

BOOK REVIEWS

LARSON, VERNON, D., EGOLF, David P., R. L., KIRLIN and S. W., STILE. **Auditory and Hearing Prosthetics Research**. New York: Grune and Stratton (1979). 456 pp., \$26.90.

— Reviewed by MICHEL PICARD

This book is intended for practicing professionals and students eager to find solutions to problems commonly encountered in research design, evaluation and fitting of hearing aids. After one has read the book, there is no clearcut distinction as to who — the audiologist or engineer — should most likely profit from such a publication. As a matter of fact, the book carries information relevant to both professionals. On the one hand, it tells engineers some of the desirable characteristics an aid must offer for hearing-impaired listeners to become more efficient users of such prosthetic devices. On the other hand, it tells audiologists many of the strategies engineers have at hand to alter the “plumbing” of hearing aids and, consequently, optimize their performance. As a result, the book by Larson et al. has people from different fields sharing their respective knowledge of auditory prosthesis. As such, it constitutes a powerful tool for changes to come. However, there is no way it can serve as a primer for the beginning student of rehabilitative audiology.

The book digs into the mathematical treatment of current computer technology which can be applied to hearing aids. This helps engineers to gauge the state-of-the-art in amplification. However, such an approach is useless for audiologists because it goes far beyond their understanding. In addition, one must remember that these aspects of the book are subject to rapid changes: the current technology of microprocessors which opens the way to sophisticated mathematical treatment of acoustic information is, indeed, an especially “fluid” field.

The editing and presentation of the book call for criticism. Typographical errors are innumerable all the way through. Some of them, at least, need rectification: on p. 13, normal limits of hearing should be identified as the area comprised between -10 and +20 dB (re ANSI S3.6-1969); on p. 84, the Zwislocki coupler simulate the impedance load of normal ears over the frequency range from 100 to 7500 Hz (Zwislocki, 1980). In addition, clarity of figures is far from ideal in many instances. In this respect, we mention fig. 4 (p. 137), fig. 9 (p. 142), fig. 10 (p. 143), fig. 11 (p. 144) in Franks' presentation and fig. 3 (p. 321) by Schwartz and Surr.

Section one of the book reviews fundamentals of physiology of hearing, audiometry and acoustics in a neat and concise way. The first two chapters are worth mentioning for their relevancy to the topic as well as their clarity. It is unfortunate, however, that references are scarce. Their inclusion in the text would have given the book the credence it is entitled to. The chapter by Kirlin, while dealing with the mathematics of signal processing, is of no practical value for the community of audiologists.

The section on acoustic response of hearing aids unevenly represents trends in this particular field of knowledge. The chapter by Larson on 2cc vs. ear canal comparisons as well as the ones by Franks constitute some exciting examples of the kind of information metrology of hearing aids can add to current knowledge and practices. Texts by Olsen and Lybarger, on the other hand, tell little about current issues in their own area of interest. As far as Lybarger's presentation is concerned, it will be of almost no benefit to the reader already acquainted with the chapter on earmold acoustics presented by the same author in the second edition of the “Handbook of Clinical Audiology” (Katz, 1978).

In view of the goals of the book, section III needed to go through the fundamentals of digital analyses and synthesis of speech (covered by Schafer and Rabiner). The book, however, had to proceed to the point where the reader would be introduced to some of the basic strategies required in the digitalization process so as to optimize perception of amplified speech by hearing-impaired listeners. Chapters by Yanick and Graupe, in this respect, are indicative of the direction to look. However, they lack supportive evidence about the effectiveness of these strategies with hearing-impaired listeners. Niederjohn's chapter remains unsubstantiated in the views of the present discussion. Indeed, this author pinpoints hints of the speech perception mechanism found to be used profitably by normal listeners. In addition, he refers to an experimental procedure in which speech solely is filtered as a means to improve its intelligibility while imbedded in noise. Such a procedure remains totally irrelevant to the way speech and noise are processed in current prosthetic devices.

The section dealing with selection of conventional hearing-aids offers limited coverage of current issues on the matter. Schwartz and Surr's chapter emphasizes the need for high frequency amplification in hearing aids. It is by far the major contribution of the section. For one thing, the paper by Bess and Bratt, in our opinion, glances through the issue of selective amplification. Also, the presentation by Rose focusses on description of tools available to select prosthetic devices rather than their efficiency and underlying principles. Reference to Pollack's book as well as "Sensorineural Hearing Impairment and Hearing Aids" by Ludvigsen and Barfod (1978), in our opinion, will help the reader grasp more thoroughly these aspects of hearing aid selection procedures.

The treatment of non-conventional aids to hearing does certainly look sketchy to one familiar with the diversity of instruments and strategies which can be described under such a heading. This is not to say Glatke's chapter is not worth the reading. On its own, the chapter represents a concise and exciting review of intrusive non-conventional aids to hearing, that is: devices which require implantation of some electronic hardware into the various parts of the ear; surgical approaches intended for extending the ear transfer function. As a consequence, Glatke's chapter can be viewed as one of the highlights of the book.

The final section on metrology of hearing aids fulfils its promises with respect to the goals of the book. Studebaker demonstrates the scrutiny acoustical measurements are capable of and stresses how powerful such measurements are now and can be in the near future. The contribution by Egolf on the simulation of hearing aid behavior through computer technology unveils a totally new way of fitting prosthetic devices. Considerations introduced by Reddy and Kirlin appears to be less provocative, being more concerned with auditory evoked responses in hearing-impaired listeners. However, spectral analysis with pseudorandom noise can be applied to the measurement of hearing aids. This way, it needs recognition as an alternative way to investigate prosthetic devices.

In sum, this provides the experienced professional of rehabilitative audiology as well as the student familiar with hearing aids with information. In addition, the book tells the engineer about the state-of-the-art in this field of the potency of computer technology for amplification of speech as well as analysis of hearing aids. In this respect, we feel the book met its basic goals.

BIBLIOGRAPHICAL MATERIAL

- KATZ, J., *Handbook of Clinical Audiology*. Baltimore: Williams and Wilkins (1978).
- LUDVIGSEN, C. and BARFOD, J., *Sensorineural Hearing Impairment and Hearing-Aids*. *Scandinavian Audiology*, Suppl. 6, 1978.
- POLLACK, M. C., *Amplification for the Hearing-Impaired*. New York: Grune and Stratton (1975).

ZWISLOCKI, J. J., *An Ear Simulator for Acoustic Measurements*. In Studebaker, G. A. and Hochberg, I., *Acoustical Factors Affecting Hearing Aid Performance*, Baltimore: University Park Press (1980).

BORDEN, GLORIA J. and KATHERINE S. HARRIS, *Speech Science Primer*. Baltimore: Williams and Wilkins (1980). 297 pp., \$25.00.

— Reviewed by J. NEELLEY

Within the cover of this rather expensive paperback of almost 300 pages, Borden and Harris present an excellent book which is indeed a primer of speech science. Although the authors write that the primary audience for the book is students in speech pathology and audiology, the topics should be of interest to engineers, physicians, psychologists, and linguists. Although this is an introductory text, it will be equally useful to undergraduates and graduates. Its usefulness will be further enhanced by the well-selected bibliographies and a glossary.

The book is divided as follows: Chapter 1, Speech, Language, and Thought; Chapter 2, Pioneers in Speech Science; Chapter 3, Acoustics; Chapter 4, Speech Production (subdivided into Neurophysiology of Speech, Respiration, Phonation, Articulation and Resonance, English Speech Sounds, Feedback Mechanisms in Speech, Models of Speech Production, and Production of a Sentence); Chapter 5, Speech Perception; Chapter 6, Research Tools in Speech Science; and Chapter 7, Evolution of Language and Speech.

This volume will probably become a basic item in the libraries of teachers and students of speech science.

FAHEY, RONALD F., BARBARA HODGINS, ANNE SEIDEL, LESLIE YANDEL, and CAROL YOUNG, (Editors), *Strategic Language File*. Austin, Texas: Exceptional Resources, Inc. (1979). 280 pp.

— Reviewed by PATRICK T. ALEXANDER

In their preface, the editors indicate that there is a need for a systematic compilation of the massive amount of information that has been published recently, in the area of language assessment and intervention. With the *Strategic Language File* they intend to address that need by providing this series of abstracts especially for those who do not have direct access to the wide range of journals, containing language assessment and intervention articles. The intent of this work is to assist students, clinicians, researchers, and educators from a variety of disciplines; by providing a cross-reference system of abstracts of articles pertaining to services for language disordered persons.

Their compendium presents 256 articles published from 1973 to 1978 (a sequel volume, considering articles published in 1979 and 1980, is expected). Each abstract is presented systematically as follows:

1. To facilitate reference to the original article, the first section lists the standard bibliographic information including author(s), title, journal, volume, year, and pages. For the experienced reader, this information begins the frame of reference for the manner in which the topic has been treated.
2. The "rapid identifying information" section cites the number of subjects, their age range, a population description, population prerequisites (specified ability level), area of emphasis (prelinguistic behavior, oral expressive, auditory receptive, or nonvocal linguistic behavior), target (the purpose or objective of the methods described in the article) and type (operant/nonoperant; stimulative, remedial, or maintenance).

This helpful second segment enables the reader to form a quick judgement of the pertinence of an article, without even reading the summary.

3. The third section consists of the article summary, a precis presenting the essential components of the original article.

The editors state that "No evaluation or interpretation of the abstracted article is offered or intended . . ." Although a critique is not intended, some objective mention of the scientific controls reported in the original article (or a statement to the effect that controls were not described) would have been helpful. Such information would enable the user of this volume to be even more selective.

The following brief excerpt is selected to illustrate the abstract format:

- 32 Buckingham, H.; McLaughlin, T. F.; Hunsaker, D., "Increasing Oral Responses in a Special Education Student with a Token Program." *Education and Treatment of Children* 1 (1978): 19-24.

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|------------------|---------------------------------------|
| N: | 1 |
| Population: | autistic |
| Age: | C. A. 11 years |
| Emphasis: | oral expressive |
| Target(s): | increase oral classroom participation |
| Prerequisite(s): | not specified |
| Type: | operant; remedial |

A token reinforcement program was implemented by a teacher to increase the oral response rate from an autistic child during class discussion or in response to questions. A baseline was taken for a period of six school days. Training consisted of:

Criterion 1. The subject received a star for each question answered in a complete sentence. Five stars could be traded for a toy.

Criterion 2. Two complete sentences or questions were required to obtain a star.

The results indicate that more oral responses were emitted when the token reinforcement system was in effect. The procedures used were easy to implement and carry out within the regular classroom.

Following the abstracts the editors provide a bibliography, an appendix, and four indexes. The bibliography lists each of the original articles discussed.

The appendix lists the 44 journals surveyed. The journals range widely from those commonly read by Canadian speech/language pathologists, including *Human Communication*, *J.S.H.D.*, and *Exceptional Children* to those less frequently seen, including *American Journal of Orthopsychiatry*, *Australian Journal of Mental Retardation*, and the *Journal of Clinical and Consulting Psychology*.

The Indexes allow easy cross reference and quick selection of abstracts. They include:

1. The Author Index lists all of the authors and the corresponding abstract numbers.
2. The Population Index is a list of the eighteen population categories and the corresponding abstract numbers.
3. The Target Behavior Index cites the corresponding abstract numbers for pre-linguistic behaviors, linguistic behaviors, and nonvocal linguistic behaviors (subdivided by oral expressive or auditory receptive).

4. The Language Techniques Index provides the corresponding abstract numbers considering five categories; vocal and nonvocal antecedent events, subsequent events, parent involvement, teacher involvement, and training technique comparison.

In compiling this review an attempt was made to stimulate the utilization intended by the editors. In addition, this reviewer selected a few more recent articles in the area of language, applying the same abstracting formula. Those activities lead to an understanding of the utility of this compendium and an appreciation of the difficulty of the abstracting task.

There are surprisingly numerous typographical errors and one page is reversed, but these do not detract significantly from the overall value of the work. The range of journals reviewed is broad and multidisciplinary, representing many different perspectives. In general, the **Stategic Language File** is a highly useful collection of abstracts of interest to anyone involved with the management of clients with language problems.

LUTERMAN, DAVID, Counseling Parents of Hearing-Impaired Children. Little, Brown and Company Boston. (1979) 193 pp., \$11.95.

— Reviewed by BELINDA BOLEANTU

Dr. David Luterman, audiologist, has written this book based on many years of experience in counseling parents of hearing impaired children. He states, "This book is dedicated to the notion that education can be a viable vehicle for reaching the handicapped child if programs are established for the parents". The author shares his wealth of experience as a counselor, showing that by developing an effective relationship with the parents, one can meet the many psychological needs of both the parent and child in order to assist the child to reach his own potential.

The book is divided into seven chapters. Each has a summary and bibliography.

Chapters one and two describe the typical emotional reactions of parents to the diagnosis of their hearing impaired child. The stages of shock, recognition, denial, acknowledgement and constructive action are well portrayed. The expectations of the parents and the role of the professional are examined. Techniques and skills for developing an effective counseling relationship are described.

The third chapter looks in depth at program development, the difficulties in developing programs and the methods by which programs can be implemented.

The author discusses therapy by correspondence, home visitation programs, short term intensive programs, demonstration home programs, school based programs and clinic based parent programs.

The Emerson program, a clinic based parent centered program of which the author is director, is described in detail. The latter part of the chapter offers suggestions for professionals engaged in parent centered programs. Observations are made regarding i) the relationship of socioeconomic status to parent education, ii) deaf parents of deaf children, iii) the effectiveness of parent centered programs.

Chapters five and six are devoted to groups, group dynamics and the role of the parent and professional in such groups. The need for the professional to develop strong interpersonal skills is constantly underlined. The latter part of the chapter is devoted to providing strategies and ideas for the development of these skills.

Chapter six explores the impact of a hearing impaired child on the family. Special reference is made to the husband and wife, sibling and parent-grandparent relationships.

A section of the chapter deals in particular with the needs of an adolescent handicapped child and illustrates the ongoing need for support for these families.

The final chapter examines education placement options; residential, mainstreaming and day class programs. Various case-histories are utilized to illustrate how any decisions regarding placement should be made on the current individual needs of a particular child and family. This chapter is written in light of P.L. 94-142, Education for All Handicapped Children Act, in the United States, but the comments are generally universal. The controversy of methodology is aptly presented as educational alternatives; Luterman recommends that the information be given to the parents in as unbiased a manner as possible, in order to allow the parents to make the right decision for themselves.

This book includes no information on the nature of hearing loss, audiograms, hearing aids, etc. The author assumes the reader has a background on the subject. There are no attempts to describe how information regarding the nature of hearing loss and its implications on language development should be related to the parents.

This book is short, well presented and has a detailed index. It is easy to read and contains much thought-provoking material for any professional involved in the care of hearing impaired children. It focuses on interpersonal relationships and counseling inherent to our role as professionals, which, to my knowledge, has often been fairly neglected both in our formal training and the literature. The numerous anecdotes enhance the concepts and ideas Luterman attempts to portray.

I recommend this book to all professionals involved in the care of hearing impaired children. Students in the field of speech pathology and deaf education should use this book in combination with theoretical texts.

PERKINS, WILLIAM H., **Human Perspectives in Speech and Language Disorders**. St. Louis, Missouri: The C. V. Mosby Co. (1978). 362 pp.

— Reviewed by C. A. ALTON

In **Human Perspectives**, Perkins sets out to provide an introduction to speech and language disorders in such a way that a "beginner, unacquainted with speech disorders, can obtain an overview of these problems". He aims to focus on the person with the disorder, demonstrating how it affects the individual's life.

The book is well organized, being divided into four sections: Language Disorders, Articulation Disorders, Voice Disorders, and Fluency Disorders. Within each section specific speech and language defects relevant to that disorder category are presented. Section One discusses both mild and severe language disorders, nonstandard language, and aphasia in adults. In the section on articulation disorders, developmental disorders, dysarthria, cerebral palsy, and cleft palate are presented. Laryngectomy, vocal abuse, and spastic dysphonia are covered in the third section. Finally, the development of stuttering and chronic stuttering are discussed in the last chapter on fluency disorders.

Each speech and language disorder is contained in a chapter which is built around a particular case or cases. In this way possible causes, diagnostic procedures, treatment plans, programs, and outcome are discussed for the various disorders. In addition, involvement of allied professionals and family members is cited when applicable. How the disorder affects the individual's life and family is brought to light by focusing on the person with the defect rather than on the defect alone. At the end of each chapter, there are study questions and book lists if the reader wishes to pursue the topic in more depth. All technical terms are printed in italics and defined in a glossary.

Human Perspectives is a readable introduction to the field of speech pathology. It would give the beginner an idea of the scope of the profession with a more humanistic outlook than most conventional texts. For this reason, it could be a welcome contribution to an introductory course. The style of presenting case illustrations limits each discussion to the facts pertaining to that particular case. As a result, alternative methods of handling the disorder are not investigated. The reader must remain aware of this bias. This reviewer does not feel that Perkins can be faulted for this as he states at the outset that this is not intended to be a "how-to-do-it" book, but an overview of speech and language disorders. One oversight should be mentioned, however. In a book professing to be "about the people our profession is intended to serve", this reviewer questions the absence of a section on the hearing impaired. These individuals are often included in our case loads and **Human Perspectives** would have been more complete had this area been discussed.