

parapsychology cannot lose from this kind of well-documented exposure and the debate should be exciting. I cannot wait to see Dean on “Larry King Live” with The Great Randi.

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The Conscious Universe: The Scientific Truth Behind Psychic Phenomena
 by Dean I. Radin, Ph.D., HarperEdge, San Francisco, 1997. Hardcover,
 \$25.00, 345 pages, ISBN 0-06-251502-0

This is the best survey of real evidence for the existence of psychic phenomena ever compiled. Clear, comprehensive, engaging, and convincing, it provides hard facts, not hazy opinions. It is a bastion of substance in a sea of credulous *psi* publications that separates the real science of parapsychology from the morass of channelers, telephone hot-line psychics, side-show telepathics and metaphysical healers that most of the population associates with psychic phenomena, and who have unfairly caused parapsychologists to become pariahs to their colleagues in the more conventional sciences. A “must-read” for both believers and debunkers, it is even more important that it be seen and understood by scientists who have the training and resources to replicate the work described in the text. While it is not the capstone that provides legitimacy to parapsychological research and reality to psychic phenomena, it is the cornerstone that may inspire others to build upon past research and in the end, find scientific truth.

It is interesting to contrast this work with skeptical books such as C.E.M. Hansel’s *The Search for Psychic Power* (Prometheus, 1989) and Nicolas Humphrey’s *Leaps of Faith* (Basic Books, 1996), both of which argue strongly against legitimacy for parapsychological research and both of which are written by psychologists. Perhaps I am more in tune with the more comprehensive and hard scientific approach taken by Radin, because when I read those books in conjunction with this review, I found them to be far less convincing in their evidence and arguments against psychic research than Radin in his supportive manuscript. Radin’s wry sense of humor also comes through often in the book, such as in the anecdotal preface involving his interaction with skeptic Harry and the credulous Shirley. A play on Houdini and MacClaine perhaps?

Some may argue that *The Conscious Universe* provides unequivocal evidence for the existence of psychic phenomena. I must dissent and use the over-worn terminology that “it is suggestive but not conclusive.” Most of my skepticism lies in the use of “meta-analysis” for the validation of anomalous effects observed over many experiments by numerous investigators. The issues are so important that Chapter 4 of the book is devoted to the topic. The author rightly

documents the objections to meta-analysis including experimenter bias, over-weighting of data from a small number of large studies, inclusion of outlier data, and the file-drawer problem. I believe that he underestimates the significance of a number of these objections, particularly experimenter bias and the file-drawer problem, and ignores the significance of non-random bias in experimental design. For example, in Chapter 8 on Mind-Matter Interaction, the criticisms to meta-analysis of dice experiments are addressed. The claim that a few investigators who reported the bulk of the studies could be the source of the significant results was eliminated by trimming the data set of those studies. The objection that a few extreme studies biased the conclusion was similarly eliminated. And the file-drawer effect was found to require 121 unpublished and unsuccessful studies for each study used in the meta-analysis to reduce the odds to less than twenty to one. So what's my problem? I am reminded that "statistics is a systematic method for getting the wrong conclusion with 95% confidence" or even greater confidence in the case of meta-analysis. Problem 1: If one were to do a meta-analysis of the published literature on physical phenomena known to be fallacious, such as polywater, biotransmutation, the Allison Effect, or *N*-rays, would meta-analysis indicate that the phenomena were real? Very likely, since the vast majority of publications on these topics have been supportive. Typically there are only one or two significant papers that finally prove the phenomena to be invalid. Scientists tend to publish in support of a new and unique phenomenon, and not to publish just to beat a dead horse. Problem 2: It is not impossible that most of the included studies were invalid because of the confounding effects of experimenter bias and non-random bias in the experimental design. The file-drawer effect assumes that unsuccessful and unpublished studies are required to offset the successful studies, but if the successful studies are largely biased and thus invalid, the whole structure of the meta-analysis falls apart. From my highly non-statistical viewpoint, meta-analysis is a vain attempt to make a silk purse out of a sow's ear, and should be abandoned in favor of carefully controlled experimentation.

A much more powerful argument for psychic phenomena than meta-analysis can be found in carefully controlled experiments, such as the PEAR work described in Chapter 8 and the author's own work presented in a number of chapters throughout the book. Here is hard evidence by credible scientists that some phenomena exist that may not be readily explainable by current scientific knowledge. On the other hand, attempts at theoretical explanations (Chapter 16) and implications and applications of psychic phenomena (Chapter 17) are interesting but very speculative and somewhat out of character to the general tone of the book.

One of the more blatant themes running through the book is an unveiled attack on unbridled skepticism. Chapter 13, "A Field Guide to Skepticism," is dedicated to the topic, with significant parts of other chapters also addressing the issue. The overall treatment of skepticism is fair, with a few negative outbursts addressed at skeptics in general and a few individual skeptics in

particular. The author does seem to vary in opinion between “skepticism is one of the hallmarks of the scientific approach” and “damn skeptics,” perhaps as those certain individual skeptics come to mind. While a negative attitude towards dogmatic skepticism is understandable, since parapsychologists have been subjected to constant and sometimes vicious attacks by skeptics, there is still no justification for quotes such as “to distinguish the lone wolves from the properly socialized wolf packs, skeptics have invented labels like pseudoscience and pathological science.” Pseudoscience and pathological science are terms used to describe bad science once it has been proven to be flawed, no matter if it was performed by a lone wolf or a nation (*i.e.*, the Nazi racial science). Some parapsychology has been bad science and deserves to be described as pathological, just as bad science in other disciplines should be similarly labeled.

Finally, one of the topics discussed in Chapter 3 on “Replication” needs to be elaborated upon. The author relates the question of replication in psychical research to the discovery of the “omega-minus” particle in physics. As described in the text, the discovery was based on the observation of two events out of a total of 200,000 experimental trials, and the author ascribes acceptance despite the rarity of the event to the existence of a well-respected theory, to the work having been done by respected scientists, and to the results being not too remote from accepted scientific knowledge. What is not clearly brought out is that the difference between the physics experiment and the search for psychic phenomena is that the former is the search for a discrete event and the latter for statistical significance that implies a discrete event. If I seek to prove that “acorns fall from trees,” I can stand under the oak tree in my front yard for a minute once a day until I’m hit on the head by an acorn. Eventually when I’m hit I can conclude with 100% certainty that acorns fall from trees. If I attempt to psychokinetically induce an acorn to fall on my head every time I stand under the tree, I must determine the probability of an acorn falling with and without PK, and consider all possible confounding factors, such as time of year, wind speed, the presence of squirrels, earth movements, *etc.* This is far more difficult and it is the reason why many scientists are going to remain skeptical of psychic phenomena until they become explainable by accepted scientific laws. It is similar to the problem of determining the influence of a drug or radiation on a biological system, but with the additional burdens of a lack of theoretical backing plus the confusing inputs of pseudo-parapsychologists and psychics who muddy the water. It is to the credit of parapsychologists that they undertake this very difficult experimental problem at the risk of their careers.

I was recently asked to do a magazine interview on mind-matter interaction, but had to refuse because of my employment in a government agency. In speaking with one of our public relations officials, through whom such interviews are approved, I found that she had the common belief that such topics were associated with channeling and telephone psychics. I recommended this

book to her. If *The Conscious Universe* does nothing more than raise the consciousness of the general public and the scientific community toward the real science in parapsychology, it will have achieved something truly significant.

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L'Esprit de la Nouvelle Science by Marcel Odier. Lausanne: Editions l'Age d'Homme, 1990. pp. 268. (This book, out of print with the publisher, is obtainable from the author. Write to: Marcel Odier, 77 Route de la Capite, 1223 Cologny (GE), Switzerland. The price is \$20.00 post paid.)

The editors of this journal wish to draw the attention of its readers to books in languages other than English that deserve their attention. This is one, and we should have noted its excellence earlier.

The author was trained in science and subsequently became a banker without losing his interest in science and knowledge of it. His book is in the first place a lucid exposition of modern physics. It is, however, much more than that, because Odier believes that there is nothing incompatible between what physicists say about the world and paranormal phenomena. He deplores the widespread tendency, evident even in many well-educated persons, to think of science and religion as inevitably opposed to each other.

The book is divided into three parts. Part One is devoted to "the facts" and Part Two to concepts. Part Three consists of dialogues about the topics of the book between the author and five distinguished thinkers: two theologians, a publisher, a writer, and a physicist. Of these, the best known outside francophonous countries is the physicist Olivier Costa de Beauregard.

Not being a physicist myself and being aware of my ignorance of physics, I try to alleviate my condition by reading books on physics written for general readers. Over many years I have read many of these, and this is one of the best. Odier has a remarkable gift for lucid exposition. The dialogues in Part Three add to the value of the book, because the different speakers examine the facts and the concepts of the first two parts and introduce fresh perspectives, sometimes with reference to the experiences that generated them. For example, Father Bruckberger describes how he shook off an oppressive cartesian emphasis on rationalism (inculcated by his educators) and converted, one might say, to the empiricism of Claude Bernard's *Introduction à la Médecine Expérimentale*. Bruckberger also alludes favorably to *La Mélodie Secrète*,¹ an exposition

¹This work was published in Paris by Fayard in 1988. An English translation, entitled *The Secret Melody: And Man Created the Universe*, was published by Oxford University Press in 1995.