

# Psychiatric Genetics (Review of Psychiatry)

Editors: Kenneth S. Kendler and Lindon Eaves

(2005). American Psychiatric Publishing, 240 pp, US\$36.95, ISBN 1585622281.

*Psychiatric Genetics*, edited by Kenneth Kendler and Lindon Eaves, is a concise text which presents a state-of-the-art summary on the genetics of schizophrenia, anxiety and substance-use disorders, and antisocial behavior.

The introduction by Kendler discusses the four paradigms in psychiatric genetics: basic genetic epidemiology, which quantifies familial and genetic risk; advanced genetic epidemiology, which explores the nature and mode of action of genetic risk factors; gene finding, which includes genetic linkage and association studies; and molecular genetics, which traces the biological mechanisms

and pathways by which DNA variants contribute to the liability to psychiatric disorders. Kendler discusses the interrelationships among the paradigms and the practical and conceptual difficulties of moving from paradigms 1 and 2 to paradigms 3 and 4, as it is not yet clear whether it is possible to move from genetic risk factors to susceptibility genes.

The second chapter by Eaves and colleagues is a 'user-friendly' treatment of models, methods and statistical approaches in genetic epidemiology, quantitative trait loci (QTL) studies, multivariate (including developmental) phenotypes and of issues that go beyond the additive model. There is a summary of

the genetic and environmental questions that provides the research agenda for the coming years and which concludes that psychiatric genetics cannot ignore the environment any more than developmental and social psychology can ignore the genes. This chapter is written in clear, non-technical language and manages to sketch all relevant issues and go beyond simple additive models while remaining very accessible.

The remaining chapters are mainly written by scientists from the Virginia Institute for Psychiatric and Behavioral Genetics, and offer an easily accessible yet thorough review of topics in psychiatric genetics.

# Psychopathology in the Genome and Neuroscience Era

Editors: Charles F. Zorumski and Eugene H. Rubin

(2005). American Psychiatric Association, 240 pp, US\$54.00, ISBN 1585622427.

*Psychopathology in the Genome and Neuroscience Era*, edited by Charles Zorumski and Eugene Rubin, brings together selected topics in psychiatric genetics, diagnosis and prevention, and neurobiology. The last two chapters are devoted to education. The chapters in this book are based on talks by 20 international experts given at the March 2003 American Psychopathological Association annual meeting. The book has less

of a review approach, but instead discusses basic issues in the definition of the phenotypes studied in psychiatric genetics and addresses the importance of a conceptual shift from identifying major genes for mental disorders to gaining an understanding of the role genes play in susceptibility to mental disorders. The discussion on phenotypes can be seen as the continuation of an earlier conference volume by the same publisher (*Defining psychopathology in the*

*21st Century. DSM-V and beyond* [2002], edited by J. E. Helzer and J. J. Hudziak). Todd and colleagues contribute to the debate by describing an approach for the redefinition of early onset disorders (attention-deficit hyperactivity disorder and autism) based on latent class and factor analysis. McGuffin and Farmer focus on the phenotypic definition of schizophrenia and comorbid disorders. Issues of reliability and validity

and the *DSM-IV/ICD-11* revisions are discussed by Regier et al.

Gershon offers a historical picture of behavior genetics and puts this in the perspective of the hunt for genes for other complex disorders. He provides a balanced discussion of the possibilities for use and misuse of genotype data as for heritable traits such as intelligence and alcoholism.

The third part of the book focuses on neurobiology and mood disorders. Drevets offers a comprehensive chapter on brain structural abnormalities in mood disorders and discusses the implications for the pathogenesis of emotion dysregulation based on PET, MRI and postmortem brain studies.

The two final chapters are devoted to educational trends in

psychiatric training. The first chapter, by Rubin and Zorumski, focuses on workforce issues and advances in neuroscience. The second, by Hudziak argues that advances in genomics and neuroscience lay the foundation for an educational model that will increase the likelihood that more science-minded medical students will choose careers in psychiatry.

## Schizophrenia: Challenging the Orthodox

Editors: Colm McDonald, Katja Schulze, Robin M. Murray, and Padraig Wright

(2004). Taylor & Francis, 221 pp, US\$69.95, ISBN 1841843776.

*Schizophrenia: Challenging the Orthodox*, edited by Colm McDonald, Katja Schulze, Robin Murray and Padraig Wright, offers a more in-depth review of the disorder that was once described as ‘the heartland of psychiatry’ and this book as ‘the Holy Grail’ of gene searching. This book also follows from a conference meeting (the inaugural meeting of the European Foundation for Psychiatry) and was recommended for British Medical Association Awards 2005. It consists of 23 short chapters, written by a large number of authors and is divided into sections on Brain Imaging; Genetic Research; Epidemiology; Prodrome and Early Intervention; Psychopharmacology and Psychology; Cognitive

Therapy; and Schizophrenia and Bipolar Disorder.

The section on genetics offers an overview of important linkage and association findings and the encouraging story from Iceland about the discovery of neuregulin as a major susceptibility gene for schizophrenia through standard operational protocols for positional cloning. The section on epidemiology looks at possible risk (e.g., urbanicity) and protective (e.g., cigarette smoking) factors of schizophrenia. One of the chapters by Murray et al. is devoted to the increased risk of schizophrenia in methamphetamine and cannabis users, suggesting that (part of) the increased risk may reflect causality. The role of ‘pot’ is also considered by

D’Souza in the section on pharmacology and psychology. Other chapters in this section cover the role of dopamine system. The book concludes with an informative series of papers on the — by now accepted — comorbidity of schizophrenia and bipolar disorder in which shared genetic architecture, shared brain characteristics from imaging studies and developmental trajectories are examined.

All three books are very accessible. Twin researchers may enjoy the first book the most, but all three have much to offer to anyone interested in psychiatric genetic research.

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