

Schizophrenia: From Neuroimaging to Neuroscience

edited by Stephen M. Lawrie, Eve C. Johnstone, and Daniel R. Weinberger. Oxford University Press, New York, N.Y., 2004, 405 pages, \$125.00.

It is unlikely that the nature of schizophrenia will ever be revealed in a single region of the brain or with any particular method of studying the brain. It appears that schizophrenia is an illness that is associated with subtle impairments in different regions of the brain and that it also involves impaired coordination among regions. Moreover, the clinical symptoms are diverse and include reality distortions, impairments of affect, loss of normal drives, as well as impairments in neurocognition. The editors of this volume realize that improving our understanding of the neurobiology of schizophrenia is likely to emerge when different sources of information are integrated. These sources can include anatomical and functional information, information from different brain regions, as well as findings from studies that measure event-related potentials.

The editors have assembled a distinguished group of collaborators who focus on the different techniques of neuroimaging and their application to schizophrenia. Initial chapters focus on structural imaging and include sections on computed tomography, magnetic resonance imaging (MRI), magnetic resonance proton spectroscopy, and diffusion tensor MRI. A chapter by Eve Johnstone and David Owens traces the gradual emerging of a consensus during the late 1970s and 1980s that showed demonstrable differences in brain structure between people without schizophrenia and patients with schizophrenia. Later studies, described in a chapter by Andrew McIntosh and Stephen Lawrie, demonstrate how researchers were able to take advantage of the improved spatial resolution of MRI as well as its safety to document patterns of abnormalities in patients with schizophrenia. The section by Nitin Gogtay and coworkers also focuses on the ability of repeated structural MRI to document changes in brain structure over time in children and adolescents. These studies have raised important questions as to whether there is a loss of gray matter early in the illness and whether this can be useful in characterizing the neuropathology of schizophrenia. The chapter on diffusion tensor MRI demonstrates how new methods of imaging white matter have led to important new leads regarding cortical disconnectivity as another characteristic of schizophrenia.

The ability to monitor brain function in vivo has emerged through a number of techniques, including positron emission tomography (PET), single-photon computed emission tomography (SPECT), and functional MRI (fMRI). Each of these methods is described in detail in separate sections, and each section describes the respective method's theoretical basis and usefulness in research and the clinical implications of findings using that method. The chapter by Margaret Niznikiewicz and coauthors on event-related potentials (ERPs) deserves special mention since it is an extraordinarily useful and up-to-date review of a rapidly emerging area. A subsequent section by Werner Strik and Thomas Koenig focuses on spatial analysis of both ERP and electroencephalographic (EEG) data and discusses the potential of multimodal imaging. These authors emphasize that new methods will permit the simultaneous recording of EEG, ERP, and fMRI data. These methods will permit researchers to take advantage of the spatial resolution of fMRI and the time resolution and additional information that can be collected with ERP and EEG imaging.

The concluding chapter by the editors integrates the information from the other sections and suggests how neuroimaging

will influence schizophrenia research in the future. Clinicians will find this chapter particularly interesting because it emphasizes how diverse findings over the past 25 years have shaped our current views of schizophrenia and its impairments. Most of us now view this disorder as one in which individuals have impairments in their abilities to process information from their external or internal environment. These basic impairments in brain functioning are associated with all of the characteristics of schizophrenia, including reality distortions and impaired social skills.

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Psychotropic Drug Handbook, 8th ed.

by Paul J. Perry, Ph.D.; Chris Alexander, Pharm.D.; Barry I. Liskow, M.D.; and C. Lindsay DeVane, Pharm.D. Lippincott Williams & Wilkins, Philadelphia, Pa., 2006, 736 pages, \$56.95 (spiral-bound softcover).

Many handbooks of psychotropic drug treatments are available as useful guides in abbreviated format for practitioners. I have not, however, read previous editions of the *Psychotropic Drug Handbook*. This was a serious mistake. On the basis of the current 8th edition, I should have read earlier editions, for this is a superb handbook.

Unlike most other texts of this nature, the *Psychotropic Drug Handbook* is not multi-authored but is written by 3 pharmacologists and a psychiatrist, so there is a uniformity and consistent style throughout the book that make it a pleasure to read. As one might expect from pharmacologist authors, there is a wealth of information regarding pharmacokinetics and pharmacodynamics of psychotropic medications, drug interactions, and mechanisms of therapeutic effect and side effects, as well as clinical prescribing advice.

This 8th edition consists of 11 chapters and 4 appendices. Each class of psychotropic drug (antipsychotics, antidepressants, mood stabilizers, antianxiety agents, and hypnotics) is covered in its own chapter. There are also chapters on treatment of alcohol dependence, treatment of drug dependence, drug interactions, management of acute drug withdrawal, electroconvulsive therapy, and the treatment of childhood and adolescent disorders as well as disorders in geriatric patients. The appendices include psychotropic drug product lists, descriptions of drug effects on pregnancy and lactation, pharmacokinetic drug parameters (metabolic pathways, oral availability, protein binding, clearance, volume of distribution, and elimination half-life), and a wonderful appendix on drug interactions, including their significance and clinical recommendations. Each chapter is organized in a similar fashion: Indications for the drug within each chapter are presented first followed by sections on efficacy, mechanism of action, dosage, pharmacokinetics, and adverse effects and a concluding section on rational prescribing. Each section contains a wealth of up-to-date information, more than is found in the average handbook. I felt that I was, in fact, reading a textbook in spiral-bound format, with information presented in numerous graphs and tables, all supported by an extensive bibliography. In other words, this handbook can be used by the clinician to guide therapeutic practice, as well as by the researcher or scholar who is searching for the most up-to-date synthesis of psychotropic drug information.

I have already started to use this book as a first “go-to” reference for common questions concerning dosages, side effects, interactions, and pharmacokinetic information. I strongly recommend the 8th edition of the *Psychotropic Drug Handbook* for the psychiatrist’s daily use. I have only one suggestion for the 9th edition: I urge the authors to insist that the publisher use larger print and to leave more space between the sentences. It was a little bit hard on aging eyes.

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Ethics in Electroconvulsive Therapy

by Jan-Otto Ottosson, M.D., Ph.D., and Max Fink, M.D.
Brunner-Routledge, New York, N.Y., 2004, 157 pages,
\$34.95 (hardcover).

Although the modern era of electroconvulsive therapy (ECT) did not begin until 1938, when 2 Italian psychiatrists, Ugo Cerletti and Lucino Bini, first used ECT in humans, by the mid-1940s, it had become a popular first-line therapy for a host of psychiatric disorders, including acute psychosis, manic-depressive illness, and major depression. Given its popularity, it also was tried in a wide range of other psychiatric (and neurologic) disorders—so much so that, by the mid-1950s, it had fallen into disfavor by many because of its overuse; such disfavor was also propelled by the association of ECT with abuse of institutionalized psychiatric patients and (particularly in the Soviet Union and Communist China) abuse of political prisoners as well as the seriousness of its side effects even when indicated, including, most significantly, memory loss and dysfunction. Now nearly 70 years old, ECT continues to be enveloped in controversy and stigmatization.

It is in light of the ongoing history of controversy and stigma of ECT that Ottosson and Fink, two preeminent researchers, practitioners, and advocates of ECT, present this book. Their aim is simple: “With a desire to clarify the controversies that swirl about ECT, we present an ethical analysis of ECT for health care professionals, students, and the public” (p. ix). They do so by relying on the general framework laid out by Beauchamp and Childress in their landmark book, *Principles of Biomedical Ethics*, which is now in its fifth edition (2001)¹ and in which 4 moral principles—beneficence, nonmaleficence, autonomy, and justice—are utilized to cluster together the most general conception of underlying norms and values upon which medical ethics might be grounded.

The layout of *Ethics in Electroconvulsive Therapy* is quite direct. After an Introduction and review of the key elements associated with the stigmatization of ECT (chapter 1), Ottosson and Fink offer a brief overview of the 4 principles (chapter 2) and a similarly brief review of why informed consent in the context of ECT may be seen as ethically challenging (chapter 3)

and then devote the remainder of the book to presenting the literature on ECT, interspersed with case anecdotes of patients for whom ECT proved to be beneficial, via the lens of each of the 4 principles on its own (chapters 4–7), as well as when potential conflicts may arise among them (chapter 8).

As noted, Ottosson and Fink do not hide the fact that they are writing this book to address head-on what they believe to be unfounded and unjustifiably negative biases against ECT. Accordingly, their use of Beauchamp and Childress is less about undertaking a comprehensive ethical analysis of ECT as it is an organizing framework by which they can lay out their argument that ECT has a legitimate place in the treatment of certain well-defined psychiatric illnesses. If this text is read as a straight ethics book, in fact, there are serious problems with how the authors seem to understand Beauchamp and Childress. And yet, their utilization of the 4 principles is a helpful rubric for capturing their real concern: that psychiatrists’ failure to be aware of the ECT literature and the evidence contained therein, especially when due to preconceived biases and without attention to evidence, may run counter to the most basic obligations psychiatrists have to their patients.

Accordingly, Ottosson and Fink’s efforts are both successful and problematic at the same time. Without a doubt, they have compiled and arranged a comprehensive but not overwhelming overview of the literature on ECT’s efficacy and outcomes—although there is a clear emphasis on that literature favorably disposed toward ECT. Even with this limitation, their reference section is quite encyclopedic and makes this a valuable resource. It is also noteworthy that the presentation of this information is clear, engaging, and easy to read—although the authors’ use of anecdotes tends to occur at points where stronger arguments would have been welcomed. There is also the fact that Ottosson brings with him extensive knowledge and experience from the European context, which adds an important multicultural and international component that oftentimes is missing in the American literature—although the differences in American and European health care systems regarding psychiatric illness deserve much more attention than the authors provide.

In the end, however, there is an honesty to the authors’ efforts: they are self-avowed advocates of ECT and they are giving us their arguments. Should the reader disagree and maintain a different commitment, Ottosson and Fink have provided a framework for critically reflecting upon the reasons for such disagreement and difference in perspective. This alone is surely an important contribution to the discussion of ECT.

REFERENCE

1. Beauchamp TL, Childress JF. *Principles of Biomedical Ethics*. 5th ed. New York, NY: Oxford University Press; 2001

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