contribution to other areas of psychology. Anyone who teaches an introductory course in applied personality assessment should seriously consider using the Karson and O'Dell book as one of their texts if they wish to provide an even-handed treatment of the different approaches to assessment in the personality area.

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MULTIVARIATE APPROACHES FOR THE BEHAVIORAL SCIENCES: A BRIEF TEXT
G. Frank Lawlis and Douglas Chatfield
Lubbock, Texas: Texas Tech Press, 1974

The twentieth century has been an especially notable one for the social sciences. Systematic, empirical inquiry has significantly extended their bodies of knowledge, and they have seen the emergence of a related interdisciplinary field largely within their own ranks, that of the study of human behavior. Perhaps nothing has aided the growth of both more than the essentially synchronous development of statistical methodology as a research tool and sister intellectual discipline.

Given the substantial reliance of the behavioral sciences upon statistics and the frequent joint inquiry which has occurred, an unsurprising result has been the appearance of many publications intended to explain statistical techniques to the behavioral scientist or to extend the boundaries of knowledge about statistics as a behavioral research tool. The present volume is of the former type, and it consists of seven chapters. The first three discuss introductory material and basic concepts, and remaining chapters focus upon multiple correlation, factor analysis, and illustrative applications of multivariate procedures.

The two initial chapters are rather uneven. The first offers a very brief statement of historical development of interest in multivariate analysis among behavioral scientists and introduces numerical techniques, notation, and "univariate regression." Curiously, no consideration of the fundamental assumptions of most of the procedures subsequently discussed is undertaken. Also, the development of the notion of variance is indirect and rather elusive. Chapter Two presents a variety of bivariate techniques, including some (tetrachoric coefficient) which are not widely discussed. Among the problems, however, is the use of symbols without prior explanation or definition, such as $\gamma$ (p. 19) and the formula for computing z scores (p. 20).

Lawlis and Chatfield's discussion of matrix algebra, though, is a distinct success and the best chapter in the book. Until recently this topic has not been covered in the typical mathematical or statistical course work of behavioral scientists; yet it has proven to be an invaluable aid in the computation of most
common multivariate statistics. The authors carefully introduce the basic concepts and continue with a discussion of usual matrix operations; they conclude with appropriate illustrative applications. The discussion is brief and lucid without being condescending and is useful for both the novice and intermediate student.

Those who follow the initial chapters and continue through the final ones will probably understand the latter, but not without encountering some of the problems of the first half of the book. The discussion of multiple correlation, for example, takes place with little direct reference to multiple regression, although two paragraphs are devoted to stepwise regression as a means of selecting additional variables (pp. 60-61). The factor analysis chapters are better, but they, too, are not without their unclear explanations (e.g., the meaning of a "factor" and the geometry of rotation).

The essential standards for evaluation of a volume such as this are that it be complete and clear for students and useful as a reference for others. Unfortunately, other texts are superior to this one on both counts. This outcome appears to result from the authors' desire to serve both groups with a purposefully brief book, but the result is to leave the needs of both substantially unfulfilled. They are nevertheless to be congratulated for trying; the perfect textbook/reference may never be published, but there is substantial opportunity for improvement, opportunity which will not be met without efforts of those such as Lawlis and Chatfield.

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