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Heterodoxy and Its Discontents

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Review of:

Michael D. Gordin, *The Pseudoscience Wars: Immanuel Velikovsky and the Birth of the Modern Fringe* (Chicago: University of Chicago Press, 2012).

The history of bad ideas is as interesting, and as important, as the history of good ideas. Books on the histories of Creationism, eugenics, and Lysenkoism — to pick just a few famously bad ideas — have proven illuminating to those who want to know how science functions (or doesn't) on the margins, and how it is co-opted into popular (and political) ends. Princeton historian of science Michael Gordin's *The Pseudoscience Wars* explores a lesser-known 20th-century movement, Velikovskyism, and uses this as a lens with which to understand the power of pseudoscience in an age where scientific authority and funding have never been higher.

Gordin observes anecdotally that the name Immanuel Velikovsky is essentially unknown to anyone under the age of fifty. (It was meaningless to me.) Nonetheless, there is a story of great historical and present import in the history of Velikovsky's unusual ideas and the efforts of mainstream scientists to explain their erroneous nature to what they perceived to be an unwitting and easily misled public. That such an interesting story could emerge out of what superficially appears to be a very obscure topic is one of unexpected joys of Gordin's book.

The thesis of Velikovsky's major book, *Worlds in Collision*, published in 1950, sounds so ludicrous that it's immense popularity seems incredible: at the same time as the events in the book of Exodus, the planet Jupiter ejected a massive comet that became trapped in a gravitational and electromagnetic interaction with Earth. For the next several decades, these interactions caused the supernatural events described in the Old Testament (the "manna from heaven" were hydrocarbons rained down by the comet's tail, for example), as well as similar catastrophes described in other religious traditions. Eventually the comet settled into a stable orbit and as such became the planet we now know as Venus.

For evidence of these extraordinary claims, Velikovsky cited meticulously correlated myths from ancient history (much of which had been re-dated according to his own chronology), as well as his own idiosyncratic electromagnetic theory of gravity, and a distinctly Freudian approach to the study of history. Moreover, Velikovsky was convinced that these catastrophes (again, in a nod Freud) had been repressed as a form of collective amnesia, which explains (conveniently) why

most of us who hear about his theories today vigorously reject them as implausible. (Gordin consciously does not attempt to rebut Velikovsky's theories, in part because there are no stakes in doing so anymore.)

Under normal conditions, one might expect such a work to pass unnoticed along with all of the other millions of pages of nonsense published in any given year. But, as Gordin chronicles, the conditions for *Worlds in Collision* were just right for a controversy. The book had been picked up by Macmillan Press, a respected publisher of scientific monographs, which led to an outraged protest by numerous members of the American astronomical community, led in part by Harlow Shapley of Harvard. Their protestation that the book could not have possibly been peer-reviewed was incorrect — it actually had been peer-reviewed in two separate rounds by the press, and tentatively approved even by scientists as interesting and entertaining, but not likely true — but their main objection was that it was being passed off as a work of “science” as opposed to a work of, say, speculative non-fiction. After a series of threats (never organized into a coherent movement) to boycott Macmillan textbooks, the press moved the book over to the popular press Doubleday, to the satisfaction of the astronomers. In attempting to draw public attention to the utterly erroneous nature of the book, though, the scientists gave it ample publicity, and it became a best-selling hit.

Gordin takes us through the many phases of the book's history: its origins, its contested publication, its resurgent popularity amongst “anti-establishment” college professors and students in the 1970s, and its drop into total obscurity following Velikovsky's death in 1979. This makes for interesting reading in and of itself: the “Velikovsky Affair” is a story of major scientists trying to grapple what to do with someone they deemed to be a serious crackpot, and Velikovsky, for his part, attempted in fits and starts to find inroads into respectability. Velikovsky was not crazy, Gordin emphasizes. He was simply crankish — totally obsessed, completely convinced, interpersonally difficult. Gordin is extremely sensitive to Velikovsky the human being, and makes good use of Velikovsky's expansive personal archives to flesh out the account with key details about Velikovsky's life, methods, and struggles.

The biggest question is, of course, why did the scientists raise such an outcry in the first place? Velikovsky's book might have entered obscurity much faster had it not been given so much inadvertent publicity. The answer Gordin gives highlights the particular historical context of Velikovsky: it was a particular moment of high Cold War anxiety. American scientists had learned from watching the Lysenko Affair from abroad that crackpots could be dangerous. In Cold War America, increased government involvement in the funding of science was taken by some to mean the possibility of increased government regulation of science. This Cold War context pervades the early sections of the narrative, and crops back up in the re-embrace of Velikovsky in years of popular ambivalence to technological progress.

The Velikovsky story intersects with many other “fringe” communities. Along with Lysenkoism, Velikovsky's writings and correspondence gives Gordin the opportunity to discuss the “rehabilitation” of eugenics, the birth of Scientific Creationism, and the aforementioned Lysenkoism. In some cases (eugenics in particular) this feels like a bit of a narrative stretch, but

it does end up adding breadth to the discussion of pseudoscience in general, and Gordin's interpretive take on each of these topics is original.

Velikovsky cosmic catastrophism is, for Gordin, also a case study on the famously intractable “demarcation problem,” the difficulty of coming up with firm criteria for what separates science from non-science, or science from pseudoscience. Gordin concludes, along with most philosophers and historians of science, that the problem is probably impossible to resolve unambiguously: “‘Pseudoscience’ is an empty category, a term of abuse, and there is nothing that necessarily links those dubbed pseudoscientists beside their separate alienation from science at the hands of the establishment.” (206)

This is not to say that Gordin takes an “anything goes” approach, that all forms of knowledge are equally valuable. He just doesn't think there's some magic criteria that will let you sort science from pseudoscience in anything like a purely rational fashion. And indeed, as Gordin notes, the entire meaning of “pseudoscience” is that it mimics “science.” Come up with a criteria — peer review, say — and those eager to prove that they are really “science” will find ways to implement it as well. (Gordin does, however, hint at a possible strict line between those dubbed “pseudoscientists” and those who are “denialists” — the latter of which he sees as essentially dishonest about their work to cloud “consensus” on issues affecting monied interests, such as big tobacco or big coal.)

Gordin is careful not to prescribe any pat answers to the question of “what to do” with pseudoscience — in part because he doesn't believe, again, that “pseudoscience” is a very useful historical categorization. Nonetheless, those who are interested in how bad ideas start, how they diffuse, how they covet and resist confrontation, and how they wax and wane in popularity over time, will find much food for thought in this gripping book.