

## Book review

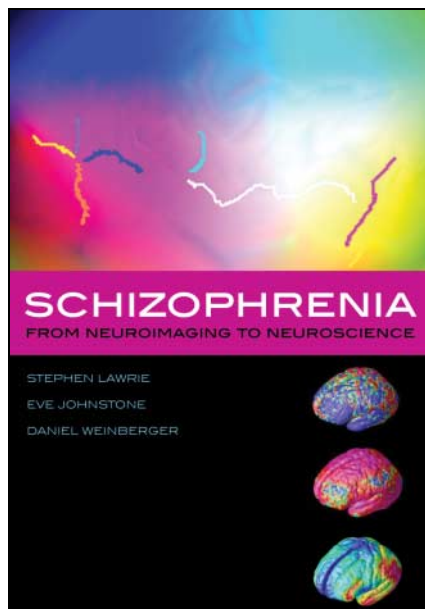
EDITED BY SIDNEY CROWN, FEMI OYEBODE and ROSALIND RAMSAY

### Schizophrenia: From Neuroimaging to Neuroscience

Edited by Stephen Lawrie, Eve Johnstone & David Weinberger. Oxford: Oxford University Press. 2004. 405pp. £60 (hb). ISBN 0198525966

In starting this review, I was struck by the phrase 'from neuroimaging to neuroscience' – what does that mean? It suggests a journey starting at neuroimaging and going backwards to the roots of neuroimaging based in neuroscience. As a researcher interested in examining brain function, particularly applied to psychosis, this appeared to be a great idea.

This volume lived up to my expectations. The authors are all acknowledged experts in their fields and the book provides an excellent summary of neuroimaging applied to schizophrenia. In keeping with my musing regarding the title, the first chapter did indeed start by describing the findings of early techniques such as pneumoencephalography and echoencephalography, before moving on to the use of computed tomography and the more contemporary magnetic resonance imaging (MRI) techniques. Subsequent chapters were organised according to the different modalities within neuroimaging, which included a description of the technical aspects



– particularly useful for the novice in the field – followed by a review of the findings applied to schizophrenia.

I was particularly impressed with the chapters describing the analysis of structural MRI data, usually considered a relatively sterile topic, which provided one of the clearest descriptions of this area that I have seen. Similarly, chapters covering functional MRI discussed the limitations of the more conventional blocked-design

experiments comparing patients with healthy individuals, and the advantages of using parametric designs, presenting tasks at different levels of difficulty, demonstrating how the same functional brain region could show decreased or increased activation associated with the difficulty of the task.

In the absence of a neurological lesion underlying schizophrenia, current thinking suggests that the likely cause lies in a failure of connectivity within the distributed brain systems, rather than the individual nodes, that underpin almost every aspect of cognition. The chapter on event-related potentials covered the contemporary research on gamma-band synchrony (an index of the brain coding information, not just in terms of the firing rates of neuronal populations, but also the temporal relationships between firing of these spatially discrete brain regions) setting out the evidence for its dysfunction in schizophrenia. Most chapters provided concise summaries, including tables of studies covering the different cognitive domains, which would make an excellent starting point for any researcher.

In the final chapter, the three editors draw the book to a conclusion by emphasising the importance of an interdisciplinary approach in the future of psychiatric neuroimaging, particularly with regard to integration with genetic data-sets. It is easy to recommend this book; it is an excellent resource providing broad coverage of the imaging findings relevant to schizophrenia.

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