

Mind & Life Institute presents



Mind and Life XXIV
Dialogues Between Buddhism and the Sciences

Latest Findings in Contemplative Neuroscience

with
His Holiness
the Dalai Lama



Twenty-Five Years of Investigating the Mind

Mind and Life was co-founded in 1987 by the His Holiness the Dalai Lama, neuroscientist Francisco Varela and entrepreneur Adam Engle for the purpose of creating rigorous dialogue and research collaboration between modern sciences and the world's living contemplative traditions. We believe this integrated, multi-disciplinary research collaboration is the most effective approach to investigating the human mind, developing a more complete understanding of the nature of reality, alleviating suffering and promoting well-being on the planet.

Over the past 25 years, Mind and Life has become a world leader in cultivating this integrated investigation and in developing research fields that explore the effects of contemplative-based practices on the brain, human biology and behavior.

Building on decades of rigorous scientific research, profound and bold dialogues on the nature of mind and humanity, and poignant and insightful scholarly and contemplative participation in our work, we continue to expand and deepen our investigation of the mind. In addition to ongoing support for scientific investigation, we are also adding the perspective of the humanities as well as the first-person perspective from contemplative practice itself, elements essential to cultivating a comprehensive understanding of contemplative practices, their benefits, and uncovering how those findings can help individuals and societies.

We envision a world that understands the importance of exploring the mind and developing inner resources in ways that alleviate suffering rather than cause suffering; a world in which everyone has access to age-appropriate and culturally appropriate means for achieving insight.

We are grateful and appreciative for all of your support and interest, and warmly invite you to join us on this most important journey of discovering the mind.

The Mission of Mind and Life is to:

- Develop the strategy and conceptual framework for a rigorous, integrated, multi-disciplinary investigation of the mind that combines first-person and second-person direct human experience with a modern scientific third-person inquiry
- Develop a global community of scientists and scholars to conduct this investigation, and global communities of financial partners to provide the material resources to support this research
- Delineate specific research projects that are strategically designed to advance these emerging fields of research
- Communicate research findings to provide a scientific basis for developing and refining practices and programs designed to improve lives and societies; practices that cultivate the human qualities of attention, emotional balance, kindness, compassion, confidence and happiness

To learn more about Mind and Life, please visit our website at www.mindandlife.org

Today, Mind and Life is happy to be joining Mayo Clinic in presenting **Mind and Life XXIV: Latest Findings in Contemplative Neuroscience.**

PARTICIPANTS

Participants

Tenzin Gyatso, His Holiness the 14th Dalai Lama

Richard J. Davidson, Ph.D., Founder and Chair, Center for Investigating Healthy Minds; Director, Laboratory for Affective Neuroscience and the Waisman Laboratory for Brain Imaging and Behavior, University of Wisconsin–Madison

Thorsten Barnhofer, Ph.D., Clinical Senior Lecturer in Depression Studies at the Institute of Psychiatry, King’s College, London

Willoughby Britton, Ph.D., Assistant Professor of Psychiatry and Human Behavior, Brown University Medical School; Director of Clinical Research, Brown University Contemplatives Studies Initiative

Norm Farb, Ph.D., Postdoctoral Researcher, Rotman Research Institute

Baljinder Sahdra, Ph.D., Lecturer in Psychology, University of Western Sydney, Australia

David Vago, Ph.D., Instructor of Psychology, Functional Neuroimaging Laboratory, Brigham and Women’s Hospital, Harvard Medical School

Helen Weng, M.S., Graduate Student in Clinical Psychology, University of Wisconsin–Madison

Interpreter

Thupten Jinpa, Ph.D., President, Institute for Tibetan Classics, Montreal



ABSTRACTS



Thorsten Barnhofer, Ph.D.

Institute of Psychiatry, King's College, London

Depression is a highly prevalent mental health problem. In a considerable number of those affected, the disorder takes a lifelong and chronic course.

What are the central psychological mechanisms, and their genetic and neurophysiological underpinnings, that make depression persist, and how can training the mind through meditation help to bring about change?

Willoughby Britton, Ph.D.

Brown University Medical School; Brown University Contemplative Studies Initiative

Interviews with more than 60 meditation teachers, Buddhist scholars and practitioners explore the nature and phenomenology of meditation-related difficulties, the wide range of interpretations from progress to pathology, and possible risk factors which may exacerbate expected (but perhaps difficult or challenging) meditation effects into the need for additional support or psychiatric intervention.

Norm Farb, Ph.D.

Rotman Research Institute

I would like to discuss the idea that there are 2 distinct brain systems supporting conscious experience, and how they relate to well-being. On one hand there is attention towards external objects, which leads us to believe in a world composed of static, permanent 'things'. This external system is closely tied to a conceptual and seemingly permanent sense of self. On the other hand there is attention towards internal sensations that change from moment to moment. These experiences lead us to believe that nothing is permanent, but is instead constantly changing and fluctuating. Most people that I have studied show much greater activation in this first external type of attention, especially people with emotional problems. Balancing these two ways of seeing the world seems to be important to individual's sense of well-being. I would like to learn more about the Buddhist perspective on whether this internal system is 'special' in its ability to help develop wisdom, or whether other types of meditation may be equally effective.

Baljinder Sahdra, Ph.D.

University of Western Sydney, Australia

I have developed and validated a measure of an important Buddhist construct, nonattachment, defined as release from reification of mental representations. I have also found that nonattachment predicts less defensiveness while recalling historical transgressions of one's group members against other groups. Can nonattachment allow people to draw group boundaries without reifying them? Can it increase social inclusion by increasing empathy with members of other groups? Can it promote intergroup harmony? I plan to answer such questions in my future research.



ABSTRACTS

David Vago, Ph.D.

Functional Neuroimaging Laboratory, Brigham and Women's Hospital, Harvard Medical School

In the last two decades, the concept of mindfulness as a state, trait, process, and intervention has been successfully adapted in contexts of clinical health and psychology, especially with relation to treating stress, targeting emotion dysregulation, attention, and improving pro-social dispositions. Yet, there remains a lack of clarity in the operationalization of this construct and the underlying mechanisms of action. This talk will focus on process models for specific meditative practices that cultivate mindfulness, and that account for transformations related to achieving insight into the nature of one's mind. Specific neurocognitive processes are identified and precisely described in terms that integrate current research findings in the field of contemplative science. Our hope for this dialogue is to clarify some of the processes involved in developing mindfulness and disambiguating the construct from the associated processes themselves. An additional hope is that such research can further our understanding how mindfulness functions in a therapeutic context and provide a biologically-driven foundation for future investigation of specific meditation-based practices in the clinical and neurosciences.

Helen Weng, M.S.

University of Wisconsin-Madison

I will discuss the effects of compassion meditation training on the brain and altruistic behavior. Our research shows that two weeks of compassion meditation increases the stability of compassionate brain states, and that this stability is related to altruistic donations to charity. These results suggest that compassionate brain states can be trained in a novice population and may have real-world effects on helping others.

PARTICIPANT BIOGRAPHIES



Tenzin Gyatso, the XIV Dalai Lama, is the leader of Tibetan Buddhism and a spiritual leader revered worldwide. He was born on July 6, 1935, in a small village called Taktser in north-eastern Tibet. Born to a peasant family, he was recognized at the age of two, in accordance with Tibetan tradition, as the reincarnation of his predecessor, the XIII Dalai Lama. The Dalai Lamas are manifestations of the Buddha of Compassion, who choose to reincarnate for the purpose of serving human beings. Winner of the Nobel Prize for Peace in 1989, he is universally respected as

a spokesman for the compassionate and peaceful resolution of human conflict.

He has traveled extensively, speaking on subjects including universal responsibility, love, compassion and kindness. Less well known is his intense personal interest in the sciences; he has said that if he were not a monk, he would have liked to be an engineer. As a youth in Lhasa it was he who was called on to fix broken machinery in the Potala Palace, be it a clock or a car. He has a vigorous interest in learning the newest developments in science, and brings to bear both a voice for the humanistic implications of the findings, and a high degree of intuitive methodological sophistication.



Thorsten Barnhofer, Ph.D.

Thorsten Barnhofer is a Clinical Senior Lecturer in Depression Studies at the Institute of Psychiatry, King's College, London, and is currently supported through a Heisenberg-Fellowship from the German Research Foundation to conduct research on the treatment of depression using mindfulness meditation at the Freie Universität Berlin. The main focus of his work is on the investigation of cognitive and neurophysiological factors underlying the persistence of affective disorders and their modification using

mindfulness-based cognitive therapy interventions. Over the past eight years, he has worked as a clinical research psychologist in a team led by Prof. Mark Williams at the University of Oxford, where he has been involved in research on the effects of Mindfulness-Based Cognitive Therapy (MBCT) in suicidal and chronic depression, as a clinician, mindfulness teacher and researcher. He teaches MBCT retreats for mental health professionals together with Mark Williams and Melanie Fennell and is a licensed CBT-therapist and yoga teacher.



Willoughby Britton, Ph.D.

Willoughby Britton received a B.A. in Neuroscience, a Ph.D. in Clinical Psychology and is currently an Assistant Professor of Psychiatry and Human Behavior at Brown University Medical School and Director of Clinical Research of Brown's Contemplatives Studies Initiative. She spent several years in Asia studying meditative techniques and received her mindfulness instructor certification training at the Center for Mindfulness at the

UMASS Medical School. With the aim of investigating the link between contemplative practices, brain function, sleep, attention and affective disturbances, she has conducted RCTs on the neurophysiological effects of Mindfulness-Based Cognitive Therapy in depression; and education-based mindfulness training in middle school and university students in comparison to music and dance. Dr. Britton is interested in

PARTICIPANT BIOGRAPHIES

the question: Which contemplative practices are best (or worst) suited for which populations? She is conducting a mindfulness "dismantling" study which compares the effects of shamatha and vipassana practices on attention, cortical arousal and emotion regulation. In collaboration with Jack Kornfield and several other teachers, she is conducting research on the adverse effects and difficult stages of the contemplative path.



Richard J. Davidson, Ph.D.

Richard J. Davidson is Founder and Chair of the Center for Investigating Healthy Minds at the Waisman Center, University of Wisconsin – Madison, and the Director of the Laboratory for Affective Neuroscience and the Waisman Laboratory for Brain Imaging and Behavior at the University of Wisconsin – Madison. He was educated at New York University and Harvard University, where he received his B.A. and Ph.D., respectively, in psychology.

Over the course of his research career he has focused on the relationship between brain and emotion. He is currently the William James Professor and Vilas Research Professor of Psychology and Psychiatry at the University of Wisconsin. He is co-author or editor of thirteen books, including *Visions of Compassion: Western Scientists and Tibetan Buddhists Examine Human Nature*, and *The Handbook of Affective Science*.

Professor Davidson has also written more than 250 chapters and journal articles. He is the recipient of numerous awards for his work, including the Research Scientist Award from the National Institute of Mental Health, the Distinguished Scientific Contribution Award from the American Psychological Association and election to the American Academy of Arts and Sciences. He was a member of the Board of Scientific Counselors of the National Institute of Mental Health. He was named one of the 100 most influential people in the world by Time Magazine in May, 2006, and in November, 2006, he received the first Mani Bhaumik Award from UCLA for advances in the understanding of the brain and the conscious mind in healing. He is currently the Chair Elect of the Psychology Section of the American Association for the Advancement of Science. In 1992, as a follow-up from previous Mind and Life meetings, he was a member of a scientific team doing neuroscientific investigations of exceptional mental abilities in advanced Tibetan monks.

<http://www.investigatinghealthyminds.org/>

<http://psyphz.psych.wisc.edu>

<http://brainimaging.waisman.wisc.edu>

PARTICIPANT BIOGRAPHIES



Norm Farb, Ph.D.

Norm Farb grew up in Toronto, Canada, and studied psychology and philosophy at the nearby University of Waterloo. He continued his education at the University of Toronto, studying the neuroscience attention and emotion through the department of psychology, where he also began the study of mindfulness meditation. Over the past 5 years, he has been developing a model of how mindfulness meditation changes the brain in new meditators, exploring how different ways of viewing the world

can be represented by distinct patterns of brain activity. Farb is currently a postdoctoral researcher at the Rotman Research Institute, studying how dementia affects awareness of the present moment.

In his non-neuroscience work, Dr. Farb has been developing a personal meditation practice over the past 5 years, and has recently begun teaching mindfulness-based stress reduction (MBSR) courses to older adults with mood problems at the hospital where he works.

He hopes one day to be able to create a research lab on the psychology of well-being, combining modern technology with mindfulness training techniques to explore how people can learn to find happiness in their daily lives.



Thupten Jinpa, Ph.D.

Thupten Jinpa was educated in the classical Tibetan monastic academia and received the highest academic degree of Geshe Lharam. Jinpa also holds a B.A. in philosophy and a Ph.D. in religious studies, both from the University of Cambridge, U.K, where he also worked as a research fellow for three years. Since 1985, he has been the principal translator to His Holiness the Dalai Lama, accompanying him to the United States, Canada, and Europe. He has translated and edited many books by H.H.

the Dalai Lama, including the recent New York Times' bestseller *Ethics for the New Millennium*.

His published works include also scholarly articles on various aspects of Tibetan culture, Buddhism and philosophy, including the entries on Tibetan philosophy for *Encyclopedia of Asian Philosophy* recently released by Routledge, UK. His two latest works are *Songs of Spiritual Experience: Tibetan Poems of Awakening and Insight* (co-authored) and *Self, Reality and Reason in Tibetan Thought*. He is on the advisory board of various educational and cultural organizations in North America, Europe and India, and is also the book reviews editor for *Contemporary Buddhism*, a biannual, interdisciplinary journal exploring the interface between Buddhism and modern society. He is currently the president and the editor-in-chief of the *Institute of Tibetan Classics*, a non-profit educational organization dedicated to translating key Tibetan classics into contemporary languages.

PARTICIPANT BIOGRAPHIES



Baljinder Sahdra, Ph.D.

Dr. Baljinder Sahdra is a Lecturer (equivalent to North American Assistant Professor) in Psychology at the University of Western Sydney, Australia. She received her Ph.D. in psychology from the University of Waterloo, Ontario, Canada and conducted postdoctoral research at the University of California, Davis, USA, before moving to Australia. Her research falls in the area of social psychology.



David Vago, Ph.D.

David Vago is an instructor of psychology in the Functional Neuroimaging Laboratory, Brigham and Women's Hospital (BWH), Harvard Medical School. He has completed a post-doctoral fellowship in the department of Psychiatry at BWH, the Utah Center for Mind-Body Interactions within the University of Utah Medical School, and the Stuart T. Hauser Research Training Program in Biological & Social Psychiatry. David has previously held the position of Senior Research Coordinator for the Mind &

Life Institute. He received his Bachelors Degree in Brain and Cognitive Sciences in 1997 from the University of Rochester. In 2005, David received his Ph.D. in Cognitive and Neural Sciences with a specialization in learning and memory from the department of Psychology, University of Utah.

David's research interests broadly focus on utilizing translational models to identify and characterize neurobiological substrates mediating psychopathology, to better predict outcomes and potential biologically-based diagnostic and therapeutic strategies for those suffering with mental illness. David has been specifically investigating brain networks supporting self-awareness, self-regulation, and self-transcendence in order to clarify adaptive mind-brain-body interactions and their therapeutic relevance in psychiatric disorders. Functional and structural neuroimaging studies along with self-report and performance-based measures are used to explore contemplative practices that cultivate mindfulness as a state, trait, and memory-related process.



Helen Weng, M.S.

Helen Weng is a graduate student in clinical psychology at the University of Wisconsin-Madison. She received her baccalaureate degree in Neuroscience & Behavior from Columbia University in 2004. Advised by Richard Davidson, Ph.D., she received a 2006 Francisco J. Varela Award to investigate the effects of short-term compassion meditation training on the brain and altruistic behavior. She studies the compassionate brain using both univariate and multivariate

statistical approaches, and has developed novel behavioral economic paradigms to measure altruistic behavior. She hopes applications of her research can benefit both patients suffering from psychopathology and the health care providers who treat them.



About The Mayo Clinic

Mayo Clinic is a nonprofit worldwide leader in medical care, research and education for people from all walks of life. Doctors from every medical specialty work together to care for patients, joined by common systems and a philosophy of "the needs of the patient come first." Mayo Clinic is governed by a 33-member Board of Trustees. More than 3,700 physicians, scientists and researchers and 58,000 allied health staff work at Mayo Clinic.

Now available in hardback

The Mind's Own Physician: A Scientific Dialogue With the Dalai Lama on the Healing Power of Meditation, based on the 2005 Mind and Life meeting in Washington, D.C.

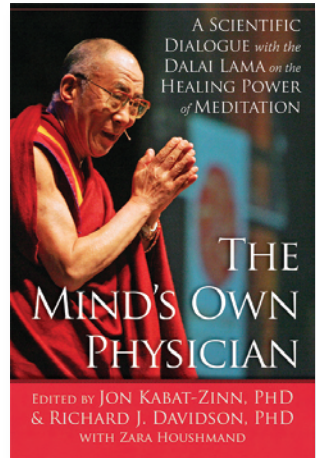


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THE MIND & LIFE INSTITUTE

A TWENTY-FIVE YEAR HISTORY OF ACCOMPLISHMENT

Mind and Life Dialogues

The titles of these dialogues between the His Holiness the Dalai Lama and leading scientists show the range of topics that the Mind & Life Institute has explored. For more details on these conferences, please go to www.mindandlife.org.

- 2011: Ecology, Ethics and Interdependence
- 2010: Contemplative Science: The Scientific Study of the Effect of Contemplative Practice on Human Biology and Behaviour
- 2010: Latest Findings in Contemplative Neuroscience
- 2010: Altruism and Compassion in Economic Systems: A Dialogue at the Interface of Economics, Neuroscience and Contemplative Sciences
- 2009: Educating World Citizens for the 21st Century: Educators, Scientists and Contemplatives Dialogue on Cultivating a Healthy Mind, Brain and Heart
- 2009: Attention, Memory, and the Mind
- 2009: Latest Findings in Contemplative Neuroscience
- 2008: Investigating the Mind-Body Connection: The Science and Clinical Applications of Meditation
- 2007: Mindfulness, Compassion and the Treatment of Depression
- 2007: The Universe in a Single Atom
- 2005: Investigating the Mind
- 2004: Neuroplasticity: The Neuronal Substrates of Learning and Transformation
- 2003: Investigating the Mind: Exchanges between Buddhism and Biobehavioral Science on How the Mind Works
- 2002: The Nature of Matter, The Nature of Life
- 2001: Transformations of Mind, Brain and Emotion
- 2000: Destructive Emotions
- 1998: Epistemological Questions in Quantum Physics and Eastern Contemplative Sciences
- 1997: The New Physics and Cosmology
- 1995: Altruism, Ethics, and Compassion
- 1992: Sleeping, Dreaming, and Dying
- 1990: Emotions and Health
- 1989: Dialogues between Buddhism and the Neurosciences
- 1987: Dialogues between Buddhism and the Cognitive Sciences

Mind and Life Books and DVD Sets

The following books and DVD sets describe discussions between His Holiness the Dalai Lama and Western scientists. Books in print can be obtained from major booksellers; DVD sets are available directly from the Mind & Life Institute. For more information about each title, please go to www.mindandlife.org.

- *The Mind's Own Physician: A Scientific Dialogue with the Dalai Lama on the Healing Power of Meditation*, based on Mind and Life XIII in 2005
- *Altruism and Compassion in Economic Systems*, DVD from Mind and Life XX, in 2010
- *Educating World Citizens for the 21st Century*, DVD from Mind and Life XIX, in 2009
- *The Science of a Compassionate Life*, DVD from His Holiness the Dalai Lama's Denver Public Talk, in 2006
- *The Science and Clinical Applications of Meditation*, DVD from Mind and Life XIII, in 2005
- *Train your Mind; Change your Brain*, from Mind and Life XII, in 2004
- *Investigating the Mind*, DVD from Mind and Life XI, in 2003
- *The Dalai Lama at MIT*, from Mind and Life XI, in 2003
- *Mind and Life: Discussions with the Dalai Lama on the Nature of Reality*, from Mind and Life X, in 2002
- *Destructive Emotions: A Scientific Dialogue with the Dalai Lama*, from Mind and Life VIII, in 2000
- *The New Physics and Cosmology: Dialogues with the Dalai Lama*, from Mind and Life VI, in 1997
- *Visions of Compassion: Western Scientists and Tibetan Buddhists*, from Mind and Life V, in 1995
- *Sleeping, Dreaming, and Dying: An Exploration of Consciousness with the Dalai Lama*, from Mind and Life IV, in 1992
- *Healing Emotions: Conversations with the Dalai Lama on Mindfulness, Emotions, and Health*, from Mind and Life III, in 1990
- *Consciousness at the Crossroads: Conversations with the Dalai Lama on Brain Science and Buddhism*, from Mind and Life II, in 1989
- *Gentle Bridges: Conversations with the Dalai Lama on the Sciences of Mind*, from Mind and Life I, in 1987

Mind and Life Research Initiatives

- Mind and Life Summer Research Institute - a week-long residential science retreat for scientists, clinicians, contemplative scholar/practitioners and philosophers from around the world, working together to develop new fields of science and studies that examine the effects of contemplative practice and mental training on brain, behavior, philosophy, religious studies and the humanities. This is an annual program of the Mind & Life Institute which began in June 2004, and has continued yearly since then.
- Mind and Life Francisco J. Varela Research Grant Program - providing small research grants to investigate hypotheses developed at the Mind and Life Summer Research Institute. Ten to fifteen Varela awards are awarded annually.
- Mind and Life Education Humanities and Social Sciences Initiative - ensuring that the emerging fields of Contemplative Science and Contemplative Studies are multidisciplinary and integrated among first, second, and third-person modes of investigation.
- Mind and Life Developmental Science Research Network (formerly MLERN) - exploring human development issues and creating education-related programs that can help children cultivate the mental qualities of attention, emotional balance, kindness, confidence, and happiness early in life.
- International Symposia for Contemplative Studies - a scientific conference co-sponsored in a collaborative effort among centers and laboratories around the world to explore the mechanisms and benefits of contemplative practices.



Mind & Life Institute

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