
BOOK REVIEWS

Behavioral, Biological, Genetic and Neuroanatomical Findings: Revealing Multidisciplinary Perspectives on Complex Disorders

Neurodevelopmental Disorders. H. Tager-Flusberg (Ed.). 1999. Cambridge, MA: The MIT Press. 614 pp., \$75.00.

Reviewed by V.J. MOLFESE, Ph.D., *Ashland/Nystrand Chair, Department of Early and Middle Childhood Education, University of Louisville, Louisville, KY.*

History, theories, methods and findings are characteristic of all disciplines. Also characteristic is the tendency to keep within a discipline much of what is known from discovery by scholars in other fields. While unintentional for the most part, the scant knowledge sharing across disciplines arises from deficits or uncertainties in understanding the definitions of terms, references to key constructs and features, variations in methodologies, and in interpretations of findings. Yet, as the chapters of this book reveal, much is known across several disciplines that converge on many of the same developmental disorders that are (and have been for decades) the focus of considerable research activity. The extensive interest in the study of developmental disorders exists both to understand their natures and causes as well as to reveal differences and similarities in development across normal and abnormal populations.

The developmental disorders that are the subject of this book's 24 chapters all involve abnormalities that have an impact on cognition. The first chapter sets into perspective the history, methods, and findings of diverse fields, including behavioral, biological, genetic, and neuroanatomical studies, contributing to the study of the developmental disorders selected as the focus of this book. The subsequent 17 chapters are divided into two groups of disorders—those with known genetic etiologies and those with complex etiology. Each kind of disorder receives coverage in at least two chapters written by recognized experts in their fields. Included in these chapters are discussions of theories, methodological approaches, and findings from multidisciplinary perspectives that pertain to the following developmental disorders: fragile X syndrome, Williams syndrome, Prader-Willi syndrome, Down syndrome, Turner syndrome, dyslexia, specific language impairment, and autism. The final six chapters take a broader perspective in discussing disorders that affect cognition and are associated with environmental toxins, sensory disorders, brain damage, and psychiatry.

The inclusion of at least two chapters on each of the first eight developmental disorders is very successful as the chapter authors tend to focus their most detailed coverage on findings and implications from different, often nonoverlapping, disciplinary perspectives. These perspective differences provide a sense of comprehensive coverage of important issues pertaining to the specific developmental disability across the two chapters. While there are overlaps in many aspects of the materials that are reviewed, differences in interpretations, weighting of evidence, and integration of the findings of others with the authors' own research findings create interesting perspective differences. Each author's use of either case histories, historical views and seminal research, and/or diagnostic criteria is helpful in defining and characterizing the developmental disorder that is the focus of the chapter. Particularly successful are the sometimes lengthy portions of the chapters that reasonably critique past research findings and assumptions in light of findings derived from recent advances in neuroimaging, molecular genetics, neurobiology, and behavioral assessments to delineate cognitive strengths and weaknesses. Also successful are the authors' efforts to address methodological issues and controversies by providing details of their own research procedures, rationales for assessment approaches, and use of tabular information or figures. Taken together, the multiple chapter coverage brings a better understanding of what is known across disciplines about the eight developmental disorders.

The same can not be said for the final six chapters. While each is well written and fleshed out with sufficient details, there are two chapters on only one topic (environment toxins), and only one chapter focusing on each of the following topics: synesthesia, hydrocephalus, lesion studies, and psychiatric approaches illustrated by Tourette and Marfan syndromes. Missing are the differences in perspective and interpretation of the developmental issues of importance offered by authors representing different disciplines and/or

the comprehensive scholarship modeled in the first eight chapters. It is disappointing that the same attention to the coverage of behavioral, biological, genetic and neuroanatomical studies is not continued consistently in the final chapters. It also is not clear why these last chapters are given different treatment and singled out as needing a broader neurodevelopmental perspective while the previous eight chapters are not so distinguished.

This book is described by the series editors, Mark Johnson and Bruce Pennington, as the first in the series on developmental cognitive neuroscience. This is a very impressive first step. Overall, this book is exceptional in its choice of

topics and chapter authors, quality of writing and coverage of the literature, and its success in focusing on current theories, approaches and findings. While it would be ideal if each developmental disorder received equal attention from behavioral, biological, genetic, and neuroanatomical perspectives, the notable lack of perspective coverage on some disorders may represent the current status of the fields more than oversights on the part of the authors. The quality of the chapters is such that both novices to particular developmental disorders and more experienced readers will find this book to be an important resource of information.

Synthesizing Animal and Human Studies of Prenatal Alcohol Exposure

Alcohol and Alcoholism: Effects on Brain and Development. John H. Hannigan, Linda P. Spear, Norman E. Spear, and Charles R. Goodlett (Eds.). 1999. Mahwah, NJ: Lawrence Erlbaum Associates. 282 pp., \$69.95.

Reviewed by PAUL D. CONNOR, Ph.D. *Department of Psychiatry and Behavioral Sciences, Fetal Alcohol and Drug Unit, University of Washington, Seattle, WA.*

The primary focus of this volume is on the impact of alcohol on brain development. It is a perfect example of how research on both animals and humans can interact to produce very important findings. In the case of prenatal alcohol exposure, dialogue between animal and human researchers has proved to be very profitable for both lines of research. Initial observations by human researchers identified a syndrome of facial stigmata, physical malformations, and early behavioral disturbances that was related to maternal alcohol abuse during pregnancy. They gave this syndrome the name *Fetal Alcohol Syndrome*. However, human researchers were unable to state unequivocally that prenatal alcohol exposure was teratogenic to the fetus. Thus, they turned to animal researchers who were able to model Fetal Alcohol Syndrome in a variety of animals and to confirm the teratogenicity of alcohol on the developing fetus. The quarter century of studies of the damage caused by prenatal alcohol exposure is replete with such interactions between these two groups of researchers. Without the input and pioneering studies of animal researchers on the effects of prenatal alcohol exposure, human researchers would have much less understanding of the damage caused by alcohol exposure in utero or insights into possible treatment or remediation strategies for those damaged by alcohol exposure.

This book compiles important information about the state of the art of prenatal and early infantile experience with alcohol, its consequences on development of the brain and behavior, and potential treatment modalities for remediation of deficits and prevention of fetal alcohol exposure. Each chapter is written by some of the top researchers in

their respective fields. The first five chapters relate to prenatal alcohol exposure. Chapter 1 describes human studies of structural CNS damage and neuropsychological deficits associated with prenatal alcohol exposure. Chapters 2 to 5 use animal models to address many questions that can't be studied directly in humans. Chapter 2 focuses on some of the key risk factors that are related to alcohol induced brain damage. These can include the timing and dosage of alcohol exposure, interaction with other chemicals, and genetic factors. Chapter 3 discusses possible neural plasticity in animal models following prenatal alcohol exposure. Chapter 4 focuses on critical periods, especially within the third trimester, when alcohol exposure can have significant damaging effects. Chapter 5 reports on metabolic changes associated with prenatal alcohol exposure. Chapters 6 and 7 elucidate how genetic factors in various strains of rats influence neurological and behavioral responsiveness to alcohol. Chapter 8 focuses on the alcohol deprivation effect and preliminary studies of pharmacological interventions to diminish alcohol consumption post detoxification. Chapter 9 returns to the study of humans, this time focusing on early infantile exposure to alcohol through breast milk and its effects on sensory stimulation, feeding patterns, lactation, and motor development. Chapter 10 uses animal models to assess the effects of fetal and early infantile exposure to alcohol on later recognition and use patterns of alcohol. Chapter 11 discusses various treatment modalities designed to reduce alcohol consumption thus aiding in prevention of FAS/FAE in future generations. Chapter 12 concludes the book with a discussion of future directions for the study of

pre- and neonatal exposure to alcohol including better understanding of the mechanisms of alcohol damage, treatment of those damaged by alcohol exposure, and more efforts at prevention of this wholly preventable cause of CNS damage.

The book as a whole is quite useful, representing a good overview of the various approaches researchers have taken to understand the effects of prenatal and early postnatal

exposure to alcohol. It serves as a helpful entry to the study of Fetal Alcohol Syndrome and Fetal Alcohol Effects. I would recommend this book for both clinical practitioners who are interested in getting a concise overview of the current state of the art and for researchers already in the field who wish to follow studies of their colleagues' advances in other arenas of prenatal alcohol research.

Human Frontal Lobe Function Revealed

The Human Frontal Lobes: Functions and Disorder. B.L. Miller and J.L. Cummings (Eds.). 1999. New York: The Guilford Press. 616 pp., \$80.00.

Reviewed by D.S. KNOPMAN, *Department of Neurology, University of Minnesota, Minneapolis, MN.*

All you ever wanted to know about the human frontal lobes seems to be contained in this multi-authored text, at least up to 1996 or 1997. The editors, Miller and Cummings, are acknowledged experts on the topic of human disorders of the frontal lobes. They have done a monumental job of collecting 53 authors and 34 chapters. The book is divided into five sections, frontal lobe neuroanatomy, frontal lobe neurochemistry and neurophysiology, frontal lobe neuropsychology, neurological diseases involving the frontal lobes, and psychiatric diseases involving the frontal lobes.

In the section on neuroanatomy there are excellent chapters on frontal–subcortical circuitry (Chow and Cummings), frontal–extrafrontal cortical circuits (Kaufer and Lewis) and gross morphology of the frontal lobes (Carol Miller). There is also an interesting chapter on the evolution and phylogenetic history of the frontal lobes. The neurochemical section has chapters each on serotonin, acetylcholine, dopamine, and neuromodulators. Hasselmo and Linster's chapter on acetylcholine's role in modulating attention was particularly notable.

The section on neuropsychological functions includes seven chapters in that section plus a very thoughtful one by Fuster in the previous section. The chapter by Fuster as well as one by Grafman provide excellent summaries of the conceptual bases of executive function. Other chapters in this section will be of interest to the readership of *JINS*. Bedside tests of frontal lobe function are described. Normative data on several neuropsychological tests of executive function are given in another chapter. Kertesz provides a nice summary of language functions of the frontal lobes as revealed by the study of aphasia. The chapter by Fitten on competence is a practical but also thematically important addition to a discussion about frontal function.

Eight chapters are devoted to neurological diseases that involve the frontal lobes. Brun and Gustafson summarize

their experience with frontotemporal dementia. Chui and Willis bring vascular dementia and the frontal lobes into focus in their chapter. McKeith and Litvan contributed chapters on Lewy Body and non-Lewy Body extrapyramidal disorders, respectively. There is also a well-written chapter on traumatic brain injury as it relates to frontal lobe symptomatology. A chapter on psychosurgery is an interesting addition to this section. The final section on psychiatric diseases and the frontal lobes includes chapters on schizophrenia, obsessive compulsive disorder, and depression.

Taken as a whole, this book is a valuable addition to the library of anyone involved in cognitive neurology or neuropsychology. There are no other recent books that deal with the frontal lobes in as much detail as this book. Neuropsychological topics are given extensive coverage, both in states of normal cognition and in disease states. The book contains an index that appears to be thorough.

The weaknesses of the book are minor. As with any book, the delay between writing and publication introduces close to a 2-year delay. Thus, there are very few citations after 1997. As this topic includes only a few areas in rapid flux (e.g., the genetics of the frontotemporal dementias), the lag in publication is not a major concern. Some of the chapters seem a bit misplaced. The last chapter of the book, on frontal lobe development in childhood, might be placed among the neurological disease chapters. The chapter by Fuster on the conceptual basis of frontal lobe function seems more suitable for the neuropsychology section. One by Jagust on neuroimaging seems more suitable for the section on neurological disorders. There is also some repetitiousness. The circuit diagram of the frontal system appears in numerous chapters. However, to the extent that some readers might seek out only one or two chapters, the reappearance of the frontal lobe circuit diagram adds only a few extra pages to this 600-page book.

It's Not Only About Sex

Sex and Cognition, by Doreen Kimura. 1999. Cambridge, MA. The MIT Press. 217 pp., \$30.00.

Reviewed by MERRILL HISCOCK, Ph.D., *Dept. of Psychology, University of Houston, Houston, TX.*

A few years ago, at the end of a lecture on handedness, a neuropsychology graduate student asked, "Why should I care about handedness? Left-handedness is not a disease." She had missed the main point of the lecture, namely that left-handedness is an exciting experiment of nature. In the left-hander we find the opportunity to study a healthy brain that is organized differently from other healthy brains. Here is a chance to study the effects of neural diversity without the vagaries of pathology. The study of handedness differences is not just about handedness.

The study of sex differences likewise is not only about sex. In considering cognitive differences between females and males, we have another opportunity to examine the effects of diversity in normal brains. Many psychologists who write about human sex differences are interested primarily in the sociopolitical and human-interest implications of sex differences. That is understandable. But, much as the graduate student missed the point about handedness, these psychologists miss the most important point about sex differences. In *Sex and Cognition*, Doreen Kimura makes the point explicit: "The chief value of studying sex differences, from a scientific point of view, is that it provides a fruitful method for understanding how differing cognitive patterns arise. It is one important way of learning more about ourselves as human beings" (p. 183). Kimura's book will give many readers a new appreciation of how sex differences can be used to discover principles that ultimately will account for differences among humans irrespective of their sex.

Commendable scientific objectives notwithstanding, writing a book about cognitive sex differences is the literary equivalent of strolling through a minefield. Controversy abounds when the science of sex meets the politics of gender. In the words of one sex-difference researcher, "Never before in the history of psychology has such a formidable body of scientific information encountered such a powerful political agenda" (Eagly, 1995, p. 155). A veteran of previous skirmishes over sex differences, Kimura is not about to be distracted by partisans who would distort, select, or suppress the evidence for their own reasons. The truth for Kimura lies in the evidence.

Having declared her dedication to science in chapter 1, and having warned the ideologues to stay clear, Kimura proceeds to recount the evidence in her distinctively spare, unembellished prose. She begins with brief chapters on evolution, genetics, and the biology of sexual differentiation. In subsequent chapters she addresses sex differences in motor skills, spatial abilities, mathematics, perception, and ver-

bal abilities. She then discusses hormonal mechanisms, brain mechanisms, and body asymmetry before concluding with a reiteration of her major points.

Kimura's book should not be mistaken for an update of the classic 1974 review of sex differences by Maccoby and Jacklin. Her book has neither Maccoby and Jacklin's emphasis on children nor their book's exhaustive documentation. Instead Kimura examines primarily adult sex differences from the vantage point of an experimental psychologist with neurobiological interests. From this perspective, standardized tests are less informative than experiments, aggregated findings are less interesting than hypotheses to be tested, and effect sizes are less important than underlying mechanisms. Kimura reports representative findings with the confidence of an author who knows the literature and feels no obligation to burden the reader with each and every potentially relevant outcome. The details never obscure the reader's view of the big picture.

There is much to like about the book, especially if one is eager to move beyond the demonstration of sex differences to a search for explanations. The reader will learn about clever and provocative studies, many of which were conducted by the author, her students, and her colleagues. Much of the work is programmatic, which allows the author to avoid the limitations of one-shot studies and their disjointed results. For instance, when discussing sex differences in memory for the location of objects, a skill at which women seem to be advantaged, she describes a study in which the superiority of women was nullified by modifying the task in a seemingly minor way. When some objects were moved to previously unoccupied locations in an array rather than merely being switched with other objects within the array, men's performance improved to the level of the women's performance. Kimura concludes that women tend to link information about object identity and object location whereas men tend to encode the two kinds of information separately. This conclusion, though tenuous, is more satisfying than the unexplained finding that women perform better than men on a test of memory for object location.

Attractive features of the book include its description of novel biological markers, such as fingertip ridge counts, and its focus on within-sex differences, such as studies in which homosexual men are compared with heterosexual men (as well as women) and studies of cognitive changes associated with the menstrual cycle. The within-sex studies point the way to a science of true individual differences, a science that transcends the limitations of dichotomizing the species into male and female.

Some readers might be disappointed by the book's lack of emphasis on the developmental dimension. Those who believe that a developmental perspective is the most valid approach to the study of sex differences are unlikely to be placated by Kimura's brief chapter on "how males and females become different," which focuses almost exclusively on genetics and hormonal anomalies. Kimura's perspective is more evolutionary than developmental. Yet her evolutionary explanations are sometimes perfunctory. It seems plausible that hunting may have promoted the evolution of navigational skills in men. But should we believe that women's superiority in perceptual discrimination and memory for locations stems from a need to detect the presence of intruders in the prehistoric home environment?

After having decided to eschew gender politics for a walk down the high road of science, the author revisits the political arena in the last chapter. Her plea for a gender-blind society is neither unreasonable nor inconsistent with her concern for objectivity in science. The problem is that, having argued at the outset for a science that is unencumbered

by ideological influence, she breaches the separation of science and politics by leaping back into the fray of gender politics at the end of the book. So, in principle, it's not entirely about sex, but, ultimately, sex is too compelling to be denied.

Sex and Cognition is not a book to be placed on the shelf for future reference. It is too important for that, and much too enjoyable. It is a book to be read and discussed with students and colleagues. It would make a splendid text for a class on sex differences. It will not be indispensable to the clinician, but it will remind many neuropsychologists of the kind of research that drew them to psychology in the first place.

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The Neuropsychiatric View of Brain and Behavior

The Brain and Behavior: An Introduction to Behavioral Neuroanatomy, by D.L. Clark and Nashaat N. Boutros. 1999. Malden, MA: Blackwell Science, Inc. 214 pp., \$35.95.

Reviewed by GREGORY P. LEE, Ph.D., *Departments of Occupational Therapy and Neurology, Medical College of Georgia, Augusta, GA.*

This volume is an introductory text summarizing much of the brain–behavior literature emphasizing the neuroanatomical underpinnings of psychiatric disorders. Because it has been written by a neuroanatomist and a neuropsychiatrist, much of the material in the book is typically not covered in the more orthodox texts written from a behavioral neurology or neuropsychological perspective. As such, this volume will be a valuable resource for students and practitioners of clinical psychology and psychiatry.

It is a well-written text which is unusually easy to navigate. This is facilitated by the authors' use of different type-setting for separate levels of knowledge throughout the book. Anatomical details appear in regular type while behavioral implications are printed in blue ink. Physiological implications are printed in italics. Clinical vignettes are frequently interspersed throughout the text and are easily identifiable because they appear in blue type and are contained within blue shaded areas. The diagrams are elementary and easy to understand. Unfortunately, figures are frequently located in distant chapters, and readers will often find themselves turning pages searching for diagrams. Cross references are provided to help the reader link related material from the different chapters. Selected references are provided after every chapter and are accurate and relatively up to date.

Each chapter concludes with a list of suggested texts for more detailed reading.

The Brain and Behavior is primarily organized cross-sectionally by neuroanatomic level or structure rather than longitudinally by neuroanatomic system. The exception to this is three chapters toward the end of the book devoted to the limbic system. Although the authors suggest readers read through the entire book before returning to individual chapters to develop a more comprehensive understanding of a particular region, this is not necessary for the already neuroanatomically knowledgeable clinician. In fact, the superb organization of this book into different colors and type-settings representing separate levels of knowledge make this an excellent reference source for the clinician.

The book begins with two introductory chapters. Chapter 1 deals with the definitions of commonly used neuroanatomy terms. Chapter 2 reviews the major gross brain structures. The next chapter is concerned with histology and includes an introduction to synaptic structure and neurotransmission. This overview of neurotransmitters is thorough yet succinct and is one of the stronger chapters. It is also one of the more unique chapters since this is a subject dear to neuropsychiatry but rarely dealt with in more traditional behavioral neurology texts.

The authors go on to review the behavioral geography of each lobe of the brain, the basal ganglia, the hypothalamus, and the thalamus with an emphasis on various psychopathological states (e.g., schizophrenia, anxiety disorders including obsessive-compulsive and panic disorders, mood disorders emphasizing depression and mania, aggression, addictions, attention deficit disorder, Tourette's syndrome, eating disorders, hallucinations, and delusions). However, because psychiatric disorders have no known etiology, no confirmed site of brain lesion, and no proven neuropathological process underlying them, the authors simply catalog the many studies suggesting alterations in numerous neuroanatomic systems. There is no attempt to critically review these data nor to provide any theory-driven explanations. This may lead the reader to befuddlement, for example, in the case of schizophrenia where it seems that almost every brain region has been implicated in the disease.

The aphasias, agnosias, and apraxias are, unfortunately, not well characterized, and some of these disorders are not mentioned at all. Language disorders are only cursorily, and at times erroneously, covered. This is probably the book's greatest fault. In contrast, the basal ganglia chapter is excellent and provides a concise but thorough overview of these structures and the behavioral consequences of lesions. After a brief chapter concerning the brainstem, there are three chapters devoted to limbic structures in the temporal lobe, cingulate gyrus, and elsewhere in the brain. The book concludes with a short chapter on interhemispheric connections and laterality.

This is a unique volume and a valuable addition to the neuropsychological literature in several respects. First, the

organization of the subject matter differs from most behavioral neurology and neuropsychology texts because this book starts with the neuroanatomic structure of interest and then describes the various behaviors associated with dysfunction of that brain region. Most comparable texts are arranged by specific neurobehavioral disorders (e.g., amnesia, dementia, aphasia, acute confusional states, agnosia) or cognitive domain (e.g., memory, language, spatial thinking), and only after consideration of the disorder or cognitive domain do they proceed to discuss the neuroanatomical underpinnings. The arrangement of the present volume allows clinicians to plan patient evaluations in advance when the locus of lesion is known as well as to double check that all of the most likely behavioral consequences of a particular lesion have been considered.

This text is a solid introduction for students of neuropsychology at most levels of sophistication. Researchers in neuropsychiatry may also find this book useful since the recent literature has been succinctly summarized. Further, the material provides a solid foundation to begin the formulation of various hypotheses, and the up to date references point the way toward further exploration of current neuropsychiatric topics. The more seasoned neuroscientist might complain correctly that this book presents an oversimplified view of the neuroanatomical networks underlying certain behaviors. In the authors defense, however, this book was meant to be an introduction rather than a comprehensive neuroanatomy text. The authors intended to present the reader with a simplified view of the neuroanatomy underlying certain behaviors. This goal has been successfully accomplished for the most part.

Is the Bender Gestalt Test an Important Tool for Neuropsychologists?

Bender Gestalt: Screening for Brain Dysfunction (2nd ed.), by P. Lacks. 1999. New York: John Wiley & Sons Inc. 264 pp. \$69.50.

Reviewed by K.J. MURPHY, Ph.D., C.Psych., *Department of Psychology, Baycrest Centre for Geriatric Care and the University of Toronto, Toronto, Ontario, Canada.*

The title *Bender Gestalt: Screening for Brain Dysfunction* (2nd ed.) indicates that the primary utility of the Bender Gestalt Test (BGT) is one of screening for the presence of brain impairment. The author, Patricia Lacks, quickly dispels this notion in the preface to her book where she states, "My book is not about how to use the BGT as a single test of 'organicity', a long outdated practice. Instead, the focus is on neuropsychological assessment as a continuum" (p. vii). Indeed, Lacks advocates, throughout her book, the more general use of the BGT as an important part of any standard neuropsychological test battery. She writes, "Even though the BGT has been shown to be useful for identifying persons with a wide range of cognitive impairment, it primar-

ily assesses disordered perceptual-motor and executive functions" (p. 27). Unfortunately, Lacks does not provide the reader with any data to support her above statement regarding what the BGT actually measures. Before taking the latter point any further, allow me to briefly describe the BGT and its history.

The Bender Gestalt Test (BGT) consists of a set of nine simple designs that are presented individually. The person being tested copies each drawing onto one, or more if necessary, blank sheet(s) of paper. There is no time limit and the test typically takes between 5 and 10 min to administer. Lauretta Bender developed the test in 1938 for use with children in a psychiatric setting. Bender used her test to

study the relationships between development, how the visual system is biased toward perceiving/organizing stimuli into Gestalten, or configural wholes, and psychopathology. The test was soon adopted for use with adults, again within psychiatric populations. The BGT has been used to differentiate schizophrenic patients from patients with brain damage, though with limited accuracy and certainly not as a stand-alone predictor. Among adults the BGT has been most widely used as a non-specific screening test for generalized brain dysfunction. Lacks prudently points out that the BGT should be combined with another screening test when examining for the presence of brain impairment, but provides little assistance regarding what to use as a complement.

Traditionally the BGT has been scored either qualitatively or by using a variety of quantitative techniques. In her first edition, Lacks is to be commended for providing users of the BGT with a comprehensive and detailed scoring criteria. Normative data using Lacks' scoring procedure were also provided allowing for standardized performance evaluation. In this second edition Lacks has added chapters giving guidance on systematic interpretation of test performance and on using computer software to assist in this process, as well as a chapter on the performance of older adults on the BGT. The addition of data on how older adults perform on this test is particularly relevant for normative purposes given that some psychologists may wish to use the test as a screen for dementia.

Screening tests can serve a purpose in identifying individuals in at risk populations who require further diagnostic evaluation. However, a screening test is usually not

appropriate in neuropsychological assessments because either neuropathology is known or diagnosis requires more comprehensive assessment than a brief screening. Lacks provides the reader with a small amount of information concerning the reliability and validity of the BGT when it is used as a non-specific screening test of brain dysfunction. She notes that there have been no studies on the content validity of the BGT "probably because it is inappropriate" (p. 97) and little research on construct validity. How then can Lacks promote the use of the BGT as a test of visual construction/spatial ability or executive function? The reader needs to know if the BGT correlates with other tests believed to measure these kinds of abilities. According to my reading of Lacks' book, neither she nor anyone else knows if the BGT can effectively evaluate visual construction and executive functions because the appropriate reliability and validity studies have not been done.

Lacks points out that the BGT is a widely used test among North American psychologists; however, this fact does not validate its continued or expanded use within the field of neuropsychology. My review of this book has not convinced me that the BGT is an important tool to include in neuropsychological assessments of a brief or comprehensive nature. A more in-depth and critical look at the usefulness of screening tests in general and more specific information on the merits and appropriate application of the BGT as a screen should have been undertaken here. In other words, perhaps Lacks should have restricted her treatment of the BGT to its use for screening brain dysfunction, in keeping with the title of her book.

OTHER BOOKS OF INTEREST

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