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Book Review

Behave: The Biology of Humans at our Best and Worst.

Robert Sapolsky

'Behaving strangely' . . . when I started working as a psychiatrist on-call, this common triage referral in the emergency department struck me for many reasons, one being that the case was considered unquestionably to belong in the domain of psychiatry. Perhaps more importantly, I wondered what it meant. What is considered strange behaviour? Can 'normal' behaviour be defined? I quickly learnt that these two words, 'behaving strangely', covered a huge range of presentations and it was now my job to weed out behaviour secondary to mental illness from the quagmire of human behaviour in an emergency department. Unfortunately, this book won't make working as a psychiatrist on-call any easier, but it will provide a considerable foundation for trying to begin to understand human behaviour.

The author, Robert Sapolsky, is a Professor of Biology and Neurology at Stanford University and a Research Associate with the Institute of Primate Research, National Museums of Kenya. As an expert in neurobiology and primatology Sapolsky is well equipped to explore behaviour from a multidisciplinary perspective, a key facet of this book. During the introduction, he emphasises how trying to separate explanations of behaviour into disciplinary 'buckets' makes no sense, as they are utterly intertwined. Sapolsky details the origins of current scientific thinking in relation to specific behaviours. He brings the reader on a journey of discovery, outlining how human understanding has arrived at its current point. He uses stories and anecdotes to portray key personalities involved in seminal research, while highlighting significant events that mark advancement in relevant fields, bringing this piece of non-fiction to life.

Sapolsky takes the reader on a temporal journey, tracing backwards from the second before the behaviour occurs. While providing an extensive introduction to neurobiology he is careful to highlight that the brain is not where behaviour 'begins', but the final common pathway, where all the other factors that contribute to behaviour converge. He demonstrates how the nervous system is influenced by sensory stimuli seconds to minutes before the behaviour and how the brain's sensitivity to certain cues is shaped by hormonal exposure in the preceding hours to days. He then discusses the role of neuroplasticity and adult neurogenesis in the days to months prior to a behaviour.

The book continues its move back in time away from the event of interest, a behaviour, but now focuses on crucial stages of human development. In the chapter 'Adolescence; or Dude, Where's my Frontal Cortex?', Sapolsky maintains his blend of humour and scientific fact, while explaining how the frontal cortex is the last brain region to develop and thus accounts for the species known as teenagers. Continuing the theme of development, he addresses childhood development, which is a key period and widely accepted as pivotal in shaping who we become as adults. Finally, he examines embryonic development, focusing on the role that genes play in our behaviour.

The second half of the book explores population factors that affect behaviour, exploring how behaviour and culture have coevolved, defining coevolution as the process where culture shapes brains and brains shape cultures. The relationship between sociology and behaviour is explored highlighting the central role that the 'Us versus Them' dichotomy plays. Complex social structures are considered including themes of hierarchy, obedience and resistance. Complex human behaviours are then addressed including morality and free will.

In the final chapters Sapolsky presents recent evidence and explores the impact of our new understanding in the real world, including the criminal justice system. He ends on a note of optimism believing that the evidence of history demonstrates that "our best" behaviours are increasing and 'our worst' behaviours decreasing.

The scope of this book is truly impressive. Sapolsky ranges from the microscopic – individual genes, synapses and neurotransmitters – to the macroscopic – evolution, culture and sociology. Two very important considerations are emphasised throughout, context and complexity. Sapolsky argues that the origins of a behaviour cannot be considered without the context being defined. Also, that the huge number of factors involved in determining a specific behaviour result in such vast complexity that no single factor can be attributed to causing a specific behaviour.

Sapolsky holds the readers' attention writing with enthusiasm, passion and humour in a style reminiscent of Bill Bryson. The book is peppered with references to psychiatry, ranging from the role of the limbic system in Klüver–Bucy syndrome, to how a reductionist view that mental disorders are a result of synaptic derangement led to the creation of leukotomies, later renamed frontal lobotomies. A true tour de force of behavioural science, this extensive and comprehensive exploration of the factors contributing to human behaviour is essential and thought provoking reading for any trainee psychiatrist.

Conflict of interest. The author has no conflicts of interest to disclose.

Reviewed by Andrew Gribben

Department of Psychiatry, Trinity College Dublin, Dublin, Ireland