GIULIO LUGHI

MOBILE/LOCATIVE PARADIGM

Embodiment and Storytelling in Digital Media

This paper examines how the advent of the *mobile/locative paradigm* redefines the role of the body (*embodiment*) in the cultural processes of Digital Media, extending the notion of *storytelling* from a simple *author-text-user relationship,* mediated by the *screen* interface, into a *complex narrative project* that positions the body and its media competences within a precise *physical space* characterized by geographical, historical and cultural coordinates.

The *mobile/locative paradigm* is based on the sum of the technological, perceptive, emotional, cognitive, behavioural, cultural characteristics that are determined by the ever increasing spread of smartphones, used not so much as interpersonal communication devices but mostly as devices to access the net and hence media products. It is a decided change in paradigm compared to the *static* fruition that has always typified the relationship with the mass media (cinema, TV, performing arts, desktop computer), since the *mobility* of the media end-user gives a strong relevance to the *location* in which the fruition takes place. Geo-positioning, end-user tracking, the enormous amount of encyclopaedic data that can be associated to the presence of *that body* in *that place* in *that moment* determine a profound change in cultural processes: with the diffusion of Digital Media *the space becomes text*, since it is automatically read and written by the body of the user; and at the same time *text becomes space*, since the textuality of Digital Media is characterised by *immersiveness, interactivity, multidimensionality*, and thus by the *accessibility* which is typical of spaces be they real or virtual.[1]

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[1]   Giulio Lughi, 'Text-Space Dynamics: the Digital Media in Defining New Urban Languages', *Planum*, 27, 2 (2013), pp. 18-24.

The return of the body

Digital culture, especially at the beginning, was characterised for a long time by a kind of need to distance itself from both the body and the physical world: the first implementations of Virtual Reality appeared as immersions in a dimension which was an alternative to reality, even though there was some more prudent thinking[2] which warned about the ease with which the relationships between *reality* and *virtuality* could be misinterpreted.

Also Manuel Castells[3] imagined, as a direct consequence of digital networking, the birth of a new operational virtual space, the *Space of Flows*, opposed to the traditional physical one named *Space of Places*; a space defined by extreme mobility, flexibility and by the dematerialisation of the economic, social and cultural relationships that occur in the global interconnected city.

However, already at the beginning of this Century, Paul Dourish[4] retrieved the complex tradition of phenomenological thinking on the concept of *embodiment* to apply it to researches on Human Computer Interaction: from that moment on, *haptic technologies* – i.e. the possibility of registering physical touch, vibrations, orientation, the positioning of devices in space – become fundamental to define the role of the body in Digital Media, intersecting with the work of Sherry Turkle[5] that highlighted the importance of the relationship with the technological objects to define the processes of personal and mediated identity building.

From a more technological standpoint, but with noticeable cultural implications, one must report the appearance on the market, in 2006, of the Nintendo Wii console that allowed players to 'enter' videogames by moving their body, followed in 2009 by PlayStation Move and in 2010 by Microsoft Kinect. Nintendo Wii not only modified the narrative and participative approach

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2   Tomàs Maldonado, *Reale e virtuale* (Milano: Feltrinelli, 1992).
3   Manuel Castells, *The Rise of the Network Society. The Information Age: Economy, Society and Culture Vol. I.* (Cambridge, MA and Oxford, UK: Blackwell, 1996).
4   Paul Dourish, *Where The Action Is: The Foundations of Embodied Interaction* (Cambridge, MA: MIT Press, 2001).
5   Sherry Turkle, *The Inner History of Devices* (Cambridge, MA: MIT Press, 2008).

to videogames, but paved the way to a series of artistic and spectacular applications[6] typified by sensory perception, physical action and strong imagination, such as the performance of the Japanese group Enra,[7] where the dancer's body becomes an input and output device as it communicates with the algorithms that manage the light projection.

The return of the place

Just as it distanced itself from the body, at the beginning, the digital culture also theorised *delocalisation*, the non-relevance of place, following the theories on mass media expressed by Meyrowitz[8] *in his work* emblematically titled *No Sense of Place,* and which were widely applied also in the digital context, especially relating to Virtual Reality.

However, from this point of view too, profound changes were determined by the advent of the *mobile/locative paradigm*.

The starting point is the extraordinary development of digital cartography, especially by Google, that brings about a total mapping of Earth's surface, providing a strong infrastructure of geo-localised data that allows the rethinking of cultural processes based on graphic-spatial parameters; this is the case, in literary history, of Franco Moretti and his fundamental research, emblematically titled *Graphs Maps Trees. Abstract Models for Literary History.*[9]

The *mobile* component merges into the *locative* one: as a matter of fact mobile devices allow us to determine the physical position of the user's body, both by means of satellite tracking devices such as GPS (*Global Positioning System*) and mobile phones' own

6   Kenny Chow, *Animation, Embodiment, and Digital Media: Human Experience of Technological Liveliness* (London and NewYork, NY: Palgrave MacMillan, 2013).

7   https://www.youtube.com/watch?v=0813gcZ1Uw8

8   Joshua Meyrowitz, *No Sense of Place* (Oxford and New York, NY: Oxford University Press, 1985).

9   Franco Moretti, *Graphs Maps Trees. Abstract Models for Literary History* (London: Verso, 2015).

tracking system, allowing geographic positioning in geographical space and user recognition.

This tracking ability has found wide application in the field of social sphere, as there has been a great development of applications that are able to locate the physical position of end-users and their friends and contact them (Glympse, Foursquare, Buzz, Google Latitude, Facebook Places, etc.); these applications often incur in privacy problems which is why they have had changing fortunes, however, they are all based on these two common elements: the presence of the body of the user in a precise physical place and the activation of social interactions, starting from this geo-positioning.

One of the most interesting uses (considering the complexity of the interactions between data, maps, storytelling and users' body location) and also the most fascinating (from an entertainment and emotional standpoint) is without a doubt Google Night Walk,[10] an experimental product that allows users to personally position themselves on the Google Street Map in a neighbourhood of Marseilles to carry out an exploration by night, looking at the map to find the most interesting places, consulting Google Art Project for details on the street-art they come across, searching Wikipedia for more information on writers or painters that lived in the houses they see on this journey. A complex product built by integrating many other products, whose emotional and entertainment effect is unique, based on adventurous first hand exploration in a precise physical location.

VR, AR, 360°: immersive or invasive?

The *return of the body* and the *return of place* are technologically condensed in the current Virtual Reality and Augmented Reality applications, where the body's position in relation to physical space is the dominating feature. These two approaches are very different, and according to Montani[11] they are actually placed on completely opposing sides of our cultural sensitivity, as Virtual Reality is based

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10   https://nightwalk.withgoogle.com/en/home
11   Pietro Montani, *Tecnologie della sensibilità. Estetica e immaginazione interattiva* (Milano: Raffaello Cortina, 2014).

on the principle of total simulation, whereas Augmented Reality has a dialogic relationship with one's immediate surroundings.

The field is in turmoil, from both an industrial and a media standpoint, with distinguished attempts to mix the two technologies even adding holographic components, such as the recent launch of Microsoft's Hololens.[12] Moreover, one must not forget the increasing diffusion of the 360° video, which opens up another field of application due to the spectacular presence of the body positioned in physical space: a less technologically advanced sector, compared to Virtual Reality and Augmented Reality, but easily approached even by non-professionals and highly attractive because of the typical 'realistic' representational power of videos.

At present it is of no use to try to forecast possible scenarios, having witnessed the virtual failure of two recent products that had been widely advertised, such as Google Glasses and polarised glasses for 3D Cinema. It makes more sense to query the relationship that binds *immersivness* and *invasiveness*: how much does an *immersive* situation risk becoming *invasive*? Is the average user really willing to wear devices – such as Virtual Reality visors – that enhance technological 'sight', but heavily condition normal media fruition?

If we take a more general and mediological stance, instead of a technological and specialist one, it seems that Augmented Reality has more of a chance of finding a place in the media diets of everyday life, as the recent worldwide success of Pokémon GO[13] demonstrates.

After all, Augmented Reality on smartphones is not in contradiction with everyday life, it allows the user to interface with the physical environment and the media using a *soft* approach, as opposed to the more invasive and *hard* features of Virtual Reality devices (visors, glasses, cardboard, etc.). Indeed, Augmented Reality guarantees a *multilayer* approach, it enables the simultaneous use of different levels of communication: an experience that is much closer to the daily experience of the average user, who perceives the communication context as full of glimpses, perspectives, people moving, screens, and all kinds of signals; on

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12   < www.microsoft.com/microsoft-hololens/en-us >.
13   < www.pokemongo.com/ >.

the contrary Virtual Reality – closed within an artificial perceptual atmosphere, albeit immersive and 'realistic' – maintains a vaguely obsessive claustrophobic, 'laboratory' feel, that makes it much more effective for experimental or niche uses or to target particular situations (sappers, jet pilots, nerds, surgeons, video gamers, etc.).

Looking at it from a non-technological point of view, i.e. from a social one, Augmented Reality is retrieving that great cultural interface inheritance – theorised by Leon Battista Alberti – that the picture frame once was:[14] an incredible 'technological' device that allows the user to look with a gaze that is at once participative and distant, internal and external, involved and critical; the look of the spectator positioned in front of the 'window' (painting, book, screen, video, monitor, smartphone) perched on the verge between participation and distance that is the pivot of cultural processing.

Internet of Things: beyond the screen

If Virtual Reality and Augmented Reality still exemplify a representation method bound to the screen, the Internet of Things opens up a wider perspective where the presence of digitalised objects – that can receive input, process it and provide output – transforms the physical environment itself into a tri-dimensional meta-screen where the role of the body is even more enhanced since that is the scene in which it moves.

Bruce Sterling[15] suggested the term *spime*, from the contraction of *space* and *time*, to define the *meta-objects* that can take on the most diverse shapes and be built with very different materials: operationally they are 'conscious' of their spatial coordinates (*space*) and of the moment in time they are operating in (*time*), since they are equipped with a) sensors that can receive data from the environment they are in; b) memorizing systems to store and process gathered data; c) transmission tools to exchange data with other spimes or with more complex systems. These small

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14   Jay David Bolter and Richard Grusin, *Remediation: Understanding New Media* (Cambridge, MA: MIT Press, 1999).
15   Bruce Sterling, *Shaping Things* (Cambridge, MA: MIT Press, 2005).

communication elements are destined to become the *smart dust* in which our everyday life is now immersed, but also essential elements for potential *pervasive storytelling* projects.

This is the direction taken by the studies[16] on the Third Wave of ICT: after the age of mainframes, and desktop computers, it is now time for ubicomp (*ubiquitous computing)* featuring computational gadgets that are increasingly smaller, more powerful, more specialised, destined to take root in our very own life: smartphones, GPS devices, wireless connections, widespread domotics etc. No mere technological transformation, it now requires a new economic, social, political and cultural approach[17] as it poses problems relating to privacy, mobility, domestic organisation, imagination ability, identity building.

On an experimental level, as in a lab, more extreme hypotheses can be found, such as the *Sixth Sense* project devised by the MIT Media Lab,[18] a wearable interface that uses the body and its movements as a device to project and read layers of interactive information relating to the physical world around it.

Talking about narrative applications instead, the *Sherlock Holmes & the Internet of Things*[19] project is very interesting and articulated. This is a prototype developed by Columbia University that has involved 15 technical-creative teams in 10 countries, with the aim of investigating a crime scene which was interconnected by the flow of communication generated by the narrative objects created by the different authors on the net.

Storytelling: data, maps, narratives

The return of the body, geographical space mapping, digital representational systems, the ability to explore large amounts

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16 Paul Dourish and Genevieve Bell, *Divining a Digital Future: Mess and Mythology in Ubiquitous Computing* (Cambridge, MA: MIT Press, 2011).

17 Ulrik Ekman, *Throughout: Art and Culture Emerging with Ubiquitous Computing* (Cambridge, MA: MIT Press, 2013).

18 < www.media.mit.edu/research/highlights/sixthsense-wearable-gestural-interface-augment-our-world >.

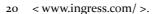19 <www.digitalstorytellinglab.com/projects/sherlock-holmes-the-internet-of-things/ >.

of data (*big data mining*), the flow of communication between interconnected objects: today, the frontiers of *storytelling* spill out of the page and out of the limits of the screen, to generate aesthetic experiences positioned in the urban context.

This urban space is mediated and spectacularised by the presence of interactive installations and omnipresent screens, but it is traversed above all by users that are equipped with devices capable of 'reading' (e.g. geo-localised information or micro stories) and of 'writing' (unwittingly leaving geo-positioning traces, or voluntarily imputing data) the territory. A space that is also playful, as the *gamification* practices that pervade most communication and cultural processes bring *live action role playing game*, the *urban game*, the *alternate reality games* (ARG) out of the limited and *nerdy* dimension of videogames, bringing fictional narratives into the everyday physical environment experience of users.

A pertinent example of this contamination between differing forms of media is *Ingress*,[20] a multiplayer science fiction game-story produced by Google, that is based on the interaction of GPS technology, player physical location, information databases, geographical maps and Augmented Reality: thanks to this complex technological apparatus, the fiction scenes that appear on the smartphone screen are located exactly in the physical space where the body of the player is at that precise moment. In *Ingress* the narrative process is conducted mostly on the street, because thanks to the mobile device the player receives instructions or suggestions that relate to the physical surroundings in which he finds himself at that time: he must reach places around him to face tests or perform other tasks that the story requests at that particular moment, constantly living in a situation that mixes the physical surrounding reality and the screen images on his smartphone.

Going beyond the overuse of the term *storytelling* (*educational storytelling, journalism storytelling, visual storytelling, corporate storytelling, advertising storytelling, data storytelling*, etc.), examples such as *Ingress* demonstrate how the ability to *elaborate complex narrative projects* seems to be the cultural key to position and cognitively orient oneself in a universe where technology is taking over *bodies*, *objects* and physical *spaces*.

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20   < www.ingress.com/ >.

Conclusions

Facing the problem of visual representation and its narrative implications means, therefore, definitely leaving a Digital Media model based on the desktop screen as a place where real spaces are replicated and virtualized: the perspective must be turned on its head, and we need to consider the mediated physical space as a place where the body of the user reads-writes the new forms of storytelling. A reversal that creates problems for traditional notions of representation and requires a reconsideration of the relationships between space and time in the text-paratext.[21]

The idea of communication space intended as a multiplicity of emotional, cognitive and cultural dimensions, as well as its technological implications, also comes from the intertwining of various wide-ranging lines of research: *transmedia*,[22] where the users move in the mediated space as if in a territory to be explored; the thoughts on *smart cities* as places that are at once highly technological, and teeming with social connections;[23] transversal researches involving cinema, architecture, emotional spaces, technology, that constitute a new vision of the relationship with both objects and mediated experience.[24]

From this point forward, the mix of *embodiment, storytelling, mobile/locative* paradigm will take us towards a new interactive aesthetics,[25] that redefines the spheres of what we consider natural, human, technological, cultural, and relating to the relationships among these proposes a profound redesign in terms of complexity, interdependence, contamination.

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21 Giulio Lughi, 'Paratext between Time and Space in Digital Media', Sara Pesce, Paolo Noto (eds.), *The Politics of Ephemeral Digital Media: Permanence and Obsolescence in Paratexts* (Oxford: Routledge, 2016), pp. 45-60.
22 Carlos Scolari, *Narrativas transmedia: cuando todos los medios cuentan* (Barcelona: Deusto, 2013).
23 Carlo Ratti, *Smart City, Smart Citizens* (Milano: Egea, 2013).
24 Giuliana Bruno, *Surface: Matters of Aesthetics, Materiality and Media* (Chicago, IL: University Press, 2014).
25 Kwastek, Katja, *Aesthetics of Interaction in Digital Art* (Cambridge MA: MIT Press, 2013).