

and poltergeists, but also particular methods such as case collections, surveys, and field studies.

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HOW TO THINK ABOUT WEIRD THINGS: CRITICAL THINKING FOR A NEW AGE by Theodore Schick, Jr., and Lewis Vaughn. Mountain View, CA: Mayfield Publishing Co., 1995. Pp. xvi + 299. \$18.95 (paperback). ISBN 1-55934-254-4.

How to Think About Weird Things is designed for use as a textbook in an undergraduate college course. As described in the book's preface, it includes explanations of 34 principles of knowledge, a procedure for evaluating extraordinary claims, boxes offering details on offbeat beliefs, comprehensive treatment of different views about the nature of truth, discussion of the characteristics of science, treatment of evidence appealed to in health issues, discussions of over 50 mysterious phenomena (e.g., astrology, ghosts, ESP, psychokinesis, UFO abductions, channeling, water witching, near-death experiences, prophetic dreams, demon possession, time travel, parapsychology, and creationism), and an appendix that explores various informal logical fallacies. The work has a foreword by Martin Gardner and falls within the skeptical genre as advocated by the Committee for the Scientific Investigation of Claims of the Paranormal.

A better name for this book would be *How to Arrive at Skeptical Conclusions*. Students using this text should develop better reasoning skills and, as a consequence, should become more skeptical regarding many occult beliefs. The book reviews previously debunked anomalous claims such as the Cottingley photos of fairies, the Tamara Rand Hoax, and the hundredth monkey story. Within the skeptical community, the Schick-Vaughn book will probably be heralded as an important contribution to the literature. It is a clear, well-written presentation of the skeptical orientation. Its strength lies in its analysis of the tenets of science, reviews of silly claims, and discussions of logical fallacies.

Unfortunately, *How to Think About Weird Things* contains instances of shoddy scholarship. Although the authors claim that the book is about "how to find answers for yourself," they provide relatively few sources

from advocates of anomalous beliefs. Lists of "suggested readings," which precede reference notes at the end of each chapter, contain no book or article by a member of the Parapsychological Association.

Since the majority of people in America believe in extrasensory perception and have had anomalous experiences, we might expect that *How to Think About Weird Things* would review the scientific evidence regarding such claims. The authors devote only 13 pages to the topic of "parapsychology" (pp. 219-231). They cite scholars who argue that "most, if not all, of the major findings in parapsychology can be attributed to errors in random number generation or response bias" (p. 220). They discuss whether the existence of a fully developed psychic capacity would be beneficial (p. 221). They quote from the National Research Council's report, which states that parapsychological experimental designs are of insufficient quality to arbitrate claims (p. 222). They describe an incident in which a Soviet man was run over after he stood in front of a train and attempted to stop it psychically (p. 224). They evaluate J. B. Rhine's research program and find it inadequate. They quote from Zusne and Jones's (1982) *Anomalistic Psychology*: "At one time, the ESP cards had been printed with such a heavy pressure that the symbols became embossed in the card material and could be read from the back." (Zusne and Jones distort the meaning that should be attributed to this incident. Although an early publisher of one set of Zener cards did use inadequate material, this deck was not used in Rhine's research program.) The authors critically discuss Schmeidler's "sheep-goat effect" but fail to review meta-analyses pertaining to this hypothesis (p. 227). Instead, they review Soal's and Levy's dishonesty and argue that parapsychology has had "more than its fair share" of frauds (p. 228).

They review the "Project Alpha" case as a "dramatic demonstration of the need for magicians in the psi lab" (p. 229). Using Terence Hines's (1988) *Pseudoscience and the Paranormal* as their reference, they claim that the McDonnell Laboratory for Psychical Research in St. Louis was created with a \$5,000,000 grant, making it "probably the best funded psychical laboratory in the world." They state that two young magicians, under the direction of James Randi, went to the lab seeking to fool the parapsychologists:

Shaw and Edwards easily convinced the research staff at the McDonnell Laboratory that they had genuine psychic powers . . . They rarely failed to achieve "psychic" feats . . . Randi reports in detail on the simple ways in which these deceptions were carried out . . . The controls that were placed on Shaw and Edwards were totally inadequate to prevent their use of trickery. Even when videotapes of their feats showed fairly clearly, to anyone

watching them carefully, how the trick had been done, the enthusiastic laboratory staff failed to catch on. (p. 229)

I had the opportunity to interview Shaw, Edwards, Randi, and all the researchers at the McDonnell Laboratory while Project Alpha was in progress. *How to Think About Weird Things* illustrates how scholars depending on secondary sources can go astray. The McDonnell Laboratory was started with a \$500,000 grant (not \$5,000,000). Lab researchers attempted to capture the performances of Shaw and Edwards on camera and presented their preliminary findings at the Parapsychological Association meetings in 1981 for evaluation and advice. They and the other parapsychologists I interviewed were aware that their controls were not adequate. When they tightened their controls during later experiments, Shaw and Edwards were unable to produce anomalous effects. As a consequence, the researchers ended their experiments with them. The authors' text reflects James Randi's false portrayal of Project Alpha; this case actually illustrates an instance in which skillful magicians caused investigators to waste time and money investigating false leads. For a more complete discussion of Project Alpha, see Truzzi (1987).

Schick and Vaughn devote one page to Honorton's ganzfeld research, quoting Ray Hyman's comments in an article by John McCrone for the *New Scientist* in 1993. They note that attempts to replicate Honorton's experiments are underway and that "if they are successful, we may have to start rethinking our world view" (p. 231).

In summary, *How to Think About Weird Things* provides guidelines for applying the principles of scientific thinking to paranormal claims. It might be useful as a supplementary text in a course regarding the philosophy of science and paranormal claims. It illustrates the skeptical paradigm pertaining to "thinking about weird things." Most professors would find this book to be incomplete by itself because of its limited coverage of sociological or parapsychological orientations. Although the authors stress examining the evidence regarding any claim (step 2 in their "formula for inquiry"), they tend to rely on secondary analysis, using only skeptical literature. Although few would disagree with the "34 principles of knowledge" presented in this book, those reading *How to Think About Weird Things* should be cautious of its hidden bias.

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