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**Pseudoscience and the Paranormal: A Critical Examination of the Evidence.**  
Terence Hines. Buffalo, New York: Prometheus Books, 1988, 372 pages.

*Reviewed by Avshalom C. Elitzur, The Weizmann Institute of Science*

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The first reaction with which one is likely to greet such a book is "at last!" Psychology, as an inevitable side-product of its modern success, has become a major contributor to the growing pseudoscience literature. A careful examination of this nonsense industry, and of the motives behind it, is an undertaking worthy of a university psychologist. Terence Hines, known to readers of this journal from a lively debate following his harsh (and justified, in my opinion) criticism of a sloppy psychology book (Hines, 1983), has now undertaken this task.

This book is written as a course book for students and for a general audience as well. As its title indicates, it is not only pseudo-psychology that it aims to debunk, but pseudoscience in general. It thus contains discussions of UFOs, the Loch Ness Monster and "health food." This makes the reviewer's job a formidable one, requiring sufficient knowledge of a wide range of issues. It may therefore be advisable to deal mainly with the treatment of pseudo-psychology as an indication of the level of the other discussions.

The vast area of psychic phenomena, psychic healings, spiritualism and parapsychology is the first examined by Hines. His discussions of these issues is in general informative and comprehensive. The findings of laboratory parapsychology are well represented, though I feel that the discussion should not ignore the more recent and striking results of Jahn and Dunne (1986) of Princeton University and the Maimonides dream research program (Child, 1985). But, be that as it may, Hines rightly argues, in accordance with common scientific standards, that parapsychology cannot be regarded as a science owing to its failure to present even a single reducible experiment. The discussion is illuminating in that it provides the reader with a good explanation of basic notions such as reproducibility, falsifiable theories and the psychology of belief.

However, my high expectations following this nice start were soon dispelled as Hines' idiosyncratic view of "good guys" and "bad guys" within psychology began to take over. Misrepresentations of psychoanalysis are as common today as they were fifty years ago, and Hines secures himself a notable place in that tradition. His account of psychoanalytic theory is sketchy and distorted, mingled with gossip about Freud and various *ad hominem* allegations. The young Freud's relationship with Fliess, however

interesting, is hardly relevant to the theoretical status of psychoanalysis, nor is the anecdote about Hines' college literature lecturer. Hines describes at length the scientific status of dream symbolism and anal eroticism, but says nothing about much more central (and sounder) notions such as defense mechanisms and more modern psychoanalytic concepts. The slippery subject of psychohistory takes another very lengthy portion of Hines' discussion of psychoanalysis. This choice of issues proves an efficient strategy for making psychoanalysis a straw man in order to knock it down with a triumphant cry. A reliable reviewer's task, however, is to make a comprehensive review of the empirical and theoretical works dealing with the credibility of psychoanalysis, upon which the overall evaluation should be founded.

Hines rightly argues that psychoanalytic therapy has failed so far to give statistical proof of its effectiveness. As Grünbaum (1984) has convincingly shown, even a successful treatment cannot validate a psychological theory. What *can* constitute a reliable scientific proof is extraclinical, empirical evidence, a field which Grünbaum (1984) himself views as crucial for psychoanalysis' scientific status. But, here again, Hines' choice of the relevant studies suffers from a fatal bias. The selection of empirical studies upon which he bases his overall negative evaluation of psychoanalysis is extremely poor and misleading. It would not have been a representative sample even a decade ago.

But perhaps Hines has just never heard of the massive reviews by Fisher and Greenberg (1977, 1978), Kline (1981, 1984), Lewis (1981, 1983), and others, concerning empirical tests of psychoanalytic hypotheses? Unfortunately, he cannot plead ignorance in this respect. On the very last page, when mentioning Silverman's research using subliminal perception, Hines quotes the famous article published in Masling's (1983, 1986) well-known series about empirical research in psychoanalysis. So Hines knows that at least one such volume exists. Yet no mention, let alone discussion, is made of the other studies included in that volume.

The way Silverman's work is mentioned by Hines is most illustrative. Silverman, let it be recalled, showed that a subliminal message can cause significant behavioral changes in accordance with the unconscious significance of the message presumed by psychoanalysis. These findings, supported by several sophisticated control experiments, are so striking that even writers sympathetic to psychoanalysis may find them too good to be true. Nevertheless, they are by now based on experiments involving more than 1000 subjects in over 35 different studies conducted by many independent teams (see Bornstein [1990] for an extensive review; and Elitzur [1990] for a brief discussion). Hines, however, after mentioning Silverman briefly, comments that

Silverman's work is controversial, and for every positive finding, negative findings have also been reported. . . , although the productivity of Silverman and colleagues is such that the absolute number of positive findings is greater than negative ones. The mere number of confirming versus disconfirming results does not measure the validity of the basic findings because of the greater probability of publication of a positive over a negative result. (p. 316)

This is simply not true. There are no negative findings "for every positive finding," as anyone familiar with the references given knows. But the last sentence commits the fallacy of telling a half-truth. The naïve reader may conclude from it that psychological journals in general are not trustworthy because of their bias towards positive findings. Hines refers here to the notorious "file-drawer effect," which should in itself have been an important issue in the book. Instead, Hines makes an unfair and oversimplified statement with no mention of the current awareness of the problem, e.g., journals with a stated policy of publishing negative findings as well (see

the inside back cover of *this journal*!). Had experimental psychology been so unreliable, Hines should discard every positive finding that he himself quoted in support of his claims. It is deplorable that the very last page of the book gives such a distorted picture of psychology to students and laypersons.

This book's bias is reflected even more acutely in what Hines chooses *not* to discuss. Since his definition of pseudoscience seems to include also unfounded claims in general, it is odd that he fails to mention the most infamous contribution of academic psychology to crackpottery, namely Cyril Burt's faked results and the ideological mumbo-jumbo founded on them. Neither is there any mention of the issue of race and intelligence, which, again, is highly relevant to the book's purpose. As one goes through the book, one cannot help having a suspicion that an "ideological" bias is involved in this selection. Is the fact that Hines is a proponent of behavior therapy unrelated to his avoidance of Eysenck's (1986) famous theories concerning astrology or the alleged genetic link between smoking-addiction and cancer? And why does the chapter about parapsychology not mention Eysenck's best-seller (Eysenck and Sargent, 1982) on this issue?

Probably Hines chose not to cover all psychology's contributions to crackpottery because he needed room for other issues such as UFOs and health food. Here even a layperson can often notice that the author went far beyond his expertise. His treatment of dietary and other medical issues is amateurish. The discussion of the relevance of rat studies and the hand-drawn graph of a "course of a fatal disease" in Figure 18 are just two examples of the superficial treatment these subjects have been given.

Yet, when Hines discusses issues close to his expertise he sometimes shows himself capable of doing his homework well: dealing with the high public status of graphology, he cites several relevant studies, most of them recent, upon which he bases his overall negative estimation. Likewise, his treatment of biorhythm seems to me fair and illuminating. This is why I find *Pseudoscience and the Paranormal* so disappointing: it could have been a very good book!

The disappointment increases when one compares the book with earlier works that addressed similar issues. The field of scientific crackpottery is covered in a more extensive, more readable and yet more concise manner by Martin Gardner's *Science: Good, Bad and Bogus* (1981). Scientific fraud is a subject that was treated much more thoroughly in Alexander Kohn's *False Prophets* (1988), which Hines fails even to mention in his bibliography of recommended readings. Pointing out these bibliographic gaps is not mere pedantry. A basic indication of a work's soundness is its ability to relate to earlier works in its field.

*Pseudoscience and the Paranormal* left me highly ambivalent. At times it provides very informative tours through psychology and critical thinking. At other times it does a gross disservice to scientific psychology. Ideologies and interests misuse science not only by inventing a wild, too-permissive psychology. An equally severe distortion is caused by those who invent an impoverished psychology not unlike behaviorism, in which nearly everything interesting is "unscientific." Such a psychology is not more scientific than spiritualism or creationism.

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