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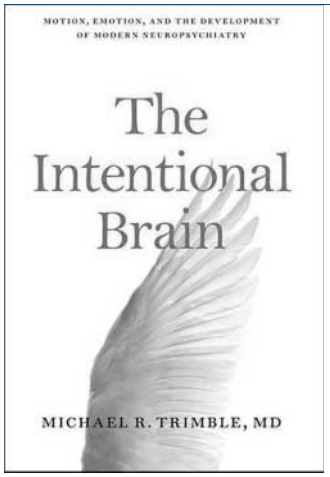
Book reviews

Edited by Allan Beveridge, Femi Oyebode and Rosalind Ramsay



The Intentional Brain: Motion, Emotion, and the Development of Modern Neuropsychiatry

By Michael R. Trimble.
The Johns Hopkins University Press. 2016.
£12.59 (hb). 328 pp.
ISBN 9781421419497

A fascinating but conceptually elusive subject, 'neuropsychiatry' has no universally accepted definition. More than simply the interface between two allied medical specialties, it is a field fundamentally and necessarily connected with the humanities: history, politics, anthropology and philosophy. Expecting a heavily scientific tome, I was delighted to discover that *The Intentional Brain* is an accessible text principally about history and culture; intimidating in its ambitious scope (Trimble is frighteningly well read!), but nonetheless immediately readable. Trimble's particular skill is to bring narrative clarity to a complex and developing field, providing depth to everyday clinical practice.

The book reads as a distillation of Trimble's hard-earned wisdom about the historical mind/brain dilemma. Entertainingly informative and with broad interdisciplinary appeal, the text is an invigorating tour de force covering evolution and medical discovery, creativity and emerging civilisations, traversing ancient concepts of consciousness, the development of dissection and anatomical drawings, the contribution of the Enlightenment and both World Wars. In a chronologically appropriate, increasingly scientific manner, the account moves from the observational to the experimental. Thus, we uncover the earliest accounts of epilepsy, hysteria and psychosis, then learn of the advances offered by histopathology, the controversy surrounding phrenology and the localisation of cerebral functions, and finally, about the vital role of electroencephalograms in developing our collective understanding.

Testament to the diversity of Trimble's influences, his chosen protagonists in this adventure include expected household medical names (Charcot, Parkinson, Broca, Wernicke, Maudsley, Sacks), alongside great thinkers (Hippocrates, Descartes, Paracelsus, Nietzsche) and literary giants (Shakespeare, Coleridge and Wordsworth). I also learnt about Martin Luther, Leonardo Da Vinci, King George III, and more besides. However, this range of sources gives the text a scattergun feel at times, as it seeks to cover such extensive ground. There was a whole section on the brain and poetry, which felt over-inclusive.

Importantly, however, Trimble demonstrates that all psychiatrists require a grounding in the history of human thought. He reminds us that neuropsychiatric phenomena, in particular epilepsy, 'the sacred disease', used to be (and often still are) mistaken for supernatural or religious experiences, illustrating that society directly influences medicine.

It is an earnest text, with occasional space for humour, a diverse range of illuminating anecdotes, and fascinating links with literature. It is a history of two complementary but at times conflicted subspecialties. It reminded me exactly why I love psychiatry, for its complex history and ongoing scientific mystery. If you are feeling in need of a reminder of how far we have come, Trimble may provide just that inspiration.

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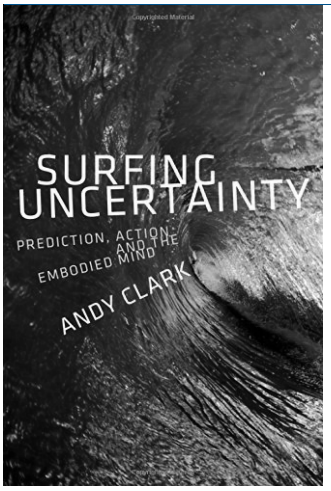

Surfing Uncertainty: Prediction, Action, and the Embodied Mind

By Andy Clark
Oxford University Press. 2016.
£19.99 (hb). 424 pp.
ISBN 9780190217013

Our understanding of 'how the brain works' has expanded enormously in recent decades. Nevertheless, the relatively new field of neuroscience is still searching for a 'unified theory' of brain function – one that can explain how the brain finesses perception, action and attention using a more general (neuro-computational) framework.

In his engaging new book, philosopher Andy Clark sketches out what is arguably the best current contender for such a unified theory: the predictive processing hypothesis. This hypothesis makes the bold claim that practically everything that the brain does can be understood by viewing it as an organ that is ceaselessly attempting to predict the future (more precisely, to predict its moment-by-moment exteroceptive and interoceptive inputs). Under this hypothesis, vision, for example, is achieved not by decoding the signals coming in through the optic nerve in a stepwise fashion, but by comparing the actual incoming sensory signals against the predicted signals, given the brain's internal representation of the world. This 'top-down' view of brain function is a radical departure from the account found in most undergraduate textbooks.

Clark argues convincingly that the predictive processing hypothesis is not just of interest to basic neuroscientists, and outlines recent work that has applied the model to psychiatric disorders including schizophrenia, autism and functional neurological disorders. His enthusiasm for the predictive processing hypothesis is evident in his writing, and he succeeds in conveying the hypothesis' key ideas in an accessible manner.

Surfing Uncertainty stands out from most accounts of the predictive processing hypothesis in the existing literature by avoiding the use of mathematical equations and opting instead to use illustrative examples. Despite its informal tone, however, this erudite text does not shy away from the minutiae of

experimental findings and neuroanatomical details, and any prospective reader should be warned that this is not an 'easy read'. Nevertheless, I would encourage all those interested in understanding the brain to meet the challenge enthusiastically – *Surfing Uncertainty* just might change your view of the brain (and of reality) forever.

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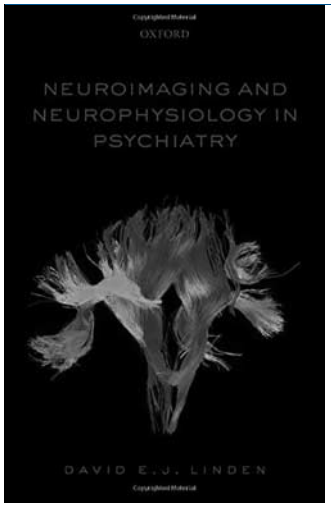

Neuroimaging and Neurophysiology in Psychiatry

By David E. J. Linden.
Oxford University Press. 2016.
£29.99 (pb). 140 pp.
ISBN 9780198739609

The ever-growing availability of brain investigation techniques opens up new avenues for the improvement of psychiatric practice. However, busy psychiatrists do not always find it easy to keep up to speed with all technological developments and their multifaceted clinical applications, and so this book by David Linden is a welcome help. As an agile and introductory volume, it clearly explains the basic physics and physiology behind the main techniques of neuroimaging, including magnetic resonance imaging and positron emission tomography, as well as non-invasive neurophysiology (mainly electroencephalography). It comprehensively covers clinically relevant aspects of neuroimaging and neurophysiology, which are discussed in the light of up-to-date information in a concise and clinically relevant manner.

An introductory chapter on the clinical and research uses of neuroimaging and neurophysiology in psychiatry is followed by two chapters presenting an overview of the most relevant techniques of neuroimaging and neurophysiology (with brain stimulation). Chapters 4 and 5 locate the clinical indications of neuroimaging and neurophysiology within the diagnostic work-up of patients with psychiatric disorders. Neuroimaging and diagnostic disease markers are covered, as are key insights into the mechanisms of mental disorders provided by modern neuroimaging techniques. Of particular interest is chapter 8, as it touches on the forensic implications of 'mind reading'. The final two chapters outline the therapeutic applications of neuroimaging and neurophysiological techniques. Both the iconography and the bibliographic apparatus are of the highest standard.

Thanks to the author's knowledge and first-hand experience with the latest research, this book provides a valuable and easy-to-read reference that will help clinical neuropsychiatrists in their everyday practice. It is at most a minor exaggeration to say that with his recent books David Linden is personally responsible for charting the rapidly changing territory between neurology and psychiatry for the benefit of the current generation of neuropsychiatrists. His efforts and endeavours have achieved the important goals of informing psychiatric practice and ultimately improving the quality of patient care.

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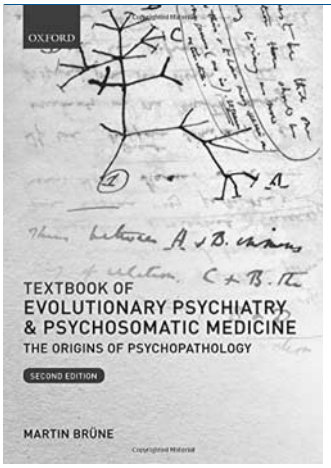

Texbook of Evolutionary Psychiatry and Psychosomatic Medicine: The Origins of Psychopathology, (2nd edn)

By Martin Brüne.
Oxford University Press. 2016.
£44.99 (pb). 496 pp.
ISBN 9780198717942

The origins of psychopathology is a topic approached in mainstream psychiatry by examining genetic factors, pathophysiology and the developmental factors (ontogeny). Martin Brüne, like other evolutionary psychiatrists, finds this approach incomplete and proposes that these proximate causes of psychopathology should be complemented by ultimate causation ones (phylogeny and adaptive functions). By doing that, the four 'why' questions suggested by Tinbergen (function or adaptation, phylogeny, mechanism and ontogeny) would be covered. This is possibly the main theme of this book and has influenced the structure of its chapters.

The book therefore is not a list of evolutionary theories of psychopathology. Instead, it is largely written using a standard psychiatric textbook layout. Clinical chapters are divided into sections similar to any other introductory textbook of psychiatry, such as symptomatology, epidemiology, risk factors, pathophysiology, differential diagnosis, course and outcome, and treatment, in addition to a section which provides an evolutionary synthesis. Part one of the book, which provides the theoretical background, covers evolutionary principles, human life history in addition to causes of psychopathology, the human brain and psychiatric assessment in line with the approach described above.

In sections called 'Afterthought', added to chapters in part 1 and 3, Brüne outlines concepts, impressions and insights which provide a different dimension to the content of the chapter and sometimes clarify difficult ideas. Examples of these afterthoughts include 'genetic determinism', 'the possibility to prevent mental illness', 'what non-verbal behaviour can tell us' and 'the social brain hypotheses'. The last is one of many examples in this book used to highlight the importance of the social context in the origin of psychopathology. This is used to dispel a common misconception that the evolutionary approach is a reductionist enterprise that aims to explain psychopathology in purely genetic or molecular terms. Another example is a new addition to chapter 1 in this second edition, 'the differential genetics of susceptibility' – the concept that genetic variation can promote vulnerability or