

## BOOK REVIEWS

by

**Beryl M. Benjers, Ph.D.**

*Departments Editor, Journal of Rehabilitation Research and Development*

**Joan E. Edelstein, M.A., P.T.**

*Associate Professor of Clinical Physical Therapy, Columbia University, New York, NY*

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

*Professor Emeritus of Sensory Rehabilitation, New York University, and David Peikoff Chair in Deafness Studies, University of Alberta, Edmonton, Canada*

**Assistive Technology Sourcebook.** Edited by Alexandra Enders and Marian Hall. Washington, DC: RESNA Press, 1990, 576 pp.

This comprehensive sourcebook lists a variety of information sources needed for technological support for rehabilitation professionals and their clients. Its predecessors were *Technology for Independent Living Resource Guide* (1982), and *Technology for Independent Living Sourcebook* (1984). The book also contains strategies throughout for finding the information needed, followed by a special index for "information seeking strategies." The entire book is written in a rather informal style which often includes the authors' personal views and requests for soliciting new technology information from readers.

The book is divided into 18 chapters, each dealing with a separate aspect of rehabilitation technology and contains a comprehensive list of available publications, many complete with cost information.

Chapter 1. Introduction to Information Seeking Strategies. Deals with basics of how to find what you are looking for, whether from a library or an electronic database, and emphasizes the need to ask the right questions.

Chapter 2. Information Resources: What's Out There And How To Find It. Discusses a variety of information sources, such as databases, publications, information centers and clearing houses, various R&D programs and organizations, small businesses and private sectors.

Chapter 3. Determining What an Individual Needs. What is the interaction between assessment and needs of technology for consumers? The latter section deals with assessment of technology in the field of augmentative and alternative communication.

Chapter 4. Evaluating the Technology. This chapter contains "A Clinician's Guide to Making Informed Choices About Rehabilitation Technology," and is primarily written to educate consumers about equipment evaluation devices, standards, services, and publications.

Chapter 5. Following Through. This is a relatively short chapter stressing the need to follow through assistive technology for basic use, training, maintenance and repair of various rehabilitation equipment and devices, including wheelchairs.

Chapter 6. Safety and Consumer Protection. Deals with legal issues for products that help protect the safety of individuals and procedures that help ensure safety involving the use of assistive technology products.

Chapter 7. At Home with Technology. Discusses technology needed to carry on activities of daily living (ADL) at home, with a special section on environmental controls.

Chapter 8. Technology for Education and Technology for Children. Devoted to adapted mobility, assistive devices, plays, toys, and games for children and classroom technology for students.

Chapter 9. Technology at Work. Deals with vocational aspects of assistive technology and accessible workstations. Three case studies are presented, each dealing with different technological modifications to meet special needs; this is followed by a segment on special geriatric vocational rehabilitation needs.

Chapter 10. Recreational and Leisure Technology. Deals with the application of technology to recreation, and contains excerpts from a panel discussion on the role of recreation and leisure in the lives of the physically challenged. The latter section deals with wheelchair sports general sports, fitness, exercise, and leisure activities.

Chapter 11. Technology for Personal Mobility. This chapter is extremely well laid out with separate sections on mobility for the visually- and mobility-impaired. This is followed by a discussion of ISO wheelchair standards, interface controls, seating, cushions, pressure sores, and batteries.

Chapter 12. Communication and Sensory Aids. Deals with augmentative and alternative communication technology, computer-assisted electronic aids, and sensory aids for the vision-impaired and hearing-impaired.

Chapter 13. Control and Controls. Opens with, "The most wondrous device or the simplest toy will be useless or underused if the user cannot control it," and discusses various types of controls for devices, wheelchairs, computers, and environmental control units (ECUs). An overview of robotics is also included.

Chapter 14. Access to Computers. This chapter was previously called "Microcomputer Applications." It is divided into various sections, including: Getting Started, Trends and Issues, Computer Access, Disability and the Law, and concludes with a list of information providers.

Chapter 15. Clinical and Treatment Technologies. This is a new chapter, and suggestions on this chapter are requested. Areas discussed are Prosthetics and Orthotics, Functional Neuromuscular Stimulation, Transcutaneous Electrical Nerve Stimulation, Cognitive Rehabilitation, and audiovisual material related to clinical treatment.

Chapter 16. Systems and Policy Issues. Deals with consumer-oriented organizations, public policies, and technology for the disabled. Information on contacting congressional representatives and obtaining publications, statistical information resources, costs, benefits, and effectiveness of technology, quality assurance, funding for assistive technology and related services is also included. The chapter concludes with an annotated bibliography.

Chapter 17. Technology Service Delivery: An Emerging Field. Various models of utilization of assistive and rehabilitation technology in state vocational rehabilitation agencies, and selected publications and projects, personal computer applications, and related ethical and legal issues are presented. It also contains a list of academic institutions offering training programs, scholarships, fellowships, and funding sources for the development of training materials.

Chapter 18. Audiological Materials Related to Technology and Disability. Starts with a very informal introduction and request to solicit new information from readers. *Healthfinder*, a series on information factsheets is recommended, and is concluded with a long annotated list of audiovisual materials related to technology and disability.

A very timely directory of information in the fields of disability and rehabilitation, this book will be a valuable reference source for all rehabilitation and disability libraries and resource centers. [BMB]

**Deaf Sport. The Impact of Sports Within the Deaf Community.** D.A. Stewart. Washington, DC: Gallaudet University Press, 1991, 234 pp.

The interest in sports for persons with disabilities has been a recently emerging trend in rehabilitation. Imagine the reader's surprise to find that deaf sportsmen have been formally organized in the United States since 1945, when the American Athletic Association of the Deaf (AAAD) was founded. Even more surprising is that AAAD came into being to allow U.S. deaf athletes to compete in the World Games for the Deaf (WGD)—which had been going on for almost as long as the Olympics. Formerly called the Deaf Olympics—a name that had to be dropped because of objections from the International Olympic Committee (IOC)—WGD has brought together deaf athletes from 30 or more countries who compete in all the same Olympic sports. In place of management by the IOC, deaf athletes have the Comité International des Sports des Sourds (CISS). CISS operates under the motto "Equal through Sports," and it has only one classification for its athletes—they must be deaf. That latter fact illustrates a point of pride among deaf athletes: they do not imitate normally hearing athletes, they do better. As Jerald Jordan, CISS president remarked, ". . . each time I watch the Olympics struggle with issues related to professionalism, doping, internal politics, and nationalism . . . [I predict] the World Games for the Deaf will be one of the last remaining vestiges of the true 'Olympics.' "

Dr. Stewart, in assembling a wealth of material about deaf sport, has actually written a psychology of sport. He discusses sport's organizational and business aspects, but mostly he is concerned with its social-psychological implications. He reflects extensively, with numerous case illustrations, upon the role that sport has played in developing deaf persons' self-concepts. He brings together research insights from other sport groups—able-bodied and disabled—to illuminate sport's social influences, especially its influences on the deaf community. With respect to the latter, Stewart draws a fascinating portrayal of the deaf community's cardinal features: the role of American Sign Language and of the shared personal experiences of being without the ability to hear. The resulting camaraderie that typifies deaf society finds a ready metaphor in the team sports about which Stewart writes so fluently.

Dr. Stewart was born deaf, in Vancouver, British Columbia. Educated in schools isolated from other deaf students, he became acquainted with other deaf people when he began his university preparation as a teacher. He presently heads the teacher training program at Michigan State University. Despite his heavy responsibilities, he remains what he terms "a sport fanatic." Nowadays, he keeps his contacts with athletics largely through the WGD and as a coach of hockey players—a natural choice of sport for a Canadian.

As a psychologist, he makes use of his observational skills to uncover important points that contrast deaf with other disability groups. He explains why CISS has resisted any efforts for it to merge with other organizations representing people with disabilities, such as the Paralympics. For one thing, the WGD allow no modifications of the games, except to make auditory signals visible. Secondly, deaf people do not consider themselves disabled: different, yes; disadvantaged, sometimes; but disabled, no. To fully grasp the significance of those distinctions, one must read all of Dr. Stewart's exposition. A hint of what he argues can be found in his conclusion: "Deaf sport fills a void within the larger realm of sport in society. It is not an alternative to participation in hearing sport but, rather, a parallel social institution with prescribed notions of social behavior and social values" (page 202).

Even readers not basically involved with deaf people will find this book worth their time. Its emphasis on "social behavior and social values" clearly removes it from the "jock" category. *Deaf Sport* is not a book to turn to for ideas about how to coach a hockey team or how to improve a weak backhand. It is an exciting, provocative essay on the psychology and sociology of sport—and a valuable addition to understanding of how sport can contribute to rehabilitation. [JDS]

**Disability, Sexuality, and Abuse. An Annotated Bibliography.** D. Sobsey, S. Gray, D. Wells, D. Pyper, B. Reimer-Heck. Baltimore: Paul H. Brookes, 1991, 185 pp.

The past three decades have seen sex come out of the closet. Professionals no longer lower their voices to discuss sex, and rehabilitationists freely discuss the sexual aspects of disabilities. Accompanying that improved freedom of expression has come disturbing revelations about sexual abuse. Administrators, their staffs, and the public must now confront some ugly facts that persons with disabilities often knew only too well.

This collection of abstracts aims "to document all of the critical work accomplished to date in the challenging and

disconcerting area of sexual exploitation, abuse, neglect, and vulnerability among persons with disabilities." *All of the critical work* amounts to 1,123 articles, monographs, chapters in books, and books, largely drawn from the North American literature. The size of the corpus alone daunts those whose attitude was that this topic belonged in the sensationalist press, along with stories of other rare, improbable events. The skeptic will be further disconcerted to find a majority of the entries are dated in the 1980s, emphasizing the late coming of attention to this area and its timeliness.

The annotations are short, but adequate for identifying materials that a reader would want to read in their entirety. Their tone is nonjudgmental, and the style in which they are written makes scanning them a simple task. The make-up of the volume is attractive, with clear, readable type and generous spacing of entries. Author and subject indexes are provided, with the latter encompassing 16.5 pages. This meticulous cross-referencing assures that the collection will be one that professionals will consult again and again, whether to assist in their research or practice. Parents and disabled persons, too, will find this a useful reference work with which to learn about a badly neglected, but highly important topic. [JDS]

**Gait Analysis: An Introduction.** Michael W. Whittle, PhD. Jordan Hill, Oxfordshire, England: Butterworth-Heinemann Ltd., 1991. Paperback, 230 pp. Illustrated.

Michael Whittle, Cline Chair of Rehabilitation Technology at the University of Tennessee at Chattanooga, has presented a succinct introduction to normal and abnormal gait. He begins with an excellent overview of basic sciences, particularly biomechanics.

The chapter on normal gait is noteworthy. Although consensus has yet to be developed regarding the terms used to identify events in normal gait, Whittle defines heel contact, foot flat, and similar terms, then details the kinematics and ground reaction force position and magnitude throughout the cycle. He emphasizes energy utilization during walking and outlines muscular activity and distinctions of juvenile and elderly gait.

Gait pathology is seen as deficiency in body support, balance maintenance, advancement of the swinging leg, or power to move the limbs or trunk. He defines typical deviations, then identifies the disorders often observed in common clinical disorders.

Methods of subjective and objective gait analysis are compared, and, in the final chapter, the applications of clinical and scientific analysis are considered.

The first appendix summarizes the normal gait parameters presented by Sutherland, *et al.* Conversions between International System and English units are appended, as is a computer program for general gait parameters, written in BASIC, and a comprehensive list of international suppliers of gait analysis equipment, complete with addresses and telephone numbers. Final elements are a brief glossary of medical terms, a well-selected reference list, and an index.

*Gait Analysis: An Introduction* is a splendid complement to the several books on the topic which have appeared in the past half-dozen years. Whittle's forte is lucid explanation of normal adult gait coupled with a rational appraisal of analytic techniques and their applications. This text is an excellent reference for students, clinicians, and research investigators concerned with the complexities of human walking. [JEE]

**Space, Time, and Attention: Processing of Stimuli Delivered to the Hands.** L.L. Calhoon (Doctoral dissertation.) Alberta: University of Alberta, Department of Psychology, 1989, 128 pp.

Deaf-blindness promotes the cutaneous system to first rank as a substitute sense for communication. Within the cutaneous system, warmth, cold, and pain sensations do

not serve well as communication vehicles, leaving touch (or pressure) as the only practical cutaneous sense. The series of studies encompassed by this work seek to explicate the skin's 'language;' i.e., to better understand the spatiotemporal responses that the haptic sensors transmit to the brain. Specifically, the eight experiments reported here answer questions about the attentional demands, divided and selective, required for optimal functioning of the haptic system. Put another way, how much tactile information can be processed per unit of time? And how successfully can an individual focus upon various tactile elements?

Using vibrotactile stimuli presented to the fingertips at stimulus-onset asynchronies (SOA) from 0 to 360 msec, the studies yielded the following conclusions: 1) response accuracy decreased conjointly with increase in the number of sites on the finger and with a decrease in SOA; 2) accuracy of identification increased with some types of redundancy patterns, but not with all; and, 3) triple presentations yielded greatest accuracy.

Readers concerned about using tactual sensitivity to replace or supplement disabled vision and/or audition will find the reviews of research of particular value. Some of the findings are either counter-intuitive or contrary to the results obtained by others. Taken together, they raise questions about the use of taction that are of importance in rehabilitation of those with sensory impairments. [JDS]