

## Book Reviews Critiques de livres

CEREBRAL REORGANIZATION OF FUNCTION AFTER BRAIN DAMAGE. Edited by Harvey S. Levin and Jordan Grafman. 392 pp. Illust. Oxford University Press, Inc., New York; Oxford University Press, Toronto. 2000. Can\$88. ISBN 0-19-512026-4

This book describes work presented at a workshop on neuroplasticity held at the National Institutes of Health in Bethesda, Md., as well as a series of lectures presented at Baylor College of Medicine in Houston. It is a comprehensive multi-authored volume with international contributors and has been developed to appeal to the neuropsychologist, neurologist, psychologist, neuroscientist, psychiatrist, speech scientist and other health professionals engaged in rehabilitation-related activities and research. The purpose of the book is to provide an update of important neuroplasticity research and to identify how this work can be translated into practical gains in the clinical setting. This is an important goal and is largely achieved.

The preface introduces the reader to the concept of "a flexible boundary" and 4 forms of neuroplasticity: expansion of cortical mapping with use; transfer of function or homologous region adaptation; sensory substitution; and alternative processing.

The first chapter provides historical notes, illustrating some of the milestones in our understanding of the importance of lesion location, size, time and rate of development in determining disability, plasticity and recovery.

The text is then divided into 4 sections with the first half devoted to neuroscience research and the second half to compelling issues in human development, investigation and rehabilitation. The first section includes a number of excellent chapters on neuroscience research on plasticity and reorganization of function. Specific examples of neurocognitive, somatosensory, and motor neuroplasticity and reorganization in

animal models are provided. This section is organized according to neuroanatomic location with some attention to molecular mechanisms of neuroplasticity. However, those looking for in-depth review of the neurotrophin literature will not find it here. Principles of potential recovery, including reorganization, exogenous stimulation and replacement are nicely elaborated in the chapter by Kolb and Whishaw. Although the chapter on recovery from traumatic brain injury might better have been placed adjacent to the stroke chapter, both chapters provide insight into the respective disorders and suggest "important implications for rehabilitation of brain injured humans." The chapter entitled "Compensatory responses in motor rehabilitation" is nicely developed and includes helpful colour figures showing some of this interesting functional MRI data.

The second section is devoted to developmental studies of neuroplasticity in children and specifically addresses issues of pre- and perinatal brain injury, verbal fluency, using 2 pathological states — congenital hemiplegia and cerebral palsy — to develop this understanding. Study details are provided in each chapter, but the chapters may also be read for their literature review and general conclusions.

The third section undertakes the task of introducing the reader to techniques for studying neuroplasticity in humans. Basic principles of functional MRI and neuroimaging of functional recovery are elucidated with attention to some of the inherent difficulties in controls for these studies. Specific examples are used to illustrate the principles and provide introduction to those not using functional imaging on a regular basis. A chapter on transcranial magnetic stimulation introduces this specialized technique and supports its usefulness as an investigative tool. The chapter on computational modelling

introduces the reader to this rapidly growing research area and specifically looks at models following acute focal brain lesions.

The last section provides an excellent chapter by Bach-y-Rita, which ties many of the concepts together for the reader and integrates them in context with the capacity for neurologic rehabilitation. This is a very important chapter, which reviews critical points in rehabilitation, offering important insights as well as pointing out difficulties in performing some of these rehabilitation studies.

Overall, the book is very readable and provides details for those with specific interests. More importantly, the volume provides an overview of some of the important general concepts in neuroplasticity and makes a unique effort to bring these concepts to the rehabilitation setting.

**Karen M. Johnston, MD, PhD**

Division of Neurosurgery  
Director of Neurotrauma  
McGill University Health Centre  
Montreal, Que.

© 2001 Canadian Medical Association

UPDATE: SURGERY FOR THE MORBIDLY OBES PATIENT. THE FIELD OF EXTREME OBESITY INCLUDING LAPAROSCOPY AND ALLIED CARE. Edited by Mervyn Deitel and Georger S.M. Cowan Jr. 539 pp. Illust. FD-Communications Inc., Toronto, 2000. US\$195. ISBN 0-9684426-1-7

Massive obesity and its associated diseases are a recognized health issue. As indicated by the American National Institute of Health Consensus, surgery is at present the only effective treatment for morbid obesity. Any physician involved in treating the diseases associated with morbid obesity or the surgical treatment of this disease should refer to this book, which has 88 contributors, each selected because of