

3. Disegnare per la città in divenire

FROM REPRESENTATION TO COMMUNICATION. ABOUT ARCHITECTURAL DRAWING IN THE PARTICIPATORY PROCESS.

Abstract

The submitted paper deals with the role of drawing for the architecture of participation; the investigation focuses on the main representation languages and techniques to find the ones that can be effective in formulating a project so that the final user can participate from the beginning to the end of the participatory process. Furthermore, architectural drawing is questioned to unveil which set of conventions means participatory design and not ordinary strategies for illustrating a project.

The core of the research also examines how architectural drawing embraces the progress of ever-new digital technologies in some experiences and international experimentations into participatory design, to promote a strategy, more than a locked solution, for any future challenges.

Key words: participatory design; maps; 3D models, interactiveness, photorealism.

Introduction

In questions regarding the project, the term 'communication' is replacing 'representation' ever more widely and for many reasons. The importance of this trend increases when speaking about participation, first because, inherent in the term, 're-representation' contains the meaning of 'interpreting what is real'; as well, when referring to the representation of architecture, certain spectacular representative operations (rendering) are mere artifices, similar to a work of metatheatre. In fact, 'architectural representation' means representing something that is already in and of itself a representation.

The aim of participation is to re-establish the project so that architecture will be less the representation of the designer and more the representation of the user (De Carlo 2013, p. 78). Along with this, the authorial drawings of the architect should give way to new course of the participatory design.

From photorealism to interactiveness.

Traditionally, two main areas of architectural representation have been recognized: technical design (symbolic) and expressive drawing (iconic). The use of the two registers basically depends on the speaker/recipient of communication, whether it is directed at an expert (who knows the code) or the final user of the design (who does not necessarily share the technical language). Every representation technique can find expressive forms, even in the most technical fields (orthogonal projection, for example). Expressive design anticipates the final result of a project and can lead back to two cognitive protocols: mimesis or abstraction.

Since the beginning of the twentieth century, the abstract code, in its evolution into rigorous geometrical shapes, has experienced a seamless bond with graphical design; the popularity of contemporary infographics attests to the effectiveness of the iconic/visual language even when communicating mathematical and statistical data. In reality, the iconic/abstract register is not always intuitive; to correctly interpret the meaning of a graphic or a map, the user needs a good graphical knowledge and decoding capability, which is acquired rather than innate.

On the contrary, in architectural design, it is the mimetic register that enjoys the widest use, especially now. Mimetic representation deals with linear perspective drawing in black and white as much as digital rendering, and it is associated with photography and even more with stereoscopy; in the photorealistic cognitive strategy, it uses static vision as well as immersive and/or interactive dynamic vision, animation, 3D cinema, and virtual reality.

It was the advent of photography that opened the doors to new expressive opportunities in the field of architectural mimetic representation. The first application (manipulation) consisted of photo-insertion: cropping the project drawing or a photo of the model to be inserted in the photographed

environment. languages (drawing and photograph) recreates sufficiently complete information on a course that requires dynamic observation by the observer to reveal continuity and contrasts.

Over time, however, photorealism has lost its original stimulus of intellectual observation. The immediate appeal of cinematographic visualizations is unquestionably convenient for market strategies and has much more to do with making things spectacular than with real communication. The hyperrealism of rendering aesthetics responds objectively to the need to see in order to understand: the observer remains passive. Moving from the static vision to the dynamic sequence (video), the amount of information increases but the spectator still remains in the position of receiving a determined message.

But if one intends to involve the final user in understanding the process, that user should be able to participate and interact, taking advantage of the potential of virtual reality.

Traditional design consists of a single 'scene'; the author conveys information and emphasizes this or that aspect of the project in a specific 'frame'. To allow the observer to remove the 'filters' of the representation, each part should be dealt with in the most objective way possible. In this sense, computer graphics allows for interaction with 3D models that can be navigated autonomously.

For example, the so-called real-time rendering technique (used in video games) allows a photorealistic effect to be obtained very quickly in progressive and partial visualizations of a 3D model as soon as the user decides to move into a specific position. The observer explores, examines, sees, and verifies each aspect of the design, pausing on the details and aspects that are not directed *a priori* (at least in theory).

Immersive virtual reality even tries to go beyond this, proposing constructed environments around a user equipped with peripherals that allow multi-sensorial rendering of the representation. In reality, this frontier of experimenting with prefigured space could already be better used to communicate a project; without exhausting the search for hyperrealism, it aims to reproduce something irreproducible: reality.



Fig.01 Interactive communication table by PGT in Milan, shown at the Triennale and the Urban Center of Milan in 2010 and realized by the studio Interaction Design Lab. (image courtesy Aurora Rapalino, © IdLab)

From functional maps to dynamic maps.

A founding principle of communication lies in the fact that reality is irreproducible and above all, to use an aphorism by the father of general semantics, Alfred Korzybski, "the map is not the territory".

Maps are representations based on the premise that space is Euclidean, homogeneous, and isotropic, on which phenomena crystallize at one unique time. First among all is the traditional urban-planning chart, which denotes the distribution of functions (residential, productive, commercial) based on indices and quantitative attributes (standards) with objective deterministic expectations.

The aspects that 'animate' a territory are omitted in traditional maps. In reality, not even the borders between two countries -as determined at a table and based on a map- is a static entity in time. In 2009, Italian legislation introduced the concept of 'mobile border' as suggested by the Italian Military Geographic Institute, which had raised the question of the Italian-Austrian border: after the glacial watershed in the Alps, it had contracted badly and continues to change. At the 14th International Exposition of Architecture at the Venice Biennale in 2014, the *Italian Limes* installation visualized and represented these variations in real time with the aid of an automatic pantograph connected to a GPS, revealing the transitoriness and indeterminacy of each abstraction relative to the physical geometry. *Italian Limes* produced an infinite number of maps concerning the same subject - the border- emphasizing the concept that any territory is the potential matrix for an infinite number of themed maps that can be stratified in time.

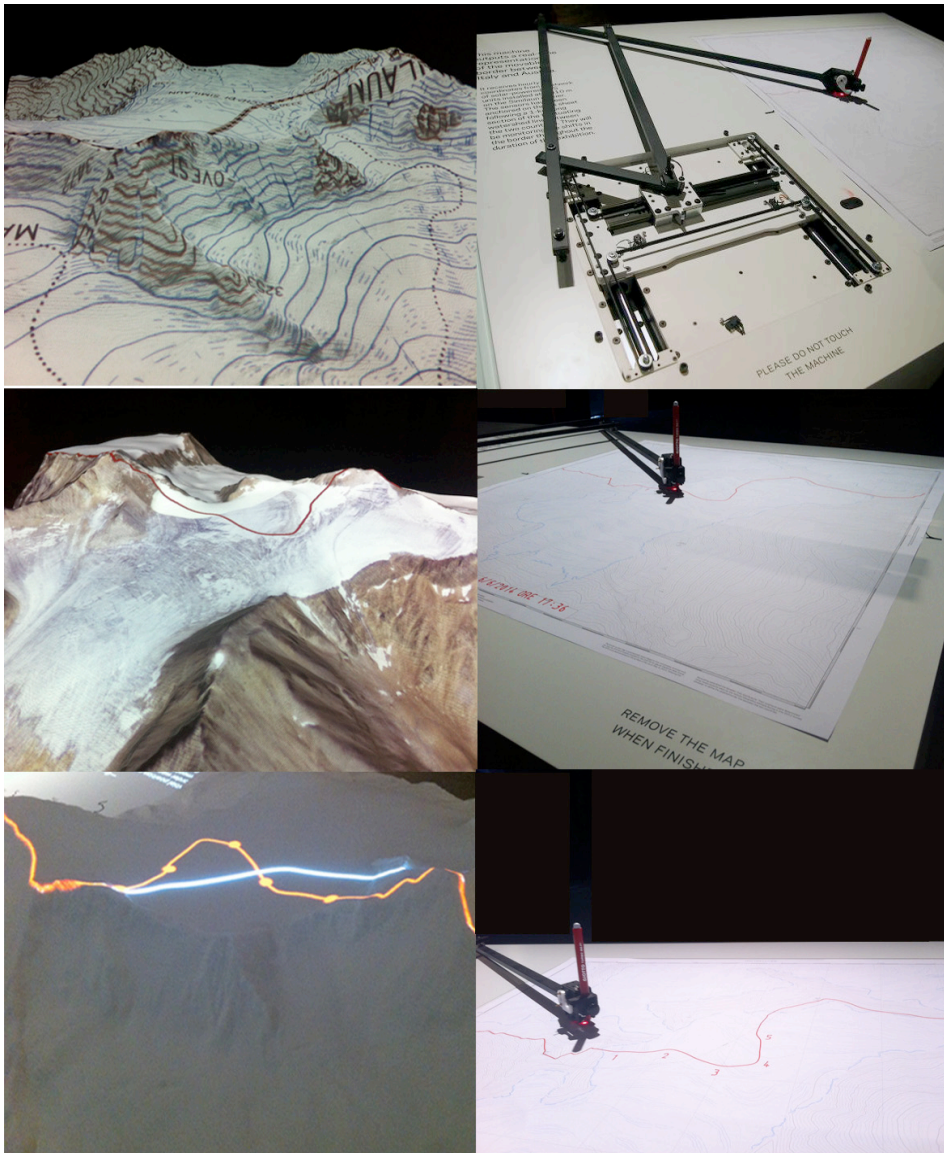
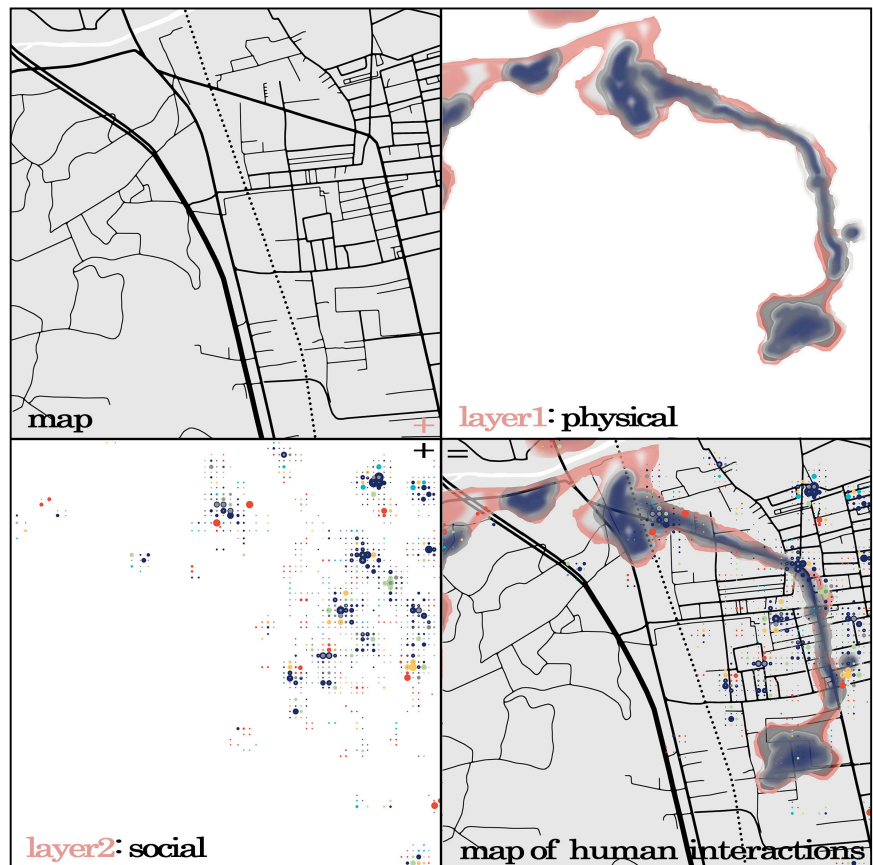


Fig. 02 *Italian Limes* (2014) is a project edited by Marco Ferrari and Elisa Pasqual for the 14th International Exposition of Architecture, Venice Biennale.

Fig.03 Mapping old and new types of information. Human interactions in the city of Martinsicuro (TE)



It is now clear that traditional representation tools as seen from above lack information about the real life of a place, and so constitute mystifications that are as abstract and incomprehensible to the non-expert as they are usable by those in power. “Maps always lie in that they exalt; they highlight some aspects of the territory and the city aimed at a project, a social idea, a secondary world that is selective and artificial” (Magnaghi 2001, p. 3).

Before the Renaissance, so-called protomaps were places where geography met the myth, fantasy, and art of its time, in which pictograms and fine-coloured miniatures mixed with more subtle images, a prelude to the conventional alphabets of later charts.

Today, different areas of research seem to be returning in some way to those symbolic values of medieval maps; the contemporary ecological approach promotes refounding the map as a story of the territory, stratifying information on different levels so that it also interprets and represents the affective and effective value that places have for their inhabitants.

In the participatory process, therefore, new tools of self-representation are being advanced by the inhabitants of specific places: community maps (1) and the interactive technologies of Internet mapping (2).

1. The community map is a cultural process inspired by the experiences in Great Britain (Parish maps) in the 1980s, in which a community designates and designs the contours of its own heritage, that is, the physical and cultural landscape and knowledge to be passed on. Laboratories for drafting community maps are being promoted ever more intensely in urban and territorial planning in the spirit of the European Landscape Convention (ELC). Functional, objective cartography finds its counterpart in community maps.

2) Moving from analog, Internet-based mapping is acquiring an ever more important role thanks to open access to data, also through the spread of GIS, the continuous drop in the cost of hardware, GPS, and telesurveying softwares. Different methods have been developed to translate the knowledge of people or their emotions into high-quality georeferenced information.

A modern map made through participation, which deals with a paper result or a visualization on a screen, is therefore dense and stratified, open, and in continuous implementation according to the number of communities that are called to create it.

From the sovereign's *maquette* to participatory 3D modelling.

Scale models hold a special place in the history of urban representation thanks to their essentially strategic function. Historians refer to *maquettes* already realized in China at the beginning of the first millennium, which depicted miniature streets, rivers, mountains, and routes. Italian engineers refined the technique in the fifteenth century while studying ways to protect Levantine cities from the Turkish armies, but the golden age for models on the urban scale occurred with the reign of Louis XIV (1661-1715), who ordered the production of 140 1:600-scale models depicting the cities that had been incorporated into the kingdom of France.

Urban-scale models were made for defensive or celebratory purposes until the end of the twentieth century (they also played an important role during the First and Second World Wars), while today, public administrations use them for urban or rural planning, especially for communication or to exchange information between designers and government institutions and between institutions and the public.

Over the course of 600 years of history, however, designers and artisans created models behind closed doors. Only in recent times has the process also included the public, but mainly as spectators or commentators in the final phase of public consultation; in no way have the citizens been actors, contributing to the inclusion of data and the creation of the model in order to be able to make the resulting information their own.

Today a change in paradigm is possible in terms of participation, as shown by the now numerous actions carried out by international cooperative entities to develop the Third World¹. In the last two decades, development promoters, in an attempt to elevate common people or the disadvantaged classes, have promoted a bottom-up approach that progressively reduces the authority of planning practices imposed by the top. Participatory techniques are developing quickly and have become almost mandatory in initiatives for development, territorial redistribution, and biodiversity conservation.

Participatory three-dimensional modelling (P3DM) is a process designed to introduce rural communities that live isolated and depend exclusively on a territory's natural resources to the potential of GIS and, in general, to technologies that provide geographical information.

To realize the models, a collective learning process is carried out that allows participants to visualize their economic and cultural heritage in the form of three-dimensional scaled georeferenced maquettes that can later be used for discussions and design proposals.

The parts of the model are positioned with the integrated use of traditional cartography and georeferenced data obtained from GPS and GIS tools used by the community itself.

From the success of actions conducted with P3DM in African, Caribbean, and Pacific countries, both in terms of conflict resolution among tribes and in talks with their governments to subdivide the territory, it is clear how the capacity of a community to be involved in planning projects can derive from knowledge and awareness of the physical model.

Conclusions and Future Work

The efficacy of communication derives from the awareness of the strategy it uses; for this reason, already in the initial stages of planning a participatory process, the choice of the representation and communication techniques is fundamental.

The modern context changes in quickly in step with technological evolution. Consequently, in the field of communication, the research should be updated and tested daily with people and with an eye on an ever more hybrid mixing between different languages.

The core of future researches should therefore not only be experimental results of specific techniques or technologies, but must include approaches of 'pure research', similar to those in art. In fact, the scope of contemporary art is, in its non-functionality, to gather and represent the characteristics of a transformation while its today's spectator is progressively involved.

Furthermore, greater attention should reside in inhabitants' genuine participation in creating a new, shared, graphical language. Only if inhabitants participate can we hope that all that pertains to a place (landscape, heritage, imagination, origins, perceptions, memories, and knowledge) can pertain to the project and common good for and of the community.



Fig. 04 “One page of a map is worth more than ten with text”. Still from the CTA educational video on participatory 3D modelling: *Localización, Participación y Comunicación: una Introducción a las Buenas Prácticas SIGP*, 2011.

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- www.scuoladifacilitazione.it
- www.mappadicomunita.it
- <http://www.technologyreview.it/index.php?p=article&a=651>
- www.cta.int

¹ In particular, this includes actions carried out by the CTA (Technical Centre for Agricultural and Rural Cooperation), which was established in 1983 between the 79 countries making up the ACP (African, Caribbean, and Pacific countries) and member states of the European Union. The CTA promotes the development and autonomous supply of products and services to improve access to information on agricultural and rural development, reinforcing the capacity of ACP countries to acquire, produce, and disseminate information in those areas.