
BOOK REVIEWS

An Enriching Reference Source

Handbook of Clinical and Experimental Neuropsychology. G. Denes and L. Pizzamiglio (Eds.). 1999. Hove, UK: Psychology Press. 1108 pp., \$150.00.

Reviewed by DIANE B. HOWIESON, Ph.D., *Department of Neurology, CR131, Oregon Health Sciences University, 3181 SW Sam Jackson Park Road, Portland, OR 97201.*

This handbook is an extensive reference source for clinical neuropsychology. It emerged from a 1988 Italian text and has mostly Italian contributors. The book is well organized and well written. The chapters include both theoretical thinking about and anatomic correlates of neuropsychological disorders in addition to their clinical features. This reviewer particularly liked the numerous theoretical discussions. Animal or cognitive experiments generally are not discussed. The topics cover current thinking in most areas and it is exceptionally well referenced with over 5000 citations.

The first section covers methodological problems in neuropsychology in reviews of its behavioral, physiological, and neuroimaging methods. The chapter on neuroimaging is particularly useful in providing a readable account of current techniques for measuring brain structure and function. Statistical methods and experimental designs are briefly reviewed. The largest section in the book covers language disorders with an emphasis on acquired aphasia. These chapters on aphasia present thorough coverage of the many clinical syndromes. The section on spatial disorders focuses on the many visual disorders that can occur with brain damage. A section on dementia provides a description of Alzheimer's disease and its neurobiology with minor emphasis on clinical assessment. Other degenerative diseases are presented, including an interesting chapter on slowly progressive isolated cognitive deficits. The section on attentional disorders emphasizes the neurophysiology and neuroanatomical correlates rather than the clinical features or clinical assessment. Memory disorders, apraxia, and agnosia are discussed, although less extensively. A section on special syndromes concerns disorders of number processing, emotional control and disorders, hemispheric disconnection syndromes, and consciousness. The chapter on the neuropsychology of music is an example of a subject often omit-

ted from clinical texts. There is no attempt to cover all the major clinical syndromes. For example, there are no sections on head trauma or substance abuse, and syndromes resulting from stroke are interspersed throughout the text. Some topics seem underrepresented, such as clinical methods in neuropsychology, psychiatrically defined disorders, and aging. This is not a "how to" assessment textbook. Some common neuropsychological tests are briefly discussed but not many.

Comparing this book with the earlier, landmark, *Handbook of Neuropsychology* edited by F. Boller and J. Grafman, published in 10 volumes between 1988 and 1995, the topics are much the same with the exception that the Denes and Pizzamiglio handbook does not cover child neuropsychology nor computer models of cognitive processes. It has a section on rehabilitation, while the earlier handbook does not. The multivolume handbook has more extensive coverage, although some of the earlier volumes are now outdated. In some ways the books are complementary because the emphasis on topics differs. For example, the Boller and Grafman handbook has over 100 pages devoted to implicit memory. This book has only 47 pages devoted to all aspects of memory disorders, of which only four refer to implicit memory. Many chapters have similar coverage and some chapters are contributed by the same authors in both handbooks. This American reviewer enjoyed the opportunity to see referenced large bodies of work conducted by European scholars. Overall this handbook is recommended as a valuable resource.

REFERENCE

F. Boller & J. Grafman. (Eds.). (1988–1995). *Handbook of neuropsychology* (Vols. 1–10). Amsterdam/New York: Elsevier.

Beyond the Norm(s): Toward an Empirical Foundation for Clinical Neuropsychology

Handbook of Normative Data for Neuropsychological Assessment. M.N. Mitrushina, K.B. Boone, and L.F. D'Elia (Eds.). 1999. New York: Oxford University Press. 531 pp., \$68.50.

Reviewed by RUSSELL M. BAUER, Ph.D., *Department of Clinical and Health Psychology, University of Florida, Gainesville, FL 32610-1065.*

Today's neuropsychological practitioners have literally hundreds of assessment instruments in their toolbox, and every assessment entails decisions about which tests to use. In addition to practicality and relevance, a critical ingredient in the decision process concerns the availability of appropriate normative data on which to base clinical interpretation. The book by Mitrushina, Boone, and D'Elia goes a long way in making such valuable data readily available and in critically analyzing the current state of the art.

As the authors state, "despite the critical importance of having access to normative data to facilitate clinical interpretation of test findings, there are relatively few large-scale normative reports in the literature" (p. 5). This state of affairs results, in part, because normative research tends to be both logistically difficult and unattractive to funding agencies. For many tests, what exists are multiple, relatively small-scale descriptive normative studies of restricted populations, leaving the practitioner to sort through available reports to find the normative set that is most appropriate for the patient being examined. If the wrong choices are made, potentially serious problems with test interpretation may result. Using the Auditory Verbal Learning Tests (AVLT) as an example, the authors show how an individual test result can lead to dramatically different normative equivalents (in the case of the AVLT, ranging from the 1st to the 53rd percentile) depending upon which normative study is utilized.

This problem confronts the practicing neuropsychologist in nearly every evaluation. Most practitioners have, at one point or another, wished for (1) some reasoned guidance in what makes a normative dataset more or less appropriate for application to the individual case, (2) a critical review of normative concepts such as standardization, cutting scores, and of the critical similarities and differences between types of normative scores, and (3) a centralized compilation of available norms for some of the most widely used neuropsychological tests. In this *Handbook*, we learn that wishes do occasionally come true.

The content of the *Handbook* is presented in seven sections. First, three brief, introductory chapters succinctly discuss the issues in generating and utilizing norms in neuropsychological assessment. Here, the nature of norms, their statistical and psychometric properties, and their role in the process of neuropsychological test interpretation are reviewed. The seasoned psychometrician may find this discussion somewhat superficial, and will trudge off to other

sources more richly endowed with derivative formulas and matrix algebra. However, these introductory chapters contain a tremendous amount of useful information. In particular, students of neuropsychology will be hard pressed to find a clearer discussion of these issues and their relevance to the process of interpretation anywhere else in the literature.

The remaining six sections contain reviews of normative studies involving tests from the domains of visual and auditory attention, language, perceptual organization, verbal and visual memory, motor functions, and concept formation. In all, 17 widely used tests are reviewed, using a standard chapter format that includes a review of the history of each test, the influence of demographic factors, a method for evaluating the normative reports, a review and status report on available normative studies, and a table that enables quick location of appropriate references.

The locator tables are particularly useful, since they allow quick identification of normative reports by age, number of subjects, sample composition, IQ and education statistics, and regional/geographic origin of the study. One particularly strong point of the book is the inclusion, in each test review section, of studies in which the test has been applied to patient groups with specific demographic characteristics (e.g., age, education, race/ethnicity). In reviewing these sections, it becomes readily apparent how much work remains to be done in applying principles and procedures of neuropsychological assessment to minority populations. This humble reality is evident in the book, as the authors clearly state that their contribution is but a first step in providing the kind of database we all so clearly need.

The *Handbook* supplements other similar sources that are already available in the literature, and will, I think, find its own niche. Test reviews are somewhat more extensive than those found in Lezak (1995), though Lezak's purpose is to provide a conceptual and practical overview of the field and thus reviews many more tests, functions, and concepts. Critical analysis and advice regarding how to choose from among available normative reports is more extensive here than in Spreen and Strauss (1998), though the latter book reviews a much larger number of tests. On my shelf, these three books now sit side by side, keeping each other warm, ready at arms length to enrich a clinical report or consultation.

Because there is such wide variability not only in populations of application (and thus normative bases), but also in techniques for test administration, the reviews contained in the several chapters are often limited by necessity to par-

ticular scoring/administration procedures. For example, the vast majority of the information presented in the chapter on the Rey–Osterrieth Figure is relevant only if the practitioner uses the original Rey 36-point scoring system. If other systems using either qualitative features or a larger number of points are employed, then the chapter is much less helpful. In all fairness, this is not the fault of the authors, but in fact represents one of the large-scale problems in application that the publication of this book attempts to address.

One problem with a book like this is that it can become outdated relatively rapidly with the publication of a few additional normative studies. To counteract this, the authors have developed a unique approach to continuous updating: in addition to assuring future editions, they are developing an Internet website (<http://www.normativedata.com>) designed to provide new data and to furnish a means by which researchers can communicate new developments. At this website, registered users will be able to access new published and unpublished normative studies, and will also eventually be able to input their own data to obtain z , T , or percentile score equivalents. As advertised, the website will also help the user preselect the best norms/administration

method to use before a patient is examined. This will be an exciting new development, and it may be that the immediacy of on-line interaction will greatly increase the rate with which advances are made in norms development.

No compilation of norms will solve the problem of decision-making that is at the heart of neuropsychological assessment. However, the *Handbook* is a valuable and well-written addition to the literature that should find its way onto the reference shelves of practicing neuropsychologists. The book will be useful as an educational tool; if used appropriately in neuropsychological coursework, the student will learn how to critically evaluate available normative studies and will come to adopt a more reasoned approach to norms selection. There is a lot to be gained from consulting this book. In readability, utility, and practicality, it goes way beyond the norms.

REFERENCES

- Lezak, M.D. (1995). *Neuropsychological assessment* (3rd ed.). New York: Oxford University Press.
- Spreen, O. & Strauss, E. (1998). *A compendium of neuropsychological tests*. New York: Oxford University Press.

Neuropsychological Assessment Across the Life Span

Neuropsychology. G. Goldstein, P.D. Nussbaum, and S.R. Beers (Eds.). 1998. New York: Plenum Press. 497 pp., \$115.00.

Reviewed by JULIE A. BOBHOLZ, Ph.D. and THOMAS A. HAMMEKE, Ph.D., *Division of Neuropsychology, Medical College of Wisconsin, 9200 West Wisconsin Avenue, Milwaukee, WI 53226.*

This volume is part of the series *Human Brain Function: Assessment and Rehabilitation* and aims to present information regarding how brain function is assessed with neuropsychological instruments. In general, this text is designed to cover assessment from the perspective of both behavioral neurologists and neuropsychologists. The book is divided into three sections: “Developmental Considerations,” “Clinical Considerations,” and “Specialized Assessment.”

Compared to other books of this type, this text offers a unique description of neuropsychological assessment across the life span, ranging from infancy to late adulthood. The first section begins with a well-written discussion of approaches to neurobehavioral assessment of infants and young children. The authors present a framework for assessment based on converging lines of research related to this age group. In addition, they present limitations and shortcomings in clinical practice and urge scientists to develop comprehensive developmental models of neuropsychology, as well as improvements in assessment, management, and treatment of the wide range of neurobehavioral deficits common to this age group. The chapter regarding assessment of

older children offers a concise overview of general principles considered in models of child neuropsychological assessment, methods of assessment, interpretation and management issues, as well as clinical and scientific applications of assessment with this population. While most chapters in this text recommend the use of flexible batteries in assessment, the chapter on adult assessment reviews the use of two standard neuropsychological test batteries, the Halstead-Reitan and the Luria-Nebraska batteries. The last chapter in this section is devoted to special issues associated with neuropsychological assessment of the elderly. In support of a specialization of geriatric neuropsychological assessment, the authors recommend several ways in which neuropsychologists could provide critical roles in the care of older adults.

The second section includes a series of chapters describing common neurobehavioral disorders, including autism, head trauma, cerebrovascular disease, multiple sclerosis, Alzheimer’s disease, neurotoxic exposure, medical conditions such as diabetes, neoplastic processes, epilepsy, and neuropsychiatric disorders. This selection of disorders spans a

broad array of conditions and pathologies; however, some common neuropsychological disorders are not addressed. For example, attention deficit hyperactivity disorder and learning disabilities are not reviewed, nor is there noteworthy treatment of confusional states. In general, chapters within this section present epidemiology of each disorder, relevant pathological findings, clinical manifestations, and neuropsychological methods for assessment of each disorder. While chapters in this section are similarly organized, they vary in terms of their depth of coverage, recommendations for assessment, and reference of recent research findings.

The final section reviews specialized assessment techniques for specific domains of functions, including abstract reasoning, memory, aphasia, spatial abilities, and motor skills. Missing from this list is attention and concentration, a domain of function that certainly would be of interest to most readers. A final chapter addresses assessment methods used in behavioral neurology and neuropsychiatry.

The text provides a general introduction to conceptual issues in neuropsychological assessment and useful reviews of assessment strategies in a number of common disorders and domains of function. The lifespan perspective and inclusion of both disorders and domains of function are welcome. As with most edited texts, there is variability among the chapters in the quality of topic coverage. Also, some students may be left confused by the varied opinions on the debate between fixed *versus* flexible batteries. With few exceptions, the chapters do not tackle issues of ecological validity, or the range of roles that neuropsychological assessment might play in clinical settings. Directions for future work are only weakly addressed. Despite these weaknesses, the text is a valuable contribution, both as an adjunct text for a graduate-level introductory course in neuropsychological assessment and as a resource to the more experienced practitioner who wishes to augment knowledge of assessment strategies in a number of common disorders and domains of function.

Neuropsychiatry for Neuropsychologists

Everything You Need to Know About Old Age Psychiatry. Robert Howard (Ed.). 1999. Philadelphia: Wrightson Biomedical Publishing, Ltd. 292 pp., \$85.00.

Neuropsychological Effects of the Psychiatric Disorders, by Simon F. Crowe. 1998. Amsterdam: Harwood Academic Publishers. 177 pp., \$24.00.

Reviewed by BARTON W. PALMER, Ph.D., *University of California, San Diego, Department of Psychiatry, MC 0603, La Jolla CA 92093-0603.*

Howard's edited volume does not reach the full challenge of its title in containing "everything you need to know about old age psychiatry," but the information it does contain is well presented and among the important things for geriatric mental health professionals (including neuropsychologists) to know. The book consists of 19 chapters divided into three sections.

The six chapters of Section I focus on Alzheimer disease (AD) and other dementias. The first three chapters address the molecular biology, risk factors, and genetics of AD, respectively. The next three chapters concern dementia with Lewy bodies, vascular dementias, and dementias associated with prion diseases.

Section II consists of an eclectic group of six chapters. The first is on cognitive enhancers for AD and thus seems to belong in section I. In a shift in style and content from the preceding chapters, D. Jolley then provides chapter 8 as a summary of his views on the importance and appropriate role/functions of geriatric psychiatry. Next, in chapter 9, J. Schneider discusses issues in evaluating quality and costs of residential care for dementia patients. In chapter 10 (a particularly interesting and well written chapter), R. Jacoby

examines whether there is a link between mental illness and crime and/or incarceration. The next two chapters both address the issue of physician-assisted suicide, as well as advance directives. The authors of these two chapters take somewhat opposite views on the issue of physician-assisted suicide, but seem to agree upon the underlying values which are in conflict.

The last seven chapters of the volume comprise section III, and all address various aspects of treatment for so-called "functional disorders" in elderly patients. The first three chapters are focused on pharmacologic and/or ECT treatment of depression. Next, in chapter 16, C.G. Krasucki outlines a model of anxiety based on the notion of fright–fight–flight–freeze responses, and then uses this model as a framework for suggesting specific treatment strategies for anxiety and mixed anxiety–depression in the elderly. In chapter 17, the editor reviews the current literature on atypical antipsychotic medications, and their use with older psychotic patients. The last two chapters consider psychodynamic issues in geriatric psychiatry and family therapy with older adults, respectively.

As seems to be true of most edited volumes, the chapters in Howard's book vary widely in style and content. A few of the chapters that focus on basic science findings suffer from the brief format generally adopted for this book, that is, there is little space taken to elaborate on complex or less familiar concepts or terms. Thus, a few of these chapters may be difficult to comprehend for those readers who are not already acquainted with the specific topics. However, most of the chapters are written in a clear straightforward style, and provide concise and up-to-date reviews of the current state of knowledge.

The only general faults with Howard's book have to do with what is not in the volume. Alzheimer disease (AD) and other dementias seem to be given a disproportionate amount of emphasis in a book with such a broad title. Moreover, even some of the more clinically relevant details of AD management are absent. In chapter 7, McKeith provides a very good discussion on the limitations of currently available cognitive enhancers for AD, and also notes that psychosis and agitation in AD may be more important determinants of caregiver burden and institutionalization than rate of cognitive decline. Given the latter finding, a chapter on pharmacologic and behavioral treatments for psychoses and agitation in AD seems warranted, yet none was provided. A chapter on psychiatric aspects of medical conditions also seems warranted in a general volume on geriatric psychiatry. Also, while many of the authors note the increased risk of side-effects from pharmacologic treatment among elderly patients, discussion of possible effective alternatives, such as behavioral and cognitive-behavioral treatments, is largely absent from most chapters.

The failure of the volume to meet the full demands of its title does not detract from the overall quality and importance of the material that it does contain. Chapters 3 and 4 both include timely discussions of the bioethical issues that may arise from advances in identification of genetic risk factors for AD. Several of the authors in section I also provide clear and important discussions of the conceptual and practical difficulties in determining the borders between AD, DLB, dementia secondary to Parkinson's disease, and vascular conditions. Other sections of the volume contain equally important and timely discussions. For example, in chapter 9, Schneider provides a very nice overview of some basic concepts and terms in health services research, and also has some specific proposals of means to improve quality of care without increasing its cost. Among the other valuable points addressed in section III, O'Brien comments on the relative lack of well-designed clinical trials involving antidepressant medications for elderly psychiatric patients and Howard discusses a similar problem for antipsychotic medications. As these and other authors in this section note, the paucity of such studies limits the ability of clinicians to make accurate judgments about the safety and effectiveness of the various pharmacologic alternatives for their geriatric patients.

This book would be an excellent textbook for graduate level courses and postdoctoral seminars in neuropsychiatry.

It also provides a relatively concise review of the current state of knowledge on its various topics at a level appropriate for experienced clinicians and researchers.

Crowe's book is stylistically very different from Howard's volume. As noted in the preface, the basic premise of Crowe's book is that neuropsychological studies of neuropsychiatric patients can be helpful in understanding the neurobiological bases of these disorders.

Crowe's book is divided into 9 chapters. Chapter 1 provides an overview of the neuropsychological model underlying the remainder of the book. It also provides a brief history of neuropsychology as well as reviewing some basic concepts and methods in neuropsychological assessment. Chapters 2 through 5 each address the neuropsychological aspects of a specific type or class of psychiatric condition, namely, schizophrenia (chapter 2), mood disorders (chapter 3), anxiety disorders (chapter 4), and somatoform, factitious, and dissociate disorders (chapter 5). Then in chapter 6, Crowe discusses sleeping and eating disorders. Chapter 7 concerns psychosurgery and ECT treatments for psychiatric conditions, and chapter 8 briefly reviews pharmacologic treatments. Finally, chapter 9 provides some general conclusions about the current and future role of neuropsychology in understanding the neuropathology underlying psychiatric conditions. Each of the middle chapters also concludes with a specific case presentation. Crowe uses the latter technique in very effectively bridging the gap between general concepts gleaned from the scientific literature and their application at the "real-world" individual patient level.

Overall, this is a very good (and enjoyable) book. Dr. Crowe interjects historical anecdotes and occasional wry humor within his presentations. Indeed, some of the most interesting material in the book is contained within the author's parenthetical comments and historical asides. The only noteworthy flaw that I found is that some sections could have been more closely integrated. For example, Crowe opened the schizophrenia chapter by noting the historical (and ongoing) conflict between those who argue that this disorder should be defined in terms of its typical course and onset *versus* those who have emphasized the presence of a core set of symptoms. While Crowe later listed the neuropsychological deficits that are typically associated with schizophrenia, he did not integrate current data on neuropsychological functioning in schizophrenia (including the course of neuropsychological deficits) into the historical debate about what exactly defines this disorder. (For example, recent studies suggest that contrary to Kraepelin's concept of dementia praecox as a disorder involving progressive deterioration in functioning, the cognitive deficits in most outpatients with schizophrenia tend to be stable/nonprogressive.)

Crowe's book is not written as a comprehensive review of neuropsychological studies of each of these disorders. However, it succeeds as an overview of the bridge between neuropsychology and psychiatry. Overall, Crowe effectively illustrates the potential value of a neuropsychologi-

cal perspective in attempts to understand many of the psychiatric conditions. It is also particularly refreshing to read a book that recognizes that the potential value of a neuropsychological perspective in psychiatric conditions is not necessarily limited to dementias, depression, or even

schizophrenia. As with Howard's volume, this book would make an excellent text for use in graduate-level and post-doctoral seminars, but also provides a concise review for more experienced neuropsychologists working in neuropsychiatric clinical or research settings.

An Intelligent Treatise on Human Intelligence

IQ and Human Intelligence, by N.J. Mackintosh. 1998. New York: Oxford University Press. 419 pp.; \$35.00 (PB), \$98.00 (HB).

Reviewed by R.W. BUTLER, Ph.D., *Department of Pediatrics, Oregon Health Sciences University, 3181 SW Sam Jackson Park Road, Portland, OR 97201.*

This is a very good book, perhaps even an excellent book. Professor Mackintosh is, interestingly, a well respected experimental psychologist who practices in the field of animal learning. His text, *The Psychology of Animal Learning*, is somewhat of a classic in the field. Thus, one wonders why Professor Mackintosh would take on the behemoth of the IQ ideology given his background. Indeed, the study of human intelligence is a subspecialty of psychology in its own right. I suspect Professor Mackintosh's motivation lies in the intellectual and academic challenge of this pursuit, and his resultant product reflects a true scholarly effort.

This text is written in a reasoned, rational and logical manner. The author systematically addresses all aspects of human intelligence and the various controversies that have arisen regarding IQ scores including such topics as race, sex and cultural differences in intelligence. One can think of this text as an "intelligent" alternative to *The Bell Curve*, a more lay review of human intelligence which was, unfortunately, replete with numerous errors of reasoning and fact. I strongly recommend this text not only to those who regularly administer and interpret intelligence tests, but the entire field of psychology. For those of us who have been out of graduate school for several years or longer, it is an excellent review of the field at its current state.

As a synopsis, the book initially addresses the development and use of IQ tests, and also reviews theories of intelligence and its genetic basis. Professor Mackintosh addresses environmental influences, and group differences in IQ scores. Theories of intelligence, particularly those that relate directly to its measurements, are addressed in considerable

detail. As noted above, the approach is relevant, scholarly and academic.

The presentation of the book is enhanced by the introduction of boxes that function as extended footnotes. These allow Professor Mackintosh to periodically digress, which is most frequently done in a very entertaining manner. Furthermore, the text is quite current with numerous references from the 1990s. As I have remarked, Professor Mackintosh is not a clinical psychologist nor does he have a background in the field of human intelligence. This initially raised my eyebrows because I wondered how he could assimilate and digest so much foreign material. Not only does the text review the field of intelligence testing from its inception to the current time, Mackintosh's approach is one of refreshing openness and there is a lack of bias or favoritism towards any particular theory of intellectual development. Academically and scientifically, there is little fault to be found in this book. This will be a rather brief review because, frankly, this is a text that should be read by all of us.

I should note that, at times, the book waxes pedantic, and Professor Mackintosh can get a bit wordy. Additionally, the overall tenor of the text is one of debunking rather than contributing. On the other hand, Mackintosh's style is informal and conversational, which suits him well. I should note that I was required to read the author's text, *The Psychology of Animal Learning*, as a graduate student in a course on learning, and the writing style of that text was anything but user-friendly. The current book, *IQ and Human Intelligence*, is eminently readable, and I recommend it to all without hesitation or reservation.

OTHER BOOKS OF INTEREST

Baddeley, R., Hancock, P., & Foldiak, P. (Eds.) (2000). *Information theory and the brain*. Cambridge, UK: Cambridge University Press. 344 pp., \$85.00 (HB).

Barker, R.A. & Dunnnett, S.B. (1999). *Neural repair, transplantation and rehabilitation*. Hove, UK: Psychology Press. 339 pp., \$54.95 (HB).

Bennett, T.S. & Raymond, M.J. (Eds.). (1999). *Mild brain injury* (special issue). *Applied Neuropsychology*, 4. 83 pp., \$20.00 (PB).

Brown, J.W. (2000). *Mind and nature. Essays on time and subjectivity*. Philadelphia: Whurr Publishers; Taylor & Francis, Distr. 181 pp., \$39.95.

Finger, S. (2000). *Minds behind the brain: A history of the pioneers and their discoveries*. New York: Oxford University Press. 364 pp., \$35.00 (PB).

Fuster, J.M. (1999). *Dreaming as delirium. How the brain*

goes out of its mind. Cambridge, MA: The MIT Press. 300 pp., \$16.50 (PB).

Gegenfurtner, K.R. & Sharpe, L.T. (1999). *Color vision: From genes to perception*. New York: Cambridge University Press. 492 pp., \$100 (HB).

Moore, D.P. (2000). *The little black book of psychiatry*. Malden, MA: Blackwell Science. 337 pp., \$32.50 (PB).