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Text - space dynamics

The digital media in defining new urban languages

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The paper outlines, from the point of view of cultural and media studies, how digital media can be taken as a key to approach the understanding of new urban languages, as they introduce new dynamics in the text-space relationship: as a matter of fact, in digital media "texts become spaces", as they become viable (eg in hypertexts and video games); and - on the other side - "spaces become texts", as they become readable and writable (eg in procedures for geotagging and in many other cases).
The paper focuses on the text-space dynamics, taking into account some theoretical points regarded as paradigms of how the perception and representation of social space are changing in the digital media landscape: the mobile/locative paradigm; ubiquitous computing and the internet of things; open data and interoperability; pervasive gaming; social tagging and partecipation.

keywords: digital media; text; space

1. Introduction

From the point of view of cultural and media studies, digital media can be taken as a key to approach the understanding of new urban languages, as they introduce new dynamics in the text / space relationship: as a matter of fact, in digital media "texts become spaces", as they become viable (eg in hypertexts and video games); and - on the other side - "spaces become texts", as they become readable and writable (eg in media walls and in geotagging).
So, in this paper, when we talk about "new urban languages" we mean that the city - thanks to the digital network infrastructure - have become a semiotic space where the experience of living and going around is very similar to the experience of reading / writing, or to the experience of watching a show / acting in theatre, and more generally to the experience of being a user of the media.
Consciously or unconsciously, the modern *flâneur* equipped with mobile phone, who moves in the urban space, continuously *reads* the spectacular performances of the media walls; or *activates* the intriguing perspectives offered by augmented reality; anyway he *writes* digital traces of his passage, which will be *read* by the tracking systems and data mining systems, creating the powerful underground structure of data and information that binds producers, consumers, digital media and the urban space into a single complex network.

The relationship between text and space obviously does not concern only the digital media: it was born in ancient times with the birth of writing (Ong W., 1982), and thus with the transposition of the temporal flow of speech in the delimited space of the page, thereby starting the close relationship between written code and iconic code which characterizes our cultural transmission processes.
A relationship that was strengthened with the invention of printing, when the spatial organization of the text became even more rigid, and when the first mechanical and technological applications for the transmission of culture - in order to control the textual spatiality - were carried out on both planes, of written and iconic text: with movable type print on the one hand; and with devices for the reproduction of perspective on the other.
Later, at the beginning of the industrial age, the relationship between cultural processes and urban spaces become institutional: since its foundation, sociology as a science has been closely related to the theme of the city (Gamba F., 2009), especially with regards to the social and cultural changes that urbanization brings in people's lives. Georg Simmel (*The Metropolis and Mental Life*, 1903), talks about a "tragedy of culture", the contradiction experienced by the inhabitants of the city between their own individuality and the multiplicity of urban forms. Max Weber (*Economy and Society*, 1921) talks about "disenchantment" as a characteristic feature of modernity, as the loss of the emotional, spiritual and mythical culture, absent in the urban space dominated by bureaucratization, mechanization, rationalization.
Somehow, starting from these premises, the age of mass media has gradually produced a negative interpretation of the text / space relationship, insisting on the concepts of de-localisation, de-territorialisation, de-spatialization, etc., as founding characteristics of "mass media culture" (Meyrowitz J., 1985). And later, at the beginning of digital media age, the prevailing idea of delocalisation was subsequently extended — as if driven by inertia — also to the "digital media culture": extension probably due to the fact that most of the debate was centred on a high visibility phenomenon (academic, industrial, emotional, mediatic, etc.) such as Virtual Reality and its presumed distance from "real" reality.
Today, a more mature theory of digital media has activated a partial revision of this position, and has gone on to a revaluation of space, guided generally by the consolidation of ICT (Information and Communication Technologies) and the pervasiveness of the network as a communication environment, and more specifically by:

- the rise of interactivity in digital media, that means the ability to act on a text as a practicable space;
- the enormous development of mobile devices and, therefore, the birth of a scenery naturally placed within a spatial dynamic;
- the growing importance of gamification;
- the general growth of visual culture and data spectacularization;
- the diffusion of social networks as places of meetings and exchanges of experiences.

A set of five theoretical paradigms, based on relations between space / text / technology, which represent now a proposal for reasoning on new urban languages.

2. Digital media and interactivity

Digital media are the transposition of the technical, professional, emotional, cultural world of mass media into the new technological environment offered by the rise of ICT. In this transposition, the key elements that characterizes the digital media is the distinction between two different levels:

- the *surface structure*: the place - on computer or tablet screens - that offers a view apparently similar to what we are used to seeing on paper, film and television;
- the *deep structure*: the place - consisting of hardware and software - where the digital information is processed and made perceptible to the human senses; the deep structure is a logic engine, based on the underlying database and algorithms, which performs calculations on abstract entities, but which is able to generate any kind of spectacular effects in the surface structure.

Thanks to the difference between surface and deep structure, the main characteristic of digital media is the interactivity. That means that the text becomes able to receive an input, perform calculations, and return an output: in other words the text - which was only *visibile* 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 as opposed to the previous mass media age.
This turning point was mostly achieved through the two dominant paradigms in cultural digital text: *hypertext* and *immersive 3D graphics*; the first one mostly tied 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 (Manovich L., 2000) 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 the phase of mass diffusion of mobile communication devices (mobile phones, smart phones, portable consoles, media players, e-book players, tablets).

3. The "mobile / locative" paradigm

In order to place the mobile / locative paradigm in digital media age, Manuel Castells's theory (Castells M., et al., 2007) is very important for its many references to the urban organization. Castells's theory highlights three concepts:

- the *information society*: the awareness that the 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 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 between people, groups and institutions: recovering strong connections with local realities, creating shared representations of the surrounding territory, becoming a link between physical reality and the internet.
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.
This paradigm shift is determined by the development of the ubicomp (ubiquitous computing) (Dourish P., Bell G., 2011): 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 are located, installed and wired many things that are not just objects but also activators, receptors and transmitters, input and output devices: in other words, communication tools that transform the physical space in a text area.
The miniaturization of electronic devices takes possession of the space, transform the world around us in a sort of "liquid Internet", completely different from the the world of bulky desktop computer: the liquid Internet is the wireless connection of micro objects, barely visible and scattered everywhere, as a communicative powder (*smart dust*) on which is based the semiotic environment of new urban languages (Sterling B., 2005).

4. Gamification and pervasive gaming

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, consumption (cultural and non cultural) (Pecchinenda G., 2004). The connection between space and games is physiologic, in the sense that in motion games and street games, as in many sports, the game allows the player to take control over space and territory, involving the creation of behavioral models and the appropriation of external reality.

In this sense, all classic videogames (ability games, adventure games, simulation games, etc.) represent some forms of control over space: over the *game space*, where the adventure takes place; and over the *player space,* mostly with the extension to the net, and the diffusion of multiplayer games.

Nintendo Wii must be mentioned relating to consoles. It based its success on the introduction of the dimension of space: not in the text, but outside it. The Wii, by extending the remote control and mouse potential out of the screen, introduced a homology between text and space that well represents - on a symbolic level - the topic we are discussing about. In the Wii, in fact, 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.

But from our point of view, the most interesting phenomenon in gamification are now the *pervasive games*, an umbrella term for a wide range of situations: *location-based game*, *location-enabled game*, *location-aware games*, *augmented reality games*, *alternate reality game,* etc. Pervasive games are played using a mobile device, that means: a) the localization of the player; b) the opportunity to interact with other players in the surrounding area, by phone or meeting them physically. As can be seen, the pervasive games are a very complex but interesting example of social discourses constructed in the urban environment, since they involve the use of communication technology, the geographical knowledge of the environment, the geo-location, the willingness to communicate with strangers, the use of leisure time for entertainment but also for knowledge.

5. Visual culture and data spectacularization

The development of visual culture offers important opportunities for developing fascinating hypotheses for the identification of new urban languages, especially taking into account the assets of open / big data which represent a huge resource of knowledge offered by ICT (Rosenfeld L., Morville P., 2002).

The management of the open / big data opens up great possibilities to invent new forms of monitoring and data collection (relating to the environment, mobility and welfare, but also to the cultural habits and leisure time activities) using advanced sensors technologies and ubicomp. The management of the open / big data allows to work on formats and protocols in order to achieve interoperability and cross-media, but also to work on the aesthetics of the data publishing form[1].

In this way, we can get spectacular forms of data streams that cross the city without interruption and enter into cognitive and emotional habits of *smart people*, creating advanced forms of evolved touristic services, where digital technology may support complex information infrastructures for cultural heritage re-use, event management, local mobility strategies, enhancement of the traditions and local products (Ekman U., ed., 2012).

For instance, *Real Time Rome* is a pilot project born from the collaboration of the SENSEable City Laboratory at MIT (Massachusetts Institute of Technology)[2] with Telecom Italy, presented at the Biennale of Architecture in Venice in 2006. In an effort to understand the configurations of everyday life in Rome, the project: uses mobile devices (cell phones and GPS receivers) as position sensors, assigned in a capillary way to the citizens; allows the collection of information to a maximum level of detail (the individual);

[1] http://www.domusweb.it/en/design/2012/06/25/in-screen-sports-graphics.html
[2] http://senseable.mit.edu/urbancode/

through the development of appropriate software for statistical processing and data display, gives an extremely precise real-time flows of the population in urban space.

6. Social networks as media spaces

After the decline of Second Life, where the overlap between real life and virtual life was realized within a space clearly recognizable as a physical environment, current *social networks* are rapidly evolving towards complex forms of identity creation (in Facebook you are generally yourself, the adoption of an *avatar* is second choice); a sort of virtual meeting place, where identity creation is based on an accurate dosing of personal text and messages adding quotes taken from other mediatic forms (literary, musical, iconographic, cinematographic).
In Facebook it is very frequent the use of Flickr, YouTube or other mediatic repositories as databases in order to create the messages: a way to create a *platform space*, in juxtaposition to - or overlapping with - the *space of flows* identified by Manuel Castells as a typical example of informationalism.
Overall, the physical presence and the socio-spatial-temporal location of people - when they are communicating - becomes increasingly important: this depends on the mobile / locative paradigm, within which they can develop new forms of creativity (Beardon C., Malmborg L., 2010), characterized by a fundamental difference compared to "sedentary" creativity (usually leading to the creation of a work). To activate the mobile / locative creativity implies necessarily to take into account the contexts of use, where and how users will be placed, such as in pervasive games, or in urban tagging experiments as the "walk show" organized by Urban Experience in Rome[3].
In these cases, it is important to understand the "spectacle of the city", not to act a show in the streets of the city; read and write an event self-promoted via social networks convocations, supported by the use of bluetooth, mobtag, mobile applications, geoblog mapped and tracked via GPS.

7. Conclusions

In contemporary cities, the mass media come out of their specific channels in order to take hold of the urban areas, in order to use the urban environment as a projection screen (Arcagni S., 2012), as in the visionary imagination of *Blade Runner* (Ridley Scott, 1982), but now with the addition of augmented reality[4].
The ambivalence of augmented reality, his being inside and outside at the same time, fits well with the central assumption of this paper: the text becoming a space, the space becoming a text. A good example of this ambivalence is the Museion in Bolzano-Bozen[5], a contemporary art museum with a special, huge Media Wall that acts as an interface between the outside and the inside, between the art and the city, between the culture and nature: technology as intermediary between institution and everyday life.
An ambivalence that is also found in many symbolic characters that modernity – and postmodernity - of media has presented to us, with an uncertain statute and a borderline collocation: firstly the *flâneur*, but then the *surfer*, the *wreader* (*writer-reader*), the *spectactor (spectator-actor)*, the *prosumer* (*producer-consumer*).
Probably we can assume also the smartphone as a symbolic gadget of this ambivalence, of the complex dynamic between text and space: thanks to the smartphone, people become *writers* (for example when put tags on places by associating them to some fragments of her own life); at the same time, people *are written* in a metanarrative that derives from their being present and geo-localized in the places, and from the uninterrupted exchange of data (in input and output) caused just by the fact of having the phone turned on.
To accept this ambivalence is perhaps the right way to tackle the complex relationship between text and space: and the ways in which this relationship is structured (interactivity, locative distribution of media

[3] http://www.urbanexperience.it/groups/format-di-performing-media-per-lurban-experience/forum/topic/walk-show/
[4] http://www.youtube.com/watch?v=R6c1STmvNJc
[5] http://www.museion.it/?page_id=11889

contents, gamification, spectacularization of data, social dynamics in virtual /physical places) are perhaps the right way to understand the dynamics of our everyday life in mediated city, and can be used as the basis to discuss a possible definition of new urban languages.

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