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BOOK REVIEWS

Continuing the Tradition of Neuroanatomic Excellence

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The Central Nervous System. Structure and Function (3rd ed.), by Per Brodal. 2004. New York: Oxford University Press. 515 pp., $79.95.

Reviewed by David Knopman, M.D., *Department of Neurology, Mayo Clinic College of Medicine, Rochester, MN, USA*

Neuroanatomy was one of those courses in medical school that was either detested (by many, I am afraid) or loved. For those of us who became clinical or basic neuroscientists, neuroanatomy was an epiphany, a revealing of logical relationships between brain structures that translated logically into function. However, at the end of a first year medical student's course in neuroanatomy (especially in my case now 33 years ago), one was left with more questions than answers. The introductory neuroanatomy texts barely brushed the surface of many structure-function relationships, especially in the case of the cerebral cortex.

That was where a lineal ancestor of this book by the author's father, Alf Brodal, played a unique role. In that now classic text *Neurological Anatomy in Relation to Clinical Medicine* (classic in the original narrow sense of the word, given the revolutionary changes in neuroscience over the 50 years since its first edition), A. Brodal provided the neuroscience student with much more detail and insight than was available in typical introductory neuroanatomy texts.

P. Brodal's book, the third edition, is completely different from his father's, both in its currency, of course, but also in its lavish use of drawings, diagrams, MR scans, histograms, graphs and highlighted clinical sidebars. The diagrams are two-colored, which seems adequate though not eye-catching. Although the book is not printed on glossy paper, the MR scans and photomicrographs are crisp and easy to view.

This book could easily be used as a text for a full semester course on neuroanatomy, or more precisely neuroscience. Both introductory neurophysiology and neuroanatomy are covered. It would be suitable for medical students, graduate students in psychology and for postgraduate physicians in neurology or psychiatry residencies. The level of detail is probably more than is needed for a 4 or 5 week survey course, but such brief courses don't do the discipline justice anyway.

The book is organized in a traditional fashion by system. There is an extensive treatment of both the sensory, autonomic and motor systems, from receptors to cortex. There are chapters that are largely devoted to the neuroanatomy of the brainstem. The final chapters cover the limbic system and the cerebral cortex.

Generally, I was pleased with the treatment of the core aspects of neuroanatomy and neurophysiology. Basic concepts of neuron structure and function are covered well in chapters 1 and 2. Reflecting the integration of physiology into anatomy, there are well-developed sections on major neurotransmitters. Traditional neuroanatomic principles such as the organization of the brainstem receive extensive attention. In addition to the traditional coverage of the various sensory and motor pathways of the brainstem, an entire chapter, with many photographs and diagrams, is devoted to the structure and connectivity of the brainstem reticular formation.

My only disappointment in this book was in the area of higher cortical functions. Perhaps it is unrealistic to expect more from a book that is already 462 pages of text, but the discussion of the anatomic bases of higher cortical function was somewhat disappointing. Consider chapter 8 on the Auditory system, and the corresponding sections on the cerebral cortex. The end organ is described with at least 5 diagrams, an MR scan and a photomicrograph. Two diagrams describe the central auditory pathways, and one diagram specifically depicts the primary auditory cortex. The treatment of the cerebral components of the auditory system, both the primary physiology of the auditory cortex and then the later description of cerebral disorders of auditory processing and language, were less satisfactory. The topic of aphasia was accorded a total of 2 pages, and one diagram that depicted the mythical arcuate fasciculus. The sections on the hippocampus and learning were better, but there was a missed opportunity in clinical correlation in failing to show an MR scan of someone with Alzheimer disease or an

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infarct in the hippocampus, or a photomicrograph of selective destruction of CA1 following cardiac arrest (though a case with such a lesion is discussed). Cortical processing of visual information was also somewhat underemphasized. Although the work of Hubel and Wiesel is discussed, there were no diagrams or elaboration that might have brought this fascinating work into the spotlight.

This reviewer did not perform an exhaustive comparison of similar texts, but I did visit our medical bookstore and glance through the competition. There are much briefer surveys of neuroanatomy, atlases of neuroanatomy, and core texts of neuroanatomy. *The Central Nervous System* by P. Brodal certainly compares favorably to these. There were two other books, *Fundamentals of Neuroscience* edited by L. Squire et al. and *Principles of Neural Science* edited by E. Kandel et al. that were more detailed and thorough in their coverage. However, both of these latter books were over 1300 pages, and thus nearly 2.5 times larger than Brodal's.

Overall, as a basic text for learning or reviewing neuroanatomy, I enjoyed reading *The Central Nervous System*. It is a very worthwhile addition to the library of students and established clinicians and researchers, as its presentation of many aspects of neuroscience are up to date, authoritative and very helpful for ready access.

A Practical Guide for Independent Practice

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Successful Private Practice in Neuropsychology: A Scientist-Practitioner Model by Mary Pepping. 2003. San Diego: Academic Press. 206 pp., $44.95.

Reviewed by Robert T. Kurlychek, Ph.D., *In Independent Practice, Eugene, OR.*

This book was designed to be a helpful guide for neuropsychologists in the USA who are considering establishing an independent clinical practice. The author addresses the book to those who want to establish a practice, those who have been in practice for several years and want to expand or refine their business, and also to those more advanced practitioners who want to compare notes with another experienced neuropsychologist.

The author maintained a private practice providing neuropsychological services in Seattle for six years. Prior to this her practice included a mix of psychotherapy and neuropsychological services.

This paperback book is comprised of 15 chapters and 16 appendices. The multiple topics discussed in each chapter are precisely named and presented in the table of contents. This allows the reader to quickly select the particular topic or topics of immediate concern. The index in back of the book is also comprehensive and accurate.

A helpful feature of this book for individuals considering issues related to the development of a private practice is the inclusion of practical exercises at the conclusion of each chapter. For example, at the end of a chapter addressing marketing issues, the prescribed exercise directs the reader to *"make a list of the five marketing approaches that are likely to be most effective and most comfortable for you to pursue . . . select three items from your list above, and develop a plan for implementation."*

The first several chapters discuss the challenges found in a private practice of neuropsychology and consider an overview of effective solutions. The author frequently relates her personal experiences and preferences. End-of-chapter exercises include formulating a personal balance sheet for direct and indirect costs, listing what appeals most to the reader about private practice, and considering how to explore and define available options. Practical business issues are discussed in chapters 5, 6, and 7.

In chapters 8 and 9 the author discusses possible options for consultation and specialization. There are also sections on educating referral sources, designing and implementing a cognitive treatment group, and issues involved in billing and reimbursement for services provided.

Chapter 10 examines psychometric concerns including interview structure and test selection. While interesting, I would hope that a neuropsychologist considering establishing a practice already would be well versed in these topics!

The author includes 16 appendices which include consent forms, informational handouts, a patient information form, ICD9 diagnostic codes, and current procedural terminology (CPT) codes. There are marketing letter samples and a suggested interview format.

While this book is helpful to all who want to explore or establish a private practice, it appears best suited for individuals in a larger metropolitan area who wish to supplement teaching and research activities or part-time agency/institutional employment. Individuals who wish to start a full-time practice in a smaller city or a rural area will find parts of the book disappointing and of limited assistance. Such individuals will not have a large enough population base to draw from that they can afford to turn away certain patient groups, e.g., patients with Medicare, Medicaid, etc. Also, many practitioners will want to provide services to these needy population groups and be responsive to their regular referral sources.

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This book was published prior to the enactment of the Health Insurance Portability and Accountability Act (HIPAA) which strictly regulates record keeping and communication of patient information. Individuals considering a clinical practice would need to research this information carefully. Also, since the publication of this book, helpful web sites regarding practice issues have been initiated and maintained by the American Psychological Association (www.APApractice.org), the Division of Clinical Neuropsychology of APA (www.div40.org), and the National Academy of Neuropsychology (www.NANonline.org). Information published on these sites can be of great assistance to all practitioners.

In conclusion, I recommend this book as a comprehensive starting point for neuropsychologists who wish to examine the wide range of issues involved in establishing and maintaining an independent clinical practice.

RECENT AND RELEVANT

Noseworthy, John H. (Ed.). *Fifty Neurologic Cases from Mayo Clinic*. (2004). New York: Oxford University Press. 218 pp., $39.95 (PB); $75.00 (HB).

Want to challenge yourself on a series of brief but precisely detailed neurological cases, each first presented with central features but without the diagnosis? This volume contains fifty succinct Neurology cases that test your ability to localize and reach a differential diagnosis. The format is case description, illustrations, revelation of diagnosis, a pertinent reference or two, and a summary salient commentary by a Mayo Clinic consultant. The format provides a template for concisely describing complex cases. While intended for physicians in training and practice, neuropsychologists will also enjoy the opportunity to analyze a number of these child and adult patient cases, including rarely seen "zebras".

Cajal, Santiago Ramón y. *Advice for a Young Investigator*. Translated by Neely Swanson and Larry W. Swanson. (2004). Cambridge, MA: The MIT Press. 150 pp., $18.95/£12.95 (PB).

This paperback reissue of a now out-of-print hardback publication contains advice from the distinguished late 19th century Spanish neuroanatomist. The book is an engrossing perspective on the personality traits and social factors that the author believed best characterize and define the successful scientific investigator. This brief but compelling volume is still a useful read for those currently engaged in, or contemplating, research. Reviewed are common traps the beginner may encounter, desirable and undesirable traits, suggestions for improvement, some incisive discussion of personalities encountered when engaged in investigation, and advice on publication and teaching. One must retain a sense of humor and consider the publication date for some portions. For example, the assumption is that the investigator is a male who requires counsel on choosing a wife who will benefit his aspirations.

Urbina, Susana. *Essentials of Psychological Testing*. (2004). Hoboken, NJ: John Wiley & Sons. 326 pp., $34.95 (PB).

The content of this useful and informative paperback book surveys basic psychometric principles, and succinctly presents practical information and guidelines enabling responsible and knowledgeable use and interpretation of psychological tests. It is one of the primer books from the Essentials of Behavioral Science series. This volume enables the reader to become familiar with, or review, basic statistical principles and procedures, providing examples along with a liberal use of tables and figures to clarify key points about test administration and score interpretation, reliability, validity, and test item considerations. There are user-friendly information summaries and self-test questions in each chapter along with direction to supportive references.

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