two objects are duplicates if and only if they share the same intrinsic properties.

As with ubiquity and being everywhere, the interdefinability of intrinsicity and duplication raises the question of which one is primitive, and which one is derivative. However, answering this question would be arbitrary. Therefore, to avoid an arbitrary answer, we should consider both intrinsicity and duplication as equally primitive and as examples of a single ideological kind.

The last concept to which CRP is ideologically committed is 'constitution'. Some definitions of it that have been provided by scholars such as Baker (2000), Sider (2002), Zimmerman (2002), and Jedwab (2013) are still debated. In several works about panpsychism, constitution is mostly understood as a metaphysical grounding, meaning that macro-consciousness is constituted by micro-consciousness, which implies that the former is metaphysically grounded on the latter (Chalmers, 2015: 253; Goff, 2017a: 151). We might, therefore,

treat ‘constitution’ as a derivative concept that is definable in terms of metaphysical grounding. However, the notion of grounding can also be defined in terms of ‘constitution’. Some scholars define grounding as a *constitutive explanation*, as opposed to a *causal explanation* (Dasgupta, 2017; Fine, 2012). Due to their interdefinability, we should regard both as equally primitive concepts.

4. *Comparison*

Having identified the ontology and ideology of panpsychism, I will now compare it to other metaphysical theories of consciousness to measure its simplicity. I have chosen five theories for this comparison: *substance dualism*, *property dualism*, *eliminativism*, *identity theory*, and *functionalism*. These five, along with panpsychism, have been among the most discussed and embraced theories in recent debates on the problem of consciousness (Bourget and Chalmers, 2023).

4.1. *Substance dualism*

Substance dualism is the view that there are two ontologically distinct substances: *physical substances* and *mental substances*. But what does ‘substance’ mean? In his *Principles of Philosophy*, Descartes (1982: 23) defined substance as ‘a thing which exists in such a way that it needs no other thing in order to exist.’ Physical substances are entities like stones, trees, and human bodies that exist independently, while mental substances are entities like mind that also exist independently. Both can exist by themselves.

However, while physical and mental substances can exist independently, they can only be known through the attributes that are attached to them. Every substance has an attribute that is essential to it. Physical substances, for example, have the attribute of ‘extension,’ while mental substances have the attribute of ‘thought.’ Since these attributes are essential features of their respective substances, one cannot be understood without the other. We cannot understand a body without understanding its extensionality, just as we cannot understand imagination without understanding that it is a thinking thing. Additionally, each attribute has several modes that specify how the substance that has it exists (Descartes, 1982: 25). For instance, a ball, as a physical substance, has the attribute of extensionality, and it also has a particular shape, size, texture, and weight that vary from one ball to another. Therefore, we can refer to attributes and modes as ‘properties’. Since every substance has properties, and there are two kinds of substances, there are also two kinds of properties: *physical properties* and *mental properties*.

Relying on the above description, we can state that substance dualism is ontologically committed to four different types of entities: (1) physical substanc-

es; (2) mental substances; (3) physical properties; and (4) mental properties. Type (1) and (3) have several examples which respectively can be classified into two in conjunction with the division of level of reality between macro and micro levels. Therefore, quantitatively speaking, substance dualism is ontologically committed to these entities: (1a) *macro-physical substances*; (1b) *micro-physical substances*; (2) *macro-mental substances*; (3a) *macro-physical properties*; (3b) *micro-physical properties*; and (4) *macro-mental properties*. Substance dualism has no ontological commitment to the existence of mental substances and properties at the micro-level of reality.

To explain how these entities exist and are related to each other, substance dualism is ideologically committed to at least four concepts: (1) *fundamentality*; (2) *instantiation*; (3) *emergence*; and (4) a certain concept of relation, such as *interaction*, *parallelity*, or *epiphenomenality*. The concept of fundamentality, which has been stipulated as a primitive concept in section 3.3, is employed as a predicate for physical and mental substances, allowing substance dualism to be linguistically expressed as follows: ‘physical and mental substances are two equally fundamental substances.’

Additionally, substance dualism requires the concept of ‘instantiation’ to explain the relationship between a substance and its properties, which can be understood as either universals or tropes. Some philosophers, such as Baxter (2001) and Armstrong (2004), have attempted to define instantiation in terms of partial identity, but others, such as Mantegani (2013) and Brown (2017), have argued that their definition fails. Therefore, the dominant view in metametaphysical discourse considers instantiation to be a primitive concept (Benovsky, 2021; Cowling, 2021).

Unlike panpsychism, substance dualism (and later, property dualism as well) does not posit the existence of mental substance on the micro-level of reality (micro-consciousness). Where and how did it come from? Dualists have two options to answer such a question. The first option contends that mental substance was created by God from nothing to complement the physical elements of humans. Before humans came to exist, mental substances had not appeared. Such a creationist view was put forward by Descartes, among others. The second option holds that mental substance emerged from the complex system of physical substances – in this context, the brain. According to this emergentist view, although mental substances are new and different from physical substances, they are not something added to physical substances from the outside but the result of the natural mechanism occurring within the physical substances themselves when they reached a complex level. Due to several problems facing the creationist view, substance dualism

has recently mostly embraced the emergentist view (Hasker, 2018: 63-65).⁴

Therefore, the concept of ‘emergence’ must be included in substance dualism’s ideology. But is it a primitive concept? In several works, emergence is rarely defined in terms of other more basic concepts. Some simply stipulate the necessary but insufficient conditions for emergence. Kim (2006), for instance, names two necessary conditions for emergence, that is *supervenience* and *irreducibility*. O’Connor (2021), unlike Kim, names *dependence* and *autonomy*.

Barnes (2012) attempts to go further than Kim and O’Connor by not merely stating the necessary but insufficient conditions for emergence, but by trying to define it in terms of necessary and sufficient conditions. He analyses emergence in terms of *fundamentality* and *dependence*: x is ontologically emergent if and only if x is both fundamental and dependent (Barnes, 2012: 884). However, Pearson (2018) has demonstrated that Barnes’s analysis is flawed because some fundamental and dependent entities are not emergent, and some emergent entities are not both fundamental and dependent. Therefore, the prevailing view on emergence regards it as a brute fact that cannot be explained by more fundamental facts (Symons, 2018). As it refers to a brute fact, ‘emergence’ should be regarded as an undefined, primitive concept.

Substance dualism posits the existence of both physical and mental substances. Because these two substances are assumed to be ontologically distinct, substance dualism requires a certain concept of relation to explaining how they can be related to each other. To address this issue, dualism must choose one of three concepts of relation: (1) *interaction*, (2) *epiphenomenon*, or (3) *parallelity*. Among these three concepts, only ‘interaction’ is a primitive concept. Some might define it in terms of reciprocity: x and y interact with each other if and only if they are in a reciprocal relation. However, the concept of ‘reciprocity’ can also be defined in terms of interaction: x and y are in a reciprocal relation if and only if they interact with each other. Therefore, both concepts are equally primitive because they are interdefinable.

Two other concepts, epiphenomenon and parallelity, can be defined in terms of other more fundamental concepts. Epiphenomenon can be defined in terms of causal power: x is epiphenomenal if and only if it lacks causal power. Parallelity can be defined in terms of intersection: two entities go parallel if and only if they do not intersect in the course of their existence. Therefore, those

⁴ Emergent dualism appears similar to non-reductive emergentist physicalism; however, they differ fundamentally in what emerges. Emergentist physicalists maintain that what emerges from a complex physical entity is a mental property and, possibly, a novel causal power associated with that property. In contrast, emergent dualists assert that what emerges is not merely mental properties and new causal powers, but also a new individual – a new subject that possesses those mental properties and exercises the associated causal powers (Hasker, 2018, p. 67).

two concepts are derivative, and we cannot consider them as part of dualism's ideology in a substantial sense. Consequently, if substance dualism uses the concept of 'interaction' (*interactionism*) to explain the relationship between physical and mental substances, its ideology will consist of four primitive concepts, i.e., *fundamentality*, *instantiation*, *emergence*, and *interaction*. However, if it adopts the concept of 'epiphenomenon' (*epiphenomenalism*) or 'parallelity' (*parallelism*), its ideology will comprise three primitive concepts, i.e., *fundamentality*, *instantiation*, and *emergence*.

4.2. *Property dualism*

Unlike substance dualism, property dualism posits only one kind of substance: physical substance. However, this substance has two different kinds of properties: physical and mental properties. This type of dualism revises substance dualism by removing mental substances from its ontology, resulting in an ontology that includes only three kinds of entities: (1) *physical substances*; (2) *physical properties*; and (3) *mental properties*.

There are two examples of the type (1) and type (2) respectively, while type (3) has only one example. Quantitatively, therefore, its ontology contains five entities: (1a) *macrophysical substances*; (1b) *microphysical substances*; (2a) *macrophysical properties*; (2b) *microphysical properties*; and (3) *macromental properties*. This suggests that only macrophysical substances have mental properties, setting property dualism apart from panpsychism, which posits micromental properties.

Although ontologically different, property dualism has the same ideology as substance dualism. It also needs three/four primitive concepts: *fundamentality*, *instantiation*, *emergence*⁵, and *interaction*. The fourth concept is only needed by interactionist property dualism. To account for the relationship between physical and mental properties, epiphenomenalist and parallelist property dualism employ derivative concepts: *epiphenomenality* and *parallelity*.

⁵ Due to the assumption that mental properties emerge from a highly complex system of physical entities, property dualism is considered a type of non-reductive physicalism. Therefore, I do not discuss non-reductive physicalism here, as it has both ontology and ideology in common with property dualism. However, it is not necessary for property dualism to assume emergence and deny the existence of mental properties at the micro level. It is also possible for property dualists to posit mental properties at the micro level of reality without ceasing to be a dualist. This panpsychist-leaning property dualism is indistinguishable from the dualistic version of panpsychism, both ontologically and ideologically. However, it is still distinguishable from the monistic version of panpsychism.

4.3. *Eliminativism*

Metaphysical theories of consciousness are mostly designed to explain introspective data that we have consciousness with phenomenal properties. In terms of this introspective data, metaphysical theories of consciousness can be divided into three types. The first one is theories that accept that phenomenal consciousness exists, and its existence is irreducible. Its examples are dualism, panpsychism, and non-reductive physicalism. The second one is theories that contend that phenomenal consciousness exists, but its existence is reducible. This type is exemplified by identity theory. The third one is theories denying the existence of phenomenal consciousness. This type is referred to as ‘eliminativism’ or ‘eliminative physicalism’.

Eliminativism is the most extreme form of physicalism. It only accepts the existence of two kinds of entities: (1) *physical objects* and (2) *physical properties*. These two kinds of entities have two examples respectively: (1a) *macrophysical objects*; (1b) *microphysical objects*; (2a) *macrophysical properties*; and (2b) *microphysical properties*. This suggests that eliminativism designs its ontology to be as parsimonious as possible. The number of entities it postulates, qualitatively and quantitatively, is equal to that postulated by the monistic form of panpsychism.

The same feature is also true of its ideology. The only primitive concept it needs is ‘instantiation’ to account for the relationship between objects and their properties. However, this is only the case if eliminativism is ontologically committed to Platonic realism. If it holds some form of nominalistic view about properties, it will need another primitive concept. Set nominalism, for instance, will have to include ‘membership’ in its ideology (a is *F* if and only if a is a member of *F*-ness); while trope nominalism will have to include ‘possession’ (a is *F* if and only if a has *F*-ness). Therefore, eliminativism will need at least one primitive concept, regardless of the metaphysical view about properties it holds.

4.4. *Identity theory*

Identity theory is a kind of metaphysical theory that holds that phenomenal consciousness exists, but its existence is reducible to physical properties. It suggests that mental states are brain states (Smart, 2022). In other words, according to identity theory, mental states exist but are nothing more than neuronal processes taking place in the brain. This claim is the same as the ones made by scientists. For instance, water is H₂O, lightning is an electrical discharge, and temperature is mean molecular kinetic energy. This means that what the word/phrase refers before and after ‘is’ is the same thing.

By identifying phenomenal consciousness with physical states, identity the-

ory recognizes the existence of the former without adding a new entity to its ontology. It treats phenomenal consciousness and physical states as a single item since they are numerically identical. This physical state must involve some physical objects and their properties. Therefore, the ontology of this theory is the same as that of eliminativism, both qualitatively and quantitatively. What sets this theory apart from eliminativism is its ideology. In addition to a certain concept employed to account for the relationship that holds between physical objects and their properties – be it “instantiation,” “membership,” or “possession” – this theory also employs the concept of “identity” to explain the relationship between phenomenal consciousness and physical states.

However, whether ‘identity’ is a primitive concept is still contentious. Some have attempted to define it. For instance, Brody (1980: 8) defined ‘identity’ using second-order logic as follows:

$$(B) \ x = y =_{\text{def}} [(F) (Fx \equiv (Fy))]$$

in which F stand for the class of all properties that x and y have in common. In simpler terms, (B) states that x is y if and only if x and y have all their properties in common. Definition (B), therefore, defines ‘identity’ in terms of commonality.

Does this definition successfully define ‘identity’? Many argue that it does not. One of the primary reasons why people deny the definability of ‘identity’ is that it is always involved in any definition of any concept, including ‘identity’ itself (McGinn 2000: 7-9). Take definition (B) as an example.. It would be successful if the definiens on the right side of ‘ $=_{\text{def}}$ ’ were *identical* to the definiendum on the left side of ‘ $=_{\text{def}}$ ’. In other words, its success requires an identity that holds between the definiens and definiendum. Furthermore, identity is also presumed to hold between (Fx) and (Fy) . This suggests that (B) involves identity in two different places. Definitions of this sort suffer from circularity because it defines identity by assuming an identity. This is why many consider identity a primitive concept (Bueno, 2014; McGinn, 2000; Savellos, 1990).

Identity theory’s ideology, therefore, contains two primitive concepts. This makes identity theory ideologically less simple than eliminativism – though both are ontologically equal.

4.5. Functionalism

Functionalism is a view about mind, which remains neutral on whether mental properties are physical or non-physical. Functionalism posits that mental properties are functional properties, meaning that something is considered mental not because of its internal makeup, but rather the causal role it plays in

a system (Levin, 2023). Whether physical or not, it can be considered mental as long as it plays a causal role in a causal chain.

Using pain as an example, functionalists view pain not as a physical state (as assumed by identity theory), nor as a mental state (as assumed by dualism and panpsychism), but rather as a functional state. To experience pain is to be in a state that is disposed to be caused by damage to body cells, which in turn causes a belief that there is something wrong with the body that ultimately motivates us to escape the state and, if no other stronger desires, causes us to groan. The functional role of pain in this causal chain can be carried out by any state, whether physical or non-physical. This property is referred to as ‘multiple realizability’ (Bickle, 2020).

Consider a computer to understand what multiple realizability means. When I wrote this article, I used a laptop with Microsoft Word installed for typing. However, this software is not limited to being run exclusively on a laptop. It can also be run on devices with different hardware components such as a tube computer, tablet, or smartphone. Similarly, a mental state can be realized in many different states. For example, being in pain is not only realizable by a neuron-based brain that has C-fibres, but it can also be realized by a neuron-based brain that lacks C-fibres or even a silicon-based brain, as long as it can play the same functional role.

Functionalism, therefore, is ontologically committed to only two kinds of entities, that is (1) mental property and (2) its realizer. It suggests that functionalism is qualitatively ontologically equal to panpsychism: both are committed to two kinds of entity. However, functionalism differs from panpsychism in terms of the number of examples of each kind. Panpsychism postulates two examples of each kind of entity while functionalism has an infinite number of examples for the realizer of mental states. This makes the ontology of functionalism extremely complex quantitatively.

The quantitative complexity of functionalism’s ontology is compensated for by its relatively simple ideology. Functionalism is committed to only two concepts: (1) causal role and (2) multiple realizability. Both concepts should be considered primitive because they cannot be defined without involving themselves. The concept of “causal role” cannot be defined without involving the concept of “causation,” while the concept of “multiple realizability” cannot be defined without involving the concept of “multiplicity” or “realization.” In other words, any attempt to define either concept will always result in a circular definition, which is not desirable. This fact makes functionalism’s ideology as simple as panpsychism’s.

4.6. Result

Having pointed out the ontological and ideological commitments of the metaphysical theories of consciousness, we can assess the simplicity of panpsychism compared to its rivals. Table 3 below demonstrates two aspects of monistic panpsychism's simplicity in comparison of other metaphysical theories of consciousness:

RIVALS	MONISTIC PANPSYCHISM			
	Ontology		Ideology	
	<i>Qualitative</i>	<i>Quantitative</i>	<i>Qualitative</i>	<i>Quantitative</i>
SUBSTANCE DUALISM	>	>	=/<	=/<
PROPERTY DUALISM	>	>	=/<	=/<
ELIMINATIVISM	=	=	<	<
IDENTITY THEORY	=	=	<	<
FUNCTIONALISM	=	>	<	<

Table 3: The comparison of the simplicity of monistic panpsychism to its rivals'

The table indicates that monistic panpsychism holds an advantage in terms of ontological simplicity. It is simpler than all forms of dualism, equivalent to eliminativism and identity theory, and even surpasses functionalism, which is the most widely accepted theory of consciousness (Bourget and Chalmers, 2023). This comparison suggests that panpsychism can align with our transparent and undeniable intuition of the existence of consciousness without being ontologically superfluous, as is the case with dualism. It maintains the same level of ontological simplicity as eliminativism and identity theory. Furthermore, panpsychism is unexpectedly superior to functionalism in terms of quantitative ontological simplicity, as the latter is committed to the multiple realizability of mental states. This provides a compelling reason to adopt panpsychism.

However, panpsychism has not demonstrated greater ideological simplicity compared to its rivals. At best, its level of simplicity is on par with various forms of interactionist dualism. When assessed against other competing theories, it shows even less ideological simplicity. Therefore, if the simplicity argument must take ideological simplicity into account, panpsychism loses much of its appeal.

This situation worsens if we use the dualistic interpretation of panpsychism as the basis for comparison. The interpretation doesn't change anything in panpsychism's ideology, but it swells up its ontology. As Table 4 shows, dualistic panpsychism is simpler than its rivals only when compared to substance dualism qualitatively and functionalism quantitatively. The number of equal

positions also decreases from five cases in the monistic version to two cases in this dualistic version, namely when compared to substance dualism quantitatively and property dualism qualitatively. In the remaining cases of comparison, dualistic panpsychism is always less simple than its rivals.

RIVALS	DUALISTIC PANPSYCHISM	
	Qualitative	Quantitative
SUBSTANCE DUALISM	>	=
PROPERTY DUALISM	=	<
ELIMINATIVISM	<	<
IDENTITY THEORY	<	<
FUNCTIONALISM	<	>

Table 4: The comparison of the ontological simplicity of dualistic panpsychism to its rivals

Overall, this comparative analysis demonstrates that the ontological simplicity of panpsychism is neither inherently superior nor inferior to that of other theories. It depends on which version of panpsychism is being compared and which rival theory it is measured against. Moreover, the level of simplicity attributed to panpsychism is influenced by the specific aspect of simplicity being considered. The ontological aspect does tend to favor monistic versions of panpsychism over alternative theories. In contrast, the ideological aspect places panpsychism in a less favorable position.

5. Conclusion

Proponents of panpsychism typically present the simplicity argument only after rejecting physicalism and excluding physicalist views from consideration. Consequently, the comparison of simplicity between panpsychism and physicalist theories becomes irrelevant in such discussions. However, given the centrality of simplicity claims in various arguments for panpsychism, it remains essential to assess panpsychism's simplicity in relation to all other theories of consciousness, whether they fall under the monistic or dualistic spectrum. Furthermore, the criteria for evaluating simplicity are still underexplored by both proponents and critics of panpsychism.

In this study, I employed two criteria for measuring simplicity: ontological and ideological commitments. By identifying the ontological and ideological

commitments of each theory, I sought to determine their respective levels of simplicity. This analysis shows that panpsychism is neither inherently simpler nor more complex than other theories. The monistic version of panpsychism has a simpler ontological commitment than the most widely accepted theory of consciousness, namely functionalism. Despite its overlap with idealism, this version offers a compelling case for panpsychism. However, if ideological commitments are considered in the evaluation of simplicity, even the monistic version of panpsychism does not hold a distinct advantage, let alone the dualistic version.

Taufiqurrahman

Faculty of Philosophy, Universitas Gadjah Mada, Indonesia
philtaufiq@ugm.ac.id

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