

*The*  
**Royal Society**  
*of* **Edinburgh**

**TALL TALES ABOUT  
THE MIND AND BRAIN**

**6 – 7 September 2007**

at

**Our Dynamic Earth  
Holyrood Road, Edinburgh**



*The*  
**Royal Society**  
*of* **Edinburgh**

**Tall Tales about the Mind and Brain Conference Committee**

**Professor Vicki Bruce OBE FBA FRSE**

Vice-Principal and Head of College, College of Humanities & Social Science, University of Edinburgh

**Professor Sergio Della Sala FRSE (Committee Chair)**

Professor of Human Cognitive Neuroscience, Department of Psychology, University of Edinburgh

**Dr Jack Jackson**

Assistant Chief Inspector of Education, HM Inspectorate of Education

**Dr Stuart Monro**

Scientific Director, Dynamic Earth Enterprises Ltd

The Royal Society of Edinburgh and the Conference Organising Committee would like to pay a special tribute to Professor Barry Beyerstein who greatly contributed to the content and programme for this event. Professor Beyerstein sadly passed away in June 2007.

*The Royal Society of Edinburgh  
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# **PROGRAMME**

Day One: Thursday 6 September 2007

**Tall Tales on Memory and Learning**

- 09.30 Registration / Morning Coffee
- 10.00 RSE Welcome  
Sir Michael Atiyah OM FRS HonFREng HonFMedSci HonFRSE HonFFA PRSE  
*President, The Royal Society of Edinburgh*
- 10.05 Introduction and Overview  
Chairperson  
Professor Sergio Della Sala FRSE, *Professor of Human Cognitive Neuroscience,  
Department of Psychology, University of Edinburgh*
- 10.20 Session 1: Memory: A User's Guide  
Professor Alan Baddeley CBE FRS, *Professor of Psychology, University of York*
- 10.50 Session 2: The Myth of the Incredible Eyewitness  
Professor Tim Valentine, *Professor of Psychology, Goldsmiths,  
University of London*
- 11.20 Session 3: The Perils of Intuition  
Professor David G Myers, *Professor of Psychology,  
Hope College, Holland*
- 11.50 Open Panel/Forum Discussion
- 12.00 Lunch
- 13.00 The Psychology of Magic  
Dr Peter Lamont, *School of Philosophy, Psychology and Language Sciences,  
University of Edinburgh*

**Tall Tales on Intelligence**

- Chairperson  
Professor V G Bruce OBE FBA FRSE, *Vice-Principal and Head of College,  
College of Humanities & Social Science, University of Edinburgh*
- 13.40 Session 4: Bigger and Better? Brain Size and Species  
Dr David Carey, *School of Psychology, University of Aberdeen*
- 14.00 Session 5: Intelligence  
Professor Michael Anderson, *School of Psychology,  
The University of Western Australia, Perth*
- 14.20 Session 6: Myths about Intelligence and Old Age  
Professor Ian J Deary FBA FRSE, *Professor of Differential Psychology,  
Department of Psychology, University of Edinburgh*
- 14.40 Open Panel/Forum Discussion
- 1500 Close

Day Two: Friday 7 September

**Tall Tales on Language and Communication**

Chairperson

Dr Jack Jackson, *formerly HM Assistant Chief Inspector of Education, Scottish Executive*

09.30 Registration / Morning Coffee

10.00 Welcome

10.10 Session 1: Facts and Fallacies about Bilingualism  
Professor Antonella Sorace, *Professor of Developmental Linguistics, Linguistics and English Language, University of Edinburgh*

10.40 Session 2: Are we in our Right Minds?  
Professor Michael C Corballis, *Department of Psychology, University of Auckland*

11.10 Session 3: Lie Detection: Pitfalls and Opportunities  
Professor Aldert Vrij, *Professor of Social Psychology, Department of Psychology, University of Portsmouth*

11.40 Session 4: Open Panel/Forum Discussion

12.00 Lunch

13.00 The Magic is in the Mind  
Professor Massimo Polidoro, *Author, Magic expert and Contract Professor of Anomalistic Psychology at the Faculty of Psychology, University of Milano-Bicocca, Italy*

**Tall Tales on Brain and Behaviour**

Chairperson

Professor Michael Anderson, *School of Psychology, The University of Western Australia, Perth*

13.40 Session 5: Lunar Madness  
Professor Eric H Chudler, *Director of Education and Outreach and Research Associate Professor, Department of Bioengineering, University of Washington*

14.00 Session 6: Why do we Believe in Strange Things?  
Professor Chris French, *Professor of Psychology, Psychology Department, Goldsmiths College, University of London*

14.20 Session 7: The Belief Engine ,  
Professor James E Alcock, *Department of Psychology, University of York, Toronto*

14.40 Open Panel/Forum Discussion

14.50 Summation and Vote of Thanks  
Professor Michael Anderson, *School of Psychology, The University of Western Australia, Perth*

15.00 Close

**SPEAKER BIOGRAPHIES  
&  
ABSTRACTS  
  
DAY ONE**

**Professor Sergio Della Sala FRSE**

*Professor of Human Cognitive Neuroscience, Department of Psychology, University of Edinburgh*

Biography

Professor Sergio Della Sala was born in Milan. He holds a degree in “Medicine and Surgery” from the University of Milan (where he was also first appointed as Consultant in Neurology) and a PhD in Neuropsychology. He came to Edinburgh in April 2004 from Aberdeen where he has held the Chair of Neuropsychology for over 10 years. He has held appointments at various institutions including the University of Milan, the University of Berkeley - California, the Applied Psychology Unit – Cambridge, the University of Western Australia - Perth. His research focuses on the relationship between brain and behaviour, with particular reference to memory and amnesia. He published over 300 papers in peer-reviewed journals and several monographs. He is also interested in the dissemination of science and, wearing that hat, organized several events and exhibitions, particularly addressed to young people; he is one of the founders of the Italian section of the Skeptical Inquirers society for the promotion of critical thinking.

## **Memory: A User's Guide**

**Professor Alan Baddeley CBE FRS**

*Professor of Psychology, University of York*

I have a terrible memory. You too? I will try to persuade you that we both have amazingly good memories, compared for example to that of computers, more fallible but much more flexible. By describing what we know about how our memories work, I hope to help you make better use of yours.

### **Biography**

Alan Baddeley is Professor of Psychology at the University of York. He studied psychology in University College London, Princeton and Cambridge, specialising in the study of human memory in general, and in particular on working memory, a memory system that helps us keep things in mind when thinking. He is a Fellow of the Royal Society and was awarded a CBE for his contributions to the study of memory.

## **The Myth of the Incredible Eyewitness**

**Professor Tim Valentine**

*Professor of Psychology, Goldsmiths, University of London*

Eyewitness identification evidence is often critical to the prosecution of criminal cases. Confident eyewitness testimony can be highly influential in a court. Yet mistaken eyewitness identification has been found to be the most common cause of wrongful conviction. In the USA over 200 people wrongly convicted of serious offences have been exonerated by DNA evidence that was not available at their trial. Mistaken eyewitness identification was a factor that led to wrongful conviction in three-quarters of these cases. Research in the UK has demonstrated that one in five witnesses who attend police identity parades make a mistaken identification.

The characteristics of human memory which can lead witnesses to make an honest and confident, but mistaken, identification will be discussed. It will be argued that it is important to consider appropriately the limitations of human perception and memory. If the circumstances make a witness' identification appear incredible, serious consideration should be given to the possibility that the identification is unreliable.

The memory of an eyewitness should be treated as if it is a part of the crime scene. Interviewing and identification procedures should be designed and deployed to avoid inadvertently inducing distortion of eyewitness memory. Some procedures, for example providing feedback on an identification, can distort memory and subsequent testimony. Furthermore, the procedures used should maximise the opportunity for a reliable eyewitness to make an identification in an appropriate test of their memory. The factors affecting eyewitness identification will be illustrated by reference to recent criminal cases.

### **Biography**

Tim Valentine obtained his PhD from Nottingham University in 1986, and has more than twenty years experience researching human face recognition and eyewitness identification. He worked at the Universities of Manchester and Durham before being appointed to a chair at Goldsmiths, University of London in 1997. He is an author of more than 60 scientific articles, and regularly provides expert advice on eyewitness identification evidence in criminal cases. He has received research funding from the Nuffield Foundation, ESRC and EPSRC. Recent research projects include investigation of video identification procedures, identification from CCTV imagery, street identification, and evaluation of a new method for constructing facial composites.

## **The Perils of Intuition**

### **Professor David G Myers**

*Professor of Psychology, Hope College, Holland*

Recent psychological science reveals an unconscious mind—an intuitive mind—that Freud never told us about. We operate like jumbo jets, flying through life mostly on autopilot. This out-of-sight thinking feeds our expertise, our creativity, our spirituality. Yet unchecked intuition is also perilous.

In his book, *Intuition: Its Powers and Perils* (Yale University Press), and his illustrated lecture, David Myers explores the wonders of intuition. He also shines the light of evidence on some fascinating questions: Why do people intuitively fear the wrong things? Are some people, such as women, more intuitive? Why do athletes, interviewers, investors, gamblers, and psychics so predictably fall prey to their illusory intuitions? How can we think smarter, even while hearing the creative whispers of our unseen mind?

### **Biography**

Social psychologist David Myers is a communicator of psychological science to college students and the general public. His scientific writings, supported by U.S. National Science Foundation grants and fellowships and recognized by the Gordon Allport Prize, have appeared in two dozen academic periodicals, including *Science*, the *American Scientist*, and *Psychological Science*.

Professor Myers has digested psychological research for the public through articles in more than three dozen magazines and through fifteen books. These include textbooks for introductory and social psychology, which are studied at more than 1000 universities and colleges, and general interest books, including *Intuition: Its Powers and Perils*.

## **The Psychology of Magic**

**Dr Peter Lamont**

*School of Philosophy, Psychology and Language Sciences, University of Edinburgh*

There is a myth that magic is all about secrets. According to this myth, magic effects (tricks) depend upon mirrors, trapdoors and other secret methods, and if you know about these methods, you won't be fooled. But the myth is not true. In fact, magic is primarily psychological, relying upon the various techniques of misdirection. Physical misdirection directs the audience's attention, by exploiting what is inherently interesting (such as novelty and movement) and by creating areas and moments of interest for the audience (through the use of the eyes, voice and body language). By managing what is interesting for the audience, the magician can predict where they will be looking, and when they will be looking at it (and, therefore, where they will not be looking, and when they will not be looking at it). Audiences, of course, already suspect that this might happen, so psychological misdirection directs the audience's suspicions. The magician employs naturalness to minimise suspicion, and various ruses to justify necessary but unnatural actions. Through the use of false expectations, the audience can be misdirected about the effect, and through the use of false solutions, they can be misdirected about the method. By using physical and psychological misdirection, the magician can deceive the audience, even when they are aware of the secret method being used. In this talk, Dr Lamont will describe examples of these techniques and will demonstrate how they work.

### **Biography**

Dr Peter Lamont is a historian and psychologist, based at the Koestler Parapsychology Unit, University of Edinburgh. He obtained a first class honours degree in Economic and Social History from Edinburgh University, then completed postgraduate studies in Theology and Education before working as a Research Associate in Psychology at the University of Hertfordshire. He returned to Edinburgh where he completed a PhD entitled 'Magic and Miracles in Victorian Britain', during which time he won the Jeremiah Dalziel Prize in British History. He was subsequently awarded a prestigious Arts and Humanities Research Council (AHRC) Fellowship in the Creative and Performing Arts, and now works as a lecturer in Psychology at the University of Edinburgh. Dr Lamont is also a former professional magician, a past president of the Edinburgh Magic Circle, and has published extensively on the history and psychology of magic and the paranormal. In addition to many articles, he is author of three books: *Magic in Theory: an Introduction to the Theoretical and Psychological Elements of Conjuring* (University of Hertfordshire Press, 1999); *The Rise of the Indian Rope Trick: the Biography of a Legend* (Little, Brown, 2004); and *The First Psychic: the Peculiar Mystery of a Notorious Victorian Wizard* (Little, Brown, 2005). Among many contributions to radio and television, he wrote and presented the BBC radio series *Wizards of the North*, and was the academic consultant on the recent BBC television series *Magic*.

**Professor VG Bruce OBE FBA FRSE**

*Vice-Principal and Head of College, College of Humanities & Social Science, University of Edinburgh*

Biography

Vicki Bruce is Vice-Principal and Head of the College of Humanities and Social Science at the University of Edinburgh and holds a personal chair in Psychology there. As Head of College she is in charge of academic disciplines across the arts, humanities and social sciences including law, education and management. She is an experimental psychologist who has researched and published extensively in the areas of visual perception and cognition, particularly focussing on human face recognition and face perception. She continues her research in collaboration with colleagues at Stirling.

## **Bigger and Better? Brain Size and Species**

**Dr David Carey**

*School of Psychology, University of Aberdeen*

The brain size and intelligence debate has been around for a long time in a number of different guises, some an unfortunate side effect of a racist and sexist history. Today, some serious scientific effort is still trying to decipher *species* similarities and differences in brain size and brain structure, and setting these into an evolutionary grounded context. More recently, within our species, scientists have spent considerable effort trying to relate measures of brain size from neuroimaging techniques such as fMRI to psychometric measures of intelligence, and to suggest that these relationships are biological and heritable from parents. The latter goal is attempted by suggesting relationships between heritability, intelligence and brain size. These projects are not without their difficulties including complex allometric relationships between brain and body size, which brain region or subdivision to measure, maturational/educational/social confounds and the not so easy problem of deciding the “how to” and the “what” of intelligence in the first place.

### **Biography**

David Carey obtained his Ph.D from the University of Western Ontario in Canada with Mel Goodale. He then spent two and a half years as a teaching and research fellow in St Andrews before taking up a lectureship at the University of Aberdeen in 1995. He is currently a senior lecturer in the Perception and Action Research Group. He trained as a clinical neuropsychologist but now works exclusively at his research on sensorimotor control in patients with brain damage and neurologically intact individuals. His current projects include work on residual vision after damage to the visual cortex, hemispace and the kinematics of reach and grasping and side biases in behaviour.

## **Intelligence**

### **Professor Michael Anderson**

*School of Psychology, The University of Western Australia, Perth*

Nowhere in psychology are there more myths than in the study of individual differences in intelligence. In my talk I will highlight three of these myths: (1) IQ tests measure nothing other than social advantage; (2) there is no good evidence to suggest that there is a genetic basis for differences in IQ; (3) the genetics of intelligence has established that race differences in IQ are genetically based. Debates over these myths have been the stuff of theatre (think Punch and Judy show) rather than science. This is because of the perceived socio-political consequences of "the facts" of the matter which have hampered research on the nature of intelligence for most of the 20<sup>th</sup> century. I will attempt to convince you that the above are indeed myths and that a scientific approach to understanding intelligence is not only possible but does not have the fearful consequences that opponents of "intelligence testing" have typically feared.

### **Biography**

Mike Anderson completed his undergraduate degree in psychology at the University of Edinburgh in 1977 and took out his Doctorate from the University of Oxford in 1981. He has worked as a Lecturer at the University of Edinburgh, as a Senior Scientist at the Medical Research Council's Cognitive Development Unit in London and is currently Professor in the School of Psychology at UWA. His research interests are in developmental psychology, particularly in understanding the mechanisms underlying individual differences and developmental changes in intelligence.

## **Myths about Intelligence and Old Age**

**Professor Ian J Deary FBA FRSE**

*Professor of Differential Psychology, University of Edinburgh*

Five ideas about old age, taken from classical and more modern literature and culture, are put to the test using data from the follow-up studies of the Scottish Mental Surveys of 1932 and 1947. First, Wordsworth's line that, "The child is the father of the man" is studied. Are there aspects of childhood that influence cognitive ability later on? Second, Fred Astaire's suggestion that, "Old age is like everything else. To make a success of it, you've got to start young" is considered. What part does childhood cognitive ability play in keeping us healthy and alive in old age? Third, Juvenal's "*orandum est ut sit mens sana in corpore sano*" is tested. Is physical function related to cognitive ability in old age? Fourth, Sir Walter Scott's description, in *The Antiquary*, of Elspeth Mucklebackit's mental abilities is examined: "There are many parts of her mind that appear, as I may say, laid waste and decayed, but there's parts that look the steeper, and the stronger, and the grander, because they are rising just like to fragments among the ruins o' the rest". Are there some cognitive abilities that remain strong in old age? Fifth, Oliver Wendell Holmes' idea that "Men do not quit playing because they grow old; they grow old because they quit playing" is studied. What can we do to keep our brains like they were when we were young?

### **Biography**

Ian Deary is Professor of Differential Psychology at the University of Edinburgh. He graduated in Psychology and Medicine at the University of Edinburgh, and studied there for his PhD. He practised psychiatry in London and Edinburgh before moving to academic psychology. His principal research interest is human mental abilities, especially the origins of cognitive differences and the effects of ageing and medical conditions on mental skills. He holds a Royal Society-Wolfson Research Merit Award (2003-2007) for his work on human cognitive ageing.

Professor Deary has published over 300 refereed journal articles, three authored books and three edited books. He leads a research team studying cognitive ageing by following up the people who took part in the Scottish Mental Surveys of 1932 and 1947. Other members of his research team are currently investigating: the cognitive effects of hypoglycaemia and diabetes; the influence of childhood IQ on health in adulthood and survival to old age; and effects of cardiovascular disease on cognitive ageing. His research includes the application of molecular genetic and brain imaging techniques to the understanding of cognitive ability differences.

His research on the origins of mental ability differences was integrated in his book in 2000 – *Looking Down on Human Intelligence: From Psychometrics to the Brain* (Oxford University Press). This won the British Psychological Society's Book Award in 2002. In 2001 he followed this up with *Intelligence: A Very Short Introduction* (Oxford University Press) which introduced the main issues in psychometric intelligence for junior students and laypeople.

In 1996 he was elected a Fellow of the Royal College of Physicians of Edinburgh. During 1999-2001 he was elected President of the International Society for the Study of Individual Differences. In 2003 he received the first of the annual Chancellor's Awards of the University of Edinburgh which 'recognise excellence in vital academic areas such as teaching and research and were awarded on the basis of innovation, relevance, creativity and personal dedication'.

**SPEAKER BIOGRAPHIES  
&  
ABSTRACTS  
  
DAY TWO**

**Dr Jack Jackson**

*Formerly HM Assistant Chief Inspector of Education, Scottish Executive*

Biography

Professor Jack Jackson holds BSc and PhD degrees in biology from the University of Glasgow. He taught medical and dental students there before taking up a post as lecturer in biology at the Scottish Agricultural College (Auchincruive) where he carried out research on biological control. He was tutor at the Open University before training to become a secondary teacher. He was head of a biology department for 10 years. He was senior examiner in biology with the Scottish Examination Board and was a member and chair of several committees concerned with the development of the science curriculum. He joined HM Inspectorate of Schools in 1983 and over a period of 23 years he inspected at all levels from pre-school to post-school. He was given national responsibility for biology education in 1987 and between 1990 and 2006 he had national responsibility for science education. He was involved in all major curriculum developments, including Standard Grade, Revised Higher, 5-14 and Higher Still. He is author of a number of HMIE publications, including *Effective Teaching and Learning in Science*, *Improving Science Education 5-14* and *Improving Achievement in Science*. He was on the group reviewing the science curriculum 3-18 in relation to a Curriculum for Excellence. He was awarded a Fellowship by the Institute of Biology in 1996 and an OBE in 2006. Between 2003 and 2006 he was Assistant Chief Inspector of Education. He was made Visiting Professor at the University of Strathclyde in 2007. He currently works as an educational consultant and has just completed a review of the contribution of Scottish science centres to formal and informal education on behalf of HMIE and the Scottish Executive.

## **Facts and Fallacies about Bilingualism**

**Professor Antonella Sorace**

*Professor of Developmental Linguistics, University of Edinburgh*

Bilingualism is becoming more common due to increased and diversified patterns of migration and international mobility. While in many parts of the world it is quite normal for children to be exposed to two or even more languages right from birth, however, bilingualism is a relatively new phenomenon in our society. As a consequence, growing up with more than one language is often regarded as 'special', and bilingualism is still surrounded by false beliefs and misunderstandings, even among the otherwise educated and scientifically minded. Many people are ready to believe that handling two languages at the same time is too much of a burden for the infant's brain, or that the languages compete for resources in the brain at the expense of general cognitive development, or that bilinguals don't speak any language properly. Lack of information and misconceptions too often prevent successful bilingual development in children; this is a missed opportunity in more than one respect, since bilingualism, as research has shown, entails general cognitive advantages that go well beyond mastery of two languages. In this talk, I will show how research findings can debunk some of the myths about bilingualism and enable more and more children to reap the cognitive benefits that bilingualism can bring.

### **Biography**

Antonella Sorace (Laurea, University of Rome; MA, University of Southern California; PhD, University of Edinburgh) is Professor of Developmental Linguistics at the University of Edinburgh. In her career she has held research appointments and visiting professorships at numerous institutions, including the Max Planck Institute for Psycholinguistics, Johns Hopkins University, Michigan State University, the University of Hamburg, and the University of Siena. Her research focuses on a number of interrelated questions that bring together linguistics, experimental psychology and cognitive science: the development of syntactic knowledge in child simultaneous bilingual acquisition and in adult second language acquisition; the changes in the native language resulting from long-term exposure to a second language; the cognitive neuroscience of the bilingual brain; the lexicon-syntax interface and language variation; the psychology of linguistic intuitions and the development of techniques for eliciting acceptability judgments in experimental linguistic research. She is also committed to disseminating research on bilingualism outside academia.

## **Are we in our Right Minds?**

**Professor Michael C Corballis**

*Department of Psychology, University of Auckland*

Traditionally, the right brain has been regarded as inferior to the left, and for many decades was referred to as the “nondominant” or “minor” hemisphere of the brain. From the 1960s on, however, it has come to be romanticized as at least the intellectual equivalent of the left brain, representing intuition, artistic achievement, and emotional intelligence. Many therapies and instructional methods claim to bring out right-brain values and virtues, to create more sane, balanced, and creative individuals in a healthier society. Although such therapies may indeed be beneficial, there is little evidence that they have much to do with any specialized activity of the right brain. In most respects, the right brain performs much the same functions as the left brain, and indeed the two sides of the brain have evolved as symmetrical structures precisely because we live in a world in which there is no essential differences between the left and right sides of space. Nevertheless there are subtle differences. We now know that both sides of the brain contribute to language, but in subtly different ways. Both sides also contribute to the awareness of space, but the right side has a slightly more dominant role. In most of our human activities, we make use of both sides of the brain, in roughly equal measure.

### **Biography**

Michael Corballis was born in New Zealand, and educated there and in Canada. He received his PhD in psychology from McGill University in 1965, and taught at McGill from 1968 until 1977, when he returned to New Zealand as Professor of Psychology at the University of Auckland. His books include *The Psychology of Left and Right* (1976), *The Ambidextrous Mind* (1983), *Human Laterality* (1983), *The Lopsided Ape* (1991), and *From Hand to Mouth* (2002). He was a founding co-editor of the journal *Laterality*, and has published widely in cognitive neuroscience, and especially on handedness and cerebral asymmetry, visual perception, and language. He has an honorary LL.D. from the University of Waterloo, and in 1999 was created an Officer of the New Zealand Order of Merit for services to psychological science.

## **Lie Detection: Pitfalls and Opportunities**

### **Professor Aldert Vrij**

*Professor of Social Psychology, University of Portsmouth*

Despite the importance of detecting deception in legal investigations, interview protocols that are currently used to detect deceit are limited. Some protocols assume that liars will be more aroused when answering key questions than when answering comparison questions through fear of being caught. This premise is theoretically weak. Other protocols assume that liars will show an orienting response to critical facts. This approach is often impractical, as it requires lie detectors to know case-specific facts; furthermore, invasive and expensive equipment is needed to measure these orienting responses. We propose and provide empirical support for an alternative approach to lie detection, namely that lying is cognitively more demanding than truth telling. We also show how interviewers can exploit liars' diminished cognitive capacity to discriminate more effectively between liars and truth tellers.

### **Biography**

Aldert Vrij (1960) is a Professor of Applied Social Psychology and his main research interest is deception, particularly nonverbal aspects of deception (e.g, how liars behave), verbal aspects of deception (e.g., what they say), people's ability to detect deceit, and ways to improve this ability. He has published almost 300 articles and book chapters and six books to date, the majority of which are related to deception. His book '*Detecting lies and deceit*' published by Wiley in 2000 (ISBN 0-471-85316-X) provides a comprehensive overview of nonverbal, verbal and physiological correlates of deception.

Dr Vrij currently holds research grants from the Economic and Social Research Council (ESRC), the British Academy and the Nuffield Foundation, and in the past he has held grants from the ESRC, the Nuffield Foundation, the Leverhulme Trust, and the Dutch Ministry of Justice. All of these research grants were related to deception.

Dr Vrij gives lie detection workshops and seminars to professionals on a regular basis in Europe and other parts of the world. He also gives lie detection training sessions to fellow academics. He acts as an Expert Witness on lie detection issues in criminal cases in both his native country the Netherlands and in the United Kingdom, and is at present Editor of *Legal and Criminological Psychology*.

## **The Magic is in the Mind**

### **Professor Massimo Polidoro**

*Author, Magic expert and Contract Professor of Anomalistic Psychology at the Faculty of Psychology, University of Milano-Bicocca, Italy*

Sometimes, we are led to believe in magic and psychic phenomena because our senses force us to believe in the unbelievable. We trust our eyes and ears, while forgetting that our senses can misguide us as well. Massimo Polidoro will show some perceptive illusions, showing how our senses can lead us to experience non-existing phenomena. During this presentation Massimo Polidoro will discuss various subjects, ranging from con games to spiritualistic seances, from PK to psychic readings, from "satanic messages" to holy visions and he will do so by the use of film clips, sound samples and some sleight of mind demonstrations that will involve all participants. And a splendid time is guaranteed for all.

### **Biography**

Massimo Polidoro, author, magic expert and contract professor of Anomalistic Psychology at the Faculty of Psychology, University of Milano-Bicocca (Italy), is co-founder and Executive Director of CICAP (The Italian Committee for the Investigation of Claims of the Paranormal). He was an apprentice to James "The Amazing" Randi and is today an established writer, having published 25 books and over 500 articles.

## **Lunar Madness**

### **Professor Eric H Chudler**

*Director of Education and Outreach and Research Associate Professor, Department of Bioengineering, University of Washington*

The idea that the full moon exerts a strong influence on human behavior has existed for centuries and is still widespread. Many people, even medical and mental health professionals, believe that days with a full moon are filled with a high frequency of abnormal human behavior. For example, many medical personnel believe that the moon affects their patients, but examination of hospital records has not found a relationship between the phase of the moon and hospital admissions, surgical complications, accidents or medical errors. Similarly, extensive research has failed to find a reliable relationship between the lunar cycle and the incidence of crime, violence, mental illness, drug overdoses and motor vehicle accidents. The lack of statistical rigor in some published studies and differences in methodologies used by different researchers make comparison of results difficult. Moreover, the design of correlative studies is not sufficient to demonstrate a causative effect. Cultural, religious and media influences as well as cognitive factors may fuel the engine that propagates this myth.

### **Biography**

Eric H. Chudler, Ph.D., is a research neuroscientist interested in how the central nervous system processes information about nociception and pain. He is currently investigating why patients with Parkinson's disease have pain problems and for ways to treat such pain. Dr. Chudler received his Ph.D. from the Department of Psychology at the University of Washington in Seattle in 1985. He has worked at the National Institutes of Health (1986-1989) and in the Department of Neurosurgery at Massachusetts General Hospital (1989-1991). Between 1991 and 2006, Dr. Chudler was a faculty member in the Department of Anesthesiology at the University of Washington. He is currently a research associate professor in the University of Washington Department of Bioengineering and director of education and outreach at University of Washington Engineered Biomaterials. Dr. Chudler also works with other neuroscientists and classroom teachers to develop educational materials to help students learn about the brain.

## **Why do we Believe in Strange Things?**

**Professor Chris French**

*Professor of Psychology, Goldsmiths College, University of London*

One of the main reasons for believing in the paranormal is direct personal experience of ostensibly paranormal events or hearing reports of such personal experiences from trusted others or via the media. Such reports are to be found in all known societies, both historically and geographically. The near-universality of this aspect of human experience can only mean one of two things. It may be that such reports indicate that paranormal forces really do exist. If this is so, our scientific worldview needs to be expanded to recognise this fact and scientists should devote more time and effort towards understanding how such forces operate. Alternatively, such reports may be the result of individuals misinterpreting certain events and experiences as necessarily involving paranormal forces when in fact non-paranormal explanations would suffice. This presentation will provide an introduction to the sub-discipline of *anomalous psychology*, which may be defined as the study of extraordinary phenomena of behaviour and experience, in an attempt to provide non-paranormal explanations in terms of known psychological and physical factors. This approach will be illustrated with examples relating to a range of ostensibly paranormal phenomena. It will be shown that human cognition operates in such a way that it is not surprising that many people would believe that they have had a paranormal experience even if paranormal forces do not, in fact, exist. The central role of cognitive biases will be highlighted. Among the cognitive biases to be described in this presentation are population stereotypes, the illusion of control, our poor intuitive appreciation of probability, and our susceptibility to the Barnum effect and cold reading. The central importance of the interaction between bottom-up and top-down processing will be described and the power of top-down processing in biasing our interpretation of ambiguous stimuli will be illustrated.

### **Biography**

Chris French is a Professor of Psychology and Head of the Anomalous Psychology Research Unit in the Psychology Department at Goldsmiths College, University of London ([www.goldsmiths.ac.uk/apru](http://www.goldsmiths.ac.uk/apru)). Between 1997 and 2000, he served as Head of Department. He teaches a course entitled *Anomalous Psychology* as part of the BSc (Hons) Psychology programmes at both Goldsmiths College and Birkbeck College. Anomalous psychology may be defined as the study of extraordinary phenomena of behaviour and experience, including (but not restricted to) those which are often labelled ‘paranormal’. It is directed towards understanding bizarre experiences that many people have without assuming a priori that there is anything paranormal involved. He is a Chartered Psychologist and a Fellow of the British Psychological Society. He has published over 80 articles and chapters covering a wide range of topics within psychology, including publications in the *Journal of Abnormal Psychology*, the *Lancet*, *Emotion*, the *Quarterly Journal of Experimental Psychology*, and the *British Journal of Psychology*. His main current area of research is the psychology of paranormal beliefs and anomalous experiences. In addition to academic activities, such as conference presentations and invited talks in other departments, he frequently appears on radio and television casting a sceptical eye over paranormal claims.

## **The Belief Engine**

**Professor James E Alcock**

*Department of Psychology, University of York, Toronto*

We usually consider our beliefs to be something that we have chosen for ourselves, and we like to think that we have based them on good logic or good intuition or accurate interpretation of experience. Yet, our brains are constructed in such a way as to be continually manufacturing beliefs without particular regard for their accuracy, and most often, we are unaware of some of the most important influences that are the basis for the beliefs that we hold. Our brains and nervous systems constitute a belief-generating machine, a system that has evolved to assure not truth, logic, and reason, but survival. This metaphorical belief engine is tirelessly processing information from the world around us -- generally without our full awareness -- and comparing it with information and beliefs that we already possess, and then using that information to bolster (or occasionally to weaken) existing beliefs, or to produce new ones. We can conceptualize this belief engine as having seven major components, corresponding to seven different aspects of information processing: learning; reasoning; anxiety reduction and search for meaning; emotion; perception; memory; feedback from the world outside.

### **Biography**

James Alcock is Professor of Psychology at York University, where he has been on faculty since 1973. He obtained a BSc (Honours Physics) from McGill University, and a PhD in Social Psychology from McMaster University, and he subsequently underwent post-doctoral training in Clinical Psychology. He has been a Registered Psychologist since 1974, and has served on the Ontario Board of Examiners in Psychology, the Board of the Canadian Registry of Health Service Providers in Psychology, and the Joint Designation Committee of the Association of State and Provincial Psychology Boards/National Register. He is a Fellow of the Canadian Psychological Association and a member of the International Brotherhood of Magicians (Order of Merlin).

He has a longstanding interest in both the critical application of science to psychology and the psychology of belief, particularly those beliefs involving anomalous experience. He is the author of two critical books dealing with psychology and the paranormal, Parapsychology: Science or magic? (1981) and Science and supernature (1990); co-editor of *Psi Wars* (2003), co-author of A textbook of social psychology (now in its sixth edition); and author of twelve book chapters and numerous articles and papers, most of which deal with the psychology of belief and critical examinations of anomalous claims, including those made in the area of alternative medicine.

He is a Fellow of the Canadian Psychological Association,; Member of Executive Council, Committee for Skeptical Inquiry (formerly CSICOP), Member of the Editorial Board, *The Skeptical Inquirer*; Member of the Advisory Board, American Council on Science and Health; Member of the Council for Scientific Medicine; Member of the Editorial Board of *The Scientific Review of Alternative Medicine*, and Member of the Council for Scientific Clinical Psychology and Psychiatry.

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