

praecox' and 'manic-depressive insanity' was not as clear as he earlier surmised.

This book sets the pursuit of knowledge and understanding of psychiatry into the frame of the people exploring the subject, their daily lives, philosophical ideas and professional encounters, mainly in German-speaking lands in the 19th century. This includes the mysterious murder of Dr Bernhard Gudden, a psychiatrist and neuroanatomist who treated King Ludwig II. Henry Maudsley, Philippe Pinel and others at the Salpêtrière are mentioned occasionally. Camillo Golgi from Italy and Santiago Ramón y Cajal from Spain were central to debates on the structure of neurones and how they communicate. Microscopy and staining methods had limitations, and a dispute raged between the 'reticularists', who 'saw' that axons and dendrites touched each other, and the 'neuronists', who described gaps between them. Despite the German leadership in the field, Cajal and Golgi jointly received the Nobel Prize in Medicine or Physiology in 1906 for their work on neurones, even though one was a neuronist and the other a reticularist.

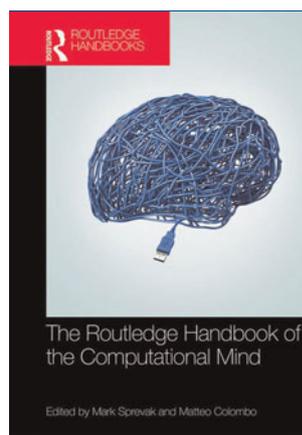
Alongside the neuronal argument came that of functional brain localisation. Could the brain have localisation when the soul is unitary? How do mind, body, brain and soul interact? Is there one or more insanity? Are causes of insanity moral or biological and, if biological, why were there usually no signs of abnormality on post mortem? Wilhelm Griesinger argued that if all psychiatric illnesses were brain illnesses (although not all brain illnesses were psychiatric) then their treatment should be part of medicine and medical training. Griesinger heavily influenced the introduction of psychiatry into the medical school curriculum.

This lively book tells a story of people, events and discoveries. Some of the illustrations are touching, such as Cajal in his laboratory and Kraepelin's photograph of catatonic patients, and the author includes his own photographs of Kraepelin's grand home in Heidelberg. The book is well written, but suffers from some irritating typographical errors, a limited index, some passages outside of the chronological framework and occasional misunderstandings. For example, Chase states that 'admissions increased sharply' (p. 47), but the increase was roughly in line with population changes; bed occupancy rising dramatically was associated with not discharging patients who had severely debilitating and chronic disorders.

Chase's book will be thought provoking for anyone trying to understand the many questions on diagnosis and aetiology in 21st century psychiatric practice. Many of the dilemmas raised over a century ago are evocative of those today, particularly the relationship between bipolar disorder and schizophrenia, as Chase discusses in his final chapter. If Kraepelin and his colleagues returned today they might not recognise the society and technology around them, but they would chuckle when they found that the concepts and diagnostic conundrums with which they grappled still exist.

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### The Routledge Handbook of the Computational Mind

Edited by Mark Sprevak and Matteo Colombo  
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In 2011, speaking at Google's Zeitgeist conference, Stephen Hawking declared that 'philosophy is dead'. He bemoaned philosophers failing to keep pace with scientific progress and thus he declared their art was dead. *The Routledge Handbook of the Computational Mind* finds philosophy in rude health. Like Daniel Dennett, I tend to think that such claims regarding philosophy and science leave unacknowledged the philosophical baggage that attends all of our scientific practices. The *Handbook* reconnects us with the baggage of a computational approach.

One of the many strengths of this volume, skilfully edited by Mark Sprevak and Matteo Colombo, is that it reminds us of how long scientists – many of them psychiatrists (including R. D. Laing) – have wrestled with issues of computation in the mind and brain. This book is particularly timely given the wealth of opinion pieces and working-group position papers on computational psychiatry, a field some have quipped is best defined as having more reviews than data papers (a problem to which I am guilty of contributing).

The excitement and enthusiasm around computational psychiatry ought to be tempered by what it means to commit to computational theories of mind and brain – what one gains and what one might lose, and ultimately what is being computed and how in the healthy and the symptomatic brain. Those with an interest in computational psychiatry would benefit from reading this book.

The book is not just concerned with philosophy. It begins by tackling the history of computation and its invocation as a metaphor for what the mind and brain do. In the next chapters the possible types of computing are outlined, and then the foundations and challenges of computational views on mind and brain are tackled. Finally, applications of the approach are discussed, including chapters devoted to psychiatry – specifically psychotic symptoms (by Brugger and Broome) and addiction (Gu).

My academic work is infused by computation and, rather than the 'busman's holiday' feel I get from many books on topics in which I feel invested, I felt inspired and eager to learn more after reading this book. For example, it was chastening to be reminded that the current debates in artificial intelligence (deep-reinforcement learning versus symbolic approaches) have their roots in much earlier work, where the debate centred on mental structure and mechanism (Fodorian modularity versus connectionism, for example). But I was inspired by the plurality

that the editors and authors advocated; computational scientists can pick methods and approaches for specific problems and see how they afford a deeper or more satisfying explanation of a particular phenomenon.

I think Ada Lovelace (the first computer programmer) had it right: we should be wary of computationalism, but we should neither underrate nor overvalue the capacities of the analytical engine. The *Handbook* grounds computational psychiatry as a

tool rather than a doctrine, a balanced and practical approach I suspect Lovelace would have endorsed.

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