

## **Some Thoughts about Digital & Natural Virtual Minds**

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Interrogating freedom and constraint in aspects of creativity in digital art cannot do without a close look at the status of the computer.

A general categorization assigns the computer as a tool. When compared, however, with other tools such as the artist's paintbrush, one can already see a paradoxical situation arise. With the computer it is not necessarily the physical learning and tool at hand practice which allows for good results, it seems that the creative artistic process rather arises through an engagement with the technological possibilities offered by the digital device. I would even suggest that the process of creative thinking is being triggered by the computer and is conceptual in its nature. Through this particular dialogue between the artist and the computer, options of working arise during the work process which influence imagination and creation of the new work. It is both possibilities and constraints that new technology brings along and transforms the artist's conception.

Oliver Grau (2003) suggests that the computer "should be considered a thinktool" and finds common terminology such as "tool", and "toolbox" entirely inadequate.

"The computer offers the artist options such as rectifying errors, duplication, randomly generated construction and recombination, continual feedback, reversibility, and visual-polysensory design of effects that can be selected from a palette of options".

It is this process of creation which has become so important to computer artists resembling more a dialogue between human and machine than a one way usage. Grau stresses the importance of the graphic user interface (GUI) and how the development and standardization of it has offered a method for operation and dialogue. "Thus", he says, "attention and creative thought are bound, to a large extent, to the interactive feature of a program".

Developments in the recent years have enabled architects and artists to produce objects, buildings and landscapes, which are with a precision and surrealist detail that would not have been possible to be realised or even to be imagined in the mind. It is the computer as "handtool" and "thinktool", that makes these new forms possible and allows for new creations

of entire virtual worlds. And yet the potential and power behind this technology still needs to be fully thought to come into existence.

In addition, the networked computer opens further possibilities in that digital communication and global aspects let a new communication culture arise. It is these networked communities, which have drawn my attention. With the creation of virtual worlds a new space for exploration has emerged to test and find new boundaries for what it is like to be human. Through this creation of digital spatial models, but also through the design of artificial agents, an intellectual process of creating imaginary spaces and artificial communication has taken on forms unthinkable before a networked digital society.

Virtual Reality (VR) has unquestionably augmented actual reality. However, I will not discuss VR as full immersion into simulated 3D worlds but rather use the term VR as a conceptual term, for it has changed the way we think about the actual real.

The work with artificial intelligence and machine intelligence has broadened the understanding of human communication and the workings of the mind/brain. Digital artists are focussing in particular around topics such as objectivity, subjectivity and communication in a networked digital society. From a more general perspective art has always addressed issues of the aesthetics of perception and representation and how they change through cultural, political and technological developments. The future developments are pointing to genetic modification and biotechnology, and this again brings along an investigation by artists into these new technologies. It is artists who generally engage, question and subvert latest technologies to create a public debate about possible ethical implications of scientific developments. It is through critical examination and reflection and in particular through cross-disciplinary approaches that art can play an important role in cultural developments. And it is through culture that the understanding of how we define ourselves and the world around us can continue to constantly change and develop further.

I suggest that creativity manifests itself through this cross- and trans-disciplinary way of engagement. Models of thought have been made, using visualisations of semantic associative networks. The way themes are interconnected and linked shows clearly that often a not so obvious link between two related subjects might offer new insights into a given problem, and here I want to suggest that creativity might be triggered by the “weak link” aspect of semantic networks. There is a new emerging understanding of the neuroplasticity in the brain that allows for these wiring of neurons and cross-referencing possibilities in the brain. It stresses the adaptability of the human brain to a fast changing environment; meaning by that, that the

brain is in permanent flux, it is constantly re-configuring, feeding back when it recreates connections.

During the process of decision making, emotions seem to play an important role; in addition, emotions are now understood to be crucial for how memories are stored and later made accessible. I have studied the dreaming brain (often considered an emotional brain) as a model for Altered States of Consciousness, to highlight current studies in neuroscience about major brain activities during sleep. This research builds upon an understanding of the brain as a regionally-specific and distributed neural active organ. Conscious states are not anymore considered distinct “on” or “off” states of being, but the states change gradually from being alert to being less active.

With my cross-disciplinary research project I have compared the dreaming brain state with the state we are in when online; trying to find parallels and distinctions between the natural imagined and the digital virtual. A possible conclusion offered here is that physical presence, digital representation and imagined realms are all but one augmented reality constructed by humans and machines. I suggest that digital technology offers new perspectives on representations of the real. Pierre Levy (1998) discusses the idea of the “hyper-real” that takes the place of reality. He opens the concept of the virtual, defining it alongside the actual and the possible, and with that understanding I conclude that creativity in general should be debated within the context of the virtual.

#### Bibliography:

Grau, Oliver, *Virtual Art: From Illusion to Immersion*, MIT Press, 2003

Levy, Pierre, *Becoming Virtual: Reality in the Digital Age*, Plenum Press, 1998