

Book reviews

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The First Century of Experimental Psychology

Edited by Eliot Hearst. Hillsdale N.J.: Erlbaum, 1979. 693 pp. \$19.95

The book was sponsored by the Psychonomic Society, which will benefit from sales. Members gave advice on topics to be covered, nominated authors, reviewed chapters, and provided other help. The result is a book of 14 chapters: one hundred years: themes and perspectives (Eliot Hearst), social and intellectual origins of experimental psychology (Richard Littman), sensation and perception (Julian Hochberg), comparative psychology and ethology (Gilbert Gottlieb), animal learning and behavior theory (Herbert Jenkins), motivation (Judson Brown), emotion (George Mandler), human learning and memory (Charles Cofer), cognitive science (Michael Posner and Gordon Schulman), physiological psychology (Richard Thompson and Daniel Robinson), developmental psychology (Robert Cairns and Peter Ornstein), social psychology (Ivan Steiner), psychopathology (Brendan and Winifred Maher), and, experimental psychology: an overview (William Estes).

Each chapter has a fair-sized list of references. There is an informative preface, names and addresses of contributors (and historical information about them), and subject and name indexes. The frontispiece is a photograph of Wundt and some colleagues. A particularly valuable aspect of the book is 84 photographs of important contributors to psychology.

Authors were supposed to cover, as best they could, historical background, findings and methods, theoretical issues, contemporary status and future prospects, and, if appropriate, practical relevance of their topic. Most attempted all these goals. The result is that the book is a mine of information. Furthermore, as a whole the chapters are of high quality. Estes' overview chapter should be read by everybody. The chapter by the Mahers is a model of organization and coverage; it should be expanded into a book.

My only quibble has to do with the authors' attempts to cover everything about a topic in one chapter. Several chapters are not merely loaded, they seem overloaded, with information. Such chapters are like short encyclopedias; they are good sources but in reading them, the memory load is heavy. On the other hand, if there really is this much to experimental psychology (and there is), then the discipline has come a long way. I am proud to be part of it, and if anyone wants to know what's my line, I will recommend they read this book.

C.P.D.

rather than a storage deficit, whereas David Schonfield and M. J. Stones (p. 109) maintain that a focus on retrieval cannot exclude consideration of storage variables. These are only a few of the many examples of such a lack of communication evident in this volume.

While the majority of chapters are well written and engaging, some add very little to our understanding of memory or memory processes. Many pages of the last three chapters were devoted to attempting to demonstrate that the phenomena under discussion were, in fact, mnemonic phenomena. Similarly the chapter on dreaming only establishes that the forgetting of dreaming is within the realm of normal forgetting. Unfortunately, the author chose to discuss the recall of information within the context of the dream experience rather than the extent to which dreaming contributes to the storage and retrieval of new information.

Although as an integrative whole this volume leaves much to be desired, the individual chapters provide excellent reviews of research and a wealth of information on methodology in the various subdiscipline of cognition and memory. It is well worth reading.

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Psychophysiological Measurement of Covert Behavior: A Guide for the Laboratory

By F. J. McGuigan. Hillsdale, N. J.: Erlbaum, 1979. 131 pp. \$14.95.

F. J. McGuigan first began relating psychophysiological events to the processes of thinking and learning around 1960. His approach throughout has been to "wed the empiricism of laboratory psychophysiology with the mediational paradigm of behaviorism such that these approaches become mutually facilitative." During this score of years, McGuigan wrote and edited several books that were focused on theoretical issues. In this, his most recent book, McGuigan provides a complementing volume on *psychophysiological technology*. In it he broaches the topics of instrumentation, methodology, and statistical analysis.

The book is divided into nine chapters and includes a couple of informative appendices. The book begins with brief surveys of background material (e.g., chapter 1— Overview of psychophysiology; Chapter 5— Overview of covert process) and concludes by describing a behavioral framework within which to view psychophysiological events. Throughout the book, *empiricism* is stressed. Although the concepts of cognition, mind, and emotion are used, McGuigan describes them as constructs with observable components. That nature of these components is mentioned only briefly seems appropriate, since the aim of the present book is to survey laboratory techniques in psychophysiological research.

The laboratory techniques are discussed in a relatively long chapter 8. (Of the 98 pages of text, 52 pages are devoted to chapter 8.) Despite its relative length, chapter 8 is quite readable. The chapter is subdivided by well conceived headings and subheadings, and clear prose and occasional anecdotes make more interesting material that traditionally students have found dry if not intimidating. The content of the chapter is another major strength of the book. Although more comprehensive and detailed discussions of psychophysiological methods are available (e.g., P.H. Venables and I. Martin, Eds. *A manual of*

psychophysiological methods, Amsterdam; North Holland, 1967), McGuigan touches upon a number of topics that are important in establishing and maintaining a safe psychophysiological laboratory. Useful discussions are provided on the methods of discerning psychophysiological signals from background noise and of partitioning event-related psychophysiological signals from basal levels of physiological activity. The notion of electrophysiological sensors (electrodes, transducers) is introduced, and procedures are suggested for attaching the sensors and for minimizing people's apprehension about serving as subjects. The function and varieties of amplifiers (e.g., operational, differential) are discussed in a manner that should be understandable to novices, though the distinction between AC and DC recording might be unduly brief.

Read-out and quantification systems are mentioned too, which completes the various "laboratory units" that are to be found in a psychophysiology lab. These latter sections, however, are sparse in places, particularly in the area of computer instrumentation and analysis. For instance after reading Chapter 8, novices should understand the general layout of a psychophysiology laboratory and a number of the specific procedures that are employed when dealing with subjects; they will not be so well informed about artifact removal procedures, analog-to-digital transformations, and experimental control programs. Instructors who might adopt this book, therefore, will want to supplement McGuigan's coverage with material tailored to their particular facilities (e.g., logical programming equipment, minicomputers, microcomputers).

Overall, the book is a perfect companion volume to McGuigan's *Cognitive psychophysiology: Principles of covert behavior* (Englewood Cliffs, N.J. Prentice-Hall, 1978). The chapters are sequenced similarly and the discussion of laboratory techniques in chapter 8 of the current book solidly grounds many of the concepts McGuigan discusses in his (1978) book. Indeed, these books seem to have been written to serve as a text and accompanying laboratory manual. The first several chapters of the books coincide; those found in *Psychophysiological measurement of covert behavior* serve as summaries of those that appear in *Cognitive psychophysiology*. The ninth chapter in each book coincides as well; each focuses on the theoretical model advanced by McGuigan for psychophysiological research. However, in chapter 9 of *Psychophysiological measurement of covert behavior*, theoretical postulates that McGuigan developed in his 1978 book are too simply stated. More problematic is that in some instances, terms are employed in the 1979 book (e.g., "allographic code," "referent level code") that are defined only in the 1978 volume.

In sum, the strengths of McGuigan's *Psychophysiological measurement of covert behavior* lie in the readable coverage he provides in his chapter on psychophysiological laboratory techniques (chapter 8), the emphasis he places on an empirical approach to the study of "covert processes," and the complementary nature of the *Psychophysiological measurement of covert behavior* and *Cognitive psychophysiology* volumes. Neither of these books standing alone serves well as a textbook but together they provide a broad, historically oriented introduction to psychophysiological research on thinking. *Psychophysiological measurement of covert behavior* might also be used fruitfully as one of several books in a course on laboratory procedures in physiological psychology or psychophysiology; it would behoove instructors, however, either to first read McGuigan's *Cognitive psychophysiology* or to be selective regarding the chapters they plan to cover.

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