box, which looked like it might have been lifted directly from the textbook; it often contained additional information to what was depicted in the figure. There was also an audio clip with each window which repeated in an abridged form what was written in the text box. The progression through the CD was identical to that in a textbook, with a table of contents laying out the information in chapters, and ending with an index.

In reviewing a CD-ROM, one must ask what advantages are gained over those of time-tested books. One feature of this CD was an abundance of figures, most likely more than would be found in a comparable text. Nonetheless, there were few animations in which the power of the computer could be harnessed. It was also disappointing to find absolutely no illustrations of original or experimental data. An additional feature of the computer that would have been nice to see is the liberation from the sequential format of a textbook; there were no links where one could, for example, switch with a mouse click back to the figure on catecholamine biosynthesis and degradation when one is in the section on antidepressant medication. Finally, with so many people now with Web access, it is disappointing not to find any Web links, either to original abstracts of articles or to informative Web pages.

In summary, for individuals who find learning easier at a computer terminal than from a print document, or who prefer to listen to figure descriptions rather than read them, this CD-ROM will be useful.

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MEMORY IN NEURODEGENERATIVE DISEASE: BIOLOGICAL, COGNITIVE, AND CLINICAL PERSPECTIVES. 1998. Edited by Alexander I. Tröster. Published by Cambridge University Press. 413 pages. $C128.25

This edited volume includes 24 chapters covering biological, cognitive, and clinical perspectives on memory function and dysfunction in various forms of neurodegenerative disease (ND). In the preface, Tröster wrote that this book was assembled "so that neuropsychologists, neurologists, psychiatrists, and neuroscientists can familiarize themselves with allied research outside their immediate area of expertise", a goal that also acknowledges that the most promising approach to the study and treatment of memory disorders in ND is a multidisciplinary one. Indeed, most chapters in this book describe empirical methodologies and theoretical perspectives that span multiple levels of analysis.

Space limitations do not permit discussion of every chapter; only those chapters that left stronger impressions will be mentioned, although it should be noted that each had its merits. In the section on biological perspectives, one finds Testa et al.'s impressive tome of the neuropathology of memory dysfunction in Alzheimer's disease, Parkinson's disease, Huntington's disease, progressive supranuclear palsy, Lewy body disease, corticobasal degeneration, Pick's disease, and prion disease; this chapter will be an essential reference for scientists and clinicians, even though it is bound to test the fortitude of readers who lack a strong background in neurology. In their chapter on the neurochemistry of ND, Miyawaki and Koller pay curiously little attention to the implications of neurochemical alterations for memory functioning, even though this issue has been well-studied. Berent and Giordani's chapter on functional neuroimaging in ND focuses more on resting metabolism studies (imaging while the patient is resting) than on activation studies (imaging while the patient is performing a cognitive task), although a number of activation studies in the literature would have been worth discussing. Furthermore, one could argue that resting metabolism data are more appropriate for studying the disease (or condition) per se, while activation data are more appropriate for understanding how cognitive function is affected by the disease or condition, because the cognitive sequelae of ND may be more strongly linked to decreased blood flow in brain regions that are actively processing information than to basal blood flow or metabolic level in those same brain regions. The biological perspectives section is summarized by Markowitsch, who provides a cogent and comprehensive theoretical framework within which to organize the biological contributions to memory dysfunction in ND.

In the section on cognitive perspectives, Owen et al. describe their program of research on executive/working memory deficits in ND. The advantage of this approach is that it allows the reader to appreciate the logical steps taken in superbly well planned and executed cognitive neuroscience research, but the disadvantage is that it does not provide a general review of the area as do the other chapters. Knight reviews studies on prospective memory (remembering to do something in the future) in ND; this chapter is brief, because in the past, many investigators shied away from prospective memory research, owing to its limited and often unreliable measures (e.g., the red pen task, in which the patient has to remember to ask for a red pen when filling out a form). More recently, however, new methods with greater empirical rigour have been developed; it is hoped that in the future these tasks will be incorporated in more studies of ND, because to a large extent, the integrity of prospective remembering, such as remembering to make phone calls, remembering to go to appointments on time, and remembering to deliver messages (to name a few examples) determines how well one can function independently in daily life. Fink and Randolph, and Salmon et al. discuss semantic memory and nondeclarative memory, respectively; both chapters provide excellent examples of the interaction between empirical data and cognitive theory, as at every step the authors describe what data would be predicted from memory theory, and how the data modify our theories of memory. In his summary for the cognitive section, Mayes asks a number of very critical questions of the theories and data presented that must be answered for a complete and accurate understanding of memory function and dysfunction in ND; however, the way Mayes structures his questions and arguments will call for a rather advanced and flexible knowledge of cognitive neuroscience on the part of the reader.

In the section on clinical perspectives, Jacobs and Schofield discuss the appealing notion of 'brain reserve capacity' (also considered by other authors in the book), that developed following findings that younger, and, in some studies, better educated patients suffer relatively milder cognitive consequences of dementia. Paulo provides references to normative data for older aged individuals that (along with the Lezak, and Spreen and Strauss's compendiums) will prove indispensable to clinicians and researchers. Ethical and legal issues regarding research and treatment of ND are discussed by Zehr; this chapter should be mandatory reading for all professionals dealing with ND patients and their families. In his review of this section, Benke raises one topic – cognitive intervention – that is essentially neglected throughout the remainder of the book. This omission is particularly surprising given that many authors discuss spared mnemonic function, and clinicians

have enjoyed some success in compensating for impaired functions in mild to moderate dementia patients via spared functioning (e.g., the use of implicit or procedural learning to compensate for episodic memory loss). As Benke points out, cognitive intervention is of limited use in advanced dementia, but of course this is no argument for withholding cognitive treatment from patients in the earlier stages of dementia.

The main theme that can be extrapolated from this book regards the importance of multivariate differentiation of various ND types, both for improving our understanding of the structural and functional organization of memory function and dysfunction, and for detecting these diseases in their preclinical stage in hopes of impeding the course of dementia. Because the differentiation of ND spans all levels of analysis, scientists, medical doctors, and clinicians alike will find this volume most valuable, instructive, and thought-provoking.

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WOMEN AND EPILEPSY. 1998. By Tim Betts, Pam Crawford. Published by Martin Dunitz. 84 pages. $C23.50

This brief monograph which can be read in its entirety in approximately two to three hours, gives an overview of epilepsy issues and management in women with epilepsy. In eight chapters the authors discuss the effects of epilepsy on sexual development and the menstrual cycle, issues in contraception, the effect of epilepsy on pregnancy, labour, and the puerperium and epilepsy and the menopause.

The discussion of these topics is very broad and the opinions expressed are largely those of the authors. Adequate but not a large number of references are provided for readers that wish to explore these issues further.

The monograph is up-to-date and teratogenic effects and issues in relation to the use of the new antiepileptic drugs in pregnancy are briefly presented. Management guidelines in pregnancy are satisfactorily discussed.

The monograph will be of benefit to any physician treating women with epilepsy. It is very readable and can be used as an introduction to further reading in this important aspect of epilepsy management.

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AMYOTROPHIC LATERAL SCLEROSIS: A SYNTHESIS OF RESEARCH AND CLINICAL PRACTICE. 1998. By Andrew Eisen and Charles Krieger. Published by Cambridge University Press. 303 pages. $C97.44

As recently as 30 years ago a comprehensive reference book on amyotrophic lateral sclerosis (ALS) such as this was virtually unknown, and as a reflection of progress it is a welcome up-to-date addition to our knowledge. Three decades ago toxins and viruses (polio virus especially, because of the motor neuron involvement) were suspected causes. Moreover, Lou Gehrig and some other athletes died of ALS it was believed that strenuous physical activity, sometimes combined with toxins, were risk factors, a view that was impossible to prove or disprove. The growth of scientific knowledge has since been impressive, mainly because of the research that has been driven or funded by ALS and motor neuron disease societies throughout the world, including Canada.

The book is well assembled into eight interesting chapters. In the chapter on the clinical spectrum of ALS, the features of the disease, as well as conditions that mimic it, are comprehensive and up-to-date. Even experts may not realize the extent of degenerative changes in the nervous system in ALS. For example, an almost sacred belief about ALS is the apparent sparing of Onuf's nucleus in the sacral spinal cord that innervates the urethral sphincter, thereby explaining absence of bladder involvement. As the authors reveal, this is not so. Although the cells in Onuf's nucleus may appear intact, they contain inclusions, notably Bunina bodies, ubiquitin-immunoreactive material and axonal spheroids, as occur in degenerating alpha motor neurons, suggesting that these cells, given time will also disappear. Inclusion bodies have always been a strong point in the pathological diagnosis of ALS, and it was once hoped they would offer a clue to pathogenesis. Although this wish remains unfulfilled, the neurofilamentous accumulations, such as the axonal spheroid, are still viewed as important evidence of cause, and are under intensive study.

The description of the Cu/Zn-SOD gene mutations in the familial form of the disease is important because it represents the first major breakthrough in ALS research. Animal models were never truly helpful in efforts to understand ALS until the appearance of a transgenic mouse that had been altered by the insertion of the mutated Cu/Zn-SOD1 gene. The subsequent expression of some features of the familial disease in mice, such as the the accumulation of neurofilaments and motor neuron degeneration, has provided a substantial link to the human disease. Excitatory amino acid neurotransmitters, principally glutamate and aspartate, are a specialized subject requiring knowledge of their receptors and associated ion channels in order to appreciate their significance. Much attention in the literature has been focussed on the potential excessive release of glutamate in ALS resulting in neuronal cytotoxicity and degeneration. I expect it is one of Dr. Krieger's strengths that is here demonstrated, notably his work on glutamatergic mechanisms and receptor-mediated neurotoxicity, and as a result the topic is covered with great clarity and will be welcomed by students and residents. Discussed as well by the authors are growth factors, an absorbing preoccupation of pharmaceutical companies, that have so far yielded little, neither has treatment of ALS patients with immunosuppression.

Dr. Eisen is a clinical neurophysiologist and on this topic he writes with professional ease, reflecting his widely recognized expertise and many publications. I was especially interested in neuro-imaging in which it is noted that magnetic resonance spectroscopy, unlike SPECT imaging, is a valuable asset to studying ALS. Positron emission tomography (PET) still holds promise for insight into the disease although this is likely of limited potential. Finally, topics such as dementia, Parkinsonism and other expressions of ALS are covered in the latter part of the book reminding us again that, until very recently, ALS was just a motor neuron disease whereas it is now known as much more extensive nervous system disorder.

This is an excellent book, well written, informative, up-to-date and important. It brings together the state-of-the-art on ALS and I am glad to have it on my shelf.

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