The Combination Problem of Panpsychism and its Possible Solutions

by
Ritika Pal

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ABSTRACT

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Ritika Pal
University of Guelph, 2019

Advisor:
Andrew Bailey

In this thesis I will talk about the combination problem of panpsychism and some possible solutions to it. A reductive approach (Dennett 1993, Churchland 2013) toward a theory of consciousness has not yielded satisfactory results because it fails to address the hard problem of consciousness (Chalmers 1995). A nonreductive approach acknowledges the hard problem and claims that consciousness is a property of the universe. Panpsychism is one such nonreductive approach to consciousness. However, a major roadblock for panpsychism is the combination problem. My thesis will discuss the combination problem and two possible solutions to it called the phenomenal bonding relation (Goff 2016) and the Space-Time-Qualia Complex (Skrbina 2011). I conclude that Skrbina’s Space-Time-Qualia Complex answers the combination problem in a much better way than the phenomenal bonding solution and that is why it is an avenue worth exploring.
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Introduction

Is consciousness a purely physical phenomenon? Where can it be found and under what circumstances? When can an entity be called conscious? Questions like these are exactly what makes consciousness so exceedingly difficult to deal with and one of the most complex albeit intriguing phenomena in the universe. Experts and philosophers have tried to approach this incredibly tantalizing issue in several ways. The physicalists firmly believe that like everything else in the world, consciousness too is physical. Consciousness is, they reiterate nothing but a bunch of rather complex physical processes taking place in the brain. Adhering to the tenets of physicalism, philosophers have either insisted that consciousness can be reduced to some physical events or they’ve suggested (with a lot of emphasis) that consciousness supervenes on the physical. The dualists on the other hand have earnestly tried to convince us that the mind (consciousness) is a substance which is very distinct and different from the body (matter). However, they claim that the mind resides in the body and the duo happen to influence and interact with each other in innumerable ways.

Then there is panpsychism that claims that consciousness can be found everywhere or in everything. The term panpsychism comes from the Greek word *pan* which means “everywhere” and the word *psyche* which means “soul” that exists in human beings and other living creatures. This is of course an over-simplified version of this particular theory of mind and we will soon find out what panpsychism actually is, in details.

One of the major roadblocks encountered by panpsychism is undoubtedly the combination problem. This thesis will discuss and evaluate the attempts made by contemporary philosophers like David Skrbina and Philip Goff to uproot the combination problem and thereby
ease the way for panpsychism towards a unified theory of the world with consciousness flowing through every nerve and sinew of it. I will first talk about the hard problem of consciousness (Chalmers 1995) and its significance. Next, I will deal with panpsychism as a possible solution to the hard problem, and briefly summarize the main objections raised against it. I will mainly focus on the combination problem and the solution put forward by Goff and Skrbina. While talking about their solutions to the combination problem, I will also try to evaluate which of these solutions is better equipped to address the hard problem of consciousness. I will finally conclude that Skrbina’s STQ Complex is a more plausible solution to the combination problem than Goff’s Phenomenal Bonding relation.
Chapter One: The Hard Problem of Consciousness and an introduction to panpsychism

Section One: Arguments for the Hard Problem of Consciousness

“Consciousness” is an umbrella term referring to several different phenomena, each of which demands an explanation. However some are easier to explain than others. Australian philosopher David Chalmers in his paper “Facing Up to the Problem of Consciousness” (1995) segregates the phenomenon of consciousness into the easy problems and the hard problem and then points out who the real troublemaker is. The easy problems seem to be successfully delineated by the standard methods of cognitive science, where a phenomenon is explained in terms of computational or neural mechanisms. According to Chalmers, the easy problems of consciousness include those of explaining the following phenomena:

1) Integration of information by a cognitive system

2) Reportability of mental states

3) Ability of a system to access its own internal states

4) Ability to discriminate, categorize and react to environmental stimuli

5) Focus of attention

6) Deliberate control of behavior

7) Difference between wakefulness and sleep (Chalmers 1995, pp. 21-22).

Providing an appropriate explanation of these phenomena isn’t exactly an easy task. But we have an idea what these explanations will look like. It is safe to admit that neuroscience may
someday be able to explain these cognitive functions quite adequately. Years of extensive research have made us much more familiar with the functioning of the brain than we previously were. We know how information is integrated in the brain; we know what part of brain is responsible for dealing with long term memory, short term memory, voluntary actions and involuntary actions, etc. Although we are far from having a complete picture of these phenomena, given enough time and money experts will figure them out eventually. The problem of explaining these phenomena has the character of puzzles rather than mystery.

On the other hand we have experiences. Why on earth should all complex brain processes and cognitive functions feel like anything from the inside? Why aren’t we just highly intelligent robots capable of retaining, integrating information, reacting to information, responding to noises and hot curries, but dark inside, lacking inner life? When you stub your toe against the furniture, as any neuroscientist can tell you, certain nerve fibres send a message to your spinal cord, sending neurotransmitters to the part of your brain called the thalamus which activates (among other things) your limbic system. But you might be inclined to ask, “Fine. But how come all these are accompanied by a flash of pain? Why did it feel that way?”

Experiences accompany all sorts of sensations. There are bodily sensations too: from pains to itches, mental images that are cooked up internally, the felt quality of an emotion like burning rage or the experience of just a conscious thought of what to have for dinner. These conscious experiences have a particular kind of subjectivity to them. Thomas Nagel in his paper “What Is It Like To Be a Bat?” (1974) talks about this subjectivity of conscious experiences. All conscious experiences have something common amongst themselves. There is something it is like to be in them. To borrow Nagel’s words, there is “something it is like to be that organism--
something it is like for that organism” (Nagel 1974, p. 436). Any sort of functional explanation of a conscious experience cannot explain what it is like to have that experience.

The hard problem of consciousness is the problem of subjective experience. The easy problems are easy because they involve the explanation of functions. To explain these one has only to specify the mechanism in computational and neurobiological terms. But the hard problem lingers even after all sorts of cognitive functions of consciousness have been explained. That’s because the hard problem is not a problem about the performance of functions. We know that conscious experiences arise in conjunction with cognitive functions. But the very fact that it arises is a central mystery. It has been proposed that the reason behind this mystery is the fact that there is an explanatory gap (Levine 1983) between functions and experiences and--on the face of it--we don’t have the required materials and knowledge to bridge the gap. We do not know how to get from computational and neurobiological functioning to experience. More to the point, so Chalmers’ claims, we have no scientific ideas at all as to how to approach this problem. In spite of scientists discovering the brain region associated with deception, gambling, hunting, etc, we have no idea what it is like to gamble or deceive unless we have first person experience of them. Like that obnoxious stain on your favorite suit that refuses to go away even after several visits to the dry cleaner, the explanatory gap remains. The hard problem amounts to the claim that more information about neurobiological functioning will not get us across that gap. The hard problem can also be dubbed as the problem of qualia or ‘raw feel’ or the phenomenal property of experience (Chalmers 1995). Qualia are subjective or qualitative properties of experience.¹

¹In the philosophical literature, the hard problem goes by a number of names: the problem of qualia (Chalmers 1995, 1996), the problem of phenomenal experience (Chalmers 1995, 1996), the problem of subjective experience (Nagel 1974).
A nonreductionist theory of consciousness takes this subjective aspect of consciousness to be something that cannot be reduced into a theory of functions and performances of the brain. The nonreductionists believe that there are facts about consciousness that are not deducible from physical facts alone. One can know all the physical facts and still may not be able to hack open all the facts about consciousness on that basis. They take consciousness to be an irreducible, fundamental aspect of the universe. A reductionist theory of consciousness, by contrast, holds that qualia can be successfully translated into a theory of functions and physical facts about the brain and once that is achieved, there is nothing else left to explain about consciousness. Reductionists believe that qualia can be deflated into an intricate set of functions and physical facts about the brain.

There are a number of philosophical thought experiments and arguments that are intended to motivate a non-reductive position on subjective experience. I will discuss two of the most famous of these here: The Knowledge Argument and The Conceivability Argument. Frank Jackson in his famous paper “What Mary Didn’t Know” (1986) talks about The Knowledge Argument which establishes that physical facts are not enough to explain consciousness. He explains that with the help of a thought experiment. Jackson invites his readers to imagine the following scenario: Mary unluckily has spent all her life being confined in a room in which the only visible colors are black and white. Through the use of a black and white television monitor and black and white books, she comes to know all of the physical facts about us and the world around us. Physics, chemistry, neurophysiology have taught her everything there is to know about colors, shapes, etc. What will happen if Mary is released from her room? Will she learn anything new? According to Jackson, she will definitely learn something new about the world around her. When Mary finally leaves the room and, for the first time, gazes upon a red object,
she learns *what it is like* to see red. All her knowledge about color will fail to provide her with this information. The Knowledge Argument aims to establish that conscious experience involves non-physical facts (Jackson 1986, pp. 291-295).² If physical facts were all that there is to consciousness, if Mary knew all the facts there were to know, then she would not have been surprised when she left the room and saw something red. She would have just gone about her day as if nothing out of the ordinary happened.

We have all been in a somewhat analogous situation to Mary. For instance, having moved to Canada from a predominantly tea drinking country, the intensity and eagerness with which coffee was consumed here made me very curious. What did it taste like? What effects did it have on the body and how long did the effect last? To put my curiosity to rest, if I had consulted a coffee expert who would give a detailed account of the molecular structure of coffee and how it affects the taste buds on my tongue, and how there are neurons and brain cells responsible for carrying the information from the taste buds to the brain and how my brain responds by firing up certain neurons which makes me feel the rush of energy through our system, the bitter taste and so on and so forth, then, if the Knowledge Argument is unsound, I would not have the impulse to walk into a coffee shop and ask for a cup of coffee to experience the taste. However, no amount of scientific data about the physical facts of coffee and the human body can explain the experience of having a cup of coffee. One can make an effort. But it will never be enough. There is more to phenomenal experiences than just the process, and the Knowledge Argument proposes

²See Frank Jackson’s paper “What Mary Didn’t Know” (1986) for a detailed explanation of the Knowledge Argument and what it entails.
that this is true regardless of the amount of scientific knowledge a person has. This is what the Knowledge Argument is designed to show.\textsuperscript{3}

The Conceivability Argument has been raised by non-reductionists to establish the claim that the problem of consciousness demands an explanatory framework outside that used by observational science. In his book *The Conscious Mind* (1996), David Chalmers deploys the idea of philosophical zombies to argue that consciousness does not logically supervene upon physical facts. A set of properties X logically supervenes upon a set of properties Y if there can be no two possible situations which are identical with respect to Y properties but differ with respect to X properties. In other words, there cannot be two things or situations that differ with respect to their X properties without differing with respect to their Y properties. X is logically supervenient on Y if and only if some change or difference in X necessitates some change or difference in Y too. The relation of logical supervenience implies the idea that a set of properties can be completely determined by another set of properties. For example all biological processes and several other phenomena like precipitation are supervenient upon the physical facts about the world. This means that all biological processes and other processes like precipitation are determined by the physical facts of the world. It would not be possible to have changes in our biological processes without there being some changes in the base level facts about the world. The physical facts entail the biological facts. There cannot be any possible worlds where the physical facts are the same as in our world but they have a different set of biological processes.

Now, if consciousness logically supervenes upon the physical facts known to us, the physical facts would entail consciousness. Chalmers argues that consciousness cannot logically

\textsuperscript{3} For further discussion of this topic, see Ludlow, P., Nagasawa, Y., & Stoljar, D. (2004). *There’s something about Mary*. Cambridge, MA: MIT Press.
supervene on the physical facts. There are facts about consciousness that are not entailed by the physical facts. He tries to establish this with the idea of philosophical zombies. These philosophical zombies are hypothetical beings that are indistinguishable from a normal human being except that they lack conscious experience. They are isomorphic to us under any functional description but lack qualitative mental states such as pain, taste and color sensation. They are unable to experience or feel anything. For instance, you can conceive an atom-to-atom replica of your Aunt Fanny; the only difference is that she lacks phenomenal consciousness (qualia). Therefore this zombie version of your aunt can smile at you for knitting her a sweater but not feel the happiness. She might even recoil in agony when you poke her with a fork and not feel any pain sensation. Given that such a micro-physical duplicate is logically possible, it entails that the physical facts do not necessitate the phenomenal or experiential facts. If you can conceive of a micro-physical duplicate of your Aunt Fanny that is devoid of consciousness then it is safe to say that physical facts are not enough to explain consciousness, thereby indicating that a purely physical explanation of consciousness is impossible. If consciousness has to logically supervene on a set of laws, Chalmers suggests that those laws should be some psychophysical laws that take consciousness to be a fundamental entity. That way it would be impossible to conceive of a possible world where these psychophysical laws hold but there are philosophical zombies strutting around in that world, just like it is impossible to imagine a possible world where the physical facts are the same as in our world but the biological processes are totally different from our world. These psychophysical laws will strictly necessitate consciousness.⁴

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⁴For a more detailed account of logical supervenience and philosophical zombies, see Chalmers’ The Conscious Mind (1996).
Section Two: Objections against the Hard Problem of Consciousness

Not everyone agrees with the bold statement that the explanation of consciousness demands something more than just physical facts. There are many scientists and philosophers who think that this is all just a mistake. We must be fooling ourselves or looking at it the wrong way. These can be called “nothing to see here, move along” theories of consciousness. Some philosophers reduce qualia to a bunch of physical processes in the brain. These reductionists deny the existence of the explanatory gap. They argue that the hard problem arises due to a misconception of the nature of consciousness. There isn’t anything over and above explaining the various functional capacities of the brain. Once we have figured out how the functions are performed, there is nothing more to explain. Consciousness for them reduces to an intricate collection of functions performed by the brain. These materialists use analogies from other domains to make their point. Paul Churchland (2013) takes the example of heat. In the eighteenth and nineteenth centuries it was widely believed that heat was a subtle fluid called “caloric” held in bodies. Surrounding it was a theory that described how it flowed from one body to another, or flowed within a body, how it produced thermal expansion, melting, boiling etc. However, with time it was realized that heat was not a substance at all. It was the motion of the innumerable jostling molecules of the heated body itself. The new theory explained and predicted the thermal behavior of bodies much more successfully than the previous one. Therefore, this “caloric” was simply declared redundant. It appears that people were led to believe that there was something more that needed explaining apart from structures and functions. But science proved them wrong. Similarly, according to Churchland, the problem of consciousness is nothing but a bunch of easy problems and by answering these easy problems we automatically answer the hard problem of consciousness (Churchland 2013, p. 75).
Reductionism is not a very satisfactory way to deal with the hard problem. In Churchland’s example of heat, all that needed explaining was heat’s ability to expand and melt substances, the causation of fire, heat transmission between substances, etc. All these are clearly functions. Therefore, a reductive explanation works. But can the explanation of functions answer questions like “What is it like to thrust your hand in a pot of boiling water?” or “What is it like to undergo hours of searing pain during childbirth?” No amount of knowledge can prepare you for that. You know it when you feel it. Assuming functions are all that need explaining will not do. A materialist needs to argue that for consciousness explaining the functions is enough. The ineffable and private aspects of a first-person refuse to come under the radar of the third-person observational techniques of other sciences.

Dennett (2013) argues that the hard problem is a red herring. In his article “Explaining the ‘Magic’ of Consciousness”, he gives an extraordinary analogy of how the use of the word “The” was implemented in a card trick by a magician named Ralph Hull to make it seem completely mysterious even to fellow magicians. This trick was called “The Tuned Deck”. Upon performing a traditional find-the-card trick, Hull challenges anyone to figure out how he performed it. He then performed the same trick with a second technique different from the first and subsequently a third technique and so on. Any hypothesis was just chasing a moving target and the trick was simply in the title: “The Tuned Deck”. Consciousness according to Dennett’s theory is like a conjuring trick: the normal functioning of the brain just makes it look as if there’s something non-physical going on (Dennett 2013, pp. 17-19). He thinks that we are mistaken in supposing that there is something more to consciousness than functions and processes of the brain. Dennett is critical of a certain philosophical position on “qualia,” the supposedly subjective, experiential dimension of a mental state, according to which qualia are ineffable,
intrinsic, private and directly or immediately apprehensible in consciousness (Dennett 1988, Section 2, Paragraph 6). With the assistance of anomalies such as change blindness, Capgras Syndrome, several clinical cases and thought experiments that he calls ‘intuition pumps’ (Dennett 1988), Dennett tries to establish that there can be no features of mental states that are ineffable, intrinsic, private and directly apprehensible in consciousness, and hence qualia do not exist.

Change blindness is a phenomenon in visual perception in which very large changes occurring in full view in a visual scene go unnoticed by the observer. In certain experiments one is shown two photographs which differ, in quick succession one after the other, often with an intermediate stimulus, such as a flash, to suppress our ability to notice the change. For instance, one pair of photos shows a bedroom; what changes from one photograph to the other is the colour of the window, which changes from blue to brown. These photos are shown continuously till the observer notices the difference. Dennett’s question to the observer is something like this: “Now before you noticed the change in the colour of the window, were your qualia for that region changing?” If the answer is yes, Dennett claims that qualia cannot be the features of mental states about which the observer is authoritative (self-aware). If the answer is no, it implies that qualia cannot be the features of mental states about which the subject is incorrigible. If the observer is inclined to say “I don’t know”, Dennett claims that it puts qualia beyond the horizon of both third-person objective science and first-person subjective experience.6

In the case of Capgras Syndrome, the victim holds a delusion that a close friend, partner, parent or other close family member has been replaced by an identical looking imposter. Here

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5See Dennett (1988) for a detailed explanation of his “intuition pumps”.

too, Dennett points out that the victim’s first-person access to his own qualia counts for nothing if it cannot be relied on for simple judgements. According to Dennett, since there are several instances and thought experiments (some of which I briefly mentioned above) that can make us question a philosophical idea according to which qualia are ineffable, intrinsic, private and directly apprehensible in consciousness, there is no reason at all for us to entertain the plausibility of qualia so conceived. I think Dennett’s conception of Qualia is somewhat different from a non-reductionist’s conception of qualia. Dennett proposes that qualia are incorrigible in the sense that since we have first person experience of it, there is no way we can be wrong about it. With examples like Change Blindness and Capgras Syndrome he attempts to show that sometimes our knowledge of our own qualia can be mistaken and therefore the concept of qualia he is critical of is incoherent. But qualia are supposed to be the felt aspect of our consciousness. A non-reductionist like Jackson (1986) and Chalmers (1995) would claim that qualia are the subjective felt aspect of consciousness that cannot be successfully defined from a third-person perspective that involves just processes and physical facts. We do not necessarily have to depend on our qualia to make simple judgements. I think it is absolutely possible for us to rely on our qualia for simple judgements and still end up with disappointing results. It is not strictly necessary for qualia to influence our judgements in any way. It does not make sense to say that a victim of Capgras Syndrome cannot rely on his own subjective experience to make simple judgements like whether or not his loved ones are imposters and therefore qualia should be dismissed. Dennett misconstrues a non-reductionist’s concept of qualia. What a non-reductionist claims is that there is something it is like to be an unfortunate victim of Change Blindness or Capgras Syndrome. They need not claim that since we have access to our own qualia, there is no way we can be wrong about them. What they have claimed was that a first person account of an
experience cannot be successfully translated into a third person account. There will always be something missing. If I got curious and wanted to experience what a victim of Capgras Syndrome goes through everyday, reading all the literature on Capgras Syndrome and talking to experts and scientists specializing in that field will not help at all. I will actually have to experience it. The thought experiments and examples that Dennett uses don’t exactly threaten the existence of qualia.\textsuperscript{7} Seager (1999) insists that the attack that Dennett launches against qualia is unjustified and that they are not substantial enough for the absolute dismissal of qualia. We are still in need of a theory of consciousness that acknowledges the existence of qualia and offers a satisfactory account of it.

\textit{Section Three: Panpsychism as a non-reductive approach to the hard problem of consciousness}

As we have seen so far, the hard problem still seems to persist. If physical facts were enough to explain consciousness, Mary would not have been taken by surprise when she comes across something red for the very first time in her life and philosophical zombies would not be conceivable. Since physical properties, however fundamental they are, cannot absolutely account for consciousness, we may be willing to entertain the idea that consciousness, like other fundamental entities around us like mass and charge, is fundamental and ubiquitous in its own right. All the reductive accounts give a description of consciousness that leaves the hard problem of consciousness unresolved. The Conceivability Argument and the Knowledge Argument discussed earlier demonstrated how physical facts are not enough to give a complete account of

\textsuperscript{7}See Seager (1999, pp. 85-106) for Seager’s arguments against Dennett’s thought experiments.
consciousness. Therefore, non reductive accounts of consciousness are something worth looking into. They take consciousness to be a fundamental entity that cannot be reduced into any physical unit. Since consciousness refuses to be reduced to a set of physical facts it is plausible that it is a fundamental nonphysical feature of the world. Panpsychism is one such nonreductive theory that takes consciousness as fundamental.

Does that mean mentality is everywhere and that everything has a mind? A panpsychist will happily say yes but will immediately forbid you from cooking up some visually amusing pictures in your head of your microwave greeting you when you come home from work and the refrigerator opening its door for you because it knows you’re starving and maybe because it feels for you. Panpsychism is the view that the ultimate constituents of the physical world are conscious. Can panpsychism solve the mystery of consciousness? Can it address the hard problem of consciousness? The most important attribute of a non-reductive theory is that it takes consciousness to be fundamental and irreducible. Will this feature help us to explain phenomenal consciousness? If panpsychism is to succeed as a theory of mind, it has to successfully resolve the hard problem of consciousness without reducing it into a cluster of easy problems, and explain how and why everything around us has some sort of phenomenal consciousness associated with it. I think panpsychism has the potential to address the hard problem of consciousness. By claiming that consciousness is as fundamental as the other fundamental properties (mass, spin, charge, etc) recognized by physics, it entails that everything around us has a phenomenal aspect to it. But does that explain qualia? How does claiming that everything from the human body to the tiniest particle of dust possesses consciousness explain qualia?

When Chalmers raised the hard problem of consciousness and pointed out how desperately we are in need of a theory of mind that takes phenomenal consciousness seriously, he
was looking for a theory that would consider the mental as fundamental and irreducible. Panpsychism fits the bill. However, it is important to remember that solving the mystery of consciousness does not mean we will have an answer to what it feels like to be a hummingbird or a discarded chunk of wood. Chances are we might never know the subjective aspect of consciousness. This is because our sense organs have limited scope. We are just not equipped to have introspective knowledge of anything or anybody but ourselves. We just cannot comprehend the subjective aspect of any other entity but ourselves. If we could, there would not exist that subjective aspect of consciousness that refuses to be translated into a third person perspective without losing its essence. Subjective experience cannot be described the way processes like growth, evaporation, condensation, pain, etc can be described. Any attempt to translate phenomenal consciousness into a third person account will undoubtedly result in an incomplete account of any particular experience we are trying to describe. But that does not mean that it should be disregarded altogether? What panpsychism acknowledges is that there is something it is like to be a hummingbird, a discarded chunk of wood, a desk, etc. There is something it is like to be everything because phenomenal consciousness is as fundamental as the other entities like mass and spin and charge. I think this in a way enables panpsychism to address the problem of qualia.
Chapter Two: Panpsychism and the Combination Problem

Section One: Panpsychism and the objections raised against it

Before talking about what panpsychism is, a few words about what panpsychism is not. It is not a doctrine that claims that human or animal-level mentality or consciousness is everywhere and therefore my couch and my microwave have mental properties and can think. What the panpsychist claims is that consciousness is fundamental in the sense that everything around us is made up of the same fundamental entities and these entities have a conscious aspect to them. This does not however mean that everything around us should exhibit the same signs of being conscious as we do. Although there are several different varieties of this very intriguing doctrine, they all agree that consciousness is fundamental and ubiquitous and any attempt to explain it in terms of something else or reducing it to something else will not yield any result.

Skrbina (2005) defines panpsychism as a doctrine that claims that “All objects or systems of objects, possess a singular inner experience of the world around them” (p. 16). Maybe the inner experiences of other entities are not nearly as rich and well structured as our experiences of the world around us, but still they have a basic form of awareness of the world. Owing to their incredibly simple and uncomplicated structure, the experiences had by them are merely a basic kind of awareness. For example, when classifying entities as living and non-living, we look for some very basic signs. Does the entity reproduce? Can it move? How self-sustaining is it? As we can see, a tree, an amoeba and a human being fit the criteria of a living thing but the level of complexity in all these three entities differ. A tree moves by spreading its roots underground. It
does not walk or sprint like humans. A tree absorbs its nutrients from its surroundings (sunlight and oxygen) by the process of photosynthesis. A human being on the other hand feeds on grains, proteins, etc derived from plants and other animals and the way they process food is way more complicated as well. An amoeba on the other hand feeds on algae, bacteria and other protozoans. The level of complexity of the criteria (like growth, reproduction, etc) that make them living things are different but still, they are all termed as living things. I think the same may be said of consciousness. As a fundamental entity, it exists in all the entities around us. But it can be manifested in different degrees. If we are looking for the same signs of consciousness that are possessed by us and maybe a few other animals in everything around us, we might be looking at it the wrong way and as a result, might be missing out on a lot.

One of the defining properties of a sentient being is the capacity of having inner experiences of the world (there is something it is like to be a certain entity). The basic and the most important claim of panpsychism is that the property of having inner experiences is universal. It’s not something that is present in a certain group of entities with a particular constitution and is absent from the rest. Just like other fundamental entities like mass and energy that can be found in varying quantities in all the entities that populate the earth, consciousness is ubiquitous and fundamental. When panpsychists claim that mentality or consciousness is fundamental, they don’t mean to imply that this fundamentality of consciousness will render your furniture and microwave conscious in the same way we consider ourselves conscious.

The core claim of any panpsychist doctrine is that consciousness is fundamental and ubiquitous. It should however be kept in mind that the ubiquity of the mental does not require that everything in the world is possessed of a mind like ours. If there is a particular set of
fundamental entities from which all other entities and all phenomena are constructed, then panpsychism only requires that these fundamental entities have a mental dimension to them.

However, the idea of consciousness being one of the fundamental entities recognized by us makes a lot of philosophers and experts uncomfortable. They say panpsychism faces a severe problem of explaining how more complex mental states emerge from the mental features of fundamental entities.

William Seager in his book *Theories of Consciousness* (1999) makes a detailed assessment of some of the most common objections that have been raised against panpsychism. He brings up five objections that can be leveled against panpsychism. I will briefly talk about all the five objections but my main focus for the rest of the thesis will be the combination problem which I will discuss after I have briefly touched upon the rest of the objections raised against panpsychism.

The most common and probably the most recalcitrant obstacle (in the form of objection) that panpsychism faces is the combination problem. This term was coined by William Seager to point out the dilemma that we face when we try to piece together the phenomenal consciousness enjoyed by the human and (to some controversial extent) animal species from the basic fundamental atomic consciousness that is supposed to be a fundamental property. Consciousness, like other fundamental entities (for example, mass), is ubiquitous and every single object that exists has to have a mental aspect to it without fail. The combination problem demands an answer to HOW the atomic consciousness gives rise to macro phenomenal consciousness.

The second objection to panpsychism that Seager talks about is called “the unconscious mentality problem” (Seager 1999). Panpsychism claims that like all other fundamental
properties, consciousness is ubiquitous and therefore, every particle and every object around us possesses it. The ubiquity of consciousness might be taken to imply that inanimate objects like microwaves and donuts are conscious in the same way as we are conscious. This makes some experts uncomfortable and unwilling to entertain the possibility of panpsychism as a workable theory of mind. I think this objection is the combination problem in disguise. I think a solution to the combination problem automatically answers the unconscious mentality objection. If we have a model of how the elemental units of nature that have a conscious aspect come together to give rise to everything from the human brain to a chunk of wood, we will have an answer to how and why consciousness is manifested differently in different entities.

The third problem that Seager talks about is called “the completeness problem” (Seager 1999). The physical world seems to be causally complete or causally closed. The idea behind causal closure is that everything that happens in this world has a physical cause. In other words, every physical event that takes place in this world can be traced back to the fundamental laws of physics which functions as the bedrock of all these events. For instance, if we are asked to explain how precipitation occurs, or why liquids take the shape of the container they are held in, we look to fundamental physics for our answers. Precipitation occurs when atmospheric water vapor condenses and falls downwards due to gravity. The force of attraction between molecules in a liquid are not strong enough and thus the molecules are not held together firmly. This enables them to flow freely and take the shape of the container they are held in. If we accept consciousness or mentality to be a fundamental feature of nature, then, like any other fundamental entity, it should have an important role to play in the causal commerce of the world. As Seager explains, if mentality is causally relevant then physically indistinguishable systems should in some way differ in their behavior because of the (inevitable) impact of their respective
mental dimension (Seager 1999, p. 255); but we do not believe that this is true, and so the
principle of causal closure says that nothing immaterial can have any causal efficacy upon the
material world. Kile Jones in his paper “The Causal Closure of Physics: An Explanation and
Critique” (2008) talks about causal closure as the theory that requires all physical events to have
nothing but pure physical explanations. The laws of physics have demonstrated that it is
impossible for something immaterial or non-physical to have a causal role within the physical
realm. A physical effect can have only physical causes preceding it (Jones 2008, p. 180). The
physical world therefore is causally closed with every physical effect having one or more
physical causes and there is no room for consciousness to play any role in it. According to a
panpsychist doctrine however, consciousness is a fundamental and irreducible feature of the
universe and, being a fundamental entity, it ought to have some impact on the physical world.
This goes against the causal closure principle of the physical world. As Seager points out, a truly
irreducible, basic feature of the world ought to make a causal difference in the world (Seager
1999, pg. 243). This seems to be a problem for panpsychism.

We know pretty well how matter works and there is no sign of consciousness either in its
fundamental operations or in the laws by which matter combines to give rise to even more
complex entities like chemicals, asteroids, enzymes, proteins, reptiles and of course, the human
species. Seager however suggests a possible response a panpsychist could make to this objection.
Physically identical systems will have identical mental features owing to their physical identity.
This will lead them to always behave in exactly similar ways irrespective of the influence of the
mental aspect. What he is trying to suggest is that just as two physically identical systems have
similar mass, charge, spin, etc, they will have similar sort of fundamental consciousness in them.
For example, if we look at two physically identical microwaves, we will see that they have the
same mass, identical electrical circuits, etc. Similarly, they will have the same kind of mental aspects to them. This will lead them to behave in exactly similar ways.

This response however doesn’t help the panpsychist because it renders the mental absolutely useless and unnecessary. If the behavior of a system can be adequately explained by just its physical properties, then why would we need to summon up its mental aspects and demand that they have an influence on the system? This response by the panpsychist runs the risk of dissolving the mental into an epiphenomenon. An epiphenomenal theory of mind states that although mental properties are not reducible to physical properties, they’re nevertheless determined by them, can be explained by them and, most importantly, these mental properties have no effect on the way a physical body functions. They’re devoid of any causal powers and therefore they have no effect on the physical world. It just happens to be a by-product of his body’s interaction with the surroundings and doesn’t have any impact whatsoever on his body. Epiphenomenalism about mind therefore isn’t very helpful to a panpsychist.

The fourth objection is called the “no-sign problem” (Seager 1999). This objection to panpsychism simply states that there seems to be no sign of a non-physical (mental) dimension to the elemental units of nature (Seager 1999, p. 244). Since there are no detectable signs that suggest that the elemental units of nature might have a mental dimension to them, there’s no point in even entertaining the idea that consciousness could be one of the fundamental units of nature. This objection does not make much sense to me. A panpsychist does not claim that if consciousness has to be a fundamental property, every single entity should exhibit the same signs of being conscious. It is absolutely possible for a slab of brick to have a conscious aspect to it and exhibit none of the signs of consciousness that a human being exhibits. Once again, if we
have a model of how fundamental entities that have a conscious aspect to them can come together to form everything in this universe, we might be able to answer the no-sign problem.

The fifth objection is called “the not-mental problem” (Seager 1999). Even if we go that extra mile and accept that these elemental units of nature have a non-physical aspect to them, what would a panpsychist’s reason be for claiming that this non-physical aspect of these elemental units is in fact mental? I think it is possible to imagine a scenario where it actually turns out that the elemental units of nature have a non-physical aspect to them and that aspect is not mental. But that is not a very strong objection to panpsychism. Until we come across a non-physical and non-mental entity (whatever that means), panpsychism still stands a chance.

Section Two: Back to the Combination Problem

All the problems that Seager talks about are interesting and important but I cannot address them all in this thesis. So I will focus on the one I take to be the most important for panpsychism to deal with, the combination problem. All through my graduate and undergraduate years, everytime I proceeded to talk about panpsychism, the first objection to be raised against it was always the combination problem. That is another reason why I will deal with the combination problem in this thesis.

The Combination Problem for panpsychism arises because the idea of micro-level consciousness unlike our own coming together to give rise to a rich, complicated consciousness like ours seems unsettling. If we accept that consciousness is an irreducible fundamental entity like mass, charge, spin, etc, we will have to explain how exactly micro-entities having a conscious aspect to them can come together to give rise to macro-entities like the human brain or
a cat brain. The combination of micro-level consciousness to give rise to a macro-level consciousness is not the same, or nearly as straightforward, as the idea of atoms of iron (Fe) coming together (when the conditions like temperature, pressure, etc. are right) to form an iron knife. The combination problem for panpsychism is the dilemma surrounding microsubjects\(^8\) coming together to make macrosSubjects.\(^9\) The concept of microSubjects having a very rudimentary form of consciousness combining together to form a macroSubject that enjoys an incredibly rich and complex variety of consciousness can open up a floodgate of questions and cast serious doubts upon the theory of panpsychism. Consciousness, which according to panpsychism is a fundamental truth about the universe like mass and charge, manifests itself very differently in higher-order entities (human beings and other animals) and other lower-order entities like stones, candles and even microentities like quarks and atoms. Skrbina (2011) asks how panpsychism intends to explain the huge disparity in its manifestation.

How do we derive higher-order minds like the ones possessed by humans and animals from lower-order minds? The usual answer is that the lower-order minds come together and form the higher-order minds just like macro objects are formed as a result of physical ultimates like quarks and electrons combining together in a particular way. But this is what sets the combination of lower-order minds forming higher-order minds apart from the combination of physical ultimates forming macro-objects -- the process in which this combination takes place. The process of physical ultimates coming together to form macro-objects is quite uncomplicated.

\(^8\)MicroSubjects in this case would mean atomic consciousness or the conscious aspect that can be found in the micro level.

\(^9\)MacroSubjects in this case would mean consciousness associated with macroscopic entities like the human brain or a cat's brain.
The mass of the resultant whole (macro-object) is the sum of the mass of its constituent ultimate physical units. This, combined with the facts that the physical characteristics of the whole is entailed by the physical characteristics of the physical ultimates and that there exists a set of physical laws governing this entire process, gives us a complete and satisfactory picture of the combination of physical entities. But we have no clue how lower order minds come together to form higher-order minds (the phenomenal consciousness of human beings). The process by which this combination takes place is a mystery and that is what forces experts to dismiss panpsychism as a theory. The human body is composed of millions and millions of atoms each having its own consciousness or experiences that is not as sophisticated as the phenomenal consciousness that we possess. How do these innumerable atoms come together to form the extraordinarily unique phenomenal consciousness that human beings experience? I personally think the combination problem is not a fatal objection to panpsychism. It is just an intriguing question that needs to be answered.

Section Three: Subproblems of the combination problem

Chalmers in his paper “The Combination Problem for Panpsychism” (2016) divides the combination problem further into three subproblems based on the three aspects of phenomenal states. Every phenomenal state or phenomenal experience exhibits a subjective character, a qualitative character and finally a structural character. The subjective character of a phenomenal state is that a phenomenal or experiential state is always had or experienced by a subject. The qualitative character is that all phenomenal states have a distinct set of qualities that is unique to that very phenomenal state. It is the experiential aspect of a phenomenal state. An example of the qualitative character of a phenomenal state would be how I feel when I brush my teeth every night. Finally a phenomenal state’s structural character is the particularly complex structure that
arises from how certain aspects of our surroundings are represented in our sense organs. Examples of the structural character of a phenomenal state would be our visual and auditory fields and the impact they have on our experiences. Based on these three characteristics, Chalmers outlines the three sub-problems of the combination problem.

Thus we get the subject combination problem which asks how microsubjects combine to form macrosubjects. Macrosubjects according to Chalmers are macroscopic subjects of experience (for example, human beings) and similarly microsubjects are microphysical subjects of experience. Microphysical subjects of experience according to Chalmers would be the fundamental properties and entities characterized by physics which according to panpsychism possess phenomenal properties.

The quality combination problem asks how microqualities combine to give rise to macroqualities like qualia. Given that microqualities that participate in giving rise to microexperience are basic and unsophisticated, how do these simple microqualities combine to form macroqualities that are much more complex and advanced in nature? Chalmers also talks about what he calls the “palette problem” (Chalmers 2016). How can we derive the wide range of phenomenal qualities that are so unique to the human species (and maybe some other species) like the visual experience of seeing a bluebird on your porch, listening to your favorite band on the radio while driving, the taste of coffee, and so on from the microphenomenal properties which are much fewer in number and which undoubtedly lack the complexity and richness of the phenomenal states that we enjoy.

The structure combination problem arises when we ask how microexperiential structures belonging to microphysical entities come together to form macroexperiential structures that can
be found in macroentities like the human brain. There is definitely a disparity between the simple structure of microexperiences associated with microphysical structures and the incredibly complicated structure of macroexperiences that we’re familiar with (for instance, qualia). How can we explain this disparity? Microexperiences can be structurally similar to their corresponding microphysical entities owing to the simple and primitive nature of these microexperiences. But why do we not see the same similarity in structure between macrophysical and macrophenomenal structure? There seems to be a huge difference between macrophysical structures like the human brain and the macrophenomenal structures like qualia, our visual experience, etc. This is what Chalmers calls “the structural mismatch problem”. I will try to address these issues when I talk about the possible solutions to the combination problem. A solution to the combination problem should be able to address these issues to a certain extent.

There are many other aspects of the combination problem that Chalmers talks about but I decided to talk about the subject problem, quality problem and the structural problem because I think a solution to these problems would give a massive boost to panpsychism. There are certain features that are peculiar to consciousness and cannot be found to occur anywhere else in the universe. These features are the subjective, qualitative and structural aspect of consciousness. Panpsychism suggests a bold move. It claims that all fundamental entities have a conscious aspect to them. I think the moment it suggests this, it opens itself up to all sorts of skepticism about how the combination that panpsychism implies is different than the kind of combination we find in the physical world (for instance, atoms coming together to form a stone or something) and therefore is not possible. I think this is mostly because of the subjective, qualitative and

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10See Chalmers (2016) for the unified consciousness problem, the boundary problem and the grain problem that Chalmers talks about.
structural uniqueness of phenomenal consciousness. If panpsychism can come up with a model of what a solution to these problems would look like, it would help panpsychism push past all the skepticism that it faces.

What is to be gained if we successfully solve the combination problem? Why should we worry about it? I think there are several reasons for us to be interested in this project. If we have a theory of how the elemental units of nature possessing a conscious aspect to them can give rise to everything in this universe, panpsychism as a theory of consciousness will stand much stronger than it stands now. Panpsychism is currently one of the most underanalyzed philosophical positions in Western philosophy (Skrbina 2005). The reason behind this is that we have no clue how to explain the sort of consciousness that we enjoy and the absence of that very kind of consciousness all across the universe. If you are in a roomful of people and you decide to talk about panpsychism and you start by gently suggesting that consciousness is a fundamental property, there is bound to be a person in the crowd (I will call him Joe) that asks, “Yeah but how is it possible for less complex conscious states to come together to give rise to a very different and much complex conscious states like the kind we enjoy?” The resistance that panpsychism meets is mostly because we still are trying to figure out the combination problem. Imagine being able to tell Joe that there is in fact a model of how fundamental entities having a conscious aspect to them can combine in several different ways to give rise to everything in this universe. This is why the combination problem deserves to be discussed.

Chapter Three: Solutions to the Combination Problem

Section One: The Phenomenal Bonding Solution and its plausibility
In this section I will talk about the No Summing of Subjects Argument that Goff (2016) designs to capture the combination problem for panpsychism and his response to this argument in the form of the phenomenal bonding relation. The No Summing of Subjects Argument goes 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 and predicates that express transparent concepts, (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 (MIS): 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, pp. 291-292).

In premise 1, Goff talks about Conceptual Isolation of Subjects which states that we can conceive of a group of subjects experiencing certain conscious states existing in the absence of any further subject of experience. This seems acceptable. Premise 2 talks about the Transparency Conceivability Principle which I think needs a little explication. Concepts can be either opaque or transparent. Opaque concepts are those which are not a priori in nature. That is, we cannot have a clear idea of these concepts independent of experience. We cannot make sense of these
concepts just by possessing the concept. For instance, in the case of the concept that water is H₂O, we see that our concept of water does not warrant that water is H₂O. We cannot expect ourselves to know that water is H₂O just by possessing the concept of water. Some extra or external knowledge is required. Moreover, the concept of water itself is not a transparent concept. Our concept of water depends on us having experiences that familiarize us with the idea of water. This is why, Goff points out, it is possible for us to conceive of situations involving water without having a clear understanding of what is being conceived of and this drives a wedge between conceivability and possibility. This indicates that our concept of water being H₂O is in fact not transparent. On the other hand, if we examine the concept of a million-sided object, we can see that it is a priori in the sense that one can conceive of this situation by just possessing the concepts. We do not have to have experiences of million-sided objects in order to have a concept of them. If we are to conceive of the idea of a million sided object we see that we do not face any hindrances. This is a transparent concept. In the case of transparent concepts the transition from conceivability to possibility is absolutely easy.

Now that we know what transparent concepts are, the Transparency Conceivability Principle is much easier to understand. This principle states that if any proposition has only quantifiers and predicates that express transparent concepts, and that proposition is conceivably true, then it is possibly true.

Premise 3 states that phenomenal concepts are transparent because, when we experience a certain conscious state we are in, we tend to have direct phenomenal concept of the conscious state. We have a very clear and transparent idea of how it feels to be in that conscious state. Phenomenal consciousness is a transparent concept. For example, when I shovel a spoonful of pasta into my mouth, I have an incredibly pleasurable experience and to have this experience I
do not need to have any prior concepts of anything else. For instance, for my experience of having a pleasurable experience of my pasta, I did not need to have prior concepts of pleasure or food. The experience would have been the same even if I had no concepts of any kind. Phenomenal concepts are transparent concepts because we do not need have to take the help of other concepts to have a concept of it. Pure experience is enough.

Premise 4 can be derived from the previous three premises. If we can conceive of a group of subjects of experience each having a different experience in the absence of any further subject of experience, then it is possible for those subjects of experience to exist independently. Premise 5 follows from Premise 4. A group of subjects of experience with certain conscious states does not necessarily imply the existence of any further subject of experience. This implies that the combination problem still lingers, which brings us to the conclusion that panpsychism is false. In other words, there can be a group of subjects of experience (each having their own conscious experience) without there being a resultant subject of experience that they give rise to. If panpsychism cannot prove that the existence of a group of subjects of experience strictly necessitates the existence of a further subject of experience, it has not addressed the combination problem and therefore can be dismissed.

In the No Summing of Subjects argument, Premise 4, which talks about Metaphysical Isolation of Subjects, inadvertently leads to Premise 5, which asserts that if we have a group of subjects, each having their own individual conscious state, that group of subjects cannot account for the existence of a further subject. This leads to the conclusion that panpsychism cannot explain the mystery surrounding consciousness because it cannot explain combination. However, Goff points out that there is still hope for panpsychism. The whole No Summing of Subjects argument hinges on how we construe the term ‘account for the existence of’. As he suggests, if
we take that term to mean ‘to wholly explain the existence of just by their mere existence and intrinsic conscious nature’, it will inevitably lead to the downfall of panpsychism (Goff 2016, p. 294). If we interpret panpsychism as a theory that demands a group of subjects to entirely explain the existence and nature of other subjects by the mere existence and intrinsic nature of that group of subjects, then we will definitely hit a roadblock. The No Summing of Subjects argument succeeds in proving the falsity of panpsychism only if we take Premise 5 to mean that a group of subjects with their individual conscious states can explain everything about the resultant subject, by the nature of their existence and their intrinsic nature. But as Goff points out, there are other ways in which we can interpret Premise 5. He explains this further by writing, “The nature of organisms and car engines are accounted for in terms of their parts, but those parts constitute the organism/engine only when related in the right way. The same is surely true of the explicability of subjects in terms of other subjects (Goff 2016, p. 294)”.

As Goff remarks:

It follows from MIS [premise 4] that certain subjects of experience cannot merely sum in virtue of their existing (and instantiating the specific phenomenal characters they instantiate). But it does not imply that a certain set of subjects of experience cannot exist and be involved in some state of affairs which accounts for the existence of some distinct subject of experience. There is nothing in the principle which rules out the possibility of there being some state of affairs of certain subjects of experience being related in some specific way which necessitates the existence of some distinct subject of experience (Goff, 2016, p. 292).
Although MIS restricts the possibility of there being a further subject of experience due to the mere existence of a group of subjects of experience experiencing certain phenomenal states, it by no means stops these subjects of experience from being related in some specific way to each other under a certain set of circumstances or in a certain state of affairs which entails the existence of some specific subject of experience. States of affairs of the following form might not always make sense:

Subject of experience S1 exists with a phenomenal character x and subject of experience S2 with a phenomenal character y exists and this necessitates the existence of subject of experience S3 with phenomenal character z.

The following state of affairs however, according to Goff can be true:

Subject of experience S1 with phenomenal character x bears a relationship R to the subject of experience S2 with phenomenal character y and this necessitates the existence of a subject of experience S3 with phenomenal character z. Goff calls this relation “phenomenal bonding” (Goff 2016).

The No Summing of Subjects, which neatly summarizes the combination problem, asks how individual entities having that fundamental consciousness that panpsychism speaks of can come together to give rise to another conscious entity of a very different kind. The human body is ultimately composed of electrons, protons, and quarks and an orange is composed of the same stuff. So why are human beings in possession of this very phenomenal kind of consciousness that an orange is devoid of? A possible answer could be that it’s not just the fundamental consciousness that matters. There are other contributing factors as well that play a crucial part. One of these factors could be the phenomenal bonding relation that Goff talks about. It’s just not
the parts that make up an entity that count, what counts more is how they are related. For instance, if I intend to bake a cake, just gathering all the ingredients will not be enough. There is a proper method and also a sequence that I am supposed to follow. While the oven is being preheated, I will have to make a mixture of sugar and butter and then add the eggs slowly into the batter. After that I stir in the cake flour and then pour the mixture in a baking pan. Now when I bake it for the exact amount of time, I can safely say that I have baked myself a cake. However, if for some unfathomable reason I stray from the recipe and mix in the eggs after I have baked the cake flour for an hour and then at last pour in the butter and sugar mixture, the end result will be anything but a cake. Now if I wonder what went wrong and why I don’t have a soft fluffy cake sitting in front of me in spite of having all the ingredients and tossing them all together, the answer is, I did not follow the prescribed method. There is a sequence in which all the ingredients should have been used, they need some time to react with each other and only then can I expect a cake. I overlooked that. Similarly, with consciousness being a fundamental entity and there being a disparity in its manifestation among the various entities in this universe, the answer could be the phenomenal bonding relationship. If subjects of experience lack this phenomenal bonding relation with each other, they cannot come together to form a further subject of experience. In addition to consciousness being fundamental, if we make room for the concept of the phenomenal bonding relation, panpsychism might be able to overcome the combination problem.

Now, as Goff points out, this phenomenal bonding relation is in no way a transparent concept. The concept of phenomenal bonding is nowhere close to the concept of million sided object that we discussed earlier. So how do we grasp the concept of phenomenal bonding? We as subjects of experience experiencing a particular conscious state at a given time can have direct,
unmediated knowledge of that phenomenal state by introspection. Introspection is the process of self-examination or self-analysis of our own conscious thoughts and experiences. The problem with introspective knowledge is that it cannot be inferred by another subject of experience. Despite our sincerest efforts, we cannot adequately convey our knowledge of our own phenomenal states to others. There is no way to translate this subjective experience that we have into something objective that can be inferred by others. Introspection doesn’t give us access to the phenomenal states of other subjects of experience. Human beings by design are unable to perceive the experiences that are had by other human beings. This is a faculty we lack. Being subjects of experience gives us a privileged access to just our own experiences and anything outside that is unattainable because our senses are unable to perceive the experiences of other subjects of experience. In other words, being subjects of experience restricts us from perceiving experiences of other subjects of experience. If we cannot introspect other subjects of experience, there is no way we can introspect the relation between subjects of experience. As Goff argues,

...Human beings are able to have neither introspective nor perspective experience of relations between subjects of experiences qua subjects of experience. We are unable to perceive relations between subjects of experience (qua subjects of experience) through the senses simply because we are unable to perceive subjects of experience (qua subjects of experience) through the senses. If you examine my brain, you will not be able to see it instantiating phenomenal properties. I have epistemic access to only one subject of experience qua subject of experience, i.e. the subject of my own experience accessed via introspection. And it follows from the fact that we can introspect only one subject of experience that we cannot introspect how subjects of experience qua subjects of experience are related, for
to introspect how subjects of experience qua subjects of experience are related we would have to be able to introspect more than one subject of experience (Goff 2016, p. 293).

According to Goff, the idea of a phenomenal bonding relation might not be a transparent concept but that doesn’t mean we cannot form a conception of it at all. He refers to the phenomenal bonding relation as the relation such that when subjects stand in it they produce a further subject and there might even be some relations in the world, especially in physics, that might be similar to it. Goff suggests that the phenomenal bonding relation will give us a model of how microexperiences or groups of subjects of experience can come together to give rise to a new macroexperience or another subject of experience and thereby help us make sense of panpsychism. The phenomenal bonding relation will be the equivalent to the laws of physics that help explain how millions of iron molecules can come together to give rise to a knife.

The concept of phenomenal bonding relation as a response to the combination problem does not sound very enticing. Goff admits that adding phenomenal bonding into the already perplexing mixture of ideas that panpsychism has created might make this theory reek of mysterianism and that is something that any proponent of panpsychism would want to avoid. We have no concrete knowledge of the concept of phenomenal bonding, but this should not necessarily be a setback for either panpsychism or phenomenal bonding. As discussed earlier, our sense organs are not equipped to experience the phenomenal experiences had by other subjects of experience and therefore, the relations that a group of subjects of experience must have amongst themselves in order to form another subject of experience are just beyond our grasp. I will discuss later why this does not make a good case for phenomenal bonding. However, to deny the existence of an entity or a concept just because we are unable to
comprehend it would be foolish. There are concepts and ideas that we think we have mastered but in reality our knowledge about them is quite vague. Goff talks about the concept of spatio-temporal relations that are not entirely transparent although the sciences lead us to believe otherwise. These concepts are not clear enough to be transparent concepts because we have to depend heavily on physics to make sense of them. But physics can only provide us with mathematical concepts of such relations. The real nature of such concepts is still unknown to us (Goff 2016, p. 293). The concepts of space and time and spatio-temporal relations have been much debated. What are the real nature of space and time? Are they absolute entities or are they just mere relations that objects have to each other? Physics and mathematics can never reveal the real nature of spatio-temporal relations. These sciences however, have cast a strange spell on us. The information provided by them is revered by us and we tend to assume that there is nothing more left to be explained. The real nature of entities sometimes goes unaddressed by physics. Goff writes, “Mathematical descriptions abstract from the concrete nature of things. We abstract from the concrete nature of phenomenology when we describe it merely in terms of its mathematical structure, e.g. we abstract from the real concrete nature of five subjects when we describe them as merely five things (Goff 2016, pp. 294-295).”

As suggested by Goff, there happens to be a lot that is left unaddressed by physics and mathematics but our blind belief in their veracity leads us to either dismiss questions that are concerned about the real nature of entities or ridicule theories that intend to address these questions with the help of something more than the sciences. It is true that there are concepts in physics that do not fully explain or reveal the true nature of a phenomenon or an entity and there are concepts that we do not have a crystal clear conception of. Goff claims that phenomenal
bonding, too, is a concept that is still a little vague to us and with time as we gather more and more information about it, we will finally have an answer to the combination problem.

David Chalmers in his paper “The Combination Problem for Panpsychism” (2016) raises some concerns about the concept of phenomenal bonding. I will use his arguments to further establish the fact that the phenomenal bonding relation is not a very efficient way to address the combination problem.

Chalmers brings to our attention a few interesting questions about the phenomenal bonding relation. For instance, how could any phenomenal bonding relation existing between two subjects of experience be sufficient for the constitution of an entirely new subject? He puts forward the idea of co-consciousness as a possible phenomenal bonding relation. As Chalmers aptly describes, co-consciousness is a relation such that whenever it relates two phenomenal states, they are experienced jointly (Chalmers 2016, pp. 200-201). So, if the relation of co-consciousness exists among the states of a group of microsubjects, these states will be experienced jointly by the new subject that is formed when this group of microsubjects comes together. In other words, if the states of a group of microsubjects have the relation of co-consciousness amongst themselves, the new subject that they give rise to will experience those states as a whole. The states of these microsubjects can be compared to individual pieces of a puzzle. The pieces in isolation, or when put in the wrong order, do not make any sense at all. But when these pieces are put together in the correct order, the puzzle is complete and we get the entire picture that we were hoping for, like a lighthouse or a horse. In this case, co-consciousness or any phenomenal bonding relation can be equated to that moment when the compatible edge of a piece is placed next to another compatible piece, and if we keep doing this, we will eventually have a complete picture. The phenomenal bonding relation I think is somewhat similar to the
compatibility that exists between certain pieces of puzzle and is non-existent amongst some other pieces. The individual pieces of puzzle can be thought of as microsubjects and the final picture could be thought of as the macrosubject that is the result of a group of microsubjects coming together. Phenomenal bonding then could be thought of as not only the relation that exists between the compatible pieces but also the act of bringing the compatible pieces next to each other in order to complete the puzzle.

Chalmers (2016) asks some very pertinent questions about the nature of this relation. Is the phenomenal bonding relation transitive? In the case of phenomenal bonding being transitive, it means that when one microphenomenal state has a transitive relation with two other phenomenal states of two other subjects, all these three states can be jointly experienced by a single subject. That is, if we have a subject that is experiencing a group of microphenomenal states that share a transitive relation, those microphenomenal states will be experienced jointly, as a whole combined experience by that subject. As noted earlier, we can think of the phenomenal bonding relation as sharing the same characteristics as spatiotemporal relations and causal relations. All entities stand in a certain spatiotemporal relation to other entities. The coffee table in my house has a specific spatiotemporal relation with the window in my loft, with my neighbor’s dog and with my mother’s cabinet back in India which is a family heirloom, so on and so forth. Every spatial entity is spatiotemporally related to every other spatial entity in this universe, in some way or the other, thereby forming an elaborate meshwork of spatiotemporal relations between objects. Similarly, if microphenomenal states all across the universe have some kind of transitive phenomenal bonding relation amongst themselves, it would mean that these states could be jointly experienced by a single subject. This lack of distinction would lead to a unified subject (Chalmers 2016, p. 201). A unified subject would in turn lead to a unified
consciousness which in conjunction with spatiotemporal and causal relations would mean that we would have a shared consciousness of everything around us. This in turn would mean that we have access to their individual quale or phenomenal consciousness as well which as we can see is not possible. Therefore if we allow phenomenal bonding to be transitive, it leads to a picture of the universe which is just not coherent.

If phenomenal bonding is a non-transitive relation then microphenomenal states cannot come together to give rise to a macrophenomenal state that is jointly experienced by a single subject. For each microphenomenal state sharing a non-transitive phenomenal bonding relation with another microphenomenal state, there will be a distinct microsubject for each microphenomenal state. These microsubjects will be incapable of fusing together with other microphenomenal states to give rise to macrophenomenal states because the phenomenal bonding relation that they share is not transitive. Needless to say this will give rise to an unnecessarily large number of subjects that cannot come together to form macrosubjects. If we don’t have macrosubjects, we cannot explain how we can get the rich, intricate phenomenal consciousness that we enjoy from just a bunch of elements having an incredibly basic form of consciousness. As Chalmers points out, for phenomenal bonding to be of any use to a theory of panpsychism, it needs to avoid both the unified subject and the multiple microsubjects that cannot combine to form macrosubjects. He writes, “To yield human consciousness, we presumably want phenomenal bonding to bond a limited multiplicity of microsubjects associated with the human organism, without bonding these to microsubjects elsewhere” (Chalmers 2016, p. 201).

As demonstrated above, a phenomenal bonding relation cannot successfully explain the subject summing problem for panpsychism. But can it address the quality combination problem?
I agree with Chalmers (2016) when he says that a phenomenal bonding relation will not be of much help to the quality combination problem. The incredibly simple and uncomplicated quality of microphenomenal states will also be experienced by the macrosubject when these microphenomenal states come together owing to the phenomenal bonding relation between them. We still need an explanation for how the rich, intense macrophenomenal qualities experienced by macrosubjects like humans and other animals arise from such rudimentary form of microphenomenal qualities.

It might be too soon to comment on how the phenomenal bonding relation will fare when it comes to the structure combination problem. We do not know a lot about the nature of phenomenal bonding relation and therefore we might still not know what kind of impact it has on the microphenomenal structures. The human brain is responsible for audio and visual cognition, memory, awareness, emotions, etc. It is much more complicated in structure than the microphenomenal structures that come together to give rise to it. How do microphenomenal states with very elementary forms of structure, sharing a phenomenal bonding relation amongst themselves, give rise to a highly complicated macrophenomenal structure like ours? I am not sure if we have a satisfactory answer to that yet.

The phenomenal bonding relation does not quite help us solve the combination problem. Instead it makes things unnecessarily complicated. Since the mere existence of subjects of experience is not enough for the existence of another subject of experience, we need some sort of principle under which a set of subjects of experience (or microentities) come together to give rise to a new subject of experience. Goff presents phenomenal bonding as a solution. However, as he discusses above, this phenomenal bonding is not a transparent concept. It is also the kind of concept that we can never grasp because it is beyond the scope of our sense organs. Our sensory
faculties do not allow us to perceive the subjective experience of anything but ourselves. We are acquainted with our own phenomenal consciousness and that is all. Goff suggests that phenomenal bonding falls into the same category as well. But if we are unable to perceive the relations between subjects of experience, then how are we to be certain whether or not these relations exist? Goff also adds that there exist some principles in the world of physics that might be similar to it. But none of the laws or concepts in physics are even remotely introspective in nature. Quite the opposite. They are all objective facts. We do not have to look into our phenomenal consciousness to figure out these laws. For instance, the laws of thermodynamics tell us how heat and temperature are related and how they affect other objects. There is nothing introspective about this. They are all objective facts. Phenomenal bonding cannot both be beyond the grasp of our senses and be similar to some laws in the physical world. It is of not much use to us if we cannot acquire knowledge about it in an objective way (like the way we acquire knowledge about photosynthesis, facts about the solar system, etc). If it is beyond the scope of our sense organs, it cannot be used as a principle on which to base the combination of subjects of experience. There is no way we can convert introspective knowledge into some sort of laws or principles or even objective facts. I think this makes the explanatory gap even bigger. I agree with Goff when he insists that a group of subjects of experience (microsubjects) can never entirely explain the existence of another subject of experience by just their mere existence and nature, but disagree that this problem can be solved by some relation between these subjects. The example that he gives of the nature of a car engine being explainable only when the constitutive parts are related in a certain way is not very helpful. This example makes sense because the relationship between the parts that make up the car engine is based on some objective facts. If the relation between the parts that make up the car engine would be available to us only through
introspection or, even worse, our sense organs were not evolved enough to grasp the idea of it, then we would not have been able to make an objective account of this relation. Moreover, the lack of an objective account of the relation between the parts would make the car engine along with its parts turn into an enigma for us.

I think the same applies to subjects of experience and phenomenal bonding. The relation has to be given some sort of objective account. The phenomenal bonding that Goff talks about seems to be just an extension of phenomenal consciousness. If there exists some kind of relation between subjects of experience that decide how they can come together to form a new subject of experience, it should at the very least be able to address the dilemma of the unified subject and the multiple microsubjects. As pointed out by Chalmers, if phenomenal bonding is transitive, it leads to a sort of globally unified consciousness and if it is not transitive, it leads to multiple microsubjects. This is exactly what we are trying to address when we are trying to solve the combination problem for panpsychism. I am not denying there cannot be any relation between subjects of experience. Of course there exists a relation. But if that relation is some sort of vague concept that we will never have access to, it takes panpsychism farther away from the answer.

Section Two: Space-Time-Qualia Complex and its plausibility

David Skrbina, in his paper “Toward a solution to the combination problem” (2011), talks about the combination problem and suggests a different solution to it. He puts forward his model of Space-Time-Qualia Complex (STQ Complex) as a solution to the combination problem. He considers the combination problem not to be an objection to panpsychism but a call for details. He therefore ventures to answer this very perplexing dilemma. In the physical realm, complex macro-objects from stones, trees, croissants to human beings -- everything is derived from a
collection of fundamental particles like electrons, protons, quarks and some force particles like photons, gluons, etc. How and under what conditions they come together to form macro-objects are governed by the laws of physics. Size introduces hierarchical complexity which in turn induces greater variations. In other words, size plays an important role in the coming together of fundamental particles and exhibiting different patterns of behaviour in space and time. An object which is made of a number of particles will have the potential to exhibit multiple states and conditions and this increases their complexity. This is called configuration space. Skirbina points out,

Two factors, then, are critical: large number of particles, and a sophisticated hierarchy of structural complexity. Fewer particles, or lesser complexity, would yield a vastly simpler object -- that is, an object with a much smaller universe of possible states. This ‘space of possible states,’ sometimes called a configuration space, embodies the physical complexity of the object (Skrbina 2011, p. 124).

To the first two factors, number of particles and the hierarchy of structural complexity, Skirbina proceeds to add another layer. Among macro-objects, compared to non-living objects, living objects exhibit a considerably wider range of possible states and behaviors. For example, between a human being and a metal hammer both weighing 200lbs; the human being has a more complex internal structure which in turn implies that it has a much larger configuration space. An object’s configuration space therefore, has two axes -- the width, which signifies the number of ultimate particles and the depth, which signifies the degree of structural complexity. So then the volume of a given space would be width*depth. So if we consider the human being and the hammer of the same mass, we will see that both the human and the hammer will have the same width because they both weigh the same. But their depth will vary because the structural
complexity of a human far exceeds the structural complexity of the hammer. Thus the human being will have a much greater overall space of possible states. Therefore, the mental life of a human is much deeper than that of a rock (Skrbina 2011, p. 125).

Now, according to Skrbina, if we consider experience to be a fundamental entity along with mass, charge, spin, etc, and if within the physical realm, the physical characteristics (ultimate particles) give rise to a complex spatio-temporal configuration space, then the same effect should happen with experience. In other words, an object should exist both in a physical configuration space and in what he calls ‘experiential space’ or ‘mind space’. The experiential space would function just like the configuration space does. Skrbina explains that just as simple physical ultimates have the potential to form incredibly complicated configuration space, simple experiential units too can combine to form complex structures (like the human mind). He explains this with the example of a camping tent. He writes,

An image that comes to mind is a camping tent. The tent is held up by many individual ropes, each of which, by itself, can do little to open up a space within. But each rope, staked in a different direction, opens up another ‘dimension’ of space within. Many simple ropes, united together but pulling in different directions, collectively open up a large internal space. In an analogous fashion, each (experiential) atomic particle and each (experiential) level of structure of a given object opens up a new dimension in its overall mental space. In this way, simple ultimates can, in truth, ‘combine’ to form a complex, higher-order mind (Skrbina 2011, pp. 125-126).
The next layer that Skrbina adds (by stipulation) is a one-to-one correspondence between physical configuration space and mind space. Every physical physical change must occur simultaneously with experiential change. If we consider an object that is undergoing some physical changes within its configuration space, then the object has to undergo some changes in its mind space too. Thus mind and body change together (Skrbina 2011, p. 126).

The next layer that he adds is the common dimension of time that both configuration space and mind space have in common. This is where he introduces his concept of *Space-Time- Qualia* (STQ). Just like physical objects exist in space-time, mental objects, Skrbina asserts, exist in *qualia-time*. Therefore, time is the bridge that unites the two realms of mind space and configuration space. Any change in configuration space has to be accompanied by a change in mind space and this change is reflected in the temporal axis in a non-causal way. Time serves as the axis around which the physical and mental world revolve (Skrbina 2011, p.126). The STQ is Skrbina’s way of explaining the existential reality within a panpsychist framework.

The last question that needs to be answered is the question of unity. How do we explain the coming together of numerous simple mental units to form something as complex and intricate as the human mind? Skrbina claims that the process is very similar to the process in which complex physical objects are formed. Particles like quarks and electrons come together and adhere to each other to form a whole (object). These complex objects have a corresponding mind space too. This mind space will be responsible for all the possible mental states of the object. As long as a configuration of particles exists as an object, there will be a singular mind of that object. The complexity of these minds would of course, depend on how complex objects are (Skrbina 2011, p. 127). This could explain why the phenomenal consciousnesses of human beings are so profoundly rich and why the experiential states of a snail are so simple and why a
desk doesn’t exhibit the same signs of having a mind as we do. With his STQ complex Skrbina tries to establish that the mental is in no way subordinate to the physical. Its existence is as real and as concrete as the physical.

I think Skrbina’s STQ complex manages to address a lot of issues that arise from the combination problem. Taking time as the common binding factor between the experiential space and configuration space, he gives us an account of how consciousness as a fundamental entity would interact with the other fundamental entities. Time acts as a substratum on which every change in configuration space and mind space is reflected. A reasonable analogy would be a water-body and its immediate surroundings. Every change in its surroundings, no matter how trivial, will be reflected on the water surface. In this account we find an answer as to why a cupcake is not conscious in the way human beings or animals are. Configuration space of an entity depends on two factors — number of particles and structural complexity. The configuration space of a cupcake should be much less complicated compared to a sheep because it lacks both of the aforementioned. Now since there is a one-to-one correspondence between configuration space and mind space, the complexity of the conscious experience associated with a cupcake will be very low. This can explain why everything around us can have a mental aspect to them but not exhibit the same signs of being conscious as we do. It also does not run into the unified consciousness or the multiple microsubjects problem that Goff’s phenomenal bonding ran into. This is because instead of trying to make microsubjects combine based on some relation that they share, the STQ establishes a one-to-one correspondence between matter and consciousness.

One might argue that in order to have this correspondence there must exist some relationship between the physical and conscious units corresponding within the configuration
space and mind space. It is plausible that this kind of relationship exists. But to say that combination of microsubjects takes place due to these relations shared between microsubjects may be a wrong way to look at it. Of course there needs to be a lot of research done on the nature of this correspondence between configuration space and mind space. I think it might be worth the time and investment.

Skrbina’s STQ Complex also addresses the quality combination problem pretty well. Entities with small configuration space (which could be due to the small number of particles or due to the lack of structural complexity or both) will have a simple and less complicated mind space too. The possible states that they can be in are not that many. So that accounts for the lower-order entities like atoms. But when they combine with other lower-order entities with their corresponding mind spaces the possible states that they can be in increase exponentially. That explains the rich, complicated mental states experienced by higher-order entities like humans. The higher the structural complexity, the higher will be the corresponding mental space.

I think the STQ Complex fares much better than the phenomenal bonding solution as a response to the combination problem raised against panpsychism. If we are to take panpsychism seriously, the STQ Complex is the one that might yield the best results. At this stage this is just a hypothesis and we are yet to figure out what a mind-space would actually look like. But if we have to start somewhere we better start with a theory that has a response for most of the objections that have been raised against panpsychism.

I think the combination problem poses a significant challenge for panpsychism. It is an area of panpsychism that needs a lot of intense research and it is important that we keep looking for a solution to the combination problem. I discussed two such possible solutions in this thesis
and ended up concluding that the STQ Complex fares much better than the phenomenal bonding relation. However it still has to answer a lot of interesting questions. For instance, can we say that a galaxy has a mind? Can we say that a cupcake sitting inside a car, if taken together as a unit, can have a mind of its own? How would STQ Complex address these questions? I think the model that it presents has the potential to address these questions, provided that we keep working on this model and keep refining it.
References


