CHICAGO JOURNALS

bots to chess-playing computers to the Japanese Fifth Generation project to the so-called AI Winter of the early 1980s. Nilsson is clearly the master of a vast range of technical material, and he manages to be comprehensive without being superficial. He does not engage much with either the philosophical or the historical literature, although this seems to be a deliberate choice rather than an oversight.

The book is unabashedly internalist, an old-school intellectual history of an emerging discipline. This is not meant to be a damning critique: although Nilsson does not engage with the kinds of questions that most specialist historians of science are currently interested in, he provides an insightful, comprehensive, readable, and above all useful introduction to the history of artificial intelligence. This is a history in its infancy. Future historians will surely explore the many issues suggested by, but not addressed explicitly in, this particular volume. The computer sciences generally, and artificial intelligence specifically, are in many respects the representative sciences of the postwar (and postmodern) period, and the story of their rise to dominance raises fascinating questions about discipline formation, professionalization, the epistemological shift from experiment to simulation, and the changing institutional relationships between science and technology, university and industry, government and the private sector. In this sense, *The Quest for Artificial Intelligence* is provocative rather than definitive, but this is a strength rather than a weakness. The book will no doubt become an essential reference work for future historians.

Nilsson himself was (and is) a key player in the history of the discipline, with a career that included serving as the chair of the computer science department at Stanford University and as the president of the Association for the Advancement of Artificial Intelligence. For the most part his history maintains a detached and objective tone, but the rare glimpses he provides of his personal experience and opinions are actually quite welcome. Nilsson has published extensively, of course, and there is an excellent oral history of him available at the Charles Babbage Institute archives, but I found myself wanting, as I read this book, to hear more about his own perspective on the discipline and its formation. Like many emerging disciplines, artificial intelligence had to struggle to establish and legitimize itself within a notoriously territorial academic environment. This book's focus on intellectual agendas glosses over this aspect of the discipline's history. That Nilsson manages to accomplish so much in a single volume is impressive; that his work suggests exciting new questions for other historians is even more welcome.

NATHAN ENSMENGER

Naomi Oreskes; Erik M. Conway. *Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Global Warming*. 355 pp., bibl., index. New York: Bloomsbury Press, 2010. $27 (cloth).

Where are the environmental skeptics coming from? This fine book explores the recent anti-environmental movement in the United States, arguing that it was formulated by "a small network of doubt-mongers" (p. 213) who lacked scientific credibility and were financed by conservative think-tanks.

Naomi Oreskes and Erik M. Conway document a network of environmental skeptics, arguing that these "hawkish" (p. 38) researchers were "merchants of doubt" when challenging well-documented scientific findings. Over the last thirty years these skeptics have questioned the health risks of tobacco smoking, environmental problems caused by acid rain and ozone depletion, and the legacy of Rachel Carson, as well as the reality of global warming.

The chief protagonists of the story—Fred Seitz, Fred Singer, Bill Nierenberg, and Robert Jastrow—were Cold Warriors devoted to protecting American freedom and free-market capitalism against socialism. With the collapse of the Soviet Union they began looking for another great threat against American liberties, the authors argue, and they found it in environmentalism. These protagonists saw environmental activists as "reds dressed in green" (p. 254) who were calling for environmental regulation that would lead the land of freedom into socialism.

Merchants of Doubt begins by exposing how the tobacco industry sponsored scientists to question a rising tide of scientific evidence documenting the health risks of both passive and active smoking. Thanks to these scientists, the tobacco industry was able to produce a cloud of doubt covering well-documented claims by physicians. Though the doubters were not taken entirely seriously in the science community, they did manage to persuade conservative-leaning politicians to halt tobacco legislation.

The politics of tobacco research has been fairly well documented by historians of science. Less well known is how the same group of doubters used the tobacco strategy to question

findings by environmental scientists and thereby cast doubt on environmental activists' calls for stricter environmental legislation.

Oreskes and Conway argue that claims by the doubters did not reflect legitimate scientific disagreements in which one scientific view or field opposes another. Instead, by analyzing the media in which the doubters' claims were published, they show that their views were "politics camouflaged as science" (p. 262). By writing in conservative-leaning newspapers and various non-peer-reviewed academic journals, they managed to create a cloud of doubt in the eyes of policy makers despite the fact that the relevant scientific communities were actually in agreement. When referring to peer-reviewed science publications, the doubters "cherry-picked the data" (p. 187) to fit their cause.

The story becomes perhaps most dramatic in the chapter about global warming, in which Oreskes and Conway argue that the current polarized debate is the result of a well-meaning yet still misconstrued idea of balanced journalism in conservative as well as liberal news media. The ideal of balanced coverage "leads journalists to give minority views more credence than they deserve," the authors conclude (p. 215).

In the final chapter they analyze the doubters' recent condemnation of Carson's 1962 book *Silent Spring*, which led to the banning of DDT. "Whoever controls the past controls the present" (p. 238), Oreskes and Conway point out in explaining why the very icon of environmentalism has become the victim of unfounded criticisms.

The fact that neoconservatives have not been supportive of the environmental cause does not come as a surprise. What is truly original about Oreskes and Conway's book is their exposure of how the same small group of right-leaning demagogues systematically attacked radically different environmental concerns.

The book is written for a broad audience; its story line pits the merchants of truth against the merchants of doubt. The authors convey a sense of outrage on behalf of the scientific community that is surely engaging, and they manage to maintain this sense of urgency while walking the reader through some fairly complicated material. I assigned a couple of chapters to some of my undergraduate students, and they found the material truly engaging.

This book is, to my knowledge, the first comprehensive history of recent anti-environmentalism in the United States. It is an original and well-argued piece of scholarship. As with all good books, the reader is left with a desire to know more. Were debates within the history and philosophy of science community of relevance to the doubters? Did they follow the so-called science wars? Did creationists and climate change deniers have anything in common? Whatever the answers might be, *Merchants of Doubt* is a valuable and important contribution to current environmental debate.

PEDER ANKER

Hans Radder (Editor). *The Commodification of Academic Research: Science and the Modern University*. vii + 350 pp., illus., tables, bibls., index. Pittsburgh: University of Pittsburgh Press, 2010. $50 (cloth).

Stemming from a 2007 conference in Amsterdam, *The Commodification of Academic Research* offers mostly lucid and readable contributions from philosophers, sociologists, and political and life scientists: James Robert Brown, Mark B. Brown, Martin Carrier, Steve Fuller, Vincent K. Y. Ho, Daniel Lee Kleinman, Harry Kunneman, Sabrina Leonelli, Albert W. Musschenga, David B. Resnik, Sigrid Sterckx, Henk van den Belt, Wim J. van der Steen, and the editor. Some of the contributors have written or edited significant books on the topic. Hans Radder's introduction says that the volume presents a philosophical perspective but does not further explain the omission of historians, physical and information scientists, economists, and people who study commodification in business schools. The editor claims that "since the 1980s, most universities in the Western world have experienced substantial changes as a consequence of an ongoing process of commodification" (p. 1). Some contributions challenge the choice of that date as especially significant. The Bayh-Dole Act of 1980 in the United States is mentioned a few times as an important cause or symptom of academic commodification, and the volume's empirical center lies in the academic-corporate complex born of biotechnology since the 1980s. The author most cited is not Karl Marx, the ur-philosopher of commodification (ignored by most contributors), but, rather, Robert Merton—mindful of which, my second favorite line in the volume comes from Resnik: "Call me old-fashioned, but I still regard talk of norms as fruitful and insightful" (p. 87 n 3), as opposed to the focus on interests in the sociology of scientific knowledge. Merton's four norms of science—universalism, communism, disinterestedness, and organized skepticism—pervade the volume and set the most apparent framework for discussion of the commodification of academic-scientific knowledge wrought by entrepreneurial practices and mentalities. Apropos Mertonian