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# Introduction

Although consciousness is the most familiar phenomena, it is the hardest to explain. The relationship between matter and conscious experience, the physical body and mind presents a well-known hard problem for science. It recently retriggers the debate about the long-standing dilemma of panpsychism versus emergentism. Panpsychism on the one hand, asserts that consciousness is a fundamental feature of the world which exists throughout the universe. Emergentism on the other hand, asserts that consciousness appears as an emerging result of the complex matter process.

Many philosophers think that the physical world is causally closed. There is a purely physical explanation for the occurrence of every physical event, and these explanations don't refer to any consciousness property. An essential separation of consciousness and matter will preclude any real integration of consciousness with the present scientific picture of the physical world. According to this view, consciousness must lack all causal efficacies, the idea which is facing opposite conclusions in the modern physics.

Panpsychism and emergentism are the two main positions that can complete the integration. The question is whether and how consciousness emerges from mere matter as emergentism proposes, or whether consciousness is a fundamental property of matter as panpsychism suggests. Emergentism is the most popular solution to the hard problem of consciousness, but many doubt that it can bridge the explanation gap ultimately.

Panpsychism may provide an attracting and promising way to solve the hard problem, but it also encounters some serious problems, such as the so-called combination problem on the one hand, and the lack of evidence by science on the other. Many philosophers claim, if panpsychism is true, the fundamental consciousness property assigned by it should take part in the causal chains of the physical world, and present itself in our investigation of the physical world. The combination problem is roughly how minds in the micro level combine to form minded systems in the macro level.

The dualist-materialist debate has lasted for centuries. The failure of dualism to explain how non-physical minds work and how they interact with brains seems to be the strongest argument in favor of materialism. The strongest argument in favour of dualism is the implausibility and self-contradictory nature of materialism. Thus, the mind-body problem has refused to go away. Panpsychism then meets both approaches at the halfway to offer a compromise that holds the virtues of both views.

Panpsychism is not a new idea. Most people used to believe in it, and many still do. All over the world, traditional people saw the world around them as alive and in some sense conscious or aware: the planets, stars, the earth, plants and animals, all had spirits or souls. Ancient Greek philosophy grew up in this context. In medieval Europe, philosophers and theologians took for granted that the world was full of animate beings. Plants and animals had souls, and stars and planets were governed by intelligences.

There are two main distinct forms of panpsychism, the first is a kind of

dualistic panspychism, which is popular and acceptable among philosophers, such as David Chalmers. The other form is a monist physicalist panpsychism. The contemporary philosopher, Galen Strawson seems to hold such rare seemingly counterintuitive form, who received a great deal of criticism and rejection.

In my thesis, in chapter 1, I'll give an overview of panpsychism, and its historical origin. Furthermore, I'll bring the main arguments in literature for and against panpsychism, and explain the motivation for thinking that this approach is plausible. In chapter 2, I will present these different positions; the monistic and dualistic ones, the main differences and the similarities between them, and the argument against and in support of each of them. It's widely accepted that panpsychism is a dualistic view, therefore, I will examine whether it can be compatible with non-dualistic monistic views such as Strawson's one. So, I will provide arguments defending Strawson's monistic position. In chapter 3, I will focus in particular on the way in which these two theories may be related to the interpretations of quantum mechanics in the context of the attempts to solve the measurement problem.

As Druze, I was raised to believe in the immortal, inseparable bond of soul and body, existing continuously and eternally under the fair, unbiased rules of reincarnation in space and time. A doctrine in which, there is a greater emphasis on the intrinsic immortal soul or mind[[1]](#footnote-1) that doesn't fade away, while there is less emphasis on the materialistic changeable body. The physical body is the tool, by which a soul can express it-self, and without which it not only can't express itself, but also cannot claim its existence.

This provides concepts like death, heaven and hell with an unconventional meaning. Death of the physical body is a mere illusion, it's only a matter of changing the physical form with a new one. What a real death is, one's separation from the collective mind. It is the divine level of conscious being which provides man with Adamic highest and finest features, with which other conscious beings such as animals and plants aren't connected at this level, but are considered as possessing lower level of consciousness. Thus, mind is considered as severely intrinsic part within man's soul, without which he can't connect with God; the highest conscious being and the ultimate reality with which one seeks to connect. Mind then is the only tool to knowing God. Mind in this sense is the highest conscious being of man's soul.

This separateness is also known as the original sin of Adam and Eve; i.e. the sin of any other Adamic being. Heaven and hell as well, in their relativistic sense, grasp symbolic meaning that exists only in one's mind. This perception of man's mind and its relation to a collective mind, makes me seek for a parallel philosophical view, which is as I think, panpsychism.

Since the terms 'Consciousness' and 'Mind' are basic terms in my thesis, and they can hold a meaning other than the one I need in my thesis, then I would like to introduce them here, in order specify the exact meaning I refer to. Rocco J. Gennaro (2005) states that the concept of consciousness is ambiguous. It is originally derived from the Latin *con* (with) and *scire* (to know). Thus, “consciousness” has etymological ties to one’s ability to know and perceive. Through consciousness, he says "one can have knowledge of the external world or one’s own mental states". We sometimes speak of an individual mental state, such as a pain or perception, as conscious. On the other hand, we also often speak of organisms or creatures as conscious, such as when we say: “human beings are conscious” or “dogs are conscious”. Creature consciousness is also simply meant to refer to the fact that an organism is awake, as opposed to sleeping or in a coma. However, some kind of state consciousness is often implied by creature consciousness, that is, the organism is having conscious mental states. Most contemporary theories of consciousness are aimed at explaining state consciousness; that is, explaining what makes a mental state a conscious mental state. Hence, whenever I use the term 'consciousness' in my thesis I refer to the second type of this classification. I also will use the term 'mind' to refer to the same meaning.

Rocco (2005) also indicates that perhaps the most fundamental and commonly used notion of “conscious” is captured by Thomas Nagel’s famous “what it is like” sense (Nagel 1974). "When I am in a conscious mental state, there is “something it is like” for me to be in that state from the subjective or first-person point of view. When I am, for example, smelling a rose or having a conscious visual experience, there is something it “seems” or “feels” like from my perspective". An organism, such as a bat, is conscious if it is able to experience the outer world through its (echo-locatory) senses. There is also something it is like to be a conscious creature, whereas there is nothing it is like to be, for example, a table or tree as he suggests. This is basically the sense of “conscious state” that will be used throughout this paper. philosophers sometimes refer to conscious states as phenomenal or qualitative states. More technically, philosophers often view such states as having qualitative properties called “qualia”. There is significant disagreement over the nature, and even the existence, of qualia, but they are perhaps most frequently understood as the felt properties or qualities of conscious states.

# Chapter 1: An Overview of Panpsychism in Literature

# What is Panpsychism?

'Mind is everywhere' is the general rough definition of panpsychism. Seager and Allen-Hermanson (2015) define it as the doctrine that mind is a fundamental feature of the world, existing throughout the universe; i.e. as David Skrbina(2016) defines it, as the view that all things have mind, or a mind-like qualities. This means that all matter is in some way conscious or sentient. This does not mean that rocks can think. It does mean that the individual atoms in the rock feel or experience each other and are somehow connected to the entire universe. The core argument for panpsychism begins with the idea that mind is real. We know this because we directly experience it, therefore, it is an indubitable feature of reality.

Christian de Quincey(2011) explains this as the following: "the ultimate reality is both physical and non-physical (it consists of objective matter and subjective mind) and that mind and matter are inseparable. Mind and matter always go together—all the way down (from the entire universe down through the sub atomic particles or waves.). Although acknowledging the existence of two ontological types (physical matter/energy and non-physical mind/consciousness) he claims, panpsychism differs from ontological dualism because it denies that mind and matter are separate or separable. Here, the ultimate reality consists of a single, inseparable, nature—sentient energy. However, this single ultimate has a dual-aspect interior subjectivity and external objectivity. In short, the creative ultimate consists of intrinsically sentient energy. Matter itself tingles with the spark of spirit. The central idea of panpsychism in summary, as Christian de Quincey put it, is: consciousness is the intrinsic capacity of matter or energy to feel, know, and purposefully direct itself. (p.98)

Freya Mathews (2003), defines panpsychism as "the view that every material object is also a subject", a position that includes "*any* view that reunites mentality with materiality, and thereby dismantles the foundational dualism of Western thought." (p.4)

Etymologically speaking, the concept is among the oldest of all philosophical ideas being found in the thought of Thales, the first of the pre-Socratics. The term itself owes its genesis to the 16th century, by an Italian philosopher Franciscus Patrizi, who derived it from the Greek roots: pan=all\everything, and psichi\psuche= mind, breath, or spirit. (Christopher 2012 p. 79)

Some philosophers have argued that literally every object in the universe, every part of every object, and every system of objects possesses some mind-like quality, as we will see later in Strawson's view. Other philosophers have been more restrictive, arguing that only certain broad classes of things possess mind, or that, at least, the smallest parts of things—such as atoms—possess mind.

# Panpsychism and Mind

Panpsychism is as Skrbina (2016) puts it, a family of philosophies of mind. Such theories generally attempt to encompass both the material realm and the mental realm in a single comprehensive framework, in a way that fundamentally connects the two. These realms, he says, are central to many aspects of philosophy, but panpsychism lies at a unique intersection of the two, wherein mind is seen as fundamental to the nature of existence and being. It is at once an ontology and a theory of mind.

Despite the etymological semantic and ontological relationship between the terms panpsychism and mind, in trying to define 'mind', Skrbina(2016) claims, panpsychism like any other approach, is neither better nor worse; it argues only that this notion of mind must apply in some degree to all things. The panpsychist conception of mind must be sufficiently broad to plausibly encompass humans and non-human objects as well. Panpsychists typically see the human mind as a unique, highly-refined instance of some more universal concept. They argue that mind in, say, lower animals, plants, or rocks is neither as sophisticated nor as complex as that of human beings. But this in turn raises new questions: What common mental quality or qualities are shared by these things? And why should we even call such qualities "mental” in the first place? Panpsychism, then, is not a formal theory of mind. It does not in general give an account of the precise nature of mind. Rather, it is a meta-theory; it is a theory about theories; it is a conjecture about how widespread the phenomenon of mind is in the universe.

 In short, panpsychism does not necessarily attempt to define “mind” (although many panpsychists do this), nor does it necessarily explain how mind relates to the objects that possess it. As a result, panpsychism is more of an overarching concept, a kind of meta-theory of mind. Mind then is to be conceived, as applying, in some sense, to all things. Therefore, Skrbina concluded that more details are required to incorporate it into a fully-developed theory of mind. (Skrbina 2016)

It is clearly debatable what one means by “mind.” Panpsychists have employed a variety of descriptive terms to articulate the mental quality that all things share: sentience, experience, feeling, inner life, subjectivity, qualia, will, perception. In the vast majority of cases such terms are used in a very broad sense, and are not defined in a specifically human sense. (Skrbina 2016)

Panpsychism needs to be distinguished from some closely related concepts which are: animism, hylozoism, pantheism, panentheism, and panexperientialism. Panexperientialism is a term that was invented by process philosopher David Ray Griffin in the 1970’s. It holds that everything experiences, or is capable of experiencing. Skbina (2016) says, only panexperientialism deserves to be considered as true panpsychism; the others are either archaic or largely irrelevant. And due to the prominence of process philosophy over the past few decades, panexperientialism is the most widely discussed form of panpsychism today. As we will see, this type is held by the contemporary philosopher, Galen Strawson, as will be discussed later.

# Historical Overview of Panpsychism

Skrbina (2005) in his book "Panpsychism in the West" brings a good survey of panpsychism from the Greek time till our days. He looks at the earliest Greek ideas as relative to panpsychism. No distinction seems to have been made between (the terms) consciousness, soul and mind. With thinkers such as Thales, there is a close connection between the idea of being capable of movement and the idea of mind. Everything was thought to possess movement, life or consciousness to some degree. (p. 24-25)

Pythagoras appears to have held that mind was present and active throughout the whole universe, and that human minds were part of this. Parmenides seems to have had a rather dissenting view. For him only beings exist, and thought is an aspect of being. A being has thoughts and is thoughts. In contrast to much of Greek thinking, Parmenides did not view motion as a central characteristic. The appearance of change was for him an illusion. In contrast to Parmenides, Heraclitus viewed change and motion as the essential reality. (p.27-29)

 Later Epicurus argued that 'will' could not emerge from non-will, and the atoms from which everything was made of, had to possess a kind of will themselves. Thus, mind cannot emerge *ex nihilo*, i.e. from non-mind, the idea which will be explained later. (p.52)

With Plato, the idea of individual objects having soul tended to be dropped in favour of a world-soul, although humans were allowed to retain an individual soul. Something in the nature of both cosmos and humans, allowed them a soul, as distinct from rocks etc., which had no soul. The concept of soul was closely related to the concept of mind. The idea that the capacity for motion is significant in relation to consciousness also persists. The soul of the cosmos is related to its ordering or the movement of the elements. Here, soul is seen as the source of motion. Plato describes three types of soul, reason, spirit and appetite, which raises the question of the soul’s causal powers. (p.34-45)

At later stages and with the rise of Christianity, it became common to think that the world was comprised of more than one substance. In Christianity, the soul was distinct from both the body and the material world. Christ told Pilate that his kingdom was not of this world, and promised his followers a near-term escape into the Kingdom of God. The material world was not of long-term interest, and this looks to have paved the way for the modern concept of a dead universe and ultimately a dead brain. Descartes reinforced this view with his distinction between matter and mind. In the generations after Descartes, the now dominant modern view of the universe came to the fore, as a mechanism comprised of inert matter organizing itself into complex systems. (p.58-65)

The middle ages were a fallow period for panpsychism, which, reactivated somewhat with the Renaissance. Bruno was an atomist with the idea of ultimately small elements, referred to as atoms or monads. Bruno saw matter as having two modes, power and subjectivity. With Kepler an important distinction emerges, because it was discovered that gravity decreases regularly in proportion to distance. He assumed this force must be physical rather than supernatural in origin. (p. 65-76)

Moving onto the seventeenth century, there was a tension between a mechanistic world view and attempts to retain the soul. The philosopher, Henry More, suggested an intermediary ‘Spirit of Nature’, which animates all matter on God’s behalf. Spinoza could also be argued to have adopted a compromise position. All of reality has a single substance which is God, who can be referred to as Nature, and this would include human mental states. Physical and mental events seem to proceed in parallel, both being attributes of God. There is no causal connection between the two streams. Spinoza also advanced the idea that a stone thrown through the air is like a human motion. It is suggested that the stone is thinking that it is striving to move, and believes it has freely chosen to do this because it wants to. This delusion is compared to the human notion of freewill, and sets us on the road to the modern non-will consensus. (p. 77-85)

Skrbina views Leibniz as attributing souls to all things with individual unity. Such objects are widespread, but seemingly not clearly defined. The soul is a point in space, something to do with the true unities of underlying reality. It seems that atoms or monads have something like sensation or perception and appetite. In fact, these last two are their primary features. Each monad is seen as having its own perspective on the universe. Perceptions are the states that monads pass through. The appetites or desires of the monads bring about the change or motion from one perception to another. This seems to imply a causal role for the conscious monads.

Leibniz faced the ‘combination problem’ of how point-like entities can produce the soul. His discussion revolves around two concepts, the aggregate and the dominant monad. Leibniz emphasized the distinction between aggregates of monads and collections of such monads that embodied wholeness or unity. Aggregates were loosely organized like collections of stones or herds of animals. Some aggregates looked unified like stones or rocks. Integrated objects with real unity seem to be mainly life forms. Unity is realized by the dominant monad. Amongst the many monads in the body of a human, one of them somehow emerges as the dominant monad or soul. (p.95-100)

Gustav Fechner envisages a hierarchy of souls, with plant souls below humans, and other souls such as the Earth and the stars above us, with an additional soul for the universe as a whole. His view of the Earth as a conscious entity foreshadowed the modern Gaia idea. Fechner’s argument for these various levels of soul in matter was again that souls could not arise from inert matter. (p.122)

William James suggested that ‘higher order’ consciousness was composed of atomic mental entities. This was related to the new theory of evolution where complex organisms could evolve from simpler ones, and therefore it seemed plausible that complex psychical entities could also evolve from simpler ones. The 'combination problem' which is the problem of how the atomic mental entities would combine into a single mind, proved insurmountable for him. Later he moved to the idea of every cell in the brain having its own consciousness. (p.145)

Whitehead conceived the idea of a distinct physical and mental pole. The physical pole is in time and the mental pole out of time. All realities are events and all events have both physical and mental aspects. Mental operations were seen as constituting part of nature. Entities are understood in terms of the way they are interwoven with the universe. Russel similarly thought that events were the primary reality and that mind and matter were both constructed from events. (p. 176-178)

Bernhard Rensch, the biologist, argued that evolution was gapless, and therefore, there was no reason for consciousness to emerge at a particular point. Therefore, mind had to have been there at the beginning in mind-like complexes of energy that make up matter. (p.194)

This was a short overview of panpsychism through the known recorded history of the Western philosophy. The panpsychistic view is growing further today to be held and promoted by many important contemporary philosophers such as Galen Strawson, David Chalmers, Christian De Quincey, David Skrbina, and John Searle.

#  4. Why is Panpsychism a Plausible Thesis?

#  Arguments for Panpsychism

Many philosophers doubt the plausibility of this thesis, especially because it cannot be proven by scientific means, which is a strong argument against panpsychism. On the other hand, many find it intuitively true. The following arguments seem to be their good strong reasons to think so.

# 4.1. The Argument from Non-Emergence:

The issue of emergence of mind, is important because it is the counterpart to panpsychism. Either mind was present in things from the very beginning (as panpsychism asserts) or it appeared (emerged) at some point in the history of evolution. If emergence is inexplicable, not viable, then we are left with the panpsychist alternative. Therefore, either one is a panpsychist, or an emergentist.

 Historically, emergence was formulated by Epicurus circa 330 B.C.E. He argued that the mental quality called 'will' could not arise from non-will, and the atoms from which everything was made had to possess a kind of will themselves. 'Will' cannot emerge *ex nihilo* and thus is present in the very components of matter. *The idea is that ex nihilo, nihil fit*: out of nothing comes nothing. We thus get the argument that mind cannot arise from non-mind, and hence that mind must have been present at the very origin of things. This is the Argument from Non-Emergence. (in Skrbina 2016)

 Telesio (1586/1967) also held that “nothing can give what it does not possess,” and thus it is inconceivable that mind arises from non-mind. Patrizi also believed that nothing can be in the effect that is not in the cause; hence the elements themselves must have life and soul, which they in turn grant to all things. Campanella (1620) wrote: “If the animals are sentient…and sentience does not come from nothing, the elements whereby they and everything else are brought into being must be said to be sentient, because what the result has the cause must have". (in Dooley, 1995, p. 39)

 Emergence of mind, at first glance, seems to be a reasonable idea, but when pressed for details it comes up sorely lacking. In fact, it is very difficult to sensibly explain it. Emergence of mind is not just some fact of the distant evolutionary past; it must recur every day, in, for example, the development of a human embryo. This problem of emergence timing was explained by Skrbina (2016). That is, if a human egg is utterly without mind, and a newborn infant has one, when in the ontogenetic process does mind emerge? Why just there? So, in addition to the phylogenetic (historical) emergence problem, we have the related ontogenetic problem as well.

 As we will see in the next chapter, Galen Strawson (2006) has recently emphasized this point, with a notable urgency, that emergence is incoherent and doesn't make sense. He offers a well detailed version of the non-emergence argument as will be discussed in the next chapter. His slogan: “emergence can’t be brute” that is, higher-order mind can emerge from lower-order, but mind cannot possibly emerge from no-mind. “Brute emergence is by definition, a miracle every time it occurs,” which is rationally inconceivable. (p.10-11)

 Emergentism is the most popular solution to the hard problem of consciousness. But many doubt that it can bridge the explanation gap ultimately. Christian de Quincy (2011) for example, argues that the view of materialism, which is the standard, almost unquestioned, belief in mainstream science and philosophy today, (i.e., neuroscience) can, or one day will, explain how mind could emerge from wholly mindless matter. However, despite this great faith in the explanatory power of neuroscience, the fact remains that materialism completely fails to account for such a “miracle.” This belief that mind can be reduced to, or explained by, physical events is merely a statement of faith, not science—because not the slightest trace of empirical evidence or rational argument supports or explains such emergence. Furthermore, he claims that when materialists deny any such distinction between objective physical existence and subjective nonphysical existence, they are simply not paying attention. They are too caught up in their own abstract thoughts about consciousness instead of actually experiencing their experience. (p. 95,96)

# 4.2. The Intrinsic Nature Argument

Another argument for panpsychism is the intrinsic nature argument. As described by Seager and Allen-Hermanson (2015), it has nothing to do with the need to explain human consciousness; rather it begins from a certain gap in the picture of the world we get from the physical sciences. This argument has its roots in Leibniz (1714/1989), Russell (1927) and Whitehead (1933/ 1967), and is defended by many panpsychists, including Strawson (2006) and Goff (2017). It is also strongly connected to the motivations for Russellian monism.

It is usually thought that physics is on its way to giving us a complete account of the fundamental nature of the material world. And it is almost the true theory of “the physical”, and hence that it is to physics we should turn for an understanding of the complete nature of space, time and matter. However, in fact, if this argument is correct, then physical theory will never provide us with a complete and adequate account of the nature of the material world. The job of physics is to provide us with mathematical models that accurately predict the behaviour of matter. This useful information has enabled us to manipulate the natural world in all sorts of extraordinary ways, allowing us to build lasers, to put men on the moon, etc. but it doesn’t tell us about the intrinsic nature of matter. As Eddington (1928 p. 58–60) put it “Our knowledge of the nature of the objects treated in physics consists solely of readings of pointers (on instrument dials) and other indicators”. It’s hard to see how this indirect method of investigating matter could yield insight into its intrinsic nature.

As philosophers, we may be interested in finding out what the intrinsic nature of matter is. And if the above line of reasoning is correct, we must look beyond physics for this. The panpsychist's proposal then is: the intrinsic nature of matter is, at least in part, consciousness.

We know that the intrinsic nature of at least *some* matter is consciousness-involving: namely the matter of brains. This is perhaps our only real clue as to the intrinsic nature of matter in general; regarding the intrinsic nature of stuff outside of brains (or of the parts of brains) we can only speculate.

Goff (2017) has argued that from this epistemic starting point there is a clear “simplicity argument” in favour of panpsychism: in the absence of any reason to suppose otherwise, the most simple, elegant hypothesis is that the matter outside of brains is continuous with the matter of brains in also having a consciousness-involving nature. (p. 283–302)

Strawson, as we will see later, has extended his discussion in Strawson (2006). Seager and Allen-Hermanson (2015) think that Strawson's general argument for panpsychism is clearly a version of the intrinsic nature argument. His view can be summarized as being akin to Russellian neutral monism with the crucial difference that the substrate is explicitly taken to be experiential in nature rather than metaphysically neutral between mind and matter.

# 4.3. Other Arguments for Panpsychism

*Genetic arguments* are also arguments for panpsychism. They try to show that panpsychism offers the best account of the development of biological consciousness in evolutionary history. Such arguments turn on the assumption that evolution is a continuous process that molds pre-existing properties into more complex forms, but that cannot produce “entirely novel” properties. William Clifford (1874\1886) puts the argument thus:

"… we cannot suppose that so enormous a jump from one creature to another should have occurred at any point in the process of evolution as the introduction of a fact entirely different and absolutely separate from the physical fact. It is impossible for anybody to point out the particular place in the line of descent where that event can be supposed to have taken place. The only thing that we can come to, if we accept the doctrine of evolution at all, is that even in the very lowest organism, even in the Amoeba which swims about in our own blood, there is something or other, inconceivably simple to us, which is of the same nature with our own consciousness…." (p. 266)

Another important motivation for panpsychism comes from the need to account for *mental causation* in a way that is consistent with the so-called *causal closure of the physical*: the thesis that every physical event has a sufficient physical cause (Goff, 2017). If, as the dualist believes, consciousness exists outside the physical world, it is hard to see how it could impact on a causally closed physical system. But if, as the panpsychist believes, consciousness infuses the intrinsic nature of the material world, then consciousness and its effects are part of the causally closed system.

# Arguments against Panpsychism

The following arguments are the main arguments against panpsychism:

#  Lack of Evidence:

It means that there is no empirical evidence, nor any conceivable test, that could point to the presence of mind in lesser beings. Seager and Allen-Hermanson (2015) claim that it is the most obvious problem with panpsychism which is simply the apparent lack of evidence that the fundamental entities of the physical world possess any mentalistic characteristics. Protons, electrons, photons (to say nothing of rocks, planets, bridges etc.) exhibit nothing justifying the ascription of psychological attributes and thus Occam's razor, if nothing else, encourages withholding any such ascriptions. Furthermore, it is argued, since we now have scientific explanations (or modes of explanation at least) which have no need to ascribe mental properties very widely (not even to *people*), panpsychism can be viewed as merely a vestige of primitive pre-scientific beliefs. At one time, perhaps, panpsychism may have been the conclusions of successful inferences to the best explanation, but that time has long passed.

In responding to this argument, I agree with Philip Goff (2016) who put it nicely: "The reality of consciousness is more evident to us than any empirical postulation. The existence of consciousness does not entail the truth of panpsychism, but it counts in its favor in the sense that panpsychism is the most unified picture of the world that is consistent both with its existence and with our observational knowledge". He explains the reluctance of philosophers as the following: "Probably the willingness of contemporary philosophers to accept special relativity, natural selection, and quantum mechanics, despite their strangeness from the point of view of pre-theoretical common sense, is a reflection of their respect for the scientific method. We are prepared to modify our view of the world if we take there to be good scientific reason to do so. But in the absence of hard experimental proof, philosophers are reluctant to attribute consciousness to electrons." (p.1-2)

# The Combination Problem

The combination problem as defined by Skrbina (2016), says that if mind is supposed to exist in atoms or cells, then higher-order minds, such as humans have, must be some kind of combination or sum of these lesser minds. But it is inconceivable how such a summing would work and how it might account for the richness of experience that we all feel. Because panpsychism cannot account for higher mind, the objector says, it must be false.

The combination problem was first raised by William James (1890/1950), who in the following passage argues that panpsychism will still face its own problem of emergence:

"Take a sentence of a dozen words, and take twelve men and tell to each one word. Then stand the men in a row or jam them in a bunch, and let each think of his word as intently as he will; nowhere will there be a consciousness of the whole sentence … Where the elemental units are supposed to be feelings, the case is in no wise altered. Take a hundred of them, shuffle them and pack them as close together as you can (whatever that might mean); still each remains the same feeling it always was, shut in its own skin, windowless, ignorant of what the other feelings are and mean. There would be a hundred-and-first feeling there, if, when a group or series of such feeling were set up, a consciousness *belonging to the group as such* should emerge. And this 101st feeling would be a totally new fact; the 100 original feelings might, by a curious physical law, be a signal for its *creation*, when they came together; but they would have no substantial identity with it, nor it with them, and one could never deduce the one from the others, or (in any intelligible sense) say that they *evolved* it. (p.160)

Seager and Allen-Hermanson (2015) claim that this is a powerful objection, since if panpsychism must allow for the emergence states of consciousness then what prevents an emergence doctrine which avoids the implausible and indiscriminate broadcasting of mental characteristics throughout the world?

However, Seager and Allen-Hermanson (2015) noticed that a form of panpsychism such as Leibniz's (1714/1989) entirely escapes this objection. For Leibniz, minds are not formed out of combinations of parts (whether sub-minds or non-mental entities). Each mind is complete in itself, and in fact totally causally isolated from all other minds. There is no way that the combination problem could arise. However, the cost to Leibniz is the downgrading of the physical world to a kind of “consensual illusion”; matter, space and time are essentially constructs of mental phenomena.

They also noticed that it is clear from the way that James (1890/1950) develops his version of the combination problem that he is presupposing metaphysics of part-whole reductionism such that the properties of the whole are no more than the sum or combined effect of the properties of the parts, in which the parts entirely retain their identities. For example, he says “… in the parallelogram of forces, the “forces” themselves do not combine into the diagonal resultant; a *body* is needed on which they may impinge, to exhibit their resultant effect” (James1890/1950, p. 159). Such a view undoubtedly has a certain attractiveness; it seems no more than a reasonable generalization of the mere logical reductionism of which the world provides so much evidence, as Seager and Allen-Hermanson concluded.

According to quantum mechanics, they claim, this view is inadequate. It has made it clear that systems are not simply the sum of their parts in James's sense but can exhibit properties that go beyond those of the parts and which cannot be detected by examining the parts in isolation. It is impossible to tell if an electron, for example, possesses an entangled partner positron by looking only at the electron and the positron (they individually look identical to non-entangled particles). Yet the system of entangled particles exhibits properties quite distinct from the properties of pairs of non-entangled particles. Thus, there *is* a mode of combination which goes far beyond what James (1890/1950) allows and which we know is actually at work in the world. This mode of combination also seems to have some intimate connection with information and some sort of non-causal information exchange which, as noted above, has some affinity with psychological notions. (Seager and Allen-Hermanson: 2015)

Many other panpsychists like David Chalmers (2013 B), Philip Goff (2016), Yujin Nagasawa and Khai Wager (2017) offer solutions to the combination problem. In the next chapter, I will discuss Yujin Nagasawa and Khai Wager's (2017) form of cosmopsychism. I will use their idea of viewing the world in a top-down manner, and not the contrary. The fact that makes a form of panpsychism adopting it avoid this problem.

Barbara Gail Montero (2017, p.216) takes a radical approach to it. She argues in her contribution “What Combination Problem?” that the problem understood as a critique of panpsychism is ill-conceived because it searches for a solution to a question which the panpsychist should never have been asked: “I see the combination problem as iatrogenic: induced by philosophers in their attempts to cure panpsychism rather than following from panpsychism itself.” Her central argument comes down to the following line of thought: If we refrain from thinking about the origin of higher-level forms of consciousness out of pools or mere groupings of proto-minds, but instead conceive of it along the lines of how higher-level individuals are generated by lower-level individuals in general, then we have no reason to believe that there is anything mysterious about the origins of higher forms of consciousness.

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# How does Panpsychism Address the Mind-Body Problem?

The mind body problem is a central question with striking struggles about the proper “form” of a scientific understanding of the world, as Seager and Allen-Hermanson describe it (2015). The mind and particularly consciousness keep rising as special problems in this domain.

It seems that the problem of consciousness was vexing philosophers 2500 years ago. It's the question how the soul, which was created by God, is able to act upon the body. The question of how the two substances interact, still forms the core of the problem which is currently thought of in terms of how can brain processes produce mental phenomena. (Christopher 2012, p.78-79)

Regarding dualism, as we know, Descartes deduced from his meditation or introspection by seeking to discover what aspects of his experience could be doubted and which could not, that the one piece of data which could be trusted was *non-sensory*: the psyche's experience of itself as a center of subjectivity. This non-sensory, experiential justification for the belief in the reality of one's mind is nota point of contention between Cartesian dualists and panpsychists, which explicitly root their arguments in this very experience. The idea, that mentality and physicality are fundamentally different in an ontological sense that gives rise to the mind-body problem, is what contested by panpsychism; it rises from Descartes' train of reasoning which leads from the known existence of mind, to a declaration of mind and body being composed of distinct metaphysical substances. (Christopher 2012 p.78-79)

Regarding materialism, on the other hand, Christopher proceeds (2012 p.83), that the materialistic monism that has largely replaced humanism responds to the mind-body problem in a vastly different way than does the neutral monism of panexperientialism. Rather than integrate the bifurcated spheres of mentality and physicality, the materialist eliminatesthe former leaving only matter in its place. In addition, it considers mental events as emerging in rare conditions from non-mental physical events. This view as Christian de Quency (2011 p. 95,96) describes it, is just a belief but not science, taking into consideration its failure to account for such a miracle; the emergence of mental from pure physical.

As we will see, there are two forms of panpsychism, one is monistic and the other is dualistic. Both reject (pure) materialism and dualism in their traditional sense, because they need a supernatural miracle to account for consciousness. Thus, panpsychism doesn't have this problem in this sense, because it is an ontology where matter and mind are not separate substances. Consciousness according to it, is a fundamental feature of the universe. It is a fundamental force in nature exactly like gravity**.** As Chalmers (2013) puts it "it (panpsychism) captures the virtues of both views and the vices of neither" (p.2)**.** However, as we noticed above, many philosophers don't accept this as simply as Chalmers describes it, and consider its problems such as the lack of evidence, as enough to refute it.

# Summary of Chapter 1:

Many contemporary philosophers have argued that panpsychism is simply too fantastic or improbable to be true and a view as such seems perhaps unlikely. However, as we have seen there is a very long and distinguished history of panpsychist thinking in Western philosophy, from its beginnings in ancient Greece through the present day. Some of the greatest philosophers have argued for some form of panpsychism, or expressed a strong sympathy towards the idea. As we saw, there are some strong arguments that defend it. For example, it enjoys a metaphysical advantage in that it avoids the difficulties of emergentism, which are greater than is generally thought. On the other hand, it has at least two difficulties, which are considered as good arguments against it.

Some philosophers such as Skrbina (2016) notices that this theory is growing farther today and he says: "Notably, as we progress into the 21st century, we find the beginnings of a philosophical renaissance for the subject. Once again panpsychism is finding a place in the larger philosophical discourse, and is being explored in some different ways.".

# Chapter 2: Can Panpsychism be Compatible with Non-Dualistic (Monist) Forms?

# 2.1. Examining the Two Approaches to Panpsychism: Dualistic Vs. Monist Panpsychism

Although panpsychism offers a genuine middle-way between physicalism and dualism, "dualism all the way down" is how panpsychism perceived by most philosophers in general, and some panpsychists in particular. However, to be precise, it's worthy to notice that panpsychism is distinct from substance dualism, which assumes two categorically different realms of entities, mental and physical, which can possibly exist independently from each other. Panpsychists in contrast, claim that mental being is a fundamental and ubiquitous feature of the universe. It is also distinguished from materialism, for which the world consists ultimately of mindless physical entities and their configurations.

Despite this distinction, it's widely acceptable that there are two different approaches to panpsychism. One is dualistic and the other is monistic. The former is more popular and accepted by philosophers, David Chalmers is one of them who is currently discussing it in the philosophical discourse. The latter is less popular among philosophers and especially being raised and discussed by Galen Strawson. His view faced much resistance and it is still being criticized world widely.

 In this section, I'll be discussing those two approaches and stand on the difference between them. it is widely accepted panpsychism is compatible with dualistic forms. I'll be examining the possibility whether the non-dualistic monistic view can be compatible with it. I'll put more emphasis on Strawson's view as well as on criticism towards it, and I will defend and support it with arguments.

# 2.1.1. Dualistic Panpsychism: David Chalmer's View

David Chalmers is a contemporary philosopher of mind, who has contributed to understanding the mind by explaining 'the hard problem' of consciousness. It is the problem of explaining how and why we have qualia or phenomenal experiences—how sensations acquire characteristics, such as colors and tastes. Chalmers (1995) introduced the term 'hard problem' of consciousness, contrasting it with the 'easy problems' of explaining the ability to discriminate, integrate information, report mental states, focus attention, etc. Easy problems are easy, because all that is required for their solution is to specify a mechanism that can perform the function. That is, their proposed solutions, regardless of how complex or poorly understood they may be, can be entirely consistent with the modern materialistic conception of natural phenomena. Chalmers claims that the problem of experience is distinct from this set, and he argues that the problem of experience will "persist even when the performance of all the relevant functions is explained". (p. 200–219)

Chalmers (1996) doubts that consciousness can be explained by physical theories, because consciousness is itself not physical. He characterizes his view as "naturalistic dualism": naturalistic because he believes mental states are *caused* by physical systems (such as brains)[[2]](#footnote-2); dualist because he believes mental states are ontologically distinct from and not reducible to physical systems. (p. 156-159)

 As a conclusion in his book "The Conscious Mind", Chalmers (1996) declares himself to be a mind-body dualist panpsychist. In recent years, he has explored panpsychism, the thesis that some fundamental entities have mental states:

"I resisted mind-body dualism for a long time, but I have now come to the point where I accept it, not just as the only tenable view but as a satisfying view in its own right. It is always possible that I am confused, or that there is a new and radical possibility that I have overlooked; but I can comfortably say that I think dualism is very likely true. I have also raised the possibility of a kind of panpsychism. Like mind-body dualism, this is initially counterintuitive, but the counterintuitiveness disappears with time. I am unsure whether the view is true or false, but it is at least intellectually appealing, and on reflection it is not too crazy to be acceptable. " ( p.357)

He argues that the failure of supervenience implies that materialism - as a monistic theory of the complete contents of the world, that there is "nothing but" matter, and that the world is "causally closed," for example - is "false". (Chalmers 1996, p.123).

Chalmers (1996) says, since information is a universal property of matter, it "goes all the way down", so the basis of mentality - information - is present in the simplest physical structures. All experiences are recorded and reproduced as immaterial information - in both conscious and unconscious playback. Non- material formation is embodied in the physical. It is a property of the material world. He suggests that the dualistic (non-physical) element might be information. Therefore, a fundamental theory of consciousness might be based on information. (p. 260-290)

While physical realization is the most common way to think about information embedded in the world, Chalmers thinks, it is not the only way information can be found. We can also find information realized in our phenomenology. (ibid)

Chalmers hence, views mind *as* information. He describes his fundamental theory as a "double-aspect principle." He views information as neither matter nor energy. It needs matter to be embedded temporarily in the brain. And it needs energy to be communicated. Phenomenal experiences transmitted to us as visual perceptions, for example, they consist of information that is pure radiant energy. The pure (mental) information content in one brain can be transmitted to other brains, by converting it to energy for communication; other brains can then embody the same information. (ibid)

The treatment of information brings out a crucial link between the physical and the phenomenal: whenever we find an information space realized phenomenally, we find the same information space realized physically. It is natural to suppose that this double life of information spaces corresponds to a duality at a deep level. We might even suggest that this double realization is the key to the fundamental connection between physical processes and conscious experience. We need some sort of construct to make the link, and information seems as good a construct as any. It may be that principles concerning the double realization of information could be fleshed out into a system of basic laws connecting the physical and phenomenal domains. (ibid)

According to this, information (in the actual world) has two aspects, a physical and a phenomenal aspect. Whenever there is a phenomenal state, it realizes an information state, an information state that is also realized in the cognitive system of the brain. Conversely, for at least some physically realized information spaces, whenever an information state in that space is realized physically, it is also realized phenomenally. Information seems to be a simple and straightforward construct that is well suited for this sort of connection, and which may hold the promise of yielding a set of laws that are simple and comprehensive. If such a set of laws could be achieved, then as Chalmers thinks, we might truly have a fundamental theory of consciousness. He says: "It may just be...that there is a way of seeing information itself as fundamental". (Chalmers 1996, p.284-287)

Keith E. Turausky (2012) brings a survey of Chalmers' panpsychism, from his influential article: *Consciousness and its Place in Nature*, from his book '*The Character of Consciousness'.*  Keith calls his view as "Chalmers’s Type-F Pan(proto)psychism". In this book, Chalmers mentions three *nonreductive* (“inflationary”) types; type-D substance dualist, type-E epiphenomenalist, and type-Fneutral/dual-aspect monist views. He defends against the *reductive* (“deflationary”)opposition views A through C. He thinks that in some ways, the type-F view is the most appealing. Although he says: “this sense is largelygrounded in aesthetic considerations whose force is unclear.” These aesthetic considerations are roughly as follows:

(1) Type-D substance dualism does not respect the causal closure of the physical.

(2) Type-E epiphenomenalism denies our profound natural intuition that

consciousness *does something*.

(3) Type-F neutral/dual-aspect monism (a) respects the causal closure of the physical, (b) preserves the possibility of some causal role for

consciousness, and furthermore (c) holds “the promise of integrating

phenomenal and physical properties very tightly in the natural world…

[delivering] a deeply integrated and elegant view of nature.” (Chalmers 2010 A, p. 133-138)

Thus, as Chalmers puts it, while Type-F monism “arguably fits the letter of materialism, it shares the spirit of anti-materialism.” One could give the view Type-F monism in its most general form the name *panprotopsychism*. Chalmers writes: “with either protophenomenal or phenomenal properties underlying all of physical reality.” The former, protophenomenal case, he says, “can be seen as a sort of neutral monism,” while the latter case, with fully genuinely (i.e., non-“proto”) phenomenal properties “ubiquitous at the fundamental level,” could be “characterized as a sort of panpsychism.”(ibid)

Keith (2012) claims, Chalmers Characteristically maintains a studied agnosticism between protophenomenal neutral monism (i.e., panprotopsychism in the non-general sense) and full-fledged panpsychism—but even pan*proto*psychism is a bridge too far for many philosophers. Perhaps to soften the blow with a mild appeal to authority, Chalmers introduces the type-F position as “Russellian monism”; after all, one popular route to type-F pan(proto)psychism comes via some comments made by Bertrand Russell and Arthur Eddington. (p. 13)

Coincidentally, physics also appears silent about phenomenal consciousness (type-A materialist views again notwithstanding). What’s more, phenomenal consciousness certainly seems to be at least *part* of the “intrinsic nature” of thinking beings such as ourselves. The implication of this dual mystery is clear enough: perhaps phenomenal consciousness *is* (at least part of) the intrinsic nature of “fundamental physical systems.”

In other words, perhaps *mind is everywhere* (the literal meaning of “panpsychism”). To quote Russell directly: “The physical world is only known as regards certain abstract features of its space-time structure—features which, because of their abstractness, do not suffice to show whether the physical world is, or is not, different in intrinsic character from the world of mind.”. Or, as Eddington queried, “what knowledge have we of the nature of atoms that renders it at all incongruous that they should constitute a thinking object? ...It seems rather silly to prefer to attach it to something of a so-called ‘concrete’ nature inconsistent with thought, and then to wonder where the thought comes from.” (Nowadays, of course, we’d talk about quarks or strings instead of atoms, but whatever “ultimates” we may consider, the point remains the same.) (Keith 2012 p. 13)

This sort of argument turns on the very definition of science, or in any case a definition held dear by many: that science (at least “hard” science, which of course includes the study of fundamental physics) must deal exclusively in third-person (i.e. “intersubjectively verifiable”) evidence. Especially for those, like Chalmers, who accept the conceivability—and, by extension, metaphysical possibility—of “zombies” and “zombie worlds” (identical to humans and our world from a third-person point of view but utterly devoid of first-person experience), the Russell-Eddington line of reasoning is naturally compelling. For in effect, Russell and Eddington observe that our actual world is, from the point of view of science, indistinguishable from a zombie world. Physics is a kind of functionalist theory of material reality. Other than zombie world or functionalism, we can simply note that solipsism—the hypothesis that *only I* am conscious—is, however distastefully improbable, generally accepted to be *logically possible*, insofar as one cannot, via third-person scientific means, conclusively establish that anyone (even oneself) is conscious. Then, first-person experience (i.e., consciousness *itself*) is, for each of us and all of us, the only source of anything approaching justified true belief when it comes to them presence of consciousness in the universe. (Keith 2012, p. 13-14)

Agreeing with the Eddington-Russel line, Chalmers asserts, science *necessarily* lacks a “consciousness detector". Rather, our scientific knowledge about the “outside world” indeed, *any* knowledge we have about the “outside world”—is limited to surfaces, structures, and functions. Science, by method and design, tells us nothing about what David Armstrong called the “stuffing for matter.”58 Nor, simultaneously (and again, by method and design), does science tell us anything about phenomenal consciousness: as Chalmers notes, “if it were not for our direct evidence in the first-person case, the hypothesis [that conscious experience exists] would seem unwarranted, almost mystical, perhaps.”. (ibid)

As Keith (2012) says, the Russell-Eddington route to panpsychism suggests we could solve two mysteries for the price of one, or at least consolidate them into a single mystery: perhaps phenomenal consciousness, for all its material inexplicability, *is* the “stuffing for matter.” Chalmers notes that “the idea sounds wild at first, but on reflection it becomes less so. After all, we really have *no idea* about the intrinsic properties of the physical. Their nature is up for grabs, and phenomenal properties seem as likely a candidate as any other.”. (ibid)

According to Keith (2012), it seems there is another crucial path by which Chalmers has tentatively reached his own pan(proto)psychist conclusions. It might be called the Darwinian argument for panpsychism: given that humans have phenomenal experience, it seems a fair bet that most “higher mammals” (e.g., chimps, dolphins, elephants, dogs, etc.) also do. The alternative—that *Homo sapiens* is literally the *only* (and, presumably, first) species on the planet to attain phenomenology—seems as improbable as solipsism; indeed, the proposal seems grounded in a sort of species-level solipsism. Common as such extreme anthropocentrism has historically been (and, regrettably, may still be). This grand solipsism of mankind simply must be found untenable in our post-Darwinian age. And fortunately, most reasonable people today would readily concede that at least *some* animals have genuine subjective experience(s)—but the closer one looks, as Chalmers notes, the harder it becomes to draw clear lines. If “higher mammals” are conscious (as they certainly seem to be), why not extend the benefit of the doubt to all mammals, or also to birds, reptiles, amphibians, and fish? (p.15-16)

Chalmers explain this as follows, he asks us first to consider the mouse:

"Mice may not have much of a sense of self, and may not be given to

introspection, but it seems entirely plausible that there is *something* it is like to be a mouse…. The natural hypothesis is that corresponding to the mouse’s “perceptual manifold,” which we know they have, there is a “phenomenal manifold.” …There does not seem to be much reason to suppose that phenomenology should wink out while a reasonably complex perceptual psychology persists. If it does, then either there is a radical discontinuity from complex experiences to none at all, or somewhere along the line phenomenology begins to fall out of synchrony with perception, so that for a while, there is a relatively rich perceptual manifold accompanied by a much more impoverished phenomenal manifold. The first hypothesis seems unlikely, and the second suggests that the intermediate systems would have inner lives strangely dissociated from their cognitive capacities. The alternative is surely at least as plausible. Presumably it is much less interesting to be a fish than to be a human, with a simpler phenomenology corresponding to its simpler psychology, but it seems reasonable enough that there is *something* there." (Chalmers 1996, p. 294-295)

Chalmers assumes that certain forms of life just aren’t “complex enough” to “need” consciousness, as well as against the cluster of implicit assumptions *behind* that implicit assumption. These latter, namely, are (1) that consciousness emerged relatively late in the evolutionary game, (2) that it did so *in response to* an increased physical complexity, (3) that at a certain point, the proper functioning of this increased physical complexity somehow suddenly *required* phenomenal conscious experience, (4) that previous, lower levels of physical complexity possess(ed) *no* such “phenomenal requirement,” and (5) that because they possess(ed) no phenomenal requirement. These less-evolved organisms possess(ed) *no phenomenology whatsoever*, brought into plain sight, each assumption is clearly tendentious on its own—and as Chalmers demonstrates, together they imply situations wherein bizarrely asymmetric relationships hold between perception and phenomenology. (ibid)

Like mice and fish, Keith (2012 p. 17) thinks, one might still wish to reserve consciousness for vertebrate animals, but even that timeworn distinction seems rather arbitrary in light, e.g., of studies suggesting that the invertebrate octopus is among the handful of animals on earth capable of tool use. From all external appearances, the octopus seems to be “more conscious” than any vertebrate fish. Yet if either an octopus or a fish could be conscious, why not, perhaps, a spider? Why should we assume there is literally *nothing it is like* for the spider to spin its web or stalk its prey? Just as long as we are careful to distinguish basic phenomenal consciousness from more advanced features like self-consciousness, Chalmers sees no reason not to continue on down the branches of the great tree of life, perhaps even to its pre-biotic roots:

"As we move along the scale from fish and slugs through simple neural networks all the way to thermostats, where should consciousness wink out? The phenomenology of fish and slugs will likely not be primitive but relatively complex, reflecting the various distinctions they can make. Before phenomenology winks out altogether, we presumably will get to some sort of maximally simple phenomenology. It seems to me that the most natural place for this to occur is in a system with a corresponding simple “perceptual psychology,” such as a thermostat. The thermostat seems to realize the sort of information processing in a fish or a slug stripped down to its simplest form, so perhaps it might also have the corresponding sort of phenomenology in its most stripped-down form. It makes one or two relevant distinctions on which action depends; to me, at least, it does not seem unreasonable that there might be associated distinctions in experience." (Chalmers 1996, p. 295)

And “if there is experience associated with thermostats”, Chalmers (1996) muses, “there is probably experience *everywhere*: wherever there is a causal interaction, there is information, and wherever there is information, there is experience.” According to Chalmers, then, the Darwinian argument brings us from the acknowledgement of non-human phenomenology to the implication of an *informational panpsychism*. (p. 297)

Keith (2012) notices that, Chalmers' form skips the possibility to be labeled as *biological panpsychism*. In its weaker form, biological panpsychism merely asserts that all living things are conscious; in its stronger form, it also asserts that *only* living things are (i.e., can be) conscious, thus ruling out the possibility of so-called StrongArtificial Intelligence (conscious thermostats). Neither form of thehypothesis, Keith claims, has been directly addressed in the literature onpanpsychism, but one can find it articulated elsewhere. (p. 18)

For Chalmers, Keith (2012 p.20-21) says, biology (however defined) is irrelevant; at least, “it is hard to see why that should make a principled difference.” (Chalmers 1996, p. 296) Rather, he argues that even thermostats—which none would claim are forms of “life” in any sense—may possess rudimentary phenomenal consciousness. What matters is information processing: the thermostat’s detection of a change in the environment and its corresponding response (e.g., turning the heater on).

Keith (2012, p. 20) notices that Chalmers grounds all this in the “double-aspect principle,” the essential ingredient in his signature “naturalistic dualism”: observing that there seem to be two aspects of the brain (i.e., physical and phenomenal), and that the physical aspect of the brain appears to be a vastly complex information-processing system. Chalmers extrapolates the hypothesis that *every* information-processing system possesses a phenomenal aspect corresponding in “richness” to the complexity of its physical organization (as he drolly concedes, this means “it will not be very interesting to be a thermostat,” and one imagines the same holds for individual neurons. (Chalmers 1996, p. 293)

In such “unconstrained” form, Keith (2012, p. 20) proceeds, the double-aspect principle is, Chalmers acknowledges, a pathway to full-blown panpsychism. And whether or not he’s inclined to follow that pathway on any given day, Chalmers’s overarching naturalistic dualism does seem to entail that experience is, in some sense, a fundamental property of the entire universe. All the same, he has certain reservations about panpsychism that are, in fact, also rooted in his informational approach:

I would not quite say that a rock *has experiences*… [or] *is conscious*…. A rock, unlike a thermostat, is not picked out as an information-processing system. It is simply picked out as an object…. It may be better to say that a rock contains systems that are conscious: presumably there are many such subsystems, none of which experiences count canonically as the rock’s (any more than my experiences count as my office’s). For the thermostat, by contrast, there is a canonical associated information space, so it seems more reasonable to talk of the thermostat’s canonical experiences. (Chalmers 1996, p. 297–298)

# 2.1.2. Monist Panpsychism: Galen Strawson's View:

Galen Strawson is one of the most known leading philosophers in contemporary panpsychism. His well-known daring article: "Realistic Monism": Why Physicalism Entails Panpsychism"(2006) ("RM" for short), became very famous and led to many commentaries and criticism by contemporary philosophers. The articles were collected in one book, starting with Strawson's leading article, followed by 17 commentaries and closing with a long reply article by Strawson: "Panpsychism? Reply to Commentators with a Celebration of Descartes". (PR for short)

Some commentaries taken from the book I've mentioned above, will be mentioned in this section. Therefore, whenever, I mention a source of a commentary in this chapter, I mean from this specific book, e.g. (name of commentator, in Strawson (2006) p.x). Other sources will be mentioned as usual.

Strawson argues in his first article (RM), that a real materialist or physicalist, i.e., one who takes consciousness seriously, must adopt panpsychism. Reductive accounts of consciousness, of which there are many, are all considered as different versions of eliminativism. And the hope that the world of matter (as traditionally understood) can accommodate (unreduced) consciousness by way of the latter emerging out of the former, is vain. For such an emergence is an unintelligible, magical process. Since neither eliminativism about consciousness nor magic is acceptable, the two main rivals of panpsychism, reduction and emergence are unavailable, and the materialist who is serious about consciousness has no choice but to embrace panpsychism.

Physicalism for Strawson (2006), (or materialism, Strawson uses these terms interchangeably) is "the view that every real, concrete phenomenon in the universe is physical." (p.3) Consciousness, or phenomenology, or feeling, or sensation, or experiential 'what-it's-likeness,' or experience (Strawson's preferred term) is "the fundamental given natural fact" and "nothing is more certain than the existence of experience." (p.4) Panpsychism hence is "the view that the existence of every real concrete thing involves experiential being even if it also involves non-experiential being" (p.8), a view which has few friends in contemporary philosophy. For many feel (and some will say) that it is "a complete myth, a comfortable piece of utter balderdash." (McGinn in Strawson 2006, p.93) But Strawson thinks that this resistance to panpsychism is grounded on a mistake, i.e. the belief "that the experiential and the physical are utterly and irreconcilably different". (p. 5) We have, he tells us, "no good reason to think that we know anything about the physical that gives us any reason to find any problem in the idea that experiential phenomena are physical phenomena." (p.4)

He argues that physics provides with the mathematical structure of the physical reality, but it doesn't tell us about the intrinsic nature of matter. Hence, the inscrutability of matter is the key to Strawson's panpsychism. Following Eddington, Russell, and many others, he holds that science only tells us about abstract, structural features of matter. This sort of information does, in Russell's words, "not suffice to show whether the physical world is, or is not, different in intrinsic character from the world of mind." (in Strawson 2006, p.10) And Eddington puts it even more succinctly: "science has nothing to say about the intrinsic nature of the atom." (in Strawson, 2006, p.10) Therefore, Strawson says it seems rather silly to prefer to attach to an atom in physics something of a so-called 'concrete' nature rather than to something of spiritual nature, of which prominent characteristics is thought (or experience, consciousness), and then to wonder where the thought comes from.

Science, he continues, is not our only source of knowledge about matter; being conscious, having experiences, is another. For according to the physicalist, matter, configured brain-wise. Thus, in experience the intrinsic nature of (at least some) matter stands revealed. It follows "that there is a lot more to neurons than physics and neurophysiology to record (or can record)." To deny this, he says, is to go eliminativist about experience and this is simply crazy. (Strawson, 2006, p. 7)

He presents the question: "How does one get from "there is more to neurons than… " to "everything is experience involving?", then he answers:

"First, by being strict about emergence: If it really is true that Y is emergent from X then it must be the case that Y is in some sense wholly dependent on X and X alone, so that all features of Y trace intelligibly back to X (where 'intelligible' is a metaphysical rather than an epistemic notion)." (Strawson, 2006 p.18)

Emergence that does not live up to this standard is brute, but "*emergence can't be brute*". In the case of experience there is nothing "about the nature of the emerged-from [nonexperiential reality] in virtue of which the emerger [experience] emerges as it does and is what it is." It follows that consciousness cannot emerge from brains composed of matter as it is ordinarily conceived, but it does. Therefore, the matter composing brains must be extraordinary; it must have an experiential aspect. That is, the ultimate particles that make up brains cannot be wholly unconscious. In short, "real physicalists must accept that at least some ultimates are intrinsically experience-involving. (Strawson, 2006, p.18,15)

 They must at least embrace *micropsychism.* But it is hard to stop at micropsychism (which says that only some entities are experiential or conscious). It entails a radical and completely arbitrary bifurcation of ultimates into experiential and nonexperiential ones. Hence panpsychism is the much more reasonable position. (Strawson, 2006, p.25)

Strawson (2006) deals with a number of attempts to resist the panpsychist conclusion. I'll briefly mention some of these issues in the following passages. Those who want to stop the descent into panpsychism by maintaining that experience is a mere appearance, there is no real seeming, there only seems to be, as Dennett would say, have it all wrong. Because "for there to seem to be rich phenomenology or experience just is for there to be such phenomenology or experience." (in Strawson (2006), p. 17, 23)

Strawson (2006) asserts, that those who want to soften the blow of panpsychism by maintaining that all we get at the bottom is proto-experience (micropsycism), not experience proper, (like Chalmers) also have it all wrong. Either proto-experience is experience, in which case you are back at panpsychism, or it is not, in which case we are back to the "magic passage across the experiential/ non-experiential divide." (p. 24)

And those who want to rise above the old experiential/ non-experiential controversy by adopting neutral monism have it all wrong too. According to which, a mental state, constructed out of neutral elements, either has or lacks genuine experiential features. If it has them, then they either emerged from the non-experiential base, and a miracle occurred; or experience was already present in the "neutral" base, and we are back at panpsychism (with a misleading name). And if it is said that the constructed mental state merely appears to have genuine experiential features but does not really have them, the reply is the same as the one given above: "experience, appearance, if you like, cannot itself be only appearance, i.e. not really real, because there must be experience for there to be appearance." (Strawson, 2006, p. 23)

Strawson (2006) also acknowledges some difficulties facing his position. He notes, for example, that emergence of macroexperientiality from microexperientiality, while not a miracle, is still quite puzzling. Secondly, there is a related issue concerns the unity of consciousness; how can many microexperiences constitute or compose a macroexperience? This problem is especially difficult for Strawson because he insists that every experience, be it macro or micro, is owned by a subject, an idea that makes subjects very alien; how can their experiences make up yours? A third issue that Strawson flags is that of mental causation. A fourth issue which may be on the minds of many of Strawson's reader, concerns the question: 'what are the microexperiences of the ultimate particles like?' Strawson responds: "there is no more difficulty in the idea that the experiential quality of microexperientiality is unimaginable by us than there is in the idea that there may exist sensory modalities (qualitatively) unimaginable to us." (p.27)

Strawson (2006) is aware that some readers of RM may think that Strawson's real physicalism suffers from a much more glaring problem: it simply isn't physicalism at all. For it may seem obvious that any theory that entails panpsychism, or any theory that results from combining anything whatever with panpsychism, is incompatible with the materialist spirit. Many of Strawson's readers are apt to think so, for they probably agree with Thomas Nagel that "panpsychism is dualism all the way down". Therefore, for this problem, Strawson offers some replacement labels: "experiential-and-nonexperiential monism," "experiential-and-nonexperiential ?-ism," "?-ism," and, finally, "realistic monism", the term that makes it into the title of the target paper. (p. 8-9)

Strawson (2006) explains his use of the word "physical" as follows: "I take the word 'physical' to be a natural-kind term whose reference I can sufficiently indicate by drawing attention to tables and chairs and, as a realistic physicalist, experiential phenomena." If you are a materialist and take experience seriously, then you will count all the concrete phenomena you can point to, be they experiential or non-experiential, as physical. Accordingly, panpsychism, the doctrine that every "real concrete thing involves experiential being," has nothing to do with dualism, and thus the air of paradox vanishes. (p. 8-9)

But Strawson does acknowledge that his way of using the term "physical" comes at a cost. His use of this term, the claim that every concrete thing is physical is trivially true, while there is a more traditional use of the term, this claim would seem a bold and controversial thesis to many. Based on this consideration, Strawson ends his discussion of this issue by saying "anyone who prefers to call my position 'realistic monism' instead of 'real physicalism' should feel free to do so." All this may sound a little frivolous, but there is a serious thought here. (ibid).

RM was followed by commentaries, some of which raised objections against his view. I will mention some of them in the next section. Strawson's reply (PR: "Panpsychism? Reply to Commentators with a Celebration of Descartes", 2006) is a long and complex essay in which Strawson tries to address some of these metaphysical questions and attempts to show that this metaphysically clarified version of panpsychism can withstand the objections raised by his commentators. Here I will only touch on some of Strawson's central themes of PR.

Strawson (2006) argues that subjects of experience are momentary beings, that are indistinguishable from their experiences, from the experiencing. An idea which is stated more explicitly: a subject of experience "is at the same time an experience, an experiencing, i.e. literally identical with an experience or experiencing." (p.192, 193, 247)

Strawson (2006) clarifies this point by embedding this view about the subject of experience into a larger view about the relationship between objects and their properties. It's a mistake, he says, to think that there is a sharp distinction between the two. For "plainly objects without properties are impossible", and "why accept properties without objects after having rejected objects without properties?". The resulting view "is not that there can be concrete instantiations of properties without concrete objects. It is that the best [thought still inadequate] thing to say, given our existing terms, is that objects are (just) concrete instantiations of properties." (p.194-195)

Strawson (2006) is aware that this explanation may not have dispelled all anxieties occasioned by his metaphysical disclosures; but he remains unfazed: "the standard existing categories of object, substance and property are not adequate to the nature of reality. The sense of intolerable peculiarity is not an objection to this claim, but evidence of its truth." (p. 195) What

The popular combination of substance monism with property dualism may seem to deliver just what is needed: a monism that respects the fundamental-duality thesis by allowing for the existence of two fundamentally different kinds of properties. However, according to Strawson (2006), this position is incoherent, for there is no real distinction between a substance and its properties. So, if there are two fundamental properties neither of which can in any sense be the other, then there must be two substances: for there is no real distinction between substances and their properties. (p. 239)

Strawson (2006) says that those monists who cannot bring themselves to embrace the Spinozist version of Fundamental-Duality Monism are faced with an alternative: accept radical eliminativism or pure panpsychism. (p. 241, 246) Strawson as we saw, is no fan of eliminativism. That leaves pure panpsychism. It is the view that "all being is experiential being.", i.e., there is no non-experiential being; there is only experiential being. (p. 227)

The case for pure panpsychism, as Strawson (2006) puts it, is simple and powerful:

[i]            There is only one fundamental kind of reality. [basic assumption]

[ii]            There is reality of the experiential fundamental kind. [obvious]

[iii]            All reality is experiential [from [i] and [ii]].

[iv]            Experiential reality can't also be non-experiential reality. [premise]

[v]            There is no non-experiential reality [from [iii] and [iv]]. (p.235)

The world of pure panpsychism is best conceived along the lines of Eddington and Russell: "the energy-stuff that makes up the whole of reality is itself something that is experiential in every respect." (p. 243) And given Strawson's identification of experience and experiencer we get this:

pure panpsychism has only one kind of thing in its fundamental ontology: subjects of experience in the 'thin' sense, subjects of experience each of which is at the same time an experience, and experiencing, i.e. literally identical with an experience or experiencing. (p. 247)

Strawson concludes that pure panpsychism is "arguably the only respectable kind of panpsychism." (p. 246) This, then, is the position to which the materialist who is serious about experience should retreat.

# 2.3. Monistic Panpsychism Versus Dualistic Panpsychism:

After I've presented the two positions, I will present the main differences between them as well as criticism of both views. Then, I will defend Strawson's view, and clarify the reason I prefer it over Chalmers' one. I will do so by several lines of defense. I will present first, a number of arguments Strawson himself used in favor of his position, which I'll call*: non-reduction*, *non-emergence* and *intrinsic nature* arguments. Then, regarding monism as a general ontology, I will explain why monistic approaches fit the scientific methods more than dualistic approaches, which might be a good point in favor of Strawson's position. However, although Strawson embraces a monistic view his 'real monism' which is special amongst all other panpsychistic views, faces a lot of criticism and objections even from panpsychists themselves. The reason very briefly is that current physics cannot bear Strawson’s requirements such as including the mental under the laws of physics. Strawson used 'real monism' as an argument for his view. So, I will present it as an argument for his view, as well as the objections that seem to refute it, such as the causal closure principle.

After that, I will discuss the argument against most panpsychistic views, namely the combination problem. (The arguments against panpsychism are presented in the first chapter. But here in this chapter, I will present the argument more specifically against Strawson's panpsychistic view). I will do that here since my own proposal, which I will present and defend at the end of this chapter, will show how Strawson's view can avoid this problem.

I focus in this chapter on the two views of Chalmers' and Strawson's because they are ontologically different; the former is a form dualism and the latter is a monist physicalist. This specific distinction between the two views, together with those I will be mentioning, is important, because both lead to different paths and implications on our view of the world, as well as on science. Since, I will be defending Strawson's view, most of my focus will be on his position.

# 2.3.1. Chalmers Dualistic Ontology: Non-Reduction, Epiphenomenalism and the Causal Closure Principle:

No doubt, both Chalmers and Strawson argue against reduction of consciousness in their theories. Like Strawson, Chalmers argues that consciousness is a fundamental property. But unlike Strawson, he thinks that it is ontologically autonomous of any known (or even possible) physical properties, and that there may be lawlike rules which he terms "psychophysical laws" that determine which physical systems are associated with which types of qualia.

Thus, in explaining the hard problem of consciousness, Chalmers starting point is: "consciousness is not physical", therefore, it can't be explained in physical terms. For Chalmers, the immaterial information is a property of the material world. It is embodied in it. Unlike Strawson who views information as physical, Chalmers thinks it is neither material nor energy. As it is embodied in the material physical brain, it needs energy to be communicated. Mind is rather information as he concludes. Here is the first contradiction between him and Strawson who thinks exactly the opposite; mind and everything that exists in the universe is physical.

Chalmers' property-dualistic view allows for persons to be directly acquainted with experiences, and it is this direct acquaintance, rather than any causal relation, that justifies our beliefs about experiences. On this view, experiences are partially constitutive of beliefs about experiences. He says: “the justification of my belief (about experiences) accrues not just in virtue of my physical features but in virtue of some of my nonphysical features — namely the experiences themselves” (Chalmers, 1996, p. 198). Strawson not only takes our direct experience to justify the existence of mentality, but also its causal relation with physical events, as we will see this later in more details.

Hence, although Chalmers view is dualistic, and one can infer that, for him, the world cannot be causally closed because of the mental causation, it seems that Chalmers' view can be explained as a form of epiphenomenalism. This view holds that mental events have no causal role in the physical world. Therefore, Chalmers' view defends the causal closure principle.

Glenn Braddock (2001) notes that Chalmers is hesitant to embrace the term "epiphenomenalism", offering the following explanation: "I do not describe my view as epiphenomenalism. The question of the causal relevance of experience remains open, and a more detailed theory of both causation and of experience will be required before the issue can be settled" (Chalmers 1996, p. 160). But his reasons for this qualification, Braddock claims, do not question the spirit of the epiphenomenalist argument at all. (p.64)

Glenn Braddock (2001) says that according to Chalmers, this case for epiphenomenalism can be summarized as follows: Absent qualia zombies are possible. This means that there could be a creature which lacks consciousness but which has the same functional structure as we have. It is therefore possible that the same causal roles could be performed without any phenomenology. It is possible, then, for phenomenological properties to be epiphenomenal. This means, though, that there is a possible world in which everything happens exactly as it happens in the actual world, but in which everything can be explained without reference to consciousness. But since the two worlds are functionally identical, then the same functional account explains the happenings of both worlds. Therefore, everything that occurs in the actual world can be explained without appeal to consciousness. This means that consciousness plays no causal role in the actual world.

The weakness of this argument is with the first premise, which states that absent qualia zombies are possible. As Block (1980) has pointed out, this claim is ambiguous. It could be given the following three readings:

Absent Qualia Premise, Strong Reading: If absent qualia are possible, then pain could lack qualitative character, and its lacking qualitative character would make no difference to its causal role. (p. 265)

 Absent Qualia Premise, Weak Reading: If absent qualia are possible, there could be ersatz pain that has the same causal role as pain, (p. 266)

Absent Qualia Premise, Weaker Still Reading: If absent qualia are possible, ersatz pain is possible, (p. 271)

By holding that phenomenal properties have no causal influence on the physical world, epiphenomenalism accepts the causal closure of physics. Thus, any physical effect, like a bodily behavior, will have a fully physical cause. Phenomenal properties merely accompany causally efficacious physical properties, but they are not involved in making the behavior happen.

Many philosophers agree that epiphenomenalism is a difficult view to embrace because of its strongly counterintuitive nature. According to epiphenomenalists, denying commonsense intuition is better than denying a basic scientific principle like causal closure of physics (Weisberg 2017). This principle is a central principle to physicalism as well as to science. It is the notion that the physical world is causally closed, and consciousness must lack all causal efficacies, i.e. there is a purely physical explanation for the occurrence of every physical event and these explanations don't refer to any consciousness property (McGinn, 1999). Based upon this, unlike physicalism according to which, mental events must supervene on, or reduce to, or be identical with something physical (unless we are prepared to accept systematic over-determination.), epiphenomenalism asserts that mental events don't reduce to or supervene on the physical and they have no causal role in the physical world.

According to Papineau (2016), the causal closure principle is needed to rule out interactionist dualism, which entails a causal role for the mental realm. The case against interactionist dualism hinges crucially on the empirical thesis that all physical effects already have physical causes. It is specifically this claim that makes it difficult to see how dualist states can make a causal difference to the physical world. Therefore, the causal closure principle is an important principle for science, since science is based on removing the subject from investigations, by seeking objectivity.

So, both epiphenomenalism and physicalism are consistent with the causal closure principle. But Papineau (2016) asserts, if the arguments against physicalism about conscious states are not compelling, then physicalism seems clearly preferable to epiphenomenalism. In itself, epiphenomenalism is not an attractive position. It requires us to suppose that conscious states, even though they are caused by processes in the physical world, have no effects on that world. This is a very odd kind of causal structure. Nature displays no other examples of such one-way causal intercourse between realms. By contrast, a physicalist naturalism about conscious states will integrate the mental realm with the causal unfolding of the spatiotemporal world in an entirely familiar way. Given this, Papineau proceeds, general principles of theory choice would seem to argue strongly for physicalism over epiphenomenalism.

It is also suggested that physicalism about the mind can be justified by an ‘inference to the best explanation’. The thought here is that there are many well-established synchronic correlations between mental states and brain states, and that physicalism is a ‘better explanation’ of these correlations than epiphenomenalism (Hill 1991, Hill and McLaughlin 1999).

Thus, epiphenomenalism can't complete the picture of the world. In the contrary it inserts new problems. It excludes the role of mental events and leads to eliminativism, as Steward (2011) concludes. She claims that the idea that consciousness exists with no causal roles is even more disturbing than eliminativism. It is a kind of eleminativism. I think epiphenomenalism closes the path for consciousness to integrate into the scientific picture in the future by denying its role in our world.

At least this is not the case in abnormal psychology. As described by Michael Silberstein (2001), who asserts that we cannot deny the psychological factors which are judged to be associated with symptoms or deficits. A judgment, he says, is based on observation that the initiation or exacerbation of a symptom or deficit is are preceded by conflicts or stressors. These symptoms are involuntary in that they are not intentionally produced. They cannot be fully explained by neurological, or medical conditions or by external causes such as substance abuse or environmental cultural forces. Diagnostic testing shows no physical cause for the dysfunction. This shows that epiphenomenalism isn't reliable. (p. 66)

To conclude, as known, the causal closure principle is strongly held by the scientific method. Epiphenomenalism like the one Chalmers holds, is compatible with the causal closure principle, so it can be justified by it. Thus, Chalmers' form can be justified by its adherence to central scientific principles like the causal closure, while maintaining a non-reductive theory of consciousness. We know however, this is not that simple, because the validity of the causal closure principle is still doubtful. The reason might be our incomplete knowledge of the world, or since our current theories of physics aren't complete yet. Quantum mechanics, which is the most basic physics we have currently, proves this notion. The measurement problem, non-locality and the various interpretations of it, all imply that it is too early to take the causal closure principle for granted.

Another point is that, Chalmers doesn’t use the term “panpsychism” in describing his approach, mainly because he rejects the possibility that all ultimates are conscious. Strawson on the other hand, has no issue with the term. He even offers other substitute names for panpsychism in order that a physicalist feel free to use, such as 'physicalism', 'real materialism', or, 'real monism' which I'll be discussing later. Even more, as we noticed, Chalmers diverged from the original panpsychist view and tried to form one which is closer to property dualism. Actually, the adoption of property dualism seems to be the preferred route among contemporary materialists who find themselves confronted with irreducibly mental features (Such as Jaegwon Kim and Chalmers). Strawson's claim that property dualism is incoherent. It is grounded in a quite controversial view about the relationship of substances and properties. So, the materialists who embraced property dualism may not feel seriously challenged, as he concluded.

According to Chalmers, there is a fundamental difference between the mental and the physical, the experiential and non-experiential, the fact that makes his form ontologically compatible with dualism. On the other hand, this difference between the physical and mental in Strawson's view diminishes or even fades away. Panpsychism in which all physical ultimates possess minds, and panprotosychism, in which only some physical ultimates possess minds, is the main difference between Strawson and Chalmers. I can conclude, therefore, Strawson's view is a monistic panpsychist while Chalmers's one is a dualist panpsychist. That's why on the one hand, Strawson’s view seems to be compatible with a physicalist monist view, and on the other hand, Chalmers’ view seems to be not monistic but rather a dualistic panpsychistic view.

Strawson thinks that the notion that only some types of ultimates are experiential is a form of dualism, so he prefers to think of all types of ultimates as experiential. (In fact, he is inclined to regard energy as the ultimate experiental level.) Chalmers on the other hand holds a form of panpsychism in which only some types of ultimates are conscious and experiential. He tends to associate Russellian neutral monism with the “less extreme” panprotopsychist and micropsychist positions, and generally conveys a sense of being more comfortable with these than with panpsychism proper, a view which is dismissed by Strawson who describes it as incoherent.

# 2.3.2 The Hegelian Argument Rather than Non-emergence:

Chalmers, like Strawson, notes that “the idea of panpsychism sounds wild at first, but on reflection it becomes less so. Both Chalmers and Strawson have reached their panpsychist implications logically. While Strawson brought his arguments from non-emergence, Chalmers picked up another path. Chalmers (2013), in his paper “Panpsychism and Panprotopsychism”, presents his Hegelian argument for panpsychism. It is inspired by Hegel’s dialectical method in exploring the possibility of a conceptual middle-ground between materialism and dualism. It seeks out a ‘synthesis’ between these two antithetical positions. Chalmers establishes this synthesis by dialectically elucidating the opposition of materialism and dualism, as well as their respective strengths and weaknesses. (p.2)

Unlike Strawson, for whom, like just must emerge from like, or we’re back to the “magical” doctrine of brute emergence. Keith (2012, p. 24) noticed that Chalmers has a deep discomfort with brute emergence, it’s safe to say this isn’t the account of protophenomenology he would prefer to give—not that he’s entirely clear on the matter. At one point, he defines the protophenomenal as “properties that collectively constitute phenomenal properties when organized in the appropriate way". (Chalmers 2010 p.151)

Strawson put some challenges in front of Chalmers panprotopsychism. His concern is that if protophenomenal properties are “ultimately non-experiential in themselves,” then panprotopsychism “doesn’t escape the problem, it merely changes the terms”. As Chalmers posits the emergence of like from *kinda*-like, regarding this, Strawson says:

"If you take the word ‘proto-experiential’ to mean ‘not actually experiential, but just what is needed for experience’, then the gap is unbridged. If you take it to mean ‘already intrinsically (occurently) experiential, although very different, qualitatively, from the experience whose realizing ground we are supposing it be’, you have conceded the fundamental point [i.e., proper panpsychism]." (Strawson in Keith p. 25)

In other words, Strawson thinks that any non-brute, “intrinsically experiential” theory of panprotopsychism simply collapses into proper panpsychism. So, it’s not clear, Keith (2012, p.29) proceeds, that Chalmers’ protophenomenal story truly delivers us the relevant like from like. The desideratum here is presumably an account of emergence in virtue of some positive similarity between the protophenomenal and the phenomenal (e.g. experientiality); the “negative similarity” of non-physicSality just doesn’t seem sufficient to get us from there to here—especially if Chalmers’s protophenomenal X is not in itself experiential in any way. Or, as Strawson has pointedly put it: “If one can have PROTO with no what-it’s-likeness, then we’re back with radical emergence.” Here, then, is the crucial point of divergence between Chalmers and Strawson: the former can accept the possibility of experience emerging from a non-physicSal but nonexperiential substrate; the latter simply cannot. (ibid)

# 2.3.3. Argument form Intrinsic Nature

Both Strawson and Chalmers draw on the Russell-Eddington line, that science doesn't tell us about the intrinsic nature of matter. We don’t know the intrinsic nature of physical stuff in spite of all that physics tells us. While Chalmers thinks that consciousness isn't physical or can be explained in physical terms, Strawson, in particular, thinks we don’t know anything about the physical that gives us good reason to think that consciousness can’t be wholly physical, he says we can assume that in having conscious experience we thereby know something about the intrinsic nature of physical reality. It's clear that Strawson deploys the Russell-Eddington line to somewhat different ends than Chalmers, who passed through another path by which he has reached his own pan(proto)psychist conclusions; the so called the Darwinian argument for panpsychism.

To conclude, as we saw, the previous discussion about Chalmers theory shows that his theory is not well grounded. For example, his use of epiphenomalism, as some philosophers rightly think, it may lead to eleminativism; a result that Chalmers would not wish to achieve. Strawson also showed that of Chalmers panprotosychistic theory is incoherent. After all, it is dualistic, a form which is conceptually incoherent because of the inconceivability of mind-body interaction, and it is inconsistent with known laws of science.

# 2.4. Strawson's Panpsychistic Ontology

In this chapter, I will present commentaries as well as my own position on Strawson's main arguments that he uses for his view. His view is built from four main arguments, as were mentioned above in detail. Three of which are shared by other panpsychistic views. They are: non-reduction, non-emergence, and intrinsic nature argument. The fourth argument, which is his 'real monism' makes Strawson's view special and different from any other panpsychistic view. I will leave it to the end, for my proposal is related to it. After that, I will discuss one argument against Strawson's panpsychism, from which most panpsychistic views suffers as well, which is the combination problem. I'll briefly show how different commentators relate to the problem, as well as Strawson himself. At the end, I will present my proposal, which will be the main contribution in this chapter.

# 2.4.1. Arguments supporting Strawson's Panpsychistic View

# 2.4.1.1. Non-Reductionism:

One of Strawson's central assumptions is that the experiential cannot be reduced to the nonexperiential. For Strawson, those who hold that the experiential can be reduced to the nonexperiential are just eliminativists. He mentions a good number of them: Daniel Dennett, Fred Dretske, Michael Tye, Lycan Carruthers, Jackson, Papineau, Rey, Rosenthal, and Smart seem to fall into this class

In a commentary for Strawson's non-reductive position, Stapp takes the irreducibility assumption a little different than Strawson. While he seems to agree that the experiential cannot be reduced to the nonexperiential, he insists that there is no tension between the experiential and current physics. The point seems to be that experience need not be reduced to physics, because experience is already an indispensable element of contemporary physics. But if experience is a basic factor in the physical description of the world, the views of Stapp and Strawson may not be that far apart after all. But unlike Strawson, Stapp acknowledges that his view might be classified as a form of idealism. (Stapp in Strawson (2006) p. 168)

# 2.4.1.2. Non- Emergence:

Non-emergence is a central assumption of Strawson's argument for panpsychism, which is that the experiential cannot emerge out of the non-experiential. It's well known that emergence is one of the biggest challenges for physicalism. So far, it failed to explain how the mental emerges from the non-mental.

In response to Strawson's RM, Carruthers & Schechter (in Strawson (2006) p. 34-35) and Coleman (in Strawson (2006), p. 45) briefly discuss this issue, i.e. the argument from non-emergence. Their position states that the impression of impossibility can be fully accounted for by noting certain peculiarities of our phenomenal concepts. Hence our inability to see how the experiential might emerge out of the non-experiential does not suggest that this is really impossible.

Another response proceeds to claim that the materialist can do without the emergence assumption. Rather than saying that the experiential emerges from the non-experiential "in the relevant sense", one might, according to Jackson" (Jackson in Strawson (2006) p. 63-64), hold that "there are fundamental laws of nature that go from certain complex arrangements of the non-conscious to consciousness." Such laws Jackson thinks, provide a non-emergentist account of the generation of consciousness. But one wonders whether this amounts to anything more than an endorsement of brute emergence. For by making the laws fundamental, Jackson indicates that there is nothing more to be said about the mechanism that gives rise to consciousness.

Macpherson and McGinn also try to avoid emergence, but along a rather different path. After raising the question, why we must assume that experience emerges from anything, Macpherson asks:

Why not suppose that the property of having an experience, is a fundamental property. Why must the experiential property I have when I see something red emerge from other more fundamental properties? One could hold that that property is not reducible to, or does not emerge from, other properties, experiential or non-experiential. One could hold that that property can attach to bundles of other properties to create creatures with experience. (Macpherson in Strawson (2006) p. 85-86)

McGinn also stresses the same point. He says that: "you might hold that experience is a fundamental feature of the universe, not emerging from anything else, as basic as space and time, that just becomes attached to brains when they reach the right level of complexity, and at the same time insist, like Strawson, that experiences 'just are' physical. (McGinn in Strawson (2006) p. 92-93)

Wilson in addition, argue as follows, directing his words to Strawson's claim of non-emergence claim: "Since we do not know what can be done by bodies and their motions, and since you confess that without a divine revelation no one can know everything which God has imparted, how can you possibly have known that God has not implanted in certain bodies a power or property enabling them to doubt, think, etc.?" (Wilson in Strawson (2006), p. 178)

A final objection to the non-emergence assumption is rooted in an observation that Strawson himself emphasizes: our ignorance of the nature of the physical. Rosenthal puts it this way: "Since we don't now know the laws that govern the occurrence of conscious experiences, we cannot see at present how the experiential might emerge from the neurophysiological." (Rosenthal, in Strawson (2006) p.121) And he suggests that once these laws are known, the emergence of experience from the non-experiential may come to seem no stranger than the emergence of liquidity from a group of water molecules. (ibid) Simons thinks that "the most sane and sober conclusion is that we simply do not know enough to see how experience emerges from the non-experiential." (Simons, in Strawson (2006), p.148) He emphasizes how hard the problem is and concludes that it would be "presumptuous to suppose that because we are currently unable to see how the emergence might work, that there can be no natural emergence." (ibid)

I think, none of the commentaries have a sharp, clear cut argument against Strawson's argument from non-emergence. I think Strawson's argument of non-emergence is a strong one. He is right to think that the idea that mind can emerge from non-mind is incoherent. In this view, the physical ultimates have no experience, but they have some way of combining to produce experience. Strawson also is right to claim that the idea is incoherent and he thinks that it is hard to understand what such a process would involve. Thus, any physicalist position that considers matter as non-experiential requires such an incoherent process of emergence. He thinks, it only seems plausible with modern consciousness studies because it has been so frequently invoked, that it has become familiar. He rightly regards this as the very strange result of a particular type of faith. It is just a belief but not science, taking into consideration its failure to account for such a miracle, i.e. the emergence of mental from pure physical. He also points out that while many philosophers regard the physical and the mental as opposed categories, such a viewpoint cannot be compatible with physicalism. This is simply how many physicalists block the path to panpsychism by rejecting Strawson's claim that taking experience seriously, makes it impossible to specify experience in non-experiential terms.

# 2.4.1.3. Intrinsic Nature:

As I mentioned above, both Strawson and Chalmers draw on the Russell-Eddington line, that science doesn't tell us about the intrinsic nature of matter. We don’t know the intrinsic nature of physical stuff, in spite of all that physics tells us. While Chalmers thinks that consciousness isn't physical or can be explained in physical terms, Strawson, in particular, thinks we don’t know anything about the physical that gives us good reason to think that consciousness can’t be wholly physical, he says we can assume that in having conscious experience we thereby know something about the intrinsic nature of physical reality. Strawson takes the argument from intrinsic nature to form his 'real monistic' form. All ultimates possess mental aspects, and all mental goings are physical, an idea which I will be discussing later.

Some commentators attack Strawson's argument for panpsychism, inspired by the Russell-Eddington assumption. It says that matter which is only known to us in its relational properties, must have intrinsic properties to ground these relations. Lycan claims that: "Perhaps the nature of a subatomic particle is exhausted by the totality of its relations to other things." (Lycan, in Strawson (2006) p. 67) For a good measure, he adds that if intrinsic properties were needed, the reason for thinking that experiential properties might fill the bill is weak. And he tops this off by claiming that if such properties were needed, and if there were reason to think that our experiential properties provide the "stuffing for matter" (David Armstrong's evocative term), defeat would still be assured. For experiential properties are themselves relational. Physics, he assures, gives us more than merely structural or mathematical knowledge of the physical. He lists mass, spin, and charge as possible candidates. (ibid p. 123)

Another discussion of this issue is found in Seager's paper. He first proposes a metaphysical framework that can underwrite the claim that matter must have intrinsic properties. The core idea is the Principle of the Reducibility of Relations: "All extrinsic properties are determined by intrinsic properties" (Seager in Strawson (2006) p. 131) which he traces back to Leibniz and Bradley. He then argues that "if we couple the idea that physics provides us insight only into relational properties of matter with the (appropriate form of the) reduction principle, we are forced to postulate an intrinsic ground for the relational, structural or mathematical properties."(ibid p. 135). After carefully reconstructing Strawson's argument on this basis, he goes on to consider relationalism, the view which "asserts that *all*there is to matter is the set of inter-relationships which science reveals" (ibid p. 138), and concludes that Strawson's argument falls apart if relationalism is adopted. He ends the paper with a list of six difficulties for relationalism. The point of Seager's paper is not to take sides, but to clarify what is involved in a crucial move of Strawson's argument for panpsychism.

In a reply to commentaries, in Strawson's PR, "Panpsychism? Reply to Commentators with a Celebration of Descartes", regarding the questions: "How much do we know about our experiences?, Do we have a fully transparent grasp of our own experiences?", Strawson replies, in the case of experience, "the having is the knowing". This means that in having the experience "I am acquainted with the essential nature of the experience in certain respects." But this intimate grasp of experience "need not involve exhaustive knowledge of its nature". That is, the nature of our experience is not fully revealed to us, the full revelation thesis is false. And that is what saves panpsychism from the sorts of objections raised by Goff and Papineau. Pure panpsychists can agree that experience can have aspects that are hidden from us. (Strawson (2006), p. 251-253)

Strawson (2006) presented the theme of our ignorance, of how little we know about matter, the non-experiential throughout RM. It resurfaces in the opening section of PR: "The only lesson of science that I apply is the general lesson that we are profoundly in the dark about the nature of things, and in particular the nature of the non-experiential." (ibid p.185) But how, asks Stoljar, can Strawson know that the experiential cannot emerge from the non-experiential, if he knows *nothing*about the non-experiential? (Stoljar in Strawson (2006), p. 174, 272) As in the case of the revelation of our own experiences, Strawson addresses this problem by backing off slightly: "I am not a radical ignorantist". Our ignorance of the non-experiential does not rob the intuition that the experiential cannot emerge out of the non-experiential of its force. It remains as a powerful but "unargued intuition". (Strawson (2006) p.21, 272)

I think that, Strawson is right to think that consciousness is the intrinsic nature of reality, we witness this notion with our direct experience. Other who claim that we know nothing about the intrinsic nature, to claim that it is consciousness, are also right. Therefore, so far, the argument of non-emergence seems stronger to rely on than this one with what we have now of Strawson's opinion on one hand, and the commentators' opinions on the other one. I will leave it now to reconsider it in my proposal and see if I can defend Strawson's position more strongly.

# 2.4.1.4. Monism and Strawson's Monistic Ontology: "Real Monism"

# A. Monism: Unity of Science and Strawson's view

Generally speaking, it is widely acceptable that any monistic view enables it to fulfill the scientific requirements. As we saw above Chalmers' view, stands many steps farther than any monistic one (including Strawson's one), because at the end it is dualistic. It's widely agreed that dualism fails to explain the mind body problem; it fails to explain how these two different substances, mind and body interact. Although Strawson's position is a monistic ontology, there is an issue with his 'real monism', which I will be discussing soon.

Meanwhile, I will talk about the advantage of monistic approaches that science takes into consideration. The dualistic view as I mentioned above, is conceptually incoherent because of the inconceivability of mind-body interaction, and it is inconsistent with known laws of science. This is one reason that pushes the scientific method to adopt a monist view of the world.

As we know, science is aimed to reduce the fundamental laws to one, by the theory of unification. It is a great heading towards a monistic view. Unity and unification as Cat (2017) put it, is important and has implications in both science and philosophy. In science, they provide a strong methodological guidance and even justification for hypotheses, projects, and specific goals. In this sense, different rallying cries and idioms such as simplicity, unity, disunity, emergence or interdisciplinarity, have been endowed with a normative value. They also provide legitimacy, even if rhetorically, in social contexts with sources of funding and profit. They become the standard of what carries the authority and legitimacy of what it is to be scientific. They make a difference, as a result, through scientific application and extension, often merely rhetorical, to other domains such as healthcare and economic policy.

Unity of science includes unifying the various natural sciences (physics, astronomy, chemistry, biology) into a single overarching theory, also they aim to unify theories within a single science (e.g., general relativity and quantum theory in physics). It examines whether there is one basic kind of material, and if not, how the different kinds of material in the universe are related. Positions about the unity of science have important consequences, and affect the way we formulate and solve problems in philosophy (e.g., questions of naturalism), science (e.g., design of education and research projects) and policy (e.g., allocation of resources). Disunity and autonomy of levels has been associated, conversely, with antirealism, meaning instrumentalist or empiricist heuristics. (Cat 2017)

I think that the scientific method, picked up the right choice by adopting, or at least aiming at a monistic view on the one hand, but it made a huge mistake at the same time. It eliminated consciousness or the mental from its account which made the method quite rough with major implications on our daily life. In my opinion, monistic physicalism must do some important modifications to its account and take consciousness into consideration. It is worthy then to investigate Strawson's panpsychist physicalist offer, and check whether it can, as a monistic view, fulfill the requirements of science.

We all acknowledge that when science was in its infancy, it did not have the appropriate tools to examine and prove certain phenomena such as soul or mind, with which we have a direct experience. While today, although science is equipped with more developed tools, (in addition to the hints given by quantum mechanics, which makes it easier to accept such phenomena) it still refuses to do so, and it is still adherent to the old and sometimes useless rough doctrines. I mean useless in a sense which appeals to life harmony and wisdom that connect us to the whole universe. Holding panpsychism with a monistic form, as the theory of unification aims to, has major implications on science, philosophy and life as well.

# B. Strawson's "Real Monism":

Dualistic forms fail to explain how the physical interacts with the mental. The fact which pushes philosophers seek for other theories. Monistic forms like physicalism has largely replaced humanism. It responds to the mind-body problem in a way that eliminatesmind leaving only matter in its place. It considers mental events as emerging in rare conditions from non-mental physical events. Unlike this view, panpsychism in its general form, instead of eliminating the mind, it rather integrates it within the physical world.

Unlike the general form of panpsychism, Strawson's panpsychistic view, which he calls 'real monism', reaches farther than anybody could expect; he argues that the experiential is physical. Many commentators argue against it, some of whom see of it "Dualism all the way down". McGinn states the problem in a pleasingly blunt way: "He simply *wants to call*experiences physical, just as I may want to call ocean waves spiritual. The complaint in both cases is that very different things (mind and body) have been brought together under the same label, in flagrant violation of common usage." (McGinn, in Strawson (2006), p. 91) And he ends this discussion as follows: "By his methods we could extend the reach of physicalism still further, by declaring that 'physical' is a natural kind term for such things as bodies, minds and numbers!" (ibid p. 92). Coleman (in Strawson (2006), p. 44), Rey (in Strawson (2006), p. 110), and Smart (in Strawson (2006), p. 160) make the dualism charge as well.

Macpherson has another conclusion in saying that "this view, in standard terminology, is one of substance monism together with property dualism". (Macpherson in Strawson (2006), p.79) In fact, none of the commentators could accept this view of panpsychism to be physicalism, or 'real physicalism'.

Philosophers may agree with Strawson that nothing is more certain than the existence of experience, and reductive accounts of experience are "great silliness". However, most of them will not agree with his "real monism or physicalism", which is that this certain thing called experience is physical. The issue is with his use of the term naturalism (Bell, 2013, p.11-12). Strawson says that often our use of ‘naturalism’ is meant to imply a misconceived version of physicalism. According to him, naturalism properly as understood, should encompass experience as a fundamental natural fact, irreducible to any other natural phenomenon. What is commonly referred to with talk of naturalism, according to Strawson, is ‘physicSalism,’ meaning that everything concrete can be explained in terms of physics. So, to ‘naturalize’ a phenomenon would be to bring it under physical theory. To many philosophers, if not most of them, this is quite puzzling, and they take Strawson’s weird definition as an error.

Bell (2013 p.11,12) noticed that Strawson advocates what he calls an equal-status theory: reality is ultimately both mental and physical, neither more fundamental than the other. For Strawson, if experience is taken as a fundamental natural fact in this manner then there isn’t much to be puzzled about in the naturalization of consciousness. The issue Bell proceeds, is that Strawson did not only integrates objective third-person phenomena into an account of the physical, the sort of phenomena captured by physics, he also includes experience as a basic physical phenomenon. If this notion of the physical is adopted, then it is still necessary to distinguish between phenomena that are mental and those that are not. The weight of these views bears on intuitions about experience, first-person knowledge, and subjectivity. (ibid)

# C. The Causal Closure Principle and 'Real Monism':

The causal closure principle applies when everything that happens in the world is caused by physical events in the world, not due to mental causations, otherwise at least reductive forms of physicalism are false. Thus, mental causation would be the most a challenging argument against causal closure principle. In Strawson's method the mental is integrated within the physical world. Consciousness does not interact with physical systems, rather physical systems are fundamentally conscious. Thus, one can infer that this view may support the causal closure principle, or at least it doesn't block its path. However, the issue is not that simple. I think that a form of physicalism such as the one Strawson suggests cannot escape this issue with the current physics we have, or the same physics with our current understanding. He simply says that in either cases, whether the cause is mental or physical, it doesn't matter, since both are the same; consciousness is purely physical, and it's the intrinsic nature of the physical. He thus enlarges the scope of the physical laws to include the mental. But we know, with the current physics it is impossible; it didn't happen that we met in our scientific observations such laws of physics acting upon mental events. Laws of physics that we have cannot account for mental phenomena. Given that this is an inevitable demand, to integrate the mental within the physical, we either need a new understanding of the current physics, or we need a new one to do so.

We have an example of this in quantum physics. According to the von Neumann- Wigner's interpretation of it, consciousness does interact with physical systems to cause the wave function collapse. If this interpretation is true, then causal closure is not correct, or it is another form of physics that we have not yet discovered.

# D. Hempel's Dilemma:

The ordinary sense of the term physicalism is an ontological doctrine according to which everything in the world is physical. Mental property can either be reduced to some physical property or shown to supervene on it. There is a need for clear definition of what is physical, so that we can leave the mental out of the frame. In fact, this is the main obstacle in an attempt to formulate physicalism properly. It is called Hempel’s dilemma. On the one hand, the most promising strategy of taking this dilemma is based on the argument from causal closure of physics. But, we saw on the other hand, that the causal closure principle is doubtful.

This is what Strawson's suggestion of 'real monism' is going to face. According to Strawson, there is nothing puzzling about the fact that we are acquainted with physical things in virtue of our experience. But it is the way physics appears to us given our understanding of experience, thus, our acquaintance with physical things via physics, independently of experience, is rather puzzling.

Strawson is still going to confront with physicalism’s adherence to a picture in which everything is physical, where the notion of mental states can only be derivative (non-primitive). The reason for this is that the physical laws, (as of now) do not seem to be capable of acting upon mentality. Mental states cannot be included as primitive states within a physicalist ontological framework. This reasoning immediately faces Hemple's dilemma according to which we do not have a clear definition of what the physical is. And as long as mental states are not added as primitives to the ontology of physics, Strawson’s view directly confronts the causal closure principle of physics, which most physicalists will not give up. It is the need of a complete picture of physics, a picture which this principle seems to promise. Of course, this is not a fatal objection to Strawson’s view since as of now (as I already said before) the causal closure principle doesn't have a clear-cut and compelling empirical support.

In fact, the history of quantum mechanics gives some support to Strawson’s view, since in the current formulation of quantum mechanics mental states are part and parcel of our physical picture of the world. I discuss this issue in more detail in Chapter 3. And if Strawson's real monism is right, then, he should wait for a new shift of our understanding of physics, in the direction in which, our understanding of quantum mechanics goes, or for a totally new physics which accounts for the mental and includes it within its ontology.

In the light of these objections, Strawson (2006) suggests that, a deeper understanding of his panpsychist framework requires one to confront a number of issues in general metaphysics:

"The object/process/property/state/event cluster of distinctions, is hopelessly superficial from the point of view of science and metaphysics. One needs a vivid sense of the respect in which, every object is a process; one needs to abandon the idea that there is any sharp or categorial distinction between an object and its propertiedness. One needs to grasp fully the point that 'property dualism', is strictly incoherent, insofar as it purports to be genuinely distinct from substance dualism, discursive thought is not adequate to the nature of reality." (p. 28)

Strawson (2006) has to find a new way of making room for the fundamental duality within a monistic framework. And if that should prove impossible, monism can only be retained at the cost of denying the existence of non-experiential reality. But Strawson doesn't give up. He thinks "that the non-experiential can be retained only if it is literally identical with the experiential in some Spinozian way. The Spinozist version of Fundamental-Duality Monism that Strawson considers amounts to this:

"Reality is substantially single. All reality is experiential and all reality is non-experiential. Experiential and non-experiential being exist in such a way that neither can be said to be based in or realized by or in any way asymmetrically dependent on the other…" (p.241)

To embrace this form of monism is to accept that the experiential is identical to the non-experiential and that, Strawson acknowledges, is something that many judge to be incoherent "on the grounds that it involves abandoning the law of non-contradiction." But Strawson ends his discussion of the Spinozistical version of Fundamental-Duality Monism with this confession: "For my part, I am fond of [Spinozistical] monism. I think it may very well be a truth beyond our understanding, and I am not prepared to dismiss it in this way." (Strawson 2006, p. 246)

What Strawson seems to propose, in short, is that we adopt a new categorical framework. Such far-reaching changes are not achieved overnight. Here are Strawson's reflections on this issue:

This is another of those points at which philosophy requires a form of contemplation, something more than theoretical assent: cultivation of a shift in intuitions, acquisition of the ability to sustain a different *continuo* in place in the background of thought, at least for a time. (p. 198)

That sort of thing takes time, Strawson suggests that it may take two years for one to feel fully at home in the new framework. (p. 197-198)

# 2.5. An Argument Against Strawson's view: The combination problem

Strawson, as I mentioned before, acknowledges the difficulties facing his position. He notes that emergence of macroexperientiality from microexperientiality, while not a miracle, is still quite puzzling. This issue is related to the unity of consciousness; how can many microexperiences constitute or compose a macroexperience? (Strawson 2006, p.27)

In this section, regarding the combination problem, I will add some of the main objections to Strawson's position in RM. Some of commentators doubt that we have a fully transparent grasp of our own (macro)experience. (Papineau, in Strawson (2016), p. 102; Rey, in Strawson (2006) p.112) More importantly, they argue that such a transparent grasp is sharply in tension, if not inconsistent: "with what my conscious experience turning out to be, in and of itself, quite different from how it appears to be in introspection: i.e. turning out to be constituted of the experiential being of billions of micro subjects of experience." (Goff, in Strawson (2006), p. 57, see also Papineau, in Strawson (2006), p. 107)

This raises at least two questions (in addition to the one just raised by Coleman: how can many little subjects add up to a big one?). First, why are we not aware of the complex structure or grain of our macroexperiences? Second, how can the combination of many microexperiences of one kind give rise to a macroexperience of another kind? (Goff, in Strawson (2006), p. 57-59)

Another area of concern is followed by these questions: how are the microexperiential and the macroexperiential related? The difficulty is raised explicitly in at least five commentaries. Carruthers and Schechter argue that the microexperiential and the macroexperiential are separated by an explanatory gap. (Carruthers and Schechter, in Strawson (2006), p.38, 39) Goff claims that the emergence of the macroexperiential from the microexperiential "is a kind of brute emergence which is arguably just as unintelligible as the emergence of the experiential from the nonexperiential." (Goff, in Strawson (2006), p.53) In addition, Lycan (in Strawson (2006), p.69), McGinn (in Strawson (2006), p.96), and Papineau (in Strawson (2006), p.107) make similar observations. These considerations pose the most serious threat to panpsychism. If panpsychism cannot explain the presence of macroexperience in the world then there is no longer any reason why the realistic physicalist should adopt it. If these critics are right, they assert, then panpsychism is not the only way of making sense of the existence of experience in the material world, for if there really is this gulf between micro- and macroexperience, then the existence of macroexperience remains a mystery.

In a reply to commentators, in PR, Srawson (2006) admits that pure panpsychism is "arguably the only respectable kind of panpsychism."(p. 246) Then, this, is the position to which the materialist who is serious about experience should retreat. Regarding the combination problem, according to pure panpsycism, microexperiences compose macroexperiences", and "unintelligible experiential-from-experiential emergence is not nearly as bad as unintelligible experiential-from-non-experiential emergence." (Strawson,2006 p. 250) The subject thesis, no experience without an experiencer, makes this problem particularly difficult: how can my experience be composed of the experiences of other subjects, experiences that I necessarily do not know "from-the-inside"? (Strawson 2006), p. 256) There must be, Strawson speculates, "Laws of Experiential Composition" that govern this process. But he is well aware that "all this needs, to put it mildly, development." (Strawson 2006, p. 261) Quoting Goff, he owns up to his "faith that *it must happen somehow"* (Goff in Strawson (2006), p. 60) and closes by saying that "the only argument for the claim that macroexperientiality emerges from microexperientiality, is transcendental… " (Strawson, 2006, p. 262)

As I mentioned in the first chapter, Seager and Allen-Hermanson(2015) noticed that the combination problem arises in most forms of panpsychism, except in Leibniz's form, which entirely escapes this objection. They also noticed that according to quantum mechanics this view of the combination problem raised by James (1890/1950), is inadequate. It has made it clear that systems are not simply the sum of their parts in James's sense but can exhibit properties that go beyond those of the parts and which cannot be detected by examining the parts in isolation. Some philosophers such as Barbara GailMontero(2017), see of this problem as an ill-conceived critique of panpsychism, because it searches for a solution to a question which the panpsychist should never have been asked.

# 2.6. Summing Up Strawson's View:

The first part of this section 'Strawson's view', I presented four of the arguments supporting the view. The first three argument provide Strawson's position with strength, specially the argument from non-emergence. The last argument, Strawson's 'real monism' or 'real physicalism' faces a great deal of objection; naturalizing phenomenality and bring it under the physical laws will be too puzzling for philosophy as well science. As I came to conclusion, if Strawson's real monism' is true, it is not compatible with the current physics we have. Then, we either need a new explanation of our current physics, or we will need a new physics that accounts for mental phenomena.

The second part of this section, I presented a problem that panpsychism generally faces, and it seems that Strawson's view faces it as well. As we will see the next section, by presenting my proposal I will show how my view can help Strawson's method avoid this problem.

# 2.7. Solving the Combination Problem in Strawson’s Approach

In this section, I would like to suggest a view, that can be compatible with Strawson's position, as well as the 'new' physics I mentioned. Thus, my proposal will be defending Strawson's panpsychistic 'real monistic' view which says that the mental is fundamental, and it is physical. Before that, I will present a background for my proposal in which I will present the topic, its relation to Strawson's position, also it will contain of the main terminology I will be using in my proposal such as cosmic consciousness, or collective consciousness.

Following Yujin Nagasawa and Khai Wager (2017), who claim that panpsychistic views are bottom-up models, Strawson's model, is a bottom-up view as well. It starts with phenomenal properties of physical ultimates and tries to build ordinary phenomenal properties from them (microexperiences connect to form macroexpeiences). In fact, this is the reason that makes this form of panpsychism face the combination problem. (Nagasawa & Wager, in Godehard & Ludwig, 2017 p.124).

I came up with my proposal inspired by my religious Druze beliefs, and the new paper by Yujin Nagasawa and Khai Wager about panpsychism, "Panpsychism and Priority Cosmopsychism"(2017). They say their Priority Cosmopsychism, a form which is parallel to panpsychistic forms, is a blueprint for alternative for panpsychism (in its general form) which faces a very hard problem i.e. the combination problem. (p. 128) In this paper the authors say, while a contemporary form of panpsychism says that phenomenality is prevalent because all physical ultimates instantiate phenomenal or protophenomenal properties. Priotity cosmopsychism that they propose says, phenomenality is prevalent because the whole cosmos instantiates phenomenal or protophenomenal properties. The consciousness of the cosmos is ontologically prior to the consciousness of individuals like us (p. 118). This view, they say, has a theoretical advantage over panpsychism, it avoids problems such as the combination problem, while maintaining several of its strengths. Priority cosmopsychism doesn't face the combination problem because, unlike panpsychism, it denies the phenomenal experiences are constituted by phenomenal properties of physical ultimates. Since it attributes basic consciousness to the cosmos and regards individual consciousnesses as derivatives of it. That is, contrary to panpsychism, it regards phenomenal experiences as derivatives of something 'larger' (i.e. the cosmic consciousness) rather than as the aggregate of something 'smaller' (i.e. phenomenal or protophenomenal properties of physical ultimates). In other words, panpsychism faces the combination problem because it is a bottom-up view- it starts with phenomenal properties or protophenomenal properties of the physical ultimates and tries to build ordinary phenomenal properties from them. Priority cosmopsychism on the other hand, is a top-down view- it starts with the cosmic consciousness and tries to derive ordinary phenomenal properties from it. (p. 124)

The authors say, their proposition may encounter some objections; one can argue it is not compatible with causal closure principles of physics. (p. 129) As we saw in the previous section, this principle tackles not only with panpsychism, but also with any non- reductive forms. After all, this principle is doubtful as I concluded above. Also, they say that, their view may seem highly counterintuitive since their priority cosmopsychism attributes consciousness to the cosmos. (p.128)

Their view enhanced my belief of a collective consciousness that I held before, and somehow provided me with confidence to offer my proposal. Their paper talks about general forms of panpsychism.

Therefore, my contribution will be by adding some elements to Strawson's view taken basically from the paper I've mentioned above, a step which I think, as Nagasawa and Wager (2017) suggest, may help Strawson’s view to avoid the combination problem. To maintain his monistic view, and to avoid falling into a form of dualism, I also will add elements from personal beliefs.

# 2.7.1. Terminology: Collective Consciousness, Cosmic Mind, Cosmopsychism in Literature

Richard Maurice Bucke (2009), a Canadian psychiatrist, explored the concept of Cosmic Consciousness in his book, A Study in the 'Evolution of the Human Mind' . He defined it as "a higher form of consciousness than that possessed by the ordinary man." According to Bucke, there are three forms or degrees, of consciousness: the first is simple consciousness, possessed by both animals and mankind; the second is self- [consciousness](https://en.wikipedia.org/wiki/Self-awareness), possessed by mankind, encompassing thought, reason, and imagination. And last, Cosmic consciousness, which is "a higher form of consciousness than that possessed by the ordinary man". (p. 1-3)

According to Bucke (2009), this consciousness shows the cosmos to consist not of dead matter governed by unconscious, rigid, and unintending law; it shows it on the contrary as entirely immaterial, entirely spiritual and entirely alive; it shows that death is an absurdity, that everyone and everything has eternal life; it shows that the universe is God and that God is the universe, and that no evil ever did or ever will enter into it; a great deal of this is, of course, from the point of view of self-consciousness, absurd; it is nevertheless undoubtedly true. (p.17-18)

[Michael Robertson](https://en.wikipedia.org/w/index.php?title=Michael_Robertson_(philosopher)&action=edit&redlink=1)(2010 p.133) noticed that Bucke (2009) and William James (1987) have much in common. Regarding cosmic consciousness, [William James](https://en.wikipedia.org/wiki/William_James) wrote:

"What again, are the relations between the cosmic consciousness and matter? ... So that our ordinary human experience, on its material as well as on its mental side, would appear to be only an extract from the larger psycho-physical world?" (p. 1264)

Bridgers (2005) claims that James understood "cosmic consciousness" to be a collective consciousness, a "larger reservoir of consciousness," which manifests itself in the minds of men and remains intact after the dissolution of the individual. It may "retain traces of the life history of its individual emanation". (p. 27)

In exploring alternative concept of God, different cosmopsychist views are made recently by Yujin Nagasawa and Khai Wager (2017), the one I've mentioned above; Ludwig Jaskolla and Alexander Buck (2012); and Freya Mathews (2003). Their cosmopsyhist views to which they appeal are radically different from the first.

Jaskolla and Buck's (2012) 'panexperientialist holism' presupposes existence monism, saying "there is exactly one entity-the universe itself". It also stipulates that the universe is "a subject of experience exemplifying experiential content". (p. 196)

Freya Mathews' (2003) "cosmological panpsychism", "the One" is a subject that "may feel the effects of finite centres of subjectivity in the field of its own larger subjectivity, even though it might not be able actually to experience the way such finite selves feel to themselves". In explaining the nature of the consciousness of the One, Mathews appeals to an idea in psychoanalysis saying, "Amongst the unconscious components of psyche are enduring constellations of psychological energy which never surface into ego consciousness yet which nevertheless may be active in the psychic life of a person". (Mathews 2003,148-149).

# 2.8. My Proposal:

I suggest to take Strawson's model a step back and presuppose a cosmic, collective mind or consciousness at the background of all the physical ultimates. I propose that a top-down model of panpsychism can help Strawson's method escape the combination problem, while maintaining his monistic panpsychistic view.

This collective consciousness is the only building blocks that exists. It is the source of energy in the universe; it is a generator of energy. All things derive from it, from a top to a bottom manner. And this collective consciousness connects them all together. According to this model the whole is prior to its parts, it is more than the sum of its parts. All consciousnesses are derivative of the collective cosmic consciousness. The collective consciousness is more basic than other consciousnesses in the sense that it is ontologically prior to, or ontologically more fundamental than other consciousnesses.

Since everything is derived from the source of energy, i.e. the cosmic consciousness. Then, everything is made from the same building blocks, i.e. energy. Therefore, the mental and the physical are made from the same matter. I suggest that, what we perceive in reality as 'physical' (in the standard sense), is 'intensive energy', which is literally solid, in a sense that its parts are close one to the other, e.g. our physical body, rocks and stones. The closer they are, the more intensive or solid they will be. For example, our physical body is less intensive than rocks and stones which are more intensive. And what we perceive in reality as 'non-physical' is 'subtle energy', e.g. thoughts and experiences.

In applying this collective consciousness in Strawson's bottom-up model, we will get that all consciousnesses found in the physical ultimates are derived from this collective consciousness. Now we need to convert it into a top-down model. We will find that, in this top-down model, all consciousnesses that are derivatives from the collective consciousness, will get forms of energy; subtle energies such as souls, experiences and thoughts, or intensive energy such as bodies, tables and chairs.

Monistic forms of panpsychism including Strawson's, can be misinterpreted as everything has mental states in the same sense as we do—for example, rocks have thoughts to the same extent that we do. This is implausible. In my model, there is an inner classification in this monistic consciousness; there are levels of consciousness: from high to low. The highest level of consciousness like God, or collective consciousness will be at the top level. At the medium level there will be the human mind. After that comes animals, then plants, and any biological beings. At the bottom (low level of consciousness), there will be concrete objects possessing the lowest level of consciousness. This classification of consciousness from high to low, can be best described via the sun analogy. The sun is the cosmic or collective highest consciousness, other derived consciousnesses will be the sun light. The closer a consciousness is to the sun, the higher it will be. And vice versa, the farthest a consciousness is to the sun, the lowest it will be.

Thus, both types of energies (intensive and subtle) are similar in components (made of energy), but different in forms on one hand, i.e. subtle or intensive, and in the level of consciousness on the other.

According to this model, we are conscious since we get our consciousness from a larger consciousness. As a human form, part of the energy remains subtle which is the mind, and part of it becomes intensive which is the physical body. It's a matter of expression; the physical body functions as an expression tool of our mind. Body and mind are substantially the same, but they are different in form. Therefore, the mind doesn’t act upon something substantially different from it like in dualistic models. The intensive form of the body changes into another one (in death and rebirth), while the subtle one remains as such; it can change in the level, i.e. becoming a higher or lower consciousness.

The combination problem:

According to panpsychism, all physical ultimates instantiate phenomenal or protophenomenal properties and our ordinary phenomenal experiences result from combinations of these properties. It is hard to see how phenomenal or protophenomenal properties of microphysical entities could add up to the homogeneous character of phenomenal experiences that we have.

So, the combination problem arises from this apparent discrepancy between macro-experiences and micro-experiences.

According to my view, it's not a matter of combination, it's rather a matter of derivation just like Nagasawa & Wager (2017) suggest. Micro-experiences, according to them, do not combine to form macro-experiences; consciousnesses in the macro level are not aggregates of something ‘smaller’. Rather, all consciousnesses in the macro level derive from this 'larger' collective, cosmic consciousness.

According to this, subtle mental events are already created in the mental realm, and then expressed in the intensive physical body. For example, a mind or a high consciousness of man for instance, already exists, preceding the process this (mind of man) getting an intensive physical form, a minded body, i.e. man. Man's mind is prior to his physical body. Mental events like thoughts and experiences are also as such. Their existence in man's mind is prior to actions in the physical form. So, like the collective consciousness, man's consciousness, as a macro-experience (as usually described) can generate thoughts and experiences as micro-experiences. Thus, man's micro-experiences derive from his own consciousness.

My proposal in short:

1. There is a priority monistic collective consciousness. It is the source of energy, the building blocks of reality.
2. Everything is energy. (What seems to us as) Mental and physical objects derive from the same building blocks, i.e. the collective consciousness. This collective consciousness connects them all together.
3. A top-down model: all consciousness that are derivatives from the collective consciousness, will get either of the two forms of energy; subtle or intensive energy. Thus, consciousness is an intrinsic nature of reality.
4. What we perceive in reality as 'physical' is 'intensive energy', e.g. bodies, rocks and stones, and 'non-physical' as 'subtle energy', e.g. souls, thoughts and experience.
5. Classification of consciousness: these consciousnesses range on a scale; from high consciousnesses (e.g. man) to low ones (e.g. concrete objects)
6. Both types of energies are similar in components (made of energy), but different in forms on one hand, i.e. subtle or intensive; and in the level of consciousness on the other one.
7. Consciousness is everywhere. i.e. panpsychism

# 2.9. Strawson's View and My Proposal

Strawson thinks that the most certain and real thing is the subjective experience. We know that he is right to think so, because one cannot deny its existence. Therefore, this is as we saw, Strawson's starting point. This experience is viewed by him as a physical phenomenon; a view with which many do not agree. I agree with Strawson in that everything is energy in the universe. (To avoid confusion, I did not use the term physicalism to refer to the mental as he did). To accept this idea, one needs, as Strawson thinks, a deep thought and cultivation of a shift in intuitions. And the peculiarity of the idea doesn't mean that it is incoherent. This view reminds me with Einstein's famous quote regarding what there is: "Everything is energy and that’s all there is to it. Match the frequency of the reality you want and you cannot help but get that reality. It can be no other way. This is not philosophy. This is physics*.*" Like Strawson, I also believe in the monist view that there is only one kind of stuff, mind, body, thoughts, emotions, experiences, table and chairs; they are all forms of energy.

I take the form of cosmopsychism, or, as I prefer to call it 'collective consciousness', because it is parallel for any form of panpsychism in structure, and thus to Strawson's view as well. It adds a new basic element to Strawson's view; i.e. the collective consciousness, which is connected to all the minds in the physical ultimates that Strawson relates to; these 'smaller' minds emerge or derive from this larger mind. Therefore, this view I've presented will be compatible with Strawson's view. It isn't inconsistent with neither of Strawson's premises. Both are non-reductive forms; for both mind is fundamental. It also goes with Strawson's arguments, non-emergence and intrinsic nature. As we saw in the model, energy which is consciousness is the intrinsic nature in all reality.

While priority cosmopsychism (suggested by Nagasawa and Wager 2017) can be seen as dualistic, like most panpsychistic forms, I tried to form one which is monistic just like Strawson's. Furthermore, it helps his view avoid the combination problem. Since the two views are compatible, therefore, Strawson probably might accept my proposition. After all, accepting a view based on a cosmopsychistic one, is left to his own view of the world and his own beliefs.

Like Nagasawa and Wager's (2017) model, this model may seem counterintuitive to many people. In addition, it is inconsistent with the causal closure principle, but we know there is no clear-cut arguments supporting this principle. After all, as I concluded before to defend Strawson's position, we need a new interpretation of physic or a totally new one; one which can account for the inevitable intrinsic part of the world, which is consciousness.

My contribution for Strawson's view is in two areas; it helps avoid the combination problem and it offers to range consciousness from high to low ones. In addition, we saw that Strawson's 'real monism' is puzzling, if the mental is the physical then it is hard to distinguish between them. We need to refer to each by different terms because they look extremely different. If Strawson's notion of the physical is adopted, then it is necessary to distinguish between both. My view divides reality, which is all energy, into two dimensions: subtle energy and intensive energy. If Strawson's view is false, then my proposal can be taken to a dualistic direction, simply by giving up Strawson's 'real monism', in which the mental is physical, and taking a form such as the one suggested in Yujin Nagasawa and Khai Wager's proposition.

# 2.10. Summing up Chapter 2:

In this chapter, after I presented the two positions of panpsychism, with the main differences between them, and clarified my positive attitude regarding Strawson's position rather than Chalmers'. I defended Strawson's positions, by using his strong arguments; non-reductionism, non-emergence, intrinsic nature. Before I got into his fourth argument 'real monism', I explained why any monistic form is preferable by science than dualistic ones. Then, I presented his 'real monism', which most philosophers do not agree with. Although their reasons are justified, I showed under which conditions Strawson's 'real monism' can still be taken into considerations. After that, I presented my proposal which suggests to replace Strawson's bottom-up view with a top-down method. I argue that such a model helps panpsychism views escape the combination problem which is considered as the most serious one standing against most panpsychistic forms. In addition, the classification of consciousness in my proposition, avoids taking consciousnesses that are in the physical ultimates to be at the same level in all beings. My model explains the interaction between mind and body without reducing one to the other, or considering any of which as substantially different from the other. Like Strawson's view, it's also a monistic view which science aims at, as we can see in the attempts to build a theory of unification.

Most materialists object to Strawson's position, especially his 'real monism'. Personally, I am not worried about this, because the most important insights in the human history of science were weird and unacceptable at the beginning. Human beings are usually driven by their (unconscious) fears towards new weird ideas, the fact which makes them deny such ideas. It is amazing the amount of the great philosophers who held such panpsychistic ideas in the past. However, now we are becoming more and more fans of eliminativism, which unfortunately became a normal thought among scientists and ordinary people as well. Some people even feel ashamed of showing their belief in metaphysics or in God. For they are committed to the mechanistic doctrines, that makes man a machinelike, lacking free well.

To conclude, if the arguments I used to defend Strawson's monistic position in the one hand, and if my proposal is justified on the other one, then the answer to the main question of this chapter *"Can panpsychism be compatible with non-dualistic (monist) forms?*" is: yes.

**Chapter 3: Quantum Mechanics as a Case Study of Panpsychism**

As we know, consciousness is the most familiar phenomena. We cannot deny its existence because of our direct experience with it. Consciousness is the basis of our reality and our existence, but the mechanism by which the brain generates thoughts and feelings remains unknown. Most of the explanations depict the brain as a computer, with nerve cells (neurons) and their synaptic connections acting as simple switches. However, the calculation alone cannot explain why we have feelings, awareness and "inner life". There are many quantum theories based on the common premise that "quantum mechanics" can help us to understand the mind that the "classical mechanics" cannot provide. In this section, I will examine more specifically this notion; consciousness as related to quantum mechanics. Then I will show how quantum mechanics can be a case study of panpsychism.

3.1. Quantum Mechanics and its Relation to Consciousness

As Ismael (2015) put it, Mathematically, the theory of quantum mechanics is well understood; we know what its parts are, how they are put together, and why, in the mechanical sense (i.e., in a sense that can be answered by describing the internal grinding of gear against gear), the whole thing performs the way it does, how the information that gets fed in at one end is converted into what comes out the other. The question of what kind of a world it describes, however, is controversial; there is very little agreement, among physicists and philosophers, about what the world *is like* according to quantum mechanics.

In short, the theory describes a set of facts about the way the microscopic world impinges on the macroscopic one, how it affects our measuring instruments, described in everyday language or the language of classical mechanics. Disagreement centers on the question of what a microscopic world, which affects our apparatuses in the prescribed manner, is, or even could be, like *intrinsically*; or how those apparatuses could themselves be built out of microscopic parts of the sort the theory describes. (Ismael 2015)

In classical mechanics, Gao (2006) asserts, the influence of the measuring device or the observer on the observed object can be omitted in principle during a measurement process, and the psychophysical interaction between the observer and the measuring device does not influence the reading of the pointer of the measuring device either. Thus, measurement is only an ordinary one-to-one mapping from the state of the observed object to the pointer state of the measuring device and then to the perception state of the observer, or a direct one-to-one mapping from the state of the observed object to the perception state of the observer. The consciousness of the observer has no physically identifiable functions that are different from those of the physical measuring device in the classical theory. (p.2-3)

However, in quantum mechanics Gao (2006) says, the measurement process is no longer plain. The influence of the measuring device on the observed object cannot be omitted in principle during a quantum measurement owing to the existence of quantum entanglement. It is just this influence that leads to the quantum-to-classical transition and generates the definite measurement result. Since the measuring device has already generated one definite measurement result, the psychophysical interaction between the observer and the measuring device is still an ordinary one-to-one mapping, and the process is the same as that in the classical context. But when the observed object and the observer directly interact, the existence of quantum superposition will introduce a new element to the psychophysical interaction between the observer and the measured object. The interaction will lead to the appearance of a conscious observer in quantum superposition. The consciousness of the observer in a superposition state can have a physically identifiable effect that is lacking for the physical measuring device, which is regarded as being lack of consciousness. (p.3)

Hence, the relationship between consciousness and quantum measurement has been studied since the founding of quantum mechanics (von Neumann 1932/1955; London and Bauer 1939; Wigner 1967; Stapp 1993, 2007; Penrose 1989, 1994; Hameroff and Penrose 1996; Hameroff 1998, 2007). Gao (2006) says, there are two main viewpoints claiming that they are intimately connected. The first one holds that the consciousness of an observer causes the collapse of the wave function and helps to complete the quantum measurement or quantum-to-classical transition in general (von Neumann 1932/1955; London and Bauer 1939; Wigner 1967; Stapp 1993, 2007). The second view holds that consciousness arises from objective wave function collapse (Penrose 1989, 1994; Hameroff and Penrose 1996; Hameroff 1998, 2007). Though these two views are obviously contrary, they both insist that there are no quantum superpositions of definite conscious perception states. (p.1)

 Regarding dualism and (monistic) physicalism, as Chalmers and Mcqueen (2016) put it, philosophers often reject dualism because physics is causally closed, leaving no role for consciousness. They proceed, in fact, physics leaves a giant causal opening in the collapse process, perfectly suited for consciousness to fill. Physicists often reject consciousness collapse because of dualism, while philosophers often reject dualism because of incompatibility with physics. We need independent reasons for rejection. Since as we saw, consciousness is a fundamental property involved in fundamental psychophysical laws. Chalmers and Mcqueen(2016) conclude that consciousness collapse interpretations promise simultaneously, an attractive, empirically testable interpretation of QM, as well as, an attractive approach to the mind-body problem; the fact which makes a place for the mind or consciousness in nature. (p. 46-48)

An interpretation of the theory would provide a proper account of what the world is like according to quantum mechanics, intrinsically and from the bottom up. After I showed how quantum mechanics and consciousness are related. I want to examine whether panpsychism in its two main forms (the dualist and the monist) can be compatible with quantum mechanics with an interpretation that accounts for consciousness. In this section, I will focus on von Neumann- Wigner's interpretation since it takes into consideration consciousness as a fundamental part in the measurement process, the fact which makes it relevant to panpsychism. The next section, I will examine how a quantum measurement sets a problem for physicists, leading them to access it differently.

3.1.1. The Measurement Problem: Approaches

Myrvold (2016) thinks, if quantum state evolution proceeds via the Schrödinger equation or some other linear equation, then, typical experiments will lead to quantum states that are superpositions of terms corresponding to distinct experimental outcomes. It is sometimes said that this conflicts with our experience, according to which experimental outcome variables, such as pointer readings, always have definite values. This is a misleading way of putting the issue, as it is not immediately clear how to interpret states of this sort as physical states of a system that includes experimental apparatus, and, if we can’t say what it would be like to observe the apparatus to be in such a state, it makes no sense to say that we never observe it to be in a state like that.

Nonetheless, he proceeds we are faced with an interpretational problem. If we take the quantum state to be a complete description of the system, then the state is, contrary to what would antecedently expect, not a state corresponding to a unique, definite outcome. This gives us a (*prima facie*) tidy way of classifying approaches to the measurement problem:

A. There are approaches that involve a denial that a quantum wave function (or any other way of representing a quantum state) yields a complete description of a physical system.

1. There are approaches that involve modification of the dynamics to produce a collapse of the wave function in appropriate circumstances.
2. There are approaches that reject both horns of Bell’s dilemma, and hold that quantum states undergo unitary evolution at all times and that a quantum state-description is, in principle, complete.

We include, Myrvold (2016) says, in the first category approaches that deny that a quantum state should be thought of as representing anything in reality at all. These include variants of the Copenhagen interpretation, as well as pragmatic and other anti-realist approaches. Also, in the first category, there are approaches that seek a completion of the quantum state description. These include hidden-variables approaches and modal interpretations. The second category of interpretation motivates a research program of finding suitable indeterministic modifications of the quantum dynamics. Approaches that reject both horns of Bell’s dilemma are typified by Everettian, or “many-worlds” interpretations. (ibid)

Based on Myrvold (2016), these approaches then are: non-realist approaches to quantum mechanics; hidden-variables and modal interpretations; Everettian, or “many worlds” theories; dynamical collapse theories. The last category, 'the dynamical collapse theories', fits my line of thought in this thesis, since it proposes that it is consciousness which causes the collapse.

Myrvold (2016) says that according to von Neumann and Dirac, if the collapse of the quantum state vector precipitated by an experimental intervention on the system is a genuine physical change, distinct from the usual unitary evolution. If collapse is to be taken as a genuine physical process, then something more needs to be said about the circumstances under which it occurs than merely that it happens when an experiment is performed. This gives rise to a research program of formulating a precisely defined dynamics for the quantum state that approximates the linear, unitary Schrödinger evolution in situations for which this is well-confirmed, and produces collapse to an eigenstate of the outcome variable in typical experimental set-ups, or, failing that, a close approximation to an eigenstate. The only promising collapse theories are stochastic in nature; indeed, it can be shown that a deterministic collapse theory would permit superluminal signaling. (ibid)

Thus, the quantum measurement problem is one of the most difficult conceptual problems in the foundations of physics. It is the problem of how (or *whether*) wave function collapse occurs. The inability to observe this process directly has given rise to different interpretations of quantum mechanics. This is an indication of its difficulty that the attempts to solve it have led physicists and philosophers of physics to speculate concerning the relationship between physical and mental states, and poses a key set of questions that each interpretation must answer**.**

The next section is the von Neuman-Dirac formulation of quantum mechanics, which provides us with a standard acceptable formulation that can lead us to Wigner's view which is directly accounts for consciousness.

3.2.2. The von Neumann- Dirac Standard Formulation of Quantum Mechanics:

Jeffrey (2014) describes the standard von Neumann-Dirac collapse formulation of quantum mechanics as based on four rules. There are two representational rules (1) representation of states: the state of a physical system *S* is represented by a vector **ψ***s* of unit length, sometimes called the wave function, in a Hilbert space *H* and (2) representation of observables: every physical observable *O* is represented by a Hermitian operator Ô on *H*, and every Hermitian operator on *H* corresponds to some observable.An interpretational rule (3) interpretation of states: a system *S* has a determinate value for observable *O* if and only if the system is in an eigenstate of the observable Ȏψ s =λѰs . And two dynamical laws (4a) *deterministic linear dynamics*: if no measurement is made, the system S evolves in a deterministic linear way: Ѱ(t1)s = Ȗ(t0; t1)ψ (t0)S and (4b) random nonlinear collapse dynamics: if a measurement is made, the system *S* randomly, instantaneously, and nonlinearly jumps to an eigenstate of the observable being measured, where the probability of jumping to ϕ*s* when *O* is measured is | Ѱϕ| 2. The first dynamical law (4a) explains quantum interference effects, and the second (4b) ensures that measurements yield determinate outcomes and explains quantum probabilities.

The problem with this formulation of quantum mechanics is that while measurement occurs as an undefined primitive term in the theory, the two dynamical laws typically give different predictions for the post-interaction state of a measuring device and its object system depending on whether one considers the device to be a physical system like any other or a collapse-causing observer. More specifically, if one treats an observer as a physical system like any other, then one should use rule 4a for the interaction between the observer and her object system; but if one takes the observer to be somehow special and capable of causing collapses, then one should use rule 4b for the interaction. And, since the two rules typically predict different states, one gets a logical contradiction if one tries to apply both. Further, and of particular importance to Wigner, there are also empirical consequences for when each rule is taken to apply- a point central to his friend story, which we will consider in the next section. So, the standard formulation of quantum mechanics is either (1) logically inconsistent if one thinks that observers and other measuring devices are physical systems like any other or (2) incomplete in an empirically significant way if one does not know how to identify systems that should count as measuring devices. This is the quantum measurement problem, Jeffrey (2014) concludes. (p.2-3)

3.2.3. Wigner's Proposal

Wigner was committed to the von Naumann-Dirak formulation. Jeffrey (2014) claims, as widely acceptable, that Wigner believed that quantum mechanics requires a commitment to a strong variety of mind-body dualism for its consistent formulation. (p.2)

Wigner's proposal for solving the measurement problem was simple:

The important point is that the impression which one gains at an interaction may, and generally does, modify the probabilities with which one gains the various possible impressions at later interactions. In other words, the impression one gains at an interaction, called also the result of an observation, modifies the wave function of the system. . . . [I]t is the entering of an impression into our consciousness which alters the wave function because it modifies our appraisal of the probabilities for different impressions which we expect to receive in the future. It is at this point that the consciousness enters the theory unavoidably and unalterably (1961 p.172-3).

Importantly, Jeffrey (2014) notes, while one might be tempted to read parts of this passage epistemically, Wigner took the collapse that resulted from the entering of an impression into the observer's consciousness to be a real physical process. As the Wigner's friend story makes clear, he took there to be experiments one might perform, at least in principle, to determine what systems cause collapses. His solution to the measurement problem, then, was to stipulate, as a fundamental principle of quantum mechanics, that a real physical collapse of the state occurs whenever a conscious mind gains the impression of the measurement result. (p.3)

Jeffrey (2014) says, there is, indeed, a sense in which Wigner's proposal immediately solves the measurement problem by sharpening rules 4a and 4b. The dynamical laws are now (4a') deterministic linear dynamics: if no conscious mind apprehends its state, the system S evolves in a deterministic linear way: Ѱ(t1)*s* = Ȗ (t0, t1) Ѱ(t0)*s* and (4b') random nonlinear collapse dynamics: if a conscious mind apprehends its state, the system S randomly, instantaneously, and nonlinearly jumps to an eigenstate of the observable being measured, where the probability of jumping to ϕ*s* when *O* is measured is |Ѱϕ |2. If there is a simple determinate matter of fact concerning whether and when an impression enters into a consciousness, these sharpened rules provide a consistent specification for the quantum dynamics. (p.3-4)

According to Jeffrey (2014), Wigner believed that this move was "required" for the consistency of the standard collapse theory, and he considered it to be the "simplest way out" of the quantum measurement problem (Wigner 1961, p.180). And, again, he took his specification of when collapses occur to have physical and empirical consequences. Namely, the state collapses caused by minds affect the quantum-mechanical states of physical systems and hence objective, observable properties of the physical world.

Wigner illustrated this with his friend story. Wigner's friend *F* has a measuring device M and both are ready to measure the x-spin of a spin-1/2 system *S*. The system *S* begins in the state

* 1. 1/√2(|*↑ᵡ>s* + |↓ᵡ>).

If we use the linear dynamics, rule 4a, and assuming ideal correlating interactions, after the measuring device M interacts with the object system *S* and after the *F* looks at the pointer on the *M*, the composite system *F +M +S* will be in the state

* 1. 1/ √ 2(|"↑x">F| "↑x">M|↑x>*s* + |"↓x">*F*|"↓x">*M*|↓*x*>*s*).

This state follows directly from the linearity of the dynamical law and the assumption that the interactions perfectly correlate the x-spin of *S* and *F*'s measurement record. By rule 3, this is a state where *F* has no determinate measurement record at all -indeed, he is in an entangled state with *M* and *S* here and hence does not even have a proper quantum-mechanical state of his own.

But if we use the nonlinear collapse dynamics, rule 4b, for the interaction between M and S, or for the interaction between *M* and *F*, or for when *F*'s mind apprehends the state, the composite system *F +M + S* will either be in the state

 (3) |"↑*x*">*F* |"↑*x*">*M*|↑*x*>*s*

or in the state

1. |"↓*x*">*F* |"↓*x*">*M*|↓*x*>*s*,

each with equal probability 1/2. In contrast with state 2, each of these states describe F as having a determinate measurement result on the standard eigenvalue- eigenstate link 3. In the first of these states, *F* determinately records the result: "I↑*x*" and in the second he determinately records the result "↓*x*."

Wigner (1961) argued that the state of the composite system must be either state 3 or state 4. To begin, Wigner believed that were he to ask the friend what the result of his measurement was, then he would hear his friend say something perfectly determinate. Then, after having completed the whole experiment, if he asked his friend, "What did you feel about the result of your measurement before I ask you?", the friend would certainly reply, "I told you already, I got the result ["↑*x*" or "↓x"] as the case may be. That is, the friend would report that the result of his measurement "was already decided in his mind" before Wigner asked him. He concludes this line of argument:

If we accept this, we are driven to the conclusion that the proper wave function immediately after the interaction of friend and object was already either [state (3)] or [state (4)] and not the linear combination [state (2)]. . . . It follows that the beating with the consciousness must have a different role in quantum mechanics then inanimate measuring device . . . (Wigner1961, p.176-177).

While Wigner (1961) recognized that it is not logically inconsistent to deny that the friend is right in reporting that he already had a determinate measurement result before he was asked, Wigner took such an option to be unacceptable. He argued that to deny that the friend has the same sort of determinate experiences that we do and hence causes collapses of systems to determinate property states "is surely an unnatural attitude, approaching solipsism, and few people, in their hearts, will go along with it (p. 177-8). So, Jeffrey (2014) comments, it is when the friend apprehends the state, and not when Wigner asks him what his result was, that the composite system collapses to a state where the friend has a determinate and now accurate measurement record. (p. 5)

Jeffrey (2014) proceeds, the precise sense in which such collapses involve a real physical process that produces in principle observable results was important for Wigner's argument. Consider an observable Ȃ of the composite system *F +M + S* that has

(5) 1/√ 2(|"↑*x*">*F* | "↑*x*">*M*|↑"*x*>*s* + |"↓*x*">*F* |"↓x">*M*|↓*x*>*s*)

as an eigenstate with eigenvalue +1, and

(6) 1/ √ 2(|"↑*x*">*F* |"↑x"M |↑*x*>*s* - |"↓x">*F*|"↓x">*M*|↓*x*>*s*),

as an eigenstate with eigenvalue -1. An observation of Ȃ would yield the result +1 with probability 1 if the interactions between *F, M*, and *S* are linear, and it would yield the result +1 with probability 1/2 and the result -1 with probability 1/2 if F's measurement somehow caused a collapse and state 3 or state 4 obtains. So, while extraordinarily difficult to perform due to the complexity of the object system and the difficulty in controlling for decoherence effects, there are at least in principle experiments that would determine what systems cause collapses, and hence what systems should count as conscious if, as Wigner argued, conscious apprehension causes collapses.

For his part, Wigner took the fact that his proposal had empirical consequences to be a virtue. In particular, it provided one a way, at least in principle, to determine which entities in fact cause collapses of physical states. The thought is that one might then compare this to one's pre-theoretic sense of which entities are conscious to test the theory's novel empirical predictions. (Jeffrey 2014, p.5-6)

3.3. Wigner's Interpretation and Dualistic Approaches

3.3.1. Wigner's Dualist Interpretation and Consciousness as a Fundamental Part of Reality

As we saw, according to Wigner, consciousness is fundamental to cause the collapse in QM and helps to complete the quantum measurements**.** It implies that there are collapses of the quantum mechanical state and that there must be a principled distinction between one type of system that always evolves linearly and another, strictly disjoint, type of system that causes collapses, and therefore, it endorses quantum mind-body dualism.

Wigner takes for granted the view that consciousness is a fundamental part of reality, and physical objects can exist only with a dependent relation with consciousness. (Wigner 1964[1967], p 192).

"…. In whatever way our future concepts may develop, that the very study of the external world led to the conclusion that the content of consciousness is an ultimate reality"(Wigner 1961 [1967] p. 172)

Applying this view as an attempt to solve the mind-body problem, can be explained as a result of viewing the consciousness of the observer as fundamental in reality (Wigner 1964[1967], p. 189). In taking this philosophical assumption, for Wigner only the content of consciousness is the one to complete reality and one can precisely explain where the wave function collapse takes place, in von-Neumann's chain. Therefore, he thinks the current form of quantum mechanics doesn't need any further interpretation or adjustments. (Wigner 1964[1967], p. 194) This explains why Wigner based his suggestion for solving the mind-body problem on an instrumental thesis rather than a realist one regarding quantum mechanics.

Despite the fact that the logical positivism was a dominant philosophical stream, with a great influence on science in Wigner's time, on the one hand, we cannot ignore the influence of the classical Cartesian philosophy on him, on the other hand as well. This point can be captured in Wigner's writings as follows:

"positivistic philosophy means that we attribute reality only to what can be observed." (Wigner 1983 [1997], p.138)

He argues therefore:

"on the part of most physical scientists [there is a return] to the spirit of Descartes's ' *'Cogito ergo sum*' which recognizes the thought, that is, the mind, as primary." (Wigner 1961 [1967], p.172).

The logical positivism view is a methodological recommendation on how the scientific research should be like. It is a theory of knowledge which asserted that only statements verifiable through empirical observation are cognitively meaningful, according to which, physical theories should be based upon criteria that make use of statements which include only measurable concepts such as those which describe sensory data, and do not take into consideration the metaphysical nature of the theoretical foundation.

Like Descartes, Wigner tried to claim his existence through introspection, which holds the mental as primary in reality. Descartes also held that physical objects are real and indicate for certain truths. They are fundamental in our reality. Thus, for Descartes, the world is divided into two distinct substances, and they exist independently. The mental substances *(res cogitas*) exist in the subjective thought, and the physical substances (which belong to science). As we saw, Wigner didn't totally adopt the Cartesian view, which sees the physical and mental substances as two different ontologies. Instead of this, Wigner took the mental content of consciousness as fundamental. He says:

"[…]there exists only one concept the reality of which is not only a convenience but absolute: the contents of my consciousness, including my sensation."(Wigner 1964[1967], p. 189).

And he clearly declared:

"I do not believe there are two entities: body and soul. I believe that life and consciousness are phenomena which have a varying effect on the events around us- just as light pressure does."(Wigner 1964 [1967], p. 609)

Thus, for Wigner, the physical reality is not absolute, it only exists dependently with mind. Hence, we get an ontology which includes within the mental element and the physical element; one that expresses two different aspects- two independent properties- of the same reality, i.e. the same reality realizes both properties (Wigner, 1964). The view we can get is an epistemological dualism which is less extreme than the Cartesian one, which denies any logical dependence between mental states and events on the one hand, and physical states and events on the other one, but enables causal relations between them.

3.3.1.1. Neumann-Wigner's View as Dualist Panpsychistic:

As we have seen, the Wigner's view is not an extreme dualistic one. Even we can notice that it shares some basic features with panpsychism. Both Wigner and the panpsychism claim that consciousness is fundamental in reality. He further says that physical reality can't exist independently of mind. His ontology includes within the mental element and the physical element; one that expresses two different aspects; two independent properties of the same reality. This means that the same reality realizes both properties, with an emphasis on mind or consciousness as being the intrinsic part. Panpsychism also holds a position that unites mentality with materiality; they are inseparable. And there is an emphasis on mind or consciousness as being fundamental in this ontology. So far, panpsychism and Wigner's view share similar ideas; they are somehow consistent with each other, except that he doesn’t accept that physical entities exist in reality. Panpsychism can be viewed as "dualism all the way down", and thus the Wigner's view; it can be read as a panpsychistic dualistic view.

3.3.2. David Chalmers and Kelvin McQueen: The Wave Function Collapse and its Compatibility with Dualistic Panpsychism

Chalmers, as we have seen in a previous section, argue that consciousness is fundamental in nature, it is subjective, non-physical and it can't be explained in physical terms. His view is described a form of epiphenomenalism, since it refutes the idea that consciousness has a causal role in our world. Thus, any physical effect, like a bodily behavior, will have a fully physical cause. Therefore, according to Chalmers, the world is causally closed.

Chalmers and McQueen (2016) have recently formulated a theory that accounts for the wave function collapse and consciousness. This theory, however, has different insights than those were held by Chalmers which have been discussed previously.

According to them the idea that consciousness collapses the quantum wave function is often invoked both as a potential solution to the quantum measurement problem and has a potential role for consciousness in the physical world. But, it is typically dismissed and has rarely been made precise. They claim, they put forward a way of making the idea precise and explore its benefits and costs for understanding physics and consciousness.

There is a wave like reality described by quantum mechanics, a collapse happens, then we experience the world as it is. There is a transition of quantum world to our world. According to this theory, there will always be an explanatory gap, because, there is a causal role of consciousness in nature and the physical world.

Because of the fundamental role of consciousness, Chalmers and McQueen (2016) think we need a quantum consciousness interpretation of quantum mechanics in which consciousness collapses the wave function, such as the von Neumann (1932), London and Bauer (1939), Wigner (1961), Stapp (1993) interpretations. However, they think, these have never been made rigorous. For them, collapse happens in reality, and it's triggered by measurement events.

Measurements are imprecise notions, but they play a fundamental role in physical dynamics. Therefore, Chalmers and McQueen (2016) infer, one needs to precisify the notion of measurement and clarify the basic principles. There are two options they say: either measurement is the observation by consciousness, which is the one to trigger the collapse; or, it is a physical process which this physical process is to trigger the collapse.

To explain this, Chalmers and McQueen (2016) present the hypothesis of "m-properties", which asserts that there are special properties, m properties (m-quantities or m-observables), which can never be superposed in principle, (while a system’s wave function is always in an eigenstate of the m-operator). Whenever an m-property enters a superposition, it collapses to definiteness, with probabilities given by Born rule for the associated m-operator.

One can assume that a particle can be an m-property which is false. Chalmers and McQueen (2016) explain this in the following passage, mainly because particles enter suprepositions: If an m-property is an m-particle, the m-property would be the position of special particles which is m-particle, whether it is fundamental or not. But the law of m-property works upon m-particles as well, i.e. they (particles) always have definite positions, which is incorrect. Particles enter superpositions. The dynamics given by mathematics of continuous strong measurement of m-quantities, Chalmers and Mcqueen (2016) add, as if someone external to the system was constantly measuring m-quantities like God. Whenever a superposed property becomes (potentially) entangled with an m-property, that property collapses; e.g. a photon with superposed position interacts with an m-particle. The m-particle probabilistically collapses to definite position, so does the photon.

Initially, a Photon is in superposition p1 + p2, m-particle is in location m. It interacts with m-particle in a way that would produce p1.m1 + p2.m2. m-particle collapses into m1 or m2. The result would be: p1.m1 (or p2.m2). The photon collapses too! The m-particle in effect acts as a measuring instrument. If an m-particle is in a slit of the double-slit experiment, it collapses the position of a superposed photon. M-particle = medusa particle (everything it looks at turns to stone).

M-Particles would need to be rare enough so that superpositions could persist, yielding the interference effects we see. However, they can’t be too rare; e.g. they are found in macro systems or brains, so that measurements always yield results. Therefore, Chalmers and McQueen (2016) claim there must be constraints on m-properties. First, they should be rare enough that observed interference effects don’t involve m-properties. They rule out position and mass. Second, they are common enough that measurements always involve m-properties, at least they should be present in brains.

Thus, m-properties would be a position of special particles, m-particles, whether are they fundamental or not (e.g. molecules). However, m-particles always have definite positions in principle, and this is a law which makes them unusual. Whenever a superposed property becomes (potentially) entangled with an m-property, that property collapses such as a photon with superposed position interacts with an m-particle, the m-particle probabilistically collapses to definite position, so does the photon.

Chalmers and McQueen (2016) argue that only consciousness is an m-property, i.e. consciousness can never be superposed. Whenever consciousness is about to enter a superposition, the wave function collapses. For them, there are some constraints on m-properties; they are rare enough that observed interference (particles are not rare enough thus they can't be as such. They are found in macro systems or brains), effects don’t involve m-properties, they rule out position and mass. They are common enough that measurements always involve m-properties and they at least present in brains.

They mention some virtues of consciousness as m-property: It is conceptual: clarifies measurement; epistemological: saves observation data; explanatory: explains non-superposability; metaphysical: fundamental property in law; causal: physical role for consciousness.

Regarding whether this theory is consistent with physicalism, Chalmers and McQueen (2016) claim that it is probable, since a pure physicalist may (reductive or nonreductive) see consciousness as a complex physical state of affairs that arises only under certain physical conditions (e.g. in human brains) for certain types of physical systems (e.g. biological organism, or perhaps turing machines). On the other hand, they argue that their view also can be consistent with dualism, for it may take consciousness as fundamentally nonphysical although it may have a causal effect on the physical. So, according to Chalmers and McQueen (2016) their view does not favour a dualistic approach over a physicalist one. However, they conclude that their view is inconsistent with panpsychism in its strong form for the following reason.

This form assumes that consciousness is everywhere, even in photons, thus photons would be conscious and collapse the wave function, but we know this does not happen. Photons enter superpositions and can't collapse the wave function therefore they are not conscious.

As I said in the second chapter, Chalmers holds a form of panpsychism, which is called panprotopsychism, it asserts that only some entities are conscious and possess mind or mind-like qualities. Therefore, this form of dualistic panpsychism can be compatible with his and McQueen's hypothesis of consciousness and the wave function collapse (m-properties), which supports dualistic view of the world; mind or consciousness on one hand and the physical world on the other one. Hence, as we saw, Chalmers and McQueen's dualistic panpsychistic view is consistent with the Wigner's view of the wave function collapse.

3.4. Non-dualistic Monistic Approaches and their Compatibility with Wigner's Interpretation

3.4.1. Non-Panpsychist Physicalist Approach:

Generally speaking, the physicalist view argues that the physical world is causally closed i.e. there is a purely physical explanation for the occurrence of every physical event and these explanations don't refer to any consciousness property (McGinn, 1999). Therefore, Non-panpsychist physicalist view would look at Wigner's view in a way which admits that there are certain (physical, chemical) events which are mental, and being mental is the only fact which makes them special. Such events are reduced to (or supervene on, or identical to) the physical. They undergo all the rules exactly the same way as other events such as electrons do. This point differs from the dualist Wigner's view which asserts that those mental events are non-reducible. They are non-physical and they do not undergo the Schrodinger's rules; they and only they cause the collapse of the wave function.

This view does not only hold that consciousness can be reduced to the physical, but also it emerged at some point of time from the physical. Thus, consciousness is by no means already fundamentally and intrinsically existent in matter like charge, mass and gravity. It can emerge only when matter is organized in such a complex (spontaneous) and rare way. Hence, some extreme physicalists also think that the so-called consciousness is just an illusion, and that spontaneous complexly put order of matter makes us feel conscious, or feel that 'there is something like' red or the taste of the garlic or any subjective experience. Thus, according to this view, consciousness doesn't take part in the causal chains of the physical world, and present itself in our investigation of the physical world, which in turn is causally closed. In other words, according to this view, the consciousness properties must lack any causal efficacies*.*

3.4.2. Panpsychist Physicalist View:

In this paper, I have presented Strawson's view as the most popular panpsychist monist (physicalist) in the contemporary philosophy of mind. For sure, Strawson wouldn't accept the previous (non panpsychistic) physicalist view. His view demands mentality not reduced to anything, but as fundamental in all entities, i.e. in the intrinsic nature of matter. For him, if a physicalist doesn't hold mentality as such, then he cannot be a real physicalist. He views the mental as prior to all other things, because it's the only thing we are sure about.

Strawson's view agrees with Wigner, Chalmers and Mcqueen's with the fundamentality of consciousness in nature. But, it demands much more than Chalmers and Mcqueen's one. It demands a kind of strong panpsychism, which holds that all entities at their basic level possess mind, i.e. particles possess mind. However, Strawson's view doesn't not explain why some consciousnesses, which are found in all particles, cause the wave function collapse and others don't. So, his view lacks some features that enable it account for such an interpretation of quantum mechanics. In the next section, I will show how my proposal (presented in chapter 2) can bring Strawson's view to a case, by which it can do so in terms of panpsychism.

3.4.2.1. My proposal: premise 5

In chapter 2, I mentioned that Strawson's model is a bottom-up view. I've presented my proposal, in which I suggested a top- down view structurally parallel to Strawson's view. It consists of 7 premises:

1. There is a priority monistic collective consciousness. It is the source of energy, the building blocks of reality.
2. Everything is energy. (What seems to us as) Mental and physical objects derive from the same building blocks, i.e. the collective consciousness. This collective consciousness connects them all together.
3. A top-down model: all consciousness that are derivatives from the collective consciousness, will get either of the two forms of energy; subtle or intensive energy. Thus, consciousness is an intrinsic nature of reality.
4. What we perceive in reality as 'physical' is 'intensive energy', e.g. bodies, rocks and stones, and 'non-physical' as 'subtle energy', e.g. souls, thoughts and experience.
5. Classification of consciousness: these consciousnesses range on a scale; from high consciousnesses (e.g. man) to low ones (e.g. concrete objects)
6. Both types of energies are similar in components (made of energy), but different in forms on one hand, i.e. subtle or intensive; and in the level of consciousness on the other one.
7. Consciousness is everywhere. i.e. panpsychism

I think a form of pure panpsychist physicalist view such as Strawson's would demand such description of the world as described above, all entities are put on a scale; they are distributed according to each entity's level of consciousness (premise 5 says that there is a classification of consciousness: these consciousnesses range on a scale; from high consciousnesses (e.g. man) to low ones (e.g. concrete objects). There are entities such as human brains, they possess high consciousness which enables them to cause the wave function. Plants would possess low ones. Other entities such as electrons of tables and chairs possess lower level of consciousness, which doesn't enable them to cause the wave function collapse. Hence, the consciousness can range from high levels to low ones. Only systems with high level of consciousness like particles of brains can collapse the wave functions. Other particle that possess lower consciousness level can only be in superposition and cannot collapse the wave function.

This is my panpsychistic explanation for the Wigner-Neumann's interpretation. While the latter says that only consciousness, which is found in brain particles, can cause the wave function collapse, the former (my view) says that consciousness is an intrinsic nature of reality, therefore, it is found in all particles. And since according to this model, consciousnesses range from high to low ones, only higher consciousnesses such as those in human brains can cause the collapse. It seems that there is no contradiction between those models, so, my view is consistent with the Wigner-Neumann's interpretation of quantum mechanics.

It is also consistent with Strawson's view; therefore, he can adopt it as a panpsychistic monistic view, so that it can explain, or account for the von Neumann-Wigner's interpretation of quantum mechanics. it is monistic, as I explained in chapter 2, since it sees everything as consisting from energy which is the building block of reality, which derives from a priority monistic collective consciousness. As I said before, unlike Strawson, I do not prefer using the term physicalism because this use of the term, referring to the mental and the physical both at once will lead to a confusion. A confusion which the current physics cannot bear, or our understanding of it doesn't bear adopting it.

3.5. Summing up chapter 3

In this chapter I, after I showed the relationship between consciousness and quantum mechanics. I focused on the Wigner- von Neumann's interpretation of quantum mechanics, which is considered as a dualistic view. I showed then that it can be seen as a panpsychistic dualistic one. I then presented Chalmers and Mcqueen's view, which seems to be compatible with dualistic panpsychism as well. Then I investigated whether a non-panpsychistic physicalist view and a panpsychistic physicalist view can be compatible with this interpretation. The former doesn't not seem compatible with the Neumann-Wigner's view, since it doesn't only take consciousness as fundamental, but it further reduces it to the physical, leaving it with no causal roles. The latter, which is Strawson's view, despite having some basic elements the Wigner-von Neumann's interpretation talks about, e.g. the fundamentality of consciousness in nature, it seems to be lacking some features that enable it account for such interpretation. It doesn't not explain why some consciousnesses, which are found in all particles, cause the wave function collapse and others don't. I claimed therefore, that a model such the one I proposed, which suggests different levels of consciousness can explain this issue. So, if Strawson accepts my proposal, then his form of panpsychism can account for the von Neumann-Wigner's interpretation of quantum mechanics in panpsychistic terms.

1. Mind here means consciousness as will be explained in the next paragraph. [↑](#footnote-ref-1)
2. this view can be viewed as epiphenomenalism. I will discuss this point in the next section. [↑](#footnote-ref-2)