

BARBARA J. SAHAKIAN  
JULIA GOTTWALD

# SEX, LIES, & **BRAIN SCANS**

HOW fMRI REVEALS WHAT REALLY  
GOES ON IN OUR MINDS



## SEX, LIES, & BRAIN SCANS

‘One is tempted to pick up *Sex, Lies, & Brain Scans* simply for its enticing title. However, once picked up, this book is not easy to put down. This volume provides an introduction to advances in brain science related to the most human of foibles including prejudice, lying, impulsive decision-making, and lapses in moral behaviour. It introduces the reader to insights arising predominately from the application of functional magnetic resonance imaging (fMRI). It highlights the power of this technique to illuminate previously hidden aspects of human brain function, essentially generating data that speaks in some ways to the neural codes that the brain uses to generate complex behaviours. It also highlights challenges involved in this research that complicate the interpretation of fMRI data. Lastly, the book highlights new, and potentially questionable, applications of fMRI, including its potential use as a lie detector or as an adjunct to the effective marketing of commercial products. *Sex, Lies, & Brain Scans* is written by Professor Barbara Sahakian of the University of Cambridge, a leading figure in this area of research, and her graduate student, Ms Julia Gottwald. It provides an important introduction to breakthroughs emerging from neuroimaging for people who are wondering what all the recent fuss regarding the brain is all about.’

**JOHN H. KRISTAL, MD, ROBERT L. MCNEIL, JR.**  
*Professor of Translational Research and Chair,  
Department of Psychiatry,  
Yale University*



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*I dedicate this book to friends and family and especially to Trevor,  
Jacqueline, and Miranda Robbins and Richard Sahakian, who have  
always inspired and encouraged me.*

Barbara J. Sahakian

*To my family, who shower me with love and support.*

*To my friends, whose wonderful weirdness I need.*

*To Carl, who makes life truly brilliant.*

Julia Gottwald



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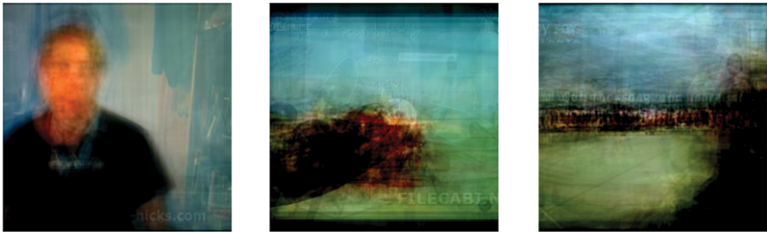


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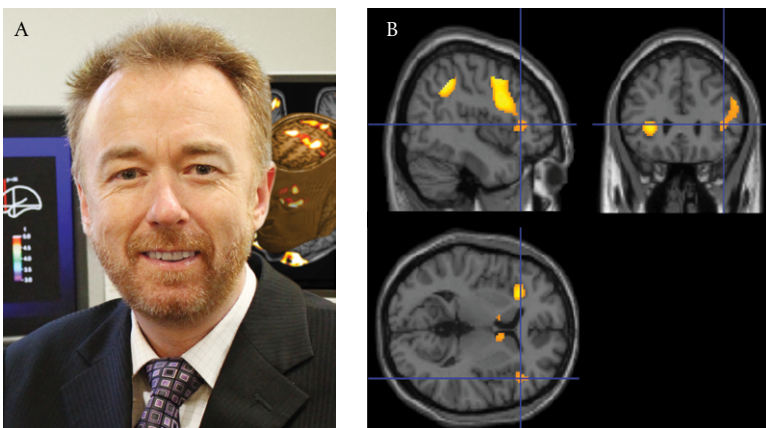
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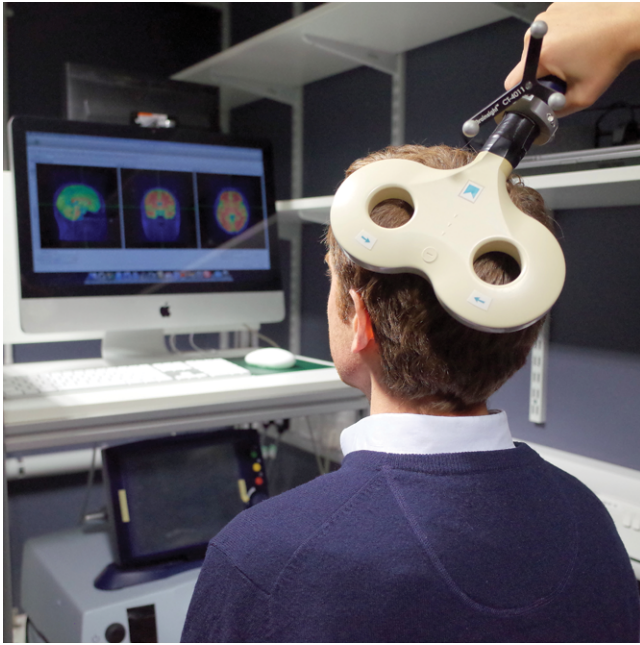


1. Segments of Hollywood film trailers reconstructed from brain activity that was measured using fMRI. The original trailers showed Steve Martin, an elephant in the desert, and an aeroplane.



2. Adrian Owen—as we know him and an fMRI scan of his brain at work.





3. A participant in a transcranial magnetic stimulation experiment.

**Easy:**      **GREEN**      **YELLOW**      **RED**      **BLUE**

**Hard:**      **GREEN**      **YELLOW**      **RED**      **BLUE**

4. Illustration of the Stroop effect: Name the colour of the ink, not the word!