

BOOK REVIEWS

**OPENING SKINNER'S BOX: GREAT
PSYCHOLOGICAL EXPERIMENTS
OF THE TWENTIETH CENTURY**

By Lauren Slater. 276 pp. New York, W.W. Norton, 2004. \$24.95.
ISBN 0-393-05095-5.

TOWARD THE END OF THE 18TH CENTURY, Immanuel Kant argued that psychology could never be a science, because the mind, being immaterial, could not be measured. But less than 100 years later, Wilhelm Wundt established the first psychological laboratory to study aspects of sensation and perception, and by the early 1930s, the scope of psychology as a quantitative, experimental science had progressively extended to include "higher" mental processes (feeling and desire as well as cognition), personality, social interaction, development, and psychopathology. Then the boom was lowered. Around the time of World War I, John B. Watson had argued that psychology would never be a science as long as it focused on people's private mental states. In the late 1930s, B.F. Skinner, Watson's spiritual heir, redefined psychology as a science of behavior whose sole method was to trace the functional relations between observable stimuli in the environment and organisms' observable responses to them.

In this book, Lauren Slater, a psychologist and popular writer (her previous books include *Lying: A Metaphorical Memoir* [New York: Random House, 2000]), offers an account of psychology's progress since Skinner. After a chapter on Skinner himself, she considers nine other landmarks in the history of psychology after World War II: Milgram's experiments regarding obedience to authority, Rosenhan's notorious "pseudopatient" study, Darley and Latane's research on bystander intervention, Festinger's analysis of cognitive dissonance in a flying-saucer cult, Harlow's exploration of attachment in monkeys, Alexander's analysis of environmental factors in morphine addiction, Loftus's "lost in the mall" demonstration of false memory, Moniz's invention of psychosurgery, and Kandel's work on the

neural basis of learning in the marine snail *aplysia*. In each chapter, Slater provides a narrative account of the work, lays out its background and sequelae, interviews some of the experimenters and other authorities, and reflects on its wider implications.

Slater's book has already aroused controversy. Reports in the *New York Times* and elsewhere suggest that at points Slater may have taken too many liberties with her material. Skinner's daughter Deborah has objected to Slater's account of her experience in the Air Crib. Several of Slater's interviewees have disputed her quotations from them, and some of the episodes she recounts call for a certain amount of skepticism on the part of a reader. But *Opening Skinner's Box* is not a scholarly monograph; it is clearly an exercise in creative nonfiction, so perhaps we should give its author some leeway in that respect.

More disturbing are what appear to be fundamental misunderstandings of the progress that Slater describes. For example, Slater is surprised to find that the original "Skinner boxes" are not black. But the black box in question is not a piece of laboratory apparatus at all; rather, the term refers to a conception of the behaving organism as a device that collects stimuli and emits responses but whose inner workings, mental or biologic, need not be examined. We do not learn that the postwar hegemony of Skinner's system was actually challenged from within, by investigators who explored the cognitive and biologic constraints on what animals could learn — findings that indeed opened up Skinner's box and reoriented psychology toward the mind and mental life.

Slater's book is engaging, provocative, and even fun to read. But it can be read profitably only by someone who is already familiar with the material it discusses and who is prepared by virtue of this independent knowledge to engage with the author. In the last chapter, Slater laments that she failed to find Deborah Skinner, though it turns out that Deborah is alive and well and living in London. For all her looking, it seems that Slater has failed to

find contemporary psychology as well. Experimental psychology is not, as Slater concludes, “all about *doing good*.” And it is not heading “inevitably, ineluctably” toward biology, either. It is all about knowing how our minds work, which includes the biologic but also the social basis of mental life. In this sense, postwar psychology did indeed open up Skinner’s box. But a naive reader would not necessarily understand, from this book alone, precisely how that feat was accomplished.

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MEDICINE, SCIENCE, AND MERCK

By Roy Vagelos and Louis Galambos. 301 pp., illustrated.
New York, Cambridge University Press, 2004. \$30.
ISBN 0-521-66295-8.

WRITING ONE’S LIFE IS A RISKY VENTURE of memory, invention, and desire. With intellectual depth and formal rigor, Roy Vagelos and the historian Louis Galambos have written a serious and nourishing report of Vagelos’s life in medicine, science, and the corporate world.

Vagelos became chief executive officer of Merck by way of an authoritative career as a cardiologist and biochemist, as a National Institutes of Health scientist at the forward edge of research on the biosynthesis and control of cholesterol, as chair of the Department of Biological Chemistry at Washington University, and as a research scientist at Merck. His scientific life is animated by a set of enduring questions about lipids and heart disease. Spanning enzyme research, molecular genetics, human trials, and the marketing of statins, his career helped to usher in our current powers in preventive cardiology. His interior life has been informed by a set of enduring values, which were derived from the Greek immigrant experience of the Great Depression. By making ice cream and working the sandwich counter in his father’s delicatessen in Westfield, New Jersey, Vagelos infused duty and familial loyalty into his bones.

Medicine, Science, and Merck achieves the goals of autobiography by making the present transparent

with the past, showing the subject — as both narrator and protagonist — reflecting on his past actions and making sense of them in the light of present knowledge. The book is a seamless weave of many stories — of the familial and cultural, of the complex fellowship among colleagues, and of the science itself, all the way down to the tales of molecules. The reader not only absorbs each strand of the narrative but also recognizes that these strands are irrevocably linked, that there is no science without them. There is no need to “humanize” science or medicine; it comes to the reader, because the science or medicine itself is humanizing as long as one is equipped with the imagination to heed its generative purpose. (Vagelos’s full given name is Pindaros Roy; he lives up to his namesake, the classical Greek poet Pindar.)

This is also a moral book. Like an active pump on a membrane, Vagelos injects his idealism into Merck’s corporate setting, enacting values of accountability, altruism, and devotion even while toeing the bottom line. Merck’s decision to make ivermectin available free to cure river blindness in sub-Saharan Africa presages efforts of the industry, one hopes, to make other pharmaceutical agents affordable.

This journey shines with optimism for all of us who have become demoralized by the failure of the ideals of science, medicine, and the corporate world and by the threat of defeat of our shared ethical vision. The book also gives heart to the reader to take a similar look at his or her journey, assessing its enduring values, measuring its missed opportunities, admiring its texture. *Medicine, Science, and Merck* brings into focus hard questions about the social costs of corporate profit structures, scientific pride, and the hunger for political power. No doubt this is but a partial report; no doubt others can tell competing versions of these events. Nonetheless, the moral freshness of the effort poses a challenge to us all to live within our cosmos as searchers, risk takers, beholders of the complexity of our world, and servants to its needs.

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