Rodrigo Firmino and Fábio Duarte:

Manifestations and implications of an augmented urban life

Abstract:
In this paper we investigate how the shift to a completely urban global world intertwined by ubiquitous and mobile ICTs changes the ontological meaning of space, and how the use of these technologies challenges the social and political construction of territories and the cultural appropriation of places. Our approach to this conceptual debate will focus on what we consider to be more direct and tangible implications of this augmentation of urban life. Three types of manifestations will represent the core of the discussions presented here, both through theoretical approaches and analytical descriptions of some examples: surveillance artefacts which permeate our daily life and allow a hypothetical total control of space; locative media that gives us the freedom of spatial mobility and the possibility of creating and recreating places; and the global networks of signs, values and ideologies, which break down the social and political boundaries of territories.

Agenda

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Introduction

The idea that ICTs have been dramatically changing many aspects of contemporary society is no longer new. The influence of such technologies on our daily activities, and on the ways we perceive and use space, has attracted the interest of a wide variety of researchers from different backgrounds, and this has also in turn increased the inter- and multi-disciplinarity of studies about space. Recent references to the city predominantly relate the constant and rapid development of ICTs to the re-definition of notions of space, territory, place, time, mediation, presence, and immersion – virtual, physical and real. According to Moss and Townsend (2000: 31), 'information systems are permitting new combinations of people, equipment, and places; as a result, there is a dramatic change in the spatial organization of activities within cities and large metropolitan regions'.

It seems to be common sense, after two or three decades of speculation and studies about the intensification of communication through the use of increasingly sophisticated ICTs, that we have exponentially increased our ability to interact and expand our personal and collective boundaries to a global scale. And so has urban space. The intangible relations between physical space and what Manovich (2002) calls dataspace are contributing to the existence of what can be called augmented reality, and analogously, augmented city. Or, in other words,

> *'Contemporary augmentation of our immediate reality, differing from such experiences in the past (based on the fact that religion, magic, metaphysics and art have always provided means for augmenting the immediate material worlds of our existence), does not depend on specific and deliberate individual or collective beliefs. Augmentation takes place everywhere and anytime, regardless of our knowledge of what is indeed happening'. (Duarte and Firmino, 2009: 545-6)*

This expansion of our ability to communicate has been compared to unlimited extensions of our own bodies and boundaries. It brings new perspectives to the perception and conceptual definition of space, to what are the boundaries that define a territory – or what are the strategies to break down these boundaries – and, to the subjective appropriation of portions of the space, called places. This shift in the perceptions of space deals, at the same time, with an urban world existing in a global scale and a fragmented world of mobile and mutant places and territories with no permanent relation with their position.

The idea of an urban world

The world is completely urban. The idea of an urban world could be tracked back to Henri Lefebvre (1991), when he thought about the notion of urban as a manifestation of a way of life different from anything that had happened up until the 19th Century, before the Industrial Revolution. For Lefebvre, urban and city become two different and yet interdependent concepts. In this sense, the *city* is an object, while *urban* is a phenomenon – therefore, it could be understood as a culture, a way of economic and social life. So, urban is independent of the presence of "urban" objects, or the existence of a city, of bundle of buildings and people and infrastructure put together. While thinking about the concept of city, Patsy Healey (Healey, 2002) takes into consideration the diverse interpretations made by different agents who live, build and use cities. She also considers the "imaginative", socially constructed concepts of city, those that are "locked into cultural inheritances and institutional practices" (Healey, 2002: 1777).

Among many differences between the concepts of city and urban, we can simplistically say that the former can be defined in terms of a territory, defined by the land it occupies – although we know that contiguity and territoriality can be questioned as determinants to place-bound in these days of information and communication technologies. Meanwhile, territorial boundaries do not help to understand the latter, which is to say that it is impossible to physically define or delimit what an urban territory truly is. This reinforce the idea that the world is indeed an urban world, despite the fact that many people live far from cities, or try to escape from the life style that characterize an urban life style. On the way to understand these differences, it helps also highlight that urban is not the same as urbanization, which in turn, is a concept closer to the idea of cities, as in urbanized areas.

In the book *The Urban Revolution*, and aware of a worldwide broad urbanization process since the 19th century, Lefebvre (2003) returns to the idea that urban and city do not serve to conceptualize the same thing. He starts the chapter called *From the City to Urban Society*, stating: "I'll begin with the following hypothesis: Society has been completely urbanized" (Lefebvre, 2003: 2). As we mentioned

before, to the author, urban is a set of transformations that characterizes contemporary society mostly due to demographic growth, concentration and industrialization, a way of life of modern societies. It is, thus, something intangible and subject to different scales, with much room for personal, historical, ideological, comprehension, but at the same time generally observed, consistent and contemporary. On the other hand, city is a well defined object, territorially delimited, the one that can be seen trough the concentration of buildings, roads, public and private spaces, people, conflicts, and common efforts, altogether in the minimum possible concentrated area. In an attempt to update Lefebvre's definition, it is important to stress, though, that the differences between urban and city do not rely exclusively on the limits defined by territorial boundaries.

City itself is becoming something different to what we classically came to know as urban agglomeration. In this respect, one can, figuratively, say that city, as a concept, is always pursuing urban, and always trying to equal the idea of urban. Even though it is quite possible they will never be the same.

As far as ICTs are concerned, they have been connecting more and more places to the spatial idea of an urban world as they turn the physical differences and boundaries of concrete places into immaterial bumps of an interconnected world where every place is linked to the principal logics that moves the world. It is not to say that everything becomes part of a homogeneous singularity, but rather that everything becomes increasingly interconnected and interdependent, without losses in the particularities and idiosyncrasies of each part of this whole. Again, this interconnection of all parts around the world constitutes a complex network of relations in different scales forming the political economy and social realities related to the historical and social construction of ICT and cities. In this sense, it has already been argued by many scholars that even the so-called digital divide is an inherent part of this interconnected urban world, and not its antithesis or abnegation (see for instance Thrift, 1995; Graham and Aurigi, 1997; Firmino, 2003).

This idea of an interconnected urban planet announces a first ethic issue: since any single part of the space is considered vital to the constitution of an urban society, this society assumes rights and responsibilities over the whole space – sometimes despite the values of people who live in particular places also directly or indirectly affected by a general way of life.

Even though the idea of a world completely urban relies in a fair share of immaterial perceptions and flows, as put by Lefebvre in the 1960s, this phenomenon has only become possible once the space is intertwined by ICTs in a global scale. These increasingly infiltrated technologies challenge the scales of space, the boundaries of political and economic territories, and how social groups appropriate parts of the world to turn them into their places (Duarte and Firmino, 2009).

We are arguing that the basic conceptual trilogy of any spatial study – space, territory and place –, are being challenged by ICTs. Even if the way we are using and developing these technologies are not influencing these three concepts individually, we believe that the way they relate to each other are fundamentally being questioned or at the very least being brought to the core of the perceptions of what we call space and urban space.

Space, territory, place

In *A Natureza do Espaço* (The Nature of Space), Milton Santos defines space as a combination of "systems of objects" and "systems of actions." Objects and actions make space a multiple and heterogeneous entity, which primarily means that space is not defined only by the physical and topological aspects of geographic manifestations of humans and objects, denying the geometrical and Cartesian notion of space that sees it as a singular unit, an aseptic physical container for social interactions.

> *'Systems of objects and systems of actions maintain a perpetual interaction. On one side, systems of objects drive the way in which actions are done and, on the other side, the systems of actions lead to the creation of new objects or affect already- existing objects. That is the way space finds its dynamism and changes itself'. (Santos, 1997: 52)*

When space is seen together with technological aspects, for example, the false understanding of space as mere container of actions exacerbates. Cuff (2003: 44) proposes the term cyburg as a "spatially embodied computing" to oppose the dread notion of the cyberspace as a "dematerialized space"; and Whittaker (2002: 136-7) points to the fact that many cyberspace theorists, for instance,

increasingly "remove space from being simply the geometrization of symbolic mathematics and re-situate it within structures or webs of political and economic power".

The other two basic concepts of any spatial logic – or of what Duarte (2002) calls the spatial matrix – are territory and place. Territory is a portion of space embedded with organizational and mainly hierarchical rules to which any entity, person, institution and even artefacts, are forced to obey (Duarte, 2002). As Kärrholm (2007: 441) puts it, "these areas do not necessarily have to be considered by any person or group as 'their own', but are nevertheless associated to by others as pertaining to a certain function or category of users". Therefore we could argue that rules and a certain logic of exclusion characterize the territory – nobody needs to submit himself/herself to the rules of a territory, unless there is a need or desire (or obligation) to become part of it.

Place is a portion of space appropriated by any person or group as "their own", but this appropriation does not involve rules or submissions (at least not written or imposed ones). It is defined by an affective appropriation or a projection of cultural values onto a certain portion of the space. A place is the kingdom of commonness, where some people or groups feel culturally attached to a geographical part of the space. If territory is characterized by rules and submission, place is characterized by affection and election.

As cultural values of individuals and groups are intrinsic to the way they perceive and conceive space, territory and place, these concepts are completely interdependent and complementary. As Doreen Massey (2005: 12) puts it, "it is simply the principle of coexisting heterogeneity. It is not the particular nature of heterogeneities but the fact of them that is intrinsic to space". However, for the purpose of this essay, in the following sections we will separate them and link them to specific manifestations of ICTs.

ICTs and the connections between space, territory and place

Mobile and locative media: the sense of place

Contemporary urban spaces are permeated by a multitude of electronic images and cultural and social signs embedded in the built environment and social context in many forms. In terms of technological infrastructure, on the one hand there is a space of ubiquitous computing, consisting of "interlinked capacities for memory and data storage, for perception and environmental sensing, and for the interpretation of contexts and situations" (Phillips and Wiegerling, 2007: 05). But on the other hand there is an explosion of mobile and locative media which are now part of a technological network of signs produced and accessed globally that, at the same time, allow a precise and instant positioning within geographical places and territories which, in turn, could lead to a meaningful link with specific locations.

The main differences from current mobile and locative media to former interfaces of instant connections within global networks are mobility and the relative unimportance of specific places for connection – despite an apparent incongruence with the very idea of locative media.

Some authors call 'hybrid spaces' this imbrication of infiltrated technological infrastructures, invisible but accessible information clouds and concrete space. As Sousa e Silva (2006: 262) puts is, "hybrid spaces are mobile spaces, created by the constant movement of users who carry portable devices continuously connected to the Internet and to other users".

This double role is essential for the re-signification of urban places, at the same time precisely positioned, even in movement (as in GPS technologies), and part of a global network of cultural and social values.

Recently, artists have been proactively using locative media with the intention to explore this hybrid space using all the potential of the global networks of signs but at the same time, anchoring them geographically by emphasizing local values. Once place is a culturally-appropriated portion of space, it cannot be considered, hierarchically, a small or submissive part of an alleged global space. Place has no physical dimension. Thus, locative media allows us to play equitably with the strengths of both the global networks of technologies and signs, and the cultural values of specific places – which are ephemeral and mobile.

Therefore, mobile and locative media are also addressed as a major manifestation of urban life augmentation, in the way that this kind of technology gives us the freedom of spatial mobility and the possibility of creating and recreating places.

Global networks and territories

Global networks of signs, values and ideologies, are intended to break down the social and political boundaries of territories. The flows and all kinds of relations (material and immaterial) that shape spaces and societies incessantly produce signs that intentionally promote the idea of a global interconnected society – or the dream of 'anything, anytime, anywhere'. But as Neil Smith (2005: 894) puts it, "it would indeed be nice if the world were flat and non-hierarchical. (...) But it is precisely the self-serving trick of neo-liberalism to assume that such a flat world is already here, hierarchy is gone, equality rules".

Indeed, the signs of an alleged global identity tend to disseminate a set of rules, beliefs, and technologies which are the support and conditions for the very existence of what can be recognized as a global world. Those global flows of signs are dependent, though, of a set of dense and interconnected infrastructures which work globally, from the telegraph to the internet. The illusion of a purposeless set of signs and values disseminated by the globalization finds a counterpart in a mostly necessary global infrastructure, named by Matt Ratto (2007: 21) as a 'seamless' infrastructure, which "emphasizes the erasure of the marks and boundaries between separate systems thereby creating an infrastructure whose individual parts blend transparently – without seams". The author makes clear that the seamless infrastructure can be positive when opening up access to technologies to non-experts; but he also argue that the abolition of seams is intended to avoid points of criticism or conflict.

Therefore, the challenge is to discuss both the roles of the global flows of information, social and cultural values, and the infrastructures which have been built as a global technological network to sustain such flows. The challenge is also in the unveiling – not necessarily to condemning beforehand – the seamless infrastructures that make this global network of material and immaterial facts and artifacts.

The studies produced by the Globalization and World Cities Research Network (GaWC) are, in this sense, seam-trackers and map-makers of the global systems and technological infrastructures that connects distant and close territories through the logics of a global interconnected economic networks. Putting in evidence the flights and airports hierarchies, the routes and hubs information dynamics, this research group claims its studies can help measuring global networks. This was already a concern to Peter Taylor (1997) in the first GaWC bulletin, when he argued that "world cities are the geographical entity that appear as the organizing nodes of world wide networks" and tried to collect data and design an empirical map for this organized world cities network. Yet, more recently, Devriendt, Boulton, Brunn, Derudder and Witlox (2009) have pointed out that "in a knowledge economy, there exists a need to apprehend the informational interconnections between cities of the world in ways that take into account the real-time and continuous production of urban places", and, with it, have tried to map the flows of information, based on the Google search engine, to show that information both reinforce some world cities hierarchies and overlap political and administrative territorial boundaries.

Surveillance: hidden dimensions of space

According to Murakami Wood and Graham (2006), surveillance studies are part of a multidisciplinary field of Social Sciences which considerably neglects spatial issues in general. These studies have grown stronger with notorious works by Foucault, in Discipline and Punish (1977), which concentrates a great number of works that supports his theories about the panopticon. Although this has been derived from the spatial or architectural design of prisons by the English social theorist Jeremy Bentham in the 18th Century, Foucault and many other scholars after him were enthusiastic about the punitive and disciplinary systems involved in the idea of the panopticon rather than its spatial implications. This is not to say that Foucault's only preoccupation and major issue was the panopticon. In fact, he uses a great number of examples and issues relating architecture and city planning in order to link his evidences and to build his arguments about the inherently disciplinary characteristics of modern societies.

This vision of Foucault's works which goes beyond his ideas of the panopticon as an architectural and technological representation of power is a crucial approach to understand the notion of a surveillance society, and is well explored by Murakami Wood (2007) in *Beyond the Panopticon: Foucault and Surveillance Studies.* Unfortunately there is no space in this paper to thoroughly assess and discuss the real implications of Foucault's works to the understanding of what now has been called the surveillance society, or as Murakami Wood argues, the different nuances of surveillance societies.

In any way there is an essential difference between what has been explored by Foucault and what has

been observed in present days in terms of the very meaning of surveillance. Empowered by a very large number of technologies more and more ubiquitous, invisible and small, nowadays surveillance has a decentralized, infiltrated and wide-spread nature, instead of the panopticon's original centralized surveillance perpetrated by Orwellian totalitarian (big brother like) State.

Boosted by ICTs, surveillance technologies are increasingly invisible and melted into the built space, and the material forms that sustain our current urban way of life. Thus, we can say that surveillance has become an intrinsic part of the space, and as such, it tends to make visible the invisible and immaterial components of places and territories. In other words, to rationalize the many flows of people, places, objects and actions for the sake of surveillance, these technologies organize information, bits and bytes for specific purposes, unifying and giving visibility to what was spread and intangible.

Therefore, there are at least two important characteristics of surveillance in relation to the discussions of space, place and territory, being its simultaneous antagonistic capability of disembodiment and materialization. These characteristics can also be understood as two different moments of the relationship between surveillance and space.

The first moment concerns the machinist manner in which surveillance systems turns persons and histories in numbers and codes of databases as part of various types of identification systems, which by definition are related to social sorting schemes (Lyon, 2009), used to point out who is eligible, who has access, who may claim or who is a suspect in the disperse and ever wary 'eyes' of the city. This divorce between identity and identification promoted by surveillance technologies can be illustrated by what happens to ants when scientists sprayed them with a pheromone that makes them smell dead to other ants – even though they are alive, they cannot communicate this effectively and keep being removed from the colony[50]. In this case we have at once the immaterial codes that represent dead ants attached to the live bodies of real ants.

In a second moment, if some attention is paid to surveillance practices – assumed here as forms of objective and systematic attention to personal details for the purpose of generating influence, manipulation or control, as outlined by David Lyon (2001) –, one can say that while working in the rationalization of data through the sorting of many different kinds of information and immaterial flows captured and organized by devices programmed with surveilling functions, surveillance technologies are giving visibility to many of the invisible and intangible aspects of the contemporary augmented space, and also relating these information to people, facts and artefacts in places and territories.

Conclusion

ICTS have a quick obsolescence. Nevertheless, their social and historical construction and implications to our life style, change the concepts and experiences of urban spaces. In this sense, what we had tried here was to focus on how the influence of an emerging global urban infrastructure based on ICTs could enlighten and bring some ideas about the paradigmatic challenges upon space, the boundaries of political and economic territories, and how social groups appropriate parts of the world to turn them into their places.

The arguments that contemporary space is homogeneous because of globalization and its interdependent infrastructures, and that places are spots of cultural resistance are, at the very least, naïve. Doreen Massey (2007: 16) argues that "the idea that the local is a product of the global has become common currency (and this is indeed one aspect of what must be addressed) but it is less often recognized that the global is also, conversely, locally produced".

In this essayistic approach, we have used the examples of three kinds of technological manifestations – mobile and locative media, global networks and surveillance practices – to point out some of the ways in which ICTs are producing complex conflicts between traditional and new paradigms of space, territory and place, and creating some conceptual dilemmas for an integrative development of infrastructural technologies and cities. Therefore, what we have argued is that, although it has been around for centuries, the mechanisms for augmenting our spatial relations have been empowered by ICTs and, as such, they represent clear manifestations of the ambiguous hybrid characteristics of space and technology in the contemporary urban world. Visible and invisible technologies and actions as well as their intrinsic relations with the manifestations of space through territories and places (more evidently

[50] Address given by David Lyon at the Surveillance, Security and Social Control symposium, Curitiba, 4-6 March 2009.

displayed in locative media, global networks and surveillance practices), have clear implications to the way we experience or think through the construction/production of space in the contemporary augmented urban world.

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