

## BOOK REVIEWS

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**Nine Crazy Ideas in Science. A few may even be true.** Robert Ehrlich. Princeton University Press, Princeton, New Jersey, USA. 2001. 239 pp. Price not mentioned.

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I am surprised that the editor saw fit to send me this book to review from the city of Bangalore, the place of IT boom and doom. Then, this book is about action ... in science, that is. The happenstance of science is best illustrated by the thin 'crazy' line, dominated by mavericks and dividing the plausible and the possible. The book is written by a physicist who has respect for simple language and clear ideas. Reading this book makes you suspect that he is a passionate teacher who loves his job. He does not reveal any particularly condensing attitude characteristic of many lesser physicists, about subjects not as defined as physics. He sees that all topics can and should be viewed rationally and that there is every reason to do so. He chose topics half from physical sciences and half from elsewhere. The topics (I mention them to indicate the range) are: More guns means less crime, AIDS is not caused by HIV; Sun exposure is beneficial; Low doses of nuclear radiation are beneficial; The solar system has two suns; Oil, coal and gas have abiotic origins; Time travel is possible; Faster-than-light particles exist; and There was no big bang.

I should mention that the author is quite clear that he is not dealing with the nutty (further clarified by the author as flaky, whacky, loony, ridiculous) ideas. He would rather have crazy (fantastic, weird, bizarre, strange, absurd) ideas as the centre of attention. He concedes, that for every idea that works, many do not. The specifics that go into the decision may be for reasons other than the possibility that it was a stupid idea, argued post-facto. He makes a fervent plea to be open-minded about each idea and evaluate with some attention to who is saying it, how good are the data, are they motivated, is the proponent committed (if he is *to be committed*, it would come under the nutty ideas!) and so on. He had some idea that the book may be used for some course at the college level.

Having said that, I must express some reservations. The author appears to be very much an establishment figure, therefore well focused. So is science, the normative kind that is. Focus itself could detract you from looking for real questions and therefore real debates. To me a crazy idea is something, after having encountered it, I cannot look at the world the same way again. The *possibility* is the apple, and once you take a bite at it, the garden of innocence is gone and the doubt would linger (too many metaphors; the problem is with the good book actually). The starting question is whether gun control leads to more crimes or less crimes. It is a debate kept alive only in the USA. Nearly all the rest of the world (except the regimes that live and kill by the gun), civilized as it is, keeps away from guns. Should not the author ask, is it a *worthwhile* question? Given a question, he asks whether the proponent has an agenda. So do questions have an agenda. Is there an agenda in keeping questions open and alive? How deep should we dig? The author does not say. There was this old story about the Minister for Transport having heard that the first and last carriages are involved in most train accidents, ordered that they be removed henceforth in all trains. Gun control indeed.

I wish to comment on the idea that the solar system has two stars. The story has two aspects: a ~26 million year periodicity on earth-bound data and dinosaur extinctions could have extra-terrestrial origins in some periodic catastrophes. The author, as I see, missed the beginnings in both the debates. The first paper to my knowledge on the periodicities was by Negi and Tiwari in *Nature* on the geomagnetic reversals, also cited by Raup and Sepkosky, at least initially. Janardan Negi of National Geophysical Research Institute, Hyderabad and I have had several arguments (my role being limited to that of an interested listener over an occasional evening cup of coffee) at that time. The difficult point at that time, as I remember, was the lack of some independent bases of establishing periodicities, theoretical, empirical or analytical. I remember him telling me of considerable difficulties for some subsequent publications. Catastrophism, as

opposed to Lyell's gradualism, was advocated by Velikovsky for reasons quite different from the so-called scientific reasons. I am yet to see a formal apology issued by the scientific community, which now embraced catastrophism with a vengeance, to Velikovsky for the treatment they have accorded him. Has the author missed something: in looking for crazy ideas from an establishment point of view (how would it be a crazy idea otherwise?); do we really miss where they all began?

The establishment figure has to worry over what ideas are to be classified as good, bad or ugly, and why. The maverick has to worry about, not whether the idea is crazy, but whether it is crazy enough. If we ask the question whether low doses of radiation are good or bad, the answer is not going to be in collecting statistics, but the mechanisms involved in suppressing cancer and other diseases. Admitted or not, biologists also prefer to have mechanisms and not simply play the number game. True, somebody got a Nobel Prize for the goodness of sunlight for tuberculosis patients. Why does not anyone talk about it now? Some of the ideas that Ehrlich talked about, we would not discuss any further in biology, for exactly the same reason as he would not waste time on the hypothesis of heat and cold as substances any more.

But then the author makes the point successfully, that the process of examination should not cease. There is yet another side to crazy ideas. It is a less pretentious way of talking about creative ideas. Some of the major discoveries in biology were based on wrong ideas and over-zealous gardeners. In that sense, the discussion tends to be prosaic in that it does not deal with the drama, the ups and downs and so on, that go into giving visibility to the crazy idea. All in all, I liked the book and could finish it nearly in one sitting. One cannot say that of a lot of non-fiction, about science or anything else.

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