

# MIND AND SCIENCE FORUM

24 MAY 2002, LLEWELLYN HALL, THE AUSTRALIAN NATIONAL UNIVERSITY



# SPEAKERS



HIS HOLINESS  
TENZIN GYATSO,  
THE 14<sup>TH</sup> DALAI LAMA



PROFESSOR  
ALLAN SNYDER  
Director, Centre  
for the Mind  
*The Australian  
National University/  
University of Sydney*



PROFESSOR  
MAXWELL BENNETT  
Professor and  
University Chair  
*University of Sydney*



PROFESSOR  
PAUL DAVIES  
Adjunct Professor of  
Natural Philosophy in  
the Australian Centre  
for Astrobiology  
*Macquarie University*



PROFESSOR  
FRANK JACKSON  
Institute for  
Advanced Studies  
*The Australian  
National University*



PROFESSOR  
JACK PETTIGREW  
Professor of Physiology  
and Director, Vision,  
Touch and Hearing  
Research Centre  
*University of Queensland*

WHY IS IT THAT SO MUCH OF WHAT OUR MINDS DO IS NON-CONSCIOUS?

WHAT DOES THAT MEAN FOR OUR CONCEPT OF MIND?

RATIONALE:

One of the interesting, and baffling, features of contemporary cognitive science is its demonstration of the extent to which so much of what we consider 'mentality' is not conscious. It is now a commonplace that the vast majority of cognitive processing goes on below the threshold of consciousness. That is, it is not available to the perceiving or thinking 'I'.

An important emerging area of mind science is research into perception and learning that takes place below the threshold of awareness. Studies of 'blindsight' patients alerted scientists to the possibility of perception without conscious awareness. Subliminal advertising tries to take advantage of this. A growing body of evidence, including studies of infants,

now indicates that human beings are capable not only of non-conscious perception but also, potentially, of a wide range of non-conscious learning. This suggests that we inhabit a much richer world, cognitively speaking, than we realise.

One of the foundational principles of mindfulness training in all Buddhist

traditions is that human beings generally have no control over their minds or the content of their thought. For the most part, we are slaves of habit, of habitual patterns of thinking. A corollary of this principle is that our mental states have significant effects on the state of our physical body and vice versa. Tibetan Buddhism, in particular, has developed a

powerful body of meditative techniques to bring the mind under conscious control, so that it can be directed in the service of helping others. All of these techniques aim at accessing deeper levels of awareness. Some of these techniques (for example, *gTum-mo*) also involve the conscious modulation, albeit indirectly, of certain bodily parameters normally considered beyond cognitive control. The theory of mindfulness meditation holds that through the special techniques of this practice we can gain direct conscious access to types of

mental processing that normally operate below the level of conscious awareness. Given the importance for these practices in Tibetan Buddhism, this is a discussion to which the Dalai Lama could potentially make a significant contribution.

It would appear that this is an area in which Eastern and Western approaches could genuinely inform one another in a way that might lead to deeper understanding on both sides. It might even provide indications for further study. Research into human creativity is one area in which this

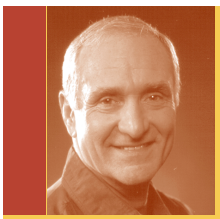
might be so. Human creativity is a profoundly mysterious phenomenon, in so far as its processes appear to take place not only below the threshold of awareness but also access seemingly widely divergent but nevertheless linked areas of memory, emotion and symbol.

Reconciliation between both approaches to the mind is now much more possible due to advances in technologies for studying mental activity in the brain (for example, transcranial magnetic stimulation, or TMS). Scientists now realise that we don't

see the world as it actually is but, rather, in terms of what we already know of the world. This has been a tenet of Buddhist thinking for nearly 1400 years (see, for example, Dharmakirti's *Pramanavarttika*). Techniques such as TMS are allowing scientists to demonstrate this empirically.

It is hoped that the forum will provide an opportunity for a genuine and fruitful exchange of ideas and insights by a panel of leading figures from the fields of science and philosophy.

## MODERATOR



**Mr. Robyn Williams** (Australian Broadcasting Corporation) is the foremost science journalist in Australia. He hosts the ABC's *Science Show*, and has also appeared in *Monty Python's Flying Circus* and *Dr. Who*. He has served as President of the Australian Museum Trust, as Deputy Chairman of the Commission

for the Future, and as President of the ANZAAS Congress. In 1993 he was the first journalist elected as a Fellow member of the Australian Academy of Science, and in 1988 he was appointed AM in the Australian Bicentenary Honours list. He has written more than 10 books, three of which are on the Higher School Certificate reading list. A description of his life and work can be found at: <http://www.abc.net.au/rn/science/ss/rwilliam.htm>

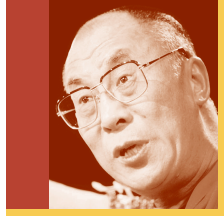
## KEYNOTE



**Professor Allan Snyder** (Director, Centre for the Mind, The Australian National University and University of Sydney) is a visual neurobiologist, mind scientist and physicist who received the world's "foremost prize in communication and information technology", the 2001 Marconi International Prize, in New York. He is a Fellow of the Royal Society of London and is the society's 2001 Clifford Paterson Prize lecturer. His

discoveries in vision are hailed in *Nature* as "breaking a 19th-century mindset", while his advances in physics are described in *Science* as a "giant step forward". His controversial hypothesis that everyone possesses the extraordinary skills of autistic savants is the subject of the BBC documentary "Fragments of Genius". He holds degrees from Harvard, MIT and University College London. Previously he was with the Yale School of Medicine. For more on his activities, see his webpage: <http://www.centreforthemind.com/director/index.htm>





**His Holiness Tenzin Gyatso, the 14th Dalai Lama** was born in eastern Tibet in 1935, and at age two was recognised as the

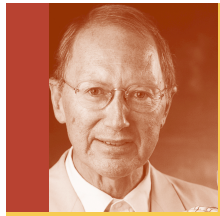
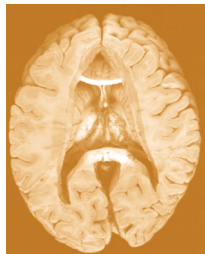
reincarnation of the 13th Dalai Lama. The Dalai Lamas are believed by Tibetan Buddhists to be physical emanations of the buddha Avalokitesvara, the patron buddha of Tibet and the embodiment of compassion. He was officially enthroned on 22 February 1940 in Lhasa, the capital of Tibet, and subsequently began his studies in Buddhist philosophy. At age 25 he was

awarded the Geshe Lharampa degree, the highest level of achievement in the Tibetan monastic educational system. Following the invasion and annexation of his country in the 1950s by China, His Holiness fled into exile in India, where he was followed by tens of thousands of other Tibetans. Since his escape, he has become one of the world's most widely known and respected religious leaders, and has received numerous honorary degrees and awards, including the Roosevelt Four Freedoms Award (1994), the World Security Annual Peace Award (1994), the First Prize for Humanity (1993) and the Albert

Schweitzer Humanitarian Award (1987). In 1989 he was awarded the Nobel Peace Prize in recognition of his efforts to develop a peaceful resolution to the crisis in his homeland. Since his exile His Holiness has visited 46 countries and met with many of the world's religious and political leaders. Despite his many honours and accolades, he insists that he is “a simple Buddhist monk — no more, no less”. In keeping with his religious commitment, His Holiness rises at 4am to meditate and pursues a vigorous schedule of meetings, audiences, religious teachings and ceremonies. He concludes each day with further prayer

before retiring. He has authored over 30 books, some of which have become international best sellers. His books include: *Ancient Wisdom, Modern World – Ethics for a New Millennium*; *Awakening the Mind, Lightening the Heart*; *Beyond Dogma*; *Kindness, Clarity, and Insight*; and *Path to Bliss: A Practical Guide to Stages of Meditation*. He is revered by Tibetan Buddhists as one of the foremost scholars and philosophers of their tradition. He has a lifelong interest in science and often engages in public or private dialogues with scientists. Questions relating to the nature of mind are of particular interest to him, and so this

forum represents a unique opportunity for His Holiness to contribute to ongoing debates in contemporary intellectual circles. For more information, see the Tibetan Government-in-Exile's webpage: <<http://www.tibet.com/DL/index.html>>



**Professor Maxwell Bennett** (Professor and University Chair, University of Sydney) is a Fellow of the Australian Academy

of Science and a past President of the Australian Neuroscience Society. The recipient of numerous prestigious awards, he was awarded the Ramaciotti Medal in 1996 and the Burnet Medal from the Australian Academy of Science in 1999. In 2001 he received the Distinguished Achievement Medallion from the Australian Neuroscience Society and was

named an Officer in the Order of Australia (AO). He also received the Excellence in Science Award from the Australian Institute of Political Science, and is currently President of the International Society for Autonomic Neuroscience.

He is the author of numerous scholarly books and articles, including *Autonomic Neuromuscular Transmission*; *The Idea of Consciousness: Synapses and the Mind*; *History of the Synapse* and *Philosophical Foundations of Neuroscience* (with P.M.S. Hacker). His webpage url is: <<http://www-old.physiol.usyd.edu.au/nrc/Bennett/bennett.html>>

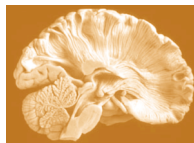


**Professor Paul Davies** (Adjunct Professor of Natural Philosophy in the Australian Centre for Astrobiology, Macquarie University,

Visiting Professor of Physics, Imperial College London) has published over 100 research papers in specialist journals, in the fields of cosmology, gravitation and quantum field theory, with particular emphasis on black holes and the origin of the universe. His work *Quantum Fields in Curved Space* is a seminal text in the field of quantum gravity. In addition to his

research, Professor Davies is well known as an author, broadcaster and public lecturer. He has written over 25 books, both popular and specialist works, that have been translated into more than 20 languages. Among his better-known works are: *How to Build a Time Machine*; *God and the New Physics*; *The Cosmic Blueprint*; *The Mind of God*; *The Last Three Minutes*; *About Time*; *Are We Alone?* and *The Fifth Miracle: the search for the origin of life*. He has also produced a number of major television series, including his 1995 *The Big Questions*. In recognition of his work as an author, he was elected as Fellow of The Royal Society of Literature in 1999.

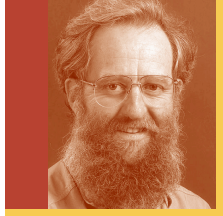
In 1991 he was awarded the Eureka Prize for the promotion of science, and in 1995 received the Templeton Prize for Progress in Religion. In 2001 he was awarded the Kelvin Medal by the UK Institute of Physics, and has a comet named in his honour (the Pauld Davies Comet). For more information, see his website: <<http://aca.mq.edu.au/pdavies.html>>



**Professor Frank Jackson** (Institute for Advanced Studies, The Australian National University) is widely regarded as Australia's foremost philosopher of mind. His research spans such diverse fields as Philosophical Logic, Cognitive Science, Epistemology and Metaphysics, Meta-Ethics. He is the author of a number of seminal articles and books on philosophy of mind and language, including: *Perception*, *Conditionals*, *Philosophy of Mind and Cognition* and *From Metaphysics to Ethics*. He has held visiting

positions at a number of overseas universities, including Oxford, Princeton, and Harvard. He is a Corresponding Fellow of the British Academy and a Fellow of the Australian Academy of the Humanities, the Academy of the Social Sciences in Australia, and Institut International de Philosophie. His webpage url is: <<http://philrsss.anu.edu.au/people-defaults/fcj/index.php3>>

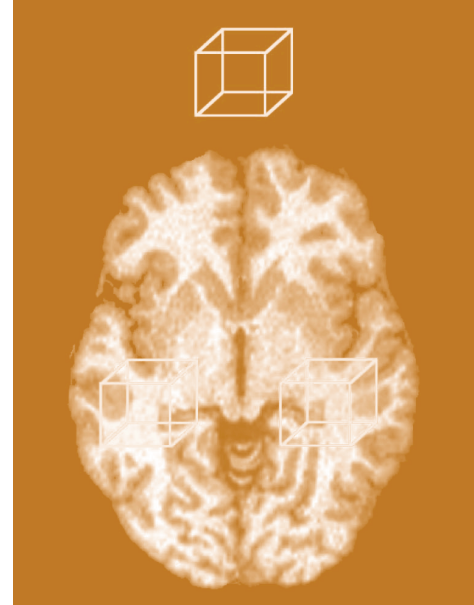




**Professor Jack Pettigrew** (Professor of Physiology and Director, Vision, Touch and Hearing Research Centre,

University of Queensland) is a medical graduate who spent 35 years studying the brain function of diverse animals before returning recently to humans. He thinks of himself as a neuroethologist, someone trained to see the world through the sensory systems of other creatures, and is the world's leading expert on what it is like to see and hear like a cat, owl or bat, or to

hunt like a platypus using only the sense organs of the bill. He is presently using this neuroethological approach to study individual human differences in consciousness, particularly those associated with the major psychoses of schizophrenia and manic depression. His diverse approach relies on the common evolutionary origin of all nervous systems. He is a Fellow of the Royal Society of London and the author of over 160 scientific articles. Further details of his work and interests can be found on his website: <<http://www.uq.edu.au/nuq/jack/jack.html>>





## SPONSORS

- Centre for the Mind
- National Institute for Bioscience
- National Institute for the Humanities
- National Institute for Asia and the Pacific

## NATIONAL INSTITUTES

In October 2001 The Australian National University announced the establishment of 12 National Institutes to identify and harness the University's strengths and to increase awareness of its unique research and education environment.

The ANU's vast array of talented researchers and educators — in areas such as the humanities, Asian Studies, the environment and bioscience — is spread throughout various schools and faculties. The new National Institutes will make it easier for

students, parents, businesses, government agencies and the public to find out about specific areas of research and teaching.

Each National Institute has a lively program of activities that reflects the strength, diversity and flexibility of its area of

interest. The Institutes hold forums, seminars, workshops and public lectures; organise demonstrations and displays; offer scholarships and visiting fellowships and conduct outreach activities at the high school, college and tertiary levels.



THE AUSTRALIAN  
NATIONAL UNIVERSITY

EVENT ORGANISER ■ Dr John Powers, Faculty of Asian Studies, The Australian National University

Special thanks to all of those who contributed time and effort to the planning of this forum, including: Samantha Dahms; Anna Damiano; Sandra Lenarcic; Pamela Lyon; Pamela McKay; Eve Martin; Michelle Morrison; Allan Snyder; Andrew Templeton; Chope Tsering; Genevieve Turville; Rachel Vance; Wendy White; Stefanie Zutter.

Photography: Dr. John Powers (cover art); *Virtual Hospital: The Human Brain*, University of Iowa College of Medicine (brain scans); and the Vision, Touch and Hearing Research Centre, University of Queensland (brain scan with necker cubes).