



Psychiatrists redefined many mental disorders after seeing the Second World War's effects on soldiers.

IN RETROSPECT

The five lives of the psychiatry manual

Roy Richard Grinker describes the military origins of the key reference work for diagnosing mental illness.

My grandfather, the pioneering psychiatrist Roy Grinker (1900–93), said that “to know schizophrenia is to know psychiatry”. Indeed, psychiatry in the nineteenth and early twentieth centuries was largely an effort to understand psychosis, the majority of practitioners being employed in public mental-health institutions. The field broadened in the mid-twentieth century when psychiatrists became aware of a spectrum of mental disorders — not in hospitals, but in wars.

The Second World War led to major attempts to classify psychiatric conditions in the United States. Of the 11 million men and women who served in the US military between 1941 and 1945, 1 million were diagnosed with ill-defined ‘neuropsychiatric’ disorders. The inadequacy of clinical terminology at the time meant that a soldier with ordinary anxiety might be assigned a ‘psychopathic personality’ that clearly did

Diagnostic and Statistical Manual: Mental Disorders

AMERICAN PSYCHIATRIC ASSOCIATION
First published 1952

not apply. Yet these wartime syndromes were responsive to brief psychotherapy, often as simple as allowing the soldiers to talk about their experiences in a safe and restful environment. Psychiatrists’ understanding of mental disorders and interventions expanded rapidly as a result.

In 1948, eager to advertise that psychiatry could treat more than psychoses, the Office of the Surgeon General published *Medical 203*, the US Army’s classification manual for mental-health conditions. The volume was revised four years later by a committee of the American Psychiatric Association (APA), chaired by Captain George Raines of the US Navy, and published as the *Diagnostic and Statistical Manual: Mental Disorders* — now known as *DSM-I*. Released during the Korean War, *DSM-I* was a surprisingly

harmonious marriage of military experience and psychoanalytical theory.

Mental disorders were seen at the time as maladaptive neurotic reactions to the environment, and most included ‘reaction’ in their name. Disorders were classified in terms of the physical symptoms, the organ system involved (such as skin or cardiovascular) and whether the cause was known, secondary or unknown. A schizophrenic reaction, for example, was assumed to result from the individual’s struggle to adapt to internal or external stressors.

OVERREACTION

The second edition, *DSM-II* (1968), retained the psychoanalytical focus on neurosis and adaptation. But it eliminated the use of ‘reaction’ in response to pressure put on psychiatrists to diagnose actual diseases, as other medical professionals did. ‘Schizophrenic reaction’ thus became ‘schizophrenia’.

The 9 types of schizophrenia recorded in *DSM-I* were divided into 15 in *DSM-II* in order to capture a wide range of symptoms associated with the disorder — including some that appeared in other conditions, such as manic-depressive illness, depression and even bacterial infections. These 15 types included autism — then considered a feature of childhood-onset and paranoid schizophrenia rather than a distinct diagnosis — as well as subtypes that are no longer valid, such as ‘latent type’, which described early onset symptoms. However, the revision did little to standardize diagnosis. In a 1971 study, Robert E. Kendell and his colleagues showed that in cases in which the majority of US psychiatrists diagnosed a patient with schizophrenia, the majority of British psychiatrists diagnosed the same patient with manic-depressive illness.

A decade later, *DSM-III* (1980) revolutionized psychiatry, especially clinical trials and psychiatric epidemiology, by making it more evidence-based. Accepting that the physical origins of most psychiatric disorders were unknown (as they still are), the *DSM-III* authors eschewed psychoanalytical theory and hypothetical causes in order to establish diagnostic reliability and validity. Psychoanalysts were consequently outraged at what they considered to be a backwards step.

The standards in *DSM-III* were also aligned with the World Health Organization’s International Classification of Diseases (ICD) manual, used in Europe. For scientists, these changes opened up new avenues for collaboration: researchers now shared the same language. For clinicians, the scientific criteria were a defence against the attacks on



SCHIZOPHRENIA

Search for origins and treatments
nature.com/schizophrenia

psychiatry as the subjective and dehumanizing profession represented in films such as *One Flew Over the Cuckoo's Nest* (1975). For patients, *DSM-III* promised more precision in diagnosis and treatment, especially for individuals who had rejoined their communities when many US public mental-health institutions were closed in the 1970s.

In the process of gathering evidence and aligning standards, subtypes lacking validity were collapsed. The schizophrenias dropped to five variants. And two main symptom domains for the disorder were established: the positive, which included hallucinations and delusions, and the negative, which noted impaired cognitive, emotional and social functions. The negative domain was especially beneficial because *DSM-III* could now capture individuals with schizophrenia who were not actively psychotic, or whose symptoms had changed over time.

Without the structure of underlying explanations, the manual became a list of symptoms for an expanding list of diseases, from a few dozen disorders in the first edition to well over 200. As psychologist Arthur Houts wrote, *DSM-III* showed how “a psychiatric nomenclature cut adrift from any theory became a nomenclature unconstrained”.

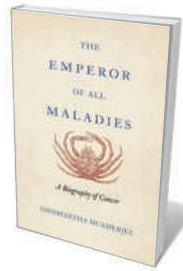
For *DSM-IV* in 1994, the authors worked closely with authors of the ICD to make the two manuals congruent, clinically relevant, grounded in the most recent empirical research and more sensitive to how patients might interpret diagnosis. For example, in the updated *DSM-IV-TR* published in 2000, the writers eliminated language that might create stigma, replacing ‘schizophrenic’ — which implied that the disorder was an identity — with ‘individual with schizophrenia’.

BACK TO THE FUTURE

Scientists now hope to integrate the classification of mental disorders with recent advances in genetics and neuroscience. Research suggests that many conditions, including schizophrenia, autism, bipolar disorder and depression, do not have distinct causes but arise during the brain's development, owing to shared genetic variations and relationships between behaviour and neural circuitry. The Research Domain Criteria (RDoC) project, launched by the US National Institute of Mental Health in 2009, is encouraging the study of mechanisms that are common to multiple disorders. Such approaches hark back to the causality on which *DSM-I* speculated.

Reconnecting our fragmented picture of mental illness is at the heart of *DSM-5* (Arabic numerals now replace the Roman), due to be released in 2013. Recognizing that narrow diagnostic categories do not help us to understand the way a person will develop over time, *DSM-5* will use symptom-severity scales instead of yes-or-no checklists to ▶

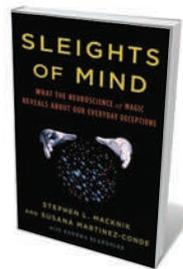
Books in brief



The Emperor of All Maladies: A Biography of Cancer

Siddhartha Mukherjee FOURTH ESTATE 592 pp. £25 (2010)

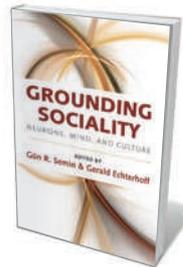
The battle to cure cancer has been waged for thousands of years. From ancient Egyptian records of the illness to the latest research into how tumour cells multiply, physician and science writer Siddhartha Mukherjee relates our attempts to understand and control cancer. He asks why each new treatment for the disease — whether surgery, radiation or chemotherapy — ends up being applied at extremes that verge on the toxic. But he hopes that incremental knowledge will add up to transformative changes in treatment.



Sleights of Mind: What the Neuroscience of Magic Reveals about Our Everyday Deceptions

Stephen L. Macknik and Susana Martinez-Conde with Sandra Blakeslee HENRY HOLT 304 pp. \$26 (2010)

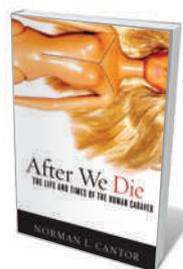
Good magicians know a lot about how the human brain works, and knowledge of magic can tell you a lot about the mind. The authors reveal the neuroscience behind the tricks of some of the world's great magicians. And using everyday examples of illusions, they explain how attention and awareness processes can be hacked. Practical applications range from the diagnosis of autism to marketing techniques and education.



Grounding Sociality: Neurons, Mind, and Culture

Edited by Gün R. Semin and Gerald Echterhoff PSYCHOLOGY PRESS 288 pp. £45 (2010)

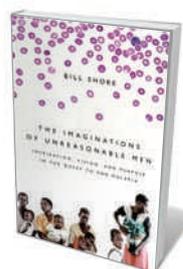
Humans are social animals. The many aspects of how we interact on varying levels — from the neural to the behavioural and the cultural — are explored through contributions by experts from a variety of disciplines, edited by social psychologists Gün Semin and Gerald Echterhoff. The book asks how individuals take each other into account, coordinate their actions and share their inner thoughts, thus laying the foundations for an integrated view of sociality and its implications for the field of psychology.



After We Die: The Life and Times of the Human Cadaver

Norman L. Cantor GEORGETOWN UNIVERSITY PRESS 284 pp. \$26.95 (2010)

Corpses have rights, argues legal scholar Norman Cantor. The wishes of the deceased regarding their mortal remains should be recognized and upheld, he reasons, suggesting that we should leave instructions for the disposal of our bodies. Examining the legal, ethical and moral aspects of death, he looks at the legacy of the corpse in medical education, science research and tissue transplantation. He also discusses novel endings for bodies, such as those that have been used in artistic displays or cryogenically frozen.



The Imaginations of Unreasonable Men: Inspiration, Vision, and Purpose in the Quest to End Malaria

Bill Shore PUBLICAFFAIRS 320 pp. \$25.95 (2010)

The scientists who search for a malaria vaccine inspire philanthropist and business leader Bill Shore's book. He uses the quest of these dedicated researchers as a springboard to muse on the lengths to which people will go to cure major world problems. Charting their efforts to overcome logistical and financial difficulties, and the disbelief of tropical-disease experts, he asks why and how these researchers persist in the face of adversity.

► better reflect the range and dynamics of patients' experiences. In another echo of *DSM-I*, special attention will be paid to context, in no small part caused by intense scientific and public interest in the mental-health problems associated with military personnel deployed in wars.

The number of possible diagnoses may contract in *DSM-5*. In the case of schizophrenia, the APA proposes removing all previous subtypes. The major debate is whether to add a category for psychosis risk syndrome, not unlike the 'latent type' within *DSM-II*. Some argue that because schizophrenia is a developmental disorder, with attenuated symptoms that can appear before psychotic episodes, a risk designation might aid early treatment and improve prognosis. Others note that most 'at-risk' individuals ultimately do not develop psychosis, and fear that the designation might turn normal human differences into pathologies or be motivated by pharmaceutical interests.

Each new edition of the DSM is considered a marker of progress, but we should be careful not to assume that psychiatric classification today is better than it was. Social scientists have widely criticized all releases of the DSM for making arbitrary distinctions between health and disease. They challenge the manual's power to dictate how the human mind is viewed across the public arena, in schools, hospitals and courts of law. Clinicians note that mental disorders are more heterogeneous than the DSM suggests, and question whether changes in classification have yielded better outcomes for patients.

Shifts in classification occur for many reasons — such as the influence of war, changes in the insurance industry or public attitudes towards mental illness — that have little to do with scientific progress and much to do with society and history. A disorder, even one with a clear cause or biomarker, is only a disorder when a society construes it as such. For example, Asperger's disorder is scheduled for elimination from the DSM, but this does not mean the category was wrong. It was useful when a non-stigmatizing term was needed for people with the disorder, but is becoming obsolete now that autism is accepted as a broad-spectrum illness without clear-cut subtypes. The possible collapse of schizophrenia classifications similarly reflects a more nuanced and connected picture of mental illness.

Nearly six decades after breaking ground with *DSM-I*, and three decades after *DSM-III* was radically reappraised, psychiatrists are braced for another diagnostic revolution. ■

Roy Richard Grinker is professor of anthropology and human sciences at George Washington University, Washington DC 20052, USA, and author of *Unstrange Minds*. e-mail: rgrink@gwu.edu



Linked minds in a non-commercial setting can lead to ideas such as the Clifton Suspension Bridge, UK.

INNOVATION

Lighting the creative spark

Ingenuity combines individual skill with shared ideas, explains **Robert J. Sternberg**.

Two new books ask how we seed new ideas: Andrew Robinson examines the personal side of great breakthroughs in *Sudden Genius*, and Steven Johnson explores the collective basis of innovation in *Where Good Ideas Come From*. Both books highlight social and environmental factors in fostering creativity. But they tend to over-generalize, and fail to appreciate that many kinds of creative expression can emerge and be treated differently in society.

According to Robinson, most 'eureka' moments take a long time in coming. He describes psychologist John Hayes's finding that experts and geniuses must immerse themselves in a discipline for at least a decade before they have the knowledge and

Sudden Genius? The Gradual Path to Creative Breakthroughs

ANDREW ROBINSON
Oxford University Press: 2010. 352 pp. £18.99

Where Good Ideas Come from: The Natural History of Innovation

STEVEN JOHNSON
Allen Lane/Riverhead: 2010. 336 pp. £20/\$26.95

experience needed to produce world-class work. Yet exceptional achievement clearly requires more than application: no amount of practice would allow most people to compose music like Mozart.

Asking to what extent genes determine creative success, Robinson observes that talent runs in families, suggesting that some aptitudes are inherited. Genius, however,