

## NEUROSCIENCE, ART AND CONSCIOUSNESS

ROSS MELLICK

*Name:* Ross Mellick (b. Goondiwindi, Australia, 1934), Institute of Neurology Science, U.N.S.W.

*Address:* 229 Macquarie Street, Sydney 2000, N.S.W. Australia

*E-mail:* rossmellick@bigpond.com

*Fields of interest:* Neurology, Art

*Publications:* Wosl Bergner – a retrospective, *Art and Australia*, Vol. 38, No. 4, (2001), pp. 530-533

Journey to the “Fair Jerusalem” of the Human Heart, *Mysticism and the Muse*, RLA Lectures 2000,

Ed. Colette Rayment, RLA Press (Department of Religion, University of Sydney), pp. 1-19.

**Abstract:** This paper argues that consciousness is not a “last frontier” to be explored but rather a process-based, whole person phenomenon, individually fashioned by interaction with the social environment, the natural world and cultural input. The cultural input addressed here will be predominantly that of painting and sculpture, however, poetry, literature, visual arts and music are intimately fused in the deep labyrinths of human consciousness.

*“...Life is just bytes and bytes and bytes of digital information...”*, Richard Dawkins<sup>1</sup>.

*“A tear is an intellectual thing.”*, William Blake.

Neuroscience teaches us much about the brain and its function with respect to experience of the world but it does not deepen our understanding of consciousness. Consciousness in this context “...is the totality of consciousness and potentially conscious states of mind, not in the limited sense of conscious awareness only. It is meant to include awareness, creative, and volitional aspects of mind, among others...”, as defined by Harman<sup>2</sup>.

This paper presents aspects of neuroscience relevant to a consideration of consciousness and seeks to correlate these understandings with broader expressions of consciousness as revealed in the human condition and in art. Consciousness is not regarded as a “last

frontier” to be explored but a whole person phenomenon individually fashioned by interaction with the social environment, the natural world and with cultural input.

A useful focus for inquiry into current questions regarding consciousness is the relationship between subjectivity and objectivity.

Since Descartes split mind and body in the 17th century information of a subjective nature has been excluded from mainstream science. This, because of the desire to isolate discrete properties of an object in order to more easily formulate physical laws which could be used to understand the natural world.

Some change has occurred in recent time and scientists have become interested in consciousness and associated brain functions involving emotions, feelings and imagination.

Remarkable recent advances have occurred in neuroscience, which have allowed understandings and observations to be made of the molecular structure of living brain in response to experience and sensory input.

Important recent research into consciousness has been conducted through enquiries into visual perception (Bennett<sup>3</sup>). This work has enabled the identification of functions of the retina and the mapping of neural pathways in the brain. It has facilitated understandings of how visual information of different types including colour, shape and movement is directed to different parts of the brain and how groups of cells in those different parts are bound together by particular neurophysiological mechanisms.

Writing from a philosophical frame of reference Mary Midgley<sup>4</sup>, has addressed the question of subjectivity and objectivity and the misleading but pervasive attitude reflecting the mind/body split which suggests that the only valid way to enquire about consciousness is to use the reductive methods appropriate to enquiries in physical science. She writes of the atomist paradigm, which suggests the only way to understand anything is to break it into its smallest parts and to conceive these as making up something comparable to a machine, the whole being best understood in this way. She regards this misguided view to be fueled by a dream of making psychology scientific and in some way “...taming and simplifying our inner life so that it will somehow conform to the known laws of matter and will stop setting us problems of its own...”. Reductionalist propensities of science work badly in relation to enquiries about consciousness.

Language is also a relevant component of enquiry into the phenomenon of consciousness. Steven Rose wrote of the “uncontrolled tangle of metaphors” which has emerged in the process of scientific enquiry and which confuse the project of scientific clarity.

David Hume and other thinkers of the Western Enlightenment also saw reason and feeling as deeply related. He wrote, “...reason and sentiment concur in almost all moral determinations and conclusions...”.

Many of the great Romantics of the 19th century attempted to bring subjectivity and objectivity together. William Blake objected to the influence of science and the growing tendency to look at things only from a scientific standpoint. Wordsworth and Coleridge also did not regard thought and feeling to be opposite poles. They encouraged more attention to the unifying capacities of imagination.

The objective methods of neuroscience support that view, there being no scientific basis to differentiate the molecular mechanisms involved in reasoning from similar mechanisms involved in the neurological basis for feeling. Both are expressions of cellular processes subserving all kinds of thinking.

Neuroscience has much to teach us about the brain in response to sensory input. Until relatively recent times it was generally considered that the brain was incapable of physical change as a consequence of changing experience. However, it has been clearly demonstrated that changes in brain chemistry and in the complex branching of nerve cells which comprise the fine structure of brain, result from training, visual experience and cultural enrichment or cultural impoverishment. Permanent physical and chemical changes are evident at the innumerable minute sites of cellular juxtapositions in response to sensory input. The brain is now demonstrated to be remarkably plastic, changing at microscopic levels rapidly and with great sensitivity to experience of the outside world.

The intimacy of the relation between the internal world and the environment is further emphasised by the recent publication of the map of the human genome, which revealed a surprisingly small number of genes. This argues against rigid genetic determinism governed by hard wiring. Rather it suggests that the background structure of brain is genetically determined and that structure is then modified and molded by individual human experience. The unique individual human brain is formed by multitudes of individual experiences in relationships with other humans, the natural world and cultural input. Each individual brain is accordingly fashioned individually in this way.

Science cannot provide us with an understanding of the deep inner world of humanity. Gaita<sup>10</sup> writes that "...a sense of the full humanity of our fellow humans requires us to direct attention to a feature of the person and to a response to that person...the subjective and the objective are interdependent here..."

It is precisely at that point that art, and works of individual artists who turn their gaze inwards, assist in an appreciation of the inner world and the feelings and emotions, which represent the common ground of consciousness for all humanity.

The great document of art shows us with completeness, precision and delicacy, the ways humans feel about themselves and others, the natural world and the living things in the natural world, and also something of the relationship with the spiritual dimensions and with Divinity.

When an individual artist turns gaze inwards in order to more deeply engage with the outside world, different dimensions of reality become evident. For example, Giacometti remarked of Cézanne, "...I believe Cézanne was seeking depth all his life..."<sup>12</sup>. This remark is not directed at the device of rendering linear perspective, one of the preoccupations of the northern Italian Renaissance, but at a different quality of relationship with things in the world.

"Depth" is about an aspect of the actual, which is penetrated by the gaze of the observer enabling an awareness to be represented which may be unusual or entirely novel. The actual giving way to representation which is more real than the actual. Merleau-Ponty<sup>13</sup> writes of "...things themselves from the depths of their silence brought to expression...".

The last part of the paper will refer to these and other ideas and will involve the presentation of a number of works of art which are testaments to the exploration of individual artists as they turn their gaze both inwards and outwards and make visible connection with aspects of consciousness common to all. Particular attention will be paid to the works of Rembrandt, Mark Rothko, Joseph Beuys and Anselm Kiefer.

The paper will bring together information and ideas about science/neuroscience and ideas and experience of art, showing the two spheres of activity to be different with different consequences in the world. In so far as whole person human consciousness is both subjective and objective, this paper argues for the acknowledgment and heightened presence of both in all human activity, scientific and non-scientific.

## References

1. DAWKINS, Richard - *River Out Of Eden* (London); Weidenfeld and Nicholson, 1995.
2. HARMAN, Willis - *A Scientific Exploration of Consciousness; Towards An Adequate Epistemology*; Journal of Consciousness Studies, No. 1, Summer 1994.
3. BENNETT, Max R - *The Idea of Consciousness*; Harwood Academic Publishers, 1997.
4. MIDGLEY, Mary - *Science and Poetry*; Routledge, London & New York, 2001.
5. JAMES, William - *Essays in Radical Empiricism* (New York; Longman, Green & Company, 1912.
6. ROSE, Stephen - *Lifelines; Biology, Freedom, Determinism*; London, Penguin, 1997.
7. HALLECK, Reuben - *The Education of the Nervous System*; MacMillan, New York, 1901.
8. CLEEVES DIAMOND, Marian - *Enriching Heredity*; The Free Press, New York, 1988.
9. BERLIN, Isaiah - *The Proper Study of Humanity*; Pimlico, 1998.
10. GAITA, Raimond - *A Common Humanity*; Text Publishing, Melbourne, 1991.
11. RICHTER, Gottfried - *Art and Human Consciousness*; Anthroposophic Press, Spring Valley New York, 1985.
12. MERLEAU-PONTY, Maurice, cited in - *"I and Mind"*, Translation by Carleton Dallery in James M. Edie (ed) - *The Primacy of Perception*; Evanston, 1964
13. MERLEAU-PONTY, Maurice - *The Visible and the Invisible*; North West University Press, with paperback printing, 1995.