

ability. The following is a partial listing of conventions criticized: (1) The use of separate group-means to establish a relation between behavior and an independent variable; (2) the stress placed on hypothesis or theory in the evaluation of data; (3) the preliminary nature of an 'exploratory' investigation; (4) the uncritical acceptance of the concept of intrinsic variability; and (5) the idea that logicians have developed a satisfactory set of rules for the designing of experiments.

Considered in the book are the following topics: The basis for judging the importance of scientific data; problems of reliability and generality; replication; the nature of variability; and specific experimental designs. The designs and techniques described are pointed specifically at problems of the behavioral processes in individual subjects, such as, the achieving of steady states, the handling of transitional states, the establishing of behavior baselines and techniques of control. The author makes it clear that problems of experimental design cannot be separated from the nature of the data being studied. His presentation is specifically oriented toward the area of operant conditioning, in which he has been one of the productive experimenters. Little effort is made to develop analogues in other areas of psychological research. This is left as an implicit challenge to the readers who are working actively in other areas.

Before he has read to the end of the first chapter, the reader will realize that this book does not belong with his other volumes on experimental design. It is primarily concerned with controlling the data and handling of the problems of research rather than with abstract mathematical and statistical procedures for extracting generalizations from poorly controlled data. Sidman does not lay down a convenient set of rules which the student may follow blindly. He specifically denies that the logicians have as yet worked out a rationale for what productive psychologists do.

Sidman has given us, not just another treatise on experimental design, but also a review of the results, with emphasis on their significance of much of the recent work on operant conditioning. The students of psychology who have not systematically kept up with the fairly steady flow of reports should be grateful for this exposition; and those who read it will most likely be profoundly impressed with the prospect it unfolds.

VA Hospital, Jefferson Barracks, Mo.

HENRY N. PETERS

The Strategy of Conflict. By THOMAS C. SCHELLING. Cambridge, Harvard University Press, 1960. Pp. vii, 309. \$6.25.

Observing that "the military services, in contrast to almost any other sizable and respectable profession, have no identifiable academic counterpart" (p. 8), Schelling suggests that the theory of games, broadly interpreted and extended in a variety of ways, may serve as the nucleus of such a scientific discipline. His book is composed of ten loosely interlocked, slightly redundant essays, several of which have previously appeared as journal articles, and three appendices. His concerns are theories of bargaining, threats, deterrence, tacit and explicit communication, and the like, and applications to real conflicts, especially those having geopolitical and military significance.

Schelling is perceptively critical of current formulations of game-theory, charging (correctly, I believe) that its focus on the limiting case of two perfectly opposed protagonists (zero-sum games) has led to misconceptions about the significant

features of the much more common and important cases of mixed (or partial) conflict. A number of failings are discussed in detail and are liberally illustrated by examples that range from the 'warfare' of discipline between parent and child, through the tacit and explicit agreements and use of threats inherent in driving an automobile, to the possibly parallel and much more serious notions involved in having and threatening to use military power. Just how parallel they are—to what extent governments and individuals can be usefully considered as theoretical entities of the same sort—is often the crux in evaluating the significance of his examples.

To the psychologist, Schelling's demonstrations that factors not now captured in the formal theories are important and sometimes controlling features of behavior suggests a range of researchable problems not evident from the classical theory, and he reports results from a number of informal studies. These range from asking pairs of Ss to name heads or tails independently, agreement resulting in a prize 36 of 42 Ss chose heads), to extremely rich mixed conflict games (see the example discussed on pp. 102f.). What is not provided, however, is an adequate theoretical framework about which to organize and interpret such empirical work. His contribution is cogent criticism and indications of what is needed, but very little is really added to the theory. So, for a time, we may see developing what could easily become a sprawling empirical literature of isolated and special findings.

To the citizen, the most fascinating feature of the book is Schelling's analyses of such problems as limited war, surprise attack, and arms control. Here Schelling is in his element, seriously considering serious problems and, through a shrewd use of verbal reasoning, arriving at interesting and often surprising insights and conclusions; and here is where the reader must be most wary. Following the traditions of military, economic, and political discussions, but incorporating recent insights into questions of strategy, these analyses treat in pathetically simple terms problems of enormous complexity and of, literally, human existence. This is no criticism of Schelling, for we have no better tools and so must use those we have, but the need is great to ferret out implicit assumptions and values, to question the simplifications made, to wonder about incomplete consideration of possibilities, and to be tuned for logical imperfections. Most such discussions of international conflict, including some of Schelling's, seem to be infused with a form of rationalistic paranoia. Similarly, spare models approached with the same pristine logic seem to suggest that it is impossible for societies of largely unarmed people to form and be stable as well as to recommend that the best way to prevent the feared world holocaust may be to indulge in arms races and have high levels of arms. One wonders!

University of Pennsylvania

R. DUNCAN LUCE

Visual Space Perception. By W. H. ITTELSON. New York, Springer Publishing Co., 1960, Pp. ix, 212. \$6.00.

Ittelson presents what he designates as a "wide ranging" theory of perception in which some data from space perception are incidental but handy for illustration. The core of Ittelson's transactionalism is the unconscious which creates the abstraction which he defines as perceiving, with the end product being, "the creation of certainty out of uncertainty or probability" (p. 38).

Ittelson proceeds to arm the unconscious with an "invariance hypothesis" as a