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A Mapping System as a Method in Experiential Culture Learning and Engagement

Faisal Mohammad

Approval certificate for Faisal Mohammad for the thesis project entitled *A Mapping System As A Method In Experiential Culture Learning And Engagement*. Submitted to the faculty of the Master of Fine Arts in Design of Virginia Commonwealth University in Qatar in partial fulfillment for the degree, Master of Fine Arts in Design.

Faisal Mohammad, MFA in Design Studies, Virginia Commonwealth University in Qatar, Doha Qatar, May 2016.

Virginia Commonwealth University in Qatar, Doha Qatar, May 2016

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Virginia Commonwealth University in Qatar
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Abstract

A Mapping System as a Method in Experiential Culture Learning and Engagement

From my observation as a new resident in Education City, I recognize a need for cultural awareness and communication amongst those studying and working in this particular area. With this project I propose a different experience, a new way to use experiential learning as a mechanism to change people's predetermined opinions about one another and disrupt personal biases in order to foster cultural awareness and friendship.

A mapping system or wayfinding strategy to navigate a new city is the beginning of a visitor's experience in a new place. This new experience is one way for users to identify locations through the use of a mapping system, discover cultural communication areas and be involved with sensory objects that require them to become aware of their surroundings. All of these elements are a catalyst for students in Education City to communicate and participate in experiential learning as part of their experience in Qatar.

Introduction

A Cultural Journey

It was another sunny day in the month October, and I was ready to start my free day of flaneuring the energetic city of Singapore. My day began with salmon, potatoes, waffles, and fruits. I'm sure not to forget the most important breakfast drink, orange juice. Once I'm done with breakfast I started my journey. With humidity reaching more than 80 percent, I was happy to wear my cargo shorts. Due to the fact that I was in a foreign country and have already used up all my Internet minutes, I had no choice but turn to my paper map to select a route. It was very much a pedestrian friendly country; sidewalks are everywhere and wide, pedestrian traffic crossings are clearly marked. Maps were very noticeable and distributed all over to keep one from getting lost. But I also realized that there were many visual expressions of culture and history, especially outdoors in the cityscape. As I walked, I saw interesting cultural sculptures. One is a depiction of two generals who protected the Emperor from the Dragon King with their special powers. Today, these generals are regarded as Guardians by doorways of hotels and private homes. Another sculpture I came across portrays children playing on a Kamcheng, a porcelain jar, used for food storage that is passed from one generation to the next. It represented the wisdom of the Paranakan heritage with the children as the next generation. There were also a few giant nutmeg seeds to signify the country's importance as a place for trading. For me, the nutmeg sculpture was a reminder that the road I was on was named after the orchard and nutmeg plantations that existed in the early 20th Century. It was apparent that cultural learning, in Singapore, could take place on different levels, and perhaps even become a visual and interactive experience.

Fig. 1 – Cultural sculpture in Singapore

A mapping system or wayfinding strategy to navigate a new city is the beginning of a visitor's experience of a new place. At some point in life, people travel to a new country, explore a new city and occasionally get lost on route. Keeping in mind that people lose out on the experience when being directed, I've asked myself, can there be a different method for identifying, reading and interpreting one's environment when going off track. Can there also be a new system for communicating pertinent information to people from other cultures who may be less familiar with local mannerisms and peculiarities. People are engaged in a continuous process of gaining impressions and building new understanding of their own culture or other cultures based on the immediate environmental experiences they have. First impressions can be a strong indication for how people regard each other.

Experiential Culture Learning

One of the goals of this project is to use experiential learning as a mechanism to change people's predetermined opinions about one another and disrupt personal biases. It aims to provide an opportunity to learn by doing within a community setting and provide other ways for understanding different cultures. Based on my experiments of the cultural, sensory, memory, wearable mapping systems, and from my observation of what's lacking in Education City, the chosen site for this endeavor, I proposed to develop a cultural introduction experience. This new experience would be one way for users to identify locations through the use of a mapping system, discover cultural communication areas and be involved with objects that one would use their senses to become aware of their surroundings. As a whole, all of these elements become a catalyst for students in Education City to communicate and participate in experiential learning as part of their experience in Qatar.

Education City (EC) is a unique place in Doha, Qatar. There are many universities and schools spread across the 14 square kilometer campus. The international academic community adds up to more than two thousand students. There are different transportation systems offered including: streets for motor vehicles, pedestrian paths, select bicycle paths (still under development), and a future train system for EC. Currently, this space is void of a defined mapping and directional system due to the ongoing changes in the landscape. With this said, there is an opportunity to develop a custom mapping system that could encourage students in experiential learning of various cultures present at the EC campus. I believe learning about other students, talking with them about their experiences and views would enhance the campus experience in EC.

Professor Debbie Pushor from the University of Saskatchewan describes cross-culture experiential learning as, “an opportunity to learn by doing, it’s an opportunity to learn outside of the classroom in the community… We have the opportunity to learn things differently than we would in a classroom setting. It gives us the experience of something as well as information about something.”[1] Through this new mapping system, one will not only be able to gain directions and routes, but also be in position to gain a cultural experience. Culture in this context is more of a cross-cultural experiential learning opportunity. I see experiential learning, in the case of Education City, as a chance for students to use this new mapping system as a catalyst to communicate with others. Spontaneous usage of provided designs, placed at strategic nodes along key routes in the campus, can turn into means of interaction for raising cross-cultural awareness.

[1] *Cross-Cultural Experiential Learning*.

The purpose of this new mapping system falls into three categories:

1. To navigate users to specific destinations.
2. To provide users an opportunity for a new experience on their chosen path.
3. To facilitate an experience of the system as a method for communication and experiential learning.

This multilayered information map consists of sensory objects for one to experience on a certain path. Users would use their own senses to notice and interact with these objects as a means of creating their own mental map and become aware of their surroundings. I also see signage as a significant way to provide information and a way to bring people together.


Former Thong Chai Medical Institution
Read Bridge
BUS
05059
MRT
CLARKE QUAY
NORTH CANAL ROAD
SWISSOTEL MERCHANT COURT
CLARKE QUAY CENTRAL
BUS
04222
MRT
CLARKE QUAY
Clarke Quay
NEW BRIDGE ROAD
HONG KONG STREET
CARPENTER STREET
BUS
04239
BUS
05029
UPPER CIRCULAR ROAD
Coleman Bridge
Elgin Bridge
BUS
04251
BUS
04229
Boat Quay
RIVER

Literature

Google Maps

Throughout the years, wayfinding systems have changed and influenced the way we navigate an environment. In 2005, Google Maps revolutionized the mapping world with a system intended for use with a smart phone. Before Google Maps, finding a gas station or museum was dependent on the use of printed-paper maps, atlases, compasses and even the published Yellow Pages to locate businesses. Moving from one location to another is something we do everyday, and today Google Maps has facilitated that process. In 2009, a new feature of Google Maps was introduced to the mobile market, providing users with turn-by-turn navigation. It directed users to locations instantly and with its navigation interface, getting lost was now a thing of the past.[2]

Developing Internal Pictures

Wayfinding can become a means for cultural communication when an individual's path or internal picture of a place is layered with particular location based discoveries. "When we use GPS, the research indicates, we remember less about the places we go, and put less work into generating our own internal picture of the world."[3] In the book *The Image of the City*, Kevin Lynch explains that during the process of wayfinding, people identify urban elements through an environmental image. These are individual mental images of a physical exterior world. This image is used as a physical feeling and a past memory that gives information and guides the user.[4] This idea is reinforced in a Boston Globe article describing the importance of mental maps, questioning the usage of a GPS system and how it affects our psychology. With the advancement in technology, navigation has become much easier for one to follow step-by-step navigation instructions. Previously, people needed to concentrate on landmarks to develop and construct a mental picture of the surrounding environment on their journey. These mental pictures also included roads and boundaries to help them reach their destination. An advantage of a mental map is the user is able to critically assess their surroundings.

Burnett Experiment

Professor Gary Burnett from the Engineering Department at the University of Nottingham says, "When you make mistakes, not only does that mean your exposure to the environment is longer — and that helps you learn more things — you also become more engaged in the task ... When you miss a turn, you become more focused on analyzing what just happened and where you are and what you need to do."[5] Burnett set up an experiment in 2005 to observe the effects of people's ability to navigate. The test consisted of two groups of drivers; the first group was given specific turn-by-turn instructions that took them to their exact destination. The second group was provided the usual paper map and given the freedom to reach their destination on their own. After the driving test, both groups were asked to draw a map from origin to destination. In this particular study, the drivers who used the turn-by-turn instructions did not even recognize that they were driving in circles.[6]

Gray Matter

Veronique Bohbot, a neuroscientist at McGill University who specializes in memory and navigation, developed a method that would differentiate those who use mental maps and step-by-step instructions. The study, published in 2007, demonstrated that through the use of fMRI (functional magnetic resonance imaging) technology, determined that subjects using mental maps had higher density of gray matter in their hippocampus (part of the brain that depends on encrypting spatial memories). At the same

[2] "Today We Turn 10!".
[3] Neyfakh, "Do Our Brains Pay a Price for GPS?".
[4] Lynch, *The Image of the City*.
[5] Neyfakh, "Do Our Brains Pay a Price for GPS?".
[6] Burnett and Lee, "The Effect of Vehicle Navigation Systems on the Formation of Cognitive Maps."

time, users who followed step-by-step instructions resulted in less gray matter.[7] This corroborated results of a previous study conducted by British neuroscientists Eleanor Maguire revealed that London taxi drivers have higher gray matter density than non taxi drivers because of their experience in the navigation of a complex city.

Everyday Spatial Memory

There are different scenarios in our lives where mental maps and spatial memory are a benefit to us. For example, a waiter brings a tray full of meals out from the kitchen and needs to create a mental map to remember the sequence of dinner orders at specific tables. Or in packing for a vacation, travelers base outfits on mapping the different places they will visit. It is even apparent in unexpected ways, Bohbot's students used spatial memory when studying for exams by placing pages on the floor and each spatial position became a topic of revision.[8] Lynch also mentions in his book, "it now seems unlikely there is an mystic 'instinct' of way-finding."[9] A Harvard physicist and author of *The Lost Art of Finding Our Way*, a book on human navigation by John Huth, similarly states, "You're losing this chance to have a greater awareness of your environment … There's a richness that you're missing out on."[10] In other words, because of our over-reliance on mapping technology, travelers could be missing out on part of the journey that includes awareness of architectural spaces, cultural environments and other details of the city.

Theories of Cultures

There are many reasons why cultural learning is important. It can be interesting, exciting, educational and open up new worlds. Culture can be defined as a group of people that have common beliefs, knowledge, customs and a way of looking at the outside world. These differences distinguish them from other groups of people. Language, religion, cuisine, social habits, artistic and material objects and events can express culture. Anthropologist Roger Keesing, in his article *Theories of Culture*, describes culture in theoretical terms, "Cultures are systems that serve to relate human communities to their ecological settings. These ways-of-life-of-communities include technologies and modes of economic organization, settlement patterns, modes of social grouping and political organization, religious beliefs and practices, and so on. When cultures are viewed broadly as behavior systems characteristic of populations, extending and permuting somatic givens, whether we consider them to be patterns *of* or patterns *for* behavior is a secondary question."[11] Keesing also mentions, it is important to observe cultures from an evolutionary viewpoint. Evolutionary studies of hominids (great apes) and human social life show that human life is adaptable. In the same article he states, "Man is an animal and, like all other animals, must maintain an adaptive relationship with his surroundings in order to survive. Although he achieves this adaption principally through the medium of culture, the process is guided by the same rules of natural selection that govern biological adaptation."[12] These ideas by Keesing, serve as support for this work, showing that as people move around the globe to travel, live or work, learning about other cultures is becoming a necessity rather than an option.

Culture Survey

The population of Qatar is increasing as people from around the world are entering the country. With that being said, there is currently an absence of cultural awareness and communication. As evidence, a survey conducted by the Childhood Cultural Center in Doha, found that many young Qataris are nationalists

[7] Bohbot et al., "Gray Matter Differences Correlate with Spontaneous Strategies in a Human Virtual Navigation Task."
[8] Neyfakh, "Do Our Brains Pay a Price for GPS?".
[9] Lynch, *The Image of the City*.
[10] Neyfakh, "Do Our Brains Pay a Price for GPS?".
[11] Keesing, "Theories of Culture."
[12] Ibid.

with limited knowledge of other cultures. Many of the answers from the children express that, “they were proud of their national identity and expressed that pride through respect for Qatar’s flag, enthusiasm in performing the national anthem, participation in religious rituals as well as wearing national dress to formal occasions.” The survey also showed that Qatari youth don’t follow local or international news. These statistics do not accurately reflect the entire community living in this city because certain segments did not participate. Nevertheless, this still provides significant insight as 88 percent of the population in Qatar is expatriates and there’s a lack of cultural knowledge and communication among the community.[13]

[13] Fahmy, “Survey.”

Precedents

Happy Maps & Smelly Maps

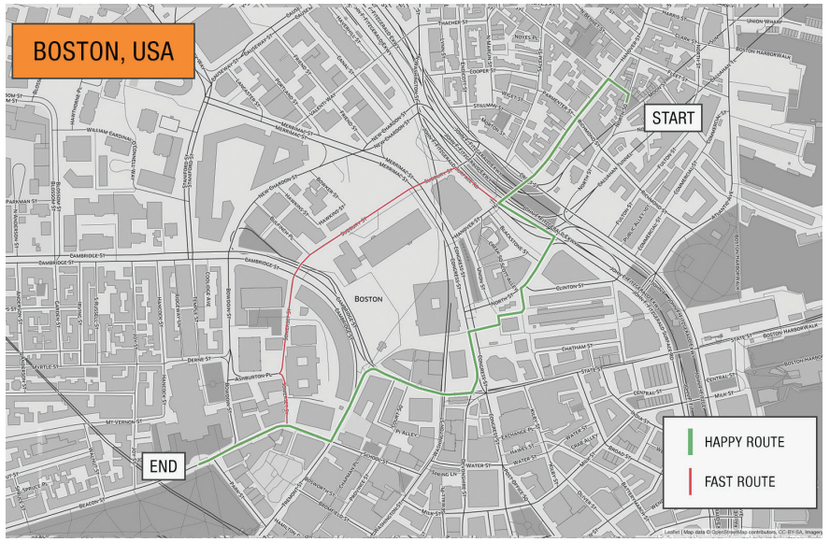

Fig. 2 – Boston map provides more than just the fastest route

Daniele Quercia, a computer scientist, developed two different types of mapping systems for users to navigate. First, Happy Maps was developed during his move to Boston where he noticed that cars were the dominant transport system. Quercia, who was accustomed to riding on his bicycle in Europe, made the decision to transport himself to work in Boston on a bicycle. Like any newcomer to a city, he referred to a map on his smart phone that directed him with the fastest route. Currently, Mobile apps only offer users a handful of routes to a destination. For Quercia, the offered routes were not a pleasant journey, he found it difficult to cross some of the roads with a bicycle, it was stressful experience trying not to get hit and in the end was an unpleasant ride. One day, he decided to ignore the smart phone map and navigate via a new route. It was a different and surprising experience; there were no cars, many green nature areas and other people around. Using Albert Einstein's quote as inspiration, "Logic will get you from A to B. Imagination will take you everywhere." Since that changed experience, Quercia developed a crowd-sourcing platform that allows users to match certain words (beautiful, quiet or happy) with Google Street images on social media. He collects data and places it into a mapping application and formed Happy Maps. These enhanced routes provide users with a new experience by allowing them to choose what type of journey they desire, a quiet path, a beautiful path or a happy path. These routes showcase beautiful urban scenes where there are public gardens, small streets and potentially a way to foster interactions amongst people.[14]

The second mapping system developed is called Smelly Maps. According to Quercia, "Your nose is a big data machine" that has the capability to smell trillions of different kinds of smells. After completing Happy Maps, Quercia challenged himself to tackling urban smells and collaborated Kate McLean during the start of the project. At that time, McLean was working on her PhD at the Royal College of Art in London. Her topic was about smell walking, where she explored the world and asked people questions about their experiences with smells in certain locations. According to this research, there are 258 words that are related to urban smells. After matching those words on social media hashtags, building graphs and checking findings with official air quality indicators, it led to the formation of four categories of smell: emission, nature, animal and food. An interactive website was then developed which maps out the city of London based on the four categories of smell. Users can click on the color-coded streets and see the percentages of the four smells for that particular street. It's a creative way to navigate a space, where travellers can choose which smells to avoid and indulge in before going on their routes.[15]

Fig. 3 – London street map revealing the four categories of smell

[14] "Building Better Cities."
[15] *WIRED2015*.

Liverpool Map

Sharing cultural information doesn't have to be a direct or conscious interaction. In England, the Liverpool city map is an example of cultural information shared in a much more subtle, artistic way. This particular city map is a visual narrative sculpture designed for the new Museum of Liverpool. This culture map turned out to be a multilayered monument that expresses geographical, historical and multicultural elements of the city. The multileveled concept for the Liverpool map was for it to be a tool for navigation, as well as a space for reflection and cultural interpretation.

The built structure hosts six 12' standing glass panels, printed with images, text, with an overlay of precise outlined cuts of the streets and nearby water's edge seen from both sides of the panel. This glass sculpture forms a collage that portrays the history, people and culture of Liverpool. It was a collaborative project that blended ethnography as part of the research method. The visual representation of the city included images of cultural icons and historical elements of the past and present. Archives from the National Museum of Liverpool and the Liverpool Records Office were the main source to find the visuals of the city. Through an online survey and handwritten thoughts of life in the city, the people of Liverpool contributed directly to the development of the glass sculpture. This helped to define and personalize the map. The placement of these writings reflects people's memories on a specific location in the city.

The finished piece is a map, but it also functions to communicate Liverpool's history and culture. The community played a significant role by writing history for their local map. It's a unique, artistic interpretation of the area's historical monuments, culture identity, famous places and icons.[16]

[16] Sarmiento and Panneels, "Blended Approaches in the Creation of the Liverpool Map."

Fig. 4 – *Liverpool Map* on display

Fig. 4 – Close up glass panel depicting the map and history of the city

BeeLine Bicycle Compass

The BeeLine device is an application that provides no turn-by-turn assistance for an individual to generate a better picture of their surroundings through extended exposure to an environment. The BeeLine provides more individualistic approach for finding a destination by giving the user more flexibility to choose their path, which naturally leads to exploration. The BeeLine bike compass is a navigation tool that displays an arrow to the chosen destination selected in a companion app running on a mobile device. With no turn-by-turn navigation, it gives the rider more freedom to choose their routes, have fun and explore new areas. Additionally, this also allows riders to remember and learn more of their surroundings. In a first reaction to using the BeeLine, Luke Edwards, a writer from *Pocket-link.com* stated, "It made us more alert to our surroundings, rather than blindly following directions. Having the choice of when to turn is liberating. We looked down one junction and saw a taxi blocking the traffic, so carried on to the next turn, confident the arrow would keep us locked onto our end goal."[17] Instead of stopping each time to check directions on the phone, the rider looks at a glance for the direction of the arrow. Developed by creative consultancy Map, BeeLine co-founder Mark Jenner states, "We felt this stop-start style of journey, following strict directions, was taking the fun out of cycling and one of the main reasons we started getting around the city on our bikes: the freedom. We wanted to create a device, that guided us, but still put us in control of our journey and encouraged us to find new and interesting routes."[18]

Fig. 5 – Colorful *BeeLine* straps

Fig. 6 – *Beeline* and companion app

[17] "BeeLine Bike Compass."
[18] Tucker, "MAP's BeeLine Bicycle Compass Guides Cyclists with an Arrow."

Green Pedestrian Crossing

Part of a journey is to discover new and unexpected elements. These elements can change one's behavior and path that leads to a memory moment that they won't forget. In China, with more than 500 million cars, the China Environmental Protection wanted to promote walking over driving. The project is an interactive street art that turns pedestrian footsteps into leaves of a tree. A big canvas image of a leafless tree is placed on a busy street crossway. On either end of the pedestrian traffic light, a sponge cushion soaked in green quick drying, washable, environmentally friendly paint is placed. Pedestrians step on the green sponge as they walk and the sole of their shoes makes an imprint onto the canvas tree. As the footprints build throughout the day, the "leaves" on the image of the trees grow thicker. The intention of this project is to make people feel they could make a greener environment. This idea has expanded in China; it has increased awareness and more of these canvases have been placed in 132 roads in 15 cities. Approximately 3.9 million people participated. This concept has also been featured in Chinese media channels and at the Shanghai Da Art Museum.[19]

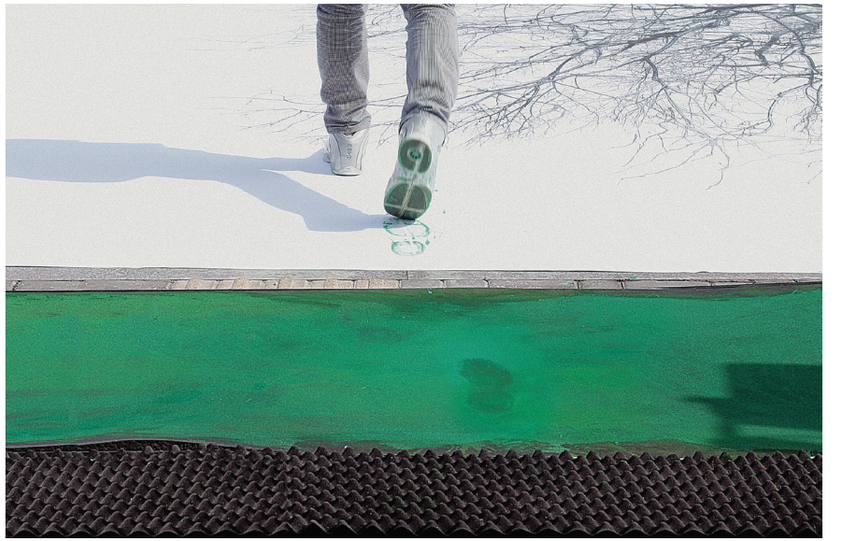

Fig. 7 – Pedestrian stepping on green paint

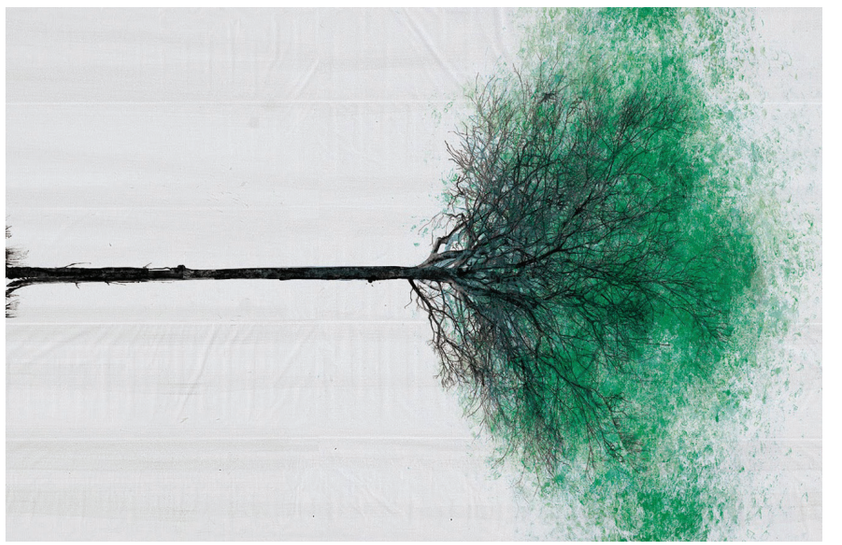

Fig. 8 – Green footsteps creates "leaves" on the leafless image

[19] James, "Amazing Interactive Street Art Turns Pedestrian Footsteps Into The Leaves Of Trees."

Investigation

The project was initiated by a set of weekly experiments during which a variety of the elements relating to mapping systems were explored. I was interested in developing potential design outcomes from this research. The experimental outcomes aimed to develop new ways to map and navigate a space through the application of human senses, creating mental maps, and learning something along the way.

Sensory Mapping System: Synesthesia Map

In this section of work, I have concluded that one of the ways to navigate through a space is to detect and identify what occurs in an environment through the use of a variety of human senses. Using Virginia Commonwealth University in Qatar (VCUQ) as my case study, I identified three locations to test three senses (sight, sound, and smell). The selected locations were the most populated areas, and the tests were done at the same time of day (12:30pm – 12:45pm) on three different days. During the test, I surveyed and identified elements through the use of these three senses. To map the results, I developed a synesthesia map. Synesthesia refers to the activation of one sense by another. Each location contained four maps: the routes taken during the test, the area surveyed while walking, and the sounds and smells identified in certain areas. The outcomes of these maps make it possible to locate certain aspects and qualities found in an environment. For instance, if one were to locate the strongest smell in a particular area, they would refer to the smell map.

These four maps are used as reference before departing on the journey, to evade certain elements in a space, avoiding loud sounds or treating themselves to the diverse smells of food.

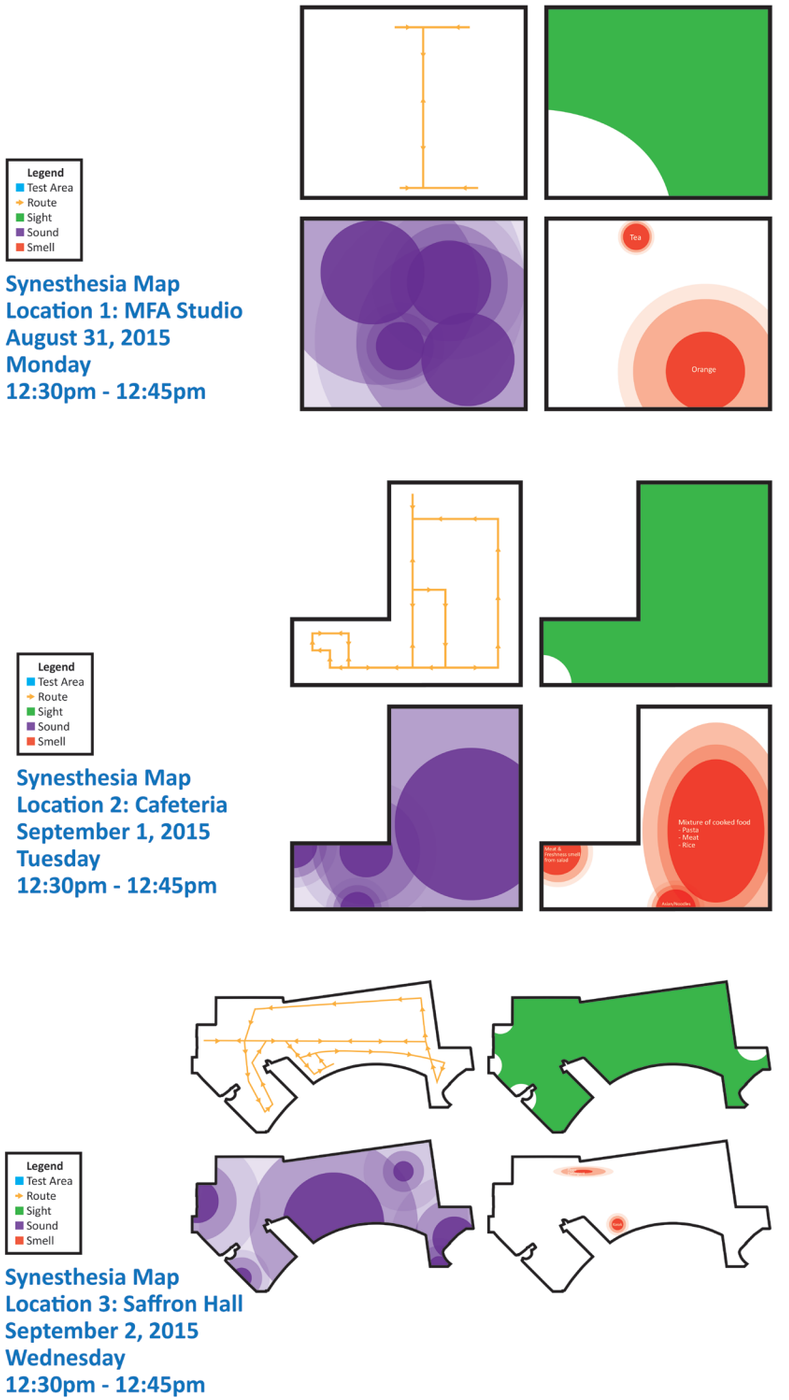

Fig. 9 – Maps of the sense tested areas at the VCUQ building

Sensory Mapping System: Flaneur Test

The second exploratory sense experiment was the flaneur test. Flaneur, a 19th century French term meaning to stroll or wonder about, is often used to refer to someone with free time to explore the urban scene.[20] The aim for this test was to witness the behavior and movement of individuals when sensing a strong smell as the element of surprise. The diverse smells I chose to test were vinegar, popcorn and wall paint. I choose these smells based on their strength and potential to influence the direction of an unsuspecting pedestrian's path. I placed these smells in different locations within the VCUQ building and video recorded the movement of people approaching or passing by. The end results were not what I expected. A reason for this could be due to the building space selected had been too large and the smells disappeared quickly. Most people walked by without noticing the smells. However, there were some who looked directly at the item as they continued on their path. Several Qatari female students did change their path, but I suspect that it was more due to an apprehension to being filmed than to the smells. When looking through the videos, what I found interesting was the movement of the people. This led me to create a rendering of one of the tested spaces, map out the path of each individual and represent it in an abstract representation style. The overlapping of different paths was a fascinating and unexpected result.

[20] "Flâneur."

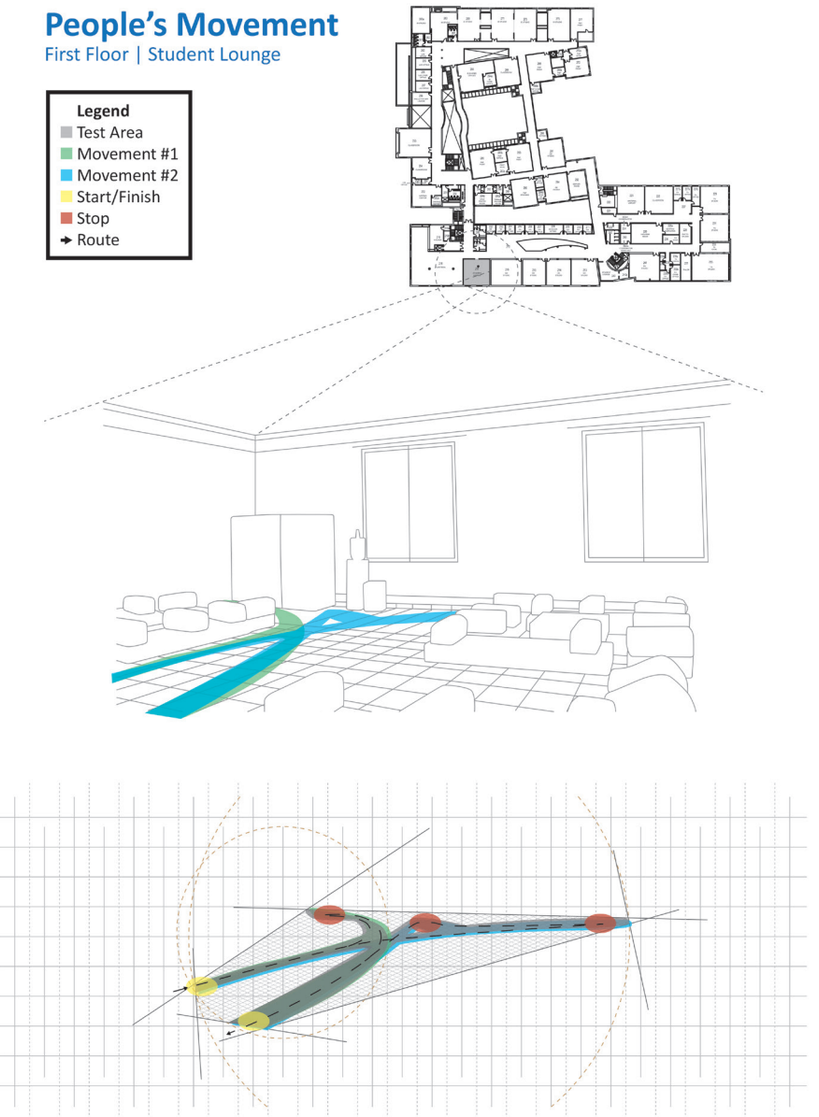

Fig. 10 – Abstract representation of two people's movement

Memory Mapping System: Mental Map

To create a mental map, an individual needs to be aware of their surroundings, to know their location. For this project I created my own mental map of EC. I used the three available transport systems of walking, biking and driving. Whilst traveling these routes, I used my senses to detect and document particular details from the environment. These details included: areas where I could smell plants, where there was a strong breeze, or areas that were significantly warmer than others. Once each respective route was completed, I tried to recall and document unique experiences with each sense. I recorded them on Mapbox, an online customizable mapping website. Once my experiences were documented I developed a signage system based on my findings. I further developed these sensory signage experiences as a part of EC that clearly identifies these areas to others, for them to find and experience.

Fig. 11 – Different transport routes along with new signs

Fig. 11 – Sensory signs for one to experience in EC

Wearable Mapping System: Keep Track

Studies have proved those who heavily use turn-by-turn navigation become unaware of their surroundings, whereas those who use paper maps generate internal pictures of an environment. Inspired by some of my investigations and research, I developed “Keep Track,” a multilayered information map of EC on a pair of trousers. The first layer consists of a combination of roads and sidewalks. The second layer represents the buildings around the area. The final layer consists of QR codes, which one can scan using their phone to provide information about traditional inspirational elements that are incorporated into the buildings. The map represents only a small part of the area, but the area is large enough to allows users to flaneur and explore hidden areas. There are also 3D printed black spindle pinpoints around the map that are removable. These spindles give the flexibility to choose how many pinpoints users want and at which locations they need to be placed. Different colored strings are attached to the belt loop and hidden inside the pocket. The final outcome allows a person to construct their own routes by pulling the strings out of their pocket and wrapping them around the pinpoints to mark their path. Whether someone is walking, taking the bus or is a passenger in a car, they can refer to their pant map to know their location and gain culture information through scanning the QR codes.

Fig. 12 – Multilayered EC map

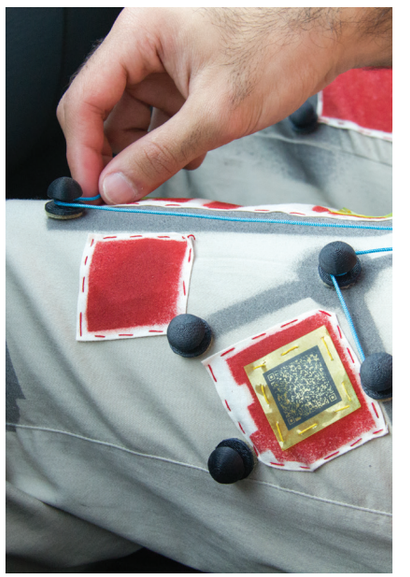

Fig. 12 – Creating routes with strings

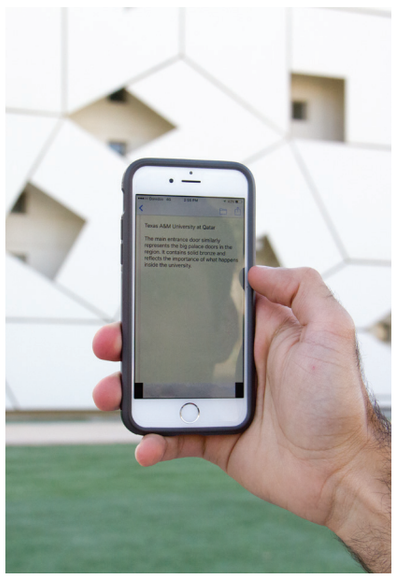

Fig. 12 – Information from QR code

Conclusion

We are all aware of the current mapping systems used today: mobile apps, website maps, traditional printed-paper maps and the directories offered in wayfinding systems. In this project I intended to develop a mapping system for Education City that uses the research I conducted as a catalyst for experiential cultural exposure. The three components to the system included a parasol map, cultural exchange signage, and sensory elements.

Parasol Map

Inspired by the domes created by the American architect, Buckminster Fuller, two Amsterdam studio firms constructed a dome out of umbrellas around a lamppost in Rotterdam. The space held a street party, with a DJ and bar. The Bucky Bar attracted approximately 300 people before police intervened because the impromptu space lacked the required permits. It showed how this unusual object, set up in multiples can catalyze a gathering.[21]

Fig. 13 – Inside the *Bucky Bar* space

After considering the Bucky Bar model, and how an object can have an impact on people, I envisioned a similar concept at EC. The Parasol Map is an interesting and multifunctional object. It provides shade during the long summer months, it contributes a mapping element of the area and locates where culture communication takes place. Opening up the Parasol Map, one sees the map of a common area. The mapped parasol that I've designed becomes a reference tool when getting lost, looking for a location or searching for interaction points identified on the inside of the parasol. The abstract map gives users the opportunity to create their own mental map by interacting with the built structures of EC and the sense elements that are linked and identified with the signage system. Having the map focus on one area allows users to flaneur and discover new areas. These parasols are located at the bus stops and at each cultural exchange signage point. The bus stops are the introduction to the general mapping system where commuters are picked up and dropped off. Each bus stop includes a detailed map of the city for travellers to identify where they are and where they are going. The parasols are placed as a rooftop to the bus stop, which protects users from the sun while waiting for the bus. Users can withdraw and leave a parasol depending on their preference to travel with or without it. This interaction is also done at the new identified cultural spots in EC that are mapped out in the new system. This versatile parasol is a new navigation tool that introduces an interactive experience where experiential cultural learning between people in EC takes place. These interactions take place at the bus stop, at the identified meeting points or any place along the way.

[21] Etherington, "The Bucky Bar by DUS Architecten and Studio for Unsolicited Architecture."

Fig. 14 – EC bus stop

Fig. 14 – Parasol rooftop

Fig. 14 – Users can pick up and drop off a parasol

Fig. 15 – Using the parasol as one navigates EC

Fig. 15 – Locations where experiential culture learning takes place

Fig. 16 – Detail map EC map at each bus stop

Cultural Exchange Signage

Motivated by developing a personal signage system from the Memory Mapping System investigation, I've developed a system that's allows for an experiential cultural learning process around EC. By observing the area, I noticed that picnics, watching the sunset and chatting are the three most common activities that take place amongst people. This led me to develop signs for each of these activities, corresponding with the best timings to experience these activities. These triangular signs, depicting the pause meaning in traffic signs, are individually related to a color: orange for sunset, green for a picnic area, and with most of the social media logos currently in blue, I chose blue for the chatting icon. Each activity sign is paired with a custom built environment to aid in its respective use. The sunset sign is paired with a sitting bench for users to take a rest and enjoy the view, the picnic sign has a dining table attached, and a sound instrument is embedded on the chatting sign for users to discover and interact. Embedded on the sign poles are Google Map QR codes as an option for those who want to use their smart phones. Once the QR code is scanned the user can find information about their location on their phone. The locations of the signs in EC are based on different activities identified on the map. The signs are mapped out on the parasols and at the bus stop information sign. The purpose of the signage system is to foster cultural communication, gather people together or have people take a journey together and to learn from one another. It's a different way of learning, to learn information about the community, to see and experience other different ways of learning, or in the hopes of fostering friendship.

Fig. 17 – Cultural exchange

Fig. 17 – Best location and timings for a picnic


Fig. 17 – Exchange takes place over lunch

Fig. 18 – Cultural dialogue as the sun sets

Fig. 18 – Best location and timings for a sunset view

Fig. 18 – Users can sit, enjoy the view and learn cultural information with people

Fig. 19 – Experiential cultural learning at the chat spot sign

Fig. 19 – The parasol map are also available at all the signs

Fig. 19 – Google Map QR codes are embedded on all signs for those needing an alternative navigation tool.

Sensory Elements

As mentioned, one way to create mental maps is to use one's senses to recognize certain elements in an environment. It's also a way to know a location by connecting what a person feels within a space. Each cultural sign is intended to exploit and amplify one of the human senses. The sunset sign is associated with the sense of sight. Sidewalk artwork is used as a trigger point to activate one human sense to mark a location and/or a destination. One part of the picnic sign is to link users with the sense of touch, providing a difference in texture from a concrete sidewalk to a grassy surface, usually paired with a picnic setting. Sound is the third sensory element activated through the use of an embedded sound instrument on the chat sign. Sound can be produced by either a voluntary or involuntary method. A voluntary method would involve a user exploring the instrument on the sign, whereas an involuntary sound can be created by wind.

Fig. 20 – Sense of touch: grassy surface

Fig. 21 – Sense of sight: sidewalk artwork

Fig. 22 – Sense of sound: instrument

3D Model

All three components are represented on a constructed 3D model of EC. A video projected on the model portrays the location of the cultural exchange signs, the bus stops and additional structural information of the campus.

Fig. 23 – Projection mapping: Locations of the cultural exchange signs

Closing Statement

In conclusion, this unique mapping system was developed for the essential concept of reaching a destination and to explore the journey. The system focuses on the use of an introduced item, the parasol, used as a reference map and needed shade. The parasols allows users to flaneur and discover new chatting areas, make plans for a weekend picnic or a sunset visit in the area. In the natural course of using the new cultural exchange signage, the user will be participating in experiential cultural learning in EC. Finally, the sensory elements aid users in the creation of their own mental maps.

Future Directions

As for the future additions for this project, the new train system stops in EC are further areas to introduce this mapping system and a different placement location for the parasols. There is room to develop new signs for other activities that can potentially add another dimension to experiencing a place. As well as, picturing other parts of the city being able to accommodate a similar system.

Images

All author unless otherwise noted.
Fig. 1, Fig. 9, Fig. 10, Fig. 11, Fig. 12, Fig. 14, Fig. 15, Fig. 16, Fig. 17, Fig. 18, Fig. 19, Fig. 20, Fig. 21, Fig. 22, Fig. 23

Fig. 2 – Daniele Quercia, *Happy Maps*, 2015. Screenshot of Boston map. http://ideas.ted.com/the-shortest-paths-to-happiness-literally/

Fig. 3 – Daniele Quercia, *Smelly Maps*, 2015. Screenshot of London map. http://mappinglondon.co.uk/2015/smellymaps/

Fig. 4 – Jeffery Sarmiento and Inge Panneels, *Liverpool Map*. Installed in Museum of Liverpool, UK.
http://sure.sunderland.ac.uk/2932/

Fig. 5 – *BeeLine Bicycle Compass*, 2015.
http://mapprojectoffice.com/work/beeline/

Fig. 6 – *BeeLine Bicycle Compass*, 2015.
http://www.dezeen.com/02/11/2015/map-beeline-bicycle-compass-cycling-accessory-kickstarter/

Fig. 7 – DDB China Group, *Green Pedestrian Crossing*. Campaign for China Environment Protection Foundation, China.
http://www.adeevee.com/01/2011/china-environmental-protection-foundation-green-pedestrian-crossing-film/

Fig. 8 – DDB China Group, *Green Pedestrian Crossing*. Campaign for China Environment Protection Foundation, China.
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Fig. 13 – DUS Architects, *Bucky Bar*, 2010. Umbrellas around lamppost.
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