

BOOK REVIEWS

Lonely Planets: The Natural Philosophy of Alien Life by David Grinspoon. HarperCollins, 2003. 433 pp. \$49.95 (hardcover). ISBN 0-06-018540-6.

Throughout human history there has been immense curiosity about whether we are alone in the universe, and about the nature of life on other planets or in other regions of the cosmos. David Grinspoon's *Lonely Planets: The Natural Philosophy of Alien Life* examines the viewpoints that scientists have held about the possibility of life existing beyond the Earth, and provides an introduction to the emerging field that is now called "astrobiology."

It is paradoxical, perhaps, but as we have developed technology that enables us actually to land on or examine the planets of our solar system at close range, these regions have become curiously disenchanted. Once it was possible for a scientifically informed philanthropist like Percy Lowell to make a strong case for the existence of life on Mars based on canals that appeared like an irrigation system, or a pioneering science fiction writer like A.E. van Vogt to stage much of the action of his classic work on a magnificent Venusian landscape. But the discovery, as Grinspoon informs us, that there are no canals on the frozen "barren desert" of Mars, and Venus is a "scorched, volcanic pressure cooker," may have a sobering effect on our imaginations.

I am not sure whether this was the author's intention, but Grinspoon gives us something that may be of greater value than the assessment of the likelihood of alien life according to the methods of empirical science. Open-minded and open-hearted, punctuated by self-effacing good humor and candor, Grinspoon frames the growing debate in our society about how we may think about the possibility of extraterrestrial life and the method or methods by which we might learn of its existence. Grinspoon defines sharply the wide paradigmatic gulf that separates mainstream astrophysics and astrobiology from the world of those who are concerned with the importance and meaning of UFOs and alien contact. "The social universe I live in is entirely disconnected from the one in which these sightings, crashes and cover-ups occurred," Grinspoon writes. "There are no six degrees of separation here. The separation is total" (p. 369).

Grinspoon's assertion of total separation is, I believe, an exaggeration. The distinguished Harvard astrophysicist Rudolph Schild, for example, has expressed publicly, based on his examination of the matter, that there is hard evidence for the reality of UFOs, and other physicists like astronaut Edgar Mitchell and theoretician Mark Comings, who have explored the boundaries of physics and consciousness, find the UFO encounter phenomenon more plausible within an evolving scientific framework than was formerly believed. But by presenting the ideological divide in such stark terms, Grinspoon allows us to look deeply into its epistemological and temperamental roots, and gives us an opportunity thereby to transcend it.

When Grinspoon was beginning his development as a scientist he participated in discussions among his father, Lester Grinspoon (a medical school classmate and friend of mine who also became a psychiatrist); futurist Isaac Asimov; astronomer Carl Sagan; and me. In some passages in the later pages of *Lonely Planets* David seems to be carrying forward the large questions with which these conversations were concerned. Asimov, for example, was a "devout positivist, a true believer, in the power of rationality and science to lift humanity out of the gutter." He was an old friend of David's grandmother, and "a ringleader of the closest thing to a religion I grew up with—rational humanism" (p. 151).

For the most part, Grinspoon would have us believe that he remains a devotee in good standing of this religion. "The success of science," he states, "is a confirmation of our faith [sic] in an objectively describable material reality" (p. 387) that is "independent from our consciousness" (p. 355). He does not hesitate to use that most damning of all condemnations—"antiscientific"—to describe those who would deviate from accepted standards of reliability and verifiability. Science has "no use," Grinspoon writes, for matters like "subtle realms" whose existence it "can do nothing to disprove" (p. 383).

Yet at the same time, using language that demonstrates great humility, Grinspoon displays in passage after passage his awareness that the scientific rationalism to which he has so totally subscribed also needs to be recognized as a faith that deserves to be questioned. "We scientists recoil against alien stories and beliefs that ignore standards of evidence and common sense," says Grinspoon (p. 252). But later in the book he observes that, "In our debunking of alien stories we insist that aliens conform to our current standards of evolution [and] our current understanding of the laws of physics" (p. 355). "How confident can we be that we are not being contacted in very different ways from what we imagine?" Grinspoon asks. "Might aliens already be here? Given our great ignorance, and the possible unknown capabilities of advanced alien civilizations, can we really dismiss the possibility that UFOs are real?" (p. 333). What if life on another planet "is sufficiently alien that we just don't recognize it?" (p. 202).

Grinspoon is candid and insightful with regard to how peer pressures may limit the possibilities of discovery in science in general, and of alien life in particular. Anxious, for example, that his own reputation might be tainted by his association with astrobiology, he heard himself "making some disparaging, eye-rolling remark about this work to a colleague" (p. 405). He recalls that when he was in the 6th grade he made fun of a "dorky" kid he did not really think was dorky in order not to receive "the dreaded dorky label" himself (p. 405). When it comes to alien life there is the "ridicule barrier" or "giggle factor." No one has wanted his research to be seen as "a search for 'little green men'" (p. 234) or "like complete tabloid nonsense" (p. 278). "What do we do," Grinspoon asks, "when our scientific reasoning leads us perilously close to beliefs that are widely associated with the dreaded 'pseudoscience'?" (p. 323). The danger of being self-censored by such fear, he points out, is that scientists will back away from

important areas of knowledge. Grinspoon suggests, however, that rejecting ideas "out of hand" just because we find them ideologically repulsive "may in itself be practicing pseudoscience" (p. 203).

Grinspoon has divided *Lonely Planets* into three sections, which he calls History, Science, and Belief. Yet by his own admission this division is to a considerable degree artificial, for there is a great deal of overlap. As he acknowledges, the "presence of human minds" permeates the story throughout. For in each age the beliefs and assumptions about reality have governed the methods and perceptions of scientists and others interested in the question of extraterrestrial life, and, therefore, the discoveries that could be made about the universe. "We are always interpreting and perceiving events through filters shaped by experience and belief" (p. 385).

For someone like me who has a special interest in how worldviews shape our understanding of what exists or is possible, and, to a large degree determine societal behavior and decisions, *Lonely Planets* is especially valuable. For throughout its pages Grinspoon acknowledges that his viewpoints are not simply based on evidence but derive from fundamental assumptions he and other mainstream scientists have about the nature of reality and how we believe we know what we know. Material science, or what Grinspoon calls "rational humanism," has become our dominant worldview, "the keeper of official wisdom," and "fate has made us secular priests with pocket protectors" (p. 70).

Grinspoon argues that at the core of the difference in worldview between him and those who are convinced, for example, of the reality of UFOs and alien encounters are different premises about "the relationship between mind and matter." Scientists such as he believe that matter exists independent of mind, and that there is an objective physical world "out there" that can be apprehended by an observer who exists largely apart from it. "On the other side of the divide lies a different assumption," says Grinspoon, "that mind [or consciousness] is primary and that the entire realm of the physical is somehow created by consciousness" (p. 382).

This question cannot, of course, be settled on one side or the other, but in several places in his book Grinspoon demonstrates the sort of problem scientists create for themselves when they void the universe of some sort of creative agency, call it what you will. When I was in medical school, my peers and I were sometimes accused of what our teachers called, disparagingly, "teleological thinking," that is, we were attributing purpose or meaningful intention beyond the simple fact of the exquisite mechanisms we were studying, as if some sort of mind or intelligent agent had been at work. This mechanistic or secularist ideology prevailed at that time throughout the professional and academic world, and for the most part still does, except perhaps in some departments of religion or schools of theology.

Yet in many of the pages of *Lonely Planets* Grinspoon reveals how little we know about the creative processes at work behind nature's observable mechanisms. To account for these mysteries, to fill in the blanks as it were,

he unabashedly applies anthropomorphic or theomorphic language that implies some sort of mysterious intelligence. Here are some examples: After a few hundred thousand years "the universe was getting ready to build galaxies" (pp. 76–77); referring to the great beauty and complexity of Earth's living organisms, Grinspoon suggests that it is reasonable to doubt "that natural selection could come up with all this" (p. 100), "a chemical catalyst grabs this molecule over here and that one over there and says, 'Why don't you two get together? Let's make something happen'" (p. 101).

The idea of "instructions" (it is never shown where they come from) sometimes fills in for our lack of understanding. For example, the genetic code is a "set of instructions," and DNA molecules "make identical copies of themselves" or replicate "when they're in the mood" (p. 105); the "self-replicators" have "surrounded themselves with the right molecules" (quite circular since the "right molecules" are, by definition, "those that helped them to replicate") (p. 115); the cosmos somehow "stumbled upon chemical memory" (p. 118); after about three billion years, single cells "figured out how to join together in large numbers to make animals" and were able to make this leap because "somehow these little guys gave up their individuality" and "their sovereignty" to join "the United Cells" (of whatever creature or plant they became); and remarkably, "each cell 'knows' what kind of tissue it is to become part of" (pp. 119–122).

Then, Grinspoon asks humbly, "How *do* they know?" (emphasis mine). He skirts close to acknowledging some sort of intelligence at work when he postulates a "multilevel genetic control system" or "centralized control," realizing that "it is essential to have something like this in place" (p. 122). "Spontaneous pattern-forming habits [are] built deep into this universe," (p. 270) which, Grinspoon concludes, "is a self-tilling orchard slowly cultivating life and mind" (p. 135). Although it seems reasonable to me to suggest that some sort of consciousness is at work throughout these processes, consciousness or "conscious awareness" for Grinspoon is an additional shift on a giant scale that he waggishly defines as "something humans have not yet fully attained" (p. 118).

Early in *Lonely Planets* Grinspoon acknowledges, with his characteristic wit, that the scientific worldview may not be able to tell us all we want to know about the universe. Citing the "big bang" by which the entire known universe came into being from nothing, or "a single point of zero size," he writes a long string of zeros following a decimal point to indicate how small the "little nugget" was at first, and then he writes a one followed by an equally long string of zeros to denote what the initial temperature might have been. Appreciating the absurdity of this as an explanation, Grinspoon comments wryly, "The beginning still needs work" (p. 73).

Grinspoon is candid about how his own biases or worldview affects his attitude about accounts of contact with alien beings. Although physical signs may be described in relation to these encounters, investigators rely to a large extent upon the reports themselves. Ultimately, he admits, "I just cannot accept

that these beings and experiences are real, so I search for rational hooks on which to hang this conviction." He finds it "easier to believe that many people have similar, vivid, and disturbing hallucinations than that our entire conception of reality is flawed." The abduction phenomenon "feels all wrong" to him. He says, "I reject it because it does not fit my worldview. This is the best I can do," and "What would happen if I started to believe John Mack? How would I ever explain it to my parents?" (pp. 386–387).

Grinspoon's personal acknowledgement of ideological bias gives him a credible basis for a critique of his own discipline. He deplores the widespread attitude of superiority he experiences in science, and observes that "science, as it has grown in confidence, has lost the ability, or at least the desire, to question its own authority." With the professionalization of science has come "a narrowing of scope," for "in becoming scientists we've accepted an invisible framework," assimilating a set of rules "the way a child picks up the rules of social interaction" (pp. 254–255). "A sometimes deserved reputation for arrogance" currently plagues science, Grinspoon admits. He asks his fellow scientists to ask questions like, "Why do we believe what we believe?" and "What is the interplay between common sense, evidence, intuition, and faith that forms our beliefs about life in the universe?"

Grinspoon challenges the assumption that "any extraterrestrial phenomenon that does not conform" to our knowledge of carbon-based life is, therefore, "by definition not alive." He says, "I'll let you in on a dirty little secret: We don't really know what life is" (p. 98). He is equally skeptical of efforts to discover life in the universe by radio or "optical" Search for Extraterrestrial Intelligence programs. "The silence" that has greeted these programs, he suggests, "may say more about our own limitations in conceptualizing intelligence than the ability of the universe to produce it. Radio aliens are appealing because they are well-behaved" (p. 323).

This brings Grinspoon to a basic point. Might not UFO skeptics, he asks, be "doing something they often accuse their 'opponents' of: avoiding the truth out of fear of the unknown? Are we being unpatriotic to the flag of science if we admit there are some mysteries?" (p. 351). He suggests that looking for microbes on Mars might be more comfortable than acknowledging the possible presence of less familiar forms of life. "As long as we are the one 'intelligent species,' alone in a universe swimming with bugs and scum, we are still the big-brained lords of all we see" (p. 290).

When he was "a kid" Grinspoon had a recurring dream of being taken into an alien spaceship. Each time, he remembers, he would think, "Here we go again." He recalls the fear he felt and many details of the inside of the craft; he was convinced that the aliens were real (pp. 375–376). I do not know, of course, whether these were dreams or actual encounters. But what seems telling to me is that Grinspoon's personal point of view, as derived from his scientific education, would preclude consideration that such memories (or those of any UFO/abduction experiencers) might reflect actual contact. By the criteria of evidence

that has derived from this professional education, Grinspoon is convinced that "as yet, we have found no scientifically accepted evidence for the past or present visitation of intelligent aliens" (p. 312); therefore, he does not believe "that there really are ships and little guys" (p. 388).

This leads me to the only major quarrel I have with Grinspoon. I admire the noble perspective that he brings to us in the book's concluding pages. He deplores our species' destructive patterns and technological hubris, suggesting that alien civilizations might be so disgusted with our behavior that they see us as too dangerous to have any truck with ("if you were in charge would you give modern humans the keys to the galaxy?" [p. 321]). However, my problem is that he experiences "a gaping spiritual void in this culture" (p. 411), and for him spirituality is embodied in our capacity for connection with one another "and the potential for wider group identification, for human love and unity" (p. 412). He sees "an integration of scientific and spiritual capacities" as "the key to our long term survival" (p. 414), and even goes as far as to say that "our common wonder and desire involving alien life creates a place, out on thin ice, where science and spirituality can meet, become reacquainted, and practice working together" (p. 409). But part of that coming together, the reacquaintance to which he refers, must surely include expanding our ways of knowing to include a revaluing of human experience and testimony, and a renewed respect for the ways of intuitive and heart knowing, long familiar to traditional cultures, which constitute the basis for the conviction of many researchers that the encounters with non-human entities are, in some important way, real.

It is rather like the old story of the Vermont farmer who, after puzzling with the city fellow's request for directions, finally declares, "well, you just can't get there from here." It does not seem reasonable to me for Grinspoon to say repeatedly that "aliens might already be here," but that we would not be able to recognize them because they do not "conform to our current notions of evolution" or "our current understanding of physics," and then reject the ways of knowing that might make such recognition possible simply because they do not provide what is considered to be "scientifically accepted evidence" (p. 312). As we have seen above, he acknowledges himself that in rejecting ideas "just because we find them ideologically repulsive" he and his colleagues might themselves be "practicing pseudoscience" (p. 203).

But at the same time Grinspoon seems to express frustration that we "cannot agree on a basic framework of reality," and treats as so much blather the contention of investigators such as me that we may be dealing with "other realms and phenomena that are 'real' but do not answer to our objective standards of proof" (p. 386). But ambiguity, paradox, uncertainty, and contradiction apparently are the universe of discourse we inevitably must enter if we are to come to grips with anomalies like the alien encounter phenomena that seem to defy accepted ontological assumptions.

In summary, I believe that Grinspoon has performed an extraordinary service in writing this well researched and readable book. He has provided a comprehensive

review of how scientific communities in the West have approached over time the question of alien life in the universe. But in my view he has done something still more important. By acknowledging so candidly the personal biases that he and others in his professional world have developed about ways of looking at matters like the existence of alien life, he has helped clear away the ideological underbrush that impedes the investigation of this and other anomalous phenomena that may never yield their secrets to approaches that are limited by the epistemological strictures that still dominate Western science.

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John E. Mack, M.D., was a professor of psychiatry at Harvard Medical School and explored the ways in which perceptions and beliefs about reality shape the human condition. He was the author of a diverse range of books, including the Pulitzer Prize-winning biography of British officer T.E. Lawrence, A Prince of Our Disorder, and most recently Passport to the Cosmos: Human Transformation and Alien Encounters, which is both the culmination of twelve years of research into the effects of alien encounters upon people's lives and a philosophical treatise connecting the themes of spirituality and modern worldviews. The John E. Mack Institute (www.johnemackinstitute.org) in Cambridge, Massachusetts, is dedicated to uncovering and developing areas of inquiry that profoundly contribute to our understanding of human experience, and providing the basis for a more inclusive framework of mental health practice for generations of caregivers to come.

To our deep regret, John E. Mack died September 27, 2004. Please see page 670 for "In Memoriam."

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It is no accident that David Grinspoon, an astronomer at the Department of Space Studies at the Southwest Research Institute and the University of Colorado, has taken extraterrestrial life for the subject of his book. His father, Lester, was a Professor at the Harvard Medical School and one of Carl Sagan's best friends, and Grinspoon was himself a student of Sagan at Cornell. It was hard to be around Sagan without getting enthused about exobiology.

The book is a wide ranging view of current work in astrobiology, the field that emerged from exobiology in the late 1990s with a considerably broader outlook in the sense that it includes not only research in cosmochemistry, chemical