attribution theory; that is, the "attempts of ordinary people to understand the causes and implications of events they witness" (p. 129). Here both availability or salience and the representativeness heuristic affect one's judgment of cause and effect. Base rate or consensus information tends to be ignored. Information tends to be used or not depending upon whether it fits well with some a priori causal structure; for example, people seem to feel more confident in using the father's height in predicting the height of the son than vice versa.

As mentioned previously, many people tend to be overconfident in assessment of their own skills, providing one possible explanation why banks have credit officers. Another version of this same phenomenon arises in studying the past and raises serious questions of our ability to learn from experience (chapter 23). In studying the past people tend to construct or perceive patterns where none may exist. Knowing how it all came out affects our judgment—there is a tendency to assume that had we been there we would have had the foresight or cleverness to predict what did in fact occur or to deal with problems whose solutions hindsight has made apparent.

Under the heading Covariation and Control, the papers in part 5 (chapters 15 through 19) consider among other things the following: How do people assess correlations in bivariate distribution? Evidence suggests that one's prior opinions and general beliefs about the world influence one's beliefs about the strength of relationships, for example, between personality traits. The role of availability and representativeness in these judgments is striking. How does the belief that one is to some extent in control of a situation affect behavior? In gambling situations, such as dice or other games where the skill of the opponent is not a factor, people still make larger bets when their "opponent" appears to be incompetent. People will pay more for lottery tickets if they choose which ticket their name is placed on than when the choice is made by someone else.

Multistage evaluations, as in sequences of judgments, and correction procedures, such as debiasing techniques, and suggestions regarding improving inductive reasoning are covered in parts 7 and 8 (chapters 24 through 32). Part 9, on risk perception, consists of a single paper that nicely illustrates how heuristics, especially availability, quite naturally lead to persistent biases in beliefs about the risks we all face in life. For example, people frequently overestimate the chances of dying from botulism, flood, tornadoes, and venomous bites and systematically underestimate the likelihood of less newsworthy deaths, for example those due to smallpox vaccinations, diabetes, or asthma.

The discussion here is hardly a summary or digest of the contents of the book. Most of the papers contain experimental evidence concerning the nature, persistence, scope, or incidence of the various heuristics discussed. The prevalence of the heuristics and the biases induced by them can have important implications for preparing for natural disasters, providing for consumer product labeling, making clinical judgments, assessing the risks of suspected carcinogens, and so on. Also, there are evident implications for studying insurance-buying behavior and risk taking. The work summarized in this book has been and will continue to be influential both for studies of human behavior and for those concerned with public policy. It should be of interest to psychologists, economists, and political scientists and in several fields in business schools. The essays collected here provide access to important recent work and give excellent selective reviews of previous research in this area.

DAVID M. GRETHER
Division of the Humanities and Social Sciences, California Institute of Technology, Pasadena 91125

Plate Tectonics

Continental and Oceanic Rifts. G. PÁLMASON, Ed. American Geophysical Union, Washington, D.C., and Geological Society of America, Boulder, Colo., 1982. viii, 310 pp., illus. $20. Geodynamics Series, vol. 8.

In this collection of papers on continental and oceanic rifts, I did not run across a definition of "rift" until the final paper, by P. Mohr, whimsically entitled "Musings on continental rifts." Mohr defines "rift" as "a parallel-sided, downfaulted valley, tens of kilometers in width and at least a few hundred kilometers in length" and then goes on to remark that "mid-oceanic 'rifts' are not correctly so named, as their floors are generated in situ rather than by subsidence of pre-existing rocks." Quibbling aside, I was slightly disappointed that the scope of the book is limited to long, linear rift systems and does not encompass broader areas of continental rifting, such as the Basin and Range province. Nevertheless, the book provides a very good overview of current knowledge about many aspects of rift zones.

The stated intention of the book is to provide a topic-oriented approach to the subject, with sufficient discussion of individual rifts and presentation of hard data to make it of value to researchers in the field. In many respects the book succeeds admirably in achieving this goal, yet it manages to retain enough of a basic approach to the subject to be enlightening to nonspecialists or geological dilettantes. In both regards the book should be well received, for advances in understanding of extensional basins over the last few years have created an explosion of interest in rifting processes, both in academia and in the oil industry. Readers will not find much discussion of some of the newest advances (such as the quantitative evaluation of subsidence and heat flow in continental rift zones as a result of the rifting process), presumably because many of them postdate the planning of this volume. However, the material presented in the book has been in no way outdated by more recent work.

The book is biased rather heavily toward geophysical studies (approximately ten of the 17 contributions fall into this category); several papers deal with various aspects of rift magmatism. I had hoped for some discussion of the structural evolution of some of the continental rift zones and perhaps an analysis of upper crustal deformation during rifting. Along these lines, there is a thought-provoking summary by E. Tryggvason of recent ground deformation determined from geodetic observations of several rift zones. Data on the structural evolution of rift zones are sprinkled throughout some of the other papers in the volume, but there is no satisfactory discussion of the topic. A paper on the role of shear in rifting, by R. Freund, looks promising in the table of contents but lacks sufficient detailed discussion of specific regions and examples.

I especially enjoyed the two summary papers included in the volume: a much-needed history of rift studies to date (largely confined to oceanic rifts) by C. L. Drake and R. W. Girdler and the somewhat flippant analysis of recent controversies and questions about the nature of continental rift zones by Mohr. The latter is written in an engaging style, and, if the reader has any preconceived notions of how or why these rifts form, he or she may delight in booing or cheering the various ideas and arguments as they are put forth.

LEIGH ROYDEN
Department of Geological Sciences, Harvard University, Cambridge, Massachusetts 02138