

Masterarbeit

zur Erlangung des Master of Education

CHALLENGING PANPSYCHISM

Why the Phenomenal Bonding Solution Fails to Solve the
Combination Problem

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Erstgutachter: #####
Zweitgutachter: #####

Vorgelegt von

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Bielefeld, ##.##.2023

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1 Introduction

A Brief History of Mind and Consciousness

'Right now, you have a movie playing inside your head. It's an amazing multi-track movie. It has 3D vision and surround sound for what you're seeing and hearing right now [...]. Your movie has smell and taste and touch. It has a sense of your body, pain, hunger, orgasms. It has emotions, anger and happiness. It has memories, like scenes from your childhood playing before you. And it has this constant voice-over narrative in your stream of conscious thinking. At the heart of this movie is you experiencing all this directly. This movie is your stream of consciousness, the subject of experience of the mind and the world.'

(Chalmers 2014)

The philosophy of mind deals with all kinds of issues concerning the mind and mental states at different levels, and consciousness is one of the most astonishing ones. Its sub-topics can be divided into two ways: either regarding different kinds of mental states (consciousness, intentionality, perception, other states and processes) or regarding the activities of the mind (Bourget and Chalmers n.d.). There are four general types of questions that can be asked about these sub-topics: ontological, epistemological, semantic, and methodological questions (Beckermann 2008, 1).

The mind consists of different parts and different kinds of mental states. Mental states are either acts or dispositions, whereby dispositions are considered mental if and only if they are dispositions to mental acts (Hübner 2015, 256). Mental states in general can be divided into intentional and phenomenal ones. Intentional mental states are, on the one hand, characterized by their intentionality which means they are directed towards something (Beckermann 2008, 13). In other words, they have an object reference and represent something (Hübner 2015, 250). Thus, to be an intentional object, then, means to be represented (Hübner 2015, 250). Those kinds of states are characterized by always having a semantic content (Beckermann 2008, 13–14). In case intentional states refer to facts or propositions, they are called 'propositional attitudes' (Hübner 2015, 250), such as the belief that it will rain tomorrow, the hope that your football team doesn't lose, the desire that I want chocolate or something like a fear of heights. The other possible states are phenom-

enal mental states such as physical sensations or perceptual impressions which possess a qualitative character (Beckermann 2008, 13). Phenomenal states include experiencing pain or knowing what it feels like to be happy, sad, or dizzy.

However, this distinction between intentional and phenomenal mental states shouldn't be regarded as disjunct. The line between the two states isn't always as clear as it may seem at first glance. For example, the intentional state of hope can also be emotionally coloured and emotions like anger and grief seem to be directed towards a specific object (Beckermann 2008, 14). This gives the impression that these states can have both intentional and qualitative aspects (Beckermann 2008, 14). Thus, mental acts can be regarded as either intentional, phenomenal, or both (Hübner 2015, 256). In recent debates in the philosophy of mind, questions such as phenomenological issues of intentionality are very prominent (Smith 2018). For those states, it is possible to be conscious or unconscious, whereas it is controversial whether purely phenomenal states can be unconscious (Smith 2018). An example of an unconscious intentional mental state could be the following: I am going to ask you right now if you think that mice are living in your room. I suppose not. So, you are certain that there are no mice in your room, but you are only conscious of this belief after my question. Conscious intentional mental states and conscious phenomenal mental states together form consciousness.

The main focus in this work lies on phenomenal consciousness, which is also often simply called consciousness. It should be noted that consciousness itself is an ambiguous term (Chalmers 2007, 225). There are different concepts of consciousness itself and there are far more interpretations of the noun 'consciousness' (Van Gulick 2022). One can distinguish between creature consciousness and state consciousness, and between the varieties of these two, while it is also possible to refer specifically to phenomenal consciousness, access consciousness, and reflexive or meta-mental consciousness (Van Gulick 2022). The term 'phenomenal consciousness' refers to the part of our mentality that includes conscious phenomenal mental states and describes the overall structure of *experience* (Van Gulick 2022). Experiences have an inherently special aspect: When we experience something, it feels a certain way to experience this circumstance, such as pain or happiness, stress or excitement, sadness or love. This subjective, introspectively accessible, phenomenal character of our experience is called 'qualia' (singular: *quale*), originally introduced by C. I. Lewis in 1929 (Kind

n.d.; Tye 2021). Qualia are the part of conscious experience associated with this ‘what-it-is-like’ aspect of our mental life (Tye 2021). Consciousness, and especially conscious experience, is what makes the inner movie mentioned in the beginning so special and mysterious. What is so baffling about this part of our consciousness is that on the one hand, there seems to be nothing we don’t know better, but on the other hand, we aren’t good at explaining this phenomenon (Chalmers 2010, 3).

This problem of not being able to explain phenomenal consciousness is called ‘the hard problem of consciousness’ or as Chalmers (2007) wrote: the problem of *experience* (Chalmers 2007, 226). What makes this problem so hard is the fact that it is no problem about performance and functions but goes beyond it (Chalmers 2007, 226–28). Problems related to these two aspects, performance, and functions, can be explained and are not a cause for concern, although the explanations are sometimes not complete (Chalmers 2007, 226). Science has provided solid explanations for several questions, such as the ability to respond to and categorise or discriminate the environment, to process information, to focus attention, and to control behaviour (Chalmers 2007, 225). Questions about these issues are what Chalmers (2007) called *the easy problems of consciousness*: With today’s standard methods of cognitive science, these questions are easy to answer and explain because they concern explanations about cognitive abilities and functions and can be explained in term of computational or neural mechanisms (Chalmers 2007, 225). So, if consciousness would be wholly described by those phenomena it wouldn’t be problematic to explain (Chalmers 2007, 226). But this isn’t the case. Unlike the easy problems of consciousness, the questions of why something is conscious and how phenomenality is possible are difficult to answer with the standard methods of cognitive science. ‘The hard problem of consciousness begins with the difficulty of making sense of the supervenience of [experience] on the physical’ (Goff 2009, 291).

The question of why our cognitive performance is accompanied by experience remains unanswered (Chalmers 2010, xiv). Why is it that besides our pure perception of an object, we also have this part of the experience like the quality of deep blue, the taste of chocolate, and the sensations of a bird singing? How do we explain the character of emotions and why it feels a certain kind of way? The hard problem describes the problem of explaining how physical states can be conscious at all (Weisberg n.d.) and how it is possible to explain consciousness in physical terms and in relation to

processes in the brain (Gennaro 2023). It is a widely accepted fact that this phenomenal aspect of the mind arises from a physical basis but what remains unclear is how and why this is the case (Chalmers 2007, 226). But even though we know a lot about all sorts of other mental phenomena and the brain scientifically, it seems that science has left us with certain questions about consciousness itself, especially the phenomenal part of it. What seems to remain, as Joseph Levine (1983) called it, is an ‘explanatory gap’.

Over the last thousand years, theories have attempted to explain the mind, especially consciousness, and to answer various questions, especially those of ontology. Problems of consciousness are central to current debates, even though they are part of a debate that goes back centuries. The two main currents are the theories of *dualism* and *physicalism*. Dualism posits that there are two fundamental kinds or categories of things (Robinson 2020). The two most well-known forms of dualism are *substance-* and *property dualism*. *Substance dualism* claims that those two different kinds of things are the mental and the physical which themselves are distinct (Robinson 2020). *Property dualism*, on the other hand, holds that there exist two essentially different kinds of properties, mental properties and physical properties (Robinson 2020). In contrast to these two dualistic theories, the theory of physicalism states that everything is physical (Stoljar 2022) or can be explained in physical terms. While, for instance, substance dualistic theories claim that the mind is somehow a distinct kind of thing and differs from the body, physicalism claims that everything is physical which specifically means that the nature of the actual world is exhausted by the condition of being physical (Robinson 2020; Stoljar 2022). Dualists also deny any identity between mind and brain, and reject the possibility that the mind emerges as a product of the brain (Calef n.d.) while advocates of physicalism generally don’t. Both dualism and physicalism, cover a wide range of different theories. Particularly well-known proponents of dualism are *substance dualists* and *property dualists*, while on the physicalistic side, we have, for instance, *identity theorists*, *functionalists*, and *representationalists*. Even though both theories face some more or less serious issues, many of the physicalist theories have prevailed in recent years in the philosophy of mind, and dualistic theories have become an increasingly abandoned view. But there is a newcomer who is gaining ground.

In recent years, some philosophers, especially non-dualists, have expressed more doubts about physicalism, which is considered by many to be the best explanation of mind and consciousness,

and claim that a better theory will be able to fill the explanatory gap. In their view, physicalism continues to fail to provide a satisfactory explanation of consciousness and they proclaim the need for a new approach to solve this problem (Goff, Seager, and Allen-Hermanson 2022a). According to those philosophers, consciousness can't be explained in terms of a supervenience relation to physical features, which means that the physical theories that are proposed as theories of everything are not theories of everything (Chalmers 1996, 126). If this is indeed the case, the question is what to do about it. Chalmers has a seemingly simple answer. 'If you can't explain consciousness in terms of the existing fundamentals – space, time, mass, charge – then as a matter of logic, you need to expand the list. The natural thing to do is to postulate consciousness itself as something fundamental, a fundamental building block of nature' (Chalmers 2014).

The theory of taking consciousness in a certain kind of way as fundamental and ubiquitous is known as *panpsychism*. What would need to be introduced at this point is a new set of fundamental properties and laws (Chalmers 1996, 126). To designate something as fundamental means that it can't be explained in terms of more basic features or laws (Chalmers 1996, 126). More specifically, the idea of this theory is that consciousness is fundamental in the sense that at least some basic physical entities have mental states or are conscious (Chalmers 2013, 1; Goff, Seager, and Allen-Hermanson 2022a). So, it's not just fundamental in the sense that it's not reducible, it's fundamental in the sense that fundamental entities have a kind of mentality. This aspect of taking minds as fundamental might make panpsychism look like dualism. But panpsychism doesn't merely claim that the mind is a fundamental property or something fundamental on an ontological level. It also claims that certain fundamental entities have consciousness and that they somehow lead to a greater consciousness. When panpsychists say that they take consciousness as fundamental it isn't just about the ontological level but also about that consciousness is to be found in fundamental entities. To make it even clearer: The word '*panpsychism*' derives from the two Greek words *pan* (πᾶν: 'all') and the word *psyche* (ψυχή: 'soul' or 'mind'), which means literally: *everything has a mind* (Skrbina n.d.; Goff, Seager, and Allen-Hermanson 2022a). Taking panpsychism literally, this is the main idea of this theory: mind is everywhere.

In the next chapters, we will explore what the theory of panpsychism looks like in detail. Advocates see this theory as a promising alternative and as a much better explanation for mind and con-

sciousness than physicalism and dualism. Panpsychism is said to have the advantage of retaining both dualistic intuitions about epistemology and physicalistic intuitions about causality (Chalmers 2016, 179). At first, it seems like a completely crazy idea to believe in. But there is a much more serious problem with this theory than just craziness, as we will see later. For the sake of this thesis, it is worth attributing a certain amount of seriousness to the theory.

This thesis deals with the combination problem and will answer the following questions: What is the combination problem and why is it so problematic for panpsychism? How can panpsychists solve this problem? And lastly, the main research question that this aims to answer is: Does Goff have a suitable solution to the combination problem with his proposal for a phenomenal bonding solution? In order to provide satisfactory answers to these questions, the work will be structured as follows: In Chapter 2, I will give a short introduction to the theory of panpsychism and will try to place the theory and its sub-theories in a larger context. I will also review some arguments in favour of this theory. In the third chapter, I will explore panpsychism's greatest weakness: *the combination problem*. As we will see, there are many versions of the combination problem, which is why I will briefly show the different variants of the problem. In Chapter 4, I will discuss Goff's phenomenal bonding solution as the most promising response to the combination problem in depth. The thesis concludes with my take on the usefulness of this proposed solution and the soundness of panpsychism.

2 Mind in Everything

An Overview of Panpsychism's Theory of Consciousness

In this chapter, I will introduce the theory of panpsychism in general and some of its variants. Contrary to what one might expect, panpsychism isn't just one theory, but rather, like dualism and physicalism, includes several sub-theories, which all differ in terms of detail. Afterwards, I will also present some arguments in favour of it. The panpsychist sub-theory that is particularly relevant to this work will be the focus of this chapter.

As an introduction to panpsychism, I would like to start by taking a closer look at its history. Contrary to popular belief, panpsychism is not a novel theory. In fact, the idea that mentality is in everything can be found as far back as ancient Greek philosophy, as well as in Eastern civilizations, and was part of many philosophers' theories (Goff, Seager, and Allen-Hermanson 2022a; Skrbina n.d.; 2007). For instance, many pre-Socratics like Thales believed that things like magnets possessed a mind (Skrbina n.d.). 'Thales notes that magnets and, under certain circumstances, amber, can move themselves and concludes that they therefore possess minds.' (Goff, Seager, and Allen-Hermanson 2022a). Or Anaxagoras, who believed that everything is in everything, and whose statements could be interpreted as holding that everything has a portion of mind while denying that everything has a mind (Goff, Seager, and Allen-Hermanson 2022a). Ideas of panpsychism can also be found in Plato's thinking: He introduced a concept called 'anima mundi', the world soul (Skrbina n.d.). He argued that since the body has a soul, it is reasonable to conclude that the universe also has a soul and everything in it is ensouled, as both the universe and the human body are composed of the four elements (fire, air, water, earth) and are well ordered and show clear signs of *logos* (rationality) (Skrbina n.d.).

During the Renaissance, the first philosopher in over a millennium to mention the ideas of panpsychism was Cardano (Skrbina n.d.). In his view, ontology consisted of a complex hierarchy: Each thing was seen as a part, a unity in itself, and a composition of sub-parts (Skrbina n.d.). The principle that maintained the unity of each part was called 'anima' (soul) and thought to be present in everything (Skrbina n.d.). In the 18th and 19th centuries, the French thinkers Julien LaMettrie

and Denis Diderot were convinced that mind or a mind-like nature must be inherent in everything (Skrbina n.d.). From today's perspective, the 19th century can be seen as the heyday of panpsychism with a multitude of proponents included such as Gustav Fechner (1801–1887), William James (1842–1910), Josiah Royce (1855–1916), William Clifford (1845–1879) and many others (Goff, Seager, and Allen-Hermanson 2022a). A century later, Bertrand Russell increasingly became a proponent of panpsychism in the late 1920s (Skrbina n.d.). After this, due to the increasing dominance of physicalism and the general hostility to metaphysics that lasted until the 1970s, interest in panpsychism waned (Goff, Seager, and Allen-Hermanson 2022a). So, it happens that the theory has almost disappeared. But in recent years, a minority of analytic philosophers have begun to take panpsychism more seriously again and to assess its potential (Alter and Coleman 2019, 230; Goff, Seager, and Allen-Hermanson 2022a).

In practice, panpsychists don't necessarily have to commit themselves to the strong thesis that 'everything has a mind or a mind-like quality' or 'everything is conscious' (Chalmers 2013, 0–1; Goff, Seager, and Allen-Hermanson 2022a). Accordingly, this translated meaning from the Greek original would mean literally that a stone, a plant, perhaps even the sun, or the seat on which you rest, has a primitive basic consciousness (whatever that means). Glossing over this, this seems to be a crazy consequence. In contemporary debates, panpsychism is rather understood in the sense mentioned previously in the introduction, that mentality is fundamental and ubiquitous and that some fundamental physical entities have mental states or are conscious and not that literally everything is conscious (Chalmers 2013, 1; Goff, Seager, and Allen-Hermanson 2022a)¹.

'[W]hilst the panpsychist holds that mentality is distributed throughout the natural world – in the sense that all material objects have *parts* with mental properties – she needn't hold that literally everything has a mind, e.g., she needn't hold that a rock has mental properties (just that the rock's fundamental parts do).'

(Goff, Seager, and Allen-Hermanson 2022a)

If quarks or photons have mental states, but rocks and numbers don't, that's sufficient for panpsychism to be true (Chalmers 2013, 1). In other words, a person who calls themselves a

¹ Note that 'some' should be more understood as a 'at least some'.

panpsychist isn't necessarily committed to the claim that these things have mental states (Chalmers 2013, 1). They aren't even committed to support the claim that every possible combination of particles has consciousness on its own (NourFoundation 2022, 1:03-1:11). It is possible that only certain combinations of conscious fundamentals under limited conditions form a conscious system (NourFoundation 2022, 1:17-1:28). In this sense, mentality and every aspect of it, including consciousness, can be located at different levels of organization and need not be limited to brains (Sheldrake 2021, 10). Also, to claim that a photon has mental states doesn't mean it has to think like we do. 'It's not that a photon is wracked with angst because it's thinking, "Aww, I'm always buzzing around near the speed of light. I never get to slow down and smell the roses"' (Chalmers 2014). That's not what the theory of panpsychism has in mind. The idea is more that fundamental physical entities and systems have some primitive type of consciousness (Chalmers 2014), not the kind of consciousness that comes with complex thoughts, reflections of our actions, and a nuanced range of emotions. So, instead of taking the expression of the Greek original of panpsychism literally, the theory must be interpreted more carefully. Even if panpsychism is often presented as the theory that everything is conscious, it rather claims that consciousness is already there at a fundamental level, and nothing just emerges out of physical entities. Panpsychism can be understood as the claim that mind or mentality (and therefore also consciousness) is a fundamental feature of the world that exists throughout the universe (Seager and AllenHermanson 2010 as cited in Brüntrup and Jaskolla 2017, 1; Seager 2020, xi).

It is important to emphasize that panpsychism is distinct from some other theories in the philosophy of mind, such as *idealism*, *physicalism*, and *substance dualism* (Brüntrup and Jaskolla 2017, 1). *Idealism* differs from panpsychism in that panpsychism doesn't claim that the only things in the world are minds but puts minds on par with basic physical features such as mass, electrical charge, or gravity. *Physicalism* differs from panpsychism in that physicalism, as earlier mentioned, claims that everything is physical. Hence, even consciousness would be fully explainable in terms of pre-existing physical features, entities, and established physical laws. However, panpsychism adds something to this picture by claiming that consciousness is another additional physical fundamental feature of the world and is not explainable by pre-existing physical features. And lastly, the theory of panpsychism differs, according to its advocates, from *substance dualism*. Substance dualism

claims that there are two categorically different sorts of entities (the mental and the physical) that can exist completely independently from each other (Brüntrup and Jaskolla 2017, 1). Panpsychism differs in this respect because it doesn't claim that mentality or consciousness is something completely different from physical entities, but rather an additional one. This might be one reason why advocates claim that panpsychism preserves the best of dualism and physicalism and doesn't share their disadvantages but is, in their view, rather an attractive middle way between dualism and physicalism (Chalmers 2016, 179; Goff, Seager, and Allen-Hermanson 2022a). As mentioned in the introduction of this thesis, the term 'fundamental' is used differently in substance dualism and panpsychism. As already noted, panpsychism doesn't just claim that the mind is something fundamental on an ontological level, it also claims that certain fundamental entities have consciousness and that they lead in some way to a greater consciousness. Speaking of consciousness as fundamental in the sense of panpsychism includes the claim that consciousness is to be found in fundamental entities.

Panpsychism is highly counterintuitive and seems like a crazy idea, but it has some advantages over other theories of mind. First, some panpsychists argue that despite the absence of empirical and observational evidence for the claim that consciousness is fundamental, its mere existence is already strong support for panpsychism (Goff 2016, 284; Goff, Seager, and Allen-Hermanson 2022a). Although the existence of consciousness doesn't ensure the truth of the theory itself, panpsychists claim that their theory can give the 'most unified picture of the world that is consistent both with its existence and with our observational knowledge' (Goff 2016, 284). Another reason given by proponents for favouring panpsychism over other theories is that it is considered to be more ontologically parsimonious than other theories 'given that the existence of conscious experiencing is certain and that panpsychism doesn't posit the existence of any kind of stuff other than conscious experiencing' (Brüntrup and Jaskolla 2017, 8). Panpsychism can be seen as ontologically simpler than physicalism or idealism because it doesn't have to pay the high metaphysical price of reduction or take the physical aspect properly seriously (Brüntrup 2016, 49).

Also, as mentioned earlier, advocates of panpsychism argue that the theory preserves the best of dualism and physicalism and doesn't suffer from their respective disadvantages (Chalmers 2016, 179; Goff, Seager, and Allen-Hermanson 2022a). In their view, panpsychism, on the one hand,

doesn't have to deal with the dualism's problem of leaving us with a radically disunified picture of the world (Goff, Seager, and Allen-Hermanson 2022a), as panpsychism claims that consciousness isn't over and above the physical. The main problems of dualistic theories are: 1) explaining the queerness of the mental, given that it's not physical, 2) the unity of mind, and 3) the famous mind-body problem, which asks what the relationships between mind and body or alternatively between mental and physical properties are (Robinson 2020). According to panpsychists, their theory avoids these problems. Further, panpsychism avoids the complexity of substance dualism, while keeping the advantages of taking the mental as well as the physical seriously (Brüntrup 2016, 49). On the other hand, some philosophers also embrace panpsychism because they think that physicalism fails to address the difficulty of giving an answer to the explanatory gap and to the questions of how consciousness can arise from non-conscious things. In their view, panpsychism preserves the basic concept of physicalism, namely that everything is physical and can be explained accordingly, by adding consciousness to the basic physical features. In addition, panpsychism can avoid the problem of physicalism that consciousness inexplicably arises from unconscious entities. In other words: panpsychism avoids the problem of strong emergence (Goff, Seager, and Allen-Hermanson 2022a; Nagasawa and Wager 2016, 115).

The *Non-Emergence Argument* is the first positive argument for panpsychism I would like to examine. Before doing this in more detail, it is useful to clarify the terms 'emergence' and 'constitution'. A property is called 'emergent' if it is a novel property of a system that differs from the properties of the parts of the system from which it emerges (Vintiadis n.d.). Therefore, I would like to formalise this as follows:

Entity B emerges out of entities $a_1 \dots a_n$ if B arises as a causal product of interactions of $a_1 \dots a_n$ and possesses new properties which $a_1 \dots a_n$ don't have and which are not reducible to the properties of $a_1 \dots a_n$.

Constitution, in contrast, can be understood as follows:

Entities $a_1 \dots a_n$ constitute an entity B if B only consists of $a_1 \dots a_n$ and all of B 's properties are reducible to properties of $a_1 \dots a_n$.

To illustrate this difference, consider a normal house made out of wood, bricks, cement, windows, etc. The various parts that were put together during the construction constitute the house, but the property of providing protection can be seen as an emergent phenomenon because the single parts of the house don't possess this property.

Note that this is a rather weak form of emergence. Panpsychists need a much stronger form of it. In order to avoid confusion about the use of the term 'emergence', it should further be emphasized that panpsychist theories understand emergence more as a spectrum (Brüntrup 2016). This also allows panpsychists to defend a theory called 'emergent panpsychism'.

Some claim that the main reason for favouring panpsychism over physicalism lies in the avoidance of the problem of (strong) *emergence* that physicalists are facing (Blamauer 2011, 32; Nagasawa 2020, 267; Pylkkänen 2020, 287). Proponents of panpsychism believe that the unexpected occurrence of phenomenal properties instantiated by non-phenomenal physical things can't be explained (Nagasawa 2020, 265). It seems as if there is a mysterious strong emergence that physicalism has trouble explaining. Note that some phrase it as 'super-strong emergence' (Brüntrup 2016, 68–69) or 'radical emergence' (Seager 2020, 7). In their view, philosophers and scientists haven't been able to explain consciousness in terms of non-consciousness in the past (Goff, Seager, and Allen-Hermanson 2022a). 'Given this failure it seems reasonable to explore other paradigms of scientific explanation' (Goff, Seager, and Allen-Hermanson 2022a). Further, the emergence of experiences, subjectivity, qualia, etc. from a universe that doesn't possess these things appears to be inconceivable (Skrbina 2020, 105). 'If they did, it's a true miracle. Panpsychists prefer a rational, naturalistic, and non-miraculous universe. And in such a universe, mind must have always been present' (Skrbina 2020, 105). As such, strong emergence is a problem for physicalism, which holds that all physical features are either fundamental or conservative and emerge from compositions and interactions of other fundamental features (Seager 2020, 7). In the eyes of panpsychists, their theory is a good alternative in closing the explanatory gap, since it provides a positive account of both the emergence of human consciousness and the intrinsic nature of matter (Goff, Seager, and Allen-Hermanson 2022a).

There are several ways to present this point as an argument. One presentation comes from Thomas Nagel (1979). According to him, panpsychism follows from four premises, which Goff et al.(2022a) have summarised as follows:

- ‘1. *Material Composition* – Living organisms are complex material systems with no immaterial parts. The matter composing us is not special; the matter composing any material entity, if broken down far enough and rearranged, could in principle be incorporated into a living organism.
2. *Realism* – Mental states are genuine properties of living organisms.
3. *No Radical Emergence* – All the properties of a complex organism are intelligibly derived from the properties of its parts.
4. *Non-Reductionism* – The mental states of an organism are not intelligibly derived from its physical properties alone (including the physical properties of its parts).’

(Goff, Seager, and Allen-Hermanson 2022a)

Nagel argues that there have to be non-physical properties of basic matter which, when combined in the right way, imply the existence of mental states (Goff, Seager, and Allen-Hermanson 2022a). Combining 1 and 2 entails that mental states are properties of matter. Further, together with 3, we can deduce that we can intelligibly derive the mental states of a living being from the properties of its matter. Together with 4, it follows that mental states are derived from non-physical properties of their material parts. Therefore, if mental states somehow exist due to non-physical properties of matter, matter must have non-physical properties. He further adds: ‘[S]ince the same matter can be made into different types of organisms with different types of mental life [...], it must have properties that imply the appearance of different mental phenomena when the matter is combined in different ways’ (Nagel 1979, 182).

In addition to the third premise, it can be said that Nagel is of the opinion that there are no truly emergent properties of complex systems (Nagel 1979, 182). This should be reason enough to conclude ‘that either the system has further constituents of which we are not yet aware, or the constituents of which we are aware have further properties that we have not yet discovered’ (Nagel 1979, 182). He continues after the conclusion to further argue that since the mental properties of an organism don’t depend on physical properties alone, but are derived from the properties of its constituent parts, it must have non-physical properties (Nagel 1979, 182). This must be a property

of all matter since all matter can form an organism (Nagel 1979, 182). Moreover, different mental states must be allowed to arise from the same matter, since can form different kinds of organisms (Nagel 1979, 182). So, the key idea of this argument is that consciousness can't arise if it isn't already there. 'Mind could never have emerged from no-mind.' (Seager 2020, 105) Instead, consciousness should be explained by consciousness. That consciousness arises from brute emergence, isn't seen as an option here.

At first, the premises of the argument sound plausible except for the fourth premise, to which physicalists would probably object. The problem is that physicalist theories don't claim some miraculous emergence of consciousness from the unconscious, but rather defend the widely accepted view that the mental nomologically supervenes on the physical and not as Skrbina (2022) claims that '[n]early every modern-day philosopher of mind is an emergentist' (McLaughlin and Bennett 2021; Skrbina 2020, 104). Unfortunately, at this point, the strongest argument panpsychists have in favour of their own theory, which is explicitly directed against physicalism, is an argument against something that most physicalists don't claim. Hence, the argument seems to amount to a strawman fallacy.

Another very closely related argument is the *Genetic Argument* for panpsychism (Brüntrup 2016, 50; Brüntrup and Jaskolla 2017, 3). Sometimes this is set equal to the Non-Emergence Argument (Skrbina, n.d.). While proponents of the Non-Emergence Argument claim to provide an explanation for the existing synchronous dependence of biological consciousness on more fundamental features of reality, proponents of the Genetic Argument want to show that panpsychism provides the better explanation for the evolution of biological consciousness (Goff, Seager, and Allen-Hermanson 2022a). True to the Latin expression 'ex nihilo, nihil fit' – 'out of nothing comes nothing' (Skrbina n.d.), it would be wholly unintelligible how conscious experience would emerge from a world only furnished with non-conscious entities (Brüntrup 2016, 50). Human consciousness is said to have evolved from purely physical entities, but then there has to be something fundamentally mental that was present at the beginning of evolution (Brüntrup and Jaskolla 2017, 3). 'If evolution is to work smoothly, consciousness in some shape must have been present at the very origin of things' (James 1890, 149). Furthermore, according to panpsychists, such a radical emergence, where consciousness arises arbitrarily from non-conscious things, appears not necessarily

logically impossible but is at odds with a physicalists-like view: All physical features are either fundamental or conservatively emergent by coming into existence through assemblages and interaction of other fundamental features (Seager 2020, 7). Hence, from a panpsychist perspective, it is reasonable to explain consciousness in terms of consciousness. In their view, panpsychism provides a much better integration of the phenomenon of consciousness into the natural world as we know it (Chalmers 1996, 298). Assuming the correctness of panpsychism, consciousness wouldn't come into existence out of nowhere, which makes it less special (Chalmers 1996, 298). Thus, panpsychism has no need for a miraculous emergence (Blamauer 2011, 32).

The *Argument from (Mental) Causation* is another option. The idea is that there is a need for an explanation of mental causation in a way that is compatible with the *causal closure of the physical world* (every physical event has a physical cause) (Goff, Seager, and Allen-Hermanson 2022a). This means that because of the causal closure of the physical world, panpsychists believe that consciousness, valued as a physical event, has itself to be part of the physical world. According to them, the thesis of panpsychism explains how consciousness fits into this causally closed physical worldview because it is seen as belonging to the intrinsic nature of the world (Goff, Seager, and Allen-Hermanson 2022a). '[If] consciousness infuses the intrinsic nature of the material world, then consciousness and its effects are part of the causally closed system' (Goff, Seager, and Allen-Hermanson 2022a). So, panpsychism satisfies this need for causal closure. Combined with the Genetic Argument, it could make a strong case for panpsychism. But there also lies a problem: physicalism already includes consciousness in the causal closure of the physical world. This would raise the question of which provides the better explanation. Thus, it is more likely that this argument for panpsychism is intended to show the disadvantages of substance-dualist theories, rather than to argue against physicalism.

Before we can move further it is necessary to get clear about some important terminology. As mentioned at the beginning of this chapter, many theories fall under the heading of panpsychism. Although there is a wide variety of panpsychist sub-theories, in this thesis I will concentrate on and discuss those that are subject to the most serious problem for panpsychism. The difficulty in providing a clear and concise overview of these sub-theories is due to the complexity of these different sub-theories, the different categorisations, and the inconsistencies in the panpsychism debate.

Here is an overview of some crucial terms. *Macro-experiences* are the kind of experiences that *macro-entities*, such as humans, have, including *macrophenomenal properties* (Chalmers 2013, 8). ‘[M]acrophenomenal properties [characterize] what it is like to be humans and other macroscopic entities’ (Chalmers 2013, 8). On the contrary, *micro-experiences* are experiences that belong to *micro-physical entities* (Chalmers 2013, 8). Likewise, there are also *microphenomenal properties*, which, as suspected, describe what it is like to be a microphysical entity (Chalmers 2013, 8). With this in mind, we are now in a position to take a more detailed look at the variants of panpsychism.

To start with, there are two general forms of panpsychism, depending on which aspect of the mind is being considered. The distinction between intentional parts and phenomenal parts of consciousness mentioned in the introduction can be extended to distinguish between two different panpsychist theories. Thus we have, on the one hand, *pancognitivism*, the theory that takes thought by being part of intentional consciousness as fundamental and ubiquitous, and, on the other hand, *panexperientialism*, which takes conscious experience as fundamental and ubiquitous (Goff, Seager, and Allen-Hermanson 2022a). Because of the observably decreasing complexity of consciousness, starting with humans and moving on to smaller creatures, panexperientialists hold that this process continues downward (Goff, Seager, and Allen-Hermanson 2022a). This means that the smaller the entity is, the less complex its phenomenal consciousness. ‘If the notion of “having experience” is flexible enough, then the view that an electron has experience – of some extremely basic kind – would seem to be coherent [...]’ (Goff, Seager, and Allen-Hermanson 2022a). Because the former form of panpsychism is taken even less seriously in contemporary analytic philosophy (Goff, Seager, and Allen-Hermanson 2022a), this thesis will focus on panexperientialism. For the sake of simplicity, I will follow Goff, Seager, and Allen-Hermanson (2022) and refer to panexperientialism as ‘panpsychism’. Hence, whenever I will talk of panpsychism, it is strictly a statement about panexperientialism.

Having laid this out, I would like to introduce some common distinctions of panpsychist sub-theories, starting with *micropsychism* and *cosmopsychism* (even if it’s not the most famous one). The difference between these two theories lies in the different attribution of consciousness to different fundamental entities. While one of the tenets of micropsychism is that primitive experience can be attributed to elementary physical entities at the micro level, the thesis of cosmopsychism is that the

entire universe is a fundamental conscious entity (Goff 2019, 1; Roelofs 2019, 118; Seager 2020, xii). More precisely, micropsychists claim that the fundamental micro-level entities, like quarks and electrons, have some basic consciousness (Goff 2019, 150). On the other hand, the thesis of cosmopsychism suggests that the entire universe possesses so-called cosmopsychological properties (Ganeri and Shani 2022, 2–3).

A more common and frequently made distinction in the literature is the one between *constitutive panpsychism* and *non-constitutive panpsychism*. Unlike the previous one, the distinction between constitutive panpsychism and non-constitutive panpsychism is about the relation between different conscious entities. Constitutive panpsychism (sometimes referred to as ‘compositional panpsychism’) is the currently preferred variant of panpsychism and probably also the most discussed one (Brüntrup 2016, 48; 57). According to Brüntrup (2016), constitutive panpsychism can be described as a theory similar to classical physicalism, while non-constitutive versions of panpsychism are akin to dualism (Brüntrup 2016, 49). The distinction between constitutive and non-constitutive panpsychism is often attributed to Chalmers, who originally introduced it in *Panpsychism and Panprotopsychism* (2016). Chalmers describes constitutive panpsychism as the thesis that ‘macroexperience is (wholly or partially) grounded in microexperience’ and non-constitutive panpsychism as the thesis that ‘there is microexperience and macroexperience, but the microexperience does not ground the macroexperience’ (Chalmers 2013, 8). The crucial difference between the two is that non-constitutive panpsychists think that consciousness as an emergent phenomenon can’t be fully captured by the metaphysical concept of constitution or composition (Brüntrup 2016, 49).

Other versions of these theories differ slightly from Chalmers’ descriptions. Goff et al. (2022a), for instance, describes constitutive panpsychism as the claim that ‘facts about human and animal consciousness are not fundamental, but are grounded in more fundamental kinds of consciousness, e.g., facts about micro-level consciousness’, and non-constitutive panpsychism as the claim that ‘human and animal consciousness are among the fundamental facts’ (Goff, Seager, and Allen-Hermanson 2022a). The difference between Chalmers’ and Goff’s formulations of constitutive panpsychism is that the former provides a more detailed description, while the latter is a more general one. Also, Chalmers is more explicit by saying that it’s possible for macro-experiences to be

only partially constituted by micro-experiences. In addition, he writes: '[F]or example, [macroexperiences] might be grounded in microexperience along with certain further structural or functional properties' (Chalmers 2013, 8). He doesn't elaborate further what he exactly means by 'structural or functional properties' but we will understand this better in the course of this thesis. Goff, however, seems to understand the theory of constitutive panpsychism in a more general way, namely that the consciousness of macro-entities such as humans or other non-human animals is constituted by, grounded in, or realized by more fundamental types of experience. The appended additional sentence 'e.g., facts about micro-level consciousness' supports this interpretation of Goff's understanding that constitutive panpsychism is just the theory of the relation between larger and smaller consciousness regardless of the level of reality at which these smaller conscious entities are located. According to this, micro- and cosmopsychism then give further information about the level, on which those fundamental entities are located.

Because this thesis will discuss Goff's solution to the combination problem, I want to adopt Goff's distinction in a slightly modified version and will understand constitutive panpsychism and non-constitutive panpsychism as follows:

Constitutive Panpsychism:	Macro-consciousness and especially macro-experience are not themselves fundamental but constituted by, grounded in, or realized by more fundamental types of consciousness or experiences.
Non-constitutive Panpsychism:	Macro-consciousness or macro-experiences are themselves fundamental and are not constituted by, grounded in, or realized by more fundamental types of experiences.

In what follows, I will focus on constitutive panpsychism as the currently most plausible theory that panpsychists have at offer, as according to Chalmers (2013) non-constitutive panpsychist theories face many problems dualistic theories share (Chalmers 2013, 9).

Additionally, there are also various combinations of constitutive/non-constitutive panpsychism on the one hand, and micro/-cosmopsychism on the other (while I won't consider

non-constitutive versions further). When we are confronted with the term ‘fundamental entities’ we tend to think of micro-level entities. However, besides constitutive micropsychism, there is another theory called ‘constitutive cosmopsychism’. This theory is a combination of *priority monism* with constitutive panpsychism, which claims that the universe as a whole is a conscious being (cosmopsychism) and that all entities are part of this universal consciousness (Goff 2019, 151; Goff, Seager, and Allen-Hermanson 2022a). Put briefly, priority monism is the theory that the universe is the only fundamental thing and that every little part is grounded in it (Goff 2019, 148). Goff illustrates this principle with a table by saying ‘the smallest [sic!] bits of the table exist and are the way they are because the table as a whole exists and is the way it is’ (Goff 2019, 148). Similarly, constitutive cosmopsychism states that all conscious beings are metaphysically grounded in the conscious properties of the whole universe (Ganeri and Shani 2022, 2–3). In other words: the consciousness of the universe constitutes the consciousness of all conscious beings. So, constitutive micropsychism can be understood as a *bottom-up view*, whereas cosmopsychism should be understood as a *top-down view* (Nagasawa 2020, 265–66). However, for now, constitutive cosmopsychism is no longer of any particular importance for this thesis and we will focus on constitutive micropsychism.

Constitutive micropsychism is the combination of constitutive panpsychism and the earlier-mentioned micropsychism (Goff, Seager, and Allen-Hermanson 2022a). According to Goff et al., it is the most common form of constitutive panpsychism (Goff, Seager, and Allen-Hermanson 2022a). This theory states that micro-physical entities are the most fundamental parts that possess basic conscious experiences and constitute macro-experiences. Hence, all facts are grounded in consciousness-involving facts at the micro-level (Goff, Seager, and Allen-Hermanson 2022a). I think that Chalmers understands the theory of constitutive panpsychism he presented in his paper as constitutive micropsychism. I would like to adopt the following understanding of constitutive micropsychism:

Constitutive Micropsychism:

Macro-consciousness and especially macro-experiences are constituted by, grounded in, or realized by a fundamental type of consciousness or experiences at the micro-level.

This theory will be the main subject of this thesis, especially because the main problem of panpsychism addresses this kind of theory.

Panpsychism is a recurring theory that claims to be the best option for solving the hard problem of consciousness. Whether this promise can be fulfilled, and whether the theory's intentions will be crowned with success, remains to be seen. I have presented a brief insight into the complexity of this theory which comprises a multitude of sub-theories from general to more fine-grained distinctions of various theses. More distinctions will be mentioned from time to time in the course of the thesis but for now, I want to leave it at that. Panpsychism claims to provide an explanation of the nature of consciousness and how it fits into the physical world, thereby providing an overall picture and avoiding the problem of strong emergence, according to optimistic philosophers. At first glance, panpsychism seems to be a completely crazy idea but there are some arguments in favour of it. I have presented these arguments exclusively in support of panpsychism and will not delve into them further at this point in my thesis. However, I will come back to them in the later discussion. For now, I would like to focus on the most serious problem for panpsychism, which is the topic of the next chapter: *the combination problem*.

3 The Combination Problem

Panpsychism's Greatest Weakness

Many people find the theory of panpsychism highly questionable, whether they have a philosophical background or not (Goff, Seager, and Allen-Hermanson 2022a). Panpsychism might appear unconventional and counterintuitive by challenging our intuitions about the world and scientific principles. The theory is often labelled as a 'crazy idea'. Panpsychists respond to this – let's call it 'craziness objection' – by saying that there is no reason to doubt the truth of a theory that it seems crazy (Goff, Seager, and Allen-Hermanson 2022a). They argue that other stunning discoveries in the last centuries also seemed crazy and counterintuitive at first but are today widely accepted theories, such as human evolution, Einstein's theory of relativity, or quantum mechanics (Goff, Seager, and Allen-Hermanson 2022a). However, it's important to note the difference between panpsychism and the scientific breakthroughs mentioned above. It appears that the latter discoveries were built on well-established scientific frameworks with established physical and mathematical principles and supported by concrete evidence. Unfortunately, panpsychism faces the challenge of establishing a firm empirical foundation for its claims. Also, it's important to recognize that these ground-breaking scientific discoveries took place in different historical contexts, which may explain why they initially appeared unconventional or 'crazy'. At present, the scientific support for the panpsychist thesis that consciousness exists at the micro-level or independently of brains or specific neural connections seems limited. Moreover, to prove that panpsychism is true, panpsychists need to provide a solid explanation and further evidence.

Although craziness seems to be the main objection against panpsychism and it is considered by many to be obviously incorrect (Goff 2016, 283), labelling the theory as such isn't a good basis for a proper philosophical discourse. Up to this point, none of the raised objections provide evidence that the theory is false. But there is indeed a more serious challenge panpsychists have to face: *the combination problem*. In this chapter, I am going to take a closer look at the problem in general terms, before explaining the various sub-problems of the combination problem in more detail. I will then present and discuss various responses to the combination problem.

The combination problem as a significant and pressing problem is definitely the most discussed problem for panpsychism. For once, everyone in this debate agrees on that (Chalmers 2016; Goff, Seager, and Allen-Hermanson 2022a; Blamauer 2011; Goff 2016). The combination problem calls into question the main premise of constitutive micropsychism by asking how microphenomenal properties can combine to yield macrophenomenal properties (Chalmers 2016, 179; 182). It's not clear how exactly this is supposed to work or how to even make sense of this idea that “*little*” conscious subjects of experience with their micro-experiences [come] together to form a “*big*” conscious subject with its own experiences’ (Goff, Seager, and Allen-Hermanson 2022a). There are various versions of the combination problem spelled out in the literature. To have a specific one I suggest the following:

The Combination Problem:

How is it possible for conscious micro-subjects with their own micro-experience to combine and constitute a macro-subject with corresponding macro-experiences?

It is extraordinarily difficult to even imagine such a combination of small conscious entities because our own conscious life appears to be totally subjective and private. We have even more problems in defining a mechanism for this combination of experiences in more detail. However, the problem doesn't appear to be a problem of panpsychism in general or for all panpsychist sub-theories, but rather for those sub-theories with a compositional or constitutive aspect. As mentioned previously, the problem arises for the sub-theory of constitutive micropsychism (or for versions related to this theory). Non-constitutive versions, for instance, don't claim a combination of micro-entities and the constitution of macro-consciousness. Thus, theories like these aren't targeted by the combination problem for obvious reasons. They rather suffer from other serious problems to which I will return later.

The combination problem is a long-debated issue in the theory of panpsychism. The most influential formulation of this problem was first given by William James in *The Principles of Psychology* (1890) (Chalmers 2016, 179), which is now the most quoted passage in the debate on panpsychism (Goff 2016, 285). However, the term itself was introduced by William Seager (1995) (Goff, Seager, and Allen-Hermanson 2022a). To illustrate the problem, he used the following example:

Take a hundred of [feelings], shuffle them and pack them as close together as you can [...]; still each remains the same feeling it always was, shut in its own skin, windowless, ignorant of what the other feelings are and mean. There would be a hundred-and-first feeling there, if, when a group or series of such feelings were set up, a consciousness belonging to the group as such should emerge. And this 101st feeling would be a totally new fact; the 100 original feelings might, by a curious physical law, be a signal for its creation, when they came together; but they would have no substantial identity with it, nor it with them, and one could never deduce the one from the others, or (in any intelligible sense) say that they evolved it.

(James 1890, 160)

If we want to relate this to the theoretical background presented in this thesis, the example can be analogously understood as this: The first 100 feelings are micro-experiences held by fundamental micro-entities, and the 101st feeling is a new one, constituted by the other 100 feelings. Considering this passage in the context of the whole article, it becomes clear that James thought that nothing could be combined, which means that no mental combination is possible either (Goff 2016, 285–86). This view is sometimes called ‘nihilism about composition’ (Chalmers 2016, 185) or ‘mereological nihilism’ (Varzi 2019). This specific version of the combination problem by James is based on metaphysical assumptions about non-combination (mereological nihilism and anti-emergentism) and is not being discussed in the contemporary debate about the combination problem.

However, the noteworthy aspect to consider is that there seems to be a problem with combining mental states. While we have no problem saying, for instance, that two wheels, a handlebar, pedals, chain, saddle, and frame constitute a bicycle it appears to be of the utmost difficulty to claim the same for experiences. We explicitly refuse to believe that such a constitution of parts applies to mental states. ‘[T]he idea of many minds forming some other mind is much harder to get your head around [...]’ (Goff, Seager, and Allen-Hermanson 2022a). Mental combination seems to be very problematic especially because of the inherently subjective nature of the mental states involved in the constitution.

As previously mentioned, the problem contains various sub-problems. Chalmers distinguishes them in his paper *The Combination Problem for Panpsychism* as follows (Chalmers 2016, 182–85): He describes those problems as a reflection of the different aspects of phenomenal states. Accord-

ing to Chalmers, phenomenal states can have different characters. The *qualitative character* of such covers its different qualities. Another would be the *structural character* which covers the complex structure of phenomenal states. Derived from this arise the following sub-problems: the *quality combination problem*, which asks how micro-qualities can combine to macro-qualities; and the *structure combination problem*, which seeks an answer to the question of how macro-experiential structures can be built from micro-structures such as micro-physical or micro-experiential ones. For each of these Chalmers (2016) points out some especially pressing aspects: The so-called *palette problem* can be related to the quality combination problem and states that it appears to be baffling that from such a limited palette of already given micro-qualities, this wide variety of macro-qualities can arise. For the structure combination problem, the *structural mismatch problem* seems to be the particularly urgent part and points out that the structure of the macrophenomenal that we experience differs in a high degree from the given macro-physical structure, such as that found in the brain. It can be presumed that this isn't the case at the micro level and that the structure of micro-experience is closely related to the structure of micro-physical structure, leaving the question open of how this is supposed to work.

However, there is one final aspect of phenomenal states to which Chalmers has assigned a problem: the *subject character*. This aspect emphasizes that phenomenal states must always be held by a subject. The problem that arises in this case is the *subject combination problem*, which questions how micro-subjects can combine and form macro-subjects. This last issue is also the most famous and most discussed sub-problem to which most of the proposed solutions respond. Moreover, Chalmers has also highlighted a crucial aspect of this sub-problem: the *subject-summing problem* (Chalmers 2016, 182–83; 186–87). This problem can be presented as an extension of the example given by James earlier: 'Given 101 subjects, it seems that the existence of the first 100 does not necessitate the existence of the 101st.' (Chalmers 2016, 182) Here is a more formalized way of putting this: Given the circumstances that we have a group of n micro-subjects, a_1, \dots, a_n , the existence of a distinct $n + 1$ -th subject b , which is supposed to be the constituted macro-subject, isn't assured because by the existence of the given n previous micro-subjects (a_1, \dots, a_n). The n subjects a_1, \dots, a_n can exist without the $n + 1$ -th subject b . So, the subject summing problem points out that a set of n micro-subjects with their own micro-experiences don't necessitate the existence of a further macro-subject with its macro-experience.

Most proposed responses to the combination problem only address one of those sub-problems (Chalmers 2016, 184). However, although these different variations of the problem are almost identical in the structure of the argument, the focus of this thesis will be on the subject summing problem, since it is the problem most often discussed, besides the quality problem (Chalmers 2016, 184).

The subject summing problem as the crucial point of the subject combination problem can be stated as an argument in various ways. Chalmers (2016), for instance, has outlined several possible ways of framing the problem (Chalmers 2016, 186–87). As mentioned, Chalmers (2016a) understands constitutive panpsychism as constitutive micropsychism. In order to remain consistent with the chosen terminology, I present Chalmers' argument in a slightly different way. The argumentation is then as follows:

- ‘(1) If constitutive [micro]psychism is true, the existence of a number of microsubjects with certain experiences necessitates the existence of a distinct macrosubject.
- (2) It is never the case that the existence of a number of subjects with certain experiences necessitates the existence of a distinct subject.
- (3) Constitutive [micro]psychism is false.’

(Chalmers 2016, 186)

According to Chalmers, this is only a very brief presentation of the argument for the sake of simplicity and highlights the central aspect of the combination problem, whereas premise (2) is the main one. For further support of (2), he formulates the following conceivability argument:

- ‘(1) For any group of subjects (with certain experiences), it is conceivable that those subjects exist (with their experiences) and no other subjects exist.
- (2) For any group of subjects, if it is conceivable that those subjects exist (with their experiences) and no other subjects exist, then this is possible.
- (3) For any group of subjects (with certain experiences), it is possible that the subjects [...] exist (with their experiences) and no other subjects exist.’

(Chalmers 2016, 187)

Intuitively, the first premise of this second argument seems to be reasonably supported (Chalmers 2016, 187). It is in no way contradictory to imagine the circumstance described in premise one.

Less obvious and controversial is the shift from the conceivable to the possible in the second premise. Of course, such a claim can be rejected. But in this case, it would be accompanied by substantial costs (Chalmers 2016, 187). Since panpsychists have used a classical conceivability/possibility argument to reject physicalism, doubting premise (2) of this second argument due to the shift from conceivability to possibility puts them in an unfavourable position (Chalmers 2016, 187).

I would like to present the whole argument, including the conceivability/possibility argument, as follows:

- P1 If constitutive micro-psychism is true, the existence of a set of micro-subjects with micro-experiences necessitates the existence of a distinct macro-subject with its macro-experiences.
- P2 But: For any set of micro-subjects with micro-experiences, it is conceivable that those subjects exist and no other subjects do.
- P3 If P2 then it is possible that a set of micro-subjects with micro-experiences exists and no further distinct macro-subject with its macro-experiences does.
- K1 Therefore, it is possible that a set of micro-subjects with micro-experiences exist and no further distinct macro-subject with its macro-experiences do.
- P4 If K1 is true, then it is not the case that a set of micro-subjects with micro-experiences necessitates the existence of a distinct macro-subject with its macro-experiences.
- K2 Therefore, constitutive micropsychism is false.

The structure of this argument is similar to Goff's (2016) *No Summing of Subjects Argument*. We will look at this at a later point in more detail.

At this point, it is important to note that there are different interpretations of 'necessitate' which have a great impact on the soundness of this argument. Necessitation can be interpreted as physical, logical (-conceptual), or metaphysical (Mallozzi, Vaidya, and Wallner 2023). A proposition *p* is *physically necessary* iff *p* follows from the laws of nature; it is *logically necessary* iff *p* follows from the laws of logic, and *metaphysically necessary* iff *p* is true in all possible worlds (Mallozzi, Vaidya, and Wallner 2023). In the case presented here, the necessitation should be understood as metaphysical. It is not physical because there is no empirical evidence of any subject combination. It is also not logically (or logico-conceptually) necessary because it is no consequence of the logical structure (or semantics) that a distinct macro-subject with its macro-experiences comes into existence by a combination of micro-subjects and their experiences. Nothing like this can be explained by referring to logical structure (or semantics).

What is left is a metaphysical necessitation. But then panpsychists have to explain how this is possible and actually the case. If subject combination is metaphysically necessary, then subjects combine in all possible worlds. Unfortunately, a possible world in which this is not the case is perfectly conceivable, which is the essence of the above argument. Thus, it can't be necessary, which leaves the panpsychists in great need of an explanation of why their thesis is supposed to work.

There are several ways in which panpsychists can respond to the combination problem or to one of the mentioned sub-problems. Unfortunately, so far no proposed solution seems to be better than any other and could thus claim the sole right of support (Chalmers 2016, 180) although a variety of solutions have been proposed. One difficulty is that it is often not clear which issue exactly is being addressed when discussing the combination problem (Roelofs 2023, 1). As mentioned before, it is often the case that the sub-problem addressed is mostly the subject combination and occasionally the quality combination problem (Chalmers 2016, 184). This makes addressing the combination problem even more complicated, as it might be that there is no single solution for all the problems associated with it (Chalmers 2016, 184).

The responses made by panpsychists can be categorized with respect to which aspect of the combination problem they are addressing. One possible distinction can be made between *direct* and *non-direct* responses. *Direct responses* don't accept the conclusion of the subject summing argument (namely that constitutive micropsychism is false) and aim at providing a solution to the problem by demonstrating the falsity of one of the premises or the invalidity of the argument. In giving a direct response, panpsychists hold on to the necessity claim of constitutive micropsychism, namely that the combination of micro-subjects with their experiences necessitates another macro-subject with its own experiences. In contrast, *non-direct responses* accept the conclusion and circumvent the problem of combination by modifying the existing panpsychist theory and presenting an alternative. A further distinction was made by Chalmers (2016), who divides them into *combinatorial* and *non-combinatorial* responses (Chalmers 2016, 191–204). Combinatorial responses retain a combinatorial aspect in their responses while non-combinatorial responses deny the possibility of combination at all. Thus, we have the following combinations of different responses to the problem: *direct-combinatorial*, *non-direct-combinatorial* and *non-direct-non-combinatorial*. There is no direct-non-combinatorial category, as direct responses are committed to subject combination. For instance, non-direct-non-combinatorial responses accept the conclusion that constitutive micopsy-

chism is false and provide an alternative panpsychist theory that doesn't have to deal with the combination problem. Non-direct-combinatorial responses, on the other hand, accept the conclusion but in responding to the problem their alternative still retains a combinatorial aspect.

Direct responses seem the way to go. For in trying to avoid the combination problem many indirect responses unfortunately create new, sometimes even more severe problems. Nothing is won by replacing one problem with another, however, and it is crucial for panpsychism to overcome these challenges. For these reasons, direct-combinatorial solutions seem to be a more promising approach for finding a viable solution, especially because of their direct character. These will therefore be the focus of the remainder of this thesis.

The direct responses on offer are few and far between, however. Representatives for this category would include *the ignorance response*, *consciousness+* (Goff, Seager, and Allen-Hermanson 2022b), and the *phenomenal bonding solution*. The ignorance response denies the possibility that humans can ever gain knowledge about the combination of subjects and suggests that we are currently not in a position to understand some aspects of the nature of consciousness, which are essential for understanding subject combination (Goff, Seager, and Allen-Hermanson 2022b). Thus, this results in an unwanted combination of panpsychism and mysterianism (Goff, Seager, and Allen-Hermanson 2022b). The other option, *consciousness+*, undermines the motivation for panpsychism by investing in hidden properties (Goff, Seager, and Allen-Hermanson 2022b). This proposal claims that consciousness itself is part of an expansive property, namely *consciousness+*, which consists of hidden properties additional to micro-level consciousness. This is highly problematic for obvious reasons: why not suppose that those hidden properties do all the work (Goff, Seager, and Allen-Hermanson 2022b)? Also how these hidden properties contribute to grounding consciousness is by no means clear and it appears to ensure that we lose motivation for postulating micro-consciousness (Goff, Seager, and Allen-Hermanson 2022b). The remaining direct-combinatorial response, which is the last hope for constitutive micropsychism to have a solution to the combination problem, is the *phenomenal bonding solution*, proposed by Goff (2016), which will be the subject of the next chapter.

4 The Illusion of a Solution

Phenomenal Bonding Doesn't Solve the Combination Problem

The combination problem is the greatest challenge for panpsychism, and its proponents urgently need a plausible solution if they are to provide a viable alternative to physicalism. The challenge is to provide an answer to the question of how and under what conditions subjects sum. This is the subject summation problem mentioned earlier. The direct-combinatorial responses discussed in the last chapter seem the most promising candidates for overcoming this challenge.

In this context, Goff's (2016) *phenomenal bonding solution* seems most appropriate, as one would expect some form of relation in this process of the combination of micro-subjects involved here (Goff, Seager, and Allen-Hermanson 2022b). Other responses don't have any concrete implementation for this particular aspect or don't even address it. Goff (2016) addresses exactly this very aspect in his proposed solution. In his view, the combination problem can be solved by including a special relation, which he calls the 'phenomenal bonding relation'. If Goff can demonstrate such a relation, panpsychists will have an answer to the subject summing problem and will be well on the way to the overall solution of the combination problem.

In order to be able to give a well-founded judgement on this I will first explain the phenomenal bonding relation in detail, before I discuss objections to it. In response to a particular problem with Goff's proposal, I will analyse Miller's (2017) alternative for developing a positive conception of this relation in detail. As it will turn out, Miller's solution faces some problems of its own, which will be subject to further discussion. Finally, I will conclude on the suitability of Goff's proposal for solving the combination problem.

Goff introduces his solution by rephrasing the subject summing argument, to which the phenomenal bonding solution is supposed to be a direct response, and calls it 'The No Summing of Subject Argument (the heart of the combination problem)' (Goff 2016, 291–92). As earlier mentioned, Goff's formulation of his argument is in some respects similar to the formulation of Chalmers' subject summing argument. He states the No Summing of Subject Argument as follows:

- ‘1. *Conceptual Isolation of Subjects* – For any group of subjects, instantiating certain conscious states, it is conceivable that just those subjects with those conscious states exist in the absence of any further subject.
2. *Transparency Conceivability Principle* – For any proposition P, if (A) P involves only quantifiers, connectives, and predicates expressing transparent concepts, and (B) P is conceivably true upon ideal reflection, then P is metaphysically possibly true.
3. *Phenomenal transparency* – Phenomenal concepts are transparent.
4. *Metaphysical Isolation of Subjects* – For any group of subjects, instantiating certain conscious states, it is possible that just those subjects with those states exist in the absence of any further subject (from 1, 2, and 3).
5. For any group of subjects, those subjects with those conscious states cannot account for the existence of a further subject (from 4)
6. Therefore, panpsychism is false (from 5).’

(Goff 2016, 291–92)

Note that what Goff at this point labels as ‘panpsychism’ should actually be understood as constitutive micropsychism. In order to be consistent with the terminology used in this thesis, the conclusion would rather be ‘Therefore, constitutive micropsychism is false’. This entails that subject summation is not possible. Goff attributes soundness to the argument up to (4), the principle of *Metaphysical Isolation of Subjects* (MIS), which is to be understood as an intermediate conclusion that follows from premises 1, 2, and 3.

There are some important differences between Goff’s and Chalmers’ versions of the subject summing argument. A rather minor difference lies in the first premises: While in Chalmers’ version of the argument the first premise is:

‘If constitutive [micro]psychism is true, the existence of a number of microsubjects with certain experiences necessitates the existence of a distinct macrosubject.’ (Chalmers 2016, 186)

Goff’s first premise, by contrast, is immediately a conceivability claim. The more important difference, however, pertains to the premises involving transparency of concepts. While Chalmers uses a more classical version of the conceivability-possibility principle in his argument, Goff resorts using

the notion of *transparent concepts*. Put briefly, a concept is transparent if it reveals the nature of what it stands for. More precisely, ‘[a] concept C of entity E is transparent just in case C reveals the nature of E (i.e., what it is for E to be part of reality is a priori accessible for someone possessing C, in virtue of possessing C) [...]’ (Goff 2017, 74). Phenomenal transparency occurs when a phenomenal concept is transparent by revealing the essence of the states it denotes (Goff 2017, 107). Goff further holds that phenomenal concepts are direct and therefore plausibly transparent (Goff 2016, 291). He describes direct phenomenal concepts as ‘a phenomenal concept of a conscious state the content of which is wholly based on attending to that state’ (Goff 2017, 107). In his account, one can form a direct phenomenal concept by observing a currently instantiated state of consciousness (Goff 2017, 107). ‘[W]hen I attend to a pain, it is directly revealed to me what it is for something to feel that way’ (Goff 2017, 107).

However, according to Goff (2016), the only thing that the MIS implies is that certain subjects of experience can’t be summed up simply by virtue of their mere existence. Following Goff’s presentation (2016, 292), I would like to formalise this as follows: If we have two subjects s_1 and s_2 with phenomenal consciousness c_1 and c_2 , then this alone doesn’t necessitate a third subject s_3 with phenomenal consciousness c_3 . Take a chair, for instance: the mere existence of the atoms doesn’t form a chair. There is something else involved to ensure that this kind of furniture exists: a relation at least. As already mentioned, one would likewise expect some form of relation to be involved in the combination of micro-subjects. The mere aggregation of subjects doesn’t seem to have enough explanatory power to explain the combination of subjects with experiences (Wager 2020, 151). But it appears to be explainable when combined with a suitable relation. According to Goff, phenomenal bonding is a suitable relation.

The phenomenal bonding relation bonds micro-subjects in a way that constitutes further macro-subjects (Chalmers 2016, 200; Goff 2016, 292). This means that those related micro-experiential properties a priori entail the consciousness of larger entities (Goff 2009, 306). Such a relation is not ruled out by MIS because this principle only implies that the mere existence of subjects can’t form another subject of experience. But it doesn’t imply that two subjects with phenomenal consciousness that stand in a certain relation can’t necessitate a third subject (Goff 2016, 292). A rephrasing of the theory of constitutive micropsychism would then look as such: Macro-consciousness, and

especially macro-experiences, are constituted by, grounded in, or realized by more fundamental types of consciousness or experiences at the micro-level and in the fact that they stand in a phenomenal bonding relation to each other. Or formalised along the lines of Miller (Miller 2017, 545): There exists a set of different micro-subjects, $s_1 \dots s_n$, with certain experiences, $e_1 \dots e_n$, which stand in relations of a certain type R to each other such that $s_1 \dots s_n$ with $e_1 \dots e_n$, necessitate the existence of a distinct macro-subject S_x with its own experiences $E_1 \dots E_n$ such that $S_x(E_1 \dots E_n) = s_1(e_1)Rs_2(e_2)R \dots Rs_n(e_n)$. If one prefers, this can be called phenomenal bonding panpsychism (Miller 2022, 5). Furthermore, Goff characterizes his proposed relation not as a mathematico-causal structure (Goff 2016, 292). What that means will be more important at a later point of this thesis. For now, this is the basic idea of the phenomenal bonding solution.

However, the phenomenal bonding relation as described is merely a role-playing concept (Miller 2017, 545), which gives rise to criticism: ‘[T]he concept merely designates the role the relation plays in the panpsychist’s theory: it tells us simply that it must necessitate the existence [sic!] a distinct subject if it holds between a group of subjects.’ (Miller 2017, 545) As a consequence, the following two questions still remain unanswered: Under exactly which conditions is a combination of subjects possible at all? Or the equivalent question for phenomenal bonding: Which subjects are related to each other by the phenomenal bonding relation? In order to ensure that the relation doesn’t remain just a role-playing concept, it is necessary to develop a positive concept. This requires answering the two questions above.

There are several answers that Goff discusses in turn to answer these two questions (Goff 2016, 296–300). He begins with the special composition question²: Which conditions have to be present for objects to combine and form another object? There are two main ways of trying to answer this one. The first response could be *always*, which is also one of the most popular ones. This means that no matter under what conditions, subjects always combine and form larger subjects. The term that is used to refer to this option is ‘unrestricted composition’, which means that any objects, regardless of how disparate and unrelated they are or appear to be, can form a larger object. Therefore, it wouldn’t be impossible to say that my nose and the Eiffel Tower form a distinct object.

² It appears to be the case that Goff uses the term ‘composition’ as a synonym for the term ‘combination’. He doesn’t comment here on the different meanings, so I will proceed with this interpretation of synonymy.

‘Mereological universalism’ is an alternative term used to describe this account. The thesis of this theory, as formalized by Rea (1998), is: ‘[F]or any set S of disjoint objects, there is an object that the members of S compose’ (Rea 1998, 347). Contrary to this, as Goff (2016) proceeds in his paper, there is the thesis of *restricted composition*, which claims that only some sets of objects are in a position to compose another object while others are not. Both possibilities can be applied analogously to the phenomenal bonding relation.

This distinction, according to Goff, can then likewise be made analogously with respect to the special phenomenal composition question (Goff 2016, 296): Which conditions have to be present for subjects to combine and form another subject? In the first case (unrestricted composition), any group of randomly chosen objects is related to each other by phenomenal bonding, while in the second case (restricted composition) only some subjects possess the ability to form an additional subject through phenomenal bonding. According to Goff, the second one seems to be more intuitive to be actually the case and is more likely to be aligned with common sense (Goff 2016, 296). It doesn’t seem worthwhile to allow an unrestricted composition with no limitations for subject combination since then everything can combine.

In the remainder of the passage, Goff describes a variety of options in an attempt to give a transparent conception of the phenomenal bonding relation, taking into account empirical observations of consciousness and the common-sense answer (which is that particles form a conscious subject when and only when they form an organism) (Goff 2016, 296–99). However, there are problems with each of these options, which leads Goff to conclude that neither empirical observation nor common sense would help to answer the special phenomenal composition question (Goff 2016, 299). In the end, the only thing that is left in such a case is the acceptance of *universalism*. This theory amounts to the unrestricted phenomenal composition and claims that any set of subjects, no matter how disparate and unrelated the subjects seem to be, always combine into a further subject. In the end, Goff accepts what he initially ruled out. However, he is not really satisfied with this solution either: ‘Universalism is wildly at odds with common sense, but we have shown that there are deep problems with what common sense has to tell us about phenomenal composition’ (Goff 2016, 299). All that remains is for him to specify conditions under which micro-subjects phenomenally bond and combine into a further macro-subject. For that Goff is in need of an al-

ready known physical relation, that always holds between subjects so that subjects can always combine. In Goff's view, the spatial relation is an obvious candidate, since every object is in some kind of spatial relation to every other object, regardless of the exact spatial relation in which those different objects are located. 'If we identify the phenomenal bonding relation with the spatial relation it follows that, for any group of material objects, the members of that group, being spatially related, constitute a conscious subject' (Goff 2016, 299). Goff sees in this identification the nice consequence that we actually have a positive conception of the spatial relation (Goff 2016, 299–300). Also, he mentions that 'the spatial relation must have some real nature that goes beyond the mathematical conception of it we get from physics' (Goff 2016, 300). One could thus argue to have discovered the true nature of the spatial relation by identifying it with phenomenal bonding as a non-mathematico-causal relation.

While this might seem like a neat solution, it has its limitations and suffers from some problems. First, Goff holds that physics only provides a mathematico-causal conception of relations, such as the spatial relation, without taking into account their real nature (Goff 2016, 294–95). The first question that immediately arises is why a description of the real nature is missing in the already existing physical conception. Assuming there is an undiscovered real nature of the spatial relation, why should the phenomenal bonding relation fit as this undiscovered real nature? It seems to me that the real nature of spatial relations is to relate objects spatially to each other, determining their relative locations in space. From this point of view, there is nothing left that we are unable to understand about the nature of space and spatial relations. It's a primitive and fundamental part of physical reality. A second question that also arises is what reasons Goff has for choosing the spatial relation, other than being in dire need to save panpsychism. For one, identifying phenomenal bonding with other relations, such as a causal or temporal relations, which, like the spatial relation, always holds, would serve the same need. Further, it is by no means clear what there is about spatial relations that would hint at it being a phenomenal relation. Goff doesn't elaborate on this, leaving us with a *prima facie* ad hoc solution.

A third objection can be made as follows: The identification that Goff suggests requires the truth of universalism. It is only a desideratum to identify the phenomenal bonding relation with a physical relation, in which all objects are always related if one accepts universalism and the proposi-

tion that all possible sets of existing micro-subjects always constitute macro-subjects. However, accepting universalism is questionable. First, accepting it would mean that there are far more subjects than we would expect, as universalism is unrestricted. Therefore, anything would combine to constitute a further subject. This leads directly to the second problem. Imagine the following: two persons *A* and *B*, one from the USA and the other from Germany, are spatially related to each other. Assuming the phenomenal bonding relation is unrestricted, *A* and *B* combine to constitute a subject *C* with further experiences of its own. *C* is not a combination of *A* and *B*. Not in the sense of a mereological sum, but rather *A* and *B* actually constitute a further subject *C*. However, that is simply not the case. Neither do some shared states of consciousness exist, nor is it the case that another subject comes into existence. Thus, at this point, Goff's universalism seems to be flatly false.

The fourth issue with this answer is related to the previous one and comes from Goff himself. He writes: 'Supposing that the real nature of the spatial relation is the phenomenal bonding relation is not entirely satisfying, as we lack a transparent conception of that relation: we don't completely understand what it is for objects to be related in that way' (Goff 2016, 300). Just to remind you: A concept, or in this case a conception, of an entity is transparent if the concept (or conception) reveals the real nature of that entity (Goff 2017, 74). So, in attempting to give a positive conception of the phenomenal bonding relation, preventing the relation from being a mere role-description, Goff has decided in favour of universalism and identifies phenomenal bonding with the spatial relation. But unfortunately, as it has transpired, this leads to the inconvenience of a lack of understanding of this relation. Goff doesn't see a particularly serious problem here. 'Still, it is better than nothing; at least we know that the real nature of the spatial relation is such as to bond subjects together to constitute further subjects' (Goff 2016, 300) But, first, accepting a theoretical approach simply because it's better than nothing doesn't seem to be a valid response. And second, without a positive conception of the phenomenal bonding, we have nothing with which to identify the spatial relation. However, in his view not having a positive, transparent conception of this relation is acceptable as there are certain relations simply beyond our comprehension (Goff 2016, 294). This would amount to an ignorance response, the idea that people are incapable of the acquisition of a certain kind of knowledge (Goff, Seager, and Allen-Hermanson 2022b). But this appears to be a facile way to circumvent the problem which is unlikely to convince critics of Goff's account.

So far, we are still left with the problem of not having any positive conception of the phenomenal bonding relation, making it appear to be a mere role-playing relation. Moreover, the lack of such a conception throws us back to the original question of how the combination of subjects is possible in the first place, threatening the whole argumentation to become circular. Hence, it is questionable whether the account has any added explanatory value.

Miller (2017) attempts to elucidate the potential of the phenomenal bonding solution more than Goff and suggests a positive conception of it. In order for the relation not to remain a mere role-playing concept and to show that panpsychists can bypass the subject-summing problem, Miller specifies three individually necessary and jointly sufficient conditions that a phenomenal bonding relation must fulfil:

‘Phenomenal bonding = Relation R , such that:

- (i) R is phenomenal
- (ii) R holds between subjects qua subjects of experience
- (iii) When R holds between a set of subjects, $S_1 \dots S_n$, with their experiences, $E_1 \dots E_n$, it necessitates a distinct subject, S_x , with its experiences, E_x .’

(Miller 2017, 546)

A phenomenal relation is a relation that holds between different conscious entities such as subjects and/or experiences (Miller 2017, 547). These subjects and/or experiences form the relata of this described relation (Miller 2017, 547–48). What characterises phenomenal relations is their positive introspectiveness (Miller 2017, 549)³.

In Miller’s view, there is a better option for fulfilling these given conditions than the spatial relation proposed by Goff. According to Miller, when one introspects one’s experience one happens to find many intrinsic properties: There are different kinds of experiences, such as the colour of a particular thing, the sound of an engine, or the smell of something (Miller 2017, 549). All these experiences don’t necessarily have to be at the centre of our consciousness, because some may be at the periphery (Miller 2017, 549). However, it seems that we don’t experience these things separate-

³ Miller gave two more reasons for the existence of phenomenal relation which are not of particular importance for the purpose of the work. For further information see Miller 2017, 550.

ly, but rather conjointly. That our experiences are somehow related to each other in that way doesn't appear to be that incredible.

This is what Miller calls 'co-consciousness'. Co-consciousness is a relation between different experiences 'by virtue of which a set of experiences has a conjoint phenomenology' (Miller 2017, 548). By definition, this already fulfils the first condition of being a phenomenal relation. Although, according to Miller, identifying the phenomenal bonding relation with co-consciousness has the following added benefit: the co-consciousness relation is constructive, which means that a) it is a concrete relation, and b) there is a significant structural difference between the existence and non-existence of this relation. In the case of a mere formal relation between two experiences, such as 'being of the same sensory modality', Miller suggests that there is less information density and gain in knowledge than in cases of connection through the co-consciousness relation.

'If we consider a set of experiences the members of which are related by the co-consciousness relation [...], there are further interesting things to say about them: there is a conjoint phenomenology between the experiences, a new structural feature of the set that arises in virtue of the members of the set being related by co-consciousness.'

(Miller 2017, 549)

According to Miller, the co-consciousness relation also suits the other conditions given for a phenomenal bonding relation better than the spatial relation provided by Goff. The question now is whether this also applies to the other conditions. For the second condition to be fulfilled, Miller has to show that co-consciousness holds between *subjects qua subjects of experiences*. The term 'subjects as subjects of experience' refers to subjects who are capable of having experiences. Since it has to be explained how subjects with experiences can combine to a larger subject with experiences, it is necessary that the relation exists between subjects qua subjects of experiences. Goff mentioned some problems in fulfilling this condition since humans aren't able to introspect or percept experiences of relations between subjects of experiences qua subjects of experience (Goff 2016, 293). However, Miller thinks that introspection might be sufficient but isn't necessary for fulfilling the second condition and suggests the following alternative: *analogical extension*.

Analogical extension is a method of concept forming ‘wherein we start with a case where we have a clear conception (hereafter, the prototype scenario), and use this conception to form a concept in another scenario that is not wholly similar to the first (hereafter, the target scenario)’ (Siddharth 2021, 11). Take the concept of ‘earlier than’ as an example (Miller 2017, 553): From our experience, we can form a concept of ‘earlier than’ by looking at two closely temporally related events with a distinct order (in the prototype scenario). We can now extend this concept to include events with a much greater time lag in the ‘earlier than’ relation (the target scenario). Or take the concept of ‘physical object’ applied to macro objects (the prototype scenario) and extend it to objects on the micro-level (the target scenario) (Miller 2017, 553).

According to Miller, this method also works with phenomenal bonding to form a positive conception that meets the second condition (R holds between subjects qua subjects of experience) (Miller 2017, 553). He suggests that the notion of a relation that satisfies the first condition can be analogically extended to the context between different subjects qua subjects of experience like this (Miller 2017, 553): Through introspection, the phenomenal relation between individual experiences of a subject can be recognised for which a positive conception is already present. So, in order to find a positive conception of a relation that satisfies the second condition, we derive it by extending the already existing conception that satisfies the first condition (R is phenomenal) from the prototype scenario to the target scenario in which it applies to relations between different subjects qua subjects of experience (Miller 2017, 553). Thus, the method of analogical extension allows to extend the positive conception of *intra*-subject co-consciousness relation to form a positive concept of the *inter*-subject co-consciousness relation (Miller 2017, 554; Siddharth 2021, 12).

Siddharth (2021) raises some objections against this general understanding of the method of analogical extension. The first crucial point is that the example relations Miller provides to motivate analogical extension and the relation of co-consciousness are not comparable. The reason for this is mainly due to the fact that in the examples the relata in the prototype scenarios are of the same type as in the target scenarios, which is not the case when it comes to co-consciousness (Siddharth 2021, 12). Consider again the ‘earlier than’ example. The relata in the prototype scenario and the target scenario are both *events-in-time* (Siddharth 2021, 12). However, when it comes to co-consciousness the relata in the prototype scenario (the *intra*-subject co-consciousness relation) are qualities experi-

enced by a subject, while in the target scenario (the inter-subject co-consciousness relation) are subjects qua subjects and not qualities experienced by a subject (Siddharth 2021, 12). But analogical extension only works if the relata are of the same type. Thus, the method can't be applied in the case of phenomenology.

Another objection against this method, which is related to the previous one, is the method's lack of transferability to all kinds of scenarios. Consider the following example of volume contradiction (Siddharth 2021, 10; 12–13): Imagine that you have two cubes of one unit volume, joined at one of their surfaces with no overlap of volume, so that the total volume is two units. Now, we want to achieve a volume of 1.5 units without changing anything about the present configuration of the cubes. Thus, we need to invent a new relation called volume-contraction. We are perfectly capable of forming a positive conception of the first relation and are now seeking a positive conception for the second case by Miller's analogical extension. The first example of the volume-contraction relation is supposed to be the prototype scenario which we now extend on to our target scenario. But the problem seems to be obvious: 1) this isn't possible and 2) it is not even conceivable. It is not possible or even conceivable to get such a relation which results in a volume of 1.5 units without changing anything of the original configuration. Another example that Siddharth doesn't mention is the causal relation: the attempt to apply this relation to a number fails since a number as an abstractum has no causal effects. Analogical extension of a causal relation from a physical prototype scenario to a non-physical target scenario is impossible. Both examples clearly demonstrate that the method of analogical extension doesn't work for just any pair of scenarios. It seems that Miller mistakenly assumes that every relation can involve any object.

In summary, Siddharth gave two interrelated objections that can be made against the method of analogical extension. First, the relation holds between qualities and not between subjects qua subjects (Siddharth 2021, 14). However, for obtaining a positive conception of phenomenal bonding the relation has to hold between subjects qua subjects of experience (Siddharth 2021, 14). Secondly, analogical extension isn't always applicable. Applying the method of analogical extension to form a positive conception of a phenomenal relation between subjects isn't possible (Siddharth 2021, 14). Miller's explanation leaves a lot of details on how this relation is supposed to properly work to be desired. In addition, a third point can be made: In order to easily extend the concept and establish

such a relation, Miller has to assume that any arbitrary combination of subjects is an appropriate set of relata and that each subject of this set stands in exactly this relation to each of the others. But this appears to be what ought to be shown, threatening once again circularity.

Miller responds directly to this objection by offering an alternative to analogical extension: *introspection*. As mentioned previously, Miller believes that introspection is not necessary, but merely sufficient to show that the second condition can be met. He elaborates as follows:

‘If we think that phenomenal bonding is true, then introspection is sufficient to form a concept of inter-subjective co-consciousness (Miller 2017, n. 21). Non-fundamental subjects, like humans and non-human animals, are composites with large proper parts that are also subjects. These proper parts undergo a subset of the experiences of the whole. Because of this, when a human subject introspects, it is thereby introspecting inter-subjective relations, viz. the relations that hold between the subjects that compose it. Hence, if phenomenal bonding is true, then we can form a concept of inter subjective co-consciousness via introspecting the phenomenal unity that holds between the experiences of our proper parts.’

(Miller 2022, 14–15)

Furthermore, Miller suggests that analogical extension might still work, since there is no shift in the relata from the prototype scenario to the target scenario. He argues that the relata need not be subjects. ‘The claim is that for a relation to be the [phenomenal bonding] relation “it must hold between subjects qua subjects of experience” [...], not that subjects must be the relata’ (Miller 2022, 15). The relation is rather an indirect instead of a direct one. In Miller’s view, two entities are indirectly related ‘when those entities have aspects (in the broadest sense of that term) which are the relata of the relation, or are themselves an aspect of the relata of the relation’ (Miller 2022, 15–16). He gives the following example for further detail (Miller 2022, 16): Take two cans of paint of the same colour. These cans are connected by the similarity relation of having the same colour. The colours are then the relata of the relation, not the cans. In the case of the phenomenal bonding relation, Miller believes that it must be an indirect relation so that the relation remains between the subjects, but rather than taking the subjects as the relata, it relates the experiences of those subjects to the experiences of others (Miller 2022, 16). For those reasons, Miller sees no problem in considering constitutive panpsychism in combination with phenomenal bonding as promising.

Let's look back and summarise the previous discussion for a better understanding of the remainder. Goff proposes the phenomenal bonding relation as a solution to the subject summing problem. In his view, the best account of phenomenal bonding is to identify it with the physical relation of spatiality to account for the need of unrestricted phenomenal composition. Granting that unrestricted phenomenal composition is correct, this account, however, neither explains why exactly the nature of spatial relations should be phenomenal nor does it explain why a phenomenal relation should be a spatial relation. Miller believes that identifying phenomenal bonding with co-consciousness is the more plausible alternative as this is a phenomenal relation and prevents phenomenal bonding from being a mere role-playing concept. The problem here is to provide an explanation of how this relation can combine subjects into distinct conscious subjects. The suggested method of analogical extension has some weaknesses. First extending the relation from experiences to subjects is unjustified and may not even be conceivable. Secondly, this method, if not restricted in some appropriate way, clearly overgenerates relations. Miller responds to this in two ways. First, he responds by claiming that the problems of which the method of analogical extension has been accused are no problem, as the relation needs not extend to inappropriate relata. To prove his point, he goes on to specify the phenomenal bonding relation as an indirect relation. Thus, in Miller's view, phenomenal bonding should be identified with co-consciousness, a relation between different experiences that share a conjoint phenomenology which thus indirectly relates the subjects having those experiences. What we need to do in order to solve the problem of subject summing is to extend the relation discovered by introspection to the inter-subject level by analogical extension. This works because the relata aren't the subjects themselves between which the relations exist, but the experiences of those subjects. Secondly, he suggests the use of introspection instead of co-consciousness, which is not necessary but sufficient to establish the relation between subjects. If phenomenal bonding is a true theory, then introspection is sufficient to form a concept of inter-subjective co-consciousness.

There are a number of objections that could be raised against the details of this reasoning, but there seem to be two main issues. First, in contrast to dualistic explanations of the mental, panpsychism aspires to provide an explanation that is suitable to fit into a purely physical account of the world. As such, we should minimally expect the phenomenal bonding relation to be a physi-

cal relation that can in principle be spelled out in terms acceptable by standard physical science. Miller has presented an analysis of this relation inherently based on purely subjective terms. However, the solution to the problem of subject summation requires an analysis based on a more objective perspective, to do justice to the quasi-physicalist aspiration of panpsychism. Miller's account shows an extreme lack of physically based or even physics-compatible explanations of co-consciousness. It is by no means clear how his proposed solution to the subject summing problem is supposed to work without rendering the panpsychist's project pointless. Further, it is by no means clear why an explanation in terms of co-consciousness is not a dualistic explanation. Hence, the question arises where the added explanatory value of Miller's account lies in comparison to Goff's, who at least identified the phenomenal bonding relation with a straightforwardly physical relation. It seems that neither Miller nor Goff have given a suitable, objective, physically based explanation of how the phenomenal bonding relation works. While Goff's account suffers from a host of problems connected to identifying spatial relations as phenomenal relations, Miller doesn't seem to provide a physical relation at all.

Second, even if Miller is able to provide a consistent theory suitable for a physical framework, another question remains unanswered: Why should we believe this to be true in the first place? So far, no reasons have been given for accepting constitutive micropsychism, the existence of the phenomenal bonding relation, or even for identifying it with co-consciousness. The only thing that has been done is to attempt an explanation of how subject summation might be conceivable. At this point, however, no evidence has been presented that this is actually the case, nor have we been given any justification to believe that it is. The sole support and the foundation for this theoretical framework come from the acceptance that panpsychism is true and the arguments in favour of it, which I have laid out in Chapter 2. However, no further reasons were given to support this account. Not only is there a need for a more detailed explanation of how this is supposed to work, but also a pressing need for good reasons to believe that it is true.

Therefore, the question from the beginning of this chapter whether Goff provides a suitable solution to the combination problem can be answered. Unfortunately, even with some adjustments on Miller's part, the phenomenal bonding solution fails to solve the problem. So, neither Goff nor Miller provide a suitable solution to the subject-summing problem and the combination problem

remains. As pointed out, the main reason lies in the lack of answers as to what the nature of this relation is, how it works in detail, and why we should believe that the theory of phenomenal bonding is true. This leaves the proposal as an at best conceivable solution with no further merit.

5 Conclusion

In this thesis, I have examined the theory of panpsychism, a recently popular theory in the philosophy of mind whose proponents claim that their theory can bridge the explanatory gap that physicalism fails to bridge. The main claim of panpsychism is that consciousness can be located at the fundamental level of reality and is found in fundamental entities. The question I set out to answer is: Does Goff have a suitable solution to the combination problem with his proposal of the phenomenal bonding solution? In order to answer this, I have first outlined the theory of panpsychism and distinguished it from other theories of philosophy of mind. Further, I have explained the various sub-theories of panpsychism, focusing on the theory of constitutive micropsychism as the most promising contender. I proceeded with the combination problem for constitutive micropsychism in the third chapter, where I explained the problem in detail and distinguished its various sub-problems. The sub-problem I have focused on as the most discussed one is the subject summing problem, which challenges panpsychists to explain how a set of subjects with conscious experiences can constitute a further distinct macro-subject with its further distinct experiences. In the fourth chapter, I have presented a detailed analysis of Goff's approach to a solution of the subject summing problem. In the course of this, certain problems with this proposal became apparent, which I have discussed with reference to Miller (2017, 2022) and Siddharth (2021). In order to avoid that the phenomenal bonding solution presenting a mere role-playing concept for the relation that binds subjects together, panpsychists need to provide a positive conception of the nature of this relation. In proposing to identify the phenomenal bonding relation with co-consciousness, Miller's attempt at providing such a conception was quickly confronted with a variety of objections that were directed at the coherence of his account. However, it was soon apparent that there were other problems with this response, which were the subject of further discussion. Moreover, even assuming that Miller's proposed solution is coherent, it has been shown that he missed the opportunity to provide a precise explanation of the nature of phenomenal bonding and how it works and to provide a justification to believe it to be true. Therefore, the question has been answered negatively: Neither Goff nor Miller present suitable solutions to the combination problem, as both lack a detailed elaboration of their accounts and could not provide further reasons to support their theory.

At this point, one might ask what consequences this has for the theory of constitutive micropsychism. Well, as it turns out, the combination problem for this constitutive form of panpsychism hasn't been solved by the phenomenal bonding solution. Unfortunately, since it has been shown that there are also problems with the other two solutions presented (namely the ignorance and the consciousness+ response), there are no other direct answers available at this stage that could be considered in more detail. Consequently, proponents of constitutive micropsychism currently have no suitable responses to this problem. In the absence of any other solution, the rejection of constitutive micropsychism is justified due to panpsychists carrying the burden of proof. This doesn't imply, however, that further research into panpsychism is unjustified. It should be emphasised that this is only one variant of panpsychism that has been the subject of refutation.

As mentioned in the previous chapters, panpsychism includes a multitude of different sub-theories which can also be considered as responses to the combination problem and offer an alternative to constitutive micropsychism. Those are the mentioned indirect responses. But the focus of this work has been on direct answers to the combination problem for a specific reason. This is because the non-direct responses suffer from other significant issues as has been mentioned in the third chapter. Take, for instance, emergent panpsychism, which we can assign to the non-direct-non-combinatorial category. This most famous version of non-constitutive panpsychism claims that there is no constitution of a larger macro-experience by various micro-experiences, but rather that macro-experiences emerge from micro-experiences. So, this theory tries to bypass the combination problem by relying on emergence (Chalmers 2016, 192). But in trying to circumvent the problem this theory inherits many disadvantages associated with substance dualism, such as problems of economy (more fundamental entities in the world than necessary) and the problems of mental causation, thereby sacrificing one main motivation for panpsychism, namely avoiding the problems of dualism (Chalmers 2016, 193). Also, advocates of this theory have to explain how emergence in the case of phenomenal consciousness is supposed to work and how that has significant advantages over physicalist theories.

Or consider another option: cosmopsychism. By changing the view on what is to be considered fundamental and claiming that consciousness is a property of the whole universe (thus adopting a top-down-view of things (Nagasawa 2020, 266)), the problem seems to be circumvented and not to

arise at all due to this shift from bottom-up to top-down view. But this view has an issue that is similar to the combination problem: how can the consciousness of the whole cosmos be divided into smaller parts? The problem can be understood as the reverse combination problem but is mainly referred to as the *decomposition problem* or *decombination problem* (Chalmers 2016, 194; Seager 2020, 121). Proponents of other non-combinatorial theories also lack a satisfying and appropriate explanation of how exactly their proposal might work in further detail and where to find the advantage of their theories. The same applies to the category of non-direct-combinatorial responses. Efforts should be made to find a solution that consists of replacing one problem with another. At present, there doesn't seem to be a promising solution that doesn't have severe problems of its own.

The presence of those many issues for various sub-theories of panpsychism raises the question of the reasonableness of its foundational premise: consciousness is fundamental and can be found in fundamental entities. We accepted the main premise of panpsychism with a certain degree of sincerity at the beginning of this thesis for the sake of the discussion. After having discussed the different ways of solving the problems that panpsychism and its sub-theories have to face, we have reached the point where its main premises can reasonably be questioned.

Hence, a question similar to the one at the end of the previous chapter arises: Why should anyone believe in the validity and superiority of the theory of panpsychism? The reasons for supporting panpsychism were presented in the second chapter. But most of the presented arguments showed significant deficits. For example, as already mentioned, many physicalists argue for a supervenience relation between the physical and the mental, rather than a more mysterious emergence of the mental from the physical, and already include consciousness in the causal closure of the physical world. Moreover, as I have argued in discussing the Generic Argument, there is no need to explain consciousness in terms of consciousness. Physicists are capable of integrating consciousness into the known natural world. One can then remain sceptical when faced with the reasons for panpsychism, as they don't seem to be very convincing. If these are the only reasons, then panpsychists have to provide better arguments for their main premise in order to justify further discussion.

There are, on the other hand, several arguments that can be used to challenge panpsychism. First, it appears that panpsychists aren't able to provide empirical evidence for their premise that

fundamental entities possess consciousness. It is also questionable how this would even look like. As mentioned, those conscious entities that produce greater consciousness are not to be understood as feeling and thinking as humans do. However, what is not described in more detail is what exactly characterises those experiences of fundamental entities. What is it like for those entities to experience something? How could one even conceive the possibility of fundamental entities having a mental life of their own?

Furthermore, the majority of panpsychist theories claim that many small entities with conscious phenomenal states somehow give rise to greater phenomenal consciousness. Another question that becomes apparent at this point is: What if some of these entities that produce a human consciousness are no longer present for some reason? Does that result in having less consciousness? It doesn't seem to me that if I lose my arm, I also lose parts of my consciousness. According to panpsychists, mentality could be located at different levels of organisation and doesn't have to be limited to the brain. But again, they have the problem of having to explain more precisely what this means, and how it works, and they also have the problem of explaining why we have good reason to believe that consciousness is closely associated with neural information dissemination processes. They will then have to explain why it is only in the area of the brain that consciousness seems to arise.

This problem is also accompanied by the question of where the boundaries of this combination should be drawn and how they should be set. As mentioned in the second chapter, someone who calls themselves a panpsychist doesn't have to claim that everything is conscious. It's sufficient for the theory to be true if electrons have mental states but rocks don't. But now the question arises, how could it be possible for a stone not to be conscious if it is made up of the same fundamental conscious entities as, for instance, a conscious human being? The panpsychist might answer that a certain configuration of conscious fundamentals can constitute a conscious system under limited conditions. But it is precisely at this point that panpsychists must specify the criteria under which conditions combination, emergence, or something else occurs. As has been shown in this thesis, universalism or the phenomenal bonding relation doesn't satisfy the demand for an adequate specification of criteria.

Lastly, panpsychists claim that their theory is ontologically parsimonious. But given the previous discussion, I don't think that's actually the case. It has become increasingly questionable whether panpsychism is able to give an explanation of the physical world that includes conscious fundamental entities, without significantly more ontological vices. At this point, it seems more ontologically parsimonious not to ascribe any additional quality to the physical world, especially since the current explanation lacks explanatory details and faces several problems.

There are certainly many more questions that could be the subject of discussion, but for the present purpose, we will bring the considerations to a close at this point. In summary, after convincingly rejecting constitutive micropsychism and presenting the problems of alternative sub-theories, it has been demonstrated that the basic premise of panpsychism is not plausible. In view of the arguments and problems that have been examined, the theory seems problematic in many respects.

By its nature, this thesis was limited in its scope. Thus, it was not intended to be a comprehensive refutation of panpsychism. In the last few pages, I've tried to give an outlook on what questions remain unanswered and need further and more detailed explanations on the part of panpsychists. These are questions and issues that panpsychists should solve and which can be used as a basis for further discussion and debate. The substantive challenges encountered so far weigh heavily and highlight the need for additional efforts if panpsychists intend to overcome these problems and prove to be an equal or superior theory to physicalism.

6 Bibliography

- Alter, Torin, and Sam Coleman. 2019. 'Panpsychism and Russellian Monism'. In *The Routledge Handbook of Panpsychism*, edited by William Seager, 1st ed., 230–42. Routledge. <https://doi.org/10.4324/9781315717708-20>.
- Beckermann, Ansgar. 2008. *Analytische Einführung in die Philosophie des Geistes. Analytische Einführung in die Philosophie des Geistes*. De Gruyter. <https://doi.org/10.1515/9783110209938>.
- Blamauer, Michael, ed. 2011. *The Mental as Fundamental: New Perspectives on Panpsychism*. DE GRUYTER. <https://doi.org/10.1515/9783110319859>.
- Bourget, David, and David Chalmers. n.d. 'Philosophy of Mind'. PhilPapers. Accessed 24 September 2023. <https://philpapers.org/browse/philosophy-of-mind>.
- Brüntrup, Godehard. 2016. 'Emergent Panpsychism'. In *Panpsychism*, edited by Godehard Bruntrup and Ludwig Jaskolla, 48–72. Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780199359943.003.0003>.
- Brüntrup, Godehard, and Ludwig Jaskolla, eds. 2017. *Panpsychism: Contemporary Perspectives*. Philosophy of Mind Series. New York, NY: Oxford University Press.
- Calef, Scott. n.d. 'Dualism and Mind | Internet Encyclopedia of Philosophy'. Accessed 24 September 2023. <https://iep.utm.edu/dualism-and-mind/>.
- Chalmers, David. 1996. *The Conscious Mind: In Search of a Fundamental Theory*. Philosophy of Mind Series. New York: Oxford University Press.
- . 2007. 'The Hard Problem of Consciousness'. In *The Blackwell Companion to Consciousness*, edited by Susan Schneider and Max Velmans, 225–35. Malden, MA ; Oxford: Blackwell Pub.
- . 2010. *The Character of Consciousness*. Philosophy of Mind Series. Oxford: Oxford University Press.
- . 2013. 'Panpsychism and Panprotopsyism'. Presented at the Lecture 8, The Amherst Lecture in Philosophy. <https://www.amherstlecture.org/chalmers2013/index.html>.
- , dir. 2014. *David Chalmers: Wie Lässt Sich Das Bewusstsein Erklären? | TED Talk*. https://www.ted.com/talks/david_chalmers_how_do_you_explain_consciousness?language=de.
- . 2016. 'The Combination Problem for Panpsychism'. In *Panpsychism: Contemporary Perspectives*, edited by Godehard Bruntrup and Ludwig Jaskolla, 179–214. Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780199359943.003.0008>.
- Ganeri, Jonardon, and Itay Shani. 2022. 'What Is Cosmopsychism?' *The Monist* 105 (1): 1–5. <https://doi.org/10.1093/monist/onab019>.
- Gennaro, Rocco J. 2023. 'Consciousness'. Internet Encyclopedia of Philosophy. 2023. <https://iep.utm.edu/consciousness/>.

- Goff, Philip. 2009. 'Why Panpsychism Doesn't Help Us Explain Consciousness'. *Dialectica* 63 (3): 289–311.
- . 2016. 'The Phenomenal Bonding Solution to the Combination Problem'. In *Panpsychism*, edited by Godehard Bruntrup and Ludwig Jaskolla, 283–302. Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780199359943.003.0012>.
- . 2017. *Consciousness and Fundamental Reality*. New York: Oxford University Press.
- . 2019. 'Cosmopsychism, Micropsychism and the Grounding Relation'. In *The Routledge Handbook of Panpsychism*, edited by William Seager, 1st ed., 144–56. Routledge. <https://doi.org/10.4324/9781315717708-13>.
- Goff, Philip, William Seager, and Sean Allen-Hermanson. 2022a. 'Panpsychism'. The Stanford Encyclopedia of Philosophy. 2022. <https://plato.stanford.edu/archives/sum2022/entries/panpsychism/>.
- . 2022b. 'Possible Solutions to the Subject-Summing Problem'. Stanford Encyclopedia of Philosophy. 2022. <https://plato.stanford.edu/entries/panpsychism/supplement.html>.
- Hübner, Johannes. 2015. *Einführung in die theoretische Philosophie*. Stuttgart: J.B. Metzler. <https://doi.org/10.1007/978-3-476-05427-2>.
- James, William. 1890. *The Principles of Psychology*. Edited by Henry Holt. Reprinted New York 1950. New York: Dover Publications.
- Kind, Amy. n.d. 'Qualia | Internet Encyclopedia of Philosophy'. Accessed 24 September 2023. <https://iep.utm.edu/qualia/>.
- Mallozzi, Antonella, Anand Vaidya, and Michael Wallner. 2023. 'The Epistemology of Modality'. The Stanford Encyclopedia of Philosophy. 2023. <https://plato.stanford.edu/archives/fall2023/entries/modality-epistemology/>.
- McLaughlin, Brian, and Karen Bennett. 2021. 'Supervenience'. The Stanford Encyclopedia of Philosophy. 2021. <https://plato.stanford.edu/archives/sum2021/entries/supervenience/>.
- Miller, Gregory. 2017. 'Forming a Positive Concept of the Phenomenal Bonding Relation for Constitutive Panpsychism'. *Dialectica* 71 (4): 541–62. <https://doi.org/10.1111/1746-8361.12207>.
- . 2022. 'A Reply to s Siddharth's "Against Phenomenal Bonding"'. *European Journal of Analytic Philosophy* 18 (1): 1–5. <https://doi.org/10.31820/ejap.18.1.4>.
- Nagasawa, Yujin. 2020. 'Panpsychism Versus Pantheism, Polytheism, and Cosmopsychism'. In *The Routledge Handbook of Panpsychism*, edited by William Seager, 259–68. New York London: Routledge, Taylor & Francis Group. <https://doi.org/10.4324/9781315717708-22>.
- Nagasawa, Yujin, and Khai Wager. 2016. 'Panpsychism and Priority Cosmopsychism'. In *Panpsychism*, edited by Godehard Bruntrup and Ludwig Jaskolla, 113–29. Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780199359943.003.0005>.
- Nagel, Thomas, ed. 1979. 'Panpsychism'. In *Mortal Questions*, 2012th ed., 181–95. Canto Classics. Cambridge: Cambridge University Press. <https://doi.org/10.1017/CBO9781107341050.015>.

- NourFoundation, dir. 2022. *Panpsychism in a Nutshell*. YouTube, 3:14, 7.12.2022 <https://www.youtube.com/watch?v=63e5ZJAuOaQ>.
- Pylkkänen, Paavo. 2020. 'A Quantum Cure for Panphobia'. In *The Routledge Handbook of Panpsychism*, 285–302. New York London: Routledge, Taylor & Francis Group.
- Rea, Michael C. 1998. 'In Defense of Mereological Universalism'. *Philosophy and Phenomenological Research* 58 (2): 347–60. <https://doi.org/10.2307/2653513>.
- Robinson, Howard. 2020. 'Dualism'. The Stanford Encyclopedia of Philosophy. 2020. <https://plato.stanford.edu/archives/spr2023/entries/dualism/>.
- Roelofs, Luke. 2019. *Combining Minds: How to Think about Composite Subjectivity*. Philosophy of Mind Series. New York: Oxford University Press.
- . 2023. 'Combination Problems and Combination Solutions'.
- Seager, William, ed. 2020. *The Routledge Handbook of Panpsychism*. Routledge Handbooks in Philosophy. New York London: Routledge, Taylor & Francis Group.
- Sheldrake, Rupert. 2021. 'Is the Sun Conscious?' *Journal of Consciousness Studies* 28 (No. 3-4).
- Siddharth, S. 2021. 'Against Phenomenal Bonding'. *European Journal of Analytic Philosophy* 17 (1): 1–5. <https://doi.org/10.31820/ejap.17.1.3>.
- Skrbina, David. 2007. *Panpsychism in the West*. A Bradford Book. Cambridge, Mass.: MIT Press.
- . 2020. 'Panpsychism Reconsidered - A Historical and Philosophical Overview'. In *The Routledge Handbook of Panpsychism*, edited by William Seager, 103–15. New York London: Routledge, Taylor & Francis Group.
- . n.d. 'Panpsychism | Internet Encyclopedia of Philosophy'. Accessed 24 September 2023. <https://iep.utm.edu/panpsych/>.
- Smith, David Woodruff. 2018. 'Phenomenology'. The Stanford Encyclopedia of Philosophy. 2018. <https://plato.stanford.edu/archives/sum2018/entries/phenomenology/>.
- Stoljar, Daniel. 2022. 'Physicalism'. The Stanford Encyclopedia of Philosophy. 2022. <https://plato.stanford.edu/archives/sum2022/entries/physicalism/>.
- Tye, Michael. 2021. 'Qualia'. In *The Stanford Encyclopedia of Philosophy*, edited by Edward N. Zalta, Fall 2021. Metaphysics Research Lab, Stanford University. <https://plato.stanford.edu/archives/fall2021/entries/qualia/>.
- Van Gulick, Robert. 2022. 'Consciousness'. The Stanford Encyclopedia of Philosophy. 2022. <https://plato.stanford.edu/archives/win2022/entries/consciousness/>.
- Varzi, Achille. 2019. 'Mereology'. The Stanford Encyclopedia of Philosophy. 2019. <https://plato.stanford.edu/archives/spr2019/entries/mereology/>.
- Vintiadis, Elly. n.d. 'Emergence'. Internet Encyclopedia of Philosophy. Accessed 24 September 2023. <https://iep.utm.edu/emergence/>.
- Wager, Khai. 2020. 'Panpsychism and Cosmopsychism'. PhD Thesis, University of Birmingham.
- Weisberg, Josh. n.d. 'Hard Problem of Consciousness | Internet Encyclopedia of Philosophy'. Accessed 24 September 2023. <https://iep.utm.edu/hard-problem-of-consciousness/>.