

## Book Reviews Recensions

**Handbook of Functional Neuroimaging of Cognition.** Cabeza R, Kingstone A, editors. Cambridge (MA): The MIT Press; 2001. 412 pp with index. ISBN 0-262-03280-5 (cloth). US\$65.00.

The *Handbook of Functional Neuroimaging of Cognition*, edited by Roberto Cabeza and Alan Kingstone, is intended as a survey of the variety of cognitive functions currently under examination using functional neuroimaging and of the issues and problems faced by investigators in this field. The book begins with several chapters on the methods used and the history of how these methods were developed. It continues in a second section with imaging findings in the different cognitive domains (i.e., attention, language, visual recognition, semantic memory, episodic memory and working memory) and concludes with a section on imaging of special populations.

There are several aspects of this book that will be most welcome to interested readers, particularly newcomers to the field. The 3 chapters on history and methods include concise but useful information on how the techniques work and how imaging data are analyzed and also provide a historical context, which is often ignored. In addition, there are discussions of experimental design and network approaches to imaging analysis, topics that anyone interested in this field should be aware of.

Each of the remaining chapters includes a relevant background on the particular area of interest and a concluding section devoted to

issues and problems specific to that area. This is an important feature in the chapters covering the cognitive domains because the presentation of cognitive and theoretical perspectives before the particular evidence from neuroimaging experiments gives a context for interpreting these data in light of the broader fields of cognitive science and neuropsychology. The "Issues" sections also are useful in providing a discussion of caveats that should be kept in mind and in illustrating questions that remain to be addressed. The final section of the book discusses imaging of older adults and cognitively impaired patient populations. A minor quibble is that the final chapter only briefly covers a variety of patient populations, such as patients with lesions and schizophrenia, and leaves out a number of other interesting diseases, both neurological and psychiatric, that have been studied with functional neuroimaging.

The book is the product of a conference held a few years ago, and each of the chapters is written by a well-known expert in the area. However, the information provided is still highly relevant, mainly because of the extensive discussions of background and current problems mentioned above. It is clear that each of the authors has given considerable thought to the task, rather than viewing this as simply another exercise in scientific writing. Thus, not every aspect of cognitive function is covered, but the thoughtful approach to those that are covered more than makes up for any omissions.

The book is attractively put to-

gether and includes a section of colour figures, which are important for visualizing imaging results. On the whole, then, this will be a valuable book for those looking for an introduction to functional neuroimaging, as well as for investigators who are working in the field and are interested in learning about work outside of their area of specialization.

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**Neurobiology of Mental Illness.** Charney DS, Nestler EJ, Bunney BS, editors. Oxford: Oxford University Press, Inc.; 2001. 984 pp with index. ISBN 0-19-514780-4 (paper). CDN\$143.95.

It is truly amazing that the scientific information related to neurobiology of mental illness has filled a volume this large. This reflects the enormous progress of neuroscience and related disciplines such as molecular genetics and neuroimaging in the last 2 decades.

The task to organize this wealth of information into a comprehensive and all-encompassing volume was certainly a great and difficult undertaking, considering that the book has 139 contributors from 44 institutions. The well-deserved credit goes to the editors (Charney, Nestler and Bunney) and section editors (Heninger, Bunney, Nemeroff, Charney, Hyman, Davis and Leckman), all leading experts in the field, for giving the volume a conceptual and organizational uniformity that makes the book an easy-to-read resource.

The 70 chapters are divided into 9 parts. The first part, edited by Nestler, gives an overview of brain development, neurochemical systems and electrophysiology of the central nervous system, signal transduction, neuronal plasticity and principles of molecular neurobiology. All of the chapters include well-designed illustrations of various concepts and mechanisms. Part 2 (Methods of Clinical Neurobiological Research, edited by Heninger) includes chapters on clinical epidemiology, molecular genetics, electrophysiology, neurochemistry, neuroendocrinology, neuroimmunology and neuroimaging. Outstanding in this part is a superb chapter by Heninger on special challenges in the investigation of the neurobiology of mental illness. This chapter, in a nutshell, addresses the essence of the volume: current problems in assessment and classification of mental illness, lack of valid models, complexity of neuronal systems subserving behaviour and challenges in evaluating the interaction between neurobiology and behaviour. Heninger concludes that advances in brain imaging and molecular genetics offer a good reason to be optimistic for future advances in identifying the neurobiological basis of mental illness.

The next 5 parts of the volume deal with major psychiatric disorders: psychoses (edited by Bunney), mood disorders (Nemeroff), anxiety disorders (Charney), substance abuse disorders (Hyman) and dementia (Davis). These parts are organized in a similar fashion; they all include chapters on diagnostic classification, molecular genetics, animal models, neurobiology, neurochemistry, neuroimaging and pharmacotherapy. Many of the

chapters include, apart from conclusions, a section on directions for future studies.

It would be interesting to revisit these sections in the next edition to assess the progress in the field. The chapters are reasonably equivalent in their coverage of various topics. In particular, the chapters on molecular biology, neurochemistry and neuroimaging are excellent in comprehensive coverage of recent progress in these areas. In this reviewer's opinion, the chapters on historical context of diagnostic classification of psychiatric disorders were somewhat out of the scope of this book and could have been dealt with more briefly in a common chapter concentrating mainly on the implications, when present, for neurobiology. Because of the uniform organization of various parts of the volume, some overlap of material was unavoidable. This was most evident in chapters on neurochemistry, molecular genetics and neuroimaging.

Part 8, devoted to psychiatric disorders of childhood onset (edited by Leckman), includes chapters on molecular genetics of childhood psychiatric disorders and on neurobiology of autism, Tourette's syndrome, attention deficit hyperactivity disorder, and psychotic, mood and anxiety disorders. This section did not include a chapter on implications of diagnostic classification for neurobiology, although it would have been useful for the emerging field of research in this area.

The last part of the book deals with special topics such as the neurobiology of personality disorders, aggression, human sexuality, social attachment, eating disorders, menstrual cycle related mood disorders and sleep. The referencing of indi-

vidual chapters is thorough and up to date, as is the indexing of the volume. All this makes the volume an excellent reference source.

The layout of the book is quite attractive. The figures are clear and have good legends. In some instances, though, the font is unnecessarily large compared with the text, and some figures take up a disproportionate amount of space. On the other hand, the headings and subheadings could have been more distinct to take away from the monotony of text-only pages. There are only a few colour plates in the book; one would hope that future editions will contain more colour images — they would be more illustrative, particularly in the chapters on brain imaging.

*Neurobiology of Mental Illness* is the most comprehensive and authoritative volume representing the progress made in biological psychiatry over last few decades. The book is superbly organized and edited and will undoubtedly serve as a premiere source of information for psychiatrists, neuroscientists, psychologists and others in the field. In addition to being an excellent reference book, it will, because of its conceptual content, also serve as a guide for researchers in the field of biological psychiatry and related disciplines.

The editors indicate in the preface that the "book will change dramatically with subsequent editions, because progress continues at an exciting pace in our field." We are therefore looking forward to the next edition which, we hope, will be published in a not-too-distant future.

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