ART AND TECHNOLOGY – THE ROLE OF TECHNOLOGICAL ADVANCE IN ART HISTORY

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Abstract: In the aftermath of the Second World War, art and technology reached the point of competing and inspiring each other, albeit long they stood far apart. Thenceforward a subsequent fusion towards substitution of the former with the latter was imminent. In other words, contemporary artistic practices reach the climax – through video and digital art, of critically engaging in their means of expression as much scientific and technological advance as never before, changing the face of art forever and completing the revolution of sociological and political infusion into the field of art. Less orientated towards the past, the present paper aims at reviewing the changing role of technology played in the art of the present with an interest taken in the artist status and the public involvement. Furthermore, the interdisciplinary and cross-disciplinary experimentation central to contemporary art is given attention in order to point out how individual aesthetics have been gradually replacing general aesthetics.

Keywords: new media, video art, digital art, sociology, politics, artist versus engineer.

The Beginnings of Tech-Art

As any reactionary artistic nascency, the emergence of technology into the field of art took place in an underground fashion, altogether disputed and repudiated by the public and the artistic world. The controversial burst of technological art was in its beginnings and many years after, an acerbic critique addressed to consumerist society, technology on the whole and the progression of human being towards dehumanisation. The challenge was double since the artist found a counterpart in the technologist (or engineer) hired by medical laboratories and international companies such as Boeing or Bell within the research divisions. At that point technology gave art new reasons of being after the Second World War had ruined all its stakes and perspectives. Inspired by the technologist's work and at times working side by side, the artist of the new media explored technical means to achieve artistic and aesthetic purposes. Whether his intention was achievable or not still accounts for tremendous debate even nowadays.

From the good companion of art in building the Egyptian pyramids or the gothic cathedrals, in making refined pottery and later on in providing painting with new colours on the canvas through the discovery of artificial pigment, technology acquired during the twentieth century an infamous role of undermining art's specificity and value. Therefore, *art as technology* would become the ultimate enemy of any art-based practice by ignoring the traditional content and manifestation of art. In addition, technology would not only affect the existence of various arts, but also the museography as such through the invention of digital galleries, interactive terminals placed in museums, electric objects kickstarters and any other virtual devices. The

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direct encounter with the artistic production was not anymore necessary since digital supports (CD-ROMs, networks and internet) would come to the fore changing completely the social environment and the perception of art.

The supporting role of communication technologies in the motion picture about new forms of art would rapidly turn into a leading role. Both instrument and practice, technology fostered and stimulated artists' imagination up to the point of rivalling and outflanking technicians. So, it is not random that the same companies hiring technicians would hire tech artists as well to corroborate their work. The non-governmental organisation *Experiments in Art and Technology* (E.A.T.), which was founded in the sixties by the electrical engineer Billy Klüver, would have the novel goal of bringing artists and engineers together: *EAT was a first instance of the complex collaboration between artists, engineers, programmers, researchers, and scientists that would become a characteristic of digital art. Notably, EAT also received creative support from Bell Labs, which became a greenhouse for artistic experimentation*[1]. Consequently, the role of contemporary artist expanded and the separation from technological change of the individual started to fade away.

The shift in civilization on account of this partnership was seen both as positive and progressive, and negative and involutory as the breakdown of civilization and the death of art. From the former category, some got totally immersed in the idea of joining indistinctively art and technology, while others approached technology from an instrumental point of view, namely as a scaffolding in the line of Marcel Duchamp (1887-1968) who considered the artist the only one in authority to define and delimitate the field of art. Also, in this first category the adherents found comfort and hope: *Some are going to evoke a qualitative leap and they are not going to hesitate to applaud to appearance of «technological art» whose territory and rules from now on are going to be perfectly acknowledged and catalogued* (tr.n)[2]. However, the invisible manipulation of the image and through the image in the new video environment did not skip opprobrium. The acceleration of data processing and the transformation of the physical universe into a sensorial one would make the humanists tremble with fear and seek refuge in scepticism and pessimism. In other words, *the novelty consists without any doubt in the extraordinary expansion of this manipulation and in the powerful consolidation of a system of representation that infiltrates now into all the actions of daily life, and even into our brains and affects* (tr.n)[3].

The apocalypse of the digital image failed to take effect and people remained surrounded by a world of images, capable in themselves of self-transformation due to the operational power of the machines. Furthermore, technology granted artificial models of action and behaviour that are going to exhilarate future artistic practice.

From video to digital art

From physicality to invisibility, from the ninetieth century of heavy machines to the twentieth century of miniaturisation and microchips, the technological advance reached the stage of imbuing contemporary art with its own spectrum of correlated-attitudes: either of contestation,

[1] Christiane Paul: *Digital Art*. Thames & Hudson, London, 2003, p. 16

[2] Florence De Mèredieu: *Arta şi noile tehnologii. Arta video, Arta digitală*. Enciclopedia Rao, Bucureşti, 2005, p. 8

[3] *Ibidem*, p. 10

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or of facilitation. At first video art gave way to repugnance, circumspection and refusal towards technology. The sixties became the playground for the international movement called Fluxus[4], which gathered many of the pioneers of video art, resident in Germany and the United States. Resonant names such as Wolf Vostell (1932-1998) or Nam June Paik (1932-2006) were conquering new territories for their just born infant with a TV set on his shoulders. During the seventies, around the feminist circles, women artists are going to bring their contribution to video art as well.

Quite interestingly, video art and digital art developed on separate ways, besides the factuality of their images having different sources, analogue and digital. At the same time, there were created hybrid video-digital forms so that we cannot discuss the anteriority of video. According to most of the specialized voices, video and digital art appeared independently and in a parallel manner. After the scene of post-war art had widely opened to happening, performance and installation, the borders between traditional arts vanished in the air and the emerging artistic forms took inspiration from the new technologies, wherein video as the instrument of a social and political battle redefined the concept of art thoroughly.

More relevantly, the public's welcome of television was wider and more enthusiastic, that is why art approached it without too much effort. As far as the computer is concerned, at the beginning the field of art was perfectly detached from its presence, not to mention that technically speaking a computer was much difficult to approach, so less accessible. From historical point of view, we can add that the twenties had been the years of technical premises, while after the Second World War there appeared the first technical applications. The fifties were the pioneering years of electronic art through the works of Ben F. Laposky (1914-2000), who brought to the public the oscilloscope as a medium for abstract art, and Herbert W. Franke (b. 1927) that created luminous contrasts and effects using a machine, and later on in the late seventies he co-founded Ars Electronica[5] in Linz, Austria. During the sixties there were carried out intense activities in favour of technological art, from the first synthetic images, aesthetic researches via computer to automatic drawing machines or tables, and obviously the first exhibitions on information art (e.g. *Computer-Generated Pictures*, *Computer Gravure* in New York and *Cybernatic Serendipity* in London). The seventies completed the series of displaying computer art at Hannover (*Komputerkunst*) and launched the first communities that promoted the uses of computer within the sphere of art (Computer Art Society in London, Computer Technique Group in Japan and Compro Division US in the United States).

Starting with the sixties, two emblematic tendencies were taking shape due to the work of Paik on the one hand and the one of Vostell on the other. While the first one adopted a technical position, running the engineer close and working out the video-graphic material, the other from a sociological and political position coined the term "decollage" to express his disapproval of the consumerist society in what the thrown-away and recyclable objects are primarily concerned. His sculptures encompass broken television sets (i.e. having blurry, blotted or bullet holed screens) combined with a wide range of out of use materials. In short, for Vostell technology was a barrier and a means of disturbing the televised society, whereas for Paik it brought in the

[4] The term is supposed to illustrate the movement and the fluidity of life (see: Heraclitus of Ephesus)
[5] The first Ars Electronica Festival for Art, Technology and Society, premiered in 1979 and lined up twenty artists and scientists that are going to multiply over the following years up to the present days (see: http://www.aec.at/festival/en/).

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redemption from derisory, elevating art to a superior level. The latter honestly believed that *As collage technique replaced oil paint, the cathode-ray tube will replace the canvas*[6].

Another predisposition of the sixties was towards a sort of technological agglomeration (mainly scattered TV sets mixed with something else) that in time is going to be reduced to one or two elements, respectively ideas. Back then, art in itself was, generally speaking, a confusing mix of genres. Also, those were the years when broadcasting from museums became possible so as the following decade would turn into the time of retaliation. The socio-political renewal of the seventies, from anti-war protests and feminist outbreaks to student or liberation movements, mutated video from a quite awkward practice into a fully-fledged interdisciplinary medium: *Video remained an interdisciplinary medium that primarily appeared in the fine art context (Conceptual art, Body art, Land art, and Action art), and which also entered into a dialogue with a growing mass media (television, film, and radio). The conceptual development of models of time and space, as well as the human body as material, were major thematic emphases*[7]. Video art was not necessary anymore as a designating concept since all the possibilities of its being have been conquered: accompanied by a single camera without audience, by cameras plus audience (live public) and eventually by camera, audience and broadcasted show (TV public).

Throughout the seventies, various drawing machines, graphic consoles and charts have already become commonplace in the artistic practice from United States, Europe and Japan. The new art was triggered by graphic networks and mathematical codes, wherein its main characteristics were abstractionism and minimalism. For instance, optical art (op art), as a predecessor of video art, was based on geometrical operations and the mechanical treatment of the image, too. Optical illusions – with roots in the Baroque trompe l'oeil (perspectival illusionism), are reused in the twentieth century by means of the new technical supports to emphasise the insidious advance of technical era and to address psychological questions of perception.

Aesthetic Revolution with Technology

If one was to credit Joseph Beuys (1921-1986)' dictum according to which *everyone is an artist*, there would not be any room left for discussing the status of the artist, the public's role or the perception of the work of art as such. However, there is some grain of truth in the Fluxus artist and pedagogue's words, namely everyone is liable to become an artist on the strength of the changing principles of art evaluation and interpretation. Within the nexus of art, technology and society, the chance of considering society a great work of art to which each individual brings his artistic contribution is exponentially increasing.

After Wolf Vostell had affirmed the modern constants of misappropriation, depreciation, invalidation and deconstruction as ruling forces of the creative society of the twentieth century, the aesthetic potential of electronics did not smoothly come through. His installations were more or less against the hair forms of expression, exposing the fetishisation of television and the society of blind consumption. Moreover, new technical means of production and distribution

[6] Sylvia Martin: *Video Art*. Taschen, Hong Kong • Köln • London • Los Angeles • Madrid • Paris • Tokyo, 2006, p. 10

[7] *Ibidem*, p. 12

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fashioned the work of art to such an extent that art is at the hand of technological advance and of the video artist who took over a museum space and populated it with different connected objects.

Where art was once created to be seen and contemplated usually from a given distance, at present installative art is created to be traversed and the previous detached viewers are to become travellers of the kind: *Viewers decided when to enter the flow of pictures, how long their reception time would be, and when to leave*[8]. Therefore, the exhibition room has developed into a passage and the visitor into a passenger that is not passing by art, but passing through, experiencing all the 3D sensations of life flow.

As far as the value factor is concerned, what used to be valuable as a VHS-cassette in the seventies today is just a video, a mass-produced commodity. Consequently, by the end of the nineties the recording of audio-visual material on magnetic tapes have been replaced by numerical storage in data sets, which diminished as well the value of the recorded material and gradually brought art to the internet. The merger of the two worlds – art and tech, originally incompatible in content and form, meant both experimentation and art exposion on the internet to a much wider audience. This way, art consumers may connect with art and artists whenever they please, either directly or indirectly via social networks. As a result, consumer technology has improved accordingly to feed this newly created need and images are now the highest currency on the web.

Surprisingly, art and technology have made the boundary between them increasingly fluid in comparison with the debuting sixties and their intersections have put to the issue matters such as the following: social and political context, communication and interdisciplinarity in a globally networked culture. The creative process of technological art is being informed by multiple disciplines (e.g. advanced computer sciences) and diverse cultures. Technical critique and instruction is regarded as a prerequisite for being an accomplished artist, not to mention that conventional ideas about art are thoroughly challenged. The creative industries are in search of creativity and the question that arises from that is whether engineers are supposed to be replaced by artists. We would say that no, but probably artists are valued much more from technical point of view than they were in the past. Anyway, more and more artists are leaving their studio to move into a high-tech laboratory for a change.

The onset of new technologies put forward more tools, more options and more ways of stimulating people's senses, and along with digital art other problems have appeared, from difficulties of restoration and preservation to fear of impermanence and lack of certainty. Indeed, technology has given art a global audience, but it has not given the artist global means of experiencing art, so art remains still a privilege of those technically well-equipped.

Conclusions

Since the visual and the sound have happily married, even though at first they were separate different devices forming a portable unit (the camera), the total synthetic creation was impossible to avoid. More than that, an international art was born in the wake of Pythagoras's theories that considered the universe founded on a mathematical armature. The technologically

[8] *Ibid*., p. 17

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trained artists are striving to decipher this foundation, to manipulate it and to play out its possibilities.

Within the same framework, the merit of the video artist is to use and appropriate the instruments specific to technology, to bring to people's attention that art has countless possibilities and its means are unlimited. In addition, the fact that the artist has open access to sophisticated gadgets ahead of ordinary people, sometimes working near the big companies, has caused the integration of the same artist into the world of technology together with the integration of technology into the field of art. In contrast with the engineer, the artist mimes the world of technology on other waves, whereon he is not feudatory to technology, but in full play with it. On the one side, there is reverence and invention (the engineer) whilst on the other one, there is sparkling freedom and creativity (the artist).

Investigating technology in order to produce new forms of art has become a purpose in itself and technology has managed to bewilder the minds of the emerging artists above everything else. As creative tools and agents, advanced technologies are responsible for the production of new meanings, ideas or artistic inventions, all of them being central to contemporary art. Besides technical competence, an extra dose of creative strategy and critical thinking is necessary to complete the training of an artist willing to create in an environment shaped by the permanent advance of technology.

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