

ence 128, 1187 (1958), in which the scope of psychophysiology in Russia is emphasized]. The contributions in the present monograph show clearly how flexible and useful the conditional reflex method is when properly applied to the study of behavior. It is a true physiological method, one which requires a logical and skillful experimental approach. Perhaps this is why the method is not so popular among behaviorists who do not belong to the Pavlovian group.

Of particular interest are the studies of visceral responses and their role in altered behavior. The cardiac conditional reflex, for example, is readily established. But it is resistant to extinction, and an increased heart rate may persist for several years without reinforcement, representing an inertness to modification that is inappropriate to existing circumstances (schizokinesis).

The individual papers vary widely in subject and quality. Some read very clearly and smoothly—for example, the paper by Moore on “Conditioning and stress in the newborn lamb and kid.” The clarity of this paper is accentuated by its freedom from the abbreviations that clutter up many of the other papers.

In spite of the diversity of the individual contributions and the rather haphazard organization, this is a valuable and most interesting monograph.

ERNEST GARDNER

*Department of Anatomy,  
Wayne State University*

**Theory and Methods of Scaling.** Warren S. Torgerson. Wiley, New York; Chapman and Hall, London, 1958. xiii + 460 pp. Illus. \$9.50.

This book should be within arm's reach of all students, teachers, and researchers in the social sciences who are concerned with problems of measurement. It appears to cover all the important contributions to date in scaling theory and techniques. The skill and competence with which the author has organized the extensive contributions to scaling are indeed impressive.

Because of the clear perspective given by the book on the current status of scaling methodology, it is relatively easy to evaluate critically the developments to date. In fact, I would have liked a somewhat more critical evaluation in view of the great variety and diversity of methods. This was not, however, the primary task assigned the author by the committee under whose direction the book was prepared.

Perhaps it is a criticism of the mission assigned the author rather than of the book itself that it may tend to perpetuate the schism between testing and

scaling theory, whereas there is mounting evidence that an integration of the two is not only feasible but highly desirable. Along the same line, those dedicated to the operational point of view may regard the rather extensive philosophical development of measurement concepts as a proliferation of semantic red herrings.

The construction of a fundamental framework within which one develops a presentation is necessarily somewhat arbitrary. The notions of *object*, *attribute*, and *magnitude* seem, however, most happily chosen and serve as a solid and well-anchored set of coordinates from which the more detailed framework proceeds. The utility of the additional concept of *quantity* as distinguished from *magnitude* is not so compelling, however, unless it was meant to include the concept of replication. The definition given seems to preclude this, and its function in the more detailed superstructure is not highlighted, even though it might be implied.

Although the mission of the book is essentially reportorial rather than critical in nature, two distinctly different fundamental points might appropriately have been emphasized. One of these is the vast amount of covariant information in the experimental data ignored by both the paired comparisons and successive intervals models. The other is the flagrant violation of one of the basic principles of scientific methodology—that is, the principle of parsimony, by the deterministic techniques.

In general, the material seems to be extremely well structured and well organized. However, I was surprised to find a discussion of the Horst and Guttman principal components models included in the chapter on deterministic models. These would seem to belong in the chapter on multidimensional techniques and are nothing if not probabilistic. Perhaps one of the reasons for this apparent displacement is that Guttman himself has failed either to recognize or to emphasize the true nature and importance of his contribution in the principal components approach.

A minor detail is the crediting of Horst with the least squares solution of the missing data problem for the paired comparison model rather than for the successive interval type model. Another detail which applies to all books dealing with multivariate analysis techniques concerns mathematical notation. The obvious notation for such techniques is that of matrix algebra. Although the book employs matrix notation in a few of the developments, it clings for the most part to the clumsy and untidy summation notation of scalar algebra. In this respect it merely follows an unfortunate tradition, and perhaps there is no par-

ticular reason why this book should have been the first to break with it.

The type and format are in the excellent tradition of the publisher. The only obvious improvement would have been to carry the chapter number along with the title at the head of each page. With so many back references, rapid referral to preceding relevant equations and passages would have been greatly facilitated by this device.

Although the lack of exercises and extensive numerical examples limits the usefulness of the book as a text on scaling theory and methods, its value as a ready reference for students, instructors, and researchers, striving toward greater precision in all the social sciences, cannot be overemphasized.

PAUL HORST

*Department of Psychology,  
University of Washington*

**Science and the Detection of Crime.** C. R. M. Cuthbert. Philosophical Library, New York, 1958. 244 pp. Illus. \$10.

As stated in the preface, the purpose of this book “is to provide the reader with an accurate and authoritative account of the work undertaken in the Forensic Science Laboratory at New Scotland Yard and to illustrate how a small group of scientific workers can render valuable service to the detective force in its constant war against crime. The work is not intended as a scientific text book, but it is hoped that, in addition to being of interest to the ordinary reader, it may be of some value to young detective officers and others whose work makes it necessary to know the extent to which science can assist in the investigation of crime.”

On the whole, the book accomplishes the purpose for which it was designed. It is especially suitable for the lay reader who has a limited understanding of scientific crime investigation, and it will prove attractive to those who enjoy “whodunits.” It is of more doubtful value to the professional policeman (unless he, too, enjoys “whodunits”), who should have a more thorough indoctrination into the facilities, operation, and investigative usefulness of a modern crime laboratory than is provided by this book.

Seven of the chapters deal with the work of laboratory specialists: the forensic pathologist, the serologist, the forensic chemist and biologist, the physicist, the toxicologist, the document examiner, and the ballistics expert, respectively. Six chapters deal with criminal specialties: stolen articles and fraud, fire and sabotage, breaking offenses, abortion, drug trafficking, and alcohol and motor accidents, respectively.