

GLOBAL MIND FIELD – A CYBERNETIC PERSPECTIVE

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Abstract

This paper examines the process and outcomes of a workshop event Global Mind FIELD presented at ISEA2013, Sydney. The workshop was conducted and facilitated by Karen Casey and Harry Sokol, with assistants Damian Smith and James Power. The researchers aimed to initiate and test for instances of neural synchrony between participants using creative visual stimulus, enabled by proprietary software program Viseeg (Sokol/Casey) and wireless EEG (electroencephalograph) headsets (Emotiv). The paper further examines to what extent the process of neuro-feedback and the resulting neural synchrony produced through the ‘hard’ and ‘soft’ interfaces can be viewed as indicators of a cybernetic mode of practice.

Keywords: Neuroscience, EEG, Brainwaves, Neurofeedback, Cybernetics, Neural synchrony

Introduction

Global Mind FIELD is a development of the ongoing Global Mind Project, an arts and cognitive neuroscience initiative developed by artist Karen Casey in collaboration with software designer Harry Sokol. Drawing on a prior research investigation into creative brainwave activity, conducted by Casey in 2003 at the Brain Sciences Institute in Melbourne, Global Mind Project is at once an exploration of technological possibilities for generative hybrid art forms and an interrogation of consciousness and creativity. At the centre of the Global Mind Project is a digital effects and animation software / interface Viseeg, developed by Sokol with Casey, which audiovisually interprets real time neural data.

To date artworks developed in the context of Global Mind Project were entirely artist driven and did not involve direct audience interaction. However, they were devised with the idea of eliciting related brainwave activity in the viewer, and it has always been a key objective to create future works that involved audience interactivity through neuro-feedback [1]. Works such as *Meditation Wall*, 2011[2] and *Dream Zone*, 2012 [3] for example, were relatively ‘one way’ affairs to the extent that

pre-recorded brainwaves were used to generate artworks that were viewed by audiences in a conventional subject-object sense. On the other hand, *Spectacle of the Mind*, 2010 was a performance event featuring artists Stelarc, Domenico de Clario and Jill Orr, which harnessed the brainwave activity of these well-known performers. As a stepping-stone to interactivity, *Dream Zone* involved Casey generating a feedback loop in the process of recording her brainwave data, thereby positioning herself as both spectator and creator of the work. Following these pieces, and in an effort to further develop artworks that harnessed neuro-feedback techniques amongst audience participants, Casey conceived of a workshop process that would require pairs of individuals wearing Emotiv neuro-headsets to engage in partnered exercises while observing on-screen visual effects created with or affected by their EEG data. The material would change or vary when neural synchrony occurred between the participating pair, thereby providing a visual queue that could be registered by the subject’s brain.

In the logic of neuro-feedback, the brain naturally seeks stimulus and will register when a frequency range, such as *Alpha* (8-13 Hz) or *Theta* (4-7Hz), is correlative with external information. Throughout the workshop the more the brain aligned with a predetermined goal as programmed with the Viseeg software (in this case synchrony with a partner), the more feedback it received, thus creating a neural feedback loop.

The title *Global Mind FIELD* was a way of evoking the idea of a ‘field’ of consciousness; the field being the sum total of all the contributing minds, both in a specific context such as the workshop itself, but also more generally across the whole of human consciousness, be it temporally or geographically. The idea of a ‘consciousness field’ raises a number of complex questions, and unsurprisingly it has been a source of deep fascination throughout a range of disciplines, not least of all psychology, philosophy of mind and many spiritual traditions. Global Mind Project engages with the notion of this field, as was highlighted by arts writer Dr Julie Clarke in her essay ‘Spectacle of the Mind’ [4] (2009), where she states: “Casey’s ‘Global Mind Project’ seeks to reveal how mind extension, enabled by technology, floods the receptive field and generates an inter-textual dialogue of fluidity, continuity and reciprocity that

unites us all and displaces the boundary between artists and audience, mind and world” [4]. From the position of the artist however, the urge to create artworks is not only a question of philosophy. It equally takes shape around a feeling of connection – a sensation of being linked to others and the world, both physically and mentally.

Fig 1. Stelarc, *Spectacle of the Mind* 2010. Photo © Malcolm Cross



While the artworks produced through Global Mind Project are reliant on sophisticated software and technology, the project has more broadly been driven by an interest in three interlinking areas: creativity, cognition and the connections that arise and multiply when groups of people are engaged in creative pursuits. This triad of creativity, cognition and connection has come into focus through observing creative practitioners over many years, especially in collaborative and group settings. While this has arisen through personal experience and reflection, the authors have looked to a range of sources as a means of contextualizing some of the drivers behind Global Mind Project. Physicist and philosopher David Bohm’s essential theory of the “unbroken wholeness of the totality of existence as an undivided flowing movement without borders” [5], for example, has resonance with the ‘connecting’, ‘synchronizing’, ‘interrelating’ features of the Global Mind Project. At a more immediate level, however, the simple desire to establish relationships through creative endeavor and to explore the potentials within those relationships remains very much to the fore.