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THE INVISIBLE CITIES - CAN PPGIS* CONNECT CITIZENS TO URBAN POLICIES?

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The urban environment is composed of multiple narratives, as many as those who live in it. They are the invisible cities of Italo Calvino whose description, in the dialogues imagined between Marco Polo and Mongol emperor Kublai Kan, is far beyond the geographical concepts of geometry and of objectivity. Only the use of poetry and the subjectivity allows the author to reveal the complexity of the different cities visited. The difficulties increase when, if you want to represent this same complexity in maps, it is necessary to add perspectives of transformation of the urban space through the initiative of planning actions. Calvino imagines in a city a great carpet, which reflects the different individual images that each person has.

> *In Eudoxia, which spreads both upwards and down, with winding alleys, steps, deadends, hovels, a carpet is preserved in which you can observe the city's true form. At first sight nothing seems to resemble Eudoxia less than the design of that carpet, laid out in symmetrical motives whose patterns are repeated along straight and circular lines, interwoven with brilliantly coloured spires, in a repetition that can be followed throughout the whole woof. But if you pause and examine it carefully, you become convinced that each place in the carpet corresponds to a place in the city and all the things contained in the city are included in the design, arranged according to their true relationship, which escapes your eye distracted by the bustle, the throngs, the shoving. All of Eudoxia's confusion, the mules' braying, the lampblack stains, the fish smell is*

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> *what is evident in the incomplete perspective you grasp; but the carpet proves that there is a point from which the city shows its true proportions, the geometrical scheme implicit in its every, tiniest detail.*
>
> *(...) Every inhabitant of Eudoxia compares the carpet's immobile order with his own image of the city, an anguish of his own, and each can find, concealed among the arabesques, an answer, the story of his life, the twists of fate.*[**]

We could consider that the true realization of the potential of geographic information systems (GIS) would put its skills and analysis of geographic information available to the citizens, so that we could all make a great carpet reflecting the order of space and that the order would make it possible to project a future that matched the negotiation of different wills.

After more than fifteen years of the first references to Public Participation and Geographic Information Systems (PPGIS), the great designs that during this period fed the scientific reflection being produced on this topic remain unfulfilled.

If, on the one hand, the goodness of the power-sharing initiatives of the representative powers is questionable, and certainly a highly responsible factor for the weak results of the majority of processes where public participation mechanisms are developed; on the other hand, communication barriers that limit the informed participation of non-specialists have not yet been overcame and GIS failed to effectively contribute to change this situation. In other words, in spite of all the technological developments in recent years, one of the biggest barriers to public participation in urban policies remains unsurpassable: the difficulty that people have to understand how the planning proposals are projected in space, how they redefine it, and how they impact the use of urban space.

It is usual in the planning processes that the public discussion of the plans takes place in its final phase, i.e. when urban policies are already set. If we consider that the elaboration of a plan calls for a set of highly specialized knowledge in various fields, the non-specialist is in a deeply unequal situation.

One of the possibilities for overcoming these constraints can be citizen participation upstream of the system. This idea is not new but, in the case of PP in land-use planning, takes on greater importance. Despite this, the truth is that there are no widespread examples of good practice where GIS has been used at that stage, and whose results and models may be generalizable and replicable. Some initiatives of participatory map creation (participatory mapping) in integrated natural resource projects that exist in small rural communities of developing countries (www.iapad.org, www.ppgis.net) are the exceptions.

In large urban areas, in developed countries, the community concepts take on different characteristics and it is necessary to think the PP differently.

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The participatory processes in the field of urban planning have to undergo deep transformations in order for solutions to be found that ensure the existence of permanent channels of communication, which call upon the participation of citizens since the identification of problems phase. Public participation models must be appropriate to the problem being decided and must necessarily considers the specific groups and contexts in which the process will develop.

Recent advances, in particular the concepts and technological solutions derived from Neo-Geography, point to the creation of new accessibility and ensure the inclusion of a larger number of citizens but, because the *digital* divides, one should be cautious as the possibility of reinforcing inequality can be maintained.

The launch of Google Earth in 2005, and the availability of Google Maps programming interface (API), as well as other initiatives, have transformed the way Internet users relate to geographic information (GI). The transfer of the information-creation processes from the specialized domain of Geographic Information Science to the field of action of the non-experts, the fact that other citizens, in addition to the geographers, cartographers or GI specialists, can create their maps with their own content, is to radically change the domains of interest and application of these mechanisms (Batty *et al.*, 2010) and to impact the criteria for the collection, analysis, implementation and the standard of truth of the information (Warf and Sui, 2010), with implications for information access, participation, power balance and nature of the data (Elwood, 2008). To the digital geographic information created by the people (User Generated Content), Goodchild called, in 2007, Volunteer Geographic Information (VGI).

The volume of content created by people keeps growing, either by publishing photographs of places, the selfless contribution of information in crisis scenarios and mapping of the Earth through OpenStreetMap (www.osm.org) or Geo-wiki (www.geo-wiki.org) or the sharing of information on places (Foursquare), for example. The development of mobile technologies and location-based services (LBS) are strong drivers of these transformations.

This change of paradigm of functioning of the Internet, combined with strong social networks diffusion, changed the concept of community. The networks are global and spatial proximity is no longer a determinant of relations established in communities, as it used to be. These new communication models allow us to be in the world, however we run the risk of not reaching our street, or our city, and in it to see the reflection of the image of what we desire our urban environment to be.

It is important to consider the issue of public participation in land use planning under a perspective that may reduce the levels of complexity of the problems presented for community discussion, so as to ensure that the different views of the urban space can enrich the solutions adopted.

Urban policies are set according to the different scales of intervention and planning hierarchy, being certain that greater levels of abstraction are required for smaller scales and higher hierarchy. However the coherence of different levels allows the construction of relationships and schemas for the breakdown of a large part of the problems.

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This is an open question and contributions from various disciplines are required to understand how these technological transformations are influencing the traditional forms of organization of local communities, and how they can contribute to change the practices of public participation.

However, we consider the hypothesis that the integration of micro-participation levels, either from the perspective of the references made by Evans-Cowley and Griffin (2011), concerning the use of Microblogging, either in a broader approach, the use of VGI in permanent channels of public discussion about urban problems, on a scale related to the problems of citizens everyday life, can help to broaden the number of people involved in these processes.

On the other hand, it is assumed that the use of techniques and tools derived from the Neo-Geography, in particular VGI, helps to develop an understanding of the complexity of geographical space and place, through the analysis of geographical phenomena and that this change may influence the attitudes of citizens to the discussion of the problems facing society.

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[**] In: Calvino, I. (1974): *Invisible Cities*. (Le città invisibili, 1972.) Harvest/HBJ, translated from the Italian by William Weaver (pp. 96-97)