

Book Review

Quantum Leaps In The Wrong Direction

by Charles M. Wynn and Arthur W. Wiggins, with cartoons by Sidney Harris (Joseph Henry Press, 2001) 226 pp., ISBN 0-309-7309-X; \$18.95 (paperback)

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Not long ago, the Sunday edition of a large daily newspaper in the northeastern part of Massachusetts carried a front-page story about a local minister with a fairly large collection of dinosaur fossils, who travels around, using them to teach and preach about creation science. Beyond the large photo of him proudly holding a giant leg bone, perhaps the most striking thing about the story was its complete lack of a sense of irony.

I have no doubt that somewhere in the inner pages of this same paper were horoscopes, which many people would read and at least some would believe. And, of course, one doesn't have to look much further afield to find advertisements for palmistry, crystal power, psychic advisors and the like.

The fact that at the beginning of the third millennium, in what is arguably the most technologically advanced and highly educated society the world has yet seen, there is a wide-spread and growing fascination with astrology, psychic phenomena, UFO's, extraterrestrial life, creationism and the like, is sobering, to say the least, and somewhere between baffling and distressing to most scientifically literate people. That, presumably, is what lies behind Charles Wynn and Arthur Wiggins' decision to write this book, and the decision of the Joseph Henry Press (a division of the National Academy Press) to publish it. I could not help recalling a cartoon I saw several years ago, in which a man reading the newspaper while watching what appears to be a television comments to his wife "It say here that 70% of Americans are scientifically illiterate," to which she replies "That's the Microwave."

Quantum Leaps In The Wrong Direction takes a critical look at widely held pseudoscientific beliefs, leavening the text with cartoons by Sidney Harris, whose work has enlivened the pages of numerous magazines, including *Science*, over the years. The book clearly has the general reader in mind, beginning as it does with three chapters devoted to a description of the scientific method and the way in which it can be used to distinguish the point at which true science ends and pseudo-science begins. From there, Wynn and Wiggins devote the next five chapters to what they regard as the most egregious examples of pseudoscience: UFO's and extraterrestrial life; out-of-body

experiences and related phenomena; astrology; and, of course, the ever-popular “scientific creationism”. In each case, they frame the topic as a hypothesis, summarizing the evidence or observations on which the hypothesis is based, and presenting the relevant biological, chemical and physical background. They then attempt to make predictions based on the hypothesis, and to compare them with experiment to see whether they are borne out.

To choose one example, the chapter on “Out Of Body Experiences And Entities” focuses on several topics (near-death and out-of-body experiences, ghosts, channeling, spirit possession, and astral projection) which Wynn and Wiggins classify under the general heading of spiritualism. Near-death experiences receive the most attention, the authors arguing that the lights, sounds, sense of comfort and mind-body dissociation reported by people can all be explained in terms of neurochemistry without reference to anything nonphysical. They therefore conclude that this eliminates the need for the “soul hypothesis”, based on “Occam’s Razor” (or, more descriptively, the “Parsimony Principle” of maximum economy in explanation). The remaining material in the chapter receives shorter shrift, being dismissed as instances of either self-delusion or outright fraud. The chapter concludes with a brief section entitled “Immortality,” that poses the question “Do we simply cease to exist at the moment of death, or do we persist in some way after death?” and concludes that we certainly “live on” in our descendants’ genetic endowment, in the memories and actions of those whose lives have been impacted by us directly or indirectly, and in the energy that is recycled upon our death. While I do not disagree with this minimalist statement about immortality, which after all, is all that can be scientifically justified, its terseness seems by implication almost to relegate those of us who are both scientifically trained and religious believers to the ranks of (to put it politely) the self-delusional, and this is, in my view, one of the shortcomings of the book.

The penultimate chapter of *Quantum Leaps* is an omnibus one entitled “Reflections On The Scientific Approach To Reality,” that begins with a brief reprise of topics from the earlier chapters, then moves on to “short takes” on a wide range of disparate topics, including the Loch Ness Monster, spontaneous human combustion, fire walking, psychic surgery, homeopathy, the Piltdown Hoax, crop circles, and Holocaust denials. The flow of material runs almost imperceptibly from things that may perhaps be ascribed to imagination or incorrect inference on the part of well-intentioned but scientifically naïve observers, to outright dishonesty on the part of people motivated largely by greed or the intent to deceive. Wynn and Wiggins instead hold up science as *the* (not *a*) beacon of truth and the only “road to reality.”

Wynn and Wiggins are at times a bit simplistic in their zeal to debunk pseudoscience, and they seem to blur the distinction between well-intentioned, but mistaken, individuals with hucksters. For instance, I am inclined to agree with them about Bigfoot, yeti and the Loch

Ness monster. However, while it is true that there is currently no scientifically credible evidence in favor of their existence, that certainly does not eliminate the possibility of their existing. Indeed, in a recent interview on National Public Radio, Jane

Goodall (hardly someone who could be classified as an antiscientific crank) proclaimed her firm belief that there very likely remain large mammals as yet undiscovered in remote areas. Seemingly supporting this contention are recent reports from the Congo of a large, hitherto unknown, primate whose skull features, body size, feces and nesting habits are gorilla-like, but whose DNA and diet are distinctly chimpanzee-like. While I am considerably more skeptical than Goodall, I would have preferred to see Wynn and Wiggins display a bit more circumspection here.

Quantum Leaps concludes with a very brief epilogue which presents the reader with some useful suggestions for authors to read, magazines and websites to consult, and activities to engage in to increase scientific literacy and critical facility. Unfortunately, it is marred by its initial sentence “We wish we had had the opportunity to recommend the following activities to the 39 members of the Heaven’s Gate cult who chose to commit mass suicide,” which I thought was unnecessary, condescending and rather offensive, in essence tarring everyone with the same brush. Scientifically literate people are by no means immune to evil. In fact, it might even be argued that a scientist (or anyone absolutely convinced that only he or she has the key to the truth) might be especially susceptible to it, and that the real issue is whether a person’s mind is closed or open. (Whenever I see the bumper sticker “Question authority”, I am always perversely tempted to ask “Why?”)

Lest I sound unrelentingly negative, let me say that I enjoyed *Quantum Leaps In The Wrong Direction* (particularly the cartoons!) and agreed with most of what Wynn and Wiggins have to say. They have an entertaining and informative writing style, and a point about pseudoscience that is worth making. However, their tone can at times have an edge of smugness and superiority to it, the result being that the book will probably be read primarily by people who already agree with them, and not by the very people most in need of hearing its message.