On Quantum Mechanics as a shortcut to Consciousness

A social-materialist critique

Boris Groisman

Quantum theories of consciousness remain within a Cartesian conception of mind. Ilyenkov offers a social-materialist alternative.

UNIVERSITY OF CAMBRIDGE

SIDNEY SUSSEX COLLEGE
UNIVERSITY OF CAMBRIDGE

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2: Why Link Consciousness and Quantum Mechanics?

- Consciousness remains difficult to explain.

- Quantum mechanics remains conceptually puzzling.

The temptation arises to connect the two mysteries.

3: Two Main Quantum Claims

Quantum consciousness theories: Quantum processes generate consciousness.

Examples:

- Orch-OR (Penrose/Hameroff)
- Quantum-biochemical models
- Field-level models

Consciousness-collapse theories: Consciousness plays a role in measurement.

- Conscious observation causes collapse.
- Consciousness enters fundamental physics.

These approaches differ, but both assign a special explanatory role to quantum theory.

Main Families of Quantum Consciousness Theories:

1. **Cytoskeletal models:**
   - Microtubules inside neurons: Penrose–Hameroff Orch-OR links quantum collapse to conscious moments.
2. **Quantum biochemical models:**
   - Quantum events may occur at the synaptic level, in neurotransmitter interactions, entangled molecular states, or receptor dynamics.
3. **Field-level models:**
   - Consciousness as a brain-wide electromagnetic or quantum field.
4. **Consciousness-fundamental models:**
   - A universal consciousness field with individual minds emerging via symmetry breaking.

4: Why These Theories Are Attractive

"Structural parallels":

Quantum theory	Consciousness
Uncertainty	Indeterminacy
Superposition	Multiple possibilities
Collapse	Decision
Entanglement	Unity of experience

These similarities are suggestive, but they are analogies rather than explanations.

5: Main Problems

- Empirical evidence remains limited.
- Analogies do not explain mechanisms.
- Quantum effects do not automatically generate meaning or subjectivity.

Most interpretations of quantum mechanics do not require conscious observers.

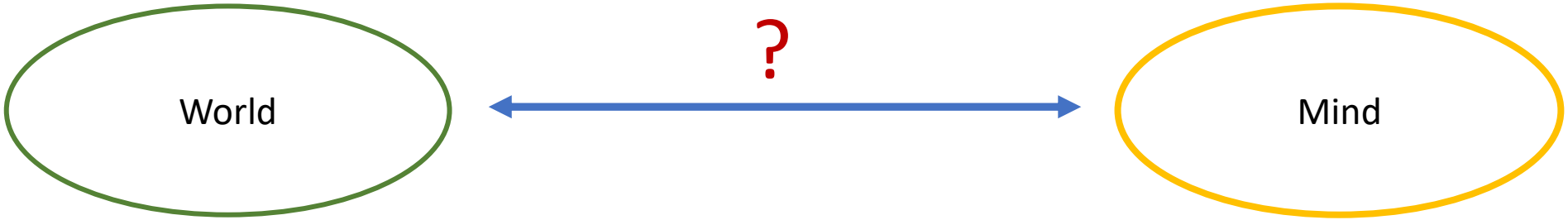
6: The Evolutionary Challenge

If consciousness depends on a highly specific quantum-gravitational process, how did such a mechanism evolve and become biologically advantageous?

7: The Hidden Assumption

A Shared Cartesian Assumption

Both quantum-reductionist and consciousness-collapse theories treat consciousness as an inner phenomenon requiring a bridge to physical reality.



Ilyenkov rejects this starting point.

8: Ilyenkov's Alternative

Ilyenkov’s approach is

‘distinct from both crude materialism – which understands human thought as essentially a biological phenomenon, a product of the physical brain – and idealist conceptions – which understand thought as something independent of matter, … .

In contrast to the reductionist truth claims of vulgar materialism and the relativistic malaise of idealism, Ilyenkov’s innovative concept of the ideal, which draws on classical philosophy …, as well as the cultural-historical school of Soviet psychology …, posits thought not as a product of the activity of the human brain, but rather as a product of human activity. Here, individual thought, like the individual self, is understood in its essence as a social phenomenon, that is to say, it does not arise spontaneously from the biological development of an individual child, but only in the context of a set of social practices that are internalised by the child.

These social practices give rise to a world of meaning, an ideal world, but one that nevertheless confronts the individual with the full objectivity of a police-baton. Ilyenkov’s concept of the ideal offers an original way of understanding the objectivity of immaterial phenomena.

Alex Levant and Vesa Oittinen in ‘Dialectics of the Ideal’

9: Ilyenkov's Alternative (continued)

- Meaning is not generated inside individual minds.
- Objects acquire ideal significance through social activity.
- Language, labour and culture create a meaningful world.

Example

Posting a letter:

Physics can describe every bodily movement involved in posting a letter.

But physics alone cannot explain what a letter, address or

postal system is.

The explanatory level is social rather than quantum.

10: Consciousness as Socially Constituted

- Children do not acquire minds merely through brain maturation.
- They develop through participation in language and social practices.
- Consciousness is the internalisation of objective social forms.

11: What This Means for Quantum Theories

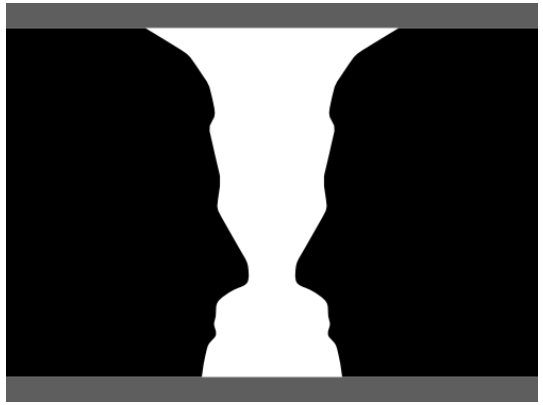
Let us revisit the original issue.

Quantum models may describe physical processes, but they do not explain the social origins of meaning, normativity, language or thought.

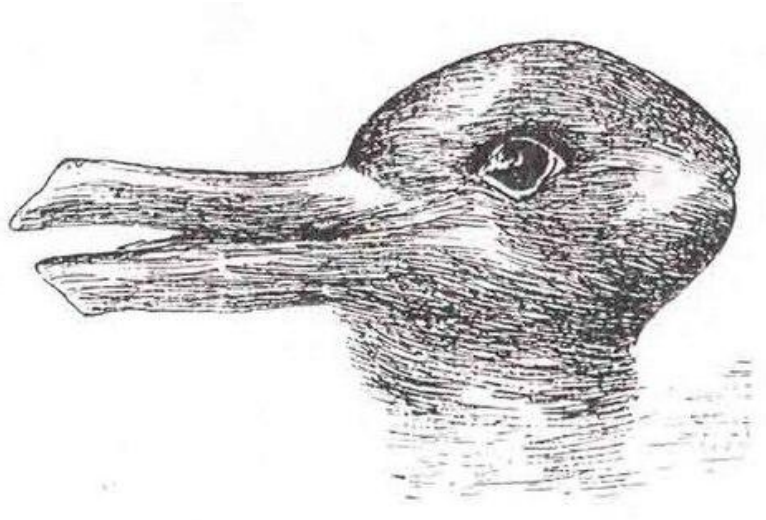
Perceived similarities between quantum states and mental states:

- Quantum uncertainty ≠ mental indeterminacy
- Superposition ≠ coexisting thoughts/mental possibilities
- Wave-function collapse ≠ decision making/ focusing attention
- Quantum correlations (Entanglement) ≠ unity of experience
- Quantum contextuality ≠ content-sensitive meaning

$$|\,DUCK\rangle \pm |\,RABBIT\rangle$$



OR



$$|DUCK) \rightleftarrows |RABBIT)$$

Slide 12: Conclusion

Quantum theories of consciousness seek an explanation for mind in the microstructure of nature. Their attraction reflects a deeper Cartesian assumption: that consciousness is an inner phenomenon requiring connection to the external world.

Ilyenkov reverses the question. Consciousness is not a hidden quantum property, but a socially constituted form of activity shaped through language, labour, culture and history. The real problem is not how consciousness enters physics, but how human beings become participants in a meaningful social world.