



Jessica Aline Tardivo is an art teacher, pedagogue and architect, Master of Education and researcher at Nomads.usp. It studies the application of the methodology of Heritage Education, associated to the new technologies, with the purpose of facilitating the identification of the cultural inheritance of a city.

Anja Pratschke is architect and Doctor in Computer Science. Professor and researcher at the Institute of Architecture and Urbanism of the University of São Paulo, Brazil, and a co-coordinator of Nomads.usp. She develops and guides research in the areas of design and communication processes in architecture.

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Resumo

This article presents educational possibilities mediated by digital means that facilitate the approximation between individuals and cultural assets, bringing to the fore the rescue of memory and new interpretations about the city. With this aim, the memory location in the present city is initially introduced. Then Heritage Education actions associated to the new communication technologies as a resource in the construction of memory will be presented. Finally, we evaluate the use of interactive interfaces, accessed by the reading of QR Codes, and the production of photo collagens that have been used in research on cultural heritage by the research group Nomads.usp.¹

Keywords: City, Heritage education, Memory, Digital media

1 Memory in the current city

Before conjecturing the place of memory in the present city, it is necessary to reflect on the reason for memory and its social role. It is possible to verify in several writings the memory of the city taking the role of the identity of the place, so it is important to clarify that in the study of this article, adopting as a reference the research of the French sociologist Joel Candau, published in the work "Memory and Identity"² in the year of 1998, memory is understood as a set of narratives that report the affective and historical remembrances. By connecting the past to the present and making possible future projections of a society or place, the identity is composed by the choices that are made from the acquired knowledge.

Cultural identity of a place and the way of life of a society, is constituted by cultural goods, histories and manifestations that a group chooses to preserve and is changing according to the habits of different generations, while the memory is a contribution so that everything that was constructed, produced and learned can be rescued over time.

Turning specifically to memory in Antiquity, for example, the real together with the mnemonic image of the city helped the individual to locate between the past and the present. According to the American historian Antony Vidler (1992: 177):

In the traditional city, antique, medieval, or Renaissance, urban memory was easy enough to define; it was that image of the city that enabled the citizen to identify with its past and present as a political, cultural, and social entity (neither the 'reality' of the city nor a purely

imaginary 'utopia', but rather a complex mental map of significance; thence the privileged place of monuments as markers in the city fabric).

The English historian Frances Yates described in her work the "Art of Memory" (1976), different and elaborate techniques of memorization used throughout the middle ages and rebirth, which helped the individual to remember historical and literary contexts, to be located in space time. Many of these techniques were given by the memorization of physical and imaginary places, whose parts of each space should be composed or filled mentally by the information that each person wanted to remember. Memory was given not only as a reminder of tradition, but as *techné*³ or mnemotechnics, processes that are now recognized as the Art of Memory (FLUSSER 1983: 83).

In today's city, reading places, constructing mnemonic maps, or recognizing a local identity becomes much more complex as individuals have access to communication and information networks and are able to quickly search historical contexts, maps of location, among others, which decreases the need to memorize. These networks also enable contact with diverse cultural, religious and political manifestations, so that each person can choose between habits and customs those that best meet their expectations and goals. This is one of the factors that makes the mnemonic map of the present city an overlap of cultural identities.

Israeli architect and an expert on contemporary city history Tali Hatuka presents an even more complex view, reflecting that

Multiple synchronous maps superimposed over one another are being created in today's city in an endless process. In fact, some of these memory maps will not last for long. There are not many active agents to keep them or keep them in the minds of the people nor significant capital to maintain their existence in physical space (HATUKA, 2017, 51).

Hatuka (2017: 51) asks what will be forgotten and what will be preserved in relation to the culture of today's city? One possible answer would be to think that when approaching a time when people experience multiple histories and different social consciences, one must realize that memory is not static, it transforms with time, as well as identity.

She (2017, p. 51) notes a critical view of cultural goods and manifestations as market product, when the architect reinforces the lack of "capital" for the preservation of memory. On this view, it is concluded that if in theory the structures recognized as cultural goods are preserved only from records and registers, administered by preservation policies, and these assets become local tourist attraction, yes, it can be agreed that there are no viable resources for the preservation of different manifestations in physical space.

However, it is understood here that the different manifestos change and form part of the cultural complex of a city in such a way that it is believed that formal and informal actions, educational activities and differentiated readings of the city, registered by the arts disposed in literary works, photographs, films and documentaries, allow the recording, reading and interpretation of memory in the city today.

In fact, the first initiatives to bring people and cultural objects together took place in formal spaces, especially in Europe, when museum and galleries exhibition spaces were seen as places of learning and adopted teaching methods to present the content to visitors, as quoted by the English educator Eileen Greenhill Hooper (2001: 52):

In the 1960s, museums became places of active learning. It is no longer enough to collect, preserve, and investigate, but such operations have become means for achieving another end that are people and their relation to objects. In other words, the centre of attention ceases to be the collection to be communication, in which learning and leisure are integrated.

In order to facilitate the educational and reflective process, a category of professionals was created, initially in England, the museum educators, who will act as interlocutors between the visiting public and the exhibited goods (HOOPER, 2001, pp. 40-54).

It is also during this period that a historiographical approach known as New History or New Cultural History arises in France. Part of the formal education of the whole of Europe, as Heritage Education, the objective was to provide a learning 'centered on the cultural object, on the material evidence of the culture [...]', and was based in "[...] an educational process that considers the object as a primary source of education" (ALENCAR, 1987, p.26).

This teaching practice allowed the students to have an initial contact with the cultural assets so that later they could gauge the historical data with greater autonomy and criticality. However, the experiences throughout the 1990s are not only restricted to the exhibition spaces, but begin to permeate the monuments and places of the city. Concomitantly, artistic manifestations, such as the Neo-vanguards⁴, began to interpret and experiment in a different way the spaces of the city.

2 Heritage education: memory resources and technologies

In Brazil, Heritage Education was inserted in the educational practices of the Imperial museum of Rio de Janeiro by the museologist Maria de Lourdes Horta in 1985 and then systematized in four stages of application: (1) observation, (2) registration, (3) exploration and (4) appropriation⁵, which were set out in a guide published by IPHAN in the year 1999.

The goal of IPHAN was to use the methodology as an instrument of cultural training, aiming to bring society closer to material heritage, especially in formal teaching practices. At the present time, the method has become the basis for IPHAN's

educational, formal and informal actions, which involve cultural heritage as a whole. (IPHAN, 2014 page 13).

At the end of the 1990s, the process of popularization of the use of communication and information networks was made possible by access to the internet network. This advance facilitated the projection and insertion of activities in interactive platforms, such as virtual museums, games and collective collections, creating other spaces of cultural memory registration, inserted in cyberspace.

According to the philosopher Pierre Levy (1993, p. 28), the configuration of "educational and socio-cultural knowledge and practices comes from the structure of language and intelligence technologies" that stand out in a feedback process, and change as they are used. On this point of view, the Brazilian researchers, specialists in communication and social memory, João Nunes and Paola Oliveira report (2016: 96):

At the same time that the computer age ushered in an even greater potential for our intelligence, it also caused a revolution in the processes of selection, storage, and availability of memory supports, which, acting as artificial extensions of cognition. The dynamics of memory and forgetting are increasingly evident in the virtual universe, since the management of memory and knowledge is shared on the web and its access depends almost exclusively on the updating of hardware and software.

From this observation it is understood that the digital media harbor different possibilities of dissemination of knowledge, memory and history, and cyberspace promotes the breaking of barriers and limits imposed by space/time. However, their support depends on the constant sharing of information. Still for Nunes and Oliveira (2016: 99):

If in the past the places of the parietal paintings, in the Cave of Chauve, the frescoes in the Sistine Chapel, the Renaissance sculptures and paintings in the museums and galleries, and the texts of the archives and libraries were designated to the storage, circulation and enjoyment of our visual references, symbolic supports of memory. Today this place, in cyberspace, is "the whole place".

The first experiences around the use of cyberspace and technological resources as a medium and support of cultural memory, advanced in mid-2010 due to the refinement of computer programming, which made possible 360° access to cultural objects and objects (Nunes, Oliveira , 2016). Nowadays, the ease of use of mobile devices, such as mobile phones and tablets, which allow connection to the internet network, installation of applications, among others, has made room for the use of Virtual and Augmented Reality (a real-time simulation of modification of the space) and the QR Codes (codes that allow the connection of mobile devices with different interfaces).

Some institutions, museum spaces and private organizations have been using these resources successfully in their educational actions, such as the project Videoguía: Virtual and Augmented Reality, accessible since 2012 at Casa Batlló in Barcelona, Spain, by the research group Artec⁶ , of the Institute of Robotics and Technologies of Information and Communication of Valencia.

The project Videoguía: Virtual and Augmented Reality was developed with the objective of providing interactivity between the visitor and the physical environment. The system consists of a mobile device in which an application is installed that displays the objects and the original spatial configurations of the exhibition rooms, including audiovisual elements and 3D virtual objects with which the public can interact. The rooms of the building are identified in the application by numbers, and upon accessing the corresponding number, the user positions the device towards the actual room to visualize the place and objects in different times and situations, as shown by Fig.1.

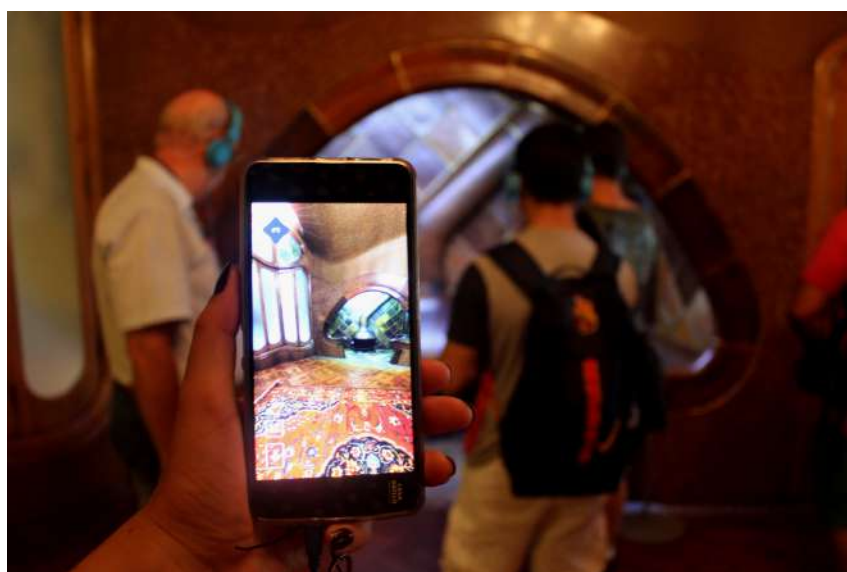


Fig. 1.Virtual Reality Application Casa Batlló. Source: Research Archive, 2017.

This system enabled the museum to build a new educational process, since the video guide has information about heritage, history, geography and culture. For Gimeno et al. (2012, page 8)

This system has improved the assimilation of visitors' knowledge in a fun way, encouraging the practice of exploring points of interest and collaboration and discussion among participants. In short, we have created a communication and learning tool with a high degree of immersion (our translation)⁷.

For this example, the use of technology has facilitated the educational dynamics and practices around memory, but costs such as internet network, maintenance and purchase of equipment, production of applications, among others, make it difficult to access these different dynamics. In this way, interactivity has generally been used in private institutions such as museums and in large events and exhibitions.

3 Interactive actions for reading and interpreting the memory of the city

Trying to make educational actions feasible, the research themes of the Nomads.usp research group have included different studies with a transdisciplinary character that seek an openness so that groups and communities can know, reflect and develop critical discussions about the city. Regarding memory, we investigate the possibilities of using digital media and audiovisual resources for the observation, dissemination, preservation and management of cultural heritage in contemporary times. To illustrate this process, I will refer to two projects in the implementation phase: (1) Virtual Paths: Collaborations in Narratives of the Cultural Heritage of São Carlos, supported by interactive interfaces accessed through QR Codes, and (2) Heritage Education: Challenges and Strategies in Digital Culture, which experiences the use of digital photo collagens in the construction of new urban landscapes.

The (1) Virtual Tours project: Collaborations in Narratives of the Cultural Heritage of São Carlos, emerged from a partnership in 2017 between the Pró-Memória Foundation of the city of São Carlos and the research group aiming to develop educational and interactive activities, proposing as a resource the use of mobile devices (cell phones and tablets), directed to the knowledge and dissemination of the history of the city's architectural heritage.

Analyzing the two available technological resources, the project was committed to creating a mediated learning routine using QR Codes, that will be fixed in buildings of historical relevance of the city. Initially, it is located as pilot in the spaces of the Sao Carlos' Railway Station⁸ The system targets interactivity between the building and the user, which when positioning the mobile device over the QR Code will be directed to an interactive interface.⁹ that will make available information and curiosities about the place through questions and answers, as shown by Fig.2.



Fig. 2. Interface of the Virtual Paths project. Interface Design: Sandra Schmitt Soster; Sketches: Maria Clara Cardoso, Web Development: Maria Vitória do Nascimento Inocencio. Source: Project Archive, 2017.

The interface also provides the icon "Learn +", which takes the user to a page in which is inserted the detailed history of the place or object observed, plus an updated image, as shown by Fig.3.

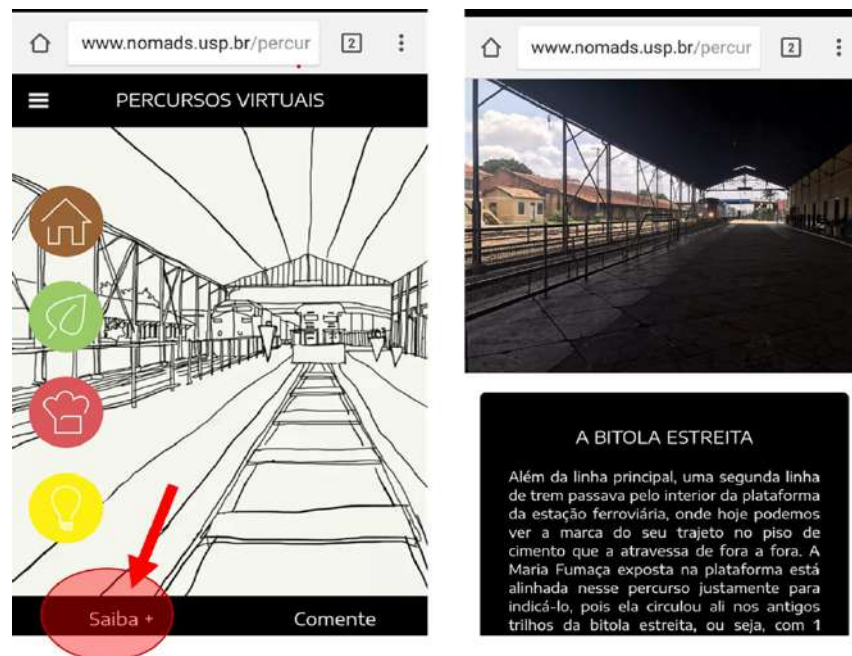


Fig. 3. Interface of the Virtual Paths project. Interface Design: Sandra Schmitt Soster; Sketches: Maria Clara Cardoso; Photo: Jessica Aline Tardivo; Web Development: Maria Vitória do Nascimento Inocencio. Source: Project Archive, 2017

The next breakthrough in the system provides the creation of an open repository where the community can add other information about the places and objects exposed in the interface and insert into the system other cultural assets that they consider important for the memory of the city, thus forming a collective mapping of the cultural heritage. The completion and implementation of the pilot project structure is scheduled for August 2018.

The project (2) Heritage Education: Challenges and Strategies in Digital Culture, is part of the doctoral thesis in development, of one of the authors¹⁰ of this article. The work, motivated by the desire to provide educational activities that can contribute to the valorization and recognition of the cultural heritage of a city, employs as a methodological contribution the stages of observation, registration, exploration and appropriation, proposed by the methodology of Heritage Education (HORTA, 1999). In this way, it proposes cognitive mappings composed by the visual reading of the several aspects that compose the architecture of the place, registered through Digital Photo Collages.

Recording, manipulation and photographic editing were used as intervention support, following the observations of the Brazilian photographer and historian Boris Kossoy, who understands the author of the image as a "cultural filter" whose selection of what is recorded results from his sensitivity and cultural luggage (KOSSOY, 2012, page 44). In this perspective, in choosing what to record, the individual points out the objects and spaces, he considers important for memory and identity of the place.

Thus, at first, following the observation and recording stages, it is proposed to get together a group of people along a central axis of the city in order to allow through mobile devices, individual observation and register specificities of the place previously chosen, as shown in Fig. 4.

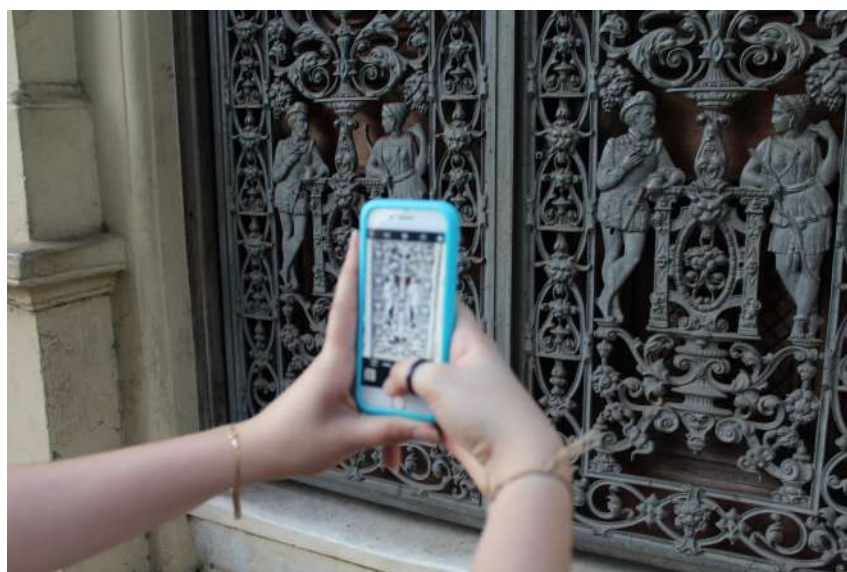


Fig. 4. Experiment Test for Educational action. Photo: Jessica Aline Tardivo. Source: Research Archive, 2017.

To cover the exploration and appropriation steps, it was chosen to work with the overlapping of images in a Digital Photo-Collage process. Returning to Hatuka's reflection (2017, p. 51), it is understood that analysing the contemporary city is to generate "overlapping memory maps," and in this sense each person will construct a visual map of the objects and goods that

he has identified and recorded. The manipulation of the images will be carried out with the use of software, such as Image Editing software and presentation software, as shown in Fig. 5, overlapping photos, newspaper clippings, drawings and texts that will be searched by each person and be available in an open access digital repository, so that any user can take advantage of the collection data.



Fig. 5. Digital Photo Collage Editing Process Test. Source: Research Archive, 2017.

We believe that collage work, in addition to boosting creativity, allows the individual to appropriate the registered object and construct interpretations and subjective readings of the place. Such thinking comes from the works of the North American artist Hilary Williams¹¹, who uses collage and engraving as a resource in her work to configure new imaginary urban landscapes. Here we chose the photograph of the real, mixed with the memories constructed individually based at the experience in the urban space, for the composition of this other visual landscape, as shown in Fig.6.



Fig. 6. Final Photo-Collage test. Source: Research Archive, 2017.

The project will be implemented in the months of March and April of the year 2018 to reach the formal education and the local community of a city, having as field of experimentation the city of Brotas, in the interior of the state of São Paulo.

Both works in progress allow for the dissemination of knowledge about the history of the place and the approximation of groups and communities with heritage, offering openness for the participation of individuals in the construction of narratives about their city, using mobile devices, accessible software and open repositories in order that these actions can be perpetuated. With the implementation of the project (1), it is expected that the population will be given a voice so that they can identify new spaces that they consider important for the memory of the city and tell their personal stories about the heritage already exposed in the interface, while the project (2) we seek the construction of new readings and visual interpretations of the cultural heritage in the city.

4 Final considerations

The memory in the contemporary city is composed of several cultural references, such that the recording and preservation of memory today cannot be accommodated only in the past, such as books, monuments, among others. In the reflections presented, the educational actions were used as facilitators of the reading and interpretation of the city of today, rescuing the cultural assets of the past still preserved and plotted to the dynamics and cultural, political and architectural relations of the present. We also believe that the ease of use of resources and technological means, especially access to internet network through mobile devices, has contributed for groups of people and communities can approach cultural heritage and build new

reflections on the city. From this point of view, the ongoing projects of the Nomads.ups research group seek to contribute with inspiring actions for collaborative construction of mnemonic narratives of the city.

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1 The research group Nomads.usp (Center for Interactive Living Research, University of São Paulo) is part of the Institute of Architecture and Urbanism, at the São Carlos campus.

2 From the original: *Mémoire et identité* are central ideas in the classical theories of human and social sciences, present in reflections of different areas and theoretical orientations as in the analyzes of memory and/or identity by authors as different as Henri Bergson, Pierre Nora, Michel Maffesoli, Jacques Le Goff, Maurice Halbwachs, Gerard Namer, and Phillippe Aries, Norbert Elias, Paul Connerton, Erving Goffman, Stuart Hall, Paolo Montersperelli, Paul Ricoeur, among others.

3 Before the Modern Age, technique was synonymous with art: "creation and application of lived, known and valued forms" (FLUSSER, 1983, p. 83).

4 See: SANTOS. Fabio Lopes de Souza As Neo-Vanguardas e a Cidade. II Encontro de História da Arte UNICAMP: Campinas, 2006.

5 See: Guia básico de Educação Patrimonial. Brasília: IPHAN: Museu Imperial, p.11, 1999.

6 The Artec Group is a team from the IRTIC University of Valencia, founded in 1992, working on Interactive 3D graphics, Virtual Reality, Augmented Reality and Civil Simulation.

7 From the Spanish: "*Con este sistema se ha mejorado la asimilación de conocimientos de los visitantes de una manera amena y divertida, incentivando la práctica de exploración de puntos interés y la colaboración y discusión entre los participantes. En definitiva, se ha creado una herramienta de comunicación y aprendizaje con un alto grado de inmersión*".

8 The building hosts the Pró-Memoria Foundation.

9 The interface was developed by Nomads.usp. Access is preferably given through cell phones and tablets. Available at: <http://www.nomads.usp.br/percursos/index.html>. 28.nov 2017.

10 The doctoral thesis of educator and architect Jessica Aline Tardivo is underway at Nomads.usp, at the Institute of Architecture and Urbanism of the University of São Paulo, on the São Carlos campus, under the guidance of Prof. Dr. Anja Pratschke. They are both authors of this article.

11 The work is available at: <<http://www.hilaryatthecircus.com/urban-landscapes/Acesso>> 15.out.2017.