THE DIGITAL ENVIRONMENT IN VISUAL AND AUDIOVISUAL ARTS. A THEORETICAL APPROACH

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The first decades of the 20th century brought a new understanding of the image as a number of artists abandoned the traditional techniques of the representation of space. Movements of Modernism, such as cubism and expressionism, or even later movements, as abstract expressionism,turned a new gaze to the world, leaving the Renaissance perspective far behind and bringing forth a new myth: the death of realistic representation (Arnason – Prather, 1998, 17 – 28). However, realism in representation didn't actually die (Best – Kellner 1991, 5-33, Danto, 2003, 1-15). The new technologies rediscovered the Renaissance perspective for once more. It is interesting to see how it happened.

Surrealism, after WW1, as well as hyperrealism, Pop Art and photorealism, after WW2, were forms of realism in the 20th century Art that prepared the ground for new forms of expression. Striking enough – but easy to understand - is the fact that, the most anti-realistic period in art, was the period between the two world wars (1914 – 1945). The phenomenon is absolutely comprehensible in the frames of particular social and historical realities. Artists were in fact rejecting the sorrowful reality of their times. From the 1950s however, artists and theorists came back to issues of realistic representation (Smith, 1984, 6-24). Perspective was reborn.

The reasons for this "rebirth of perspective" (Veltman, 1996, 209-228) were numerous. We could summarise them in the following points:

•The post-war conditions underlined the significance of reconstruction and built environment, that were based on realistic representation.

•The sectors of surface research of regions and mapping were also favoured and GIS (Geographical Information Systems) as well as AM/FM (Area/Facilities Management) emerged.

•The evolution of photographic techniques for scientific research was also encouraged. One of the results of those experimentations was the satellite image.

Moreover, an integral part of the demand for recording the world in the 1950s was the demand for electronic reconstruction with vector images. The discovery of the basic algorithm for this 'perspective in electronic form', finally led to computer graphics and also to: Computer Aided Design (CAD), Computer Aided Engineering (CAE), Computer Aided Manufacturing (CAM) and Computer Integrated Manufacturing (CIM).

All the above mentioned presuppose the use of systematic coordinates of space in the representation (at first level) and interpretation (at second level) of objects and contexts. Several forms of perspective were thus encouraged, the linear perspective mainly, an immediate descendant of Greek and Roman Antiquity (illusionism) (Fig. 1: Pompeii – Villa dei Mystreri) and the Renaissance (Fig. 2: Baldassare Peruzzi, Sala delle Prospettive, Villa Farnesina, 1516).

Panoramas and cinema, as applications of photography, also extended the significance and the objectives of perspective (See Grau 2003, on: The Battle of Sedan-Panorama). New uses of perspective were now invented by directors and designers, mainly for the depiction of natural or illusional urban landscapes. Entire cities were thus represented virtually. No need to mention here the remarkable fact that those techniques also influenced the scenography in theatre.

Demanding VR applications created an additional motive for the reappearance of perspective, particularly because all these applications presuppose a combination of various visual or optical fields and levels of depiction (Tomas 1996, 145-153). We can thus speak of a 'new perspective', contrasting it with the perspective of the Ranaissance. Characteristic examples of Renaissance use of space are the works by David Hockney and those by Richard W. Maile. Thus, Uccello's dragon from the famous Saint George painting enters Hockney's space, while Elvis takes the place of the renounced Botticelli's Venus in Maile's work [SIGGRAPH, 1990] (Sampanikou – Vlachakis, 2005).

The imagination of the authors of programs, created, in every occassion, context in 3-D space, undoubtedly influenced by the artistic tradition each one was bearing from their countries of origin. Therefore, if we observe the differences in virtual reality over the world, we can trace obvious cultural differences in the notion of space. In Europe, an integration of history and an emphasis on the distinguished importance of cultural residues and objects with a concrete cultural context in real landscapes is evident, while in Japan futuristic scenarios, independent to the present cultural frames of the country are developed. In Canada, a more retained growth of futuristic scenarios is observed, finding application in architectural settings of today. In U.S.A. finally, we observe a growth of fantastic scenarios based on fictions that obscur time and the difference between present and future, characteristics that are also attributed to cyberpunk writing (Manovich 1996; Tomas 1996; Veltman 1996; Grau 2003).

Lev Manovich believes that the use of computers extended, in one degree, the rules of perspective, exceedingly developing the algorithmic character of this very old science, as well as the retrograde relation it creates, between representation and reality (Manovich, 1996, 232-237, Manovich 2001, 6-20). He also considers however that the "geometrical vision" obtained by computers, also constitutes a limit, confining the eye to an irrevocable automation of sight. The eye recognizes henceforth the objects through the automatism of the electronic picture.

Fig. 1: Pompeii – Villa dei Mystreri

Fig. 2: Baldassare Peruzzi, Sala delle Prospettive, Villa Farnesina, 1516

Fig. 3: The Passions – film still

Thus, an initially charismatic role is substantially removed from the sight and the non-geometric creative imagination is set aside, to one extend (our underline - Manovich, 1996, 237-239, _i_ek, 1996, 290 – 295).

The above mentioned view is also one of the main reasons of a critical attitude of many artists to the new means, without however a denial of their use. Bill Viola, one of the most important contemporary artists using the digital image (video), is often critical to new means in a lot of artistic experimentations on the Art of the Past (London, 1995, 73-77). He however uses the possibilities they provide, as he simultaneously recognizes their expressive force (See the Bill Viola's relatively recent exhibition The Passions in London National Gallery, at: http://www.nationalgalleryorg.uk/exhibitions/bill_viola/default.htm. Also: Walsh – Sellars – Belting, 2003, 140 – 145, 259 - 261).

Particular emphasis should be given to his 2003 work Emergence (Fig. 3: The Passions – film still) that signifies strong artistic references to the Renaissance past, being at the same time a creative look at the fragmentation of illusion of our times. Having, for example, as a starting reference point Giovanni Bellini's, 'Dead Christ held by angels' (around 1465-70, London, National Gallery), Viola creates an epic synthesis of astonishing expressive force, with a particular conceptual content.

Walter Benjamin (Benjamin, 1936/1978, 11-43) has early enough traced and interconnected the changes the mechanical reproduction bears, in three major fields:
1. Economy and Methods of Production
2. The Nature of Art
3. The several levels or categories of Perception

However, it has repeatedly been proved that art has the force to function - even within the restrictions of market strategies – in a subversive way (Sampanikou - Vlachakis, 2005, 261-264). For this reason, Art accepts and adopts new techniques and the totality of the new technologies, while moreover experimenting with the meanings of 'visuality' and cyberspace. For example, the following coexist with technology and are based on it:
a. Cinema (all through the 20th century).
b. Multimedia, Installation and Performances from the 1960s to nowadays.
c. Video Art
d. Video Installation
e. Digital Art (film, photography).

Moreover, we have to underline here that all the above describe one condition: Postmodernism. That is why the sense of humor, a fundamental constitutive element of Postmodernism (Rush, 2001, 64, Kawa, 2002, 9-17), is expressed in every form of contemporary culture and cultural industries (literature, visual arts ,cinema, theatre, theory and Cultural Studies). A characteristic area of the visual expression of Postmodernism is, for example, the comics (bandes desinées) cultural industry, a reference point of Pop Culture, too.

In the late 1990s, multimedia industry has gained a more than ever influence on dance and the theatre, affecting thus directly, that is with an equally 'hybrid' way, visual arts and performances. The digital image dominates. Expression as a notion becomes part of digital technologies.

On the other hand, the abuse of technologies by many, leads a number of artists to simpler, cheaper means, even television, having so far been underestimated and criticised by artists of the previous generations. The de-implication of 'naive', popular means and partly the 'exoneration' of TV, is also one of the expressions of the multifaceted generation of Postmodernism. We can actually say that Postmodernism expresses the syncretism of globalization.

The interactive possibilities of digital art gave other dimensions not only to digital representation, but also to the education and the role of the artist. Characteristic nowadays is for example the hybrid educational origin of contemporary artists, who often operate, in 'exploratory' ways, mixed-media 'works-within-works', thus invading –actually- new or Other versions of reality.

A worth mentioning case study could be Karl Sims (Fig. 4: Karl Sims, Galapagos, 1995, multimedia interactive installation) (see Rush, 2001, 205-208). Inspired from the theory of natural selection of Charles Darwin, Sims developed a system where biological organisms seem to develop an environment of their own, into the computer. The viewer can simply select images, where changes in color, texture, shape, e.t.c. appear gradually, until a different "generation" of creatures is created.

The interactive technologies have now occupied all areas of visual arts, as well as performance arts as the dance (motion – sensor technology).

The more effective (for the participation of the viewer) interactive form of technology is VR (Virtual Reality), as it presupposes a massive contribution of the senses, as well as the introduction to a world of parallel reality. In a way however, whatever one can see in a computer monitor, is actually part of a 'virtual universe' (Fig. 5: depicting Charlotte Davis' Osmose, VR environment – also see Jeffrey Shaw's, The Legible City, in Rush, 2001).

Digital technology embraces all parts of contemporary visual arts, from the cinema (Kawa, 2004, 150-151) and the electronic music, to the complicated realities of virtual spaces. In visual arts especially, the image of the "object" isn't anymore what we ask or look for. The creators' and the viewers' interest, more and more turns to the eternally alterating universe that lives inside the computer.

Interactivity is the main characteristic of digital art. A dominating example can be the work Sonata (1991 – 1993) by Graham Weinbren, that constitutes one of the earlier examples of interactive cinema (Fig. 6.) (see Rush, 2001, 208). The spectator-user has the possibility, by touching infrared sensors on the monitor, to discover different film levels, amalgamating characters from the original "Kreutzer Sonata" text by Tolstoy, with Froyd's case studies ("the werewolf") and the Biblical story of Judith and Holofernes, as it was represented by artists from the 15th to the 17th century, with an emphasis to the paintng by Artemisia Gentileschi. The creator-artist

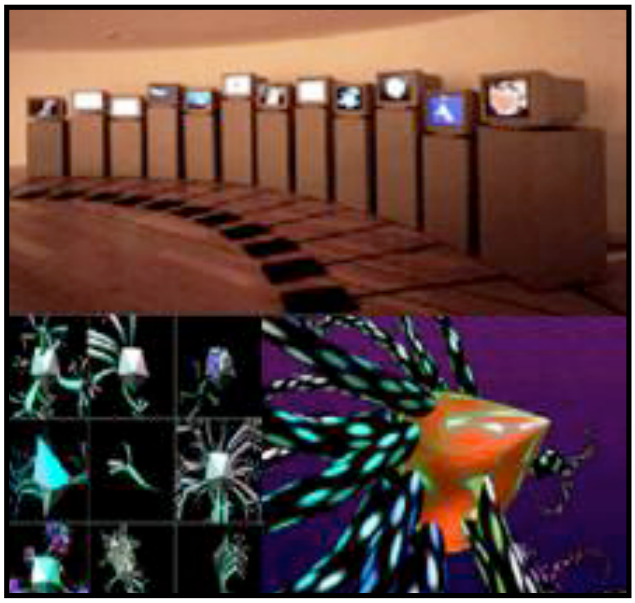

Fig. 4: Karl Sims, Galapagos, 1995, multimedia interactive installation

Fig. 5. Depicting Charlotte Davis' Osmose, VR environment

himself has characterized the film as a "moment-to-moment cooperation of the director with the viewer".

A characteristic case study of a 'digital' artist is also Keith Cottingham (b. 1965), who uses digital painting and montage techniques to set questions on the nature of representation, by creating portrait images. His photographs, that actually consist ex-novo creations, depict non-existing digital faces. The series bears the name: Fictitious Portraits (1992) (See for example the Untitled [Triple] in Rush, 2001, 186-187) (Fig. 7.).

Fig. 6.

The digital representation often creates [ex novo] dymanical images that set questions for the past and the future, consisting at the same time political commentaries or diachronical anti-war messages. Another important case study artist could be the work by Victor Burgin, Angelus Novus (Street Photography, 1995), where the portrait of the girl / angel is flanked by aero-photographs of Second World War bombings. Thus, the fear and desperation of the innocent becomes the face of the angel, while Death (bombs) is his/her wings (Rush, 2001, 188) (Fig. 8.). We can trace other parallel examples in the works of the Knowbotic Research group of artists (Yvonne Wilhelm, Christian Hubler, Alexander Tuchacek). A special emphasis should be given to their work Dialogue with the Knowbotic South (DWTKS), (1994-1997, Interactive real-Time Installation, Austria – Germany), where they develop hybrid models of digital representation of the notion of knowledge, thus creating, for once more, an original, conceptual, multifunctional, work-within-the-work (Fig. 9.). We should also mention Monika Fleischman and Wolfgang Strauss and their installation The Home of the Brain, (1991, ART+COM Institute, Berlin) (Fig. 10.) (Grau 2003, 246-260), a new, virtual area of 'inside' existence. All the above mentioned digital and virtual works, create an interactive condition of reality within digitality, an ultimate 'work-within-the-work', that is actually an interactive co-existence of conflicting or even colliding identities.

Fig. 7.

Fig. 8.

However, any exhibition can at times be setting matters of identity. It is actually a representation as re-construction of the identity of the Self (when the organizer of the exbibition constitutes a cultural part of the total work) or the Other (when the organiser represents / reconstructs a different cultural reality).

Sometimes the Other is the interactive relation between human beings and computers. According to Erkki Huhtamo (Huhtamo, 1996, 298), a [so called] "anonymous history", should include: "not only the industrial developments, but also the social history of

the computer user, the history of the computer as an object of design and as a source of style and fashion, … the history of the computer's encounter and gradual merger with the media culture (…) and, indeed, The "mental history of the computer" – the computer as a "dream machine", an immaterial object of desires, fantasies, fears and utopias. An artifact-centered, chronological account of the computer is not completely misguided - although it could be seen as just another re-enactment of a myth, that of the idea of progress" (our underlining).

What we can finally say on digital visual arts is that the views of those who support the "death" of reality with the arrival of the digital image, thus extending the fears of Debray (Debray 1996) and Baudrillard (Baudrillard, 1990) for the technically reproduced image, can only contradict those who welcome the era that reality copies the digital image, those who create new dynamics in the relationship between the viewer and the work of art. Such an occasion is cinema.

The uniqueness of "digital effects cinema" stems from the fact that it is a contemporary, postmodernist, hybridist cinema, where computer-generated graphics are grafted onto the objective world of filmed scenes which comprises the rest of the movie. The question – which will concern us in the following pages – is what kind of images are made by the combination of the above elements, as well as by the manipulation of images that this combination implies.

Within films such as the Matrix (Fig. 11.) and the new Star Wars trilogies, the nature of technological development is often uncanny and reversed: this may be concluded from the fact that their protagonists, ostensibly cerebral and scientific people (the monastic, peace-loving "Jedi", computer hacker "Thomas Anderson", FBI Agent "Smith") are transformed into violent, vindictive ids, battling in digital arenas of the soul. At the level of the construction of these films, their ambivalent stance on technology is reflected by the fact that all this wonderfully complex technology, used to construct the protagonists' digital stunt doubles, is employed to present us with the most primal form of entertainment

Fig. 9.

Fig. 10.

Fig. 11.

since ancient times, namely hand-to-hand combat. In action scenes, the heroes become imaginary, ideal bodies (literally, since, as digital selves, they possess no tangible presence). Such films deny and suppress the Cartesian mind-body split: they are adventures of the mind, exteriorizations of our interiority through technological media. Nevertheless, their protagonists retain control over their bodies and do not lose their identity, even when this control assumes a schizophrenic aspect. The super-heroes and super-villains of these films often divide their personality in two antithetical and conflicting egos: Thomas Anderson literally leads a double life, as a human in the "real" oppressive world of the future, and as a superman in the digital world of the Matrix. And the Jedi are characterized by a schizophrenia of sorts, since, on the one hand, they lead strict, monastic lives, outside the human democratic society they are pledged to protect, and on the other hand, they stagger continuously between their uncompromising morals and the dark side of their repressed emotions, to the point where they (and the viewers) are confused over whether they serve the forces of good or those of evil.

The exteriorized interiority is, at the same time, traumatic and transcendental, disturbing and liberating. The replacement of characters by digital simulacra poses the question of whether total freedom, the ultimate fantasy realized, is beneficiary, or catastrophic. Ideal bodies do not obey natural laws, but they are frequently outside human law as well: as criminals, monsters, totalitarian agents, or heroes who, despite good intentions, end up either duped or the very causes of misfortune, the protagonists of digital cinema express the moral uncertainty of the contemporary western world.

At a different level, the absolute artistic liberty offered by digital effects may imply a similarly absolute liberty of ideological expression. Through their art, deliberately or not, creators express certain ideological prejudices and influences, with frequently astounding results. At worst, the liberty granted by digital effects may harbour a reactionary ideology. The artist may use the powerful visual presence of digital effects to create indelible, influential images for his audience, or to use the "absence", the imperceptible manipulation of reality essayed by "invisible", less showy digital effects, in order to promote morally dubious messages. A blatant example of this is the case of George Lucas, who makes digital interventions on his films decades after their completion, changes that are ostensibly cosmetic and insignificant, but which reveal significant revisions of the original films' ideological views. In the 1997 "Special Edition" of 1977's Star Wars: A New Hope, a digital effect is added that portrays an alien shooting first at the hero Han Solo, while in the original version, Solo fired without warning, unprovoked. Solo shooting first was an element, which, in 1977, helped establish his character as a tough, emotionless, unscrupulous pirate, but which, in 1997, was considered inappropriate behaviour for a hero.

Perhaps the most paradoxical dimension of creating "realistic" digital effects is that the ultimate digital effect would be an environment, so perfect, so realistic, that it would be the real world we see around us. This ironic realization is also the principal dramatic device in the most successful films about virtual reality. Films like the Matrix trilogy actually film the world we see, hear and touch everyday, and then suggest that it is a virtual reality environment, digitally created. The Matrix trilogy combines this ultimate illusion of reality with a multitude of digital effects that manipulate nature's laws as well as the raw material of photographed film (which comprises the true reality of the world of a motion picture). The trilogy pioneered digital effects based on stereoscopic photography, such as the «bullet time» and «flow-motion» techniques, thus underlining cinema's ability to compress or accelerate time around the events it narrates.

The liberty with which the Matrix trilogy breaks natural laws reminds similar liberties taken by comic books, animation, and electronic games, something leading to particularly interesting paradoxes. In the first film, The Matrix (1999), the spectacular sequences of all action films, sequences that usually offer spectacle at the price of the verisimilitude of dramatic situations, are finally furnished with a logical explanation: they

are understood as occurring within the world of a videogame of sorts, where every action is possible for the experienced user/ protagonist.

In Matrix Reloaded and Matrix Revolutions (2003), the action scenes are more spectacular, but also more ambitious. For example, the existing technology was unable to depict the “burly brawl” (Neo’s fight with the multiple copies of Agent Smith) without flaws. As it happens in many “digital effects films”, the replacement of actors by digital stuntmen “shows” in parts. But these flaws can be explained based on the analogy of the trilogy to a videogame. The gamer / Neo, in order to respond to the rising demands of the game – a fight against a hundred opponents, in this case – “cracks” the software, improvises new gameplay codes and new moves (which, being the work of a hacker/ user, are not as perfect or flawless as the graphics made by the programmers of the official, company-approved), and uses the so-called «cheats». From this aspect, Neo is reminiscent of comic book superheroes, who are always required to use something beyond their natural abilities to defeat a villain stronger than they. Except that here, the fair play ethic is irreparably compromised. Consider this: Neo starts off a typical Messianic hero, and, as we know, no self-respecting Messiah may cheat or use tricks to triumph. The more incredible Neo’s moves become, the more apparent it is that he is “rigging” the game for his benefit.

This insistence on the ploy and the nagging feel of a “set-up” also extend to the thematic twists of The Matrix Reloaded, which radically revises the clear, but eventually simplistic values of the first film, where the heroes were good and the villains very, very bad. In the Matrix sequels (the two 2003 films, the Enter the Matrix videogame, and the Japanese anime anthology The Animatrix) we find out that the machines are far from the typical “villains” of the piece, and that the prophecy of the Messianic “One”, who would free the humans (in short, the entire plot of the first film), is nothing but a ploy, a safety device / program invented by the creators of the virtual reality of the Matrix in order to contain and eliminate a glitch in the system: the One, the human/ user/ hacker who can break the Matrix. The One, the Christ figure, the Saviour, is nothing but a virus, a system error, and the heroic plot of the first film is only the anti-virus program created by the manufacturing company.

This is a bold, yet self-destructive stroke, since it is
a) an anathema to action movie audiences, who do no not like messages that condemn action movies as empty fantasies, as pacifying products tailor-made for the anxieties of a mechanistic society, and
b) a unimaginable complication of the film’s moral universe, as it renders the Manichean struggle of good and evil superfluous, and transforms the hero into a confused pawn.

The above facts posit the Matrix trilogy as, not so much an uneven work of cinema, but a videogame that successfully pretends to be a film. Its eventual structure and nature may be considered as inadmissible for any well-made film, yet it becomes crystal clear when revealed as the non-linear narrative of a console game. This sets it apart from similarly digital narratives, such as the second Star Wars trilogy. In the Lucas films, scenes reminiscent of videogames exist in themselves, as incongruous inserts to a fairly classical plot (or conversely, according to this trilogy’s detractors, the films are a series of game levels, with the plot being merely the pretext, the glue that holds them together). Both trilogies are structured more after the fashion of videogames than Aristotelian drama. However, the Matrix trilogy incorporates gaming elements in all its aspects, in contrast to the superficial grafting of scenes that comprises the Lucas trilogy.

What are the pros and cons of transforming a motion picture into a digital game? Or shouldn’t we even be talking of pros and cons, but rather about a new, hybrid, non-linear film narrative, with its own aesthetic and rules? Indeed, the Matrix trilogy has something of the chaotic, yet enjoyable experience of gaming: long bits of dialogue reminiscent of the endless wanderings of adventure games, followed by equally long stretches of non-stop action reminiscent of shoot-them-ups and beat-them-ups, various narrative levels available for choosing (the moments where Neo can choose between the red pill and the blue pill, or between the left door and the right door in the

Architect's office), secret levels (the Enter the Matrix videogame, set in the interims of Reloaded). Of course, since these are game-movies, not games per se, the "other" choices are never made. The choice has been made before us, for us, and, like the heroes of the trilogy, we must understand why.

The "why" has to do with gaming mentality. The narrative choice has already been made, over and over. The Matrix game has already been played (6 times within the plot, as the Architect reveals) and will be replayed every time we re-view the trilogy. We have made our choices because they have already been made. In the entertainment world of the early 21st century (yet also in sociopolitical reality, since our reality has become a flawless, hyper-realistic digital spectacle, played on TV and computer screens in the form of "objective" newscasts and investigations, "live" reports, and "realistic" filmed fictions) there is no choice, for there is nothing new. Humanity's free will, the capacity to discover new ideas and meanings, the freshness of the first film, all these are an illusion. The Matrix trilogy is not so much about meaning, as about the illusion of meaning. Neo is duped in thinking his role was his own choice, just as we are duped, when we fail to understand that, behind Baudrillard's trendy ideas (his theories on simulation were the foundation for the world of the first film), behind its pioneering effects and its playful structure, the Matrix trilogy is nothing but a retelling of the Hero's Journey, yet another Messiah's biography, a tale as old as Lord of the Rings, the New Testament, or the Mahabharata. And this revelation, this realization, is the true "desert of the real".

The gamer-viewer, contemporary man, has no choice but to keep playing, like the gamer-hero, in the digital spectacle. Chasing the illusory rebirth of the endgame, he ends up back at the beginning. Neo sacrifices himself to save mankind, but his sacrifice fuses him with the machine world, makes him one with the Matrix. Within this Matrix, one imagines that Neo will rise again someday, repeating his destiny as the chosen One. When Sati, an intelligent program with the guise of a little girl, says that she made a sunrise for Neo, we understand that, in a sense, Neo is this digital sunrise; a sun god, like Norse Mythology's Balder or Christian Mythology's Jesus, who, through his springtime ritual sacrifice, builds the "new" world from his own flesh. A sunrise is not a novel sight, but it is pleasing, and offers us enough entertainment until the next game in the digital society of the spectacle.

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