

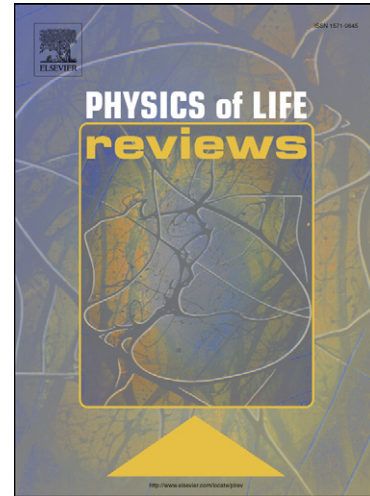
## Accepted Manuscript

Reality and Consciousness: A View from the East

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### Uncited references

[1]

**Reality and Consciousness: A View from the East  
Comment on “Consciousness in the Universe:  
A Review of the ‘Orch OR’ Theory”  
By Stuart Hameroff, MD<sup>1</sup>, and Roger Penrose, FRS<sup>2</sup>**

**Deepak Chopra, MD**

I have been asked to comment from the viewpoint of Eastern philosophy, which at first glance will seem irrelevant to most physicists. The essence of Eastern philosophy is to approach reality through subjective experience. Science takes the objective world as a given and has excluded subjectivity. On the face of it, the two worldviews face in opposite directions, even though it cannot be denied that our only access to reality is through subjective experience. If there is a reality beyond human awareness, it will remain unknown to us.

The potential for reconciling science and consciousness was first glimpsed during the quantum revolution a century ago when several of the greatest physicists, including Schrödinger, Heisenberg, Planck, and Pauli, surmised that consciousness might be so fundamental that it can't be gotten around. This line of inquiry proved uncomfortable, however, and although the observer effect and the measurement problem brought consciousness to the fringes of experimentation, the Eastern view that reality is best explained through investigations into human awareness – our vehicle for knowing reality – was steadfastly ignored.

The landscape is changing now. Physics has never come closer to describing the quantum foundation of consciousness than in this article by Penrose and Hameroff. It begins with the brain as a testable locus of the mind, the standard materialist position. But by tracing brain activity to quantum events at the microtubule level, the Orch OR model positions itself at the halfway house between the physicalist perspective and the “spiritual” perspective most purely represented by Vedanta. Vedanta is non-dual (*pace* the Penrose-Hameroff claim that “spiritual” systems are dual). It posits that the cosmos is the play of consciousness, which undergoes

transformations into what we perceive as matter and energy. By inserting Platonic values from mathematics, Orch OR, while still accepting the primacy of a world “out there,” opens up a choice.

The choice is between two non-dual explanations for how mind came into being. Vedanta says that mind is innate in creation. To be viable, this brand of monism must show how mind created matter and energy. The challenge from the Penrose-Hameroff side is to show how matter and energy created mind. Of the two, Vedanta, in my view, has the upper hand. Mind creates matter every time we have thoughts that generate unique electrochemical activity in the brain. But no one has credibly shown how molecules learned to think. This article is an optimistic step in a project that is paradoxical when viewed by Vedanta.

The paradox is that Vedanta rejects materialism as unsound while at the same time allowing any model to be valid on its own limited terms. Since all models are created in consciousness, and since consciousness creates reality, the scientific model is a creative use of consciousness – all models, including the religious and philosophical, are equal in this respect. Science isn't privileged, but neither is Buddhism or Theosophy or aboriginal animism. Vedanta can live with the paradox that all systems of thought are viable and inadequate at the same time. The only privileged thing is consciousness itself.

Orch OR provides a credible, testable model for how mental activity enters the physical world. I would take its optimism and turn it around: the mind-brain problem is indeed closer to being solved, not because quantum events give rise to mind but because these events indicate that an invisible agency (consciousness) is producing orderly, intelligent, information-infused activity at the very interface where spacetime emerges. The Platonic values of mathematics are undeniable, and once they are admitted into the picture, Vedanta would allow in every other

Platonic value (truth, beauty, love). Then "nothing" - pure awareness without qualities – is the only viable explanation left standing for the origin of mind and reality itself.

[1] Hameroff S, Penrose R. "Consciousness in the Universe A Review of the 'Orch OR' Theory". *Physics of Life Reviews* 2013;, this issue.