Limits of Physics and Consciousness

The Intrinsic Insolvability Of

The 'Hard Problem Of Consciousness'

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Abstract

The argument presented here, establishes that the "hard problem of consciousness" is not merely unsolved but intrinsically unsolvable within the formal domain of physics.

Conscious experience is a property that only a *first* person can experience and 'know' of, thus conscious experience cannot be defined as an object of Physics. Any object without an objective definition in Physics, intrinsically, cannot be dealt with or explained by Physics.

Physics is a closed descriptive system whose primitives are quantities defined by measurable reference operations—mass, charge, distance, time, and their derived relations. That is, in order for Physics to account for an observation, Physics can only account for entities that are defined *within*, physics, say, by marks on a rod in a laboratory in France.

Conscious experience, by contrast, lacks any operational referent: there exists no measurable standard or definable object corresponding to *pain*, *awareness*, or *qualia*. Consequently, consciousness cannot be expressed or derived within the language of physics. That is, there is no 'pain' object in a laboratory to which Physics can refer measurements to. 'Pain' is a *first* person *experience* only. Only the *first* person 'feels' pain. They cannot send a message to another that allows that other to experience the same 'pain'. Attempts to define any aspect of experience always result in semantic self-reference rather than physical specification.

The argument presented here therefore concludes that physics and consciousness occupy independent, non-intersecting definitional loops. That is, words such as 'aware', 'feel', 'know', 'understand', 'consciousness' all refer to each other in the same loop. They cannot break out to physics terms such as 'the speed of light', 'Plank's constant', 'electronic charge' and so forth. This yields a Gödel-type incompleteness for physical theory: consciousness is a real but axiomatically independent primitive, irreducible to physical observables or computation.

1 Introduction

Most discussions of the hard problem of consciousness remain conceptual or empirical. The present argument derives the boundary formally from the definitional structure of physics itself. The reasoning demonstrates that consciousness is not a physical mystery but a definitional exclusion: the language of physics cannot, even in principle, express subjective experience.

2 Premises

1. **Domain of Physics:** Physics concerns only operationally definable observables.

A quantity Q is physically meaningful only if there exists a reproducible operational definition:

Q set of measurements referable to standard objects.

Examples: kilogram, metre, second, coulomb.

2. **Closure:** Only quantities reducible to such observables belong to physics.

   All entities that physics can treat are composed of, or reducible to, such observables and their relationships.

   If an entity cannot in principle be assigned an operational reference, it is outside the formal closure of physics.

3. **Nature of Consciousness:** Experiences have no measurable referent.

   Phenomena such as pain, awareness, or the feeling of red are directly known only through first-person experience.

   There exists no physical object or operation that can be identified as that experience — only correlations (neural activity, hormone levels, etc.).

4. **Circular Semantics:** Every linguistic definition of consciousness is self-referential.

   Any attempted definition of "consciousness" in ordinary language resolves into self-referential equivalences:

   consciousness → awareness → knowing → consciousness.

   Therefore no non-circular operational definition is possible within the semantics of physics.

3 Logical Construction

Let $\mathcal{P} = \{\text{all physically definable entities}\}$ and $C = \{\text{conscious phenomena}\}$.

Since C has no operational definition, $C \not\subseteq \mathcal{P}$.

Therefore, physics is definitionally incomplete with respect to C.

4 Theorem: Consciousness Exclusion

Statement: Physics, as a self-consistent formal system, cannot define or derive subjective experience.

Proof (informal): Physics is a closed system of measurable quantities. Consciousness is not measurable but only directly experienced. Therefore, no mapping $f : C \to \mathcal{P}$ preserving definitional meaning exists. $\square$

5 Corollary: Gödel Analogy

Just as arithmetic contains true but unprovable propositions, physics contains real but undefinable phenomena—consciousness:

$$\exists C \quad (\text{Real}(C) \land C \notin \mathcal{P})$$

6 Key Terms and Implications

Definitional Closure of Physics: Limited to measurable referents.

Phenomenal Domain: Defined only through subjective apprehension.

Gödel Analogy: Establishes logical, not empirical, incompleteness.

Implications: Physics and consciousness form orthogonal descriptive systems; AI and neuroscience can only model correlates, not experience itself.

7 Discussion

This axiom does not assert dualism or supernaturalism; it only specifies the logical boundary of a descriptive framework.

Neurobiology and AI can study correlations (patterns of neural firing, behavior, linguistic output) but never the experience itself.

Consciousness therefore functions as an independent primitive, similar to how mathematics treats "truth" or set theory treats "membership".

8 Consequences

For Physics: completeness of description ends with measurable correlates; subjective qualia require an additional primitive term.

For AI: algorithmic systems, being purely physical and computable, can reproduce correlations of consciousness but not consciousness itself.

For Philosophy: any attempt to define consciousness purely in physical terms results in self-reference and circularity; therefore new axioms or postulates are required to include experience within a unified ontology.

9 Conclusion

Physics is complete for measurable reality but incomplete for phenomenal reality. Consciousness stands as an independent primitive, necessitating new axioms for any unified ontology of mind and matter.

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