BUILDING RESILIENT COMMUNITIES IN SLAVE ISLAND: MAPPING COLLECTIVE MEMORIES THROUGH COGNITIVE MAPPING

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Abstract: This study explores community resilience and the relationships between the built environment and memories of an urban neighbourhood using cognitive mapping as a research tool. This correlation acts as a tool that holds communities together and it is important to acknowledge them to enhance the social sustenance and resilience of those communities. However, these relationships are being disrupted through the urban regeneration projects of Colombo causing displacement, the discontinuity of identity, and the erasing of history and memories of inner-city communities, further resulting in gentrification. The research focuses on the contested neighbourhood of Slave Island as the case study area where the urban landscape has gone through drastic changes to make way for urban development projects. The study explores features in the built environment that hold collective memories to preserve and recreate them using cognitive mapping as a research tool. Six distinct residents were asked to produce a cognitive map of Slave Island and each map was analysed through a theoretical framework to understand them in terms of built environment and memories. The findings indicate that shared spaces, typologies, landmarks, public spaces, and paths have a strong association on shaping the collective memories of the residents.

Keywords: *Cognitive mapping; Collective memories; Community resilience; Slave Island.*

1. Introduction

Sri Lanka is in the midst of an infrastructure development boom following years of civil war. However, the vision for development doesn't seem to effectively address the ever-growing levels of inequality that prevailed since the origin of the civil war. Ruwanpura (2018) and Venugopal (2018), through their intensive writings, identified a growing absence of vision around the infrastructure-led post-war developments in Sri Lanka and its tragic downside. Slave Island, the focus of this study, is highly desired among investors and is considered prime real estate in Colombo. That desirability has led to drastic changes in the urban landscape of Slave Island. Therefore, Slave Island, predominantly a Malay neighborhood and one of the most historically and culturally significant urban precincts in the city of Colombo is now in the process of being permanently erased.

Until now what kept these communities alive was their collective presence, past lived experiences, and collective memories which are now being disrupted by the redevelopments making them more vulnerable. Wilson (2017), argues and identifies the importance of 'collective memory' as a tool that is being used by vulnerable communities as a coping mechanism against outside forces. However, in the case of Slave Island, what held these memories, and their patterns are now being disrupted. In 'Seven Lamps of Architecture' under the topic 'The Lamp of Memory', Ruskin (1849) refers to architecture and states that "We may live without her, and worship without her, but we cannot remember without her." (Ruskin, 1849, p.224) Which suggests that one always tends to remember best when a certain event is attached to a place. Therefore, to preserve the memories and culture of these historical communities of Slave Island it is necessary to identify the places and physical elements these memories are attached to.

2. Literature Review

2.1. COLLECTIVE MEMORY AS A TOOL FOR COMMUNITY RESILIENCE

Magis (2010) in her study, defines community resilience as "the existence, development, and engagement of community resources by community members to thrive in an environment characterized by change, uncertainty, unpredictability, and surprise." (Magis, 2010, p.402). Such community resources could be both tangible and intabgible according to Wiggins (2018), where he states that both the tangible and intangible resources and heritage of a community have a crucial role in nurturing community resilience. Similarly, Halbwachs (1950) in his study discusses the communication between tangibles and intangibles of a community and how they are being utilized as a form of resistance.

Collective memory and its connection to community resilience is not a completely new topic, but this research field is relatively new concerning contemporary urban scenarios, especially in the urban development and regeneration that has been taking place in Colombo. Therefore, the conceptual discussions about what part of collective memory exactly drives people toward community resilience have not been fully developed. Several studies from different disciplines have outlined the importance of studying collective memory in understanding and building community resilience. Scholars, in particular, Folke et al. (2003), Barthel et al. (2010), and Olick & Robbins (1998) have extensively analysed how collective memories and societal systems create an impact when building community resilience. They suggest that communities grow very specific inherent qualities that are constantly shaped by memories within a societal system; memories of individual and collective experiences that affect the ability of a community to adapt in the face of adversity. Wilson (2017) on the other hand, had studied this phenomenon by relating to both intangible layers and the physical environment of a community. His study mainly focused on the interconnections between social memory, community resilience, and land degradation. His analysis has demonstrated how lack of collective memory and collective practices tied to physical entities such has lowered the ability of the communities to address the issues they have faced in recent decades, thus lowering overall community resilience. Nevertheless, before coining terms such as collective memories and community resilience, certain scholars had noticed the links between culture, built environment and resistance through their work. Walter Firey (1944) in his work in Boston, had extensively analyzed the environment of Boston in terms of both culture and its built environment. By doing so he had noticed that built spaces of a city could acquire certain sentimental and symbolic connotations that plays an important role when standing against external forces and competition. Firey further strengthens his argument by understanding how the morphology of Boston has been influenced by these cultural and non-rational values. These cultural connotations are rather collective, as Firey (1944) explains, certain parts of the Boston city has been preserved based on collective sentimental values.As Halbwachs (1950) suggests, collective memories help shape the collective identity of a society and that identity is crucial to communities as it acts as the driving force behind unity, sense of belongingness and the social responsibility of a community both towards each other and the city which will ultimately become a tool that create healthier and resilient communities. Halbwachs (1950) further argues that in order to nurture collective memories of a place, they need to be understood in terms of the spatial framework that it is built upon. Therefore, this paper identifies collective memory as a tool that can reinforce community resilience within the communities of Slave Island by proposing a theoretical model that informs on the built elements and community resources that retain collective memories which would ultimately help the communities in Slave Island to thrive in an urban environment characterized by uncertainties.

2.2. TRANSLATION OF COLLECTIVE MEMORY INTO ARCHITECTURE

Collective memory was originally a concept that was studied only by sociologists and philosophers until theorists like "Aldo Rossi" and "John Ruskin" theorized the relationship between collective memory and the built environment. Therefore, the idea of collective memory has often been cited and interpreted in the literature about architecture and urban design from multiple perspectives. For example, theorists like Steven Holl (2000), Peter Eisenman (2020) have discussed widely about time, memory, and architecture. But the works of Aldo Rossi (1982), Christine Boyer (1996), and Kevin Lynch (1960) became more prominent in this study as they create a clear connection between collective memory and the built environment. In addition to their theories, the works of theorists like Christopher Alexander and Ruskin were also referred to simultaneously. The literature review explored 'how collective memory can be translated to architecture and architectural elements?'. Hence the elements in space that trigger collective memory and their placement in the built environment were explored.

2.3. KEVIN LYNCH, CHRISTINE BOYER AND ALDO ROSSI ON COLLECTIVE MEMORY

As Rossi (1982) states, the city acts as a place for collective memories and the communication between that place and the people is then turned into the image of the city. During the process, certain 'artifacts' become a part of that memory. What Rossi refers to as urban 'artifacts' are the physical manifestation of the city and the collective memory it carries.

Kevin Lynch (1960) in his book 'Image of the city' introduces five elements - nodes, paths, districts, landmarks, and edges that form the mental image of the city. A concept similar to Rossi's urban artifacts; because Rossi had referred to the work of Lynch when writing his book 'The Architecture of the City' and had often praised Lynch's attempts throughout. Halbwachs (1950) originally came up with the idea that collective memory is built around and evoked only within a spatial framework. Aldo Rossi (1982) then explored more about that idea from the perspective of an architect through his book 'The Architecture of the City', which was then continued and revised to suit contemporary cities by Christine Boyer (1996) through her book 'The City of Collective Memory'.Therefore, these theories were reviewed simultaneously to identify the overlaps and deviations between their concepts to identify the most suitable series of spatial elements or urban artifacts to study and assess Slave Island.

Five elements of Kevin Lynch (1960) from the book 'The Image of the City'
Paths: Paths are defined as the channels which are used by the observers usually or occasionally to move. Paths can be identified as streets, walkways, alleyways, transit lines, canals, or even railroads.

Edges: Lynch (1960) defines the edges as the linear element that is not being used or considered as paths by the observers. Edges are the boundaries and transitions between two segments: shores, walls, edges of development, and

railroad cuts. In some instances, they could act as barriers cutting one region off from another, or they could be the seam that joins two regions together.

Districts: Districts are defined as the medium-to-large parts of a city, where the observers will mentally enter the "inside of" it and often has a recognizable common character. People often tend to structure their mental image in this way along with paths.

Nodes: Nodes are the points and the planned spots in a city. They could be mainly junctions, a crossing of paths, a shifting moment from one place to another, a place where transportation breaks, or it could even be a concentration that becomes important for its physical character, like a street corner hangout. These concentrations could be the central focus of a district, which stands as a symbol. Similarly, Christopher Alexander (1977) in his book 'A Pattern Language' mentions the importance of activity nodes and stresses that to make a significant impact in the community, public squares and activity nodes should be scattered throughout the city.

Landmarks: Landmarks can be identified as another type of point reference, but the observer does not enter that and experiences it externally. They are often simply defined as tangible objects such as buildings, signs, mountains, etc. Some landmarks could be distant objects such as isolated towers and other landmarks are mainly local and are visible only within close proximities. The idea of a landmark is also heavily related to public spaces and activity nodes mentioned by Christopher Alexander (1977).

Figure 1, Five elements of Kevin Lynch as they can be seen in Slave Island
(*Source: Author and Google, compiled by author*)

Continuity: Christine Boyer (1996) in her book 'The City of Collective Memory', was fascinated by the idea of creating public spaces in a city because public spaces are often the most overlooked element in an urban fabric and are widely misrepresented. She builds her argument chronologically by criticizing the transformation of public spaces starting from the 18th century till the 20th century. She states how the public spaces were originally used to celebrate the power of the monarchy and then slowly started transforming into more democratic public spaces with the involvement of 19th and 20th-century designers. Public spaces often had the connotation of 'poor' people's places as they were used by the working class for protests. Along with that 'public' spaces started developing a negative connotation around them and 'private' spaces were praised as they gave freedom of living. Public spaces then started disappearing from the urban fabric making way for private spaces. Thus, disrupting the collective memory patterns that took place in public spaces and resulting in divisions in the society. Boyer argues that collective memory demands a specific arrangement in the urban fabric and points out that a city of collective memory should comprise a continuous urban topography and a spatial structure that covers both rich and poor places. Christopher Alexander (1977) in his book 'A Pattern Language' also discusses a similar idea about the patterns of the activity nodes and highlights the importance of links between different parts of public space by stating: "Community facilities scattered individually through the city do nothing for the life of the city" (Alexander, 1977, p.164). Furthermore, Boyer (1996) explains how designers fail to create that links between spaces and relate them to the history of the city. Similarly, Gehl and Gemzøe (2000) in their book 'New City Spaces', refer to public spaces of cities as places that hold memories of people, which have now been privatized and invaded by cars.

Figure 3, Castle hotel standing next to the newly privatized land which says, "World-Class Spaces Coming Soon" (*Source: We Are from Here*)

Figure 2, Castle hotel standing next to the debris of demolished Java Lane houses. (*Source: Thushni De Silva*)

Slave Island, one of the most historically significant places in Colombo is now suffering from the negligence of urban life, as the government has given priority to investors and cars instead of the historic communities living around. With the construction of two flyovers along Justice Akbar Mawatha and Uttarananda Mawatha, Slave Island is merely becoming a place to pass by regardless of the historic value and memories it holds.

Public space: Referring to what Halbwachs (1950) stated, Boyer (1996) looks at public spaces as a collective memory itself because of the transitions they have gone through influenced by the communities and vice versa. That makes public spaces a great test subject to examine the way collective memories are influenced and formed in people's minds. This could also be the reason why many authors talk about collective memory in terms of crises. The public space that we know today is formed by the traces of the transformations that took place in societal layers.However, the public sphere of a city plays a major role when forming the memory of the people and leaves room for interpretation contrary to the private spaces. Upcoming contemporary interventions tend to place the new public spaces within enclosed privatized areas which disrupts further growth of local identity and memories in a place.

Figure 4, A group of locals of Slave Island enjoying their small gathering at TATA housing
(*Source: We Are from Here)*

Shared space: is another type of space where collective memory could come into life. Boyer (1996) in her writings finds a residential quarter as a fascinating place because each quarter has its unique character while being a part of the whole. Therefore, the need for shared spaces comes in as a buffer that sits between public and private spaces. The important aspect of shared space is the link between collective (public) and private spaces. Collective spaces are shaped, and their use is determined entirely by the local culture, whereas private spaces are shaped based on individual experiences.

Typology: Rossi (1982) in his book, identifies typology as one of the main elements that constitute in creation architecture of the city. When discussing collective creation of the street, both Rossi and Boyer mentioned building types and their linear developments. Rossi says that the typology of a building is something that is bonded with the structure itself despite the changes in the primary function. When it comes to carrying and triggering collective memories, typologies are open to a range of interpretations and embrace the subjective nature of the city. For Rossi, typology is the inner law of creating a building, created not just by anyone or people, but by the basic lifestyles and experiences lived by people which got accumulated over a very long time. Therefore, typologies should be a crucial consideration when it comes to urban regeneration projects. At the same time changing dynamic of society should be considered as well because the mistake we make as architects is that we try to reconstruct the past without understanding what constitutes the memories.

Rossi in his work argues that the city is the **Locus** of collective memories, and the city acts as a wax tablet that constantly collects traces of experiences and memories lived by the people thus forming the **monuments** of the city which he refers to as the vehicle of the public image.
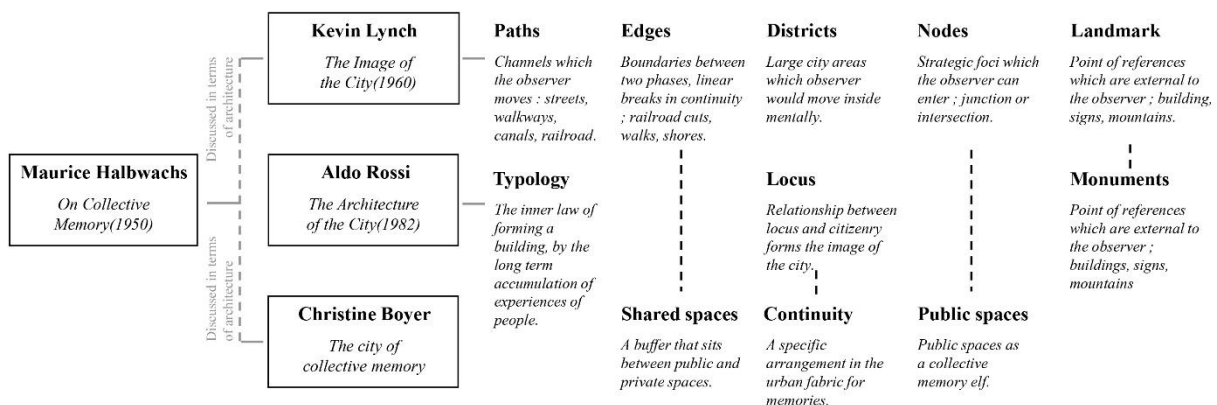

Figure 5, Theoretical framework: elements extracted from each scholar and the relationship among them
(*Source: Author)*

3. Method of study

The literature review established a theoretical framework to explore how the built environment elements shape the way people memorize things. The mapping exercise then explores these elements and the memories associated with and attached to them. Hendrickson (2006) in his study has identified cognitive mapping as one of the most effective research tools that are a multisensorial method of communicating and can explore different layers of social, political, and cultural situations of a place rather than the ocular-centric conventional maps which are being used just to understand a geographical position. Therefore, the study uses cognitive mapping as the primary research tool while raising the question of how these maps can be translated and understood in terms of collective memories and the built environment. This method of study is also an attempt to understand the importance of effective communication methods for better architectural interventions.
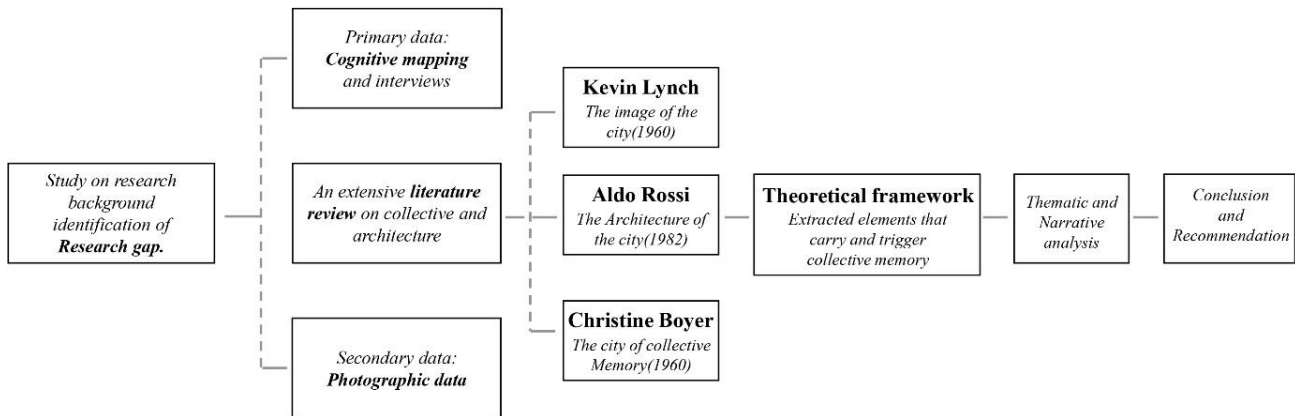

Figure 6, Research methodology (*Source: Author*)

4. Mapping the memories of the residents through cognitive mapping

Based on Kevin Lynch's (1960) work on cognitive maps and a study done by Ken Hendrickson (2006), this study primarily incorporates cognitive mapping as the research methodology. A cognitive map is a type of mental image that allows us to acquire, store, and decode information about a place. Cognitive mapping has been utilized as an urban design tool in many urban regeneration projects in contexts similar to Slave Island. Sihombing (2013) in his study in Jakarta, explored the potential of participatory planning in urban development projects of Kampungs. In his study, he carried out a comparative analysis between two sets of cognitive maps produced by the residents of different Kampungs; a series of maps drawn by the residents back in 2000 with a NGO and, maps drawn in 2013 with the author. This comparison had given a great insight to the changes in morphology through the perspective of the locals, resulting in a series of recommendations and action plans on how the regeneration of slums in the kampungs needs to be carried out. Pocock and Hudson in their book Images of the Urban Environment (1978) include a series of mental maps of Durham drawn by different type of people representing multiple socio economic groups where the authors have observed that even though each individual create their own image they share common and collective experiences and cultural traditions.

In this paper, the main study was a collection and analysis of cognitive maps drawn by six residents who live on Slave Island. The whole purpose of this mapping exercise is to identify what people are holding on to collectively as memories and suggest the ways how the identified elements can be interpreted in architecture and incorporated into future urban redevelopment projects in Slave Island. When the residents were asked to draw the map of Slave Island, they often drew the map while telling stories and experiences about that place, which were also recorded and used during the analysis. While listening to their stories the drawing process and stages were observed and recorded. Therefore, the maps are presented step-by-step in the stages in which the drawings were constructed. A similar approach is used by Hendrickson (2006) in the study of resident's perceptions of El Chiro neighbourhood in Panama City, Panama where the mapping process and stages have been recorded and analysed. Many scholars like Passini (1988), Isaac (1994), including Boyer (1996) had identified that cognitive maps created in urban areas are influenced by sensory influences, personal and ethnic differences, collective experiences, aesthetic perceptions, and cultural values. Based on that argument, the partiipants were selected ensuring a representation of multiple socio-economic groups that can be found on Slave Island. Therefore, before the activity, a brief discussion was carried out with residents to qualify them as suitable respondents for the study. The criteria were length of residence, ethnic differences and their interactions with the neighborhood (shown in table 1 below). Once selected the residents were asked to draw a sketch map of Slave Island depicting the city as they have experienced showing all the places and important features, they found important to them.

During the mapping activity, questions derived from Lynch's (1960) study were asked of the participants as cues to start mapping.

- What 'Slave Island' brings to your mind?
- Most reminiscent features and memories you have with Slave Island?
- What places do you enjoy visiting the most?
- What routes and shortcuts do you take on a daily routine?

One of the interesting things about cognitive mapping is the way people denote space and place through different perspectives; one draws the complete map in bird's eye view; one draws in both street level view and bird's eye view. Every map has its spatial framework highlighting the subjective experiences lived by the one who draws. The configuration will be decided by the proximity and the importance of that place rather than the accuracy of the measurements.

Each map drawn will be elaborated on and presented in a format introduced by Hendrickson (2006) in his mapping studies in El Chrio neighborhhod, Panama City. Each drawing will be scanned and juxtaposed on a traditional figure-ground map with a road network to identify the overlaps and the differences. The maps will be aligned respectively to the five elements introduced by Kevin Lynch (1960) as points of reference. The drawings were scaled to fit the traditional maps as it allows the researcher and the viewers to understand the difference between the cognitive perception of places based on lived experiences and the traditional maps. The backgrounds of the maps were then colour coded to represent each person as mentioned in table 01. As the initial step of the analysis, each map drawn, and the narrative will be analysed individually by relating to the key physical elements derived by reviewing theories developed by Aldo Rossi (1982), Kevin Lynch (1960) and Christine Boyer (1996) (Figure 5). Within the discussion, some drawings include all the identified elements, while some don't. As the second step, all the maps were placed side-by-side to carry out a visual comparison to understand their similarities and differences while getting a wholistic idea about which part of the city holds memories for them.

Table 1, Participants of the mapping activity (*Source: Author*)

Colour code	Type of participant	Gender & age	Ethnic group
Participant 01	**An art activist** – who has been trying to keep the Slave Island heritage alive. *An Indian-Sri Lankan who was born in India and moved to Slave Island, Sri Lanka in 2007 when she was 14 years old. During the time she moved, Slave Island was completely untouched and urban regeneration hasn't even begun.*	Transgender, 29 years old	Indian Tamil
Participant 02	**A former resident of Java Lane –** currently living in 'TATA housing' after a resettlement. *His family has been living in Slave Island for 03 generations starting from his grandfather. Well aware of the whole urban regeneration process in Slave Island and an active member of the management corporation of TATA housing.*	Male, 46 years old	Malay
Participant 03	**Postman of Slave Island** – who had lived there all of his life. *Has been working as the postman of Slave Island for 10 years since 2012. Till COVID-19 he had also worked part time as a labour to meet the ends.*	Male, 42 years old	Sinhalese
Participant 04	**An introverted student** *Has been living in Slave Island since she was born but doesn't get exposed to the neighbourhood often.*	Female, 17 years old	Malay
Participant 05	**A freelance designer** – who had recently moved into Slave Island as a tenant *An aspiring graphic designer who is new to Slave Island and is still getting to know the neighborhood. Though, he is familiar with living in dense urban situations and enjoys the bustling city and its utilities at hand.*	Male, 25 years old	Tamil
Participant 06	**An extroverted student** *Was born and raised in Slave Island and once enjoyed exploring every nook and corner of Slave Island. But not anymore, because Slave Island is slowly being privatized and drugs are slowly taking over the younger residents.*	Male, 17 years old	Malay

5. Findings & Discussions

Participant 01 - Transgender, 29 years old
An art activist - who has been trying to keep the Slave Island heritage alive

An Indian-Sri Lankan who was born in India and moved to Slave Island, Sri Lanka in 2007 when she was 14 years old. During the time she moved, Slave Island was completely untouched and urban regeneration hasn't even begun.

Figure 7, Cognitive map juxtaposed on top of a traditional street map, and on the right-hand side is a layered view to show the sequence of the drawing. (*Source: Author*)

When the idea of cognitive mapping was explained and she was asked to draw the map of Slave Island, she quickly understood the purpose of this activity and referred to it as "mind maps" as she was familiar with the activity. With the prompt questions, she started drawing a shortcut that she used to take to Galle Face and a place she referred to as "Aathoram" in Tamil which is a place where she used to hang out with her friends. It is clear in the drawing (Figure 7) that she is interested in the architectural details of the **landmark** buildings; minarets, portals, and domes of Wekanda Jumma Masjid; series of arches in the demolished De Soysa building; series of openings in the Abaya building. Interestingly they were drawn in street-level view with more details compared to the other shops with lesser details or as a simple box in bird's eye view. According to her narration and what she had drawn, the map depicts her daily routine in Slave Island. She had drawn the map as if she would walk around to get her work done, starting from the place she used to withdraw money sent by her late father to the place where she gets her watch fixed. These are memories from personal lived experiences rather than collective memories, but these could be the personal interpretations that Rossi sees in **typology**; the elements that embrace the subjective nature of the city. Certain residents have been able to capture architectural details such as domes, arches, minarets, portals etc. through their maps displaying a strong connection between landmark buildings and their memories. One thing that makes these buildings landmarks could be those distinct architectural features, but in addition to that, the acessability people have with those buildings have also matters. One such example is the case of 140-year-old Castle Hotel, which was demolished to make way for 'One Colombo' by TATA. During the demolition, the UDA had assured that first two floors of anything that is going to be built on this land will have the same aesthetics and the façade of castle hotel as an attempt to recreate the old character. Upon that, within months a polished white building was built on the same site to house the sales gallery of TATA projects and it looks nothing like the castle hotel. Even though they have attempted to trigger memories by recreating the architectural elements, locals can't relate to it since it completely cuts off the connection with the streets and the function has been completely changed: a public hotel that was used by the local working-class as the community bar has now been replaced by a private office that is only being used by the upper-class. Therefore, its is crucial to understand the siginifcance certain buildings have as typologies as much as their architectural features.

Figure 9, Hotel castle now; completely cut off from the streets *(Source: Google)*

Figure 8, Hotel castle and the activities it had with the streets (*Source: Asanka Brendon Rathnayake*)

What is found interesting in his map (Figure 10) compared to other participants is that he is a resident who got relocated to TATA housing and his old neighbourhood in Java Lane has been completely wiped off. Therefore, his drawing is a complete depiction of his old neighbourhood as he can recall. It is clear in the juxtaposed maps, as the traditional map has an empty land where his neighbourhood was, and his drawing aligns right on top of it. He started his drawing from an informal **public space**, which was a football ground that was formed by 4 adjacent buildings namely; De Soysa building, public toilets of CMC and two government apartment blocks. While drawing he stated:

"During the relocation, UDA promised to provide a similar public playground, but they have never spoken a work about it, nor haven't built a playground. We needed it because Slave Island is famous for football, back in the days kids would play football in every corner of the streets."
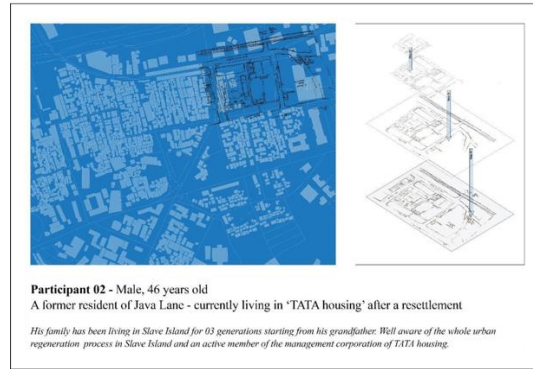

Figure 10, Cognitive map juxtaposed on top of a traditional street map, and on the right-hand side is a layered view to show the sequence of the drawing. (*Source: Author*)

Figure 11, A group of young residents from Slave Island arranging their playground (*Source: Author*)

Figure 12, A group of young residents of TATA housing have reclaimed a parking lot as a playground (*Source: We Are from Here*)

Figure 11 shows a football ground of similar fashion in Slave Island and sooner or later the same story would happen to it. On the other hand, Figure 14 reminds me of a statement by Halbwachs (1950) about the emergence of informal spaces and needs within a community based on the collective memories they possess. As Boyer (1996) states collective spaces are shaped and their use is determined entirely by the local culture just like the informal football grounds which is also reflected by the map drawn. Then he went on to draw a farming plot with five coconut trees that his grandfather used to grow. He also stated that the land plot was never owned by anyone but was owned by the government and had given authority to the community to use it collectively. This is what Boyer refers to as **shared space** as it acts as a buffer between the public and the private along with the informal football ground while allowing the people comfortable outside their spaces. From the map and his narrative it is clear how much collectively performed activites like playing football have shaped the collective memories they have with a place. Therefore, it is vital for architects and urban developers to understand the importance of these shared infill spaces of the urban fabric which are open to interpretation and will eventually accommodate the needs of a community based on their collective memories.
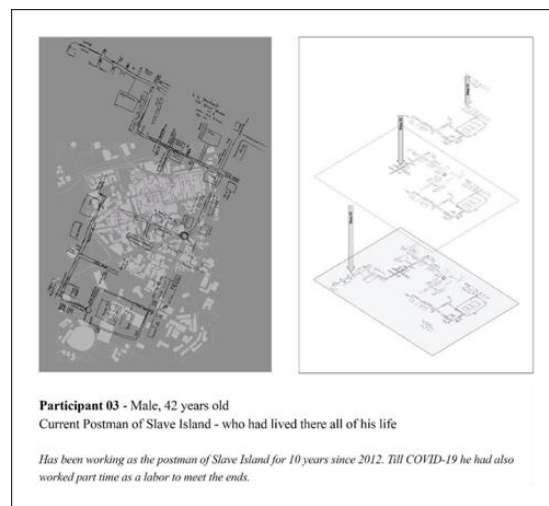

Figure 13, Cognitive map juxtaposed on top of a traditional street map, and on the right-hand side is a layered view to show the sequence of the drawing. (*Source: Author*)

The postman of Slave Island makes an interesting candidate for my study because his job itself is all about remembering places, meeting new people, and riding through the city. As expected, he possesses more information about the streets and needed two large papers to complete his map (Figure 13) as he kept drawing and covered the largest area out of all the maps I have collected. He started his drawing from his workplace; the post office and constantly kept moving towards Union Place rather than Slave Island. Even though he had lived on Slave Island his entire life, he doesn't seem to resonate much with Slave Island compared to the other parts of Colombo. Even though his map was predominantly filled with **landmark** buildings it certainly lacked the continuity between elements. The discontinuity between urban elements is a direct result of the ongoing urban development projects and as literature susgests, collective memory demands a specific arrangement in the urban fabric which is being replaced by large dehumanizing building blocks for the rich. But instead, a healthy urban landscape that advocate collective memories should comprise of a spatial structure that covers both rich and poor places, humble monuments, permanent and ephemeral forms ,places for public assemblage and personal retreats.
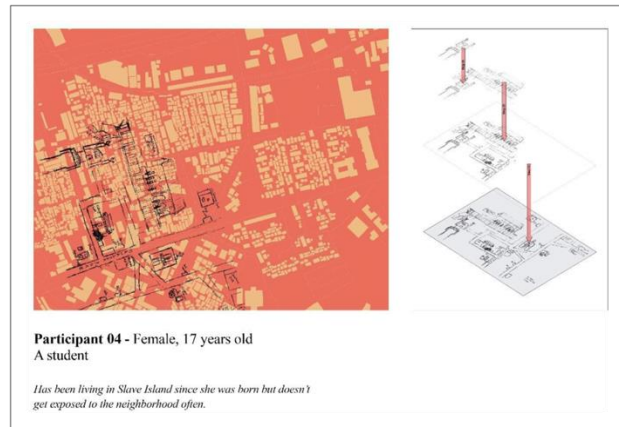

Figure 14, Cognitive map juxtaposed on top of a traditional street map and, on the right-hand side is a layered view to show the sequence of the drawing. (*Source: Author)*

She drew her map (Figure 14) mostly in the street-level view except for a few large buildings and started her map by drawing the Shahul Hameedhiya Jumma Masjid which is closest to her house in detail similar to the map drawn by Participant 01. Compared to the other maps, she was only able to draw a few selected numbers of places on Slave Island and most of them were **landmarks**. The reason could that she doesn't often go out in the city. The fact that most residents drew mosques in detail as an important building, proves that Malay communities are built around their religious institutes. Slave Island is home to multiple historically significant mosques that are considered landmarks and the memories built around such landmarks are important to religious communities like Malays. On a positive note, most of these mosques built since the british period are still being preserved by architects and urban developers and sets a positive influence on urban regeneration projects and ways of preserving collective memories.

Figure 15, A Professional measuring the Mosque for a conservation project (*Source: masjiduljamiah.org)*

Figure 16, The preserved mosque in TATA housing project *(Source: masjiduljamiah.org)*

During his mapping activity, it became clear to me that **paths** are the main element he has in his drawing (Figure 17). Not just him, every map drawn has a network of paths because the residents observe the city as they move through it while relating and arranging the rest of the city according to the paths. He starts his drawing from his boarding place and slowly progressed towards the places he'd visit often like a daily routine. One significant feature that can be noticed is an **edge** drawn by him, which is a wall that blocks people from crossing the rail track unsafely. As I was told by the postman the road was regularly used by 100s of office workers during the evening, but not anymore as frequent railway accidents happened the road was closed by the CGR. In addition to that, with the privatization of public spaces, the new interventions have unfortunately become the edge itself in most of the places leaving no room for action. In European countries, privatization of public spaces is being recognized as a major problem and they are constantly taking new approaches to recover the lost public realm. Approaches based on the creation of boulevards are more famous as it allows to recreate the lost street life within certain places. Such approaches can be incorporated in to the local situations while involving interventions in various scales and what

makes these street-based approaches easier is that architects and planners doesn't have to make ways for these from scratch because all the necessary conditions are already there and it is just a matter of having the right planning policies and reforming them to be more pedestrian-friendly rather than entirely being investor-friendly.

Participant 05 - Male, 25 years old
A freelance designer - who had recently moved in to Slave Island as a tenant

An aspiring graphic designer who is new to Slave Island and is still getting to know the neighborhood. Though, he is familiar with living in dense urban situations and enjoys the bustling city and its utilities at hand.

Figure 17, Cognitive map juxtaposed on top of a traditional street map, and on the right-hand side is a layered view to show the sequence of the drawing. (*Source: Author)*

Participant 06 - Male, 17 years old
A student

Was born and raised in Slave Island and once enjoyed exploring every nook and corner of Slave Island. But not anymore, because Slave Island is slowly being privatized and drugs are slowly taking over the younger residents.
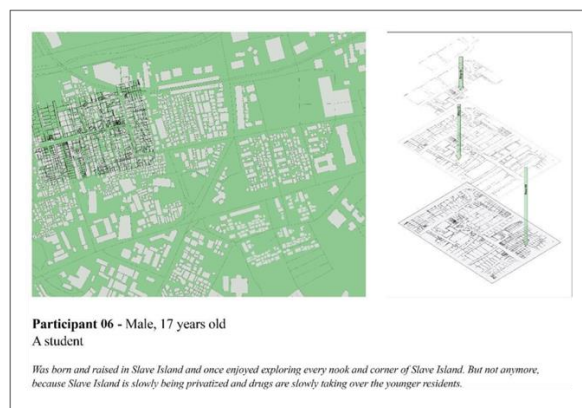
Figure 18, Cognitive map juxtaposed on top of a traditional street map, and on the right-hand side is a layered view to show the sequence of the drawing. (*Source: Author)*

The most prominent feature I noticed when looking at this drawing (Figure 18) is the granularity, is the way that the student has given a lot of attention to defining the fine-grained grid pattern he has noticed in his neighbourhood. It is noticeable in the juxtaposition that he has accurately identified the rhythm of the grains and their scale as close as possible to the traditional map. He starts his drawing by first defining the outer **edge** of every housing block and then starts dividing them into separate houses and shops. In certain places he has attempted to draw the edges accurately by defining the turns, indentations, and curves they have. His focus was more on the small businesses in that area and very few landmark buildings were drawn because his memories are mainly holding on to the **typology** of small shops and their granularity. Because naturally they can remember walking in to more destinations within a very short distance which is a sign of good urbanism. But, unfortunately the urban frabric of Slave Island is turning from fine-grained to a course-grained thus disrupting the memory patterns as the upcoming malls and relocation projects have tried to fit in all the small business in to a one single block. Therefore it is important to retain these rhythms and patterns in the urban fabric in urban development projects as their dispersion itself has the ability to hold memories.

Table 2, Reflection on the relationship between memories and build environment. (*Source: Author)*

Participant	Collective memory	Expression on urban quality/ space Architectural elements
Participant	Personal lived experiences; Daily chores and routine tasks and collective activities such as hanging out with friends	Typology of buildings dispersed in the urban fabric is vital in creating memories just as much as its accessability to people. Replacement of the existing typologies in the built fabric can heavily alter the behavior of communities.
Participant 02	Collective recreational activities; football and use of shared space in neighboohrhoods collectively for activities	Shared informal spaces left open for interpretation can take place based on the collective needs of a community.

	such as farming	
Participant 03	Disruption in the continuity of the urban landscape hindering the memories of the spatial arrangement	A healthy urban landscape that advocate collective memories should comprise of a spatial structure that covers both rich and poor places, humble monuments, permanent and ephemeral forms ,places for public assemblage and personal retreats.
Participant 04	Remembering religious building and institutions as an important part of the Malay communities	Conserving, preserving and investing on important landmarks that shape and govern a community and their collective memories
Participant 05	Memory of taking a short-cut route from the neighborhood to the Slave Island Railway station and understating the disruption caused by the physical wall between the two transitions	Clear demarcation and the transition between rail track and the residential zone is defined as an edge in the urban landscape and they often define the territorial values of a community, between communities or places.
Participant 06	Memory of walking from one place to another within a very short distance and remembering a larger number of small buildings within a small 'watta' neighborhood.	Granularity of the urban landscape: A clear distinction between fine-grained and course-grained fabrics. A denser fine-grained configuration within a smaller footprint is much more healthier both in terms of economical and social values..

6. Conclusion

The Sri Lankan government doesn't define nor recognizes the phenomenon of gentrification. Yet, within managing relocations, there is a well-known framework to deal with physical features of a community, but they lack mechanisms to cope with intangible layers of a community, such as collective memories and place attachments. Therefore, this study explores the importance of communication through cognitive mapping as an attempt to redefine the way the relevant stakeholders should approach urban regeneration projects and encourage user participation to understand the intangible layers, in the redevelopment of contested neighbourhoods such as Slave Island.

In this attempt it was observed that, when the participants start drawing the map, the elements they draw, and the scale of their maps tell a story about the way that person understands Slave Island and the memories they have of the city. Similarly, one of the significant findings about the way residents understand Slave Island and the mapping process is that every resident constantly draws the road edges of Slave Island compared to the inner parts of the city. Maps are layered in a way that the rest of the city gets constructed relative to the road front because the residents observe the city as they move through the roads. In a similar manner elements that are identified through the literature review were visible throughout the maps. Landmarks, edges, and paths were predominantly the largest elements that were drawn by the residents. While certain maps also showed hints of typologies, shared spaces, and public spaces which are elements that were also identified by scholars as elements that hold collective memories. Thus, showing that through cognitive mapping, it is possible to extract elements of collective memories in urban neighbourhoods. Such elements when recognised has potentials to inform urban development and regeneration programs for sustaining the memories, and lived experiences of urban neighbourhoods. Urban regeneration and redevelopment projects must sustain the "lived experiences", the "memories of space" and the "place" when transformation takes place.

However, this study primarily focuses on the potential of cognitive mapping as a communication tool on a theoretical basis. Therefore, there are certain constraints involved in practical implementation of such an approach such as the potential conflict-of-interest between multiple stakeholders and domains. Munasinghe (2014) in his study, identifies gaps between different domains of an urban regeneration project and labels them as an issue in the way forward in urban development of Sri Lanka. Within those identified gaps, he recognises the problems in knowledge transfer between the research communities and interest groups. Nevertheless, that gap can be closed through proper communication and collaboration among different institutions and individuals. As a way forward from this study, practical guidelines and recommendations can be developed based on the research findings by engaging with the relevant stakeholders and policymakers. The guidelines would be context specific and consider the challenges of a contested neighbourhood and provide actionable steps for architects, urban designers and other stakeholders to implement effective communication in-order to preserve collective memories of a community.

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