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A Handle on Consciousness: The Asymmetry of Consciousness

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Abstract

The mystery of consciousness, especially the question of how we each experience our own unique, first-person perspective, is something that has perplexed scientists for centuries and philosophers for millennia. In the vast complexity of the human brain is a three-pound universe teeming with neurons and synapses. Yet somehow, amidst all this biological machinery, emerges the wondrous phenomenon of consciousness. This raises not one, but two intriguing puzzles. First, there's the symmetric challenge: Why would any physical state become sentient? It's like asking why any light bulb, plugged into any socket, suddenly glows. But the asymmetric challenge is where things get more personal and perplexing: Why does my specific, individual first-person perspective exist at all? Why do I experience my thoughts and my feelings? That's like asking why does one specific light bulb represent 'me'? This exploration delves into this enigma, highlighting the inherent uniqueness of each person's first-person perspective. It's evident that we have no current theories that even come close to an explanation. We need a robust theory, one that will not only explain consciousness but can also fully explain the distinct and deeply personal nature of individual consciousness.

Key Words: neuroscience, consciousness, sentience, symmetry, quantum, spacetime, solipsism

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Introduction

The phenomenon of consciousness has long captivated the minds of scientists and philosophers, presenting a tantalizing puzzle that has yet to be fully unraveled. At the heart of this enigma lies the first-person perspective, the deeply personal and unique experience of being an individual sentient being. While strides have been made in understanding how the brain

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generates consciousness, the profound mystery of why each of us has a distinct first-person perspective remains largely uncharted territory.

This paper discusses the twofold challenges posed by consciousness. The symmetric challenge wrestles with the profound question of why any physical state becomes sentient—a puzzle that has spurred a great deal of theoretical and empirical research. On the flip side, the asymmetric challenge examines the origins of individual first-person perspectives, delving into why each person experiences their own unique consciousness. Upcoming papers will dive deeper into these mysteries, exploring the first-person perspective in more detail, looking at how telepresence technology can tease apart the first-person from the physical body, investigate realms beyond the brain that might harbor first-person properties, and consider a potential interface where the physical brain and first-person properties interact.

The Olympian perspective

Imagine, if you will, the Earth and its bustling inhabitants - before you ever became sentient. It's a bit of a paradox, in fact, because you can't truly fathom what that was like since your first-person perspective hadn't yet sprung into existence. For all intents and purposes, you were still a non-entity. There was no you to look out at the world. The marvelous machinery of your brain was still a work in progress.

But let's entertain the whimsical notion that you had a disembodied vision, like an Olympian god perched on a celestial cloud, gazing down at Earth. From that lofty perch, the humans below might look like a scurrying ant colony, all remarkably similar, perhaps even indistinguishable. There's nothing to suggest that any of them are sentient beings. They appear interchangeable and, dare I say, expendable. If, in a fit of divine caprice, you were to smite one with a thunderbolt, the grand tapestry of the universe wouldn't ripple in the slightest. You might be tempted to conclude that there's a perfect symmetry regarding individuals. Each one as inconsequential as the next.

From symmetry to asymmetry

Then, something remarkable happens. Your sentience kicks in. Your brain develops enough to support the intricate apparatus

needed for your first-person view. You gain a unique perspective and a vantage point onto the world. You learn what it means to be sentient. Suddenly, you are the central figure in the universe. You become 'the viewer,' while everything else is 'the viewed.' Interestingly, there is still no evidence of consciousness in others. For all you know, you are the only sentient being.

This event breaks the apparent symmetry. As the world reveals itself to you it exposes an 'asymmetry.' Unlike all other individuals, you're not expendable. Eliminating you is not the same as eliminating any of the others. Eliminate any of them, and the world remains mostly the same. Eliminate you, however, and the universe disappears.

Articulating the problem

This asymmetry strikes me as nothing short of extraordinary and deeply significant. And it seems I'm not alone in this sense of wonderment. Take, for example, a description I stumbled upon online, posted by someone with the moniker 'ELTO D'. That person writes (Elto, 2021):

> *"For me, the big mystery about consciousness is what I might qualify as a broken symmetry. My human body is equivalent to or like many others I see around. From afar, no one human is fundamentally the center of the universe. Yet, I inhabit one specific body, not the others. I see through my eyes, not through yours. Why do I feel this body from the inside, and not feel the others?"*

This quote resonates with my own struggle to articulate the phenomenon. Billions of people each possess their own first-person perspectives. Yet, of all those billions only one developed your specific first-person perspective. That was you. What made you different from the billions of others? You might argue that there is no difference. And that all those individuals are just like you, each with their own first-person point of view. In that respect, they are all the same, creating a sense of symmetry. That answer seems reasonable on the surface. But when you dig a little deeper, there's still something profoundly unsettling that needs explaining.

The singular view

For me, there's a palpable difference between me and everyone else. I'm snugly tucked away inside this body of mine, peering

out at the world, while the billions of others are merely external spectacles to me. Naturally, everyone can make the same claim—and I understand that—but it doesn't alter the undeniable truth: each of our first-person perspectives is profoundly unique.

Consider the way we perceive the world: it happens through someone's eyes, or at least, their senses. If no one's around to experience the world, does it even bother existing? It's like the old tree falling in the woods puzzle. If I'm not around, the world might as well vanish for all the good it does me; I can't attest to its existence anymore. You might argue that the world persists for others, but in the grand tapestry of the universe, without your or my perspective, does the world hold any central significance? Each of us is armed with just one viewpoint at any given time—our own. This means not only can we not juggle multiple perspectives simultaneously, but we're also privy to a singular firsthand experience: that of being ourselves. I can only truly speak for one individual's perspective, and that's my own. This situation is glaringly asymmetrical.

If one of the myriad other individuals in the world doesn't wake up from anesthesia, for you, the universe ticks on unabated. But if it's you who doesn't snap back to consciousness, then the universe effectively winks out of existence. That's asymmetry with a capital 'A'—but just for you. Qualifying that statement with "for you" seems only fair for precision, though it's hardly a trivial point. Declaring "for me" or "for you" is essentially saying, "in my world, I'm the sole sentient player," which sets up an unmistakable asymmetry.

The universe, if it's perceived at all, is perceived by an individual, carrying a unique weight or gravitas that no one else's perspective can claim. Each of us champions our first-person perspective as the only one that truly matters, a notion replete with asymmetry. Yet, the kicker is, despite these personal microcosms, we're all ostensibly shuffling around the same shared world, which reels us back to a semblance of symmetry. Sure, this might be a symmetrical asymmetry—if there is such a thing—since it likely applies equally to everyone. But make no mistake, it's an asymmetry all the same.

Philosophical zombie

It seems perfectly reasonable to assume that all human beings possess a first-person perspective. There are, after all, some

rather compelling clues to suggest that others are indeed sentient. Take, for instance, someone who dedicates an exorbitant amount of time to researching, reading, writing, discussing, and lecturing on consciousness. It's safe to say that such an individual is not a philosophical zombie—a being without first-person views (Chalmers, 2018). A philosophical zombie wouldn't have the concept of consciousness to drive that kind of intellectual pursuit. While not a proof, that dedication to the study of consciousness can be seen as a tangible manifestation of another person's sentience.

However, many philosophers and physicists argue that a philosophical zombie would still perform these actions, regardless of its lack of consciousness (Carroll, 2021; Dennett, 1995). It would mimic the behaviors of researching consciousness even without being conscious. The argument here is that, since consciousness doesn't seem to contribute anything to a person's functioning, the philosophical zombie would behave exactly like a non-zombie, with both governed solely by the laws of physics.

Solipsism

What I'm trying to say, albeit in a rather roundabout manner, is that there's no definitive proof that others are sentient. It's just as conceivable that I'm the only conscious person in 'my world'. Or you are in yours. And no one else, other than you, has a first-person perspective in 'your world'. That's still asymmetrical. But in such a skewed solipsistic existence, these 'parallel worlds' would appear and operate in precisely the same way to each of us as a single world would in a non-solipsistic reality (Thornton, 2004). No matter how we attempt to rationalize the sentience of others, whether we each have our own world or share a common one, the fact remains that each of us lives solipsistic isolation. Our first-person experience, and only that, means everything to us. And without it, there is nothing.

Perhaps the worlds we inhabit are not one and the same. That's a very real possibility. But I'm not ready to defend a parallel worlds hypothesis here (Wallace, 2012). I mention it only to emphasize this notion of asymmetry.

Questions about the first-person property

The so-called 'problem of consciousness' is typically framed as: Why is any physical state sentient rather than non-sentient? This is indeed a crucial question that any theory of consciousness must address (Chalmers, 1995). However, for me, there's a deeper mystery. Why didn't a person born just before me, or just after me, end up with the first-person perspective that I got? What determined that? There are many more questions that echo this theme, such as: What determined the specific location of my first-person perspective on the 'family tree' of all humans? Why did my parents' second-born—rather than their first-born—get my first-person? Was that determination arbitrary? Presumably, identical twins do not have identical first-person perspectives. Why not? Are the first-person property and the body separate entities? If so, how did they come together?

It's not just an inquiry into why I, or any person, is sentient. That seeks an answer to the question: 'Why am I ***sentient***?', with the emphasis on 'sentient.' Rather, it's an inquiry into the origin of my own existence. That's the same question but with the emphasis on 'I': 'Why am ***I*** sentient?' There's a subtle, nuanced difference between the two, reflected in the fact that an answer to the first question doesn't necessarily address the second.

I'm not concerned with why my physical body came into existence when and where it did. Genetics and evolution satisfactorily explain that mechanism. We need comparably powerful understandings, as powerful as genetics and evolution, that explain why first-person perspectives come into existence when and where they do.

Quest for the mechanism

One explanation, for why I have the first-person perspective that I do, is that all other first-person perspectives were already taken, used up, or otherwise occupied. Only one first-person property was available for my body to use. This is a delightful explanation but one that didn't quite satisfy me, at least not initially. I later recognized there may be some truth to it. Perhaps there is a one-to-one correspondence between brains and first-person perspectives. Perhaps first-person properties are doled out on a first-come first-served basis, from somewhere, a field perhaps, and then somehow marked 'in use'.

If there is such a mechanism, that doles out first-person properties, I want to understand it. I want to know precisely what determined how I acquired my first-person perspective. I'm assuming it is governed by a mechanism and it's not purely by chance. But then, even if by chance, that also implies 'a mechanism' – a probabilistic mechanism. For a theory of consciousness to be complete, it must clearly address whatever mechanism brings about distinct first-person perspectives. (I use 'first-person perspective' and 'first-person property' somewhat synonymously.)

Objective reduction

One prominent theory (Hameroff, Penrose, 2014) posits that consciousness emerges when the quantum wavefunction collapses. In quantum mechanics, a wavefunction represents a particle's state, allowing it to exist in multiple states simultaneously. This simultaneous multiple-state concept is known as superposition. The collapse of the wavefunction occurs when this superposition reduces to a single state, often due to an interaction with the external environment. The theory uses its own term for this collapse, called 'objective reduction.'

Objective reduction suggests that wavefunction collapse is not merely a probabilistic event; it is intrinsically linked to the fabric of spacetime. It proposes that superpositions reach thresholds influenced by mass and spacetime curvature. Neurons in the brain are thought to facilitate these quantum processes. Per this theory, once the threshold is met, the wavefunction collapses, resulting in a moment of consciousness.

Symmetric vs asymmetric challenges

If this objective reduction theory is correct, it addresses the symmetric challenge. It might explain how consciousness arises in all of us. However, it says nothing about why my individual consciousness, my specific first-person perspective, differs from yours. It fails to elucidate my unique existence and why I possess my specific first-person perspective. This incompleteness highlights the need to address the asymmetric challenge. The need to address the individuality of conscious experiences.

So, on the one hand, there is the symmetric challenge: "Why do any of us have subjective experiences?" It's symmetric because it applies equally to everyone. It must explain the

subjective aspect of our experiences—the 'feel' of our encounters. On the other hand, there's the asymmetric challenge: "Why does my specific first-person perspective exist at all?"

This dichotomy within the consciousness conundrum resonates with me. The symmetric challenge is more easily explained and more readily understood. In contrast, I rarely, if ever, hear researchers express or vocalize the asymmetric aspect.

Spacetime symmetries

Symmetry is not just something that we appreciate as aesthetically pleasing. It plays a very important role in physics. Special relativity isn't just about time dilation or length contraction. Special relativity is about something even more profound: the elegant symmetry in the laws of physics.

Back in the days of Newton, physics had a kind of symmetry known as Galilean symmetry. The rules were consistent and predictable. Galilean symmetry was quite straightforward. It simply said that if two observers are cruising along at a constant speed relative to each other, they'd witness the same physical phenomena governed by Newton's timeless laws.

Then along came Einstein with his theory of special relativity (Hall, 2004; Yaakov, Tzvi (2019 and swapped out this old symmetry for a new one called Lorentz symmetry. Lorentz symmetry acknowledges that, while the laws of physics are still invariant across all inertial frames of reference, the finite speed of light, must also be considered. From this sprang forth the peculiar idea that simultaneity is not absolute after all. It's the realization that while you and your friend might see the same sunset, your views on the exact moment it happens differ depending on how fast you're moving.

The marvel of symmetry

This idea of symmetry isn't just a theoretical fancy. In fact, symmetry is quite the marvel. It's practically magical in its predictive power.

The essence of symmetry is 'an unchanging quality following a transformation'. Take a perfectly round wheel: spin it, and when it stops, it looks the same. Symmetry, in the grand

scheme of things, implies that despite changes, certain aspects remain constant. Recognizing symmetries can yield new understanding. And things get interesting when symmetry breaks (Earman, 2002; Keyl, 1991). If you put a chip in the wheel, it's not symmetric anymore. It's now asymmetric. Its symmetry is said to have been broken.

One of the best examples of broken symmetry is the discovery of the Higgs boson. Picture the early universe as a ballroom with everyone dancing in synchrony. As the universe cooled, the dance floor became uneven, and particles began to clump together. They gained mass through a mechanism called spontaneous symmetry breaking (Guralnik, 2011). The Higgs field, which was once perfectly uniform, became lopsided, giving particles their mass and thereby explaining why we have the material world as we know it.

Understanding broken symmetry involves figuring out the original symmetry, the nature of the transformation, what quality is conserved, how the symmetry broke, and what new properties or behaviors emerge from the transformation. It's a process that often requires a mix of theoretical musings, experimental tests, and analytical skills.

Particle symmetry

In quantum mechanics, there's an interesting symmetry involving particles. This symmetry is all about their interchangeability—a principle that says identical particles are indistinguishable from one another. Swapping two such particles doesn't change anything. This is akin to saying that swapping two coins doesn't change the overall value of your pocket change. Or that interchanging two ants in a colony doesn't impact the colony. The symmetry here is called 'exchange symmetry,' and it's fundamental to the conservation of particle identity (Skomski, 2020).

However, just as with any grand symmetry, there are ways to break it. Exchange symmetry is broken when identical particles, such as electrons, which are normally indistinguishable and interchangeable, acquire distinct properties through interaction with an external field or measurement. In quantum mechanics, particles like electrons obey exchange symmetry, meaning their wavefunctions are symmetric under particle exchange. However, when an electron is measured, its wavefunction collapses, and it acquires specific

properties, such as spin orientation. This collapse makes the electron distinguishable from other electrons, thus breaking the exchange symmetry. Subsequent interactions, such as entanglement with other particles, propagate these distinct properties, further reinforcing the broken symmetry.

The asymmetry of consciousness

That brings me to a rather fascinating concept—the asymmetry of consciousness. I'm grappling with the prospect that the universe might have mirrored the broken symmetries of physics in the peculiar nature of our own awareness. I'm imagining that our first-person perspective, the cornerstone of our subjective experience, might reflect a broken symmetry. Is this just a play on the word symmetry, or is there something deeper, more profound here?

Picture an electron, in a superposition state, being measured for spin. Its wavefunction collapses, and suddenly, its spin property adopts a specific value at a specific angle of the spin axis. In that moment, the electron becomes distinct, no longer a faceless member of the electron crowd, but a unique entity. Its exchange symmetry is broken. As this electron entangles with others, it shares its distinct spin axis, propagating its uniqueness to other electrons.

What if consciousness' asymmetry can be examined through the same lens as electrons? Suppose there are yet-to-be-discovered properties that particles possess—beyond spin, charge, and mass—something we might call a 'first-person property'. And that each such first-person property represents a unique first-person perspective.

Imagine that, early in embryogenesis, a critical particle's wavefunction takes on a specific first-person value after interacting with some external field, like spacetime. Initially, and from an objective perspective, embryonic brains are interchangeable, lacking that first-person property. This symmetry breaks when a particle gains a first-person value and subsequently propagates this value within the brain.

Long-standing puzzles

Unique personal perspective could emerge from interactions with some known or yet-unknown field, much like how electrons become distinct through their interactions with the

electromagnetic field. This notion proposes that the mental might originate not from the brain's inner workings, but from outside it, giving us a fresh lens through which to view some of our most puzzling quandaries. A first-person property, accessed externally, could unlock answers to questions that have long vexed us.

The Teleportation Paradox (Parfit, 1997):

Q: Can physically identical individuals share the same 1P perspective? (where 1P = first-person)

A: No. Physically identical individuals can never have identical first-person perspectives. Each of us is unique in this regard. Identical and constantly changing brains cannot account for unique and persistent 1P perspectives.

Persistence of Identity (Olson, 2023):

Q: What ensures we maintain the same first-person perspective throughout our lives?

A: During embryogenesis, a brain acquires a unique first-person property for the rest of its life.

AI Sentience (Smith, Schillaci, Guido, 2021):

Q: Can a non-biological 'brain' possess a 1P perspective?

A: Yes, non-biological 'brains' could pick up a 1P property, provided they're so designed.

Neural Correlates of Consciousness (Koch, 2004):

Q: Does a 1P perspective correspond with neural activity?

A: No. There's no need for a correlation, which neatly explains why a correlation remains elusive.

Philosophical Zombie (Dennett, 1995):

Q: Can an individual function without a 1P perspective?

A: Yes, the brain can carry out its duties without tapping into a first-person property.

Animal Sentience (Animal sentience, 2018):

Q: Do non-human species have 1P perspectives?

A: Probably. They probably possess the wherewithal to acquire a first-person property.

There are more questions to be answered, for sure. Such as, primarily, what exactly is the nature of this first-person

property? How does the brain tap into and latch onto such a property? And how does it interface with the brain to produce a first-person perspective? These questions will be examined in upcoming papers.

Conclusion

In summary, the quest to understand consciousness, especially the first-person perspective, stands as one of the most profound challenges in both philosophy and science. Our current theories do try to explain the general emergence of consciousness - what we might call the symmetric challenge. However, they fall short when it comes to explaining the unique, individual flavor of our own first-person experiences - the asymmetric challenge. This article puts a spotlight on our desperate need for a precise mechanism that can unravel the mystery of how we each have our own distinct first-person perspective.

Future research must dive into the very essence of consciousness, from the biological to the quantum, to provide a complete and satisfying explanation for this asymmetric conundrum. Solving this puzzle is essential for developing a comprehensive theory of consciousness.

One of the takeaways from drawing a parallel with symmetry in physics, is the intriguing idea that our mental experiences might not originate from the physical brain at all. The source of the mental could lie somewhere outside the brain. The next segments of this journey delve deeper into this field idea, hypothesizing that the first-person perspective might arise from realms beyond our physical bodies. I'll explore concepts like spacetime and Hilbert space, considering how these external dimensions might interact with our brains to spark our consciousness. Subsequent papers will take these ideas further, armed with more examples, reasoning, and arguments, including a more detailed explanation of what is meant by first-person perspective and first-person property.

The asymmetry as it relates to consciousness is conjecture, of course. But it offers a framework for studying consciousness and points us toward new avenues of exploration. The asymmetric challenge represents a tantalizing handle on the "grail" that a complete theory of consciousness must grasp. I echo Sir Roger Penrose's understatement: *"It's very important to get a handle on what consciousness is."*

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