Drawing Memories: Intersections Between the Sites of Memory and the Memories of Places

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Abstract. This paper explores the relationships between people, place and memory and involves discussing the links between the "sites of memory" and the "convergence-divergence zone¨, which is bound up with the processes of perception and evocation/recognition of fleeting memories, as experienced by the residents of the central district of the town of Campinas - Sao Paulo - Brazil. A field research was carried out with a sample of 266 participants from the central area of this town, who agreed to take part in interviews and produce drawings on the basis of which it was possible to identify places of memory. These places were appropriated and preserved through shared feelings, which distinguished them from others, and the memory of these places was undertaken there. The results show the close ties between the individual, the urban/architectural space created and the recognition of the value of the constructed urban identity that is based on the memory that the participants had of their city, cultural heritage, symbolic reference points and representations. These representations underpin the discussions about the way cultural heritage and memory are endowed with legitimacy and preserved in the present.

Keywords: Neuroscience · Architecture · Drawings · Sites of memory
Memory of places

1 Introduction

Memory is an evocation of the past. St Augustine [1] showed that memory is not simply a way of recalling and recording things, but rather a manner of evoking past ties which can no longer be accessed. He also stressed that the past is our history, while at the same time it lingers on into the present and explains many of the current events that take place.

St Augustine [1] also states that human beings learn about time in three phases: past, present and future. The past is something far away and refers to events that simply once occurred but still influence what we are at present. The present corresponds to what is here and now – the period when our lives and experiences are happening at this moment. The future is the place where all events that are taking place will reach a conclusion and the time when the determined period of what is going to happen arrives. This being the

case, the past constitutes an abstraction, which only materializes through the evocation of the living experiences of the present, and this generally occurs by envisaging and making predictions about what the future will be like.

In other words, the brain creates records of memory through sensory maps and reproduces an approximation of its original facts. This process is known as 'recall' or 'evocation'. Remembering a person or an event or telling a story requires evocation, that is, it involves recognizing the objects and situations around us. This procedure is of value since it allows us to think about the objects with which we interact and the events we witness, as well as the whole imaginative process through which we plan our future [2]. In the present, we are able to reconstruct memory. This process of reconstruction is fundamentally mediated by memory. Halbwachs [3] stated that memories always originate from a collective process and are embodied in a precise social setting.

According to Damásio [2], our memories are preconceived, in the strict sense of the term, by our history and prior beliefs. The notion of an infallible memory is a myth and can only be applied to trivial matters. The idea that the brain retains something that seems an isolated "memory of the object" reveals to be unsustainable. The brain retains a memory of what occurred during an interaction and what is crucial is that this interaction includes our past and even very often the past of our biological species and culture. This means that remembering does not exactly entail reconstituting the experiences or events of the past but rather recognizing things that have value and being able to embody them in our present circumstances.

Value, in the sense derived from economics, is the quality through which something is roughly estimated and determines its importance for people. Thus, cultural heritage is something that has value insofar as its assets are of a cultural and non-monetary order: it is something formed and created that constitutes a legacy of past generations. This heritage belongs to both individuals and society and its legacy is an intrinsic part of the life of communities. A community can be defined as a particular group of human beings who share common features such as ethnicity, territory and beliefs – and it is the outcome of a common social pattern; they also share a common history and heritage. Hence, the fact that they perceive things through a form of interaction and appropriation and not through a passive receptivity may be the secret of the "Proust effect" in memory and the reason why we often remember situations and not simply isolated things [2].

Pollak [4] underlines the fact that memory is selective. Being a first-rate editor, the brain creatively manipulates "multimedia" records of images, sounds, tactile sensations, smells and other perceptions of this kind. Each mind abstracts and discards to what does not interest it and focuses and records what most attracts it, while always being guided by value judgements. The assigning of a significant value to the capacity of something (whether tangible or intangible) is a way of responding to a human need and means people are compelled to make choices that are mediated by feelings and meanings.

Damásio [2] argues that what we remember from our encounter with a particular object is not only its visual structure, which is mapped through optical images on the human retina. A key additional factor is that there is a real governance controlling the sensorimotor patterns which makes the formation of memories possible. This involves: "the sensory-motor patterns associated with the view of the object; the sensory-motor

pattern associated with touch and handling the object (if this is the case); the sensory-motor patterns resulting from the evocation of previously acquired memories related to the object; the sensory motor patterns involved in triggering the emotions and feelings associated with the object".

In view of this, the selection based on a judgement value is always bound up with feelings of esteem – positive feelings that we nurture for something - which is a key factor in the formation of memory and identity. There is no relationship of belonging unless there has been affectivity and appropriation or in other words, "unless we nurture a positive feeling that we can be identified with or it is related to us" and without which the conservation will not be justified. These feelings are expressed in the values and meanings that the things have for us but which are not an intrinsic part of them. They are the results of the relationships maintained with them and vary in accordance with each individual, community, temporality and spatiality [5].

Menezes [6] believes that value is not inherent to goods and things. It can fluctuate and can be divided into the following categories: cognitive value (associated with the opportunities provided by knowledge), formal value (which allows the construction of a world of meaning), affective value (with regard to a heavy symbolic weight) and pragmatic value (i.e. a utilitarian value). Finally, it is the result of the relations people have with themselves and not only of their direct relations with objects. The assigning of value calls for a distinction and allows the retrieval of memory.

Halbwachs [3] stated that there is no collective memory that does not occur in a spatial context. He argued that space offers an image of permanence and stability through signs left by social groups. These signs can assist in arousing memories and evoking the past and thus represent valuable testimony since they involve the retrieval of information about people and significant social facts about the groups. In this way, the places of memory can be shaped – places that are appropriated and preserved by the existence of a shared meaning that distinguishes them from others.

At the same time, the 'physical' sites of memory are connected to the 'neurophysiological' places of memory, described by Damásio [2] as 'convergence-divergence zones'. These zones can be defined as a set of neurons where a large number of handle signals make contact in *feedforward-feedback loops*, which assist the neural architecture responsible for the evocation of memories and hence the recognition of all our surroundings.

In light of this, this paper collates information about the relationship betweeen the history and significant memories of the central area of the city of Campinas - Sao Paulo – Brazil. The purpose of this is to identify the "places of memory" recognised by the inhabitants and mediated by the "convergence-divergence zones", which constitute the spaces for images and dispositions that are bound up in the perception and evocation/recognition of these memories.

2   Sites of Memory

"Sites of memory" [les lieuz de mémoire] is a term coined by the French historian Pierre Nora [7] to designate places in every sense of the word, from the material and concrete

object to the most abstract, symbolic and functional entities which show vestiges that are recalled and transformed by the history of a society.

The site of memory that covers a territory corresponds to the records and everything that goes beyond them, which is another way of saying that it encompasses the symbolic meaning inscribed in its own record. These territories are places where memory is established and look like a new unnatural way of confining memory since we do not experience more than what they mean and what history, as a source, appropriates from them. In this way they are 'material' (tangible) and 'non-material' (intangible) stopping points where memory is solidified by a community, country and places where groups or peoples can be identified or make their mark; this gives rise to a feeling of identity and belongingness.

Even a place, which has a purely material appearance like a filing cabinet, is only a site of memory if the imagination bestows on it a symbolic aura. Even a purely functional place like a classroom textbook, a will or a group of former combatants, only enters the category if it is an object of ritual. Even a minute's silence, which has the ultimate symbolic significance, is at the same time the material form of a temporal unit, which periodically serves as a vivid reminder of the need to remember. The three factors always coexist (…). It is (a) material for a demographic profile; (b) hypothetically "functional" since it ensures, at the same time, the crystallization of memory and its transmission while (c) it is symbolic by definition, since it is characterized by an event or vivid experience [7].

Running in parallel with this, neuroscience has made a considerable effort to understand the neural basis of the representation of objects and how knowledge of an object can be stored in the memory, categorized in terms of conceptual and linguistic factors and retrieved through an evocation or recognition [8]. From this perspective, Damásio [2] extended the 'site of memory' concept to the area of neurophysiology to define the theory of convergence-divergence zones. The purpose of this was to set out a neural architecture of cortical connections, endowed with converging and diverging node markers, closely related to perception and memory. This theory assumes there are two cerebral spaces: (a) images and (b) dispositions.

The space of the image designs clear maps of objects and events during the perception and redesigns them during the evocation. Both in the perception and the evocation, there is a display in which the properties of the object correspond with the map. This space consists of an aggregate of primary sensorimotor cortices, or in other words, regions of the cerebral cortex situated at the entrance point of the visual, auditory, and other types of sensory signals in the nearby areas. It also includes the nucleus of the solitary tract, the parabrachial nucleus and the superior colliculus, which are provided with the capacity to create images.

In contrast, instead of maps, the space of the dispositions includes mechanisms, which consist of implicit formulas about how to reconstitute the maps in the space of the image. This space consists of an aggregate of associative cortices. This means it is situated in the cerebral cortices, which are not occupied by the space of the image (the higher-order association cortices and the limbic cortices) and in the large number of subcortical nuclei. In this space, the mechanisms maintain the basis of knowledge and

the means for reconstituting this knowledge in the evocation. It is the source of the images in the imagination and reasoning process and is also used to activate movement.

The two spaces show the different ages in the evolution of the brain – one in which the dispositions are strict enough to ensure a suitable behavior and the other in which the maps form images and make an improvement in the standard of the behavior. Today the two are inextricably intertwined. And at the intersection, the sites of memory of Nora [7], and the convergence-divergence zones of Damásio [2], coexist in their potential capacity and can be found in the spaces that design and shape the concept of the city.

The cities are formed of built and natural spaces which being constituted of meaning, turns them into an empowered region and allows them to integrate this symbolic community of meanings called the imaginary world. Above all, they are places endowed with a symbolic weight which distingushes them and gives them an identity. These entities can be represented by a monument, museum, well-known character, file or even a symbol, event or an institution. However, not all of them are characterized as sites of memory.

For this reason, these territories must possess a "desire for memory" and be able to show in their origins a memorialist purpose that ensures their identity. What constitutes them is an interplay between memory and history which is an interaction of the two factors that lead to their own mutual determination. Without this will, places of memory are only places of history. It should be remembered that memory and history are not synonymous, while, at the same time, they are narratives of the past that reshape episodes that have occurred and are not subject to repetition.

It is not correct to say that in order to remember, it is necessary to be transported in our thoughts outside space because, on the contrary, it is precisely the image of constructed or natural space that, owing to its stability, gives us the illusion of not being changed by another time and finding the past in the present – "but it is exactly in this way that we can define memory, and only space (whether created or natural) is stable enough to last without aging and without losing any of its parts" [7].

Every city is the owner of its history and memories and, equally, of the community of meaning which entitles it to its identity. Finally, memory is something evoked and vivid and its intellectual reconstruction is history.

3   The Center of Campinas

In the context of this discussion the central area of the municipality of Campinas, located in the State of Sao Paulo – Brazil, can be dubbed as a "site of memory"; this is appropriate since the city itself is renowned for the transformations it has undergone throughout its history. It represents a place where people can be identified, remembered and feel nostalgic about the experiences it has given them. Hence, what should be remembered represents both known memories and an infinite number of anonymous stories about the people who have passed through it. Even though these spaces have undergone radical changes and deterioration, they have left their traces and memories, and these can act as benchmarks for identifying the evolving pattern of the city.

Until the end of the 19th Century, Campinas was the largest producer of coffee in the State of Sao Paulo and one of the main bases for the expansion of its coffee industry. This was partly due to the social and economic history that characterized the city itself and partly on account of its ideal position as a key staging post for transport and communications. This central location has always been one of the permanent features required for the structuring of this town and shaping the formal and cultural features of its urban landscape.

In the opinion of Lapa [9], since the original foundation of the city, it has always been a center of commerce with stores for both wet and dry products, and sales outlets for foodstuffs, clothing and footwear. It was also a thoroughfare for carts drawn by animals alongside the Sao Carlos Theatre, which was demolished in 1922. In the center, the first tramways of Campinas could be found.

According to Badaró [10], the change of Campinas into the main center for coffee production, led to a wide range of alterations to the city that changed its appearance. From an urban standpoint, the changes brought about by coffee resulted in several improvements, which included the following: public gas lighting (1875) and animal-drawn trams installed by the Companhia Carris de Ferro [Steel Railway Company] (1879). Several buildings arose in the urban environment which served the public, such as hospitals, schools and markets - these created a more public life in the city that was embedded in middle-class and urban values. A new neo-classical style of architecture emerged which was adopted for several residential dwellings and public constructions and led to alterations in many colonial buildings. The location of the railway station served as a new central hub of the city - with the cathedral at one of its extreme points, and beyond that the Sao Carlos Theatre; and, at the other end, the station itself. Thus, the station attracted to itself the extension of the commercial area of Campinas, already established in the border areas to the central centers of the city. This explains the trend for a "North-South occupation", which followed the pre-urban axis of the way known as Guaiases at that time.
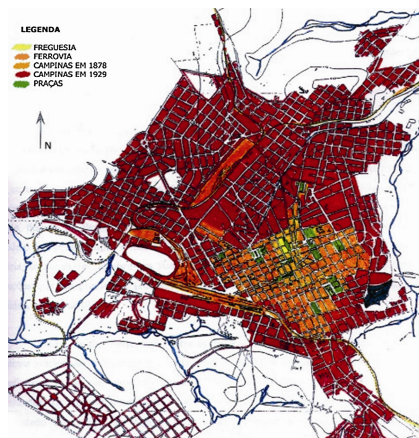
Fig. 1. Campinas in 1929. Source: Oliveira, 2012 [11]

Following the industrial expansion, which gave an impetus to Campinas at the beginning of the 20th Century, there began to be other urban requirements. The narrow streets and colonial appearance of the buildings were not in tune with the modern "progressive" spirit of the upper classes in Campinas. Thus, in 1934, an urban plan for redesigning the city, called the Urban Refurbishment Plan was implemented and the civil engineer Francisco Prestes Maia undertook this project (Fig. 1).

Badaró [12] believes that the historic center was treated in an appropriate way since it was redesigned, when there was a great concern about its aesthetic and civic features. On the question of traffic circulation, Prestes Maia suggested building two orthogonal avenues at a right angle, which crossed the regular network of the central area. In the North-South divide of the city, an alternative choice was the enlargement of the Francisco Glicério Street between Luzitana and José Paulino streets. In the East-West direction, it was decided to enlarge Campos Salles Street. As a result of the broadening of this street, it was turned into a new link between Fepasa Station Square and the main center, which is connected to an avenue that intersects the center at Francisco Glicério Street.

One of the design features that emerged in the first half of the 20th Century was verticalization. This is revealed by the technological and formal evolutionary patterns of society and the new styles of living and working, as well as the attempt to break up the landscape in the central area. This led to a social/spatial segregation that is witnessed by the physico-aesthetic appearance of the buildings. These had advanced and sophisticated levels of construction, as well as being both comfortable and functional, with extensive areas for leisure activities and large verandahs, and were sold at high prices.

The center of the city includes the remains of many buildings, which bear all the hallmarks of their construction, alterations, adaptations, appropriations and re-appropriations undergone over a long period of time. In view of this, how can one single out the significant memories that can be recognized as a cultural heritage? What are the historical places, sites of memory and memory of places in the central area of Campinas?

4   Results: The Sites of Memory and the Memory of the Places in the Center of Campinas

As a means of providing a clearer understanding of the sites of memory and memory of the places in the town of Campinas – Sao Paulo – Brazil, an attempt was made to interpret the representation of the people who make use of this municipality, by means of a field research that was carried out in 2011. The methodology of this research involved both a qualitative and quantitative analysis which addressed individual issues that affected the residents and their relationship with the memory of the city. A sample of 276 people was interviewed[1] and they answered a questionnaire in which they expressed the main things they could remember about key features of the city, with an emphasis on memory and cultural heritage.

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[1] Residents, passers-by and users, in short, people who experience space in their activities, in the center of Campinas. Different profiles of social class, age, occupation, income, origin and races were considered, in order to observe the differences between the referentials of the center identified by the interviewees.

The undertaking comprised open-ended and semi-structured questions, which the interviewees answered by hand; they were free to write about anything they wished without any type of restriction. There was also space for the participants to express themselves freely by means of designs. They were requested to design a representation of their view of the center of Campinas without the imposition of any time constraints or control of their technique. This took account of the fact that memories that are made up of events, can be evoked from the representation of any one of the factors that form the event [2].

The memory of an object is stored in a dispositive way. As explained earlier, the dispositions are dormant, implicit, and non-active and explicit records like images. These dispositive memories do not just store aspects of the physical structure of an object but have the capacity to reconstruct its shape, color, sounds, characteristic movements, smells etc. In addition, the dispositive memories also store the features of the motor involvement of the organism in the process of learning about key factors such as: the emotional reactions to the object; and the physical and mental state that are shaped at the time when the respective object is apprehended. As a result, the evocation of an object and clear formation of its image in the mind, are accompanied by the reconstruction of at least some of the images that represent these features. This means that the evocation of an object sets in motion the convergence-divergence zones and their respective spaces of the dispositions and of the image. The reconstruction of this set of adjustments to the organism that is evoked creates a situation similar to what occurs when someone directly perceives an outside object [8].

Thus on the basis of the answers of the interviewees, subcategories were established which guided the analysis and were devoted to an understanding of the relationship between memory, the city and the cultural heritage such as: religious buildings; buildings/monuments; and streets/squares. This formed the basis of the Table 1 below in which the question asked to the interviewees is in the first column, the classification of categories is in the second and a general tabulation of the replies obtained, is shown in the third.

When obtaining the immediate results of the analysis of this investigation, it was observed that the group comprised by the youngest members (under 40 years of age), was the group with the fewest items with regard to the memory of place, regardless of social class or gender considerations. An additional factor in this result is the finding that people with incomes above 10 minimum salaries were more representative[2].

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[2] At the time when this research was conducted, the minimum monthly salary in Brazil was R$622,00, which at that time was roughly equivalent to $270,00 [US dollars].

Table 1. Answers to the questions of the questionnaire that was applied in the research field study. Source: Oliveira, 2016 [14]

Questions	Subcategories	Specific Subcategories/Directions
When one speaks of the center, what is the first thing that comes to your mind?	Religious buildings (18)	Cathedral (14), churches (4)
	Buildings/monuments (8)	Old buildings (4), the demolished theatre (2), the central market (2)
	Others (10)	Tradition/history/cultural heritage (7), childhood (2), trams (1)
What do you most like in the center?	Religious buildings (11)	Cathedral (11)
	Buildings/monuments (12)	Historic building (6), Fepasa Railway Station (4), monuments (2)
	Others (8)	Architecture (7), the railway (1)
What things that have been lost did you like in the Center?	Religious buildings (1)	Igreja do Rosário [Rosário Church] (1)
	Buildings/monuments (10)	Fepasa Railway Station/passenger trains (3), the Carlos Gomes Theatre (3), the Public Library (1), historic buildings (1), the Hotel Terminus (1), monuments (1)
	Streets/squares (3)	Rua Treze de Maio [13th May Street] (2), streets with paving stones (1)
	Others (10)	Romanticism (3), traditions (2), history (1), trams (1), the Fountain of Rua Treze de Maio (1), Ezekiel living dead dolls (1), the Umbrellas of Rua Treze de Maio (1)
What would you like to see in the Center?	Buildings/monuments (12)	Buildings/preserved history (9), things as they were in the past (9)
Which spaces/places in the Center do you make most use of?	Religious buildings (11)	Churches (11)
	Buildings/monuments (4)	Centers of culture (4)
	Streets/squares (3)	Areas with shade from trees (3)
What kind of cultural heritage is there in the Center at present?	Religious buildings (122)	Cathedral (90), Churches (20), Rosário Church (2), Universal Church (1)
	Buildings/monuments (169)	Culture of the FEPASA station (30), Palace of Azulejos [glazed tiles] (22), Palace of Jequitibás (19), Jockey Club (12), Statue of Carlos Gomes (12), monuments (11), buildings (10), the Town Market (8), Carlos Gomes College(7), The Forum (5), Museums (5), PUC Central [Catholic University](5), CCLA [Latin American Cultural Center] (4), Carlos Mendes Theater (4), the Post Office (3), MACC Building [Medical/Scientific Computing Center] (3), Health Center (3), Mogiana (2), Headquarters of the Carlos Gomes Band (1), Carlos Salles Monument (91), Giovanetti (1), Niemeyer Building (1)
	Streets/squares (64)	Carlos Gomes Square (24), Community Center (17), Squares (10), Carmo Square/Bento Quirino Square (5), Rosário Place (3), Jequitibás Wood (2), Pará Place (2), Parks (1)
	Others (16)	Railway (10), Bars (2), Hotels (2), Pedestrian tunnel (1), Bandstand (1)

This Table will be examined in greater detail in this section with a view to revealing some of the key features of significance to the sites of memory and the memory of places in the central area of Campinas. These are related to thoughts, affectivity, imagination or losses in the center of Campinas (Question 1, 3, 4 and 5 of the questionnaire), the Cathedral was mentioned 25 times and the other churches 5 times. With regard to the buildings/monuments, the old and historic buildings, in general terms, were referred to 20 times. Items with a low frequency (a maximum of four mentions) were: the demolished theatre (Sao Carlos), the Railway Station (Fepasa), the Carlos Gomes Theatre, and monuments, among others. The features in the subcategory streets/squares were not often mentioned. Seven interviewees showed concern about the loss of their history and seven with the loss of their architecture.

On the particular question of the presence of signs of cultural heritage in the central space, the research determined that 22 respondents mentioned the churches. The Metropolitan Cathedral of Campinas was remembered by 90 of the interviewees, Carmo Church by nine, Rosário Church by two, Universal Church by one and churches generally by 20. These results raise the following question: were the churches remembered because of their historic and artistic value or the fact that religious feelings prevailed?

With regard to the drawings designed by the participants, the places of memory in the central region of Campinas were also not clearly distinguished. Only in some of them there was an allusion to the cultural assets that the city possesses. The following stood out in some of the designs: Design 1 (Fig. 2) designed by Aline (aged 23, 3–5 minimum salaries, secretary), six cultural assets of great importance were mentioned: the Community Center, Metropolitan Cathedral, Town Market, Municipal Civic Center, Bento Quirino College and Progresso College. Although it was represented in a symbolic way, the design of the Cathedral drew attention to the Church Tower, which is an important landmark in the local landscape.
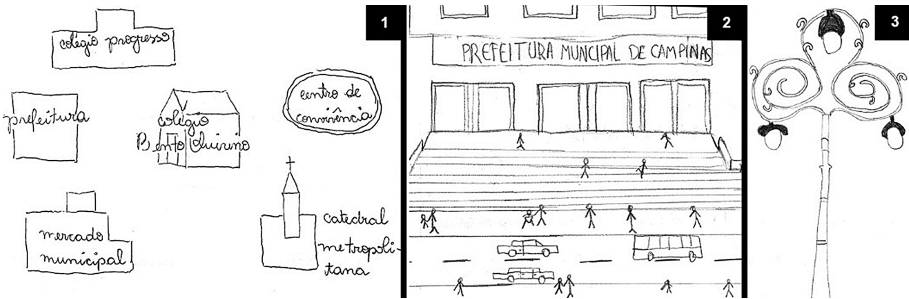

Fig. 2. Cultural assets of significant value for the city of Campinas: buildings, churches, the stairway in front of the Municipal Civic Center and the lamppost in front of the Jockey Club building. Source: Oliveira, 2016 [13]

Leonardo (aged 14 anos, 3–5 minimum salaries, student), in Design 2 (Fig. 2), displays the stairway that leads to the square in front of the Jequitibás Palace, the headquarters of the Municipal Civic Center which is constantly used as a platform for demonstrations and protests. An urban feature - the cast iron lamppost in front of the

Jockey Club building in Bento Quirino Square - was highlighted by Rosana (aged 41–50, 5–10 minimum salaries, teacher), in Design 3 (Fig. 2).

Thus, as in the answers to the questions in the questionnaire, the Cathedral was the most prominent feature in the drawings. Design 1 (Fig. 3) by Fernando (aged 29, 3–5 minimum salaries, advertising salesman) found a symbiosis between the vertical lines marked by the skyline of the tall buildings and church tower, and the horizontal line of a street that cuts through the drawing. The large number of people shown in the image leads us to believe that it refers to Treze de Maio Street and that the church represented is Campinas Cathedral. It is worth noting that the tall buildings designed at the same height as the church tower, are evidence that this symbolic landscape feature no longer stands out in the midst of the tall buildings surrounding it. Design 2 of Fig. 3, drawn by José (aged 46, 1–3 minimum salaries, caretaker) shows Francisco Glicério Avenue, also in perspective, with a suggestion of the Cathedral Square and Matriz Church with its towers, on the right-hand side.
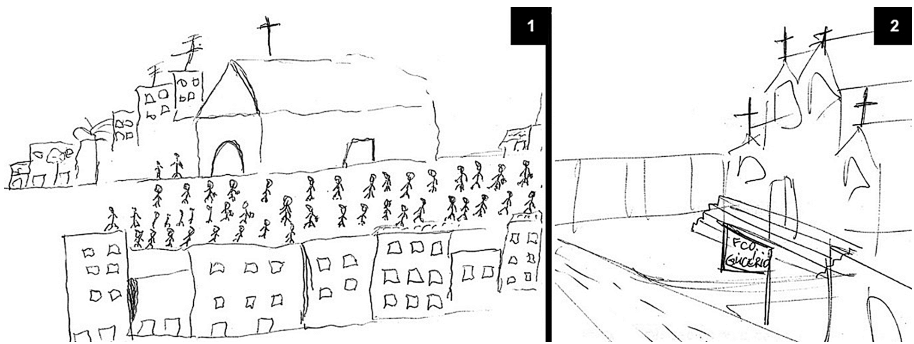
Fig. 3. Glicério Avenue: skyline of tall buildings and the Cathedral tower. Source: Oliveira, 2016 [13]

In Fig. 4, the Cathedral Square, bordered by the high constructions surrounding it, is recorded in the foreground of Design 1, drawn by Sandra (aged 39, 5–10 minimum salaries, architect). The Cathedral Tower forms the initial point of an axis that terminates at Fepasa Station, parallel to the outline of Treze de Maio and Costa Aguiar Streets, as can be seen in the image 2 shown on the right.

Set against the verticilization of the center, the Cathedral towers and Railway Station show this axis in visual terms and shape the visual features of the central area. At present, the two towers are hidden by the patchwork of buildings that delineate the landscape at the center. However, the axis for the circulation of traffic remains at Treze de Maio and Costa Aguiar Streets.

In Fig. 5, Design 1 Letícia, (aged 24, 3–5 minimum salaries, designer) displays a decorative picture between posts, which supports the idea that the space in front of the Cathedral, can serve as a meeting place for events and festivals. Design 2 (Rafael, aged 17, 5–10 minimum salaries, office assistant) shows the neighborhood in the precincts of the Cathedral, bordered by Treze de Maio Street, Costa Aguiar Street and Francisco Glicério Avenue. A crowd of people and several shops represents Treze de Maio Street,
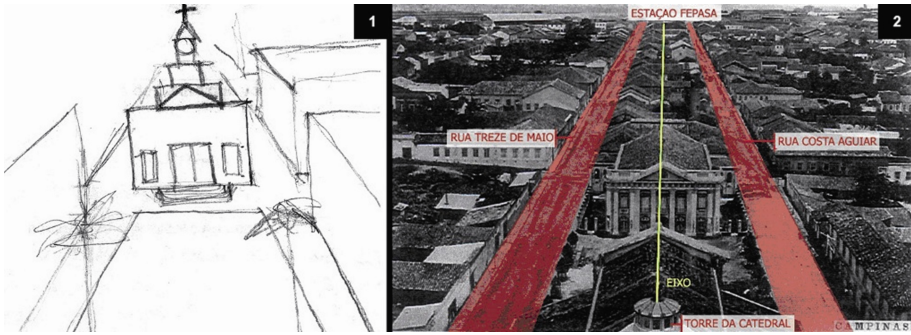
Fig. 4. The Cathedral Square and Cathedral-Fepasa Station. Source: Oliveira, 2016 [14]

while Glicério Avenue conveys the idea of congestion, judging from the large number of cars that have been drawn. The Cathedral is delineated with its front towers and the Cathedral Square (labelled "square" in the design) highlights an everyday public space with a large concentration of people.
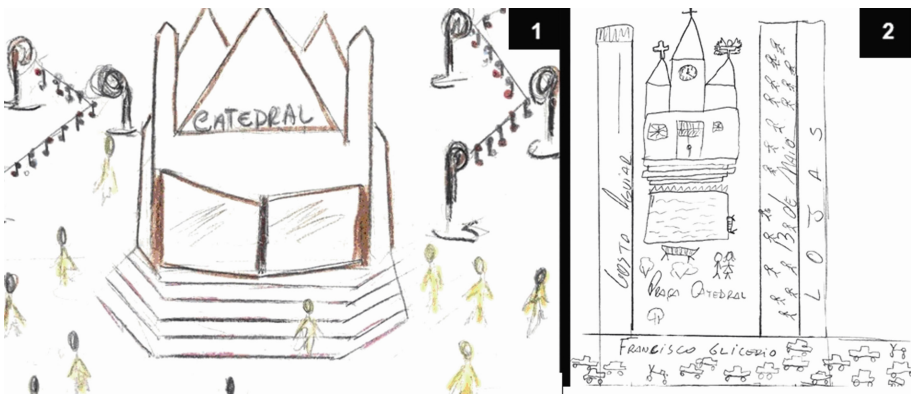

Fig. 5. Cathedral Square with space for meeting and socializing. Source: Oliveira, 2016 [13]

These designs are notable for showing the steady flow of people and traffic that circulate around the central area. They testify to the fact that it is a center where contact can be made by people driving cars or travelling by public transport, as well as by the physical contact of people walking along the pavements, thus demonstrating that they identify themselves with the center and appropriate it in a distinct manner.

The streets, avenues, squares, gardens and pavements are spaces for collective activities, and a blending of people, customs, opinions and joint ownership. […] They are spaces for existing, seeing and feeling and are far removed from a purely functional system that can lead to social displacement [14].

The clock shown in Design 1 of Fig. 6 (male participant, aged 31–41) leads us to believe that the building in the picture refers to Fepasa Station, which is now called the Cultural Station, an important vestige of the heritage of the railways. Design 2 (Fig. 6)

by Julio (aged 46, 5–10 minimum salaries, designer) highlights Carlos Gomes Square with its bandstand and a row of imperious palm trees at the central corner of Anchieta Avenue, adjacent to the square.
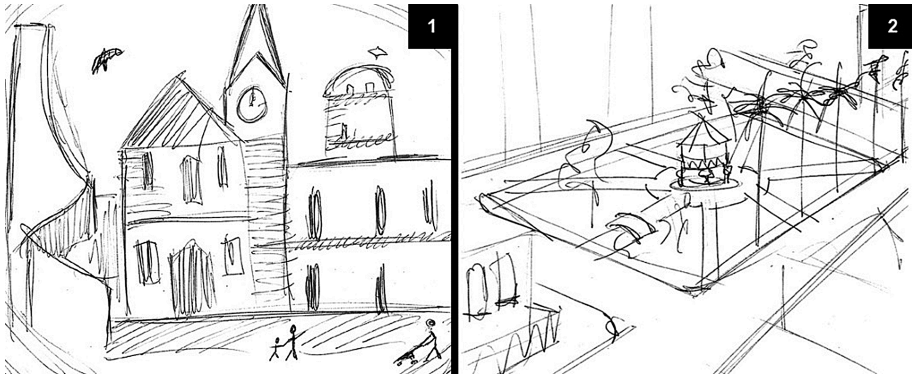
Fig. 6. Building of Fepasa Station and its tower with a clock and Carlos Gomes Square with its bandstand and imperious palm trees. Source: Oliveira, 2016 [13]

5   Discussions

Both the narratives and drawings of the interviewees raise a number of points for discussion, including the following:

(a) **Inconsistency between the memories of the people and the memories of the State**

The sites of memory highlighted by the people do not show a correspondence with the cultural assets and memory recognized by the State. As the choice of assets usually entails compiling an inventory of the cultural heritage[3] through the techniques of the government itself, and the final opinion[4] is strongly influenced by them, it can be argued that, generally speaking, this memory is more closely linked to the hegemonic powers and not to the memory found in the discourse of those who frequent or live in that place. In this way, the public authorities filter and select the cultural assets and lay down their own criteria for their preservation, without always taking account of the effective places of memory and the "vivid memories" of the people in their everyday lives. Thus, it is worth noting that the State should pay more attention to the memory expressed by the inhabitants of the place in seeking a greater resonance between the people and the assets

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[3] The inventory of the cultural heritage is a declaration of value of a good, expressed by a law that prevents, through administrative restrictions, its destruction and ensures the protection of cultural heritage. It is the means by which the state recognizes cultural assets of significant relevance to the history and memory of a place.

[4] It is carried out by representative Councils of society and traditionally constituted of notables and specialists in the area.

that are legally preserved by the inventory, even while being aware that memory is formed over a period of time.

(b) **The lack of education on matters concerning the heritage undermines the sense of "belonging"**

What we generally describe as the memory of an object is memory consisting of sensory and motor activities related to the interaction between the organism and the object over a given period of time. Moreover, the set of sensorimotor activities varies in accordance with the circumstances and value of the object and even take place through the retention of these kinds of activities. Our memories of certain objects are governed by our previous knowledge of comparable objects or similar situation [2].

Many of the cultural places and assets, as well as the symbolic landmarks that can be found in the center of the city, were not mentioned by most of the interviewees, particularly the youngest of them, even though they are constituted as historically and socially created objects. This is a clear demonstration that there is little knowledge of the cultural heritage and memory that can be found in the center of Campinas.

It can be inferred from this that there is a lack of resonance between the sites of memory in the memories described by the interviewees, which results from a lack of education in heritage matters. This is evidence of the need to improve the extent of belonging and forge affective links with the people, so as to endow the cultural heritage, historical places and memory of places with a greater legitimacy. It should be stressed that the sense of "belonging" is a two-way street because it belongs to us and, at the same time, we merge with it; in a dialectical relationship, it transforms us since it is transformed by us.

In this way, we feel that a cultural treasure passed down to us by our ancestors belongs to us, insofar as we value it, identify ourselves with it and acquire added materiality or significance from it. From this notion of identity, things or signs, which we are able to adjust to and form a reference-point that is dear to us, we value the things that we want to conserve and do not want to lose. But none of this can occur unless we know something.

(c) **The loss of memories of place and hence identity as a result of urban renewal**

Another dimension of the discussion concerns assigning a negative value to place. In the opinion of Espinosa [15], a person is as affected, either pleasantly or adversely, by the image of something in the past or future, as by the image of something present. Thus most of the objects surrounding us and the respective flows of ideas, trigger emotions that are either powerful or weak, good or bad, conscious or unconscious, that occur in the domain of the body or its cerebral maps and hence affect out feelings.

The main regions of the brain responsible for triggering emotions, involve the amygdala, which is located in the temporal lobe; the ventromedial prefrontal cortex; and the frontal part of the cingulate cortex and in the supplementary motor area. In the domain of social emotions, the ventromedial prefrontal cortex responds to the detection of objects and situations, whether natural or acquire, which trigger feelings such as the discomfort caused by a particular place [2].

In the case of some buildings in the central area, their lack of use can cause their physical deterioration. Hence, people assign a negative value to the place because the traditional and social values are forgotten or given lower priority.

The image of the center as an important and secure place is also tarnished. It was confirmed that, in general terms, the central area acquired negative associations in the popular imagination of most of the inhabitants who were accustomed to beauty, opulence, security and cleanliness in the shopping centers in other central locations.

Urban renewal which in recent years has transformed the center into a place for consumer goods (particularly down-market), may have also aggravated the degree of negative emotions and hence led to a loss of identification among the people for whom these new spaces have been created.

(d) **The lack of synchronization between different dynamics of time as a significant factor in the loss of memories of place**

In consolidating memories of place, the question of time is being turned into a fundamental benchmark through its intervention in the substance, tangibility and materiality of the place. Time is not a static concept. There is no consensus about the ideas of time, which are wide-ranging and pluralistic and can be differentiated for each religious, cultural and social system. Nonetheless, it is the notion that is altered through the unfolding of life and in the face of historico-cultural mutations. The view and meaning of past phenomena are altered by time itself; different times give rise to different views of the past.

In the dimension of time, our age is affected by the rapid "speed" of flows of information in communications systems and technological change. This exceptional speed is today leading us to a sensation of temporal densification: as a result, time is compressed in a space, which is condensed and depersonalized like systems on the "Internet". Our historical background and constructed environment are formed of much slower dynamics and it is evident that there is no synchronization between the slow and static rhythms of the cultural heritage with the fast and dynamic rhythms of the vital process. The collision between two temporal strata – one tangible and one intangible – is determining a new kind of reality for human beings. Rapid changes of subject are making this reality more prevalent: the visual image is thus being superimposed on the concepts. As ¨visuality¨ is prevailing over ideas, human awareness is becoming fragmented, with a loss of integrity in our perception of the surrounding world [5].

Thus the acceleration of changes in time that lead to a disintegration of the memory of place (whether individual or collective), can still be another cause that distances the individual from his/her origins, past and memories. This is because the memory of entities and unique events which are, at the same time, unique and personal, require a highly complex context. In other words, the more the reconstituted sensorimotor context concerns the determined entity or event, the more complex it is and hence, the time for action will evolve. In a hierarchical progression, the following can be observed: (a) entities, unique and personal events require greater complexity; (b) entities, unique events and not personal then follow; (c) entitites and events that are not unique require less complexity [2].

6   Conclusion

The human brain is an inborn cartographer. It can map any object or activity that occurs outside it as well as all the relations that the objects and activities forge in time and space both with each other and with regard to their own organism. The brain also creates maps for the evocation of memories.

The memories of things and its properties, people and places, as well as events and relationships, skills and the management of life – in short, all the memories inherited from evolution and already made available at birth or acquired from learning – exist in the brain in an dispositive way. They are stored there so that they can be evoked and become explicit images or actions in these maps [2].

Thus the results obtained from this research provide evidence of the way that the interviewees revealed their personal accounts and designs. Moreover, they showed a clear connection between the 'places of memory', put forward by Halbwachs [3], and the 'convergence-divergence zones', coined by Damásio [2].

These connections also support discussions on the manner by which the heritage and memory have come to be recognized, preserved and valued at the present time. As Nora [7] makes clear, memory is life and something that is always borne by living groups and, to this extent, it is in a permanent state of evolution and open to the dialectic of remembering and forgetting. Moreover, it is unaware of its successive distortions, vulnerable to all its uses and manipulations, and susceptible to protracted latencies and sudden renewals.

In time, the evocation can lose intensity [2]. In other words, changes, transformations and deterioration gradually affect people's memory and cut them off from their origins, past and all they can remember. With regard to this problem, this research provides evidence of a lack of "resonance" [16] between the places of memory that tell the history of Campinas and the memories of places retained by the inhabitants of that city and suggests that the most likely motivational factors are as follows: (a) a lack of an education in heritage and cultural traditions; (b) the loss of an ability to identify with the created space and hence a failure to recognize the value of this place owing to a urban renewal; (c) the mismatch between the memories preserved by the State and the memories evoked by the local inhabitants; (d) the negative effects that the different dynamics regarding the concept of time, can have on consolidating the memories of place.

In a future development of this research, an attempt will be made to broaden the discussion by following the procedures clearly laid out in this paper, as well as in other places and cities. It is expected that this will entail: [i] seeking to make the conclusions outlined here more universal and representative - but always in the light of new inter- and transdisciplinary benchmarks, such as those referred to here; and [ii] providing new conceptual instruments and methodologies that can enable measures to be taken for cultural preservation and the training of memory and identity, an area that is currently undergoing a dramatic expansion.

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