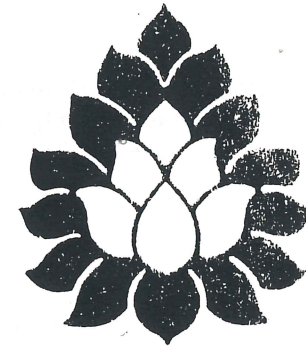


MIND AND LIFE



**DIALOGUES BETWEEN
BUDDHISM
AND THE
COGNITIVE SCIENCES**

**WITH
HIS HOLINESS
THE XIVTH DALAI LAMA**

**DHARAMSALA, INDIA
OCTOBER 23-29, 1987**

MIND AND LIFE

Dialogues Between Buddhism and the Cognitive Sciences

THIS gathering is inspired by a shared interest in establishing a dialogue between Buddhist thought and cognitive science which can illuminate these rich and distinct modes of exploring mind and life.

THE discussions will take place in the meeting room of His Holiness the Dalai Lama in Dharamsala, India. They are styled not as a conference nor a debate, but in an atmosphere of a living room conversation. Some sessions are structured as presentations on specific topics, with questions and answers aimed at clarification. Other sessions are designed as free flowing discussions with designated themes.

THE event will be videotaped in full; copies of the tapes will be made available to the Tibetan Government for use in their schools and monasteries, and to the western public for use in furthering understanding. Edited versions will be prepared for more abbreviated viewing, for transcription into books or articles and perhaps for broadcast.

IN the same way that this is not the first such dialogue, it will not be the last. Instead, it is expected that these conversations will provide a model for other such discussions designed in various formats and in various localities around the globe to foster an understanding viewed from these different perspectives.

PARTICIPANTS



Tenzin Gyatso, His Holiness, the XIVth Dalai Lama of Tibet.

Newcomb Greenleaf, Ph.D., Professor of Computer Science,
Columbia University.

Jeremy Hayward, Ph.D., Director, Naropa Institute,
Boulder, Colorado.

Robert B. Livingston, M.D., Professor of Neurosciences,
University of California, San Diego.

Eleanor Rosch, Ph.D., Professor of Cognitive Psychology,
University of California, Berkeley.

Francisco J. Varela, Ph.D., Professor of Cognitive Science
and Epistemology, Ecole Polytechnique and
Institute of Neuroscience, Paris.

INTERPRETERS



Thubten Jinpa, Ganden Shartse College, Mundgod, India.

B. Alan Wallace, B.A., Spiritual Director,
Dharma Friendship Foundation, Seattle, Washington.

PROGRAM



*Morning Session 9:30 a.m. - 12:00 p.m.
Afternoon Session 1:30 p.m. - 4:00 p.m.*

Friday, October 23

Morning Session: Presentation on Scientific Method and Validation.
Dr. Jeremy Hayward

An outline of the social and logical basis in which a scientific idea is said to be proven, and the importance of change and diversity in scientific ideas. Relevance for current debates in cognitive science and its various tendencies.

Afternoon Session: Presentation by His Holiness the Dalai Lama.

Saturday, October 24

Morning Session: Presentation on Perception and the Brain.
Dr. Francisco J. Varela

Perception as an introduction to brain operation, illustrated through some basic visual processes in man and animals.

Afternoon Session: Discussion theme: Perception

Brain Processes of perception in contrast to the early (Abhidharma) and later (Yogacara) Buddhist tradition; relation with skandhas and ayatanas.

Sunday, October 25

Morning Session: Presentation on Cognitive Psychology.
Dr. Eleanor Rosch

Recent work in cognitive science has led to interesting investigations about the inner workings of the human mind from an experimental point of view such as categorization, memory, and reasoning.

Afternoon Session: Discussion theme: Causality and Karma

To what extent can these two main ideas, central to science and Buddhism respectively, be seen as addressing similar/dissimilar problems?

Monday, October 26

Morning Session: Presentation on Artificial Intelligence.
Dr. Newcomb Greenleaf

Ideas and examples of the recent tradition of building devices ("computers"), which have some cognitive capacities such as reason, language, and vision.

Afternoon Session: Discussion theme: Memory.

The questions of memory and continuity of self as central topics to both Buddhist concerns and modern cognitive science.

Tuesday, October 27

Morning Session: Presentation on Development of the Brain.
Dr. Robert B. Livingston

Stages the brain goes through from conception until birth, and the gradual emergence of mental capacities seen from a biological perspective.

Afternoon Session: Discussion theme: Brain/Consciousness States.

The difficult issue of brain/mind relations and their various states can perhaps be addressed at this stage of the conversation with some profit.

Wednesday, October 28

Morning Session: Presentation on Life and its Material Basis.
Dr. Francisco J. Varela

Life, for science, is understood as a material process of chemical elements out from which arises the quality one may call "life".

Afternoon Session: Discussion theme: Evolution.

The theme of evolution as biological transformation, and human possibilities. Links with karma and causality.

Thursday, October 29

Morning Session: Presentation on Trends in Cognitive Science.
Scientific Panel

A concluding overview of the modern cognitive science, some of the most common issues being addressed, and future perspectives.

Afternoon Session: Concluding remarks by His Holiness the Dalai Lama.

ABOUT THE PARTICIPANTS

His Holiness the Dalai Lama

His Holiness the XIVth Dalai Lama, Tenzin Gyatso, is the spiritual and temporal leader of the Tibetan people. He was born on July 6, 1935 in a small village called Taktser in northeastern Tibet. Born to a peasant family, His Holiness was recognized at the age of two, in accordance with Tibetan tradition, as the reincarnation of his predecessor the 13th Dalai Lama. The Dalai Lamas are manifestations of the Buddha of Compassion, who chose to reincarnate for the purpose of serving human beings. His Holiness has traveled extensively, speaking on subjects including universal responsibility, love, compassion and kindness.

Newcomb Greenleaf

Newcomb Greenleaf is currently Professor of Computer Science at Columbia University in New York City, where his principal responsibility is for undergraduate education. Recently he was a member of a delegation of computer science educators which visited China. He became involved with computers in industry where he served as software manager for a computer graphics company. His training was in mathematics (Ph.D. Princeton, 1961) and his current writing concerns the relationships between computing and mathematics and the influence of computers on our epistemology. He became a student of Trungpa, Rinpoche in 1974 and has worked as an administrator and teacher at Vajradhatu and Naropa Institute. At Naropa he helped to organize and direct several special summer institutes in cognitive science. He is married and has three children.

Jeremy Hayward

Dr. Hayward received his doctoral degree in Nuclear Physics from Cambridge University and has been a Research Associate in Biological Studies at Tufts University Medical School, Massachusetts Institute of Technology, and Cambridge University. Dr. Hayward is Director and Vice-President of the Nalanda Foundation, a cultural and educational organization based in Boulder, Colorado. The Foundation operates The Naropa Institute, an upper-divisional degree-granting College. Dr. Hayward also serves as the Director of Education for the Vajradhatu International Association of Buddhist Meditation Centers and has been Co-Director and staff member of the Karne-Choling Contemplative Center in Barnet, Vermont. He is the editor of the New Science Library for Shambhala Publications and is the author of *Perceiving Ordinary Magic: Science and Intuitive Wisdom* and *Shifting Worlds, Changing Minds; Where the Sciences and Buddhism Meet*.

Robert B. Livingston

Robert Livingston received his undergraduate and medical training, followed by a residency in Internal Medicine, at Stanford University. After serving as a physician during World War II, during which time he was the head of a medical laboratory in China, he taught Physiology at Yale University School of Medicine and Psychiatry at Harvard Medical School. He has served as Executive Assistant to the President of the National Academy of Sciences, and the Chairman of the National Research Council. In 1952 he was appointed Professor of Physiology and Anatomy at the new School of Medicine at the University of California Los Angeles (UCLA). In 1956 he began service as Scientific Director for the Intramural Research Programs of both the National Institute for Mental Health and the National Institute of Neurological Diseases and Blindness. During that period, he was appointed the first Scholar at the National Library of Medicine, and Lecturer in the Mid-Career Training Course at the U.S. Department of State. In 1965 he was appointed professor in the new School of Medicine at UCSD where he founded the Department of Neurosciences and where he continues to hold a professorship.

Livingston has held research and teaching fellowships at the Université de Genève, Collège de France, Oxford University, Göteborg University, University of Hawaii, and University of Zürich. He has participated in oceanographic expeditions in the South Pacific, and in diplomatic missions in the Middle East and Latin America. He is active in Physicians for Social Responsibility, The International Physicians for the Prevention of Nuclear War, and Beyond War. He participated in the founding of the Council for a Livable World, the Institute for Policy Studies, and the Elmwood Institute.

Eleanor Rosch

Eleanor Rosch received her Ph.D. in 1969 from Harvard University in the interdisciplinary Department of Social Relations. After a year's field work in Indonesian New Guinea, she joined the faculty of the Department of Psychology at the University of California, Berkeley. She is best known for her work in concepts and categories and has originated the field within cognitive psychology called categorization research. She is author of numerous scientific articles and editor of the book *Cognition and Categorization*. She is co-founder of the Cognitive Science Program at U.C. Berkeley. She has been a student of Chogyam Trungpa, Rinpoche (Tibetan Buddhism) for over a decade, has served as a faculty member of Naropa Institute, and is currently also becoming conversant with the study of Buddhism in the scholarly tradition. Presently, she is professor of psychology at U.C. Berkeley where she teaches courses in cognitive psychology and Buddhist psychology.

Francisco J. Varela

Born in Chile in 1946, Dr. Varela received his doctoral degree in biological sciences from Harvard University in 1970. His interests have centered on neurobiological and cybernetic mechanisms of cognitive phenomena, especially perception, and the related epistemological issues. He has contributed more than 70 articles to scientific journals on these matters, as well as four books. His most recent book, *The Tree of Knowledge: The Biological Roots of Human Understanding* (with H. Maturana) has been published in six languages.

Dr. Varela has taught and conducted research extensively in South America, the United States, and Europe. He has been a Guggenheim and von Humboldt Fellow and the recipient of the Interamerican Science Prize in Biological Sciences for 1986. Currently he holds a chair of Cognitive Science and Epistemology at the Ecole Polytechnique in Paris, and directs a research laboratory at the Institute of Neuroscience (CNRS -University of Paris VI).

Dr. Varela is also actively interested in buddhist meditation practice and thought. For over a decade he has been a student of Chogyam Trungpa, Rinpoche, and a faculty member of Naropa Institute in Boulder, Colorado. He is currently writing a book on the dialogue between meditation practice and the modern cognitive and brain sciences.

ABOUT THE INTERPRETERS

Thubten Jinpa

Born in Zonghar, Tibet in 1958, Thubten Jinpa received his initial monastic training at Zonghar Chode Monastery, India. In 1978 he joined Shartse College of Ganden University and has been engaged in intensive study of Buddhist philosophy, Epistemology and logic. He has taught logic and philosophy and is one of the principal interpreters for His Holiness the Dalai Lama.

B. Alan Wallace

Born in California in 1950, Alan Wallace began his studies of Tibetan Buddhism and the Tibetan language at the University of Göttingen, West Germany in 1970. He continued his studies for three years at the Library of Tibetan Works and Archives and the Buddhist School of Dialects in Dharamsala, India. For a period of four years he studied, taught and interpreted for numerous Tibetan lamas at the Tibet Institute and the Centre for Higher Tibetan Studies, both in Switzerland. After a thirteen year absence from western academia, he earned his Bachelors Degree from Amherst College, *summa cum laude*, where, as an Independent Scholar, he researched the philosophical foundations of modern physics in light of Buddhist philosophy. He has translated and published several books on Tibetan Buddhism, language and medicine and is currently the spiritual director of Dharma Friendship Foundation in Seattle, Washington.

CO-ORDINATION COMMITTEE

Mr. R. Adam Engle, Chairman
Universal Education Association and Vajrapani Institute
Dr. Francisco J. Varela, Scientific Co-Ordinator
Ecole Polytechnique and Vajradhatu
Mr. Michael Sautman

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ACKNOWLEDGEMENTS

This event has been made possible through grants from the following:

Mr. Branco Weiss, Zürich
Mr. R. Adam Engle, Boulder Creek, California
Mr. Michael Sautman, Berkeley, California
The Meridian Trust, London
Mr. & Mrs. R. Thomas Northcote, Denver, Colorado



Appreciation and thanks are gratefully extended
to the following organizations:

The Private Office of His Holiness the Dalai Lama
The Kashmir Cottage, Dharamsala
Middle Path Travel, New Delhi
Just Us Productions, Santa Cruz, California