

Chapter 1

Virtual Metaplasticity (Ars Metaplastica)

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ABSTRACT

This chapter defines a new metaplastic discipline through analysis of Digital art history and their relations among artistic and scientific achievements. Virtual Realities found in Art and Science a new modality of definition based on technological codifying with language philosophies that interpret new digital aesthetics. It would be introduced new metaplastic virtual media used in different research areas with examples of applications.

INTRODUCTION

Art and virtuality discover their common origins within the poetic vision of artists, for example imaginary worlds of Kandinsky, Klee, Miro'. Their worlds are, in fact, inhabited with organisms similar to cells, bacteria and other microorganisms in fantastic and indefinite spaces. Artists (re)create new realities with systems of symbols that express the representation of their concepts. At the same mode, computer's virtual realities are patterns of information. The description of artists' imaginary worlds occur with representations of basic elements, combinations of elements in sequence,

structures, surfaces and kaleidoscopes of images. These expressions narrate of new visual and musical languages modalities with their peculiar characteristics. Their research processes of new shapes and disciplines established archetypes of virtual reality languages. According to Jaron Lanier, a pioneer of the virtual reality, artists should create new worlds:

“Instead of communicating symbols like letters, numbers, pictures, or musicals' notes, you are creating miniature universes that have their own internal states and mysteries to be discovered.”

In the last decades of the 20th Century, technological innovations in different research areas

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have developed new interdisciplinary interests between art, design, science and technology. From the 1950s, Computer Art is a term used to define artistic electronic data processes for creating new aesthetics. In the same period, the mathematician Norbert Wiener in his essay "Cybernetics and Society" (1950) presented Cybernetics which refer to the general analysis of control systems and communication in living organisms and machines. The exhibition "Cybernetic Serendipity" (1968) at the Institute of Contemporary Arts in London was important because there were presented various artworks of computer graphics, of sound and luminous spaces, "intelligent" robots which could be considered precursors of contemporary artistic installations.

Some artworks were dedicated to machine's aesthetics and its transformations, other artworks created audio visual motives and automation's poetry, like "open systems" installation where spectator acts as a part of a programmed system. From the 1960s, the researches within new technologies created new research areas in arts and sciences. In that period, important transdisciplinary studies were developed by artists as Andy Warhol, Robert Rauschenberg, Jean Tinguely, John Cage and others at the Osaka Universal Exposition, Pepsi Cola's pavilion in 1970. (Christiane Paul, 2004 p.16). The artistic creative process is modified with new technologies, generating new methodologies and different disciplinary areas in Digital Art.

In this phase, new creation methodologies became with following the simulations of the preceding technique. This simulation property gives to digital systems the unprecedented capacity of blurring the traditional distinct boundaries, by subjecting all techniques of information to the creation of hybrid art forms and to becoming a hybrid art system itself. This is the first hybridization typology of creation methodologies.

The new aesthetics of Digital Arts are founded with this continuous antithesis of blurring the boundaries and resisting to this new artistic becoming. This is the second hybridization typology of

creation methodologies. According to Christiane Paul, one of these new methodologies of creation is the combinatorial processes that obey to the rules of Dadaist Poetry, which were resumed by the members of OULIPO (Ouvroir de Littérature Potentielle) and their creation poetics became part of combinatorial loop of conceptual gaming. The Fluxus artists have specific rules when they stage their performances. Vera Molnar uses mathematical functions to create new drawing methodologies for computer graphics. In these research areas, the Permutation Art, defined by Abraham Moles in 1971 found its aesthetics. It is created with combinations of limited set composed with simple elements, which gave representations of infinite perceptual games.

A different method forms of "self-production" has been suggested by mathematician H. Conway with his famous "Game of Life" (1970) which has inspired the future development of Generative Arts theories. Christiane Paul in his book Digital Art indicates various artistic experience that have been developed in the 1960s and 1970s period, and in the following part will be given their description. Michael Noll in his artwork "Computer Composition with Lines" (1964) uses a graphic table to draw combinations of lines and other pictorial representations. Manfred Mohr composes his artworks with computer as exercises on parametric variations of basic graphic repertoire. This methodology originated the "generative drawing". Mohr is the first plastic artist that had contributed to the theorizing of criteria and methodologies of creation new aesthetics with computers. The first generation of Algorists in the 1960's and 1970's included Herbert Franke, Manfred Mohr, Frieder Nake, George Nees, Harold Cohen and Roman Verotsko. The term "Algorithm" descended from the name of an Arabian mathematician who was active around 820 AD in Baghdad. It is believed that his surname, *al-Khowarazmi* is the source for the term *algorism*. According to Roman Verotsko (2009):

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