Research Essay

The Subjective Core of Reality: Subjectivity, Relationality & Consciousness

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Abstract

Contemporary debates on consciousness often assume subjectivity – the quality of having a point of view or "what-it's-like" – emerges only at higher levels of biological complexity (i.e. in conscious brains). This essay defends a contrary thesis: that subjectivity is a primitive, non-conscious perspectival property inherent in all relational physical interactions, rather than an exclusively emergent feature of conscious minds. In our framework, every concrete physical interaction entails a minimal point of view (a "subjective" aspect) for the participating entities, even though these ubiquitous viewpoints are not conscious experiences in themselves. By clarifying the distinction between basic subjectivity and full consciousness, we argue that consciousness is an elaborated form of fundamental subjectivity, not an ontologically novel property arising from entirely non-subjective matter. We introduce the concept of relationality – the idea that reality's fundamental structure is defined by relations between entities – and illustrate it with accessible examples to ground the discussion. The paper's aims are to articulate this relational subjectivity theory, connect it with current empirical research on consciousness, and contrast it with major theories in the philosophy of mind (including physicalist emergence, panpsychism, and dualism). We provide philosophical justification for these speculative claims, particularly that subjectivity demarcates concrete reality (with causal power and perspective) from abstract objects (causally inert, with no perspective). We also expand the discussion of how our view aligns with relational interpretations of quantum mechanics (Everett's relative-state theory and Rovelli's relational quantum mechanics), which illustrate a world of perspectival facts that lend support to the idea of an observer-relative (though not necessarily conscious) aspect pervading physical reality.

Keywords: Reality, subjectivity, relationality, consciousness, quantum mechanics, basic subjectivity, full consciousness, physical reality.

1. Introduction

What is the place of subjectivity in the natural world? Traditional approaches often tie subjectivity inseparably to consciousness, treating it as the defining hallmark of conscious experience. In everyday terms, *subjectivity* usually refers to the first-person quality of experience – the idea that there is "something it is like" for a being to experience the world (Nagel's famous criterion) (plato.stanford.edu). By this standard, only conscious organisms (humans, animals, perhaps certain AI) are said to have genuine subjectivity, while inanimate matter or unconscious

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processes are deemed entirely objective or lacking any point of view. The prevailing scientific view of consciousness in neuroscience and cognitive science is largely physicalist and emergentist: consciousness (and hence subjectivity) is thought to emerge from complex information processing in the brain or equivalent systems. For example, Global Workspace Theory models consciousness as an emergent product of information integration and broadcasting across the brain's neural networks (en.wikipedia.org), and Higher-Order theories hold that conscious states arise when mental representations are the object of higher-order thoughts or awareness. On such accounts, primitive physical entities (like particles, neurons, chips) are entirely non-experiential; only when organized in particular complex ways do they give rise to a *subjective point of view*. This mainstream stance sharply distinguishes the realm of mind (with its subjective, qualitative character) from the realm of matter (purely quantitative, without perspective).

This paper proposes an alternative framework: that subjectivity is a fundamental feature of reality, deeply rooted in the relational structure of the physical world, and not exclusively tied to consciousness. In brief, we argue that *to be a concrete thing is to have a perspective*. Even an electron, a rock, or a plant – while certainly not conscious in the way a human is – participates in interactions that *from its side* constitute a kind of "point of view" on the world. This perspectival character is what we call *subjectivity*: a primitive, intrinsic orientation or aspect that every physical entity has by virtue of its relations to others. Crucially, this does not mean electrons or rocks have thoughts or feelings; it means that subjectivity in our account is more akin to a basic *perspectival being* – the fact that each entity exists as a distinct locus of interaction, and thereby *the world shows up differently from its standpoint*. Consciousness, with its rich inner life and self-awareness, is then understood as a special, complex case of this ubiquitous subjectivity – a case where the basic perspectival property is greatly amplified, unified, and enriched by cognitive structures. Thus, consciousness is *continuous with* the rest of nature, rather than an inexplicable anomaly, because the seed of subjectivity is present even in the simplest relations. The aim of this paper is to articulate this position clearly, address potential confusion (especially distinguishing subjectivity from consciousness), and demonstrate its philosophical and empirical relevance.

The motivation for positing fundamental subjectivity arises from the long-standing "hard problem" of consciousness (Chalmers 1995) – the difficulty of explaining how subjective experience could *emerge* from wholly non-subjective matter. If our world's fundamental ingredients are entirely objective (lacking any perspective or experiential quality), it remains mysterious how assembling enough of them in a brain suddenly produces first-person experiences. This has led some philosophers to explore alternatives to strict emergent materialism. Panpsychism, for instance, holds that *mentality is fundamental and ubiquitous* – that some form of experience or proto-experience exists in all matter (plato.stanford.edu and (plato.stanford.edu). Our proposal shares the spirit of panpsychism in rejecting a brute emergence of experience from utterly non-experiential stuff. However, we diverge by

emphasizing relationality and by carefully defining what fundamental "mentality" entails: *not* full consciousness in every particle, but a more austere quality (subjectivity as perspectival being-in-relation). In this sense, the view can be seen as a form of pan-proto-subjectivism: all concrete entities have a proto-subjective aspect by virtue of their relational existence, which under certain organizational conditions (e.g. in brains) yields conscious experience. This contrasts with classical panpsychism that might attribute *feelings* or *experiences* (however rudimentary) to electrons or atoms. By positing a primitive subjectivity that is *not itself conscious*, we aim to avoid category errors and anthropomorphic leaps while still accounting for how consciousness can fit into nature.

In what follows, we first clarify our key concepts. We define relationality in physical terms and give intuitive examples of how relations *constitute perspectives*. We then define subjectivity as used here and distinguish it from consciousness. Next, we lay out the core argument that subjectivity is a primitive feature of concrete reality. We provide justification for this claim, including why subjectivity might differentiate *concrete, causal reality* from *abstract, causally inert entities*. We then relate our framework to current empirical research on consciousness. Here we discuss how our view can be seen in light of neuroscience and cognitive science findings – for instance, how integrative brain processes (as studied in theories like Integrated Information Theory and Global Workspace Theory) might manifest or leverage fundamental subjectivity. We also highlight predictions or connections our theory makes that could, in principle, be empirically explored (e.g. the gradations of consciousness across species or artificial systems). In a subsequent section, we compare and contrast our approach with several major theories in philosophy of mind: we consider how it differs from standard physicalist emergence, from dualist ontologies, from panpsychist approaches, and from Russellian monism or neutral monism (which posit that physical reality's intrinsic nature might be mental or proto-mental). This situates our contribution in the broader landscape.

Finally, we expand on the philosophical implications of relationality by examining resonances with modern physics – notably the relational aspects of quantum mechanics as seen in Everett's and Rovelli's interpretations. Everett's Relative-State (or Many-Worlds) Interpretation and Rovelli's Relational Quantum Mechanics (RQM) both suggest that *there is no view from nowhere in physics*: facts or states are always specified relative to some frame or system. We discuss how these frameworks illustrate a universe where what is real for one system may be perspective-dependent, thus conceptually supporting the idea of an embedded "point of view" at the fundamental level (albeit without invoking consciousness in physics). We will show that RQM, for example, explicitly drops the notion of observer-independent states and asserts that all physical quantities are relational (plato.stanford.edu), effectively introducing an indexicality or perspectival aspect to every interaction (plato.stanford.edu). We argue this is analogous to the "subjectivity" we propose: each interaction yields a fact *for* some system, echoing the idea that each entity has its own "world" of relations. In conclusion, we summarize how conceiving subjectivity as the core of reality's relational web offers a unified picture: one that is

philosophically coherent, empirically relevant, and capable of bridging the apparent chasm between mind and matter.

2. Relationality in Physical Interactions: Defining the Concept with Examples

A central concept in our account is relationality. By this we mean that *to exist is to exist in relation*: the properties and even existence of an entity are determined through its interactions with other entities. In a relational view of reality, relations are not secondary features plastered onto self-sufficient objects; rather, the relations *constitute* the objects' states and realities. This idea has roots in both philosophy and physics. For instance, in philosophy, thinkers like Leibniz (with his relational view of space and time) and Whitehead (process philosophy) argued that relations are ontologically fundamental. In modern physics, relational ideas surface in theories like general relativity (where space and time are not fixed backdrops but defined by relations between masses and events) and relational quantum mechanics (as we discuss later). But one need not venture into esoteric theory to grasp relationality – it can be illustrated with simple, accessible examples.

Example 1: Relative motion. Imagine two spacecraft drifting in deep space. Spacecraft A observes Spacecraft B moving away. From A's perspective, *B is moving* and A might consider itself "at rest"; from B's perspective, *A is moving*. There is no absolute fact of the matter about who is "truly" moving – motion is a relation between the two. Each craft is a reference frame for the other. This everyday insight from relativity illustrates that a property like velocity is relational (defined with respect to something else) and that each entity sees the relation from its own perspective. We do not normally call this "subjectivity," but it shows that even in basic physical descriptions, there is an implicit perspectival structure – what is true or observed depends on the relational context (who is measuring whom). When we later speak of each entity having a perspective, this is the sort of basic idea we mean: *the state of the world is indexed by relations*. As Rovelli notes in explaining RQM, when we say "our speed is 11 km/s with respect to the Sun, we are not attributing subjectivity to the Sun" (plato.stanford.edu) – indeed not consciousness, but we are acknowledging that speed is a fact only relative to the Sun (from the Sun's frame we have that speed). In other words, the property (speed = 11 km/s) is *relational* and perspectival (it's a statement from a certain viewpoint).

Example 2: Interaction as exchange of information. Consider a simpler scenario: a billiard ball A collides with ball B. From A's perspective, it imparts some momentum to B; from B's perspective, it receives a knock from A. Each ball's state changes through the interaction – A slows down, B speeds up. Importantly, the interaction can be seen as an *exchange of information* or influence. A "learns" something about B (there is an obstacle there), and B "learns" something about A (a force came from that direction). Again, we need not anthropomorphize the balls – they have no minds – but the point is that the interaction is two-sided. It produces a pair of

related changes, one in A and one in B, each of which is relative to the other. There is a perspective embedded in this: the effect on A is *due to B*, and vice versa. Each ball can be considered the "subject" of its experience of the collision, where "experience" here simply means the physical impact received. In this minimal sense, *each ball has an experience of the event, namely the effect on its state*. We will later connect this to the idea of proto-experience in panpsychist theories. The key takeaway is that in any interaction, each participant can be considered as having its own *side* of the relation – its own "take" on what happened. This constitutes a rudimentary sort of subject–object structure: A acted on B (from A's perspective, B was the object affecting it; from B's perspective, A was the object).

Example 3: Sensing in simple organisms. At a slightly higher level, think of a single-celled organism like an amoeba reacting to a chemical gradient. The amoeba moves toward a nutrient source – we say it "senses" food. There is a clear relation: chemical molecules bind to receptors on the amoeba's membrane, triggering internal changes and leading to motion. Here the relational interaction is between the chemical and the amoeba. From the amoeba's side, the world has a certain feature ("more nutrients this way"); from the chemical's side, it is being absorbed or bonded. The amoeba has no neurons or brain, and we can assume it is *not conscious*. Yet, it exhibits a simple form of subjectivity in our sense: it is an agent with a perspective defined by its relation to the environment. It prefers some states (nutrient-rich) over others, and it acts on information relevant to itself. This perspectival, active orientation is a building block of what in more complex systems becomes consciousness. The amoeba's encounter with the chemical has a subjective pole (the amoeba "experiencing" an attraction) and an objective pole (the chemical as experienced by the amoeba). While the amoeba likely has no *felt* experience or inner world, it nonetheless instantiates a primitive subject-object relation in the physical sense.

From these examples, we draw a general insight: every concrete interaction in the physical world has two (or more) faces, one for each participant. Each participant is, in a trivial sense, the "subject" of the interaction from its own side – meaning the interaction is something that *happens to it* and affects its state. This two-faced nature of interaction is what we mean by relationality giving rise to perspective. Whenever system S interacts with system S', *S has an interaction state relative to S'* and *S' has an interaction state relative to S*. In physical terms, one might say the two systems become entangled or correlated, but there is no God's-eye view of the interaction without choosing a frame.

We can now venture a definition: Relationality is the principle that the properties and states of physical systems are determined by their relations (interactions) with other systems, and these relations inherently involve an *orientation* or *point of view* for each participating system. This does not imply that the systems have *awareness* of the interaction; it only means the interaction defines a state-of-affairs *for each system*. In the relational quantum mechanics literature, this is sometimes described by saying that facts are relative: "different observers can give different accounts of the same set of events" (plato.stanford.edu), not because of error, but because the

events are genuinely relational. For example, in a Wigner's friend scenario, the friend has seen a definite outcome (a fact for the friend), while Wigner (treating friend+lab as a system) may still describe the situation as a superposition (a different fact for Wigner). RQM asserts no single, absolute account exists that isn't tied to a viewpoint. We see a parallel in our everyday relational examples above: the "fact" of who is moving, or who is exerting force, or where the nutrient is, is perspectival.

By grounding the somewhat abstract notion of relationality in these examples, we prepare the way to talk about subjectivity in a new light. We will argue that subjectivity can be understood as the intrinsic *perspectival aspect* of these relations – essentially, the fact that each relation has a *subject-side*. Before making that case philosophically, however, we must clarify how we are using the term "subjectivity," and how it relates to (and differs from) "consciousness," to ensure there is no confusion.

3. Subjectivity vs. Consciousness: Distinguishing the Concepts

In common usage, subjectivity often means the same as conscious experience – the *phenomenal* or first-person aspect of mental states. Philosophers sometimes equate "subjective states" with felt experiences (qualia), and contrast "subjective" with "objective" to mark the difference between how things *appear to a subject* and how they are in themselves or to others (plato.stanford.edu and plato.stanford.edu). If we strictly follow this usage, one might say that only conscious beings have subjectivity, since only they have experiences that feel like something. However, in this paper we adopt a broader notion of subjectivity, carefully distinguished from full-fledged consciousness. This broader notion could perhaps be termed *proto-subjectivity* or *perspectival subjectivity* to avoid confusion, but for stylistic simplicity we will use "subjectivity" with the understanding of this special meaning. Here is a clear definition to guide the reader:

- **Subjectivity (primitive, perspectival sense):** a primitive property of *being a subject-of-interaction*, i.e. occupying the "subject pole" in a relation. It is the inherent perspectival orientation that any concrete entity possesses in virtue of the fact that it interacts with others. This means the entity has a *way things are for it* – not necessarily in a cognitive or experiential manner, but in a purely relational sense (the state it is in as a result of its interactions). Subjectivity in this sense does not entail self-awareness, thought, or feeling. It is a pre-reflective, non-conscious quality. One might poetically say it is "what it is like to be *something*," but here "what it is like" is stripped of any sensation or image; it refers only to the fact that the entity is *itself* and not another, situated in a web of relations from its unique standpoint.

- **Consciousness (phenomenal, reflective sense):** a higher-order manifestation that includes awareness, qualia, and often the ability to report or reflect on mental states. Consciousness in the usual philosophical sense implies there is truly "something it is like" experientially to be the organism or system (plato.stanford.edu). It involves integrated experience, memory, perhaps attention, etc., depending on one's theory (whether one means merely *phenomenal consciousness* or also *access consciousness*, to use Block's terms). For our purposes, consciousness is the full-blown subjective experience as humans know it (and presumably many animals to varying degrees) – it is subjectivity plus mental content, a richly structured, qualitative point of view that the being can (at least potentially) introspect or report.

With these definitions, we can rephrase our thesis more clearly: we propose that subjectivity in the primitive, perspectival sense is an intrinsic feature of all concrete entities, while consciousness is a special, complex form of subjectivity that arises in certain organized systems (brains). This means that while every physical thing has subjectivity (a perspective), not everything is conscious. All conscious beings are subjects, but not all subjects (in the broad sense) are conscious beings. Consciousness *requires* subjectivity as its groundwork – there must be a point of view for there to be a felt experience – but subjectivity itself *does not require* the trappings of consciousness.

Consider an analogy: electric charge is a fundamental property of matter, but not all charged particles form an electric current. However, an electric current (organized flow of charges) cannot exist without the charges. In this analogy, subjectivity is like charge – a basic property present in each unit – and consciousness is like a current – a particular organized process involving those units. Just as charges might exist in isolation, never producing a macroscopic current, subjectivity might exist in simple entities without ever producing consciousness. And just as the laws of electromagnetism might look very different when describing a large current versus individual charges, so too the principles describing human consciousness differ from those describing a single proton's perspective. Yet, there is continuity: the current is nothing mysterious beyond many charges moving in concert, and consciousness is, in our view, nothing ontologically extra beyond many primitive subjective relations integrated in complex ways.

By clarifying this, we address a possible misunderstanding: one might have thought our theory implies that rocks *have consciousness* or feel pain (a position often deemed absurd). We are not saying that. Rather, a rock has no neural network, no information integration in the manner of a brain, and thus no consciousness or mind. However, the rock is still a concrete entity that partakes in interactions (with the ground, with temperature changes, etc.), and in each of those interactions the rock has a perspectival aspect (e.g. it *receives* heat from the Sun, it *exerts* gravity on a pebble, etc.). Those countless trivial "viewpoints" never collect into anything like a mind for the rock – they remain fragmented and simple. In a human or animal, by contrast, the body and brain organize interactions (sensory inputs, internal signals) into an integrated perspective, a

single self that experiences the world. Thus, consciousness could be seen as the *integrated sum* of an enormous number of relational perspectives unified into a complex, dynamic structure. This resonates, in fact, with some modern theories of consciousness. For example, Integrated Information Theory (IIT) posits that consciousness corresponds to the amount of integrated information (denoted Φ) in a system and that it has properties like "intrinsic existence" from the system's own intrinsic perspective (royalsocietypublishing.org and royalsocietypublishing.org). IIT explicitly suggests that even simple systems have non-zero Φ and thus a tiny spark of consciousness (or at least *proto-consciousness*) – which aligns with our notion that a minimal subjective aspect exists in all systems, though IIT would say such low-Φ systems have extremely trivial experience or none at all. Koch and Tononi note that IIT implies consciousness is fundamental and graded: "the theory holds that consciousness is a fundamental property possessed by physical systems having specific causal properties... consciousness is graded, is common among biological organisms and can occur in some very simple systems" (royalsocietypublishing.org). Our view can be seen as offering a metaphysical justification for such a claim: if subjectivity pervades all matter, then it is plausible that as soon as matter has the right causal organization, the existing subjectivity blooms into actual consciousness. In other words, IIT's axioms (like "intrinsic existence") could be reinterpreted as reflecting that every system exists from its own point of view (intrinsically) (royalsocietypublishing.org) – precisely our claim about fundamental subjectivity.

Another current theory, the Global Neuronal Workspace (GNW), offers a different picture of consciousness as global availability of information in the brain (psychologytoday.com and psychologytoday.com). GNW is typically cast in functional terms without metaphysical commitments: when information from various modular processes is broadcast and integrated, it becomes conscious (psychologytoday.com and psychologytoday.com). Our view would say: what is being broadcast is content *for the subject*, and the subject exists at all times (even unconscious brain states belong to the subject, just not illuminated in the "workspace"). Traditional GNW doesn't speak of a subject per se, but implicitly the "global workspace" is the workspace *of* an agent or system. In our terms, the brain is a single integrated perspectival entity (the person) and consciousness arises when that perspective attains a certain unified informational structure. If one were to remove the assumption of an intrinsic perspective (subject) in a pure functionalist account, one faces the question: who or what has the global workspace's content? Our proposal builds the subject into the picture from the ground up – it's not something extra to be generated; it's the *thread* that ties the processes together.

To further cement the distinction between subjectivity and consciousness, consider a hypothetical scenario: a future where we create an artificial system that mimics human behavior perfectly (a sophisticated AI or robot). Will it be conscious? The standard debate revolves around whether it has the right functional architecture or biological substrate. In our framework, we would ask: does the system integrate a perspective in a way analogous to a brain? All the transistors and circuits certainly have the fundamental subjectivity (as any physical systems do),

but have we *organized* them such that they form a unified subject that experiences? If yes, then it will be conscious; if not (if it is merely a collection of processors without integration into a single standpoint), it might still *act* conscious without an inner life. This view thus naturally accommodates the possibility of philosophical zombies or AIs without consciousness – not because they lack an ineffable soul, but because the subjective aspects present in their parts were never tied together into a single subject. Conversely, it also allows the possibility that some artificial systems *could* become conscious if configured appropriately, since nothing is lacking in their matter – no special spark is missing, only the organization of the always-present subjectivity.

In summary, subjectivity in our essay means *being a perspectival participant in reality*, and this applies to all concrete things; consciousness means *having an inner experiential perspective*, which requires not just being a participant, but being an integrated, complex, self-referential participant. We have now set the stage to explore the implications of this view. The next section will lay out why we think subjectivity must be a primitive feature of concrete reality, and how this claim can be justified and made coherent without slipping into unfalsifiable mysticism.

4. Subjectivity as a Primitive Aspect of Concrete Reality

Why assert that subjectivity is primitive? This claim might seem bold or speculative, so it requires careful justification. We offer several lines of argument: conceptual, metaphysical, and empirical, to support the idea that a perspectival aspect belongs to matter at the most basic level. We also contend that this subjectivity marks a key ontological distinction between concrete entities, which have it, and abstract entities, which do not. We address that distinction first, as it helps clarify what we mean by "concrete reality" and why subjectivity would be absent from the abstract.

Concrete vs. Abstract: Causal Presence and Perspective. Philosophers define abstract objects (like numbers, mathematical sets, propositions) in part by their lack of causal powers – they do not enter into physical interactions (plato.stanford.edu). A standard criterion is: *an object is abstract iff it is non-spatial and causally inefficacious* (plato.stanford.edu and plato.stanford.edu). For example, the number 7 does not push or pull anything; it does not emit light; it isn't located anywhere in space or time where it interacts. Concrete objects, by contrast, are things that exist in space-time and can be causes and effects (whether physical, like rocks and electrons, or mental, like a moment of thought in a mind). Because abstracta are by definition outside the web of causation, they also lack a perspective: perspective is a feature of being *situated* among other things, which abstracta are not. We do not ask "what is it like to be the number 7," not just because it has no mind, but because it does not *exist as a bounded entity in the world* at all in the way a concrete thing does. It has no relational context – it's an idea, an element of a formal structure, not an agent or patient of interactions. Thus, when we restrict our

discussion to "reality" we principally mean the concrete reality of physical (and mental) events that are part of the causal nexus. Our assertion is that subjectivity – the perspectival, relational being – is a distinguishing feature of all concrete entities. If something is concrete, it *participates* in reality and thereby has a from-its-perspective aspect; if something is completely abstract, it is like a shadow cast by thought, with no standpoint of its own.

One might object: "Certainly abstract objects have no perspective, but why think every concrete thing does? Isn't perspective something that only arises for complex organisms?" Here we must be careful. If by "perspective" one imagines a rich experience of the world (like a human perspective), then yes, not every concrete thing has that. But as clarified, we're speaking of perspective in the minimal sense that the thing occupies a viewpoint in the network of relations. Even a tiny particle has the universe *acting on it in a specific way unique to its position and state* – that is its "perspective" on the universe. This minimal perspective becomes richer and more elaborate as we ascend the hierarchy of complexity. An electron might have essentially a set of relations (fields affecting it, forces from other charges) – its "view" is nothing more than those interactions happening to it. A plant has a more complex perspective – it "views" its environment in terms of sunlight, gravity, water gradients (again, not pictorially, but through how it is causally affected). An animal with a nervous system has a yet more complex perspective, built out of sensory inputs and internal states – now we are approaching an actual subjective experience. By the time we get to humans, the perspective is *world-encompassing*: we have memory, language, introspection, and can represent not only the immediate environment but abstract concepts. But crucially, at every stage of this complexity ladder, the simpler stage is not utterly divorced from what comes after; it's continuous. There is a throughline of *being an entity for which things can happen*. This is what we claim is present all the way down.

Another motivation for believing in fundamental subjectivity comes from the failure of strict emergence. Many philosophers have argued that you cannot get mind from matter if matter is defined as entirely mind-less. This is often referred to as the "explanatory gap" or the uniqueness of qualia (subjective qualities) which seem irreducible to physical descriptions. Galen Strawson has put it provocatively: if you're a "real" physicalist (one who thinks everything is physical), you should conclude that *experience itself is a physical feature of reality*, because denying that leads to the impossible task of deriving experience from non-experience (ndpr.nd.edu). He and others suggest that perhaps what we call "physical" has been too narrow – maybe matter has an "inside" aspect (experience or proto-experience) that complements its "outside" aspect (mass, charge, behavior) (plato.stanford.edu). Our theory can be seen as a variant of this idea: subjectivity is like the hidden interior of physical relations. When two particles interact, physics describes the exchange of momentum, forces, etc., which is the external, third-person account. The internal, first-person corollary (by first-person here we mean the particle's "point of view") is simply that the interaction occurred *to that particle*. Now, a particle is not aware, but if we imagine scaling this up, once you have something like a brain, the internal side of all the neural interactions could collectively become an actual feeling or experience. In other words, by

postulating subjectivity at the ground floor, we provide a potential bridge over the explanatory gap: consciousness doesn't emerge ex nihilo, it's the flowering of an intrinsic aspect that was always present in matter's interactions.

We can also appeal to parsimony and explanatory power. If one rejects any form of fundamental subjectivity, one must explain consciousness purely in terms of emergent structures and functions. While enormous progress has been made in identifying the neural correlates of consciousness (NCCs) and proposing mechanisms for cognitive aspects of consciousness, many agree that the hard problem remains – why those mechanisms *feel like something* internally (plato.stanford.edu). By contrast, if fundamental subjectivity is real, then it is not surprising that when you arrange a complex self-referential network (the brain), it results in a robust subjective experience – because you are amplifying and knitting together countless threads of perspective into one unified tapestry. This doesn't *solve* the hard problem in a conventional sense, but it dissolves it by saying: we were looking for subjectivity in the emergent product, but in fact it was also in the ingredients, just in a much simpler form. The hard problem partly arose from an assumption that the ingredients had no trace of what they combine into. Remove that assumption and the gap is less mystifying (it becomes akin to how life arises from non-life: if you allow that molecules can have proto-life properties like self-organization, then the emergence of life is no miracle but a continuum).

Moreover, positing a subjective aspect to matter can potentially yield hypotheses that connect to empirical research. For example, neuroscience might look for signatures of "unitary perspective formation." Indeed, research in integrative neuroscience already looks at how disparate stimuli get bound into a single experience (the binding problem) and what distinguishes unconscious processing from conscious processing. Under our view, one could hypothesize that *when previously independent relational processes in the brain become integrated into a single dynamical complex, a unified subjectivity (hence a conscious experience) results*. This is consonant with IIT's notion that consciousness corresponds to integrated information beyond that of parts (royalsocietypublishing.org). It also meshes with evidence from anesthesia and disorders of consciousness: when the brain's integration breaks down, consciousness fades (e.g. anesthetics that disrupt cortical communication eliminate conscious reports, suggesting the unified perspective has fragmented). Such observations do not *prove* fundamental subjectivity, but they are *compatible* with it and even expected if one takes that lens. Conversely, if one believed consciousness is entirely emergent and fundamental reality is objective process only, it's puzzling why only certain integrated processes have subjective experience while others (e.g. a complex computer running a simulation) might not – unless one sneaks in some dualistic property or denies the computer could be different. Our view straightforwardly says: any system that manages to gather a lot of relational interaction into one complex will have *that much subjectivity as a whole*. A computer *could*, if arranged right, have it – if not, it's because its architecture keeps the interactions too separate or doesn't allow a global perspective. This is admittedly speculative, but it shows how thinking in terms of fundamental subjectivity can

inform interpretations of empirical data and guide new inquiries (e.g. searching for minimal consciousness in simpler systems, or probing how conscious experience might gradually diminish in simpler neural networks or even in certain quantum systems if at all).

To sum up this section: we argue subjectivity is primitive because (1) abstract, non-relational entities lack it, suggesting it is inherently tied to being a concrete, relational thing; (2) avoiding it leads to an explanatory gap in accounting for consciousness, whereas including it provides continuity from physics to phenomenology; and (3) it offers a conceptually parsimonious way to interpret why certain physical organizations yield experience. The speculative nature of claiming "electrons have perspective" is tempered by the clarity that this perspective is not consciousness, and by aligning this claim with a broader philosophical tradition. In fact, our proposal can be seen as a modern form of panexperientialism, which was notably developed by Alfred North Whitehead. Whitehead's process philosophy held that every actual occasion (fundamental event) has both an objective and a subjective aspect; he described basic events as "drops of experience" that *prehend* or feel aspects of prior events (openhorizons.org and openhorizons.org). This is strikingly similar to our view: "there is prehension, feeling, everywhere" (openhorizons.org), meaning every interaction involves a feeling (though not conscious feeling) on the part of the interacting occasions. Whitehead even asserted that these prehensions can be unconscious and are the building blocks of conscious experience in higher organisms (openhorizons.org). Our theory can be considered a close cousin to Whitehead's, cast in more contemporary terms and informed by modern physics. Like Whitehead, we are wary of "anthropophobia" (a fear of attributing any mind-like quality to non-minds) (footnotes2plato.com) – such fear can blind us to genuine continuities in nature. Instead, by humbly extending a minimal form of subjectivity to all, we can better understand how our own subjectivity fits into the cosmos.

Having laid out and justified the thesis of primitive subjectivity, we now turn to seeing how this idea interfaces with current scientific and philosophical discussions. The next section examines connections with empirical consciousness research, and thereafter we will compare our view to other prominent theories of mind.

5. Integration with Empirical Consciousness Research

A philosophical theory of consciousness, especially one as wide-reaching as ours, should ideally connect with ongoing empirical research rather than float in isolation. In this section, we explore how the relational subjectivity theory relates to and can be informed by findings in neuroscience, cognitive science, and consciousness studies. We also consider whether our view suggests any new empirical avenues or reinterpretations of data.

Neural Correlates and the Substrate of Subjectivity: Decades of research have identified specific brain regions and activity patterns linked with conscious experience – the so-called neural

correlates of consciousness (NCCs). For example, synchronized activity in the 30-70 Hz (gamma) range across distant brain areas has been correlated with conscious perception; the posterior cortical "hot zone" has been implicated in core visual and sensory experiences; and prefrontal activity is often linked with higher-order awareness and reportability. Under a strictly emergent view, these neural features *somehow* generate subjectivity when present. Under our view, we would say these neural features correlate with the heightened integration of subjectivity into a unified conscious field. The mechanisms that NCC researchers identify (like particular feedback loops or thalamo-cortical circuits) can be thought of as the *process of knitting together the individual subjectivities of many sub-parts into the single subjectivity of the whole mind*. This is a slightly unusual interpretation, but not one that drastically changes the empirical project – it mostly adds a layer of description: *whose* perspective is active when these neurons fire synchronously? The answer: the system as a whole achieves a single perspective (the person). When those synchronies break down (e.g. under anesthesia, which often reduces long-range communication), the perspective fragments or diminishes, and thus consciousness fades. This aligns with empirical observations that loss of consciousness (in sleep, anesthesia, seizures) corresponds to a breakdown in integrated activity across the brain, even if local activity persists.

Integrated Information Theory (IIT) and Empirical Measures: IIT, mentioned earlier, is not just a philosophical theory but attempts to be mathematically and empirically grounded. It posits that the quantity Φ (phi) measures the degree of integrated information and by hypothesis the degree of consciousness. Empirical work has tried to estimate Φ or related metrics in brains and even in simpler systems (frontiersin.org and pmc.ncbi.nlm.nih.gov). For instance, the perturbational complexity index (PCI) is a measure derived from EEG responses that correlates with levels of consciousness in coma patients and anesthetized subjects – essentially measuring how complex (integrated and differentiated) the brain's response is. These approaches are in harmony with our view: the higher the integration and complexity, the stronger the unified perspective (hence more vivid or richer consciousness). In fact, IIT's central postulate – that *consciousness is a fundamental property of physical systems with specific causal properties* (royalsocietypublishing.org) – could be read as an empirical counterpart to our metaphysical postulate about subjectivity. The difference is that IIT would ascribe actual (albeit tiny) consciousness to basic systems with any $\Phi > 0$. Our view might stop short of calling that "consciousness," reserving that word for when Φ is above some threshold to generate recognizable experience. But we certainly see a continuum: a photodiode registering light might have an extremely minute Φ; IIT might say it has the faintest glimmer of experience (perhaps so faint as to be pragmatically zero). We would say the photodiode has a perspective (it registers either light or dark relative to its threshold), which is the seed of what in more complex form becomes experience. So the philosophical difference is subtle – primarily about where one draws the line of "consciousness." Empirically, however, both views suggest looking for *graded signs* of consciousness in simple systems and expect no magical discontinuity. Recent evidence that bees can be knocked unconscious with anesthetics and possibly have something like dream

states, or that even small-brained animals exhibit complex behaviors, fits with a graded view of mind. Our theory would encourage looking even at networks of neurons in vitro or simple organisms to see if some minimal "subjective integration" can be detected (though measuring subjectivity directly is tricky, one could look for analogues of choice, preference, or integrated response as hints).

Global Workspace and Cognitive Access: The **Global Workspace (GW) theory** suggests that information becomes conscious when it is globally broadcast to many cognitive systems (psychologytoday.com and psychologytoday.com). This is often tested by looking at differences between consciously perceived vs. subliminal stimuli: consciously perceived stimuli evoke widespread brain activation (the "ignition" pattern, especially in fronto-parietal areas) while unperceived ones only produce localized sensory activity. This "broadcast" is said to enable reporting, memory, decision-making, etc. How does this map to fundamental subjectivity? We might say that even a subliminal stimulus had a *subject*, but that subject (the person) did not fully integrate that stimulus into the global perspective (it remained a fleeting, isolated relation in the visual cortex, for example). Thus it never became part of *what the subject is aware of*. In fundamental terms, the subject (the person's perspective) exists in both cases, but in one case the content reached the core of that perspective (the global workspace), in the other it did not. Our view thus meshes with GW by treating the global broadcast as the formation of a *unified subjective experience* from multiple inputs. In other words, cognitive access (global broadcasting) is the process of the subject incorporating a piece of information into "its world." If that fails, the subject still exists but its "world" lacks that piece (hence the person reports no awareness of it). This interpretation might encourage experiments on intersubjective integration: e.g., what happens if two people are connected via brain-machine interface sharing information – can a coupled system form a joint subjectivity? (Some philosophers have speculated about collective consciousness or whether split-brain patients have two subjects, etc.) Our theory would predict that if you truly integrate two brains to function as one unit, a higher-level subject could emerge encompassing both – a provocative idea, but not entirely science fiction given current brain-to-brain interfaces in lab settings. Conversely, if you fragment a single brain's communication (as in a split-brain patient), you may effectively create two separate centers of subjectivity (which is one interpretation of split-brain results where each hemisphere seems to have its own perceptions and wills).

Phenomenology and First-Person Data: Empirical science of consciousness increasingly tries to incorporate first-person reports and even train subjects in introspection (e.g., in micro-phenomenology or using experienced meditators to report on fine-grained experience). If subjectivity is fundamental, one might ask: can we detect its presence in systems that cannot report? This is a challenge. Some propose looking at intrinsic behavior or dynamics as "self-reports" of simpler systems. Our framework doesn't give a direct solution, but it suggests that *any* physical system will behave in a way that is oriented by its perspective. For instance, even a plant "reports" its perspective by growing toward light, which implicitly tells us "I, the plant,

experience more light on this side, so I grow that way." In a loose sense, that is the plant's perspective manifesting in behavior. We can thus extend the notion of "report" to include *any outward sign of an inward orientation* – though for non-conscious entities, "inward" just means internal state. This perhaps overly broadens the idea of empirical detection, but it means that to test if a system has a perspective, we look for whether it reacts to stimuli in a state-dependent way (which pretty much all physical systems do!). Thus it may be more fruitful to ask not "does it have a perspective" (yes, if physical and concrete), but "does it have a *unified* or complex perspective akin to consciousness?" For that, measures like Φ or global communication patterns are suitable.

In conclusion, our theory integrates with empirical research by providing a metaphysical backdrop that *complements* existing frameworks like IIT and GNW. It largely does not conflict with their empirical content, but it does prefer certain interpretations (e.g. IIT's panpsychist implication is welcomed rather than seen as absurd, and GNW's cognitive story is underlain by an ontological subject). By aligning with these theories (royalsocietypublishing.org and en.wikipedia.org), we show that current science is not actually incompatible with a fundamentally subjective universe – in some ways, science is gravitating toward theories (like IIT) that already hint at it. We believe that as empirical consciousness studies advance, especially into areas like whole-brain modeling, brain-organoids, or fundamental physics links to consciousness (e.g., some researchers exploring if quantum processes play a role, etc.), having a theory like ours could provide a valuable perspective. It cautions scientists not to dismiss the subjective as an epiphenomenon, but to consider it as *real* as any other property, with lawful connections to structure and dynamics. In the next section, we shift focus to the philosophical arena, comparing our approach with other major theories of mind to clarify its uniqueness and address potential criticisms.

6. Contrasting with Other Theories in Philosophy of Mind

Our proposal of relational fundamental subjectivity can be situated among the established positions in philosophy of mind. To demonstrate its significance and originality, it's important to contrast it with other major theories: materialist emergentism, dualism, panpsychism (including panprotopsychism), and others like idealism or neutral monism. By doing so, we can highlight both the similarities (where our view draws on strengths of each) and differences (where it avoids pitfalls or adds new insights).

1. Classical Materialist Emergentism: This is the mainstream physicalist view held (implicitly or explicitly) by many scientists: consciousness is something the brain *does*, an emergent property of neural computation, with no fundamental existence independent of that activity. In this view, prior to a certain threshold of complexity, there is simply no subjective experience; matter is "dark" or blank in terms of phenomenology. Only when arranged in a brain does some

magic of complexity ignite the light of consciousness. Our theory departs from this by denying that subjectivity is entirely absent at lower levels. We agree that brains are special in producing vivid consciousness, but we say this is because brains concentrate and organize subjectivity that was already present in matter. The emergentist might retort that our view is unnecessarily baroque – why add this pervasive proto-subjectivity? One answer is the explanatory gap: emergentism tends to treat subjective experience as a brute fact that appears when neurons fire in certain ways, whereas we attempt to explain *why* it appears (because the conditions allow the inherent perspectival nature of matter to manifest as conscious awareness). Another answer is that emergentism faces the challenge of mental causation: if consciousness is just a byproduct, why should it have any causal role? But people's experiences do seem to affect their behavior (I withdraw my hand because it *hurts*). If subjectivity is fundamental, it's not surprising that it has causal influence – it's part of the causal fabric at all levels (just as charge is fundamental and always causally relevant). In emergentism, one must either accept epiphenomenalism (consciousness does nothing, which is counter-intuitive and arguably self-defeating) or argue that somehow the emergent property is also a cause (which sits uneasily in a purely physical story unless we allow some form of top-down causation). By giving subjectivity from the get-go, our view naturally allows that when subjectivity becomes complex (conscious), it can play a causal role as just a more elaborate instantiation of what was always a feature of interactions. In terms of parsimony, emergentism has the simpler ontology (one kind of stuff, no subjectivity except in brains), while we have a slightly richer ontology (subjectivity everywhere). However, one could argue we are *more* parsimonious in another sense: we have one category (subject-inclusive physical reality) rather than two disjoint categories (totally objective matter vs. subjective mind) with a mysterious bridge. In effect, we unify mind and matter at the base, so we avoid the bifurcation that emergent materialism ultimately has (at emergent levels, the ontology suddenly includes new qualities). Historical note: Some emergentists like Roger Sperry advocated a non-reductive physicalism where emergent mental states have causal power as high-level fields, etc. Our approach can be seen as an extreme form of *non-reductive physicalism* – so non-reductive that the mental is present even in the micro. We provide a more continuous spectrum rather than a jump.

2. Dualism: Classical substance dualism (Descartes) posits a mental substance separate from physical substance, with some interaction between them (or parallelism). Property dualism, a modern variant, says mental properties (qualia, etc.) are fundamentally distinct and irreducible to physical properties, even if they emerge from physical substrates. Our theory is not dualist in the sense that we do not claim two kinds of substance or disconnected properties. We assert everything is physical (if one broadens physical to include these perspectival aspects). In fact, our view can be seen as a kind of monism: there is one kind of stuff (the stuff of the world) which has dual aspects – an extrinsic relational aspect (described by physics) and an intrinsic perspectival aspect (which becomes mind when developed). This is reminiscent of Spinoza's double-aspect theory or Russellian monism in contemporary philosophy, which suggests that

physical science tells us about structure and relations of things, but not their intrinsic nature, which could be mental or proto-mental. We align well with Russellian monism: the intrinsic nature of the physical, in our account, *just is* this subjectivity or perspectival being. So one might classify our theory under the Russellian monism umbrella (often also called panprotopsychism if one says the intrinsic nature is proto-mental, not full mental). The key difference from dualism is that we don't have an independent realm of mind interacting with matter; every bit of matter has its "mind-face" already. Therefore, we avoid issues like how to connect two disparate substances. However, by acknowledging a fundamental "hidden" aspect, some critics might say we're introducing something as problematic as dualism – but since it's wedded to the physical, it's not truly dual. In short, we preserve the unity of nature that physicalists prize, but incorporate the irreducible reality of the mental that dualists insist on, by effectively saying the mental (subjectivity) is a universal side of the physical.

3. Panpsychism: As discussed, panpsychism holds that *mind-like aspects are ubiquitous*. Our view is closely related, arguably a form of panpsychism. The main nuance is in what we attribute to fundamental entities. Traditional panpsychism might say electrons have tiny experiences, or that the universe is composed of "psychophysical" units that have consciousness in some form. This raises the classic combination problem: how do simple minds combine to form complex minds? We address this by effectively downplaying the "mind" in simple entities – an electron's subjectivity is so minimal (indeed possibly just a mathematical perspective with no qualitative feel) that we might call it *proto*-experience rather than experience. This is why some would call our view panprotopsychist (fundamental entities have proto-mental properties which are not themselves experience, but can combine to produce experience). This avoids having to imagine trillions of little consciousnesses inside your brain forming a bigger one (which seems unintuitive). Instead, we imagine trillions of essentially blind perspectives getting fused into a conscious perspective. There's still a combination problem (how do they fuse?), but it's more tractable because what's being fused is not full selves, but perspective fragments. Whitehead's philosophy tackled combination by his theory of *prehensions* and *concrescence*, where many feelings are absorbed into one higher-order feeling (footnotes2plato.com). We won't delve into Whitehead's technicalities, but conceptually we resonate with that: each moment of a conscious mind "prehends" the activity of sub-parts (neurons, etc.) and integrates them. Neuroscience calls it binding; philosophy here calls it combination of subjectivities. Our approach thus embraces panpsychism's core insight (mentality is fundamental and ubiquitous plato.stanford.edu) but tries to refine what that mentality is (subjectivity without consciousness). We also avoid an extreme version of panpsychism sometimes called cosmopsychism (the universe as a whole is one consciousness that subdivides). Our view is more bottom-up: tiny subjectivities build larger ones. However, interestingly, it is compatible with top-down thinking too – one could ask, is the *entire universe* a vast web of relations that constitute one mega-perspective? Possibly not a *unified* one because the universe isn't tightly integrated like a brain, but it's an open question. We don't rely on that notion.

4. Idealism: In idealist philosophies (Berkeley, or some interpretations of quantum mechanics or certain Eastern philosophies), it's mind or consciousness that is fundamental, and the physical world is a kind of appearance or construct of mind. Our theory is not idealism in the strict sense, because we still treat the physical as real and external – we are not saying "only consciousness exists." Rather, we're saying everything that exists has (or is) both physical and subjective aspects. So it's a kind of dual-aspect monism as mentioned. One could cheekily call it "idealism of the gaps" where even particles have a sort of mind, but it's not really the idealist notion of a perceiving mind that gives rise to reality. Instead, reality gives rise to perceivers by virtue of containing that potential in itself. We keep the ontology symmetric: mental and physical are two intertwined sides of one reality. This differs from idealism which usually privileges the mental (e.g., saying the physical is an illusion or exists in consciousness). We do the opposite of privileging: we democratize – everything is both subject and object in some measure.

5. Other notable theories: There are various specific theories (like eliminative materialism or illusionism which claim consciousness is not what it seems or doesn't truly exist as we think). Our view would strongly reject such positions as they essentially deny the reality of the first-person. By contrast, we take the first-person (subjectivity) so seriously we put it at the foundation of reality. Another view is epiphenomenalism (consciousness exists but is causally inert). Our stance, by making subjectivity fundamental, implies it is part of causal relations intrinsically (since every causal relation *is* an interaction with two sides, the subject side being part of it). Thus, we would expect consciousness, as a concentrated form of subjectivity, to have causal efficacy (which aligns with common sense and many neuroscientific models that treat conscious decisions as having causal effects, even if underlain by neural processes). Neutral monism (James, Mach, Russell) posits a single kind of substance that is neither purely mental nor purely physical but underlies both. Our view can be cast as a flavor of neutral monism where the "neutral stuff" is basically these relational events which, when viewed externally are physical, and when viewed internally are experiential (or proto-experiential). This is very much in line with Russellian monism as earlier noted. So in summary, one could place us in the company of integrated monist views, providing a bridge between reductive physicalism and panpsychism.

In contrasting our theory, it's evident that we share some commonality with panpsychism and dual-aspect monism, but we emphasize relationality more than many of those do. For instance, some panpsychists consider each fundamental particle as an isolated tiny mind. Our view stresses that it's in the *interaction* (relation) that the subjectivity really is defined. This resonates with quantum relational views (next section) and makes our account arguably more contextual and dynamic: a particle alone in empty space – does it have subjectivity? One might say it has potential, but until it interacts, there's not much to speak of. In this way, we incorporate a bit of pragmatism or process: subjectivity isn't a static property that just sits in a particle; it's actualized in interactions. This can answer an objection to panpsychism: "If electrons have experience, why don't we see evidence of it?" In our view, an electron's subjectivity is basically

the relational aspect of its interactions, so outside of interactions it's moot. And in interactions, all we "see" is the physical side; the subjective side for an electron can't be communicated to us (since it's not conscious to report, etc.). Thus, it's unsurprising we don't have direct evidence – yet the theory isn't unfalsifiable, because it will live or die by whether it provides a coherent framework that can possibly unify physical and mental explanations, and whether it can inspire testable implications (like encouraging search for simpler consciousness or specific combination pathways, etc., as we've discussed).

Having mapped out these comparisons, one can appreciate that our theory is an attempt to take the best of both worlds: It takes physicalism seriously (there is one natural world governed by relations and described by science) and also takes the reality of experience seriously (it's not an illusion or magic but built into nature's fabric). By doing so, we aim to offer a focused, coherent account that can speak to both philosophers and scientists – avoiding jargon like "spirit" or "dualism" that alienates science, but also avoiding reductionist dismissal of inner life that alienates the reality of what it's tackling.

Next, we turn to examine in more detail the promised discussion of quantum mechanics interpretations by Everett and Rovelli. This will further bolster the relational aspect of our view and show that even fundamental physics has moved in a direction that makes room for perspectival (if not subjective) reality.

7. Relational Quantum Perspectives: Everett and Rovelli

One intriguing line of support for a relational, perspectival ontology comes from quantum physics. Two interpretations in particular – Everett's relative-state (many-worlds) interpretation and Rovelli's relational quantum mechanics (RQM) – challenge the classical notion of a single, observer-independent reality. They suggest that what is true in quantum events is always relative to some frame or system, which resonates strongly with the idea of fundamental subjectivity (though these physicists themselves typically avoid conscious language). We will outline each interpretation briefly and draw connections to our theory of relational subjectivity.

Everett's Relative-State Interpretation (Many-Worlds): Hugh Everett in 1957 proposed that the wavefunction of quantum mechanics never collapses; instead, every possible outcome of a quantum measurement exists in a vast superposition, and when an "observer" interacts with a system, they become entangled, splitting into branches that correspond to each outcome. Each branch has an observer who sees a definite result. In effect, the observer and the observed system form a joint state, and the observer's experience is only of one branch – the one relative to their state. Everett described the apparent collapse as the *subjective experience* of an observer who is part of the quantum system (plato.stanford.edu). In fact, Everett's approach explicitly aimed to account for the perceptions of observers *within* the theory, by treating observers as physical

systems and deriving that they will experience a single outcome (even though globally all outcomes happen) (plato.stanford.edu). This language of "the subjective experiences of observers" (plato.stanford.edu) is telling: it acknowledges that what we call a physical outcome is tied to an observer's viewpoint within the universal wavefunction.

How does this tie to our theory? Everett's interpretation suggests that reality at the quantum level does not pick a single objective outcome; it instead contains *all* outcomes, each tied to a particular branch (observer-state). Each observer (could be a conscious human, or even an inanimate measuring device modeled as "observer") has a perspective from which one result is realized. This is a radical form of relational reality: the result is *relative to the observer*. One could say each observer has their own "world" (hence the term many-worlds, though Everett himself used "relative state" more). Our theory says every interaction involves a perspective for each participant – and Everett's theory is a grand confirmation of that: in a measurement interaction, the quantum system and the observer each end up with their own correlated states. The observer's state is entangled with a specific outcome for the system; the system's state is entangled with a specific state of the observer. There is no view from outside this entangled pair that selects one – only an external meta-observer would see the superposition of all. In essence, Everettian quantum mechanics naturalizes the notion of a "subjective fact". The fact "the electron's spin is up" is not an absolute fact but a fact for the observer who saw it up (and that observer themselves is now in a state corresponding to having seen "up"). For another branch's observer, the fact is "spin is down." Both are real, but relative to different observer-subjects.

One might wonder, does Everett imply each physical system has something akin to a viewpoint? Possibly yes: each branch could be thought of as reality from the viewpoint of one version of the observer. The theory heavily emphasizes there is no need for an external wavefunction collapse or an absolute reality – everything is perspectival or relationally defined by the entanglements. If one were inclined, one could say that Everett's formalism provides *mathematical backing* to the idea that for every physical interaction, there is a "subjective" aspect (the branch relative to each participant). However, a caution: Everett's interpretation deals with conscious observers (like people or measuring devices we treat as macroscopic observers). It doesn't literally say an electron is an observer of another electron. But in principle, one could extend the logic: any interaction between two systems can be viewed as each becoming correlated – from system A's perspective, it has state X and B has state Y; from B's perspective, it has state Y' and A has X', etc. This is more explicitly handled in Rovelli's interpretation.

Rovelli's Relational Quantum Mechanics (RQM): Carlo Rovelli in the 1990s formulated RQM, which goes even further in generalizing the observer concept: every physical system can play the role of "observer" to another. RQM posits that the values of quantum variables (outcomes of measurements) are only defined *relative to another system*. There is no objective, "absolute" state of a single system in isolation; properties are instantiated only during interactions between systems (plato.stanford.edu and plato.stanford.edu). This leads to a picture

where if system A interacts with B, A might have a well-defined outcome relative to B, but for a third system C, which hasn't interacted, there's no determinate outcome yet (hence Wigner's friend type scenarios). Rovelli is careful to say 'relative' does not mean 'subjective' in the sense of personal opinion or consciousness (plato.stanford.edu). He wants to avoid any anthropomorphic connotation – *subject* for him just means a physical reference system, not necessarily a human mind (plato.stanford.edu). He writes: "There is nothing subjective, idealistic, or mentalistic in RQM" (plato.stanford.edu). Nonetheless, the language used – observer-dependent values, relational existence of facts – is philosophically very suggestive. As the SEP article on RQM summarizes, RQM abandons the assumption that physical variables have absolute values and instead assumes "all contingent physical variables are relational" (plato.stanford.edu). This introduces a kind of indexicality to reality (plato.stanford.edu), meaning any statement of a fact must be indexed to the system with respect to which that fact is defined.

Relating to our theory: RQM essentially says *the world is a network of interactions, and each interaction yields facts that are relative to the participating systems.* This is one-to-one with our statement that each interaction has a subjectivity aspect for each participant. The difference is just the choice of word "subjectivity" vs. "relation." RQM intentionally avoids "subjectivity" because in physics that suggests consciousness or agent-centric language which they don't need. But from a philosophical standpoint, we can interpret RQM as indicating that *every physical system is a kind of "perspective" on the world.* If system A and B interact, you can say "A sees B as having property X" and "B sees A as having property X'." This is not metaphor – it's literally the formalism: A's state has correlation with X, B's with X'. If we generalize "sees" to mean "obtains information about" or "is affected by," then indeed each system has its own view of the interaction.

Notably, RQM even contemplates whether it leads to a form of "quantum solipsism" or relational solipsism – the idea that each observer has their own reality. However, RQM proponents argue there is consistency when observers communicate: they can *agree* on shared facts through further interactions (the so-called "cross-perspective links" that ensure intersubjective agreement) (philosophyofphysics.lse.ac.uk). This is analogous to how, in everyday life, we have different perspectives but we can communicate and establish a common objective picture. In RQM, there is no ultimate view from nowhere; objectivity is like an intersection of multiple subjectivities via communication.

For our theory, these quantum interpretations provide a *striking parallel*: the fundamental theory of physics itself might be telling us that the universe is relational and perspective-bound all the way down. If even a quantum particle doesn't have a position until measured by another, one could say it doesn't have an experience of position until that interaction – again using "experience" loosely. We can borrow the authority of physics to argue that it is not absurd to think of non-conscious entities in terms of perspectives. Physics already does (mathematically).

We are simply adding that this perspectival structure might come with a primitive *subject*-quality. When Rovelli says "when we say the distance between a signpost and a road intersection is 100m, we are not thinking the signpost has a subjective view" (plato.stanford.edu), we can accept that – the signpost isn't conscious. But on a deep level, the distance being 100m is relative to a certain frame. The signpost doesn't know it, but from our external perspective we can attribute a relational property. Our theory in a way personifies what RQM de-personifies: we say every relation implies a subject and object concept, whereas RQM says drop the terms subject/object and just say relations. These are two sides of one coin – it's more a linguistic difference. We choose the language of "subject" to emphasize the analogy to consciousness (to claim continuity), while RQM chooses "relation" to emphasize continuation of physical objectivity (to avoid any suggestion of needing minds).

The interplay of Everett and RQM also touches on quantum interpretations of information: If reality is fundamentally about information exchange (as some interpretations like Wheeler's "It from bit" suggest), then information always has a sender and receiver – a perspective built in. Some have argued that quantum probabilities become easier to understand if viewed subjectively (as in QBism, Quantum Bayesianism, where the wavefunction is seen as an agent's degrees of belief). QBism explicitly says quantum states are personal (subjective) to the agent using them. That's yet another approach aligning quantum theory with a perspectival stance. We mention this to note that our idea of universal subjectivity isn't at odds with how cutting-edge physics interpretations think about reality.

Now, we must be careful: none of these physics interpretations prove that an electron has a glimmer of consciousness. They only show that physics can be formulated without assuming an external observer, by effectively giving *every system the role of observer relative to others*. This "democratization of the observer" in physics stops short of panpsychism, but our philosophy picks up right there and says: If every physical interaction already mimics the structure of subject-object (perspective), why not see that as a real aspect (subjectivity)? Doing so doesn't change the successful predictions of physics, it just enriches the ontology to align with what we know is real – that perspective exists (because we have it). If one day we have a deeper theory that connects quantum physics and consciousness, it might well build on these relational ideas. For example, some authors speculatively suggest consciousness and quantum mechanics might be related via information theory (though we must avoid unsupported leaps here – our theory doesn't require any special quantum effects in the brain or anything like that; it's compatible with consciousness being entirely emergent at the neural level, but the *metaphysics* behind it is relational at all levels, quantum included).

In summary, the Everett and Rovelli interpretations lend support to our core idea by showing perspective-dependence is a powerful and perhaps necessary concept in fundamental physics. The fact that one can interpret all of quantum mechanics with the notion "facts are relative to observers (systems)" (plato.stanford.edu and plato.stanford.edu) is a profound hint that *"view*

from somewhere" is more primary than "view from nowhere." Our theory simply takes that hint and extends it: each "view from somewhere" is what we call a subjective aspect of reality. Everett gives a vivid picture of each observer living in their branch (their reality), and Rovelli generalizes it to all interactions – together, they dissolve the myth of a monolithic reality independent of any perspective. This does not mean reality is arbitrary or anything-goes – it means reality is a vast interlocking web of viewpoints that agree with each other where they interact and can legitimately differ where they haven't interacted.

8. Conclusion

We conclude that subjectivity is at the core of reality's fabric, present in all relational interactions as a primitive perspectival aspect, rather than a late-emerging property confined to conscious brains.

The central idea is that every concrete entity is a subject-in-itself, possessing a viewpoint by virtue of its relations to other entities. This *does not* imply every entity has consciousness or rich inner life; rather, it means that being a concrete reality entails having an *intrinsic perspective*, however minimal. Consciousness is then explained as what happens when these intrinsic perspectives become highly integrated and self-referential (as in a human brain), yielding the familiar features of awareness, qualia, and unified selfhood. In this way, we reconcile the existence of consciousness with a physically monistic worldview: no element of reality is wholly "dark" or utterly devoid of the spark that, when magnified, is mind. Conversely, no consciousness comes from outside physical interactions – it is rooted in them.

We began by clarifying relationality with intuitive examples – showing that even simple physical scenarios require considering different perspectives – and by distinguishing subjectivity from consciousness to avoid conflation. This set the stage for our philosophical argument: that subjectivity, as we define it, must be a pervasive feature of the concrete world in order to avoid the explanatory gap of consciousness and to demarcate concrete existence from abstract, causally inert being. We justified this claim by pointing to the inherent limitations of emergence-only theories and aligning our stance with the intuitive continuum of nature (echoing panpsychist and process philosophy insights, but refining them to emphasize relations and avoid naive mental ascriptions to particles).

The essay then bridged to empirical research, showing that our framework is compatible with leading theories like IIT and GNW, and indeed offers a deeper interpretation of why integration or global broadcasting correlates with consciousness – because those processes unify what was fundamentally perspectival into a single large perspective. We discussed how our view can be falsifiably relevant: e.g., it predicts a gradient of consciousness and encourages looking for its

signs in simpler systems, aligning with ongoing research in comparative cognition and even quantum biology.

We also contrasted our theory with other philosophies: it stands as a form of *neutral monism* or *panprotopsychism*, avoiding the pitfalls of both extreme emergentism and dualism, and carving a nuanced path distinct from classical panpsychism by focusing on relational, not intrinsic-isolated, subjectivity. This situates our approach in the current philosophical landscape, highlighting its potential to unify the truths in opposing camps (physicalism's continuity and panpsychism's ubiquity of mind) while avoiding their extremes.

Our expansion on Everett and Rovelli's interpretations of quantum mechanics further reinforced the idea that a *perspectival, relational ontology* is not only philosophically appealing but also reflected in the cutting edge of scientific thought. Reality, as seen through those interpretations, is constituted by facts relative to observers (or systems) – a striking parallel to saying each system has a subjectivity relative to others. By drawing these connections, we gave additional credence to the plausibility of relational subjectivity as a serious metaphysical proposal grounded in how successful theories describe the world (plato.stanford.edu).

While the idea of a "subjective universe" remains unconventional, we hope this essay demonstrates its coherence and potential explanatory power. Far from being mystical, it is a rational extension of the observation that *being something entails a way of being*. If we accept that our way of being (consciousness) doesn't spring from nothing, we are led to the view that the universe had a proto-subjective character from the start, awaiting complexity to shine forth as mind.

In conclusion, subjectivity, relationality, and consciousness are deeply intertwined. By understanding subjectivity as the perspectival core of every relation, we not only demystify consciousness but also enrich our conception of the physical world – revealing it not as a cold collection of things, but as a living tapestry of viewpoints, of which our own mind is one exalted thread.

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