

**Principles of Psychological Research.** Joel A. Gold. Homewood, Illinois: Dorsey, 1984, 335 pages.

*Reviewed by Paul Schaffner, Bowdoin College*

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Undergraduate texts on methodology in psychological research have proliferated in the last 15 years. This is an important development because the curriculum addressed in these texts has relevance beyond the immediate goals of courses in research methods. Obviously such courses are intended to expose students to the demands of rigorous empirical inquiry, an understanding of which is essential both to the execution and to the informed appreciation of research. But these courses can also highlight the fundamental intellectual continuities and discontinuities of the social sciences vis-a-vis the humanities and natural sciences. That in turn can facilitate an appreciation of the roles, benefits, and limitations of social scientific inquiry in the broader context of liberal learning. This may be particularly relevant in undergraduate courses which emphasize general understanding over preprofessional training.

Nurturing an appreciation of social scientific inquiry need not occur at the expense of the more immediate goal of developing students' research skills. Good texts further both ends by integrating concrete instruction in, and illustration of, various psychological research techniques with more formal analysis of their logical and empirical foundations. Furthermore, good texts need not be long nor technically sophisticated in order to address both concerns well. *Principles of Psychological Research* is a case in point. It is short, selective, and introductory; it exposes students to a broad array of research procedures; and it presents these procedures as enactments of clearly stated principles for sound empirical discovery.

There is no apparent consensus about a core curriculum for courses in psychological research methodology. The many texts available today differ considerably in emphasis and organization. My own approach organizes the field into seven areas (recognizing that not all seven can be developed in one semester and that selective coverage is necessary). My seven areas are: (a) scientific epistemology, including concepts of causation; (b) measurement theory, including reliability; (c) research design and the inference of validity and generalizability; (d) research methods; (e) data analysis and interpretation; (f) the intellectual context of research (historical development, continuities among disciplines, theory-method resonance, etc.); and (g) the social context of research, including applications, dissemination, and ethics. From this perspective, Gold's text touches on all seven areas but places distinct emphasis on measurement, research design, and evaluation of data. By contrast, it pays least attention to specific research methods in psychology, which are encountered largely through illustrations of research employing various designs; and to the social context of research, which some may argue is the province of courses in the sociology of science in any case.

The text's emphases on measurement, design, and evaluation follow naturally from its use of variability analysis as an integrating theme. This is an excellent approach for at least three reasons. First, it allows students to discover the underlying connections among apparently disparate topics such as experimental control, experimental manipulation, randomization, individual differences assessment, and sampling and measurement error (though the latter terms are not used). Second, it establishes a basis for relating nonquantitative "procedural" topics to the statistical methods we use to evaluate data. Third, it should facilitate understanding of more difficult statistical topics as they are encountered. Students who approach multifactor experiments, multiple regression, partial correlation, and factor analysis with a good understanding of the concept of partitioning of variance are more likely, again, to recognize the underlying continuities among these methods.

The text contains 13 chapters grouped into sections titled "The Underlying Principles" (three chapters), "The Basic Approaches: Simple Correlational and Experimental Procedures" (six chapters), "Understanding More of the Variance" (two chapters), and "Understanding Psychological Constructs" (two chapters). Chapter 1 briefly differentiates scientific epistemology from informal experience and common sense. It concludes with a discussion of "Why [one should] Study the Principles of Psychological Research," emphasizing the broad value of a general understanding of social scientific methodology as discussed above. Chapter 2 introduces variability as a working concept, and it and Chapter 3 review the fundamentals of measurement theory and reliability analysis.

The second section includes chapters on correlational research, experimental research, significance testing, reducing error variance, internal and external validity analysis, and quasi-experimental designs. The latter two chapters closely follow the format first introduced by Campbell and Stanley (1963). The third section elaborates on the topics of two earlier chapters, with two additional chapters on multivariate experimental and correlational research designs and analysis.

The fourth section contains two chapters that differ dramatically in focus, style, and probable effectiveness. Chapter 12, on construct validity, presents four case studies of series of experimental investigations. Each series gradually led to better understanding of one construct (e.g., learned helplessness). Two more case studies demonstrate construct development through correlational research. This is a valuable chapter because it repeatedly demonstrates the incremental and tentative nature of the research process, and thereby conveys some sense of the excitement of that process. Chapter 12 provides the book's best coverage of what I call curricular area (f), the intellectual context of research.

The final chapter attempts to integrate research methodology through a chronologically organized illustration of the research process, from reading journals and formulating new hypotheses to designing followup studies based upon the results of one's new research results. I suspect this chapter may fail to make much impression on most undergraduates unless it is brought to life through class discussion or homework assignments in which students experience the process on their own.

The book concludes with an unusual statistical appendix. It does not attempt to provide a refresher course in statistical computation in 26 pages. Instead, it illustrates several statistical procedures that are discussed but not directly studied in the main text. The point here, as with discussions of statistical procedures throughout the text, is that students should have some appreciation of the kinds of data and calculations involved in these procedures, whether or not the students can actually execute the procedures. *Principles of Psychological Research*, in emphasizing data and statistics, thus complements rather than attempts to replace a standard introductory presentation of statistical methods.

A few miscellaneous features and non-features are worth noting. The book has no glossary, cartoons, photographs, "terms to remember," "chapter outlines," "chapter summaries," multi-colored text and borders, "boxes," or thumbnail interviews with famous researchers—all to its credit, in my opinion. But it also omits suggestions for further reading, which may be an important oversight considering the brevity of the book. Its selection of examples of psychological theory and research is heavily skewed toward human social behavior; developmental theory and methodology are neglected. Nine Venn diagrams (Chapter 11) illustrating the partitioning of variance in multivariate statistics are particularly helpful.

*Principles of Psychological Research* will not suit every teacher's needs, nor should it. One can find more complete coverage on most (though not all) topics among other undergraduate methods texts. However, any text that thoroughly covered all relevant topics would be much too long for a one-semester course. This book approaches the general area of psychological research methods with rather unusual but very useful goals and emphases. Instructors who share similar interests should find it to be a highly effective introductory text.

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Drs. Dwight and Joan Dixon, Conference Co-Chairs

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Edited by Robert G. Turnbull

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