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COMPUTER ART

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It. *Arte digitale*; Fr. *Art numérique*; Germ. *Digitalkunst*; Span. *Arte digital*. If Computer art generally refers to any form of art in which the function of the computer is emphasized, in the history of contemporary art it became a specific way of expression into the horizon of Digital art, New Media art or Video art, which include all the artistic productions generated by electronic devices and technological tools. Since the first forms of expressive experimentation by Computer artists (in the 1960s with John Whitney and Charles Csuri, in the late 1970s and early 1980s with the work of Larry Cuba), Computer art has not been a movement and there has not been a manifesto: it gives no indication of specific aesthetic qualities or stylistic techniques. A possible definition of Computer art should focus on works of art produced by algorithmic programming, without translation of the image from analogic recording of the real but with direct production in software code writing. Especially in the 1990s and today, Computer art has been an important source of inspiration for audiovisual-movie industry and video-music products.

AESTHETIC PROBLEMS

Since the first important event for the history of the origins of Computer Art, the travelling exposition in 1969 entitled *Computer Art: On the Eve of Tomorrow*, this artistic genre has followed the experience of experimental abstract cinema (L. Delluc, O. Fischinger, V. Eggeling, S. Brakhage) using exclusively the informatic language; like abstract cinema, Computer art leaves narrative dimension for rescuing a full aesthetic autonomy image. Indeed, for some works of the end of the 1960s, like *Permutation*, John Whitney prefers such definitions as "animation" or "experimental film" rather than "Computer Art", and Whitney himself was more often considered an "experimental film-maker" rather than a "Computer artist". Also Cuba is reluctant to be forced into the category "Computer art", because in this case the specific qualities of his artistic practice would be subsumed by informatic technology. For him, computer provides a new way of expression and a new artistic approach, and may be seen as an extension of older

forms rather than a new artistic undertaking; his work has a greater degree of continuity with the pre-computer Abstract animators, even though it incorporates computational processes into its aesthetics and execution.

Compared to avant-garde cinema and other forms of Video art, Computer art is immediately registered within the horizon of absolute self-reference. Its creative approach is based exclusively on algorithmic processes of creation of abstract-geometric forms, often with no possibility of foreseeing the spontaneous development of these forms. Computer art incorporates the experience of twentieth-century aleatory art (such as Surrealism), because the autogenesis of lines and geometrical figures interests artists-engineers like Whitney and Cuba. The art of Charles Csuri, pioneer of computer graphics and computer animation, performs an inverse process in comparison to the tendency of contemporary painting: if the avant-garde arts started from mimetic figuration in order to achieve abstraction, Csuri conversely starts by principle of numerical abstraction for recovering successively the figurative dimension. From this experimentation would have been developed the art of John Lansdown and all the contemporary visual culture of graphic digital animation.

The artistic research of Whitney, Cuba, Manfred Mohr and Ronald Davis is pursuance of the longest and oldest tradition of decoration and ornamentation; the work of Csuri and Lansdown recovers the figure through an unprecedented ontological path: it is not the numerical translation of the analogical image in digital, but recovering through similarity with real elements as simulation of real. From Csuri, Lansdown and Ida Gerosa, with the advent of 3D animation the imaginary of Computer art becomes overall "organic", composed by figures between geometric abstractions and natural elements (as exotic fauna in the work of Tatsuo Kawaguchi). This attraction for organicity stands in opposition by the original intentions of Computer art: the transition from two to three dimensions is in direction of a recovery of figuration, typical of spectacular cinema and animation. Mario Costa calls it "turbid and spurious fascination" between mathematical-geometrical abstraction and mimetic dimension. As well as Clement Greenberg in his theory of painting, for Costa a specific genre of art is connected to its exclusive properties, different by those belonging to other arts: in the case of Computer art, it would be the numerical abstraction, the only authentic "epiphany portrayed in itself" without reference, the manifestation of purity of "technological sublime" (Costa 2000).

APPLICATIONS AND OPEN QUESTIONS

By proliferation of powerful desktop computers, artists develop very individual styles with little need to follow a specific approach. For example, one can mention Generative art, Fractal art and Glitch art (where the artwork must be created with a certain degree of spontaneous autonomy), but mostly the sector of audiovisual industries like Animated Cinema, Music-video production, Applied art as computerized design and digital architecture. Computer graphics is the most lucrative applicative area of Computer art: the images can range from something quite basic (like a company logo or movie title) to sophisticated animations and realistic computer generated film or computer videogame simulation, but also Mapping installations and Augmented reality. In movie business, it is possible to find on the one hand the special

effects of Action movie (where, like Augmented Reality, the real world melds with computer-generated imagery), while on the other hand we see the *Pixar Animation Studios* productions where form, figures and creatures are directly generated by 3D simulation software, without mediation by drawing.

Music-video is today the most interesting applicative sector of Computer art expressive experimentation: when 3D technology came to Computer art, a lot of videomakers started to use this for music-video industry, in correspondence to the visual bulimic triumphalism of special effects and post-production techniques of Hollywood mainstream cinema. John Whitney realized Mick Jagger's video *Hard Woman* in 1985, where his geometrical and abstraction lines become human figures, as in the work of Rebecca Allen for Kraftwerk; William Latam, creator of strange and anamorphic 3D figurations and pioneer of Generative art with works like *A sequence from the evolution of form*, realized for English band The Shamen the video *Heal* in 1995 (Amaducci 2014). In the last few years, meaningful for relationship between Computer art and Music-video are the morphing no figurative works by Esteban Diàcono, the video directed by Alexander Rutterford for Autechre and Radiohead (the first, *Gantz Graf*, fully abstracted, the second one, *Go to sleep*, with digital human figures), and the video *House of Cards* for Radiohead directed by James Frost and Aaron Koblin with GIS (Geometric Informatics System), which produced human faces and forms with pixels and signals directly through algorithmic software processing (as an evolution of Csurì 1980s artistic research).

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