

The author includes a comparison of the results of the 45 cases she investigated with 50 cases studied by Stevenson. She also discusses the various alternative explanations for the behavior of the children: fantasy, fraud, genetic or inherited memory, cryptomnesia, paramnesia, extrasensory perception, possession, and finally, reincarnation.

Our understanding of certain aspects of human behavior may well benefit from investigations such as these. The author says, "If the results obtained in the present investigation support the hypothesis of reincarnation, they add to existing knowledge and understanding of human personality". It is just possible that an explanation for the occurrence of personality disorders, for which there is no present **satisfactory** explanation or treatment, may rest in investigations such as these.

The phenomenon of birthmarks is a subject that deserves the most careful study and thought because it may be the closest thing to empirical evidence for reincarnation that may ever be found. It may also point to a previously unsuspected mechanism at work in the process of evolution, whereby the death experience of an entity is reflected in physical aspects of a subsequent body in which the same soul is presumed to reside.

The organization of the book was mildly disappointing; the chapters were overly long and combined more results in a single chapter than I would like to see. The quality of the printing was poor, and there were a number of typographical errors in the text. The publisher should correct the typographical errors and print the book on a better grade of paper.

This book is a fine addition to the literature on the subject. I enjoyed reading it, and I recommend it without reservation to anyone who is interested in this phenomenon.

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Too Hot to Handle: The Race for Cold Fusion, by Frank Close. Princeton: Princeton University Press, 1991, 376 pp.

Why would one want to read a book about "cold fusion?" First, to learn whether there's any truth to the scientific claim. Second, to learn what the episode has to teach about the nature of scientific activity in this scientific age and country where science and technology are so much in the public eye and enmeshed in arguments over public policy. Readers of this Journal will be interested for the corollary reason that arguments about anomalies display many points of similarity.

The first book about cold fusion, by F. David Peat (*Cold Fusion*, Chicago: Contemporary Books, 1989), was a slim, mediocre pot-boiler that offered nothing more than articles that had already appeared in magazines like *Time* and *Newsweek*. Close's book is much better than that; but it is also flawed, and one hopes for more from forthcoming works. At least three works have already been rumored: one is by science writer Gary Taubes, author of *Nobel Dreams*, another is by John Huizenga, professor of chemistry at Rochester, and a third is by Eugene Mallove, science writer at MIT (the last reported on BITNET as being in proof, entitled *Fire from Ice*, and giving credence to the reality of the claimed phenomenon).

Close recounts the early sequence of events in plausible detail showing how Fleischmann and Pons, as well as much of the scientific community, may have come to give too much credence too quickly to early, tentative experiments. Most important, the initially presumed congruity of the work of Fleischmann and Pons at the University of Utah with that of Jones at **Brigham Young University** turns out to be quite spurious. Also significant for the media and the scientific community will have been Fleischmann's reiteration that he and Pons had been working on this for 5 years. Close makes a good case that these were 5 years of desultory talk and exploratory trials and that the "decisive" experiments preceded the press conference by no more than a year or thereabouts.

Close damages the credibility of Fleischmann and Pons most seriously by recounting the varying answers they have given about control runs with ordinary water to check on the working runs with heavy water. And Close's case seems sound as he repeats over and again the lack of evidence for any products that one would expect from fusion, be they particles or radiation or newly formed atoms. Nevertheless, the matter is not entirely over. It does seem that several people continue to observe unexplained heat in these systems. Close, a physicist, is quite sure that this must come from chemical processes; chemists, on the other hand, don't think so.

At any rate, Close has provided welcome illumination on some important points, and that his answer to the scientific issue is not quite final reflects the state of the art more than any failure of the book (though one is left hanging unnecessarily by Close's failure to tell us more about, say, anomalous helium in Indian hot springs [p. 24] or what Hutchinson's group actually did—by contrast to planning to—during 1990 [p. 265]).

But the book has more serious shortcomings. Its occasional pretensions to seeing this case in the context of the history of science are perfunctory and feeble. The title of chapter 14, "Test-Tube Fusion: Science or Non-Science?", is hardly justified by a couple of pages of second-hand musings about "pathological science"; and the repeated assertion that peer review is the essence of scientific activity—though essentially true—remains no more than an assertion in the absence of contextual discussion. It remains for

some other book to milk cold fusion for the light it can shed on the nature of contemporary science and the lessons it has for anomalists.

That may be a minor sin of omission; unfortunately, Close's book displays notable sins of commission too. It is inferior in organization and style, and there are some highly questionable statements as well. More than once Close remarks that Fleischmann and Pons were unknown "outside their immediate circle." On the contrary, Fleischmann especially was known to all serious electrochemists, and his Fellowship of the Royal Society ought to count for some visibility outside his discipline. The attempts to reason a priori that cold fusion *couldn't* be true will be familiar to anomalists who have explained to them all the time why a certain phenomenon just cannot exist: "had there been some previously unknown nuclear process . . . at room temperature in solid materials . . . it is likely that we would have discovered this long ago in some disaster [involving generation of nuclear power]" (p. 27); "Releasing millions of volts of energy from a nucleus by means of a few volts from a car-battery made no sense at all" (p. 123; by that token, we could never generate useful energy by any means!).

Close fails to explain why Fleischmann and Pons could claim that "the effective pressure induced by the electrical potential would approach 10^{27} times atmospheric," namely from the thermodynamic relation between electrode potential and activity of the reactants, a relation that is similarly applied by other scientists, for instance in connection with solubility (see Henry H. Bauer, "Physical Interpretation of Very Small Concentrations," *Journal of Scientific Exploration*, 4 (1990) 49). In a number of places, poor expression masks Close's meaning: for example, "The centre of the Sun where fusion occurs is at a temperature of around fifteen million degrees but practical fusion needs a much higher temperature than this" (p. 31). The spelling indicates that Princeton University Press may have used printing plates supplied from the prior English publication by W. H. Allen; but there are numerous spelling errors (e.g., scientific; aficionados), not just differences between English and American usage.

If there was any proofreading done on this book, then it was highly incompetent—see for instance p. 357, note 1 for chapter 2. Thus, up to page 57, we read about *dt* or *pd* fusion, but thereafter it is *DT* or *PD*. On page 99, which is in chapter 6, the reader is referred for further information to chapter 6. Commas and hyphens are used apparently at random rather than with purpose; blank but numbered lines in tables on pages 117 and 122 give food for useless thought; the checklist of mentioned meetings on p. 222 serves only to tell us that other meetings too were held and to confuse us because "1988" appears where "1989" should. And if the proofreading was absent, so was any serious copyediting. A book on this subject ought to be exciting reading, but this one is not because it is so poorly organized; in particular the same points are repeated over and over again in different chapters and even in

different sections of the same chapter. This could have been so much better a book with not all that much extra effort, and the blame should rest largely on the shoulders of the publishers. If Fleischmann and Pons went public too early, so too have the publishers produced this book far too hastily. Perhaps one can't expect more nowadays from a commercial publisher, but why would Princeton University Press put out something so shoddy?

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