

## BOOK REVIEWS

by

**Jerome D. Schein, Ph.D. and Leslie Torburn, M.S., P.T.**

### **Auditory Diagnosis: Principles and Applications.**

Shlomo Silman, Carol A. Silverman. San Diego: Academic Press, 1991. 412 pp. Illustrated.

by *Jerome D. Schein, Ph.D.*

Two master teachers have joined to author a textbook that summarizes decades of progress in this critical step in the rehabilitation process. Diagnostic audiology has made giant strides in addressing clinical conundrums; indeed, comparing its status before and after World War II is like comparing Lindbergh's Spirit of St. Louis to the Concorde. The range of techniques that must be covered to merit the text's title—acoustic immittance, brainstem auditory-evoked potentials, high-frequency probe tones, to mention a few—might justify multiple authors, but such an approach most often leads to an uneven product that is difficult to read and suffers from duplication. By managing the entire field by themselves, the authors have produced a book of matchless quality. Having said that, it is important to note that they have not watered down the material. They are addressing graduate students and, it should be added, their fellow audiologists. While the former will be challenged, the latter will find much to earn their readership, so completely are the topics covered.

The text opens with a comprehensive presentation of stimuli used in audiologic testing, a wise move that sets the heuristic tone from which the remainder of the chapters do not deviate. Chapter 2 deals with routine testing. Acoustic immittance receives thorough treatment in Chapter 3, and Chapter 4 addresses functional hearing impairment. Site-of-lesion testing occupies the fifth chapter, although the authors emphasize the faultiness of those procedures. Speech-recognition tests are discussed in Chapter 6, brainstem auditory-evoked potentials in Chapter 7, and electronystagmography in Chapter 8. Chapter 9 takes up clinical decision-making, presenting criteria for evaluating test performance,

cost-benefit analyses, and so forth. Each chapter is generously illustrated and case histories abound, especially in the last chapter in which 11 cases are discussed.

Few audiologists will need encouragement to purchase this book for their own professional libraries. Some instructors, however, may be initially reluctant to impose this intensely written material on their students. However, those students whose professors do choose this work as either the principal text or as supplementary reading will be grateful for the opportunity it will afford them to delve deeply into auditory diagnosis.

### **The Biomechanics and Motor Control of Human Gait: Normal, Elderly and Pathological. 2nd Ed.**

David A. Winter. Waterloo, Ontario: University of Waterloo Press, 1991. 143 pp. Illustrated.

by *Leslie Torburn, M.S., P.T.*

This book provides an overview of the biomechanics of normal gait. Chapter One defines the terminology encountered in the gait analysis literature. This may be helpful in clarifying some of the terms used by various investigators. In Chapter Two, Dr. Winter summarizes the plethora of literature on temporal and stride measures of normal walking, from infant to elderly gait. The kinematics, kinetics, and EMG of normal walking are presented in Chapters 3, 4, and 5. The intra- and inter-subject variability of each of these measures is discussed based on the data gathered by the author. In addition, mean values at every 2% of the gait cycle for joint angles, ground reaction forces, joint moment-of-force, mechanical power, and surface EMG for 25 different muscles are provided for slow, natural, and fast cadence gaits.

The last three chapters of the book are new in this second edition. Chapter 6 covers the important topic of balance and posture in gait: Dr. Winter discusses

the importance of looking at the overall support synergy resulting from the combined moment-of-force patterns at the hip, knee, and ankle. Degenerative gait of the elderly is covered in Chapter 7. The author provides data gathered on 18 fit and healthy elderly subjects. Stride characteristics are given and data are listed for every 2% of the gait cycle: joint angles, ground reaction forces, moment-of-force, and power. The last chapter focuses on the assessment of pathological gait and includes six case studies. Also in this chapter, the author describes the potential to gather gait data with simply a video camera, VCR, and walkway.

This book provides a useful reference for normal gait with the detailed data provided. In addition, each chapter has from 14 to 168 references listed for further reading. This book would be a beneficial supplement to the library of anyone doing research in gait analysis, or anyone attempting to digest the abundance of gait analysis literature.

**Demographic and Large-Scale Research with Hearing-Impaired Populations: An International Perspective.** Edited by Amatzia Weisel. Washington, DC: Gallaudet University, 1990. 162 pp.  
by *Jerome D. Schein, Ph.D.*

Determining the size and demographic characteristics of disabled groups should occupy more attention than it usually receives from rehabilitators. *How-many* and *where-at* questions satisfy more than idle curiosity: they assist in planning and evaluating services, as well as providing clues to etiology and contributing ideas about prevention. Morbidity surveys, however, generate specific problems uncommon to survey research generally, and the demands of epidemiological studies also introduce requirements beyond those typically encountered in sociological studies. In return for the increased effort large-scale surveys demand, they gain benefits of generalizability beyond those that can be claimed for research based on single-subject designs or investigations of small numbers of persons—which is not to

say that the latter types of research do not make valuable contributions of their own. These aspects of large-scale surveys are amply illustrated and fully discussed by the 14 papers that make up this monograph.

The authors of the contributed papers reside in Canada, Great Britain, Israel, the United States, and West Germany. While they come from different research traditions, their purviews are not parochial, and their findings and techniques apply across nations. All of their research bears on rehabilitation and special education. Some papers deal with substantive issues (pre-school education, career education, occupational attainments, mental health), and others with technical problems (cultural factors, psychometrics, statistical models).

From such a wide variety of issues and scholarly approaches, no single conclusion seems appropriate. Some generalizations from this collection of essays and research reports, however, do recommend themselves. For one, the study of persons with impaired hearing continues to attract researchers, and their efforts bear rich fruit. Another point is that cross-fertilization from similar research with other disability groups would be welcome, though it is most evident by its absence. Anyone who has studied persons with particular disabilities realizes that successful scientific research combines art with technology. Characteristics of a disability group introduce problems for the researcher that are unique to that group, and those who do not appreciate and account for the social-cultural aspects of the persons being studied often conduct research that misleads, if not reaches wholly erroneous conclusions. The readers of this monograph will gain an appreciation of how effectively some international researchers have melded art and science to achieve trail-blazing results of benefit to rehabilitation, generally, and to persons with impaired hearing, in particular. But even if readers do not agree with that judgment, they will find sufficient new information and ideas for follow-up studies in the 14 essays to justify their reading them.