

# The Urban Landscape and Its Social Representation. A Cognitive Research Approach to Rethinking Historical Cultural Identities

Letizia Bollini<sup>(✉)</sup>

Department of Psychology, University of Milano Bicocca, Milan, Italy  
letizia.bollini@unimib.it

**Abstract.** On the one hand, space is built according to a top-down development approach, on the other, it is the result of informal, bottom-up activities of everyday life. The cultural heritage to preserve is, therefore, a melted contribution both of professional planners and spontaneous behaviors of citizens, city-users, and tourists, directly involved or unaware of the co-design role played. Nevertheless, all these actors contribute to defining the social and future identity of the place. The paper presents a cognitive research approach, borrowed from environmental psychology, to discover the “social images of the city” with the purpose of preserving and enhancing its cultural heritage. The methodology of the user and representative testing is presented and discussed using experimental case studies developed in the Italian territory at different scales.

**Keywords:** Cultural heritage · Environmental psychology · User-centered design · Historical and cultural identity design

## 1 Planned, Built and Lived Space

The environment we live in tells us two stories and a growing divergence between the urban space – planned, built and historicized – and the one experienced, lived and shaped by the everyday life.

The first space is designed by a top-down vision. The second one grows spontaneously bottom-up. The juxtaposition comes from both from a different approach and a different point of view on the world, but rather from the subjects involved in the urban history evolution. In the first case, the choices are supported by a long-term and strategic project, in the second one, they are made according to a tactical activity based on present needs.

Architects, urban planners, art historians define cultural objects among the urban texture according to aesthetic, historical, authorial, and preservation criteria. These are the *totemic* ones, who generate the city identity, the city *brand*.

Nevertheless, this perspective produces an ideal, abstract images sometimes even not recognizable of the place if you’ve had the opportunity to live and experience it directly.

This idea is well embedded in the imagery of Venice. A city that has become furthermore similar to its *simulacra* repeated in Hangzhou, Cina (Fig. 1), rather than to itself, which has become nearly a *hyper-place*, as underlined by Bonomi already in the '90s [1]. Its *representation* is, even more, a *cultural non-place* par excellence, reproduced endlessly in its iconographic and archetypal elements in a surreal *out-of-scale* and *out-of-context* dimension.

On the opposite, there is a lived city, the one daily experienced by people who live there: workers, city users, tourists or citizens. The one which produces a different image, a collective mental model: the social image, as sensed by Lynch [2].

It is different – comparable in some parts of the previous – but its *symbolic objects* and their meanings come from the people.

This map doesn't raise from the cultural relevant elements, rather from the sense of the place compared to lived emotions: *paths* – the fluid and dynamic interaction with space –; *borders* – perceived boundaries, not only physical –; *districts* – well-defined urban units which already have a strong identity –; *nodes* – urban point of interest for interactions –; *references* – recognizable objects that are visual anchor and orientation signs. All these are physical and cognitive structures which shape the common and shared image.

Although *nodes* and *references* are similar to the elements also identified by experts, they do not necessarily correspond to the historical and cultural representation of the city. This offsetting becomes even more evident when compare with urban renovation interventions or with further planning activities. In this case, places not highly considered in term of historical or artistic quality are often sacrificed and dismissed. On the opposite inhabitants firmly defended them due to the deep symbolic worth shared inside the social group.

Identifying this collective model could give a further investigation tool and an inner knowledge of the place involving people in co-designed and participated activities.

The problem is how to define these spontaneous maps, let them come to consciousness so that they can be part of the design process in preserving and building the urban identity.

## 2 Environmental Psychology and Spatial Mental Models

*Imageability* [2] is a way to define the *legibility* of a place – the qualities of the spatial morphology that allows people to understand and read its structures and its meaning. This idea has been the leading concept of research theory and experiments in the field of *Environmental Psychology* since the '70s.

The discipline has been introduced by the book written by Hellpach [3] and it has been developed by authors such as Ittelson et al. [4]. In Italy, we can consider valuable works made by Bagnara and Misiti [5] and recently by Cesa-Bianchi et al. [6].

In particular, the studies of Proshansky et al. [7] focus on the *city identity* according to the *self-awareness* based on the relationship between the subject, his/her cognitive dimension, and the physical space.

Buttimer [8, 9] works on the *human geographicity* concept (*geographicity* was firstly introduced in 1999 by the two philosophers Gary Backhaus and John Murungi



**Fig. 1.** Venice: images of *The Venetian*, Las Vegas; *The Venetian*, Macao; the *Venice Water Tower* in Hangzhou, China; the *Italian Pavilion* in Disney world; the *Ever-last resort* in South Korea (PHOTOS: fanpage.it/viaggi - CC BY-NC-ND 3.0 IT)

as: “the spatial component of all phenomena” [10]). In her observations, she studies the daily and intimate bond between individuals and the surrounding environments. Some

of the grounding elements of the relationship between people and places come from her investigations. Among them, we can recall the *sedimentation of memories*, the *belonging feeling* that are part of the constructive process of values and meanings. In this conceptualization take place other recurrent factors in the constitution of a space identity such as *recognition*, *meaning*, *expressive-requirement*, *mediating change*, *anxiety and defense function*.

Another approach to this study field is represented by *Humanscape* a project conducted by Kaplan and Kaplan [11]. This second branch investigates the distinctive elements of a space aimed at the construction of a meaningful relationship according to a cognitive and social perspective. Among the predictors: *coherence*, *complexity*, *legibility* and *mystery*. These parameters allow to define how easy is to map and to understand a place: *coherence* and *plainness* of the spatial structure enable the discover and the interaction of it. According to this criteria people, as individuals and as a group, build a mental model though the interpretation of information, stimuli, and relation with the urban environment [12].

The references adopted are the research conducted by Lynch in Boston, Jersey City and Los Angeles [2], and the scheme proposed by Kates [14]. Kates defines the optical illusion concept used to test and verify the differences between the perceived image and the real one. It is useful to understand the relationship between environment and human behaviors and the adaptability index to environmental conditions.

The research, therefore, tries to “explore (a) the images that people have of the city (b) their attitude towards the city (c) the relationship between the different images and behaviors” [13]. Among the conceptual tools borrowed by Lynch, Francescato and Mebane utilize verbal answers – interviews and questionnaires – sketches and drawings – representation tests – and trained observers. This last approach is comparable to the *expert evaluation* conducted in user-centered design discipline.

The attempt, furthermore, focused on the selection and validity of the experimental sample (188 subjects involved, both man and women, not/born in the two cities clustered in two age and socio-cultural segments) to observe possible statistical correlations. The study used mainly qualitative methods to collect and compare data to discuss.

### 3 Drawing as a Knowledge Method to Understand Cognitive Images

Among the inquiring methods, the authors give a strategic role to sketch/drawing techniques according to the Stea and Wood observations [15]. The Lynch’s research is based on the significant correlation between the maps drawn by subjects (representative test) – where people show to visitors the important places of the city – and the interviews (mentions). However, in the sketches, individuals tend to visualize more the connectivity and paths in front of locations and people. Perhaps it could depend on the difficulty of drawing complex structures.

One of the goals, explicitly declared by the researchers, is, therefore, to verify if sketches are an efficient inquiring tool. They tried to understand if less trained individuals or elder people were less able or less inclined in the use of this expressive language: the low level of drawing abilities could be a limitation in taking part in the

experiment. The detection method aimed to identify the whole scheme – the mental images that inhabitants have of their own city – is organized according to two criteria. On the one hand, the image is considered as “the idea that people have of the physical shape of the city (it could be brought out through graphic methods: subject are requested to draw a map)”. On the other hand, it is intended as a scheme “the conceptual representation of a city including symbols, beliefs, and activities”.

Some of the questions of the qualitative interview were aimed to bring out the elements of the spatial-visual memory and to report the urban mental image as cognitive maps and spatial representation. “Please, close your eyes and think of... (name of the city). What do you see?”. Or “Draw a map so that a visitor could find his/her destination or street”. Again “List the characteristic elements of the city [...] It could be a street, a building, a district, or some physical aspects that you would show to let people feel more familiar with the city”.

Some of the images that come out from the experiments are fascinating. Maps drawn by the “Milanesi” reproduce the star-shape of the urban structure: radial street starting and concentric circle. 63% of the subjects of 92% indicate the Milan cathedral as the city center. Roma seems to have more than one focal point: the Tevere river, Piazza del Popolo, Piazza Venezia and the Vatican. 10% of the subjects draw a map and the streets of his/her residential area according to sort of egocentric cartography because they are not able to define a structured model or image of the city. Milan citizens report more abstract concepts to describe Milan such as social dynamism, pollution. They also use negative adjectives to describe it: crowded, loudly and chaotic. On the opposite, Romans give more concrete answers and reveal a not so negative perception and feelings.

Finally, comparing the images drawn by subjects of the same group a significant similarity comes out in visually describing the hierarchy of spatial elements. Sketches have been evaluated considering: the average number of drawn elements; the frequency and the typology; how many and how coincident are the focal points; the possibility to overlay specific points. The results confirm the Stea and Wood concept of opportunity profile: people build their scheme and image grounded in their own lived experience.

#### 4 Identity Story Telling vs. Perceived and Hidden Identity

According to the Francescato and Mebane work [13], a series of research projects have been developed to analyze, at a different scales, the territorial brands and the cultural story telling compared to the image perceived by the users in a bottom-up approach.

Starting from the mental model and the cognitive map – considered as a social and conscious construction of the spatial structure representation as discussed in Bollini and Palma [18] – this method has been hybridized with user-test task-based common in the usability and user experience evaluation.

People were asked to complete tasks in space to evaluate the mental model and the images brought out by the spatial experience.

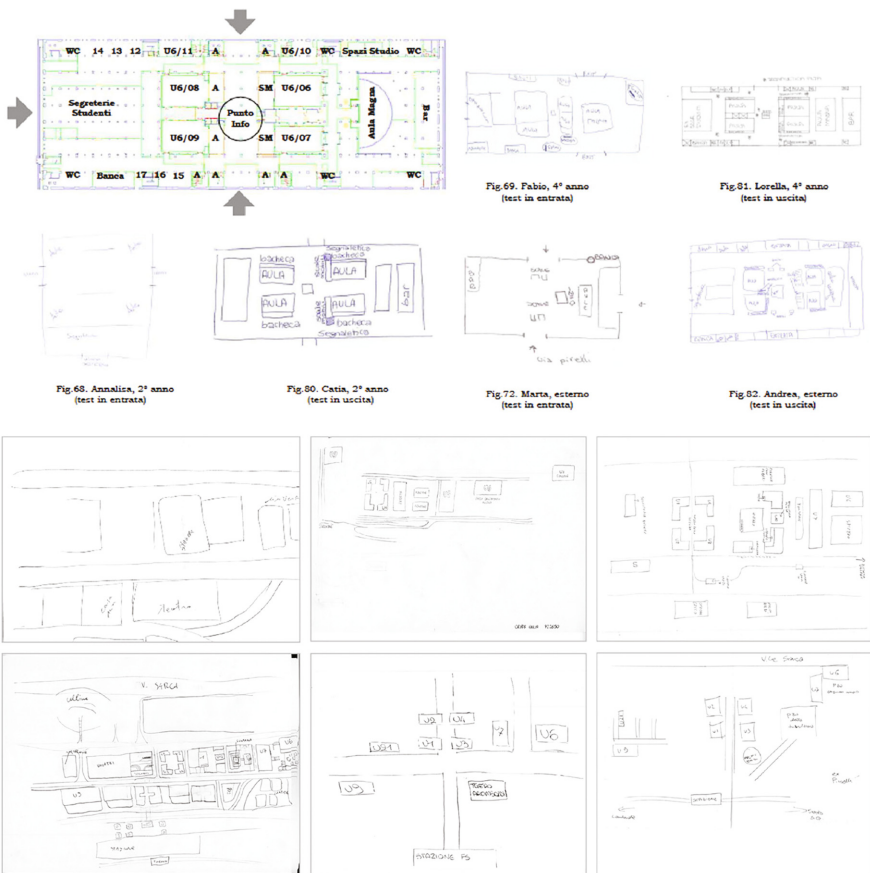
Inspired by the Nielsen’s usability heuristics [16] declined by Bias [17] as *cognitive walkthrough*, subjects of the experiments had to achieve certain spatial goals such as to go to a particular place etc. During the activity, they were invited to describe strategies, doubts or problems (*thinking aloud* protocol) while they were trying to complete the



parcourse/task to find qualitative insights. In the meanwhile, execution time was recorded, and main difficulties observed or failures in completing the tasks. The results have been measured and compared according to ISO 9241 parameters: *efficiency*, *efficacy*, and *satisfaction*.

Spatial user testing activities and sketches according to Stea and Wood model have made possible to read the images shared inside the social groups letting them better cluster for the place perception and urban brand construction.

Further research projects have been conducted at different spatial and at the urban scales. The first works were focused on single buildings [19], the university campus [20] and the whole Bicocca district [21] in the suburbs of Milano (Fig. 2) to verify and assess the methodological hypothesis. The last one was extended at urban scale having as research subject the conurbation Rimini-Riccione [22] to modeling the research methods, tools, and the design approach [23].



**Fig. 2.** *The urban island:* representative tests conducted inside the U6 building with students, external visitors (a) the experiment at the district scale in Milano-Bicocca (b) has involved workers, inhabitants students and city users.



## 5 Conclusions

In this hybrid approach representative tool – typical of the drawing and design disciplines – have been mixed with user tests coming from the cognitive psychology, qualitative research, and user-centered approach. It has allowed bringing to life and consciousness the hidden images that people shares of the urban spaces inside similar social groups.

According to the experience and the interaction of the urban environment different groups identifies point of interest, totemic elements. They do not necessarily coincide with the ones that have been recognized for they high historical, artistic or cultural value by experts. Nevertheless their symbolic meaning is part of the city brand spontaneous construction and they have to be considered to preserve and design a shared collective identity.

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