

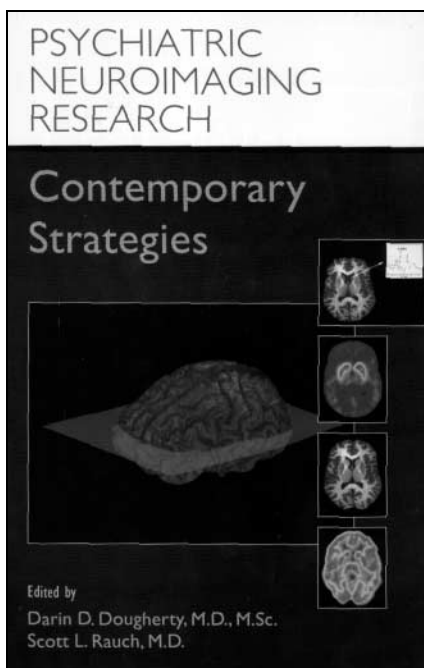
continuing use of the term 'atypical' was a marketing strategy, as sulpiride, amisulpride and risperidone behave very much like classic antipsychotics if used in equivalent dose, and not like clozapine.

This book is more suitable for the bedside table than the coat pocket. The trainee will find lots of interesting and important information in one place, and the experienced clinician may like to find updates on areas outside his or her expertise.

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Psychiatric Neuroimaging Research. Contemporary Strategies

Edited by Darin D. Dougherty &
Scott L. Rauch. Washington, DC: American
Psychiatric Publishing. 2001. 417 pp. £67.50
(hb). ISBN 0 88048 844 1



The achievements of neuroimaging in psychiatry have been modest, although perhaps no less than those of any other technique for investigating the cause or mechanism of mental disorders. The cardinal reason for this limited success is the

immense complexity of the human mind and brain. The problem is not a lack of studies reporting intriguing findings, but rather the lack of consistency between them. Two of the earliest imaging findings, ventricular enlargement and hypofrontality in schizophrenia, both of which were reported more than a quarter of a century ago, have eventually been confirmed in numerous studies, but fundamental aspects of these abnormalities, such as the time course of ventricular enlargement and the circumstances under which hypofrontality can be elicited, remain uncertain on account of inconsistent findings.

In contrast to the modest advances in understanding of mental disorders, the rate of evolution of imaging technology and of study design is breathtaking. This book provides a taste of a variety of contemporary strategies. Among the recent technological advances reported are diffusion tensor imaging, which provides information regarding the orientation of myelinated fibres, and the use of transcranial magnetic stimulation (TMS) with functional imaging techniques. TMS provides reversible disruption of brain function at a localised cerebral site, and hence makes it possible to examine the effect of transient loss of local function on the pattern of cerebral activity elsewhere in the brain. Thus, we now have the technology to assess both the structural connections (mediated by myelinated fibres) between brain regions, and the remote functional consequences of local malfunction. Perhaps these techniques will illuminate the way in which the coordination of activity in distributed neural networks is disrupted in disorders such as schizophrenia.

The past few years have also seen the development of many new approaches to experimental design in the imaging of regional brain function and also in the imaging of neuroreceptors. The use of positron emission tomography (PET) or single photon emission computed tomography (SPECT) with displaceable ligands to provide an indirect measure of the release of endogenous neurotransmitters has opened the door to many exciting possibilities. It has also provided a partial resolution of the perplexing conflict between previously reported findings regarding D_2 receptor levels in schizophrenia. Previous studies using the ligand raclopride indicated no elevation of D_2 receptor density in the basal ganglia in schizophrenia, whereas studies using the ligand

N-methyl spiperone did indicate an elevation. Although the mechanism is imperfectly understood, it is now clear from the work of Laruelle and colleagues that substituted benzamide ligands, such as raclopride, are displaceable by endogenous dopamine, whereas ligands such as *N*-methyl spiperone are not. Use of radioactively labelled raclopride to measure D_2 receptors before and after treatment with a dopamine-depleting drug reveals that the level of endogenous dopamine is abnormally high in schizophrenia, suggesting that when raclopride is used to measure D_2 receptor density, an elevated level of endogenous dopamine obscures an abnormally high concentration of D_2 receptors. Thus, the current evidence indicates not only that D_2 receptor density is increased in schizophrenia, but also that there is an excessive release of endogenous dopamine.

The technique for measuring endogenous dopamine offers the prospect of measuring the effect of various pharmacological or psychological challenges that might be expected to modify dopaminergic activity. However, enthusiasm for this technique should be tempered by the fact not only that the physiological basis of the effect is imperfectly understood, but also that the effects of interest are small and difficult to measure.

Although many psychiatric imaging studies in the past three decades have focused on schizophrenia, this book draws attention to the rapid rise in the use of elegant experimental designs to study other disorders. Whalen, Curran & Rauch provide a stimulating account of strategies for evaluating implicit information processing that appears to play a key role in anxiety disorders. Several chapters report advances in the study of mood disorders. In particular, the chapter by Drevets addresses the likely reasons for the conflicts between previously reported studies of regional cerebral activity in depression, and argues cogently for integrating structural and functional imaging modalities. Pine *et al* provide a clear account of the way in which functional imaging has contributed to the understanding of attention-deficit hyperactivity disorder.

Overall, this volume provides an introduction to most of the major developments in psychiatric neuroimaging technology that occurred in the final decade of the 20th century. As would be expected from a multi-author volume, the quality of the technical detail varies, but overall, the editors have done a good job in ensuring

a comprehensive coverage without much overlap between chapters. The book ends with a thought-provoking chapter by Koslyn & Plomin on neurocognitive genetics. They argue convincingly that imaging studies designed to delineate individual differences in brain structure and function might bridge the gap between genes and behaviour. Their chapter was apparently written before the publication of the study by Egan *et al* (2001) demonstrating the influence of variation in the gene specifying the enzyme catechol-O-methyltransferase on dopaminergic modulation of frontal lobe function. That study ushered in a potentially exciting era in which the complementary use of neuroimaging and genetic strategies offers the prospect of major advances in understanding of the causes and mechanisms of mental disorders.

Egan, M. F., Goldberg, T. E., Kolachana, B. S., et al (2001) Effect of COMT Val108/158 Met genotype on frontal lobe function and risk for schizophrenia. *Proceedings of the National Academy of Sciences of the USA*, **98**, 6917–6922.

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Henry Darger: In the Realms of the Unreal

By John MacGregor. New York: Delano Greenidge Editions. 2002. 736 pp. \$85.00 (hb). ISBN 0 929445 15 5

John MacGregor, the foremost authority on outsider art, long famous for the acclaimed classic *The Discovery of the Art*

of the Insane (1989), now offers us his *magnum opus*.

The subject of this book, Henry Darger, personified bizarre fantasy, isolation and awesome industry. Largely uneducated and a recluse, he left his Chicago rented room after 31 years in 1972, to die in a nursing home. His unsuspecting landlord, throwing out the accumulated garbage of a marginal lifetime, sensationally discovered the fictional and artistic work arguably of a genius.

Henry Darger had the features of Asperger syndrome, the diagnosis suggested to MacGregor when he spoke on Darger at the World Psychiatric Association (WPA) Madrid Conference. Darger's mother had died from puerperal septicaemia after giving birth to his sister before he was 4. The sister was put up for adoption by his harried father, who eventually also gave up raising his increasingly unruly son. Darger claimed never to have known his mother's name (or his sister's). On account of 'self-abuse' his father put him in an asylum for 'feeble-minded children'. In later life he kept himself as a hospital dishwasher and cleaner. Darger had never mentioned, let alone shown, his pictures and writings, of between the ages of 19 and 79, to anyone.

MacGregor's all but insurmountable problem is the sheer magnitude of Darger's mostly unpublished pictorial and narrative oeuvre. MacGregor estimates that he read two-thirds of *In the Realms of the Unreal*, scrutinising certain sections in their entirety. *The Story of the Vivian Girls, in What is Known as the Realms of the Unreal, of the Glandeco-Angelinian War Storm Caused by the Child Slave Rebellion* extends over 15 immense densely typed volumes, and at 15 145 pages is 'unquestionably the longest known work of fiction

ever written'. *Realms* is accompanied by three bound volumes of several hundred illustrations, scroll-like watercolour paintings on paper, the work of six decades, derived from magazines and colouring books. In addition, Darger wrote an eight-volume, 5084-page autobiography, *The History of my Life*; a 10-year daily weather journal; assorted diaries; and a second work of fiction, provisionally entitled *Crazy House*, of over 10 000 handwritten pages (also featuring the major characters in *Realms*, the seven Vivian sisters and their companion/secret brother, Penrod).

In his fiction, Darger depicts a whole world rent by mammoth struggles between angelic morality (the Vivian girls) and the horrific violence inflicted by men known as Glandelinians, who subject the children to strangulation, crucifixion, evisceration and more unmentionable horrors.

An amazing anatomical fact is that the young girls have penises and testicles. MacGregor postulates that this is because Darger's bizarre and isolated existence precluded him from ever grasping that the genders differ physically.

The Darger publication is a landmark, in outsider art, in art history, and certainly in psychiatry, as the record of phenomenal creative engagement, the triumph of the human spirit, under conditions of isolation and profound social deprivation. Condensation is the name of the game: the heroic author distilled acres generated by the prodigious creator; I have reduced the author to a fragment, hopefully illuminating, to the *Journal* reader at any rate.

MacGregor, J. (1989) *The Discovery of the Art of the Insane*. Princeton, NJ: Princeton University Press.

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