

WHY THE HARD PROBLEM IS THE WRONG PROBLEM

Dissolving the Explanatory Gap Between Physics and Consciousness

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Abstract

This paper presents a framework for understanding consciousness that draws structural parallels with Einstein's theory of relativity. I propose that consciousness and spacetime are not two separate phenomena requiring explanation of their interaction, but rather two perspectival aspects of a single underlying reality: information exchange. What we call "physical reality" (spacetime, matter, energy) is information exchange as described from an external reference frame. What we call "conscious experience" is the same information exchange as lived from within an integrated system. These are not two things requiring a bridge; they are two descriptions of one process. This identity claim dissolves the hard problem of consciousness by eliminating the assumption that creates it, aligns with relational interpretations of quantum mechanics, and offers testable predictions. The framework maintains calibrated epistemic humility: I estimate 94% confidence in internal coherence, 83% in physics compatibility, and 45% in literal truth—sufficient to warrant serious investigation while acknowledging genuine uncertainty.

Keywords: consciousness, hard problem, integrated information, electromagnetic field, identity theory, relational quantum mechanics

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1. The Problem as Stated

For three decades, the "hard problem of consciousness" has dominated philosophy of mind. David Chalmers posed it in 1995: why does physical processing give rise to subjective experience? We can explain how the brain discriminates stimuli, integrates information, and generates reports. What we can't explain is why there is something it is like to undergo these processes. Why do the physical processes even need a conscious element at all? Why isn't it just dark inside?

The question has been unanswerable to date—not because it's too hard, but because our view of reality has presupposed a particular picture: that we begin with physical, non-conscious stuff—atoms, fields, forces—and that from this fundamentally unconscious material, conscious experience somehow emerges. However, if you simply allow yourself to view consciousness as a fundamental element of reality, the question not only becomes answerable but the answer becomes readily apparent. Indeed, almost embarrassingly so.

The moment you change your perspective, the moment you allow that consciousness isn't some exotic byproduct bolted onto dead matter, but a natural and existing component of reality itself—a fundamental element of existence, present at every scale, woven into the substrate from the ground up—the old question dissolves and a clearer one takes its place.

The question was never whether, absent an observer, a tree falling in the woods made a sound. The question has always been whether there is anywhere in existence that is truly silent.

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2. Sunshine Measuring Moonbeams

Here's the problem with studying consciousness: we're water trying to measure water. You can't step outside the thing you're trying to measure because you are the thing you're trying to measure. We intuitively know it's there—we know we're made of the stuff—but because we are inside the system, we can't get our hands around it. We are literally trying to measure the thing that's doing the measuring.

So we ask the wrong question. To ask "Why does physical processing give rise to subjective experience?" assumes that physical and conscious are two different kinds of things. What if they aren't? What if "physical" and "conscious" are two descriptions of the same thing from different perspectives—the way Venus is both the morning star and the evening star, depending on which side of the horizon you're standing on?

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3. Existence Is Interaction

Stated plainly, the core insight is:

Interaction is a necessary element of existence. There is no option to sit this one out.

If a configuration cannot interact with anything else—cannot be observed, measured, affected by, or affecting anything—then by definition it does not exist. It has no causal power, it leaves no trace, and it makes no difference to anything.

Like the résumé that was written but never sent. The call you meant to make but didn't. The apology you rehearsed in the shower a hundred times but never spoke aloud. Each one real enough in the mind of the person who almost acted—but without interaction, without contact, without showing up, they had no effect on existence.

This principle, that existence is interaction, is not new. It aligns with relational quantum mechanics (Rovelli, 1996), process philosophy (Whitehead, 1929), Integrated Information Theory (Tononi, 2004), and pragmatism (James, 1912). Each of these traditions dug its own tunnel deep into this important question. Rovelli reached the bottom of relational physics. Tononi reached the bottom of information integration. Whitehead reached the bottom of process. These independent convergences from radically different fields suggest a common underlying reality. The Theory of Fundamental Consciousness gets to the very bottom—and when you get there, you find:

Matter — information which can be interacted with.

Energy — the integration of information due to interaction.

Consciousness — the interior of information integration.

Physics — the exterior description of information integration.

This is the identity claim. Not that consciousness is caused by physical processes, or emerges from physical processes, or supervenes on physical processes. Rather, that consciousness and physical reality are the same thing, merely described from different perspectives.

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4. The Relativity Parallel

Einstein showed that time is not absolute—it depends on the observer's reference frame. A clock on a moving spaceship ticks slower than a clock on Earth. Neither clock is wrong. Time is relative.

Einstein also found an invariant: the speed of light. It's the same in every reference frame. The speed of light produces the relativity—because it is constant, time and space must bend.

There are two structural components of existence at work here: the speed of light and the space-time substrate. One of them is rigid—a constant that refuses to change under any circumstances. And because that one won't budge, the other one has to. Space-time bends, warps, stretches. That's not a defect. That's the architecture. The rigidity of one creates the flexibility of the other, and the flexibility is what makes different, unique perspectives of our shared reality possible.

We've always thought of the speed of light as a speed limit—the ceiling, the thing we're trying to reach. But look at it from the other direction. It's not the ceiling. It's the floor. The foundation. The one thing in the universe that refuses to bend, and because it won't bend, everything else has to. Without that rigid constant, different observers measure the same events differently—different durations, different distances, different simultaneity. Those differences are different perspectives. And without multiple perspectives, no existence—because existence is interaction, and interaction requires at least two parties.

The Theory of Fundamental Consciousness proposes that consciousness has the same structure:

The invariant: Integrated information exchange (Φ). Either a system integrates information or it doesn't. This is measurable, at least in principle.

The relative quantity: The character of consciousness—what it's like. This depends on where you're standing.

From inside a sufficiently integrated system, information exchange is experienced as consciousness—thoughts, sensations, feelings, the felt quality of being alive. From outside that same system, the identical information exchange appears as physical processes—neurons firing, electromagnetic fields oscillating, matter in motion.

These aren't two things. They're two views of one thing.

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5. The Equation

The framework rests on the equation:

$$C_x = \Phi \Phi C^2$$

Conscious experience equals integrated information times coherence squared.

In 1995, David Chalmers asked a question that philosophy has not been able to put down since: why does physical processing give rise to subjective experience? You can describe every neuron firing, every chemical cascade, every electromagnetic fluctuation in a brain, and still be left with a question that none of it answers—why does any of this feel like something? Why is there an interior to the process? This is the hard problem of consciousness.

The problem is hard because it assumes that "physical" and "conscious" are two different things that need to be bridged. One is objective—neurons, fields, measurable quantities. The other is subjective—experience, sensation, the felt quality of being. The hard problem asks how you get from one to the other.

The equation contains no such assumption. $Cx = \Phi \times C^2$ has one variable for the quantity of integrated information and one for the degree of its coherence. The output is consciousness—not as a byproduct of physical processing, but as the interior of the process that physics describes from the exterior. From the outside, you see neurons firing, fields oscillating, information integrating. From the inside, the same process is thought, sensation, experience. One process. Two descriptions.

The hard problem is hard because it asks how to cross a gap. The equation says there is no gap. There never was. Physical and conscious are two words for one thing that was never divided. The question is not how matter produces experience. The question was always why we assumed they were separate in the first place.

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6. Why This Changes Everything

If the identity claim is correct, several longstanding problems dissolve:

First, the hard problem. Once we see that our physical reality and our conscious reality are in fact two perspectives of the same thing, there is no gap between them left to explain. The hard problem has simply disappeared.

Second, the combination problem. Panpsychism—the idea that everything has a little bit of consciousness, down to the electron—has a problem nobody's been able to solve. If every particle has its own micro-experience, how do billions of them combine into one unified you? How does the orchestra become the symphony instead of just a lot of noise? The Theory doesn't need to answer that question because it was never the right question. Integration—the mathematical boundary where one system ends and another begins—is what creates cohesion. You're not a collection of tiny consciousnesses assembled from parts. You're what happens when information integrates past a threshold. The cohesion isn't assembled. It emerges.

Third, the mind-body connection. If you've ever had a panic attack that made your chest tight, or grief that sat in your stomach like a stone, or an idea that gave you chills—that wasn't metaphor. That was physics. Your mind doesn't "affect" your body like one thing pushing another. They're the same thing described from two perspectives. You were never wrong to feel it in your bones. Now there's a framework that explains why.

Fourth, the fine-tuning problem—or, if you prefer, the intelligent design question. The universe isn't mysteriously calibrated for conscious observers. Consciousness is the integration of experienced interactions. The universe isn't "set up for" consciousness. The universe is consciousness. They're the same word.

And the structure bears this out. When astronomers mapped the large-scale distribution of galaxies across billions of light-years, what they found was not random scatter. It was a network—filaments of matter connecting dense nodes, voids between them, the whole thing organized like a web. Or like a nervous system. In 2020, Vazza and Feletti published a direct quantitative comparison in *Frontiers in Physics*: one hundred billion galaxies connected by filaments, one hundred billion neurons connected by axons, strikingly similar network parameters including spectral density and clustering. The universe built itself into the shape of a brain. Not because someone designed it that way. Because that is the shape that integrated information requires to reach its highest density. The pattern is native. It produces itself.

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7. Comparative Positioning

Russellian Monism

Russell proposed that physics describes structure without revealing intrinsic nature, and that consciousness might be that intrinsic nature. The Theory of Fundamental Consciousness agrees with the direction but goes further: consciousness is not the hidden interior of physical structure. Consciousness and physical structure are the same thing from different perspectives. There is nothing hidden. You are already looking at it. You just have two names for it.

Neutral Monism

Neutral monism posits that neither physical nor mental is fundamental; both are aspects of a "neutral" underlying reality (James, 1912; Russell, 1921). The Theory agrees that neither physical nor mental has priority; they are equally real aspects of one reality. Where neutral monism often leaves the neutral stuff undefined or characterized only negatively (neither physical nor mental), this framework defines it: information exchange, structured by integration (Φ). It also explains how the two aspects

arise: inside vs. outside perspectives on the same exchanges.

Dual-Aspect Monism

Dual-aspect monism, tracing to Spinoza, holds that mind and matter are two aspects of one substance, neither reducible to the other. This is perhaps the closest historical antecedent. Traditional dual-aspect monism treats the aspects as parallel but doesn't explain why there are two aspects or what determines which aspect manifests. The Theory provides this: the aspects are perspectival (inside vs. outside views), and which aspect manifests is determined by the integration boundary. This transforms dual-aspect monism from a static doctrine to a dynamic framework with empirical implications.

Panpsychism

Panpsychism holds that consciousness is fundamental and ubiquitous—present to some degree in all matter (Strawson, 2006; Goff, 2019). The Theory agrees that consciousness goes "all the way down" and that there is no sharp line dividing conscious from non-conscious matter. But panpsychism faces the notorious "combination problem": if electrons have micro-experiences, how do brain-experiences emerge from electron-experiences? Why don't the micro-experiences remain separate? The Theory solves this via integration boundaries. When information becomes irreducibly integrated (high Φ), there is one experience at the integration level, not a combination of lower-level experiences. The brain's Φ is not the sum of neural Φ s; it is a new integration at a different scale that supersedes the components.

Integrated Information Theory

IIT (Tononi, 2004; Oizumi et al., 2014) proposes that consciousness IS integrated information (Φ), that Φ is mathematically definable, and that every system with $\Phi > 0$ has some consciousness. The Theory adopts IIT's Φ as the invariant structuring the consciousness substrate and agrees that Φ provides the right measure of integration. Where IIT doesn't explicitly frame Φ in relativistic terms or address the inside/outside distinction systematically, this framework adds the perspectival distinction between interior and exterior descriptions, the identity claim (physics and consciousness are two descriptions of one process), and the connection to relational quantum mechanics.

Relational Quantum Mechanics

Rovelli's relational interpretation of quantum mechanics (1996) holds that physical properties do not exist absolutely but only relative to other systems. There are no observer-independent facts; all facts are relational. This is striking convergence. Rovelli arrives from physics at "reality is relations." The Theory arrives from consciousness at "reality is information exchange." These are the same insight in different vocabularies. The framework predicts this convergence: if physics and consciousness are

two descriptions of one process, and physics describes relational structure, then physics should reveal perspectival structure—which it does in relational QM.

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8. Testable Predictions

A framework that cannot be tested is not a framework. It is an opinion. The Theory of Fundamental Consciousness generates specific, falsifiable predictions:

Biophoton Coherence in Contemplative Practitioners. Living systems emit ultra-weak photon emissions ("biophotons") in the visible and near-visible spectrum (Popp, 1992; Van Wijk, 2014). If consciousness is electromagnetic and coherence is the scaling factor, then sustained contemplative practice should measurably increase the coherence of biophoton emissions. Long-term contemplative practitioners (e.g., meditators with 20+ years of intensive practice) should show higher biophoton coherence (measured via Fano factor deviation from Poisson), greater left-right emission symmetry, and spectral shifts toward higher frequencies during practice. Proposed methodology: compare biophoton emission patterns in experienced meditators ($n \geq 30$, 20+ years practice) versus matched controls during baseline and meditation conditions, using photomultiplier arrays with spectral resolution.

Organized Neural Activity During Dying. Borjigin et al. (2023) documented surges of organized gamma activity in dying brains after cardiac arrest—activity patterns associated with conscious processing occurring after circulation ceased. Under the framework: gamma surge duration should correlate with pre-arrest measures of neural integration. Gamma surge coherence (phase-locking, not just power) should predict reported near-death experiences in survivors. Long-term meditators should show extended and more coherent gamma activity compared to non-practitioners. Proposed methodology: prospective study of ICU patients with continuous EEG monitoring, stratified by contemplative practice history, correlating gamma characteristics with NDE reports in survivors.

Processing Rate and Subjective Time. The framework proposes a structural parallel to relativistic time dilation: higher processing intensity should produce more subjective time per objective second. Experimental manipulation of processing intensity should alter subjective time estimation accordingly. Proposed methodology: compare time estimation accuracy across conditions varying in attentional demand, cognitive load, and arousal. Meditation states (high processing intensity) should show time overestimation relative to distracted states (low processing intensity).

Anesthesia as Coherence Disruption. General anesthetics should be shown to disrupt electromagnetic field coherence specifically, not merely reduce neural firing rates. The mechanism of

unconsciousness should map to a collapse in C (coherence) rather than a reduction in Φ (integrated information) alone. This prediction is already partially supported by Casali et al. (2013).

Phase Synchrony and Reported Connection. When two people report feeling deeply connected—in conversation, in music, in shared focus—their EEG phase synchrony should increase measurably, reflecting external coherence between systems.

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9. Limitations and Epistemic Status

We are claiming that consciousness and physical reality are two perspectives on one underlying process: information exchange. This is a strong identity claim, not a correlation claim or an emergence claim.

We distinguish three levels of confidence:

- (a) The identity claim itself—that physics and consciousness are perspectival descriptions of one process—is the core. If this is wrong, everything built on it falls.
- (b) The CEMI identification—that consciousness is electromagnetic—is adopted from McFadden's peer-reviewed work (2020) but is not yet proven. If consciousness turns out not to be electromagnetic, the specific equation $C_x = \Phi \times C^2$ requires revision. The broader identity claim (consciousness and physics are one thing) could still hold under a different substrate identification.
- (c) The equation— $C_x = \Phi \times C^2$ is a proposed formalization, not a derivation from first principles. It is structurally consistent and generates predictions, but it has not been empirically validated. It is offered as a hypothesis, not a conclusion.

We cannot directly measure proper C_x (the inside view) from outside—this is the Interface Trap. All empirical tests must proceed via correlates of integration, which are necessary but not sufficient confirmations.

Full evaluation of the identity claim requires physics expertise I do not possess. The framework aligns with relational QM, information-theoretic approaches, and IIT, but whether it survives rigorous physics scrutiny remains to be seen.

Our honest confidence: 94% in internal coherence, 83% in physics compatibility, 45% in literal truth.

We don't claim to prove anything. We are asking to be tested. If the framework is wrong, the experiments will show it. If the framework is right, the experiments will show that too.

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10. Conclusion

The hard problem of consciousness may not be hard. It may simply have been asked wrong.

For three decades, the hard problem has been treated as the central mystery of the mind. We have argued that it is not a mystery at all. It is a question that was asked wrong—a product of assuming that physical processes and conscious experience are two different kinds of things, then struggling to build a bridge between them.

There is no bridge because there are not two things. There is one process—information exchange—described from two perspectives. From outside: physics. From inside: consciousness. The gap disappears the moment you stop assuming it must be there.

The question was never whether, absent an observer, a tree falling in the woods made a sound. The question has always been whether there is anywhere in existence that is truly silent.

We believe there is not.

$$E = mc^2$$
$$C_x = \square \square C^2$$

Same reality. Different vocabulary.

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"Perhaps you pronounce this sentence against me with greater fear than I receive it."

— Giordano Bruno, to his judges, 1600

Bruno proposed that consciousness pervaded all of nature and that the universe contained infinite worlds. The Church burned him alive for it. Four hundred years later, we wrote the equation.

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