GENERATIVE ART, Preludi, natural mirrors

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Abstract

Generative Art is Art, Science and Technology working together. This creative process produces an endless sequence of unique and complex events, as in nature. A new icona for this era. This Generative Idea is strongly recognizable through each CODE as natural mirrors.

1. New Nature and Generative Art

After two hundred years of the old industrial era of necessarily cloned objects, the one-of-a-kind object becomes an essential answer to the long-neglected human need to live a world in which each artificial object mirrors the uniqueness and unrepeatability of every person. In an epoch marked by repeated attempts at the cloning of natural beings, Art returns in advanced technological fields such as non-linear dynamic systems to the notions of artificial life and artificial intelligence, the aesthetic and ethical pleasure of rediscovering the processes and characters of nature.

Generative Art is the idea realized as genetic code of artificial objects. The generative project is a concept-software that works producing three-dimensional unique and non-repeatable events as possible and manifold expressions of the generating idea identified by the designer as a subjective proposal of a possible world. This Idea / human creative act renders explicit and realizes an unpredictable, amazing and endless expansion of human creativity. Computers are simply the tools for its storage in memory and execution, but they are necessary to reach and manage complex not-linear systems.

This approach opens a new era in Art, design and industrial production: the challenge of a new "naturalness" of the industrial object as a unique and unrepeatable event, mirror of the uniqueness and unrepeatability of man and nature. Once more man emulates nature, as in the act of making Art.

CELESTINO SODDU - GENERATIVE WOMAN 3D PORTRAITS

Argenìa is the term that we have coined for this genetic code of artificial ware that, like DNA in nature, identifies not only an object but a species of objects. Industrial design will no longer be the idea and realization of an object, but the idea of a species of objects and its industrial intelligent generation.

The three-dimensional models produced using Argenìa soft, multiple results of the idea, can be directly utilized by industrial


Fig. 1 - Sequence of generated skyscrapers in Hong Kong waterfront, C.Soddu, Feb. 2002, www.celestinosoddu.com

manufacturing equipment like numerically controlled machines and robots, which already represent the present technologies of industrial production. This "generative and automatic reprogramming device of robots" (Fig.6) makes it possible to produce unique objects with the same

equipment and with costs comparable to those of objects that are identical; like a printer that can produce pages that are all the same or all different, at precisely the same cost.

Designing this artificial genetic code was an enthusiastically creative operation. We have found ourself returning to the Renaissance cultural approach, capable of combining science and art. We have created ideas formulating a code of the harmony that, as it is born of the history of man and his relationship with nature, identifies and represents our subjective vision of the possible, the imprinting as a designer. The code of harmony, like all codes, contains some rules that trace certain forms of behavior. Therefore it is not a sequence, a database of events, of forms, but a definition of behavior patterns: the transformations from what exists to the complexity of contemporary objects in a state of becoming. The design act changes from forming to transforming, because each form is only one of possible parallel results of an idea.
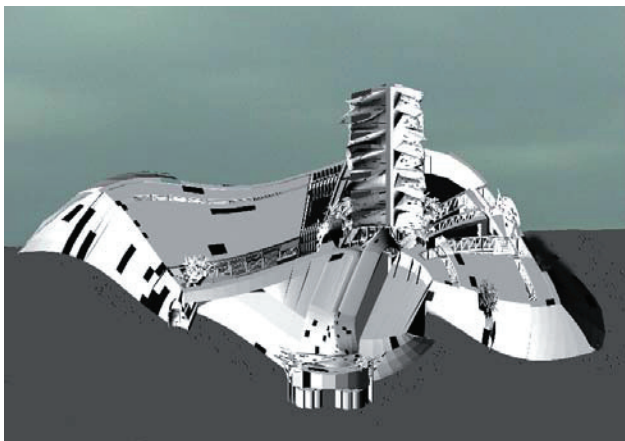
## 2. Generative Art and Design, the logical approach.

Two are the most important topics in designing this Argenìas: the complexity and the relationship between species and individual. To manage the complexity we referred to the concept that the complexity is not generable ex novo, but only using a process to stratify sense into a flowing simulation of a temporal irreversible path. We can activate and control this stratification if we design a system with a self-organizing paradigm that can
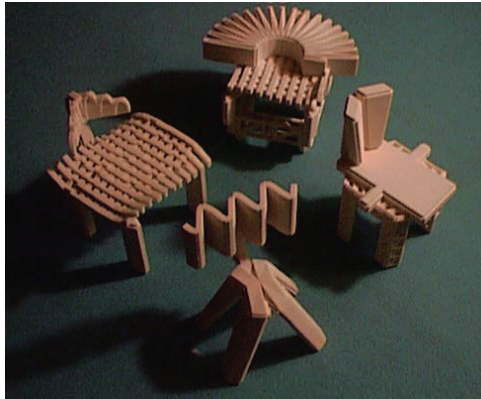
increase its identity and recognizability during the simulated time flowing.

To built this paradigm we referred to the chaotic dynamic systems that are suitable to be controlled by algorithms, even if they never produce the same event. We have used a fractal
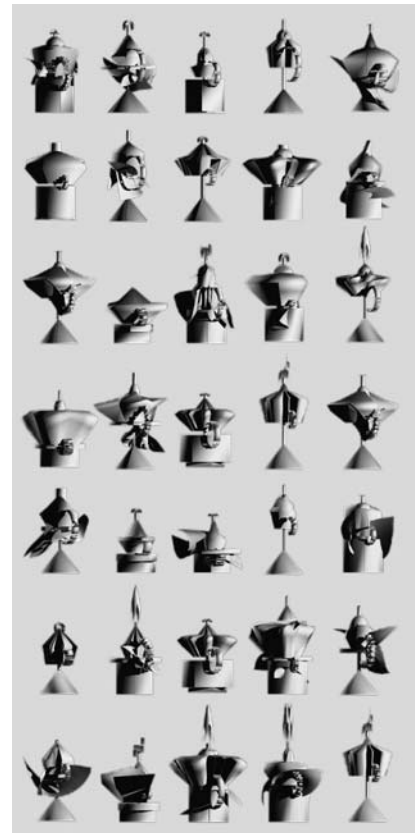
but non deterministic logical frame. In other terms, every decision cycle has inside, nidified using a lot of other cycles, other decisions, and so on. The structure of these cycles is, as in fractal objects, always the same. The differences and the unpredictability born from the resonance with other cycles, from the time of activation and from always different flow of information.

Fig.2 Generated Architecture in Hong Kong, C.Soddu 2002
Fig.3 Generated Architecture project of a commercial center in Italy, C.Soddu 2001. www.celestinosoddu.com
Fig.5 Generated series of different coffee-pots, C.Soddu 2002
Fig.6 Chairs realized by Soddu's Generative Project that directly generates and sends stl files to rapid prototyping machine. www.generativedesign.com - www.soddu.it

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