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Book Review

Psychophysiology: Human Behavior and Physiological Response

by John L. Andreassi

Lawrence Erlbaum Associates, Publishers, Hillsdale, New Jersey, 472 p.

Andreassi has produced an excellent second edition to the successful but now outdated first edition of *Psychophysiology*. Substantial new material, distributed more or less homogeneously across the chapters, has been added. This fact might go unnoticed upon cursory examination of the book, since it contains fewer pages than the first edition. However, the pages are larger and contain approximately 30% more words than those of the first edition. Andreassi notes that more than 450 new references have been cited, most having been published in the last 10 years (p. xi).

The primary aim of the book is the same as that of the original, namely to provide a comprehensive introduction to psychophysiology for those with no previous exposure to the field (p. xi). More specific aims are (1) to illustrate the kinds of questions asked by researchers, the types of studies conducted by them, and conclusions drawn from those studies, and (2) to provide elementary information on the anatomy and physiology of various bodily systems, including techniques for obtaining such information (pp. 9, 10).

The new book follows the same organization and style as the first edition. An introductory chapter defines psychophysiology and previews the field. It contains an expanded treatment of issues pertaining to adequacy of definition of the field and variations in the methodological approaches used by psychophysiological researchers, giving the reader a better appreciation of the nature of the subject matter which follows than did the earlier edition.

The major contents of the book (Chapters 2–12) are organized into chapters on the basis of the type of organ or body system from which measures of physiological activity are derived. Material appearing within each chapter is arranged with respect to the types of measures obtained, procedures for obtaining them, and types of psychological phenomena to which they are related. Research findings tend to be grouped on the basis of issues which have guided a body of research. Interpretative comments are closely linked to empirical data, and there is minimal speculation on unsettled issues. An important organizational feature is that the coverage of the body systems considered in each chapter is self-contained, thereby permitting the reader to cover the chapters in any order without the necessity of alluding to other chapters.

The brain is viewed as the central organ of behavior (p. 10), and the importance given to it is reflected in the six chapters (2–7) dealing with the nervous system. Chapter 2 gives a brief but solid account, with excellent illustrations, of the anatomy and physiology of the nervous system and of procedures for recording the electroencephalogram (EEG) and magnetoencephalogram (MEG). The next five chapters provide comprehensive, well-documented treatises of the EEG (Chapters 3, 4) and event-related potentials (ERPs) (Chapters 5–7) with respect to their source of origin, measurement and quantification, and psychological significance.

Chapters 8–12 address the bodily systems peripheral to the brain, including the muscles, sweat glands, eyes, and blood vessels. Two of the remaining chapters (13, 14) deal with psychophysiological applications such as the detection of deception and the treatment of clinical disorders through biofeedback.

The last chapter (15) focuses on theoretical concepts in psychophysiology, including activation, stimulus response specificity, orienting and defensive reactions, and significance of event-re-

lated potentials. Andreassi's rationale for treating this material last is that the reader will be better prepared to appreciate the general theoretical issues after having established a knowledge base of empirical findings (p. 10). However, given the self-contained nature of each chapter, there is nothing to deter a reader from turning to the concepts chapter at any time. Some instructors might choose to have their students read this chapter first because they feel it could help the student better appreciate the significance of research findings reported in the earlier chapters.

Supplementary information is provided in three appendices. Appendix I provides a chapter-like, 30-page treatise of environmental influences on various physiological measures, including the effects of drugs on the EEG, ERPs, and the EMG. Appendix II gives helpful information for equipping an EEG research laboratory and establishing conditions for obtaining artifact-free data. Appendix III describes safeguards on how to avoid electric shock and other potential laboratory hazards.

The subject matter is presented in a clear, succinct, logical style and at a level the intelligent neophyte can understand. All of the illustrations are excellent. A well-organized index enables the reader to locate information on specific topics quickly. The book appears to be relatively free of errors; systematic spot checks for typographical errors revealed none, while a systematic check for reference errors revealed only one.

In summary, this reviewer feels the second edition of Andreassi's *Psychophysiology* provides a thorough, up-to-date, elementary treatment of the subject. Comprehensive, balanced, new material is included in each chapter. Appropriate documentation is used throughout the text. A bibliography appears at the end of each chapter, making references to statements documented in the chapter easy to locate. This arrangement constitutes an improvement over the first edition in which chapter bibliographies appeared in a separate section toward the end of the book, making it difficult to locate specific references quickly.

The book will serve as a fine text for advanced undergraduate students majoring in psychology, physiology, nursing, biomedical engineering, and related fields. Its comprehensiveness and extensive reference list make the book an excellent starting point for graduate students and professionals seeking information on a specific psychophysiological topic. Clinical, social, and industrial psychologists wishing to incorporate physiological measures into their research will find the book useful, as will human and biomedical engineers seeking information on specific body systems.

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