Digital Media and Contemporary Art

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Introduction

The relationship between digital media and contemporary art is a complex relationship: despite frequent statements of a continuing «disavowal» of digital media within contemporary art,[1] in this paper[2] we will try to identify some converging lines that appear to be increasingly strong.

A convergence that was widely anticipated (in the Twentieth Century avant-garde movement in general, and especially in its conceptual trends) by some global factors: the opening of all the arts to the communicative dimension; the interest in the relationship between technology and creativity; the relationship with the media, and in general with the concept of «mediation», which poses the problem of positioning the artist in society; the pervasive and interdependent feature assumed, especially in recent years, by the «system» of contemporary art.[3]

The relationship between digital media and contemporary art poses the problem of finding the right balance between tradition and change: often many subjects, particularly institutional ones, maintain conservative positions considering the advent of technologies such as a simple change in medium and techniques (from the book to e-book, from film to magnetic memory, etc.). But we have to remember that already McLuhan[4] ironically affirmed that the automobile, at the time of its appearance, was simply considered a «horseless carriage», because contemporaries did not grasp the full inherent technological potential, and above all did not see the profound conceptual, cultural and social change that the new mean of transport carried with it in terms of the reorganization of space and time: in trips, in the perception of the landscape, in the changing relationship with the territory.

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[1] Claire Bishop, *The Digital Divide: Contemporary Art and New Media*, «Artforum», september 2012.
[2] This paper resumes the work and findings of the «Mediatic Impact» WP, the last part of the INVISIBILIA project *The Promotion of the Artistic and Expressive Intangible Heritage in Piedmont: toward a Digital Creativity Model*, funded within the Announcement titled University of Torino / Compagnia di San Paolo Projects (year 2011), of which the writer was the scientific coordinator. The WP was conducted with the active collaboration of dr. Vanessa Michielon, research fellow from September 1, 2013 to August 31, 2014.
[3] Francesco Poli, *Il sistema dell'arte contemporanea. Produzione artistica, mercato, musei*, Laterza, Roma-Bari 2008.
[4] Marshall McLuhan, *Understanding Media*, New American Library, New York NY 1964.

The risk is that something similar may happen in the relationship between digital media and contemporary art, where digital media are sometimes actually seen as «horseless carriages», simple equipment aids considered in the light of long-established traditional practices, and with an eye to the past.[5]

Digital media are today in a state of transition: on the one hand, they look towards the past, showing their ability to recover and give new functions to all the wealth of knowledge deposited on analogic media; on the other hand, towards the future, developing completely new forms, which are based on characteristics that analogic media did not possess: modularity, variability, programmability, interactivity.

The purpose of this paper is therefore to give a quick overview of how digital media are offering a new conceptual and operational scenario, reconfiguring on the one hand the expectations of individuals and institutions about digital tools, and on the other offering the artists new opportunities to elaborate their expressiveness and experimental creativity.

Organizational Management Platforms

Collaboration platforms are the simplest example – as they are purely instrumental – of the application of digital media. They are based on the same models that are used on a larger scale by the typical generalist social networks (Facebook, Twitter, etc.), but reorganized to address the needs of particular audiences.

An example is the CaFÉ platform,[6] managed in the United States by the Western States Arts Federation (WESTAF) with the aim of promoting work and networking among artists. It works as a financial, organizational and directional infrastructure, by promoting research and exchange among all participants, providing a wide range of services, giving support to the organization of exhibitions, activities, funding opportunities, participation to tenders.

The platform is a significant example of advanced digital technology supporting artistic and cultural activities, as it includes an internal database of nation-wide job opportunities, projects and residencies; an online gallery where artists can exhibit their works and get in touch with institutions, galleries, collectors; a system of online participation in competitions, exhibitions, demonstrations; an adaptive platform to enable governments, institutions, foundations to manage the financing process. By cross-checking all these data, thanks to a «smart» algorithm, the platform can also produce a *Cultural Vitality Index*, based on

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[5] Yehuda E. Kalay, *Preserving Cultural Heritage through Digital Media*, in Yehuda E. Kalay, Thomas Kvan and Janice Affleck, eds., *New Heritage: New Media and Cultural Heritage*, Routledge, London 2008.

[6] <https://www.callforentry.org/index.php>.

various parameters, which automatically reports the most productive areas and the potentially critical situations in the artistic activities of all the businesses that are part of the initiative.

Documentation and Museums
Moreover, digital media are «instrumental» in the documentation and conservation of contemporary art. Nowadays, museums and institutions produce and store large amounts of digital material, and of course they have great interest in making this content available to the public through the net.[7] The extent and speed with which some of these subjects are responding to the changes brought about by digital technology is impressive, especially considering that these institutions are generally regarded as gazing towards the past and strongly anchored to the conventional and traditional well established collection and documentation management practices.[8]
This is indeed a strategic turning point: in 2010 the Smithsonian Institution developed a strategic plan extended until 2015 titled Digitization Strategic Plan,[9] in which the problems implicit in a project of this size are presented in an integrated manner and relate to: the conversion of analogic materials into digital; the production of original materials in digital format; the distribution of materials by means of different devices; the upgrading of technology and metadata to prevent the loss of information; the use of a training approach to retain and maintain the audience; the attention to the various forms of social participation and experience sharing; the selection of criteria for the identification and disposal of obsolete material.
Along the same lines, the Tate Gallery has developed a document entitled *Digital Strategy 2013-15: Digital as a Dimension of Everything*,[10] in which the focus on «everything» shows the global approach to the problems: to place all the richness of available content within the reach of present and future publics; to create and support user groups; to maximize the possibilities of return on investment. This is a strategic approach in the sense that digital media are no longer seen as a means of occasional action, but as the new glue of the entire organization as a whole.
There is a growing awareness that, in all sectors, the field of digital media is now freeing artistic practices from established customs: from production to exhibition,

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[7] Dyson M. C. and Moran K., *Informing the Design of Web Interfaces to Museum Collections*, «Museum Management and Curatorship», 18, 4, 2000.
[8] Fiona Cameron, *Digital Futures I: Museum Collections, Digital Technologies, and the Cultural Construction of Knowledge*, in «Curator», 46/3, July 2003.
[9] <http://www.si.edu/Content/Pdf/About/2010_SI_Digitization_Plan.pdf>.
[10] <http://www.tate.org.uk/research/publications/tate-papers/
tate-digital-strategy-2013-15-digital-dimension-everything>.

to fruition, to curation, to the actual conceptualization.[11] This is a phase of transition to a hybrid culture, where the digital space is increasingly just another space we live in: the museum of the future will come in evolutionary steps, but some steps have already being taken.

The issues about sharing artwork online came to a head a few years ago, when Google began Art Project.[12] The Internet giant planned to scoop up images of artworks and present virtual tours of museums, using high-definition camera technology. Museum curators worried about matters of copyright and commercialization, fearing that Google would try to profit from the images shared by the museums. But Google signed contracts with the museums including copyright protections and pledges not to use the art images for commercial gain. Art Project began with 17 museums in 2010, and today has 500 institutions in 60 countries, and 7.2 million artworks. Google's high-definition image technology captures the image of a painting in roughly 10 billion pixels, well beyond the power of the human eye. The technology allows online viewers and researchers to zoom in to see details, down to brush strokes and scratches, in a way they could not in person.

Creative Processes

But in addition to the «instrumental» processes mentioned above, the spread of digital media also encourages a «physiological» artistic renewal, which is linked to the long history of how artistic expressions have always been intertwined with technology, which has always affected their creativity allowing them a wider scope in an intrinsically interdisciplinary field. In this sense, digital media encompasses all experiments and currents that have succeeded one another and often crossed paths in recent decades, in their attempt to follow the continuous changes in the field: programmed art, computer art, internet art, net art, web art, digital art, etc.,[13] and can often be traced back to deeper persistent currents that are rooted in Futurism.[14] This is, therefore, a constantly changing scenario in which digital media are tightly woven into the fabric of artistic practice and production reconfiguration, in a range of ways that include the interactivity, the positioning of the body in physical space and hence the focus on performance, the general trend toward gamification, the

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[11] Sarah Cook and Beryl Graham, eds., *Rethinking Curating: Art after New Media*, MIT Press, Cambridge MA 2010.

[12] <https://www.google.com/culturalinstitute/project/art-project?hl=en-gb>.

[13] Rachel Greene, *Internet Art*, Thames & Hudson, London 2004; Christiane Paul, *Digital Art*, Thames & Hudson, London 2003; Michael Rush, *New Media in Late 20th-Century Art*, Thames & Hudson, London 2001.

[14] Cosetta Saba, ed., *Cinema Video Internet. Tecnologie e avanguardia in Italia dal Futurismo alla Net. art*, CLUEB, Bologna 2006.

narrative dimension and generally the use of the spectacular in the design of digital media.

In addition, a consequence of the spread of digital media is the ever stronger need to take different points of view as opposed to the purely iconic one: the character of much of contemporary art has become inherently transmedia, in situations where all semiotic forms of creative expression are present alongside the visual dimension. Very often the works of art developed in the context of digital media appear not so much as materials, physical objects, but as aesthetic and narrative processes placed in a well defined area in space and time.

Interactivity

Because of this strong transmedia and participatory nature of contemporary art, one of the most important features of digital media, which affects the creative processes, is interactivity. That means that the «text» (written, iconic, performative, etc.) becomes able to receive an input, perform calculations, and return an output: in other words the text – which was only visible until then – in the last quarter of the Twentieth Century becomes practicable, accessible. This transformation of the textual space from visible space to viable, playable space represents the decisive turning point in opposition to the previous mass media age.

This turning point came about mainly due to the two dominant paradigms in cultural digital text: hypertext and immersive 3D graphics; the first one mostly relating to the world of writing; the second one to the visual world; but they are both destined to flow into ever more convergent interactive multimedia forms. In particular, Manovich[15] emphasizes the difference between the traditional paradigm of media representation (where the relationship between observer and observed is static) and the new paradigm of simulation (where the observer moves within the observed space): a real construction of space as a mediated text, permitted by 3D graphics.

However, Manovich still talks about a user/reader/spectator who is sitting in front of a computer; whereas the first decade of the Twenty-First Century represents, as we shall see, the phase of the mass diffusion of mobile communication devices (mobile phones, smart phones, portable consoles, media players, e-book players, tablets), which leads to a new role for the physical presence of the body on the media scene. For this reason some examples of installation art, in particular interactive installations, can be interpreted as improvised performances[16] where the action plays a central role in the aesthetics of use: in interactive art the action of the user

[15] Lev Manovich, *The Language of New Media*, The MIT Press, Cambridge MA 2001.
[16] Sarah Rubidge, *Reflections on the Choreographic Process in the Digital Domain*, Discussion Document written after the Machines and Migratory Bodies Artists Lab held at Chichester Institute of Higher Education, UK, July 1998:<http://www.sensedigital.co.uk/writing/DigChor98.pdf.>..

shapes the work of art and becomes the main source of aesthetic experience. The work of interactive art – and this is what distinguishes it from traditional visual art – doesn't show its form in the absence of reception.[17]

Interesting examples in this sense may be considered *Synapse*,[18] an interactive experience in Brussels driven by the passers whose movements influence a self contained system, translating connections and encounters into sounds and lights; or *Enra*,[19] an aesthetical experience combining elements of dance, performance art, music, technology, light, and computer programming.

The «mobile/locative» paradigm

Digital media are increasingly moving away from the fixed locations (desktop computers) that have characterized and influenced their birth and their first diffusion: according to industry observers,[20] by 2017 the mobile will be 13 times larger than 2012; and most importantly, mobile web will exceed desktop web in 2015, and by 2017 will be three times larger. A paradigm shift that radically changes both the mediated relationship that contemporary art consumers can have with museums and conservation institutions, and the way they enjoy individual works of art or situations from an aesthetic perspective.

Manuel Castells's theory,[21] with its many references to the organization of space, is the very foundation that allows us to place the «mobile/locative» paradigm in the digital media age. Castells's theory highlights three concepts:

- the information society: the awareness that social and cultural life is governed today by the exchange of information rather than by the movement of goods and people;
- the space of flows: the technological network that supports and integrates the physical space, within which social relationships can grow and develop;
- the global city: intended as a the infrastructure of a physical, technological, emotional and cultural space, within which people can recognize themselves as world citizens.

With the diffusion of mobile communication devices, this paradigm develops ever more. Locative media are communication systems that use specific location based technologies in order to give life to significant spatial and temporal relationships

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[17] Katja Kwastek, *Aesthetics of Interaction in Digital Art*, MIT Press, Cambridge MA 2013.
[18] <http://vimeo.com/87069896>.
[19] <http://enra.jp/post/71380514740/performamce-choreography-saya-watatani-maki>.
[20] Cisco Visual Networking Index (<http://www.cisco.com/c/en/us/solutions/collateral/service-provider/ip-ngn-ip-next-generation-network/white_paper_c11-481360.pdf>); Mery Meeker, Internet Trends 2013, KPCB (<http://www.kpcb.com/insights/2013-internet-trends>).
[21] Manuel Castells, *The Rise of the Network Society*, Blackwell, Oxford 1996.

between people, groups and institutions: establishing strong connections with local realities, creating shared representations of the surrounding territory, becoming a link between physical reality and the internet.

Unknown territory to explore, where the connection between art and technology can give rise to forms of locative art,[22] which can organically unite several experiences that have been disconnected: pervasive computing, site-specific installations, place-based storytelling, geo-tagging and urban interactions.

A profound scenery change has occurred, where – through information technologies – new forms of embodiment are springing up, reflecting both a physical presence in the world and a social embedding in a web of practices and purposes, transferring the realm of virtuality to the realm of everyday experience. In this sense, embodiment is emerging as one of the key concepts for today, with a very broad base spanning from philosophy to cognitive psychology, to computer science, to medicine, to theatre. This paradigm shift is determined by the development of *ubicomp* (ubiquitous computing):[23] it gradually gets rid of the old desktop computer, to make room for sensors and microcomputers which, associated with an object, can be unequivocally identified and gather information in real time and in real space.

After all, the Internet of Things is a mediated space, since it is an area where many things – that are not just objects but also activators, receptors and transmitters, input and output devices – are located, installed and wired: in other words, communication tools that transform the physical space into a text area. The miniaturization of electronic devices takes possession of the space, transforms the world around us in a sort of «liquid Internet», completely different from the world of bulky desktop computers: the liquid Internet is the wireless connection of micro objects, barely visible and scattered everywhere, a communicative powder (smart dust) on which the semiotic environment of new art languages is based.

Pervasive Gamification

The importance of the ludic dimension has emerged more and more in contemporary culture: the ludic dimension has progressively lost its negative connotation, acquiring instead a central position in the socio-cultural dynamics and remodelling the concepts of loisir, free time, cultural space and consumption of art.[24]

Nintendo Wii must be mentioned as the first example of interactive consoles that

[22] Ulrik Ekman, ed., *Throughout. Art and Culture Emerging with Ubiquitous Computing*, The MIT Press, Cambridge MA 2012.

[23] Paul Dourish and Genevieve Bell, *Divining a Digital Future: Mess and Mythology in Ubiquitous Computing*, The MIT Press, Cambridge MA 2011.

[24] Friedrich von Borries, Steffen P. Walz and Matthias Böttger, eds., *Space Time Play. Computer Games, Architecture and Urbanism: The Next Leve*l, Birkhäuser, Berlin 2007.

have based their success on the introduction of the dimension of space: not in the text, but outside it. In general, the interactive console born in the field of video-games are now also used for artistic experiments: by extending the remote control and mouse potential out of the screen, they introduced a homology between text and space that well represents the symbolic dimension. The movements of body, arms and legs are read in the real space and reproduced on the screen, immediately becoming a feedback for the player. In fact, the player who moves in the physical space writes precise instructions on the text controlling the game (the deep structure); this text in turn writes, or better projects, onto the screen a visual text (the surface structure) that suggests to the human device (the player) how s/he must act. An application of these possibilities has been tested as part of the Alcotra Innovation Project,[25] during which the Reggia di Venaria hosted a Living Lab which lasted three days. A French-Italian team designed and offered, as a work in progress, an innovative evening visit to the museum, based on digital technologies, in order to engage palace visitors: in particular, a game console was used to intercept visitor movements in the gallery space and modify the images and performance projected onto the lit walls.

Yet in the field of narrative experience located in the physical space, one of the most exciting examples is definitely *Ingress*, a recreational and participatory narrative work developed by Google in experimental format in 2013. Within a scenario of sci-fi drama, in which two factions fight for control of the city, the player moves and sees on the screen - thanks to his/her mobile device - precisely those buildings that are within a 25 meter radius from the place where he/she is physically located, and that have been mapped through the geo-mapping algorithms of Google.

In this way real and virtual dimension will overlap, and blend into a single experience that is playful, emotional and aesthetic at the same time.

Urban spectacularization

One of the areas where digital innovation can have a greater impact on the contemporary art is certainly that of augmented reality,[26] which allows – through smartphone and dedicated software – to see virtual «objects» superimposed on the real landscape and integrated with it, giving birth to a complex experience between reality and fantasy, between documentation and fiction.

An example of this hybrid approach to the urban experience[27,] characterized by a

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[25] <http://www.invisibilia.unito.it/?p=272>.

[26] Communication Strategies Lab, *Realtà aumentate. Esperienze, strategie e contenuti per l'Augmented Reality*, Apogeo, Milano 2012.

[27] Simone Arcagni, *Screen City*, Bulzoni, Roma 2012.

fragmentation that seeks new forms of aggregation, is Komplex.28, [28] an integrated media experience project that mixes augmented reality technology with literary and film references, constantly evoking the nomadic uncertainty of the urban experience: a story on the border between the graphic novel and urban graffiti, where the «pages» of the story are hidden and at the same time visible on the city's architecture, and where the protagonist/player wanders into a dreamlike dimension between reality and vision looking for a way out of this narrative maze. Real city and imagined city are overlapping into a synthetic experience, where the city itself in its mediated forms becomes the interface of the project; and where in general the nomadism becomes the key to understand all these forms of urban art, where the aesthetic experience is combined with the exploration of an area that is historically loaded with social, political, and emotional meaning as the city invariably is.

Or even, *The Towers-Lucca Hybris*, an audiovisual installation by Peter Greenaway which narrates a series of episodes set in medieval Lucca, where visual arts and performance are mixed with the support of the most advanced digital technologies. For about 35 minutes the entire facade of the church of San Francesco becomes a screen onto which an experimental event of «architectural film» is projected, with gigantic images in high definition created from shoots taken in the city using the most advanced video technologies. As in other events of this kind, one of the salient features of the experimentation, beyond the extremely refined technologies, is the extension of the artistic experience: on the one hand on the aesthetic plane, going beyond the size of the visual representation and opening up to the experience of the installation and performance; on the other hand on the social plane, opening the show in the public square and going beyond the traditional art audience to address every day people, tourists, passers-by.

More complex, and even more interesting on a conceptual level, is the *London Streetmuseum*, a project of locative participation, which allows free movement around the city with the guidance of a smartphone. The visual experience of walking around is merged with the digital experience of surfing the London Museum database that provides images of the town. In this way the tour in the actual and physical space also becomes a visit in time, a blast from the present to the past, acheiving that mediatization of reality which in many ways seems to be the characteristic code of contemporary urban culture and art.

Conclusions: Invisibilia Project

The overall scenario within which to view the relationship between digital media and contemporary art shows more and more the relentless process of art out of its appointed places and its institutional forms, a process already begun in the

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[28] <http://www.lebfilm.com/28.html.>.

Twentieth Century that digital media now seem to speed up and put in a cultural context – conditioned by the model of the network – strongly influenced by the processes of communication, by the rooting in physical places, by the social and participatory dimension.

That's why the research project, on which this paper stands, has been titled INVISIBILIA, a reference to the concept of the «intangible» cultural heritage promoted by UNESCO; and also to several other projects moving in this direction: the *Variable Media Network*;[29] the Institute for the *Unstable Media*.[30]

A title used as a sign, to emphasize the fact that in contemporary art the relationship between the aesthetic appreciation of the single «work» and its material visibility is becoming less relevant: the focus is now on the complex nature of the artistic experience, which is connected with social, cultural, economic and ecological aspects[31].

In addition, this digital convergence stretches also to the institutional aspects of contemporary art, it extends their digital modes of production – inherent to the works – to the way they are managed. The digital challenge requires a rethinking of artistic production, as well as – perhaps especially – the role and responsibility of decision makers: regarding how museum exhibits are organised, the evaluation criteria, the channels of dissemination, the problems of acquisition and conservation, the integration of artistic media in the general flow of social activities playing a central role in culture transmission.

Contemporary cultures are increasingly based on the exchange of information, symbols, images, desires, expectations, in a world where the users are increasingly mobile in the international arena, undefined with respect to the class of origin, transversal and globalized: in this context, the artistic and aesthetic experiences – connected and enhanced by digital media – seem to be the pillars and the foundations for the reflexivity[32] which is nowadays necessary to understand the dynamics and changes in social streams, the new logic of cultural production and consumption, the new forms of active citizenship that are taking shape in the contemporary landscape.

[29] <http://www.variablemedia.net/e/index.html.>.
[30] <http://v2.nl/archive/works/capturing-unstable-media>.
[31] Federica Martini and Vytautas Michelkevičius, eds., *Tourists Like Us: Critical Tourism and Contemporary Ar*t, VDA Leidykla, Vilnius 2013.
[32] Ulrich Beck, Anthony Giddens and Scott Lash, Reflexive *Modernization: Politics, Tradition and Aesthetics in the Modern Social Order*, Stanford University Press, Redwood City CA 1994.