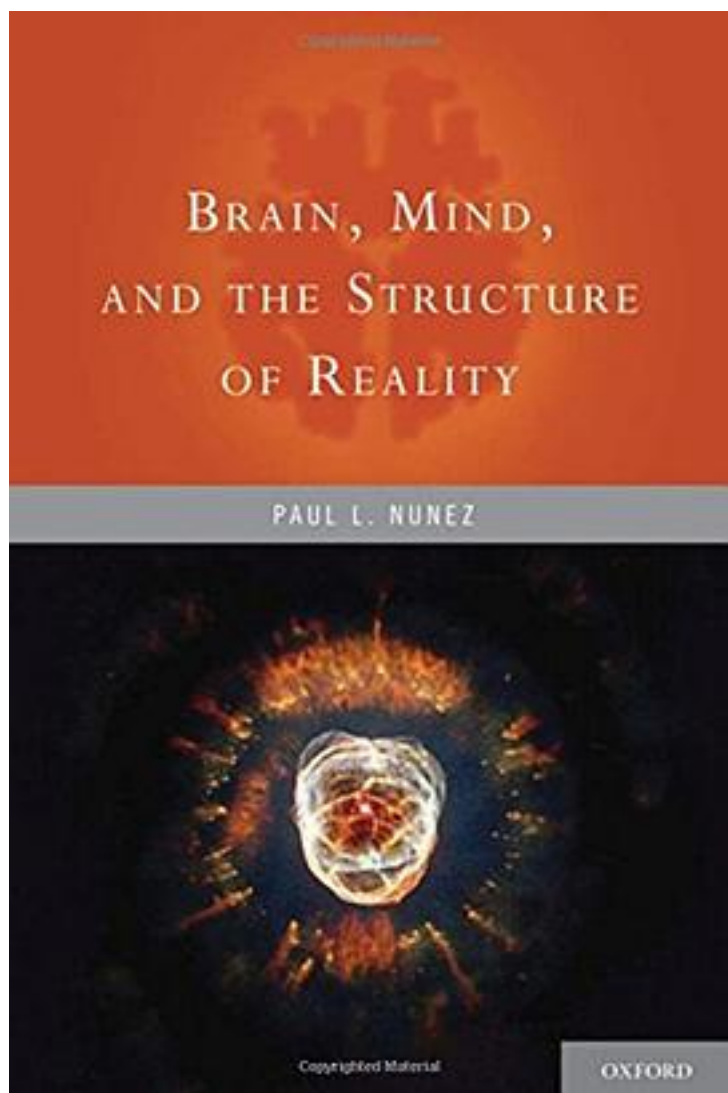


Brain, Mind, and the Structure of Reality



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Does the brain create the mind, or is some external entity involved? In addressing this "hard problem" of consciousness, we face a central human challenge: what do we really know and how do we know it? Tentative answers in this book follow from a synthesis of profound ideas, borrowed from philosophy, religion, politics, economics, neuroscience, physics, mathematics, and cosmology, the knowledge structures supporting our meager grasps of reality. This search for new links in the web of human knowledge extends in many directions: the "shadows" of our thought processes revealed by brain imaging, brains treated as complex adaptive systems that reveal fractal-like behavior in the brain's nested hierarchy, resonant interactions facilitating functional connections in brain tissue, probability and entropy as measures of human ignorance, fundamental limits on human knowledge, and the central role played by information in both brains and physical systems.

In *Brain, Mind, and the Structure of Reality*, Paul Nunez discusses the possibility of deep connections between relativity, quantum mechanics, thermodynamics, and consciousness: all entities involved with fundamental information barriers. Dr. Nunez elaborates on possible new links in this nested web of human knowledge that may tell us something new about the nature and origins of consciousness. In the end, does the brain create the mind? Or is the Mind already out there? You decide.

作者介绍:

Paul L. Nunez is Emeritus Professor at Tulane University and heads a small consulting firm (Cognitive Dissonance, LLC) that engages in brain physics and cognitive science research, mostly with the Cognitive Science Department at the University of California at Irvine. He has authored three technical books: *Electric Fields of the Brain: The Neurophysics of EEG*, 1981 (2nd edition with Ramesh Srinivasan of UCI, 2006) and *Neocortical Dynamics and Human EEG Rhythms*, 1995. Professor Nunez holds a Ph.D. in engineering physics and NIH-sponsored postdoctoral training in the neurosciences, both from the University of California at San Diego. Early in his career he held several positions in private industry, working on such disparate projects as spacecraft guidance, plasma instabilities, and controlled fusion.

Nunez's new book addresses both the easy and hard problems of consciousness. Many view human consciousness as one of the following: 1) Nothing but a byproduct of sensory, motor, and memory information processing, essentially saying that the hard problem is just an illusion. 2) Something mystical that lies beyond scientific purview, implying that the hard problem is just too hard for us deal with. 3) Explained by flaky ideas, pseudo quantum mechanics, or appeals to fuzzy theology. By contrast, Professor Nunez's book *Brain, Mind, and the Structure of Reality* (2010) aims for a proper balance between knowledge and ignorance. The book is based on hard science but is written for a general audience. It involves ideas from philosophy, religion, ethics, neuroscience, physics, engineering, and cosmology. Personal stories and a little humor aim for an enjoyable read. What do we know, what do we only think we know, and what can we perhaps never know? Does the brain create the mind? Or is Mind already out there. You decide. (Japanese translation in progress)

Professor Nunez has written about 100 scientific journal articles on EEG and related aspects of Complex Systems as well as many sections or chapters of edited books. A few of his more recent works are found in the following books: *Brain Computer Interfaces for Communication and Control*, 2011 (Wolpaw); *Quantitative EEG Analysis: Methods and Applications*, 2009 (Tong and Thakor); *Handbook of Brain Connectivity*, 2007 (Jirsa and McIntosh); *Encyclopedia of Nonlinear Science*, 2005 (Scott);

Encyclopedia of Neuroscience, 2004 (Adelman and Smith); Encyclopedia of the Human Brain, 2002 (Ramachandran); Analysis of Physiological Brain Functioning, 1999 (Uhl).

Author photos: Left, 2009; Middle, 70th birthday celebration, Queenstown, NZ, 2010; Right, Standing in UCSD's EEG lab, 1976.

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