Journal of Contemporary Neurology

VOLUME 1998, BOOK REVIEW 1R
MAY 1998

ISSN 1081-1818. MIT Press Journals, Five Cambridge Center, Cambridge, MA 02142, USA; tel.: (617) 253-2889; fax: (617) 577-1545; *journals-orders@mit.edu, journals-info@mit.edu.* Published one article at a time in html and PDF source form on the Internet. For more information and other articles see:

- *http://mitpress.mit.edu/CONE/*

The MIT Press

Book Review

Neural Organization

Michael A. Arbib, Péter Érdi, and János Szentágothai

1997. A Bradford Book
The MIT Press
Cambridge, Massachusetts
London, England

Book Review

Keith H. Chiappa, M.D.

EEG Laboratory
Massachusetts General Hospital
Boston, MA

This book is an attempt to integrate classical structural and functional aspects of brain systems with a conceptual and mathematical framework of the interactions of different levels of organization.

Part I is titled *Overviews* and its initial chapter reviews the concepts of structure, function, and dynamics that constitute the basic themes of the authors' approach to neuroscience. Structure refers to the anatomical aspects of the brain and the relations between different brain regions. Function refers to skills and behaviors, which are explained by functional schemas and biologically-based neural networks. Dynamics refers to a mathematical analysis of spatiotemporal neural phenomena in single neurons and networks, the development and plasticity of neural structures, and learning and memory phenomena associated with synaptic modification. The following 3 chapters expand further on these areas.

Part II is titled *Interacting Systems of the Brain* and uses the concepts and methods explained in Part I to analyze specific parts of the nervous system—the olfactory system, hippocampus, thalamus, cerebral cortex, cerebellum and basal ganglia. Finally, the authors propose a plan for the use of their methods in the cognitive neurosciences.

The book provides an excellent comprehensive summary of each of the areas and thus furnishes a means by which neurobiologists can learn about mathematical methods and network modeling, and those specializing in the latter disciplines can learn neurobiology. It is highly recommended to anyone wishing to explore in these directions.

Journal of Contemporary Neurology is a peer-reviewed and electronically published scholarly journal that covers a broad scope of topics encompassing clinical and basic topics of human neurology, neurosciences and related fields.

Editorial Board