“LOST SPACE” AND “ARTIALISED SPACE”: ANALYZING PHOTOGRAPHIC REPRESENTATIONS IN PARIS

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ABSTRACT

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Photographs are ubiquitous, and we seem to understand the world through photographs a lot more. But how does the ubiquitous photographic representation affect our understanding of the urban environment? The main aim of this study was to examine and explore how and why a city is represented in people's photographs differently. In this case study, two groups of photographs were collected and compared: the first group of photographs was taken and shared by 14 landscape architecture students who participated in Michigan State University's study abroad program in Paris; the second group of photographs was collected by one person on the streets of Paris in areas different than the first group. Guided by the theory of artialisation, the differences and similarities between the two groups of photographs are discussed by careful observations and cluster analysis methods. Paris is a great city, but with a slight twist of representation, it can also become dull and unpleasant. The result suggests that there are two types of Paris: one is the Paris that people would like to share, the other one is not. Relating to the theory of "Lost Space," I argue that the ubiquitous use of photographs may contribute to a visual "lost space" in the urban environment. In the planning and design profession, new approaches should be employed to bridge the gap between "lost space" and "artialised space."

Key Words: Visual Representation, Artialisation, Lost Space, Environmental Design, Landscape Architecture

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Many of the ideas and approaches were suggested to me during my time in the School of Planning, Design and Construction at Michigan State University. My study abroad experience in Europe and my landscape architecture training at the undergraduate level has fueled my curiosity of visual representations in environmental design. I remember vividly when Dr. Trish Machemer and Dr. Pat. Crawford asked the class to compare the difference between the real environment and visual representations, such as postcards and photographs, during study abroad. I was also lucky to have taken many courses that eventually shaped the direction of my research. Specifically, I would like to thank Professor Paul Nieratko, Professor Karen Russcher, Professor Marco Diaz-Munoz, Professor Xuefei Ren, and Professor Howard Bossen.

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CHAPTER 1: INTRODUCTION AND LITERATURE REVIEW

1.1 Introduction

With the fast development of communication technologies, visual materials are made, distributed and observed quickly. In the planning and design professions such as landscape architecture, architecture, and interior design, a significant amount of the work is communicated through two-dimensional representations: drawings, renderings, diagrams, and texts are often the elements of a design presentation (Rock, 2015). However, what is seen on paper or screen may appear and function differently in the real world (Lange, 2011). The emphasis on vision among our senses (ocularcentrism) in the Western society has not assisted in people comprehending the environment (Rose, 2012). Just as Juhani Pallasmaa (Pallasmaa, 2012) put it in *The Eyes of the Skin: Architecture and the Senses*, "Modernist design at large has housed the intellect and the eye, but it has left the body and the other senses, as well as our memories, imagination and dreams, homeless" (p. 22).

We do not just *see* the landscape in front of us; we experience it with our other senses and understand the landscape based on culture and our ways of seeing. People seem to react to the seemingly strong focus on the visual in planning and design professions. Photography as a way to represent reality has always been my interest, but the more photos and photographic renderings I make, the more I question about the use of images to represent reality. Thus, I will investigate the issues of photographic representation in an urban context, specifically, in the city of Paris.

This case study investigates how a city can be represented in people's photographs in two different ways. I will first review the current theories and study methods relating to visual representation and the environment. Then, I will collect two groups of photographs from the city of Paris with different methods and then analyze them through careful observation and cluster

analysis methods. Finally, I will discuss the results and relate the findings to the planning and design profession.

The purpose of this study is to examine and explore how and why a city is represented in people's photographs differently. The following questions will be addressed:

1. How do different people represent the same city in photographs?
2. How is the city presented in the shared photographs different than the images of a real city? Why?
3. How do we understand photographic representations in an urban context?

1.2 Literature Review

1.2.1 Art, Picturesque, and Environmental Design

Art and landscape have long been associated with each other in Western traditions (Matlock, 2008). During late 17th and early 18th century, when the "traditional social and cultural guidelines" faced "revolutions and democracy," the old planning and design guidelines were no longer applicable; people were in search of a new approach to landscape design in order to accommodate the new demands of the people (Matlock, 2008). In the 18th century, William Kent borrowed ideas from landscape paintings to serve as guidelines for a new form of landscape design (Matlock, 2008). Around this period, the term "Picturesque" expanded from artistic compositions to landscape design, and the idea of a "Picturesque" landscape was formed to become a "three-dimensional realization of an artist's idealized version of nature" (Matlock, 2008, p. 18). Although this Picturesque period has brought its virtues to the design of the landscape, there were also shortcomings (Matlock, 2008). For example, Elizabeth Meyer (1992) noted that "this emphasis on the visual and recordable reduced the landscape to two-dimensional

surfaces, either the vertical surface of the picture plane or the horizontal surface of the geographer's map" (p. 28).

The influence of picturesque did not stop when designers moved from Beaux Arts style to Modern landscape design (Matlock, 2008). Similar to what the Picturesque designers did before, modern landscape architects and architects searched "in Modern art, in oriental landscapes and in nature" for forms that could embody the new concept of "form follows function" (Matlock, 2008, p. 28); they searched for "a new way to express themselves" by using "clean lines, primary colors and shapes inspired by geometry" (p. 24). Examples of this group of modern landscape designers were Dan Kiley, Garrett Eckbo, and Roberto Burle Marx from Brazil (Matlock, 2008).

The Picturesque period seems to influence Modern architecture design as well. In *Anti-Object*: *The Dissolution and Disintegration of Architecture*, Kengo Kuma (2013) argued that Le Corbusier and Mies van der Rohe had created "photogenic works of architecture" that led architecture into a direction that the works were created to be easily recognized through photographs when the works were "sufficiently new and individualistic to be recognized as such in a single, decisive black-and-white photograph" (p. 13). Perhaps the influences that the Picturesque period has brought to design is the fact that picture is a means of communication; it is Kuma who argued that a significant role of modern architecture has become about the communication of the impact of a building to a broad audience (Kuma & Watanabe, 2013).

Despite the influences, the Modern period in landscape architecture ended when landscape architects and designers such as Hideo Sasaki, George Hargreaves, Richard Haag and Ian McHarg started a more rational approach to design when they considered various cultural, physical and ecological conditions (Matlock, 2008). At present, the planning and design profession has also become more interdisciplinary; landscape architects often work alongside

with architects, artists, environmentalists, horticulturalists and civil engineers (Burley & Machemer, 2016). For example, Peter Walker works with environmental artist Carle Andre; artist such as the late Isamu Noguchi worked with landscape architects to create art in the landscape; Martha Schwartz works as an artist turned landscape architect, creating artistic solutions to address specific site problems (Matlock, 2008). Researchers in the profession are also looking for design inspirations from a variety of other places; for example, landscape architects may study biophilic patterns from nature and use these patterns to design urban landscapes better (Dietzel, 2016).

1.2.2 Visual, Representation and Landscape

In *Art, Design and Visual Culture*, Barnard (1998) noted that there is a difference between landscape and the representation of landscapes. Landscapes are made meaningful only by applying human or cultural intentions to landscapes; generals, farmers, and artists interpret the landscape based on the cultural meaning they gave to the landscape, such as “defensibility, arable crops or melancholy” (Barnard, 1998, p. 12). Landscapes are also representations of “lived relationships”(Morin, 2009, p. 140). Especially from the end of last century, Western cultural geographers have come to realize how “representational practices” could be important in influencing the “production of landscape” as well as “social relations and social structure” (Morin, 2009, p. 140).

Such a notion of Landscape can be traced back to the study of landscape perception in human geography (Morin, 2009). In the 1920s, Carl Sauer introduced qualitative methods for studying landscape perception; he argued that it was the collective human transformation of the landscape that produced "cultural landscapes" (Morin, 2009). Carl Sauer also influenced a generation of cultural geographers who used his empirical method to study how landscape and

culture relate to each other (Morin, 2009). For example, J.B. Jackson studied the impact of American popular culture through "vernacular landscapes" in the formation and transformation of the American Landscape (Jackson, 1984).

Visual perception is of great importance in the "cultural construction of social life" in "contemporary Western societies" (Rose, 2001, p. 6). In the early 1980s, an interdisciplinary field called "Visual Culture" for "the study of the social and cultural construction of visual experience" (Barnard, 1998, p. 197) started to emerge in the field of art history, literary studies, and cultural studies (Mitchell, 1995).

Researchers consider seeing as a critical point of analysis in visual studies (Hansen & Machin, 2013). Seeing is culturally constructed; as John Berger (1972) observed in his seminal *Ways of Seeing*, our way of seeing is shaped by the culture in which we grow up. The paintings, photography, architecture, sculpture, advertisements and other visual representations of culture and society shape our understanding of the society (Hansen & Machin, 2013). It is argued that in postmodern times, the strong connection between seeing and knowing is questionable, because we frequently interact with totally constructed visual experiences, such as a photograph (Mirzoeff, 2013). The power of photography to document and bear witness is also questioned by scholars in the field of visual studies (Hansen & Machin, 2013). Examples of such discussion can be found in Susan Sontag 's *On Photography* (1977) and Kiku Adatto's *Picture Perfect: Life in the Age of the Photo Op* (2008).

Critical social theory not only brought a new perspective to visual studies, since the 1980s, it also challenged landscape researchers in landscape studies (Morin, 2009). One enduring theme in landscape studies is to interpret and understand landscape as "symbolic" representations of the relationships among people, as well as "between people and landscape" (Morin, 2009, p.

142). With the influence of critical theory, landscapes came to be thought of as an interception of "competing authorities, perceptions, interpretations, discourses, and knowledge" (Morin, 2009, p. 143).

Not only does landscape reflect or represent culture, but it is also argued that visual representations can be effective in "communicating about, understanding, and modifying place and landscape" (Morrison, 2003, p. 25). For example, "landscape representations by artists" can assist in the management or transformation of the landscape (Joliet, Landon, Yu, & Burley, 2011, p. 618).

To study the relationship between human and landscape, Zube et al. (1982) created a landscape perception model that considered landscape perception as a function that affects the interaction between human and landscape. The model includes the human component, the landscape component, how these two components interact and the outcomes it creates (Zube et al., 1982). This model is used in this research to develop a framework for discussing the relationship between human and landscape, illustrated in Figure 1.

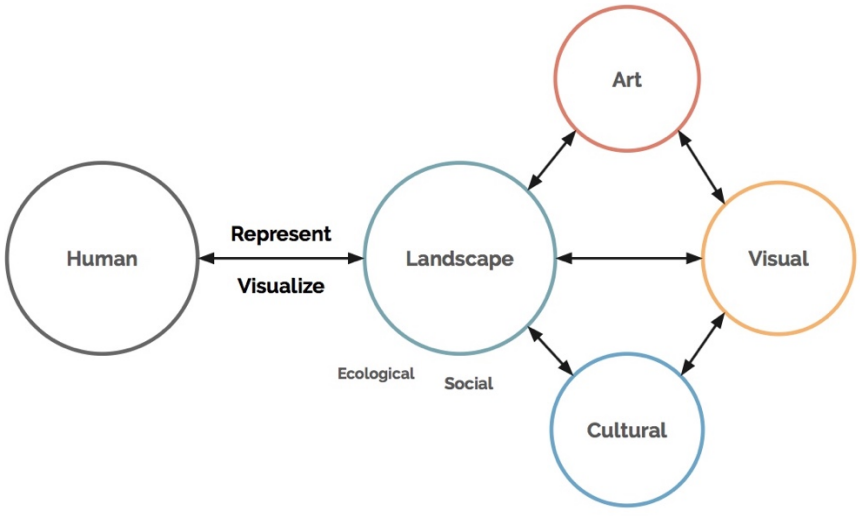


Figure 1: The theoretical framework used in this study.

1.2.3 Artialisation

"Artialisation" is a concept related to the area of research in Cultural Geography where art and landscape overlap (Burley & Machemer, 2016). The notion of "artialisation" is a philosophical concept defined by the French philosopher Alain Roger. In his concept, the landscape is considered a perceptual interpretation of nature and art is in the process of transforming nature (Roger, 1995).

Artialisation is "the selected presentation of a real environment using a characterization of the environment by selectively choosing what to present" (Burley & Machemer, 2016, p. 363). To illustrate the idea, Joliet et al. (2011) argued that landscape paintings are iconographic messages created by the artist; the meaning of the landscape is revealed by the "choices" that artists make when they "observe, frame and compose the artwork" (Joliet et al., 2011). Thus it is to say artialisation is embedded in our image making process when we make "choices", whether consciously or unconsciously.

As part of an image-making process, photography seems to fall into this discussion of Artialisation. This concept of artialisation is in the decision-making process when we take photographs. When we are asked to take photographs and select photographs, we are often faced with a choice, and it is for the photographer to select what information to be included in the frame. Whether the photograph is produced from negatives or in the digital format, it is a representation of the reality based on the choices we make. The process of making "choices" goes on to the distribution of photographs as well. Will the photograph be printed? Will it be viewed in a slideshow? Will it be posted on to a social network? Will it be seen with other photographs or will it be viewed by itself?

1.2.4 Researching Visual Materials

The interest of visual research is growing across a variety of academic disciplines, especially in the recent years (Pauwels, 2012); among these disciplines there are art history (Margarita Dikovitskaya, 2001), sociology (Rose, 2012), tourism studies (Steen Jacobsen, 2007), environmental communication (Hansen & Machin, 2013), and computer science (Brualla, 2016), …, to name a few. The validity of using visual materials to study people's perception is confirmed by several researchers; it is suggested that people responding to photographs (e.g. Lange, 2001), videos and simulated 3D models (e.g. Partin, Burley, Schutzki, & Crawford, 2012) have a similar response to the real outdoor experiences. Another interesting finding is that the response between design professionals and non-design professionals is significantly different from each other (e.g. Tempesta & Vecchiato, 2015; Jon Burley, 2016). Landscape architects and urban designers who have gone through design education may look at a place differently than those who have not. For example, experts tend to interpret and comprehend the landscape as a whole whereas lay people focus on a limited number of landscape features such as the buildings (e.g. Dupont, Antrop, & Van Eetvelde, 2015). Such findings of the difference between cultural groups can also be found in research that employs visual materials, such as tourism studies (e.g. Steen Jacobsen, 2007).

Although photographs can be used qualitatively and quantitatively, using photography as a type of data in the research is complicated; there is not a well-established methodological framework for using photography in social science research (Rose, 2012). Gillian Rose stated in *Visual Methodologies* that it is important to notice three sites or aspects while working with visual materials: the site of production or where and how the image is made; the site of the image itself or its visual content; and the site where the image encounters its audiences (Rose, 2012).

With the popularity of social networking services, photographs are shared widely. Accessing crowd-sourced photographs from social networking websites such as Flickr, Twitter, and Panoramio has been a popular approach for researchers in the recent years for understanding people's perception of the urban environment (Hahmann, Purves, & Burghardt, 2014; Hollenstein & Purves, 2010; Jiang, Yin, Wang, & Yu, 2013). However, the quantitative approach used in these studies is effective but has its limitations. Because they usually focus on a broader group of users when they acquire a large amount of data from the internet, they may lack concerns on specific groups of people who have different backgrounds, knowledge, and experiences. In this study, however, a qualitative approach is employed to focus on a specific group of people.

1.2.5 The Case Study Method in Environmental Design

The case study method is employed by researchers from a variety of fields, such as psychology, sociology, political science, business, and anthropology (Yin, 2014, p. 4). In the field of landscape architecture, the case study method is valuable in that it often serves to make concrete generalized or anecdotal information about projects or processes as well as bringing out projects and concepts worthy of further examination (Francis, 1999, p. 5). According to Mark Francis, the case study method in landscape architecture is defined as "a well-documented and systematic examination of the process, decision-making and outcomes of a project that is undertaken for the purpose of informing future practice, policy, theory and/or education" (Francis, 1999, p. 9).

The case study method is particularly useful when a controlled empirical method is difficult in a real-world context (Francis, 1999) and when the research questions seek to explain

how and why some social phenomenon works (Yin, 2014, p. 4), which is why a case study method is especially suitable for this study.

1.3 Hypothesis

For this study, the hypothesis is that people will share a certain type of Paris with their photographic representations; the places to be shared will have a certain type of quality that is different in the places where no photographs were shared; the photographs will not be distributed evenly across the research area.

CHAPTER 2: METHODOLOGY

2.1 The Study Area

Historic Paris, France was chosen as the study site. Paris is a city with historic and contemporary significance in Europe. It has been one of Europe's major cultural and economic centers and had an important role in the course of modern urban planning. Paris is also one of the destinations in the 2015 and 2016's Michigan State University study abroad program. For this study, the research boundary is set in the historic Paris, shown in Figure 2.

Figure 2: Map of the study area. Retrieved from Google Maps in June 2017 (Map data ©2017 Google).

2.2 Research Design

2.2.1 Collecting the first group of photographs

The first group of photographs was collected from students who participated in Michigan State University's study abroad program in 2015 and 2016. Study abroad is an integral part of

the landscape architecture program at Michigan State University. Each year, the third-year students may participate in the landscape architecture program during the final nine weeks of their spring semester. Study Abroad locations are determined on a year-to-year basis. For the year of 2015 and 2016, Paris, France is part of the destinations in the program.

Several students in the program will be asked to share photographs that they took in Paris. These students had not been to Paris before, but before departure, they have a class that meets every week where the students researched and prepared for the study abroad program, so the students had some expectations and knowledge of the destinations. This group of students consists of males and females, Chinese and Americans. By having people from different backgrounds, the sample could represent the research question with a greater global view. Because they were third-year landscape architecture students at the time of the departure, they had relatively the same level of landscape related expertise, thus eliminating the bias introduced by their different knowledge of the landscape. The cameras students used were all digital cameras brought by the students themselves, be it a point-and-shoot, a DSLR or a smartphone camera. The photographs will be collected after they have finished their visit in Paris.

For the study abroad program, students have a set of destinations to visit each day (see Table 1 and Table 2), while they also have a free day to explore places on their own. When the official program ends each day, students are also free to explore. These destinations on the schedule may influence where photographs will be taken (site of photograph production), but students may also take photographs in their free time at places not shown in the schedule; for example, they may take photographs when they are in the Metro. For the time being, most destinations were accessed by taking the Paris Metro. Note that in some days, the destination on the schedule is outside the research boundary.

Table 1: 2015 Study Abroad Schedule in Paris

Date	**4/6/15**	**4/7/15**	**4/8/15**	**4/9/15**	**4/10/15**	**4/11/15**
Day	**1**	**2**	**3**	**4**	**5**	**6**
Schedule	Travel to Paris	Versailles	Tuileries	Notre Dame	Walk from Arc deTriomphe to La Defense	Free day
			Champs-Élysées	Mémorial de la Shoah		
			Arc de Triomphe	Centre Pompidou		
			Eiffel Tower	Sacre-Couer		
Note		Outside boundary	Long walk in the city		La Defense is outside boundary	
Hotel	FIAP Jean Monnet Hostel, Paris					

Table 2: 2016 Study Abroad Schedule in Paris

Date	**3/20/16**	**3/21/16**	**3/22/16**	**3/23/16**	**3/24/16**	**3/25/16**	**3/26/16**	**3/27/16**
Day	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Schedule	Travel to Paris	Parc LaVillette	Champs-Élysées	Versailles	Musee d'Orsay	Loire Valley	Vaux leVicompt	Free day
		Parc Butte Chaumont	Arc deTriomphe		Notre Dame	Chateau Amboise		
		Professional Office Visit	La Defense		Centre Pompidou			
			Tour deEiffel					
Note		Professional Office within boundary	Long walk in the city	Outside boundary		Outside boundary	Outside boundary	
Hotel	Hotel Voltaire Republique, Paris							

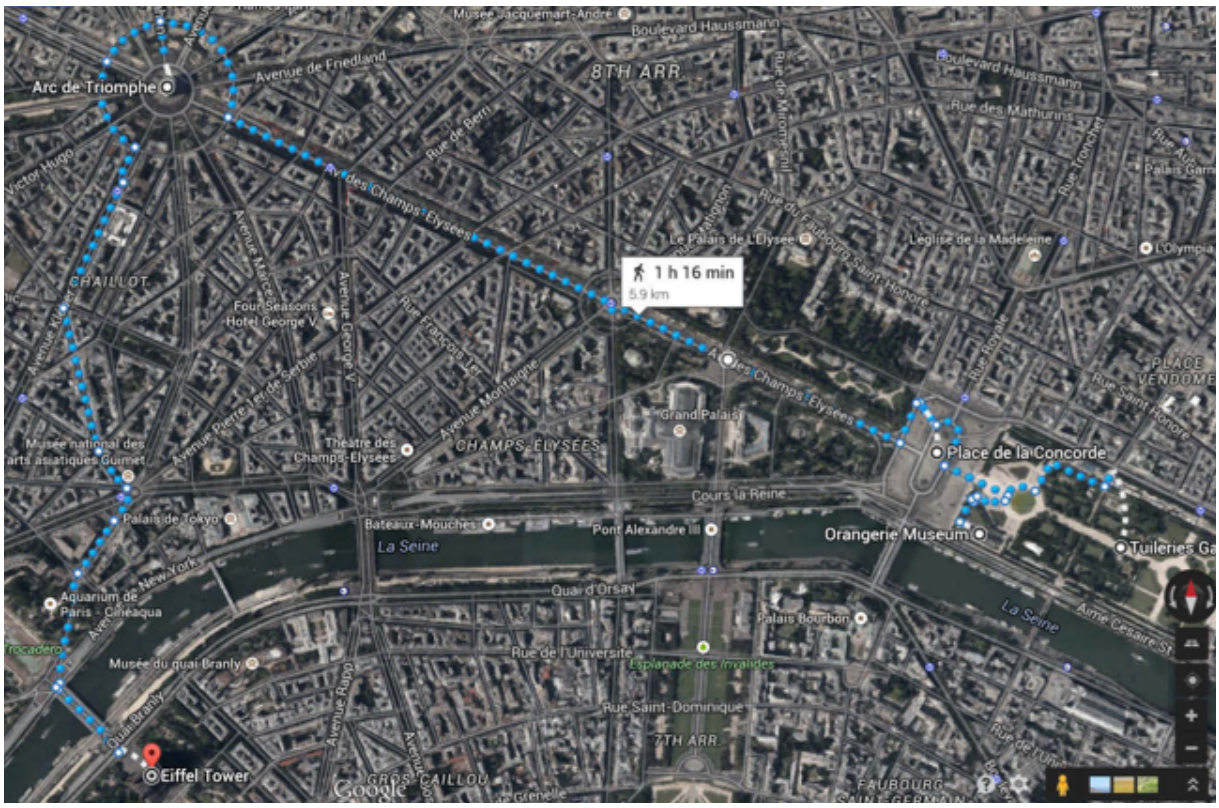


Figure 3: An example of the "long walk in the city" (seen in "Day 3" of Table 1and "Day 3" of Table 2). The walk goes from the Tuileries Garden over Champ-Élysée to Arc de Triomphe and ends in Eiffel Tower. Generated using Google Maps (Map data ©2015 Google).

The question that students were asked is "What are the photographs that you would like to share of Paris?" The question was intended to be vague for students to interpret, because a photograph shared on social media may be just as vague as the data to be gathered this way. The students may interpret this question as:

1. What do you like about Paris?
2. What are your favorite photographs in Paris?
3. How do you perceive Paris through taking photographs?
4. What photographs describe your study abroad experience in Paris?

For the 2015 group, each student was asked to share around ten photographs of Paris. For the 2016 group, each student was asked to share five photographs.

2.2.2 Collecting the second group of photographs

Since the aim was to compare the photographs that people shared with what the rest of the city might look like, a different method was used to gather photographs from other parts of the city. After the locations of where the first group of photographs was taken were identified, the researcher would collect the second group of photographs in other parts of the city where no photographs were taken and shared.

A friend who lives in Paris was asked to gather photographs for the second location. The five areas chosen were presented in Figure 19. For the second location, the friend was to take photographs in a "non-compositional" way, meaning that she just positioned her camera and shot without thinking about composition. The photographs were to be gathered at eye level in these areas. Although the "non-compositional" photo-taking process may seem hard to execute in a city such as Paris, it is well used in visual quality assessment studies in natural and urban settings (Jin, 2012; Lu, 2011).

2.2.3 Analyzing photographs

The analytical stage of the case study method usually depends on "the researcher's own style of rigorous empirical thinking, along with the sufficient presentation of evidence and careful consideration of alternative interpretations" (Yin, 2014, p. 133). After receiving the two groups of photographs, the researcher would sort the pictures into different groups to compare and analyze using a cluster analysis method called pile sorting.

Pile sorting has its roots in anthropology. It is often used in social science to "understand people's perception and structure of a cultural domain through an observation of how people classify and group the items of the domain studied" (Bernard, 2002). It can also be used to "explore and contextualize relationships between individual and group norms, values, feelings and fears, and complex constructs such as barriers to cancer screening or risk behaviors" (Trotter & Potter, 1993). In this study, however, the pile sorting method is not used as a way to understand people's perception of the collected photographs, but a way for the researcher to examine the structure and possible relationships hidden in these photographs. Because of limitation of the sample size, quantitative data is not assessed in the case study method.

CHAPTER 3: RESULTS

3.1 The First Group

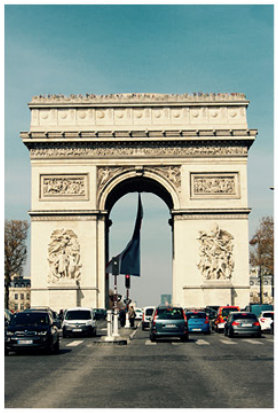
A total of 14 students provided photographs for this research; seven of them participated in the study abroad program in 2015 with the researcher, the other seven participated in the 2016 study abroad program. The 2015 photographs were collected in February 2016, around 9 months after the program officially ended in May 2015, using Google Drive and the iPhone photograph sharing function; the 2016 photographs were gathered in April 2016, right after the students visited Paris, by Dr. Jon Burley, who was the program leader at the time. Although students were asked to provide 10 (for 2015) and 5 (for 2016) photographs, the number of submitted photographs was not exact and varied from student to student. Some of the photographs were not in the research boundary. As a result, a total of 95 effective photographs were gathered. The data description is in Table 3.

Table 3: Description of the First Group of Photographs

Student	Year	Number of Photographs Submitted	Photographs Within Boundary
A	2015	11	8
B	2015	8	7
C	2015	10	10
D	2015	14	11
E	2015	10	9
F	2015	12	6
G	2015	10	9
H	2016	4	4
I	2016	5	5
J	2016	5	5
K	2016	7	6
L	2016	5	4
M	2016	6	6
N	2016	5	5
		Total:	95

A1

A2



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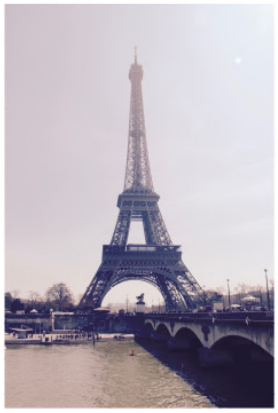

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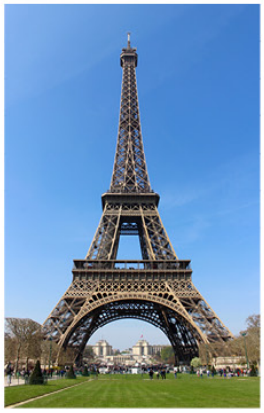

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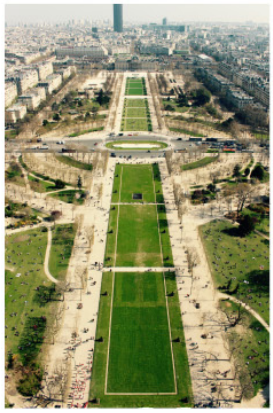

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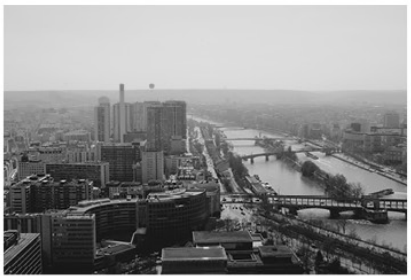

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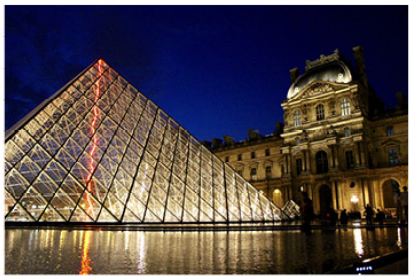


A8

Figure 4 (A1-A8): Photographs submitted by student A.

B1

B2

B3

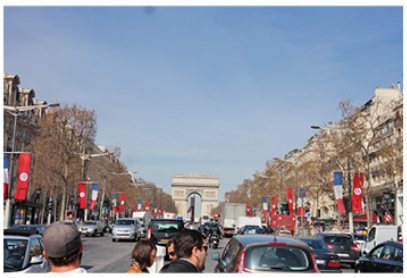
B4

B5

B6

B7

Figure 5 (B1-B7): Photographs submitted by student B.



C1

C2

C3

C4

C5

C6

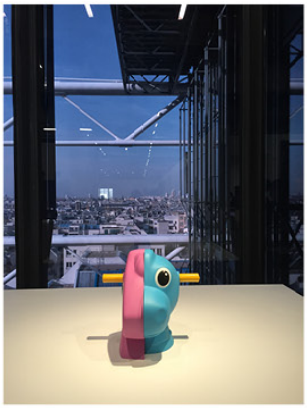
C7

C8

C9

C10

Figure 6 (C1-C10): Photographs submitted by student C.



D1

D2 D3

D4

D5 D6

D7

D8 D9

D10

D11

Figure 7 (D1-D11): Photographs submitted by student D.

E1

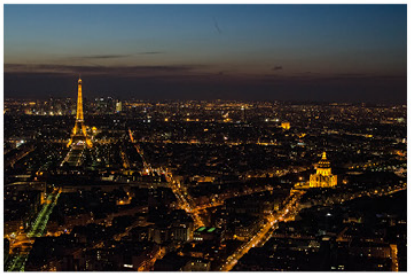
E2

E3

E4

E5

E6



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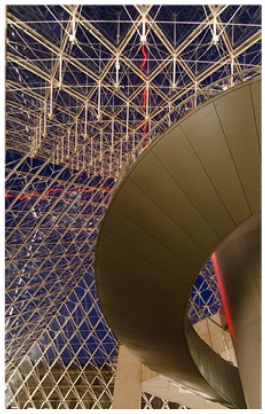


E8

Figure 8 (E1-E8): Photographs submitted by student E.

F1

F2

F3

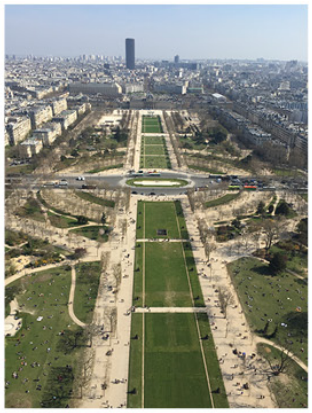
F4

F5

F6

Figure 9 (F1-F6): Photographs submitted by student F.

G1



G2

G3

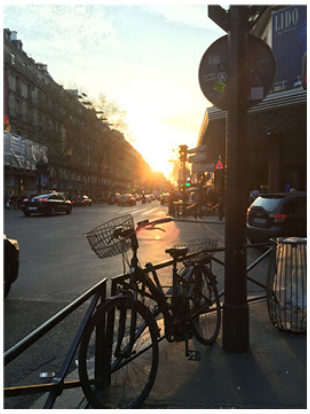
G4

G5

G6

G7

G8



G9

Figure 10 (G1-G9): Photographs submitted by student G.

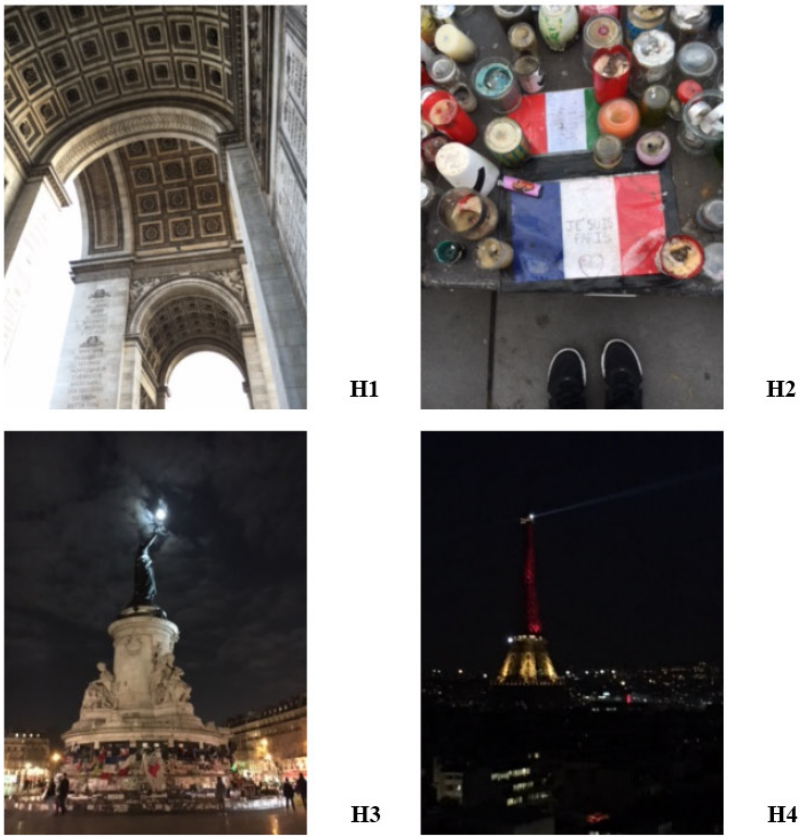
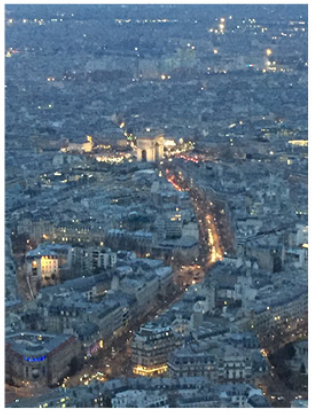


Figure 11 (H1-H4): Photographs submitted by student H.

I1

I2

I3



I4

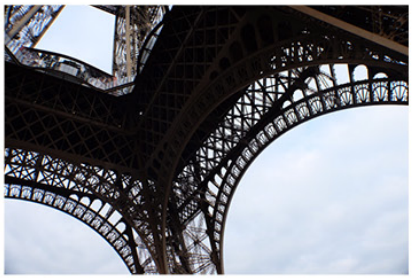
I5

Figure 12 (I1-I5): Photographs submitted by student I.

J1

J2

J3



J4

J5

Figure 13 (J1-J5): Photographs submitted by student J.

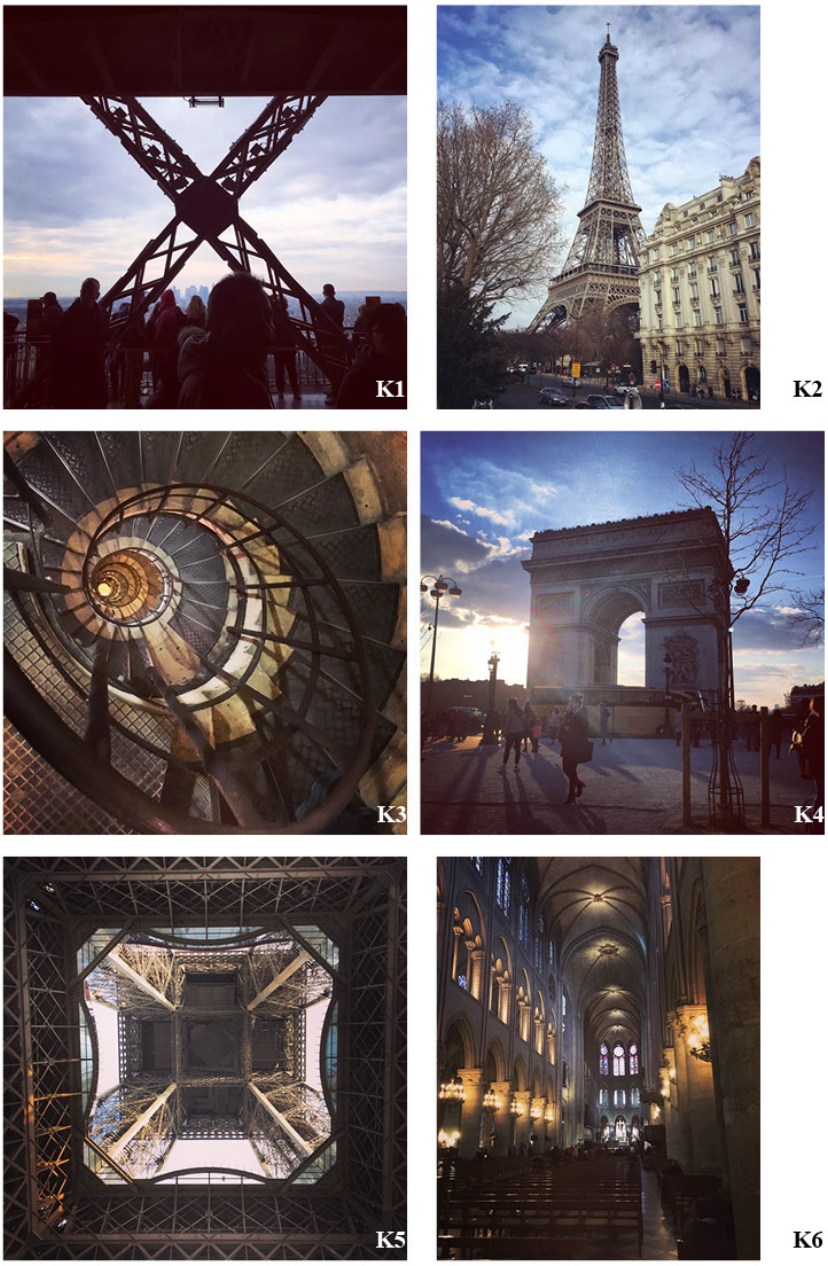
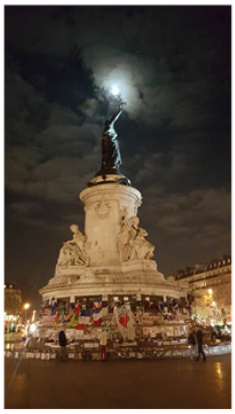
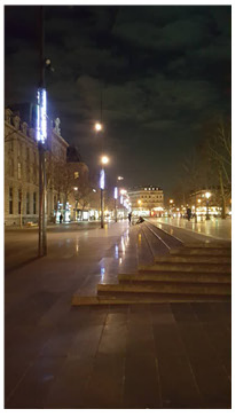


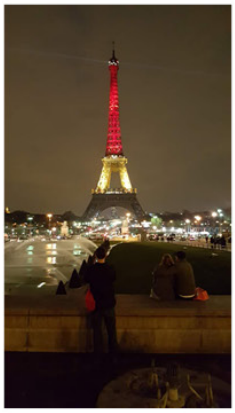
Figure 14 (K1-K6): Photographs submitted by student K.



L1



L2

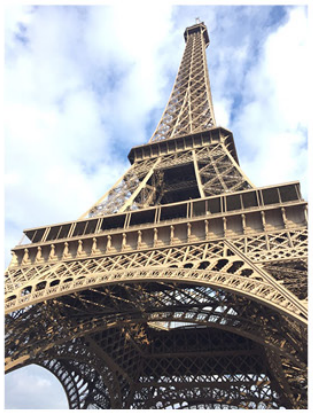


L3

L4

Figure 15 (L1-L4): Photographs submitted by student L.

Figure 16 (M1-M6): Photographs submitted by student M.



N1

N2

N3

N4

N5

Figure 17 (N1-N5): Photographs submitted by student N.

3.2 Location of Photographs

Because the geo-location was not readily available in these photographs, to determine the geographic location about where these photographs were taken, I utilized my knowledge of Paris during study abroad as well as help from Dr. Jon Burley, the students who provided these photographs, and Google Maps. The location information was mostly straightforward, with exceptions such as a shot of interior (Figure 6-C8), or a location that was not very identifiable (Figure 6-C10). Although students were not asked to label their photographs, one student provided some labels to help identify one of her photograph which otherwise would be hard (Figure 6-C6 shows a restaurant by Eiffel Tower). The photographs were named using the location of these photographs to the best of my knowledge, presented in Table 4.

Table 4: Description of Photographs Based on Location

Student	Year	Description
A	2015	Place de la Concorde with Eiffel
A	2015	Champ Élysée looking Arc de Triomphe
A	2015	Arc de Triomphe
A	2015	Tour Eiffel
A	2015	Tour Eiffel
A	2015	Tour Eiffel looking southeast
A	2015	Tour Eiffel looking southwest
A	2015	Louvre Night
B	2015	Jardin des Tuileries
B	2015	Tour Eiffel down looking up
B	2015	Tour Eiffel looking northwest
B	2015	Tour Eiffel looking southeast
B	2015	Sacré-Cœur
B	2015	Quai Branly Museum
B	2015	Quai Branly Museum
C	2015	Champ Élysée looking at Arc de Triomphe
C	2015	Champ Élysée
C	2015	Louvre Plaza
C	2015	Notre Dame
C	2015	Pompidou plaza

Table 4 (cont'd)

C	2015	Restaurant by Tour Eiffel
C	2015	Sacré-Cœur
C	2015	Restaurant interior
C	2015	Near Tour Eiffel Seine
C	2015	Historic Street
D	2015	Centre Pompidou
D	2015	Arc de Triomphe du Carrousel
D	2015	Jardin des Tuileries
D	2015	Mémorial de la Shoah
D	2015	Square Louise Michel
D	2015	Notre Dame
D	2015	Chanps-Élysées
D	2015	Luxor Obelisk with Tour Eiffel
D	2015	Sacré-Cœur
D	2015	Champs-Élysées
D	2015	Tour Eiffel girls
E	2015	Louvre Night
E	2015	Arc de Triomphe
E	2015	Champ Élysée looking Arc de Triomphe
E	2015	Tour Eiffel
E	2015	Louvre car
E	2015	Notre Dame interior
E	2015	Montparnasse Tower Bird's Eye
E	2015	Louvre Pyramid Interior
F	2015	Tulleris
F	2015	Arc de Triomphe du Carrousel
F	2015	Hostel Interior
F	2015	Tulleris entrance
F	2015	Galeries Lafayette Haussmann
F	2015	Le Centre Pompidou child
G	2015	Tour Eiffel
G	2015	Tour Eiffel looking southeast
G	2015	Jardin des Tuileries
G	2015	Tour Eiffel looking down
G	2015	Tour Eiffel looking at Seine
G	2015	Tour Eiffel lawn
G	2015	Saint-Jacques-interior

Table 4 (cont'd)

G	2015	The Centre Pompidou sunset
G	2015	Sunset near Lafayette Haussmann
H	2016	Arc de Triomphe
H	2016	Place de la République
H	2016	Place de la République
H	2016	Tour Eiffel Night
I	2016	Arc de Triomphe
I	2016	Notre Dame
I	2016	Place de la République
I	2016	Tour Eiffel looking at Arc de Triomphe
I	2016	Jardins du Trocadéro looking at Tour Eiffel
J	2016	Arc du Triomphe
J	2016	Place de la République
J	2016	Arc de Triomphe looking at Tour Eiffel
J	2016	Tour Eiffel detail
J	2016	Jardin des Tuileries
K	2016	Tour Eiffel view out
K	2016	Tour Eiffel
K	2016	Arc du Triomphe interior
K	2016	Arc du Triomphe
K	2016	Tour Eiffel down looking up
K	2016	Notre Dame interior
L	2016	Place de la République
L	2016	Place de la République
L	2016	Jardins du Trocadéro looking at Tour Eiffel
L	2016	Jardin des Tuileries
M	2016	Arc de Triomphe looking down
M	2016	Place de la République
M	2016	Tour Eiffel
M	2016	Jardin des Tuileries
M	2016	Jardin des Tuileries
M	2016	Jardin des Tuileries
N	2016	Tour Eiffel
N	2016	Place near République
N	2016	Notre Dame
N	2016	Not identified station
N	2016	Near République plaza

After identifying the location information, Google My Maps was used to mark the location of each photograph. The result is shown in Figure 18.

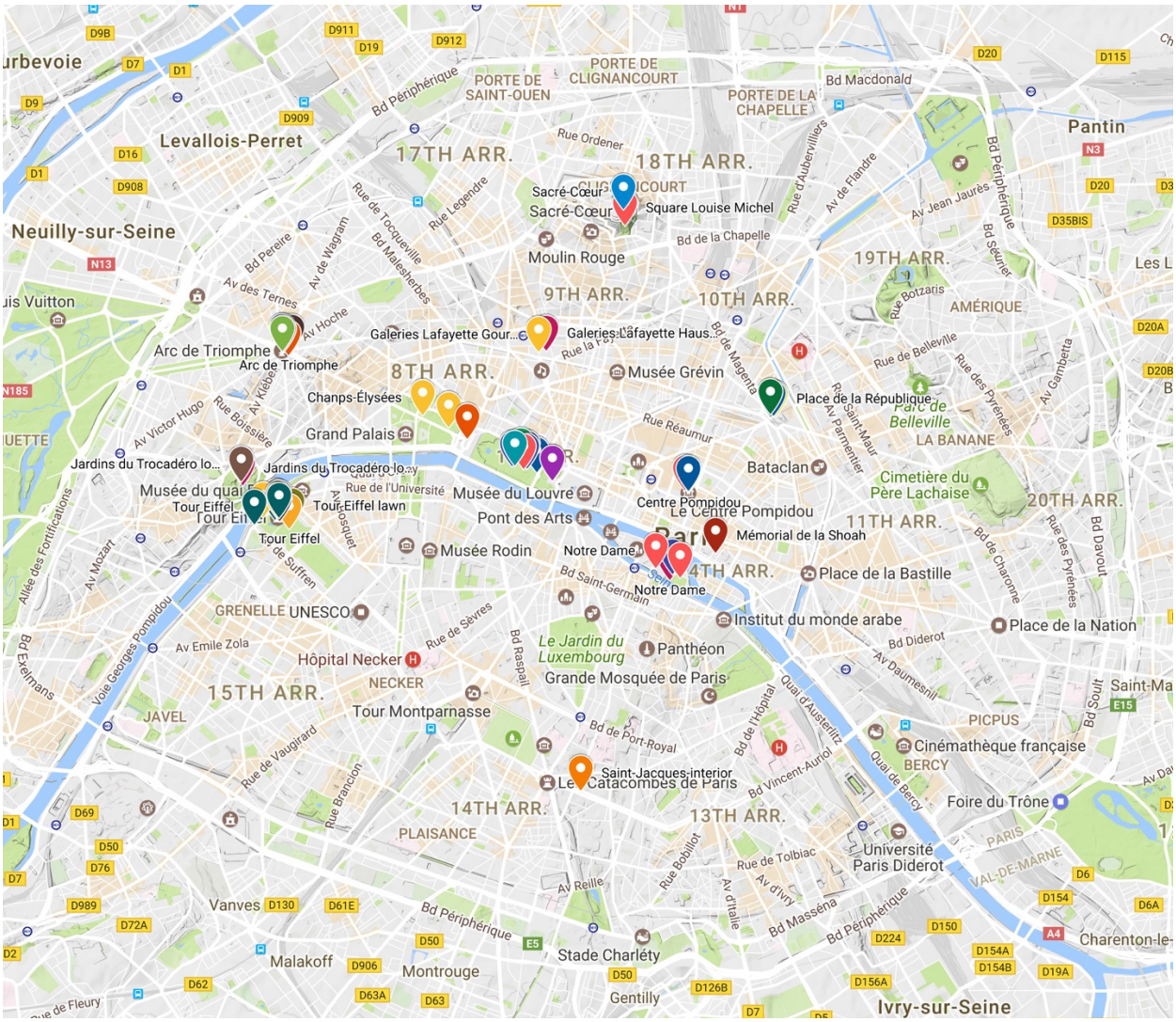


Figure 18: The Paris photograph map created using Google My Maps (Map data ©2017 Google). Different colors are used show overlapped photographs better.

3.3 The Second Group

As the geo-tagged map (Figure 18) shown, the location of these photographs are clustered. In order to compare what these shared locations look like compared to other parts of Paris, 5 zones were picked (shown in Figure 19 and Figure 20).

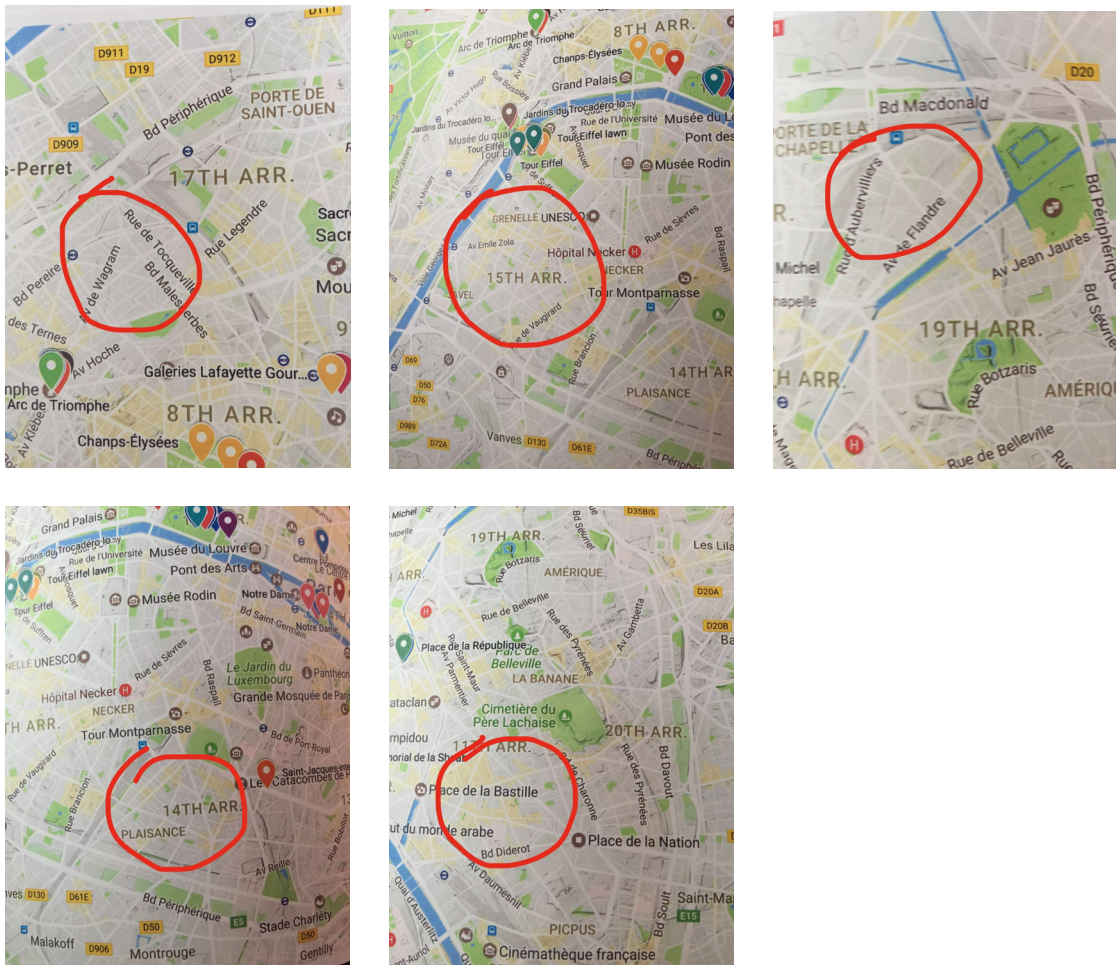


Figure 19: The areas chosen to gather photographs for the second group were circled on the Paris map and then sent to the friend in Paris.

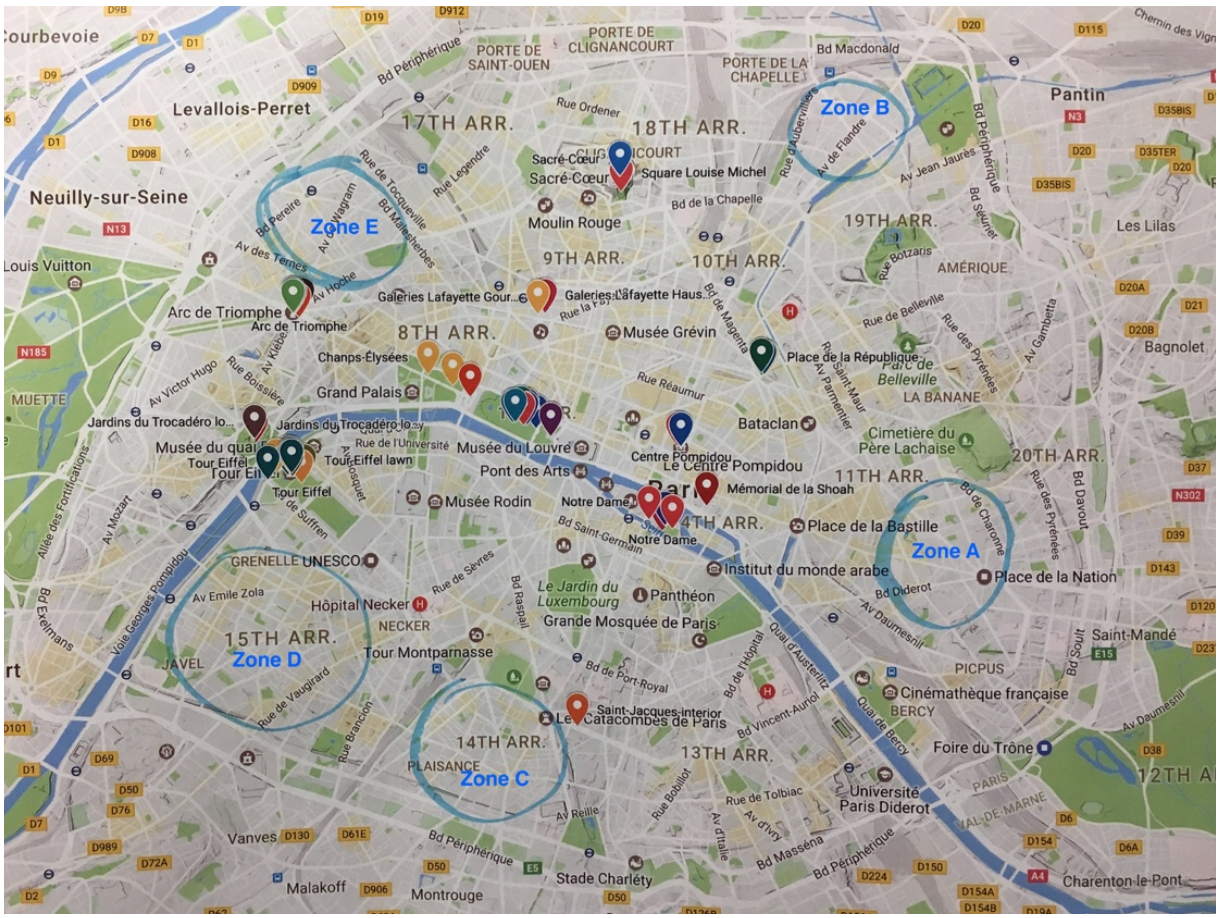


Figure 20:The five zones to gather photographs on the map of Paris (Map data ©2017 Google).

After the five zones were communicated, the friend hired a driver and collected these photographs in a car, with a smartphone camera held vertically. Some of these photographs seemed to be taken while the traffic was slow or near a crossing where the car seemed to stop. A total of 44 photographs were collected in one day in February 2017. The data description is shown in Table 5, followed by the collected photographs.

Table 5: Description of the Second Group of Photographs

Code	Zone Name	Number of Photographs
ZA	A	7
ZB	B	7
ZC	C	9
ZD	D	9
ZE	E	12
	Total:	44

ZA1

ZA2

ZA3

ZA4

ZA5

ZA6

ZA7

Figure 21 (ZA1-ZA7): Photographs collected in Zone A.


ZB1


ZB2


ZB3


ZB4


ZB5


ZB6


ZB7

Figure 22 (ZB1-ZB7): Photographs collected in Zone B.

Figure 23 (ZC1-ZC7): Photographs collected in Zone C.

Figure 24 (ZD1-ZD9): Photographs collected in Zone D.

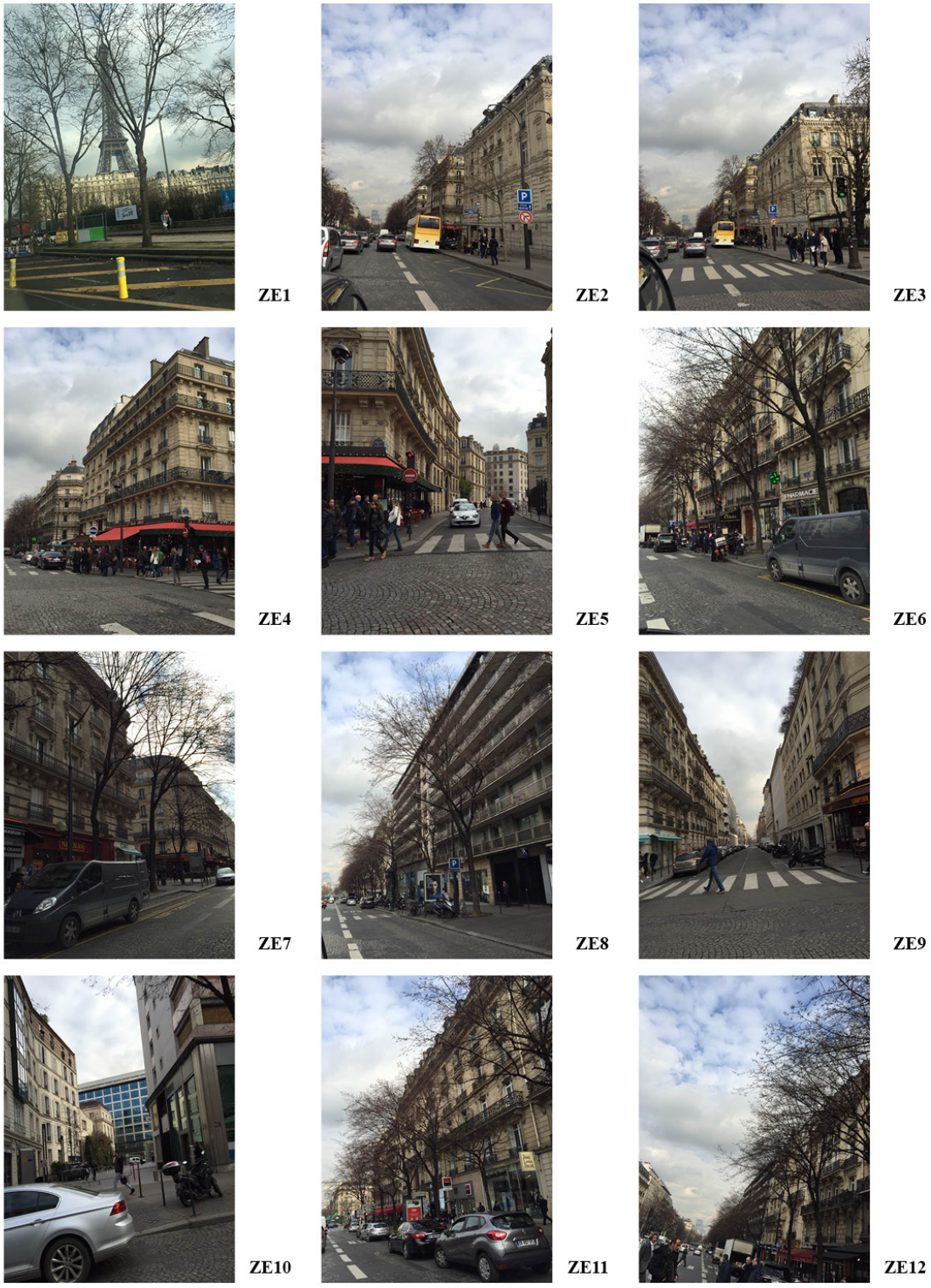


Figure 25 (ZE1-ZE12): Photographs collected in Zone E.

3.4 Clusters of Photographs

Figure 26: The digitally collected pictures were printed and put on the floor to analyze. By moving pictures around and grouping some of them together, one could discover the relationships that we could not see by looking at photographs on a single computer screen.

Photographs were first observed on screen, but it was not easy and efficient to see the relationships between photographs, so I printed these photographs to move them around easier. Because the digital photographs were taken with different cameras, the aspect ratios were not all the same. I printed these photographs with respect to their aspect ratios and tried to print them into relatively the same sizes. For example, the 3:2 aspect ratio photographs were printed into 4”x6” prints; the 4:3 aspect ratio ones were printed into 4”x5.3” prints; the 1:1 (square) ones were printed into 4”x4” prints.

By moving pictures around and employing the pile sorting method, I was able to see the possible relationships and alternative relationships. I especially examined the first group where photographs seem to be very diverse concerning their style and content. The photographs were grouped based on geographic location**,** viewing angle, content, time of day, filtered or unfiltered, etc. I then compared some of these clusters to see the connections and differences further. This method is similar to that of content analysis in that the codes in the content analysis method are similar to the groups I created (Rose, 2012).

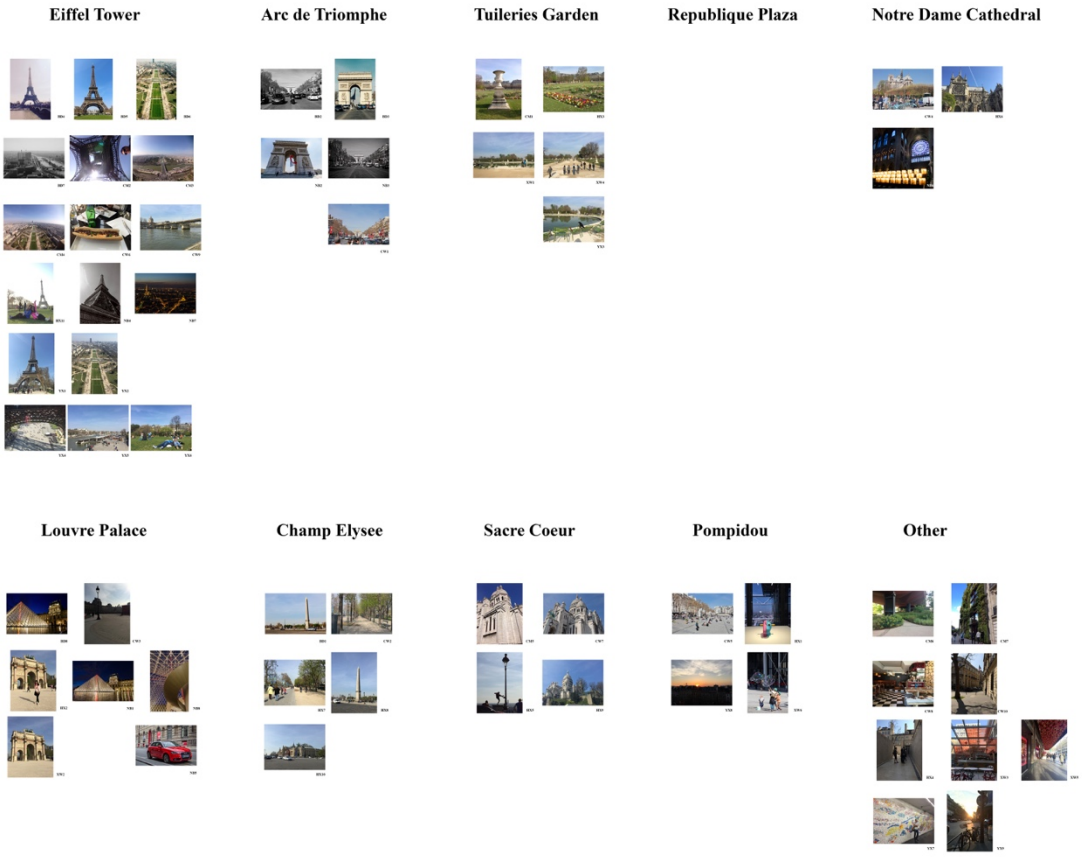
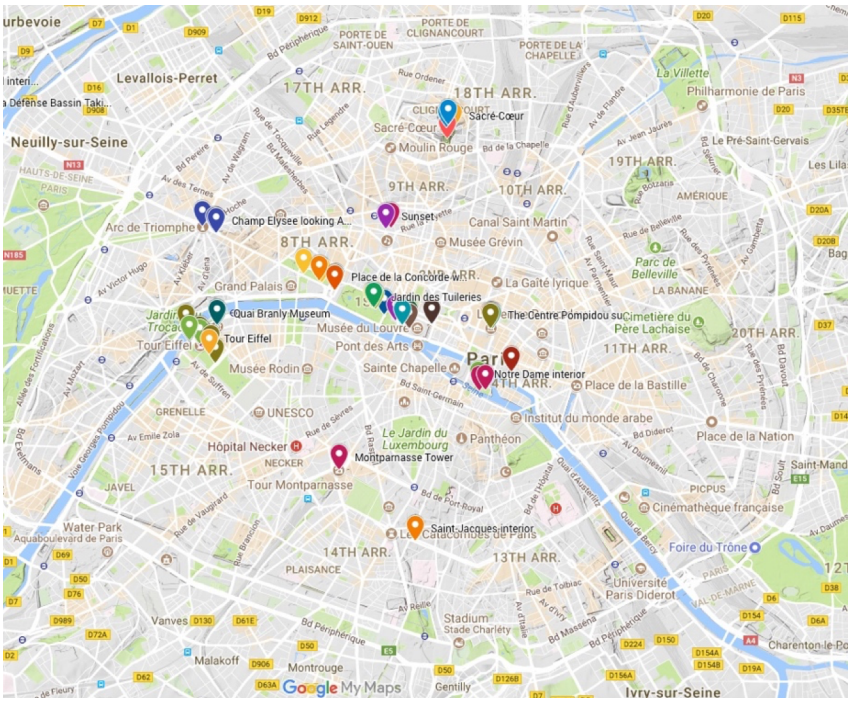
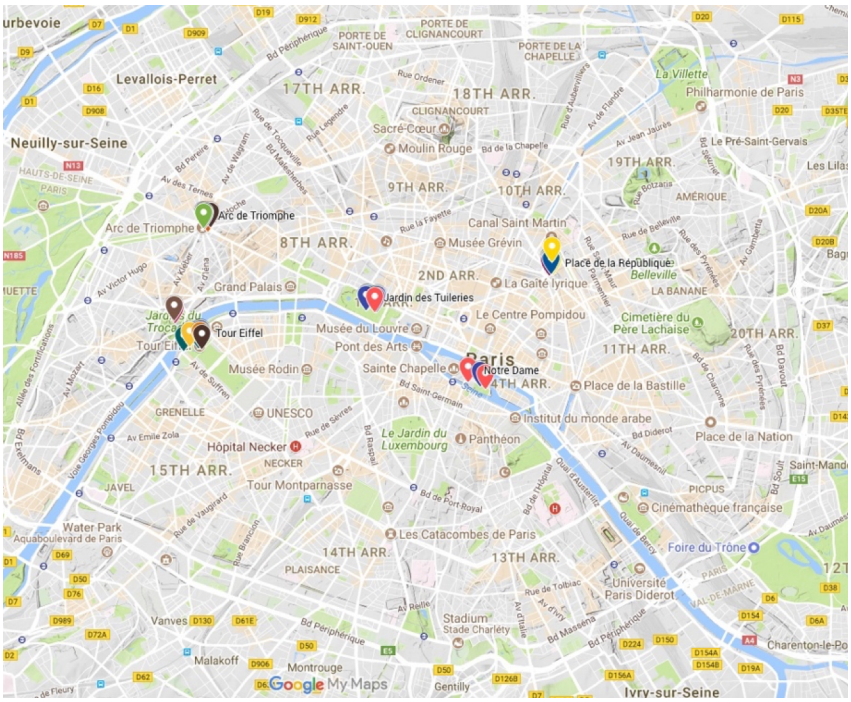


Figure 27: 2015 photographs grouped by location.

Figure 28: 2016 photographs grouped by location. It shows the seven students' photographs in seven different rows.



(a) The 2015 group



(b) The 2016 group

Figure 29 (a) (b): Geo-tagged map of the location of the first group of photographs (Map data ©2017 Google).

Figure 30: Location of photographs that were taken around Eiffel Tower (Map data ©2017 Google).

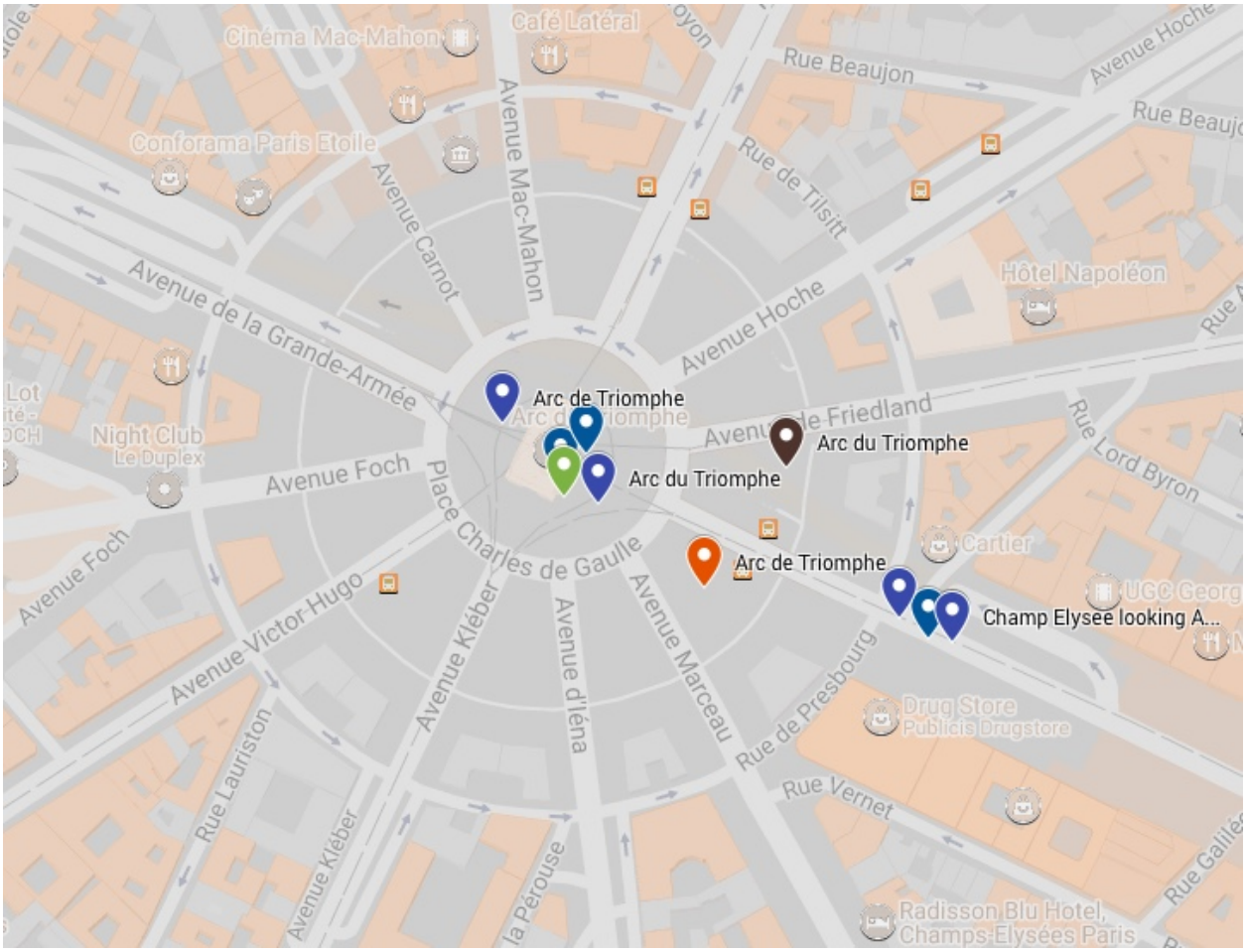


Figure 31: Location of photographs taken around Arc de Triomphe (Map data ©2017 Google).

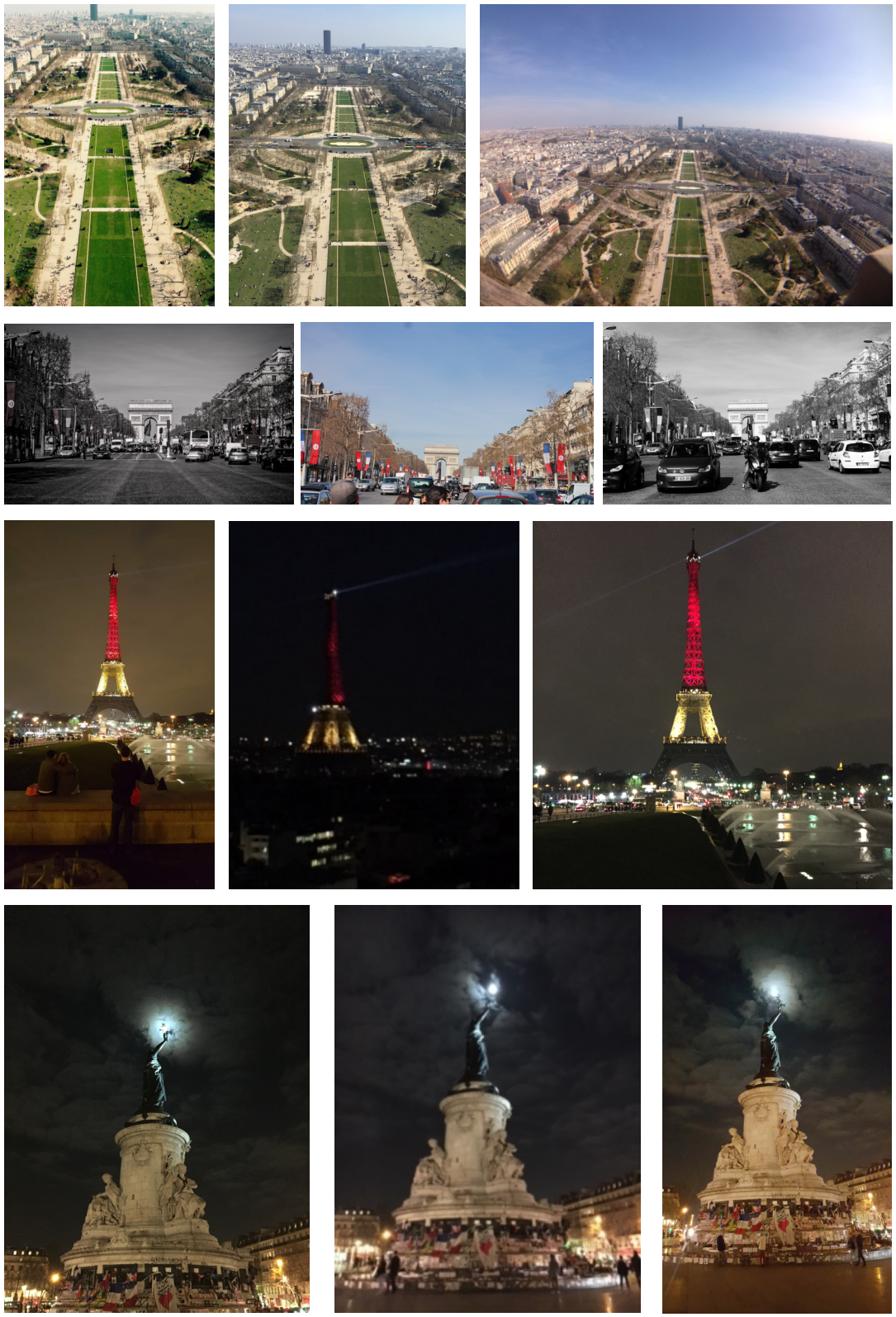


Figure 32: Similar photographs taken and shared by different people. Each row of these photographs has very similar compositions.

3.5 Overall Observations

1. There seems to be two sets of photographs. One set is of a selectively represented (artialised) Paris, while the other set is the Paris that is "lost".
2. Comparing the first group of photographs with the second group, it seems that most of the photographs in the first group have a theme, or people's intention. On the contrary, the second group of photograph does not seem to have a theme; they just look like random uninteresting street photographs.
3. When we look at the first group of photographs as a whole, we can see that these photographs are clustered around certain areas (Figure 18), rather than dispersed.
4. In the first group, Eiffel Tower has the most amount of photographs compared to other places. Eiffel Tower is also almost in everyone's submitted photographs.
5. The first group of photographs seem to be diverse in its content; viewing angles, time, inclusion of people, composition, focal length are all qualities that vary. The second group, however, are very similar.
6. Base on the photographs people selected to share, we can see that different people have different ideas of what a city might look like.

CHAPTER 4: DISCUSSION

4.1 Clustered Locations

The clustered quality is very clear in the photographs from the 2016 group (Figure 29-b), with 34 out of the 35 photographs located around five areas: Eiffel Tower, Place de la République, Notre Dame Cathedral, Jardin des Tuileries and Arc de Triomphe (see Figure 28). In the 2015 group, however, the photographs covered more places than the 2016 group (Figure 27). Eiffel Tower, Arc de Triomphe, Tuileries Garden, Notre Dame Cathedral, Louvre Palace, streets of Champ-Élysée, Sacre Coeur, Pompidou are the clustered locations. To explain this difference, it is important to notice that in the 2015 group, each student provided more photographs (around 10 photographs) than the 2016 group did (around 5 photographs), which may influence their choice of locations. It suggests that the required number of shared photographs may influence people's choice of place. Think of an extreme example: if a student were to select only one photograph from their collection, it would have only one location.

The intent of people seems to direct the results. Each person will provide photographs from the photographs they took, which is based on the places they have been to, which is based on the plan and the purpose of the program. The places they live matters too. For example, Place de la République was not in the travel plan of the 2016 study abroad program, but students took a lot of photographs in this place; some even submitted multiple photographs from here. In fact, in the 2016 photographs, a total of 9 shared photographs were taken at Place de la République, which is as many as photographs taken at the Eiffel Tower. The students could walk to this place easily because they lived very close to this place (Hotel Voltaire Republique). It is likely that the students chose this place because Place de la République had become a special memorial for the terrible terrorist attacks happened in Paris. It is also possible that since the nearest metro station is located here, they had to see this place every time they need to take the metro. In the 2015

group, there are also photographs taken at places close to where people live. For instance, there is a photograph taken inside their hostel (Figure 9-F3) and a photograph taken near the metro station of the hostel (Figure 10-G7).

The clustered characteristic is related to the "scale of perception", or how we frame the environment. At an "urban scale" (when we look at the city as a whole), the photographs are clustered around these famous destinations such as Eiffel Tower and Arc de Triomphe, but when we look at where the photographs were taken at a smaller scale, such as the "street scale" (when we "zoom into" an area within the city), the result still has a clustered characteristic. For example, Figure 34 presents the locations of the photographs that were taken around Eiffel Tower and Arc de Triomphe. From this "street scale", we can see that most of the photographs are clustered around a certain "focal point", rather than dispersed across the entire area. In this case, Eiffel Tower and Arc de Triomphe are the focal points that draw people's attention at the "street scale".

4.2 Representing Paris

Figure 32 suggests that different people could perceive the environment with similar, even identical views. Because these students went together as a group, they were able to communicate their thoughts and feelings to each other at the same spot. Someone may point at a wonderful view and then several students could start to take photographs at once. Although they may have the same intentions when they clicked the shutter, not everyone frames the view exactly the same. For example, in Figure 32, the three Arc de Triomphe photographs were taken in the middle of Champ-Élysée. The students framed these photographs just like each other, even similar to some photographs online (Figure 33). But they did not simply let their friend take the

photograph and share it with them because that will not be "their photograph." This added meaning may have a layer of "self" on top of the image (Belk & Hsiu-yen Yeh, 2011).

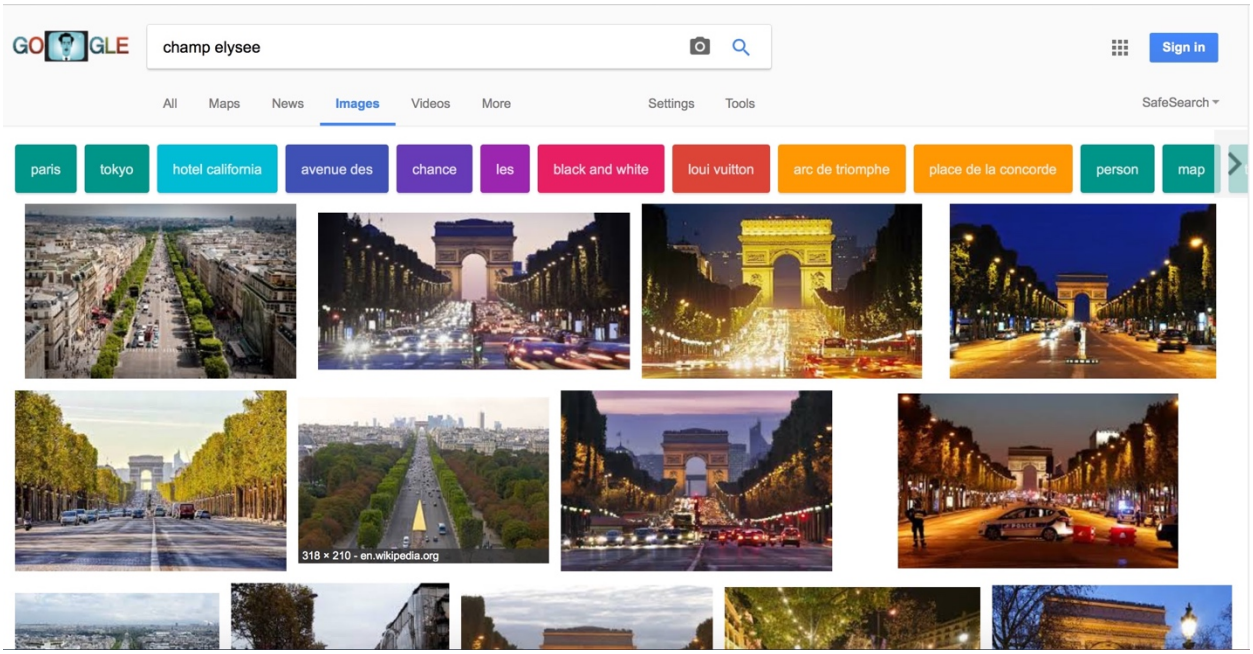


Figure 33: Screenshot of Google's images search result of "champ elysee". Retrieved from Google. 2017.

If we ask people what they think of Paris directly rather than asking them to share photographs, they may talk about these landmarks that have become symbols of Paris. They could also talk about the food, the culture of the city, and a lot more. But with the photograph as a medium, this impression become vague and hidden behind the photographs.

The same city can be experienced in different ways. Looking at the second group of photographs, it is hard for us to recognize where the places were, even to recognize whether or not these photographs were taken in Paris. One exception to this is in Figure 25-ZE1, where Eiffel Tower is a prominent feature in this photograph.

There may be several explanations. One explanation is that since I am not from Paris and do not live there, my knowledge of Paris is limited; I have not been to these areas so I do not know what the character of these areas are. Even though I cannot tell street scenes from one another, I am able to tell Eiffel Tower from the rest of the buildings. Students going abroad also have limited knowledge of Paris, so the photographs they pick will be based on their knowledge of Paris. The other explanation could be that the street photographs may not be suitable to showcase Paris. As we all know, Paris is a city with a very rich culture. Even though the streets of a city are considered by Jane Jacobs as "the main public places of a city" and "its most vital organs" (Jacobs, 1992), the streets of Paris may only represent a portion of the culture in Paris. Therefore, the photographs collected from the streets of Paris could only represent parts of Paris. Research in tourism studies also suggest that photographs that feature culture, history and art are frequently associated with pleasant feelings of a place (Pan, Lee, & Tsai, 2014); we might also argue that the students did not take and select the second group of photographs because these ordinary street scenes were lacking in culture, history or art dimensions and that they were not "pleasant."

The differences in the photograph collecting method have created two different sets of representations. Although the second group of photographs was collected randomly on the streets of Paris in order to get a general idea of what other parts of Paris look like, they do not seem to represent the city other than representing its streets. The first group of photographs, however, did not represent the entirety of Paris, either; because the photographs were clustered around certain areas, the locations that were covered by the first group are only samples.

When we see representations of Paris, the not represented part is sometimes ignored. The first group of photographs seems to represent the city through a cultural lens while ignoring the

physical construction of the city. The second group represents the city with a "scientific" approach, similar to that of a map, but it lacks considerations in the city's cultural and social aspects. In order to get an accurate representation of a city, we may need to utilize two approaches together to get a better image of what Paris might look like.

The group of students seems to perceive the city with some "common ideas". The "common ideas" reflect the collective understanding of a group or their culture. By collecting photographs from a specific group of people, we are collecting a cultural way of seeing that is unique to this group. But when the group changes, the way of seeing is changed as well. For example, the 2015 group of students have different understandings of Paris compared to the 2016 group. Comparing the photographs between 2015 and 2016, it is safe to conclude that when destinations change, the content of student photograph change as well. The student's impression of a city is based on their own experiences and their unique way of seeing.

We can guess what Paris looks like from the first group of photographs. Landmarks such as Eiffel Tower, long and wide streets like Champ Élysée, great city view night and day from on top of Eiffel Tower, Arc de Triomphe and Tour Montparnasse; the light show of Eiffel Tower; great café culture and food; great night scene, art and street performance; the fashion and shops, people and the weather. The photographs are documents of what we see, but they form pieces of our memory of a place.

Drawing from the artialisation theory from Alain Roger, it seems that in photography we use different techniques to artialise; the individual contribution expressed in drawings is considered an artful representation of the landscape that is different from reality or mediums such as photographs, videos, and models. The photographs selected from students are artistic

representations of the landscape rather than an image that only shows what the real landscape looks like.

4.3 City, Street, and Different Perspectives

People see the city in different viewpoints and perspectives. For the second group of photographs, since the images were collected on the street in a car, what we are getting is the perspective of the city from a car; the appearance of the street is comparable to Google Street View. However, the smell of plants, the activities of people, the weather, and the vibrancy of the café culture will all go unnoticed with Street View. When the photographs are taken from a moving car on the street, the photographs cannot represent what we see of Paris when we walk, either. The photographs in the second group may represent the street in an "accurate" way, however, the photographs taken on the street does not cover the entirety of the urban environment. On the contrary, the photographs in the first group were all photographs taken from a pedestrian viewpoint. In the first group, people saw the city landscape from different perspectives, such as on top of Arc de Triomphe (Figure 13-J3); at the viewing platform of Eiffel Tower (Figure 4-A6); or inside a metro station (Figure 10-G7).

Photographs collected from the street level does not depict what a person may see indoors, or on an advantage point. The street photographs collected in the second group might not look interesting or "Paris-like", and the inside of these places could be very different. For example, a nice interior of a restaurant (Figure 6-C8) may help to illustrate the café culture of Paris. What the street photographs cannot show is also what the people selected photographs are good at showing: indoors (e.g. Figure 6-C8), "elevated perspectives" (Morrison, 2003) (e.g. Figure 8-E7), architecture details (e.g. Figure 13-J4), food (e.g. Figure 6-C6), change of weather (e.g. Figure 10-G8), and friendship (e.g. Figure 7-D11). The second group of photographs gives

us an “accurate” look at the appearance of a city, but it is probably what is under or above these facades that make the city interesting. More viewpoints and perspectives seem to help us to understand a place better.

These street scenes certainly may look boring to some, but they are “boring” maybe because we are examining it at the scale of a city, not at the street scale. At the scale of a city, Eiffel Tower, Arc de Triomphe may well be the symbol of Paris, but for people who live in Paris, that might be another story. For example, a taxi driver who drives in the city every day may perceive the city at a street level when they look at the city behind the car window, unlike visitors who tend to walk a lot more.

It may seem that we are able to get a better understanding of the world by reading more information. A photograph collection will give us a better understanding of the whole because more perspectives contribute to better understandings. The individual groups of photograph all look very different, but together they have common qualities. Since different photographs are representations of different cultural ways of seeing, they are also contributing to the building of diverse ideas in a larger group.

4.4 Landmarks in the City

Even though students may have gone to other places and taken other photographs, they all seem to select photographs that are more of an iconic place or a landmark. In other words, students have selected these iconic places as representations of Paris. In the first group of photographs, we see landmarks such as the Eiffel Tower, Arc de Triomphe, and Notre Dame Cathedral. These iconic places seem to be meaningful in a way that is associated with personal experiences and cultural expectations. They are also easily recognizable from the surroundings. The second group of photographs, however, does not seem to have distinctive characters like the

first group. Maybe it is harder for us to associate the meanings of the second group of photographs to our impression of Paris.

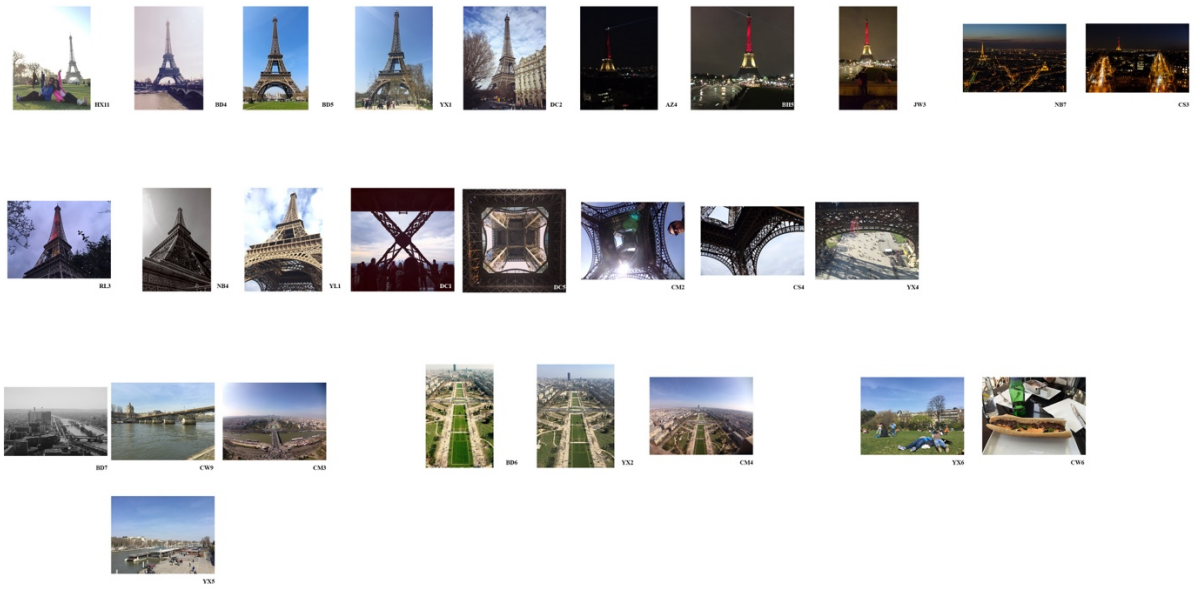


Figure 34: Photographs taken around the Eiffel Tower area. They show city streets, people, the city view, Seine River, the nice green space down the tower and food nearby. The two bird's eye's view photographs (two of the top right photographs) were taken at Arc de Triomphe and Tour Montparnasse, which are not close to Eiffel Tower but have visual access to it.

From Figure 34, we can sort or classify the photographs into several groups based on their content: Eiffel Tower and city; elevated view of a city; architectural details of the tower; food and life around Eiffel Tower. Although Eiffel Tower is itself a landmark, we can see that of all the 27 photographs, most of these photographs show Eiffel Tower with some context, rather than a stand-alone object.

Eiffel Tower has become a symbol of Paris, even of French culture. We experience landmarks long before we see them in person. Take Eiffel Tower for example, when we are in the city of Paris, we can see it from far away, and in different parts of Paris. But when we get closer, we can experience Eiffel Tower by going under, going up, or just to admire the architectural details in it.

These landmarks provide vantage points that give people an "elevated" perspective (Morrison, 2003). For example, Arc de Triomphe has its top for viewing; Eiffel Tower is even better in that it provides different viewing platforms in the open air. Eiffel Tower also has a distinctive shape that is unique and memorable. They offer close connections to city life. Eiffel Tower and Arc de Triomphe are excellent examples of urban landmarks; they provide multiple types of experiences and can be seen in lots of places in the city (especially Eiffel Tower, such as Figure 4-A1 and Figure 7-D8). They are landmarks to be seen, but in the meantime provides opportunities for seeing differently.

Because Eiffel Tower is such a successful landmark, there are copies around the world. There is an Eiffel Tower by the Parisian Hotel in Las Vegas. There is also an Eiffel Tower in a Paris-like town development (Tianducheng development) in Hangzhou, China. We should be careful while using landmarks.

4.5 The Space Lost

In urban design theories, "Lost Space" is a concept put forward by Roger Trancik to describe the area within a city that is unused by pedestrians or not occupied by buildings or streets (Trancik, 1986). Trancik argued that one reason that has contributed to the issue was the use of the automobile. Automobiles, highways, garages, and parking lots have led to a type of design that has contributed to places unsuitable for pedestrians who want to walk in the city (Trancik, 1986). Similarly, I argue that the ubiquitous use of photographs may contribute to a visual "lost space" in the design of our urban environment that is unsuitable to "real-world" users but are only pleasing to people who look at photographs. If the profession is highly focused on visual, to design for our other senses would be hard.

In the modern age where visual experience seems to dominate our other senses, a photogenic design may get attention easier and more effective. However, good visualizations and representations do not replace real experiences (Lange, 2011). A project that looks good on paper may not transfer to the success of it in reality. Although the construction of visual representations may make people understand a project better, we must not confuse it with reality.

In planning and design professions, there has always been a debate in representing a design: should we use more hand graphics and physical models, or should we embrace new technologies and create digital renderings, 3D models and even put them to use in virtual reality (VR)? In landscape architecture, when a project is in the design phase, the complicated evaluation process is often times substituted by a visual document that strives to communicate what the space can be by the design team, ranging from the analysis of the space according to context, to the overall plan view of the place, a section view of an important relationship, to a perspective view and drawing and nowadays a computer rendered graphic that gives us impressions of the place along with textual descriptions that illustrates a design concept. The intent of the experts is, however, not easily transferred by the general public, and yet the clients and users very much rely on visual communication before their actual experience in the built place.

Even though photographs may be seen as realistic, this study suggests that the photographic representations of a city from the visitors' point of view are "artialised", although they may look much more realistic than hand drawings. Compared to photography, hand drawing may seem to take a lot more time—taking out a sketchbook and choosing where to draw on the paper is not as simple as taking out the smartphone and click. However, the disadvantage of the fast method of taking photographs is that the thinking process in creating an image is lost in the

shutter button, even though clicking the shutter is not the entire image making process in photography (Rose, 2012). For example, post-production, or styling is a process that gives "personality" or individual ways of seeing to the photographs. From the first group of photographs, we can see that some students have applied filters, changed colors and cropped photographs into squares to preserve their individuality and different ways of seeing. Styling seems to fill in the gap of where hand drawing used to give us—by making decisions, we changed the look of photographs and made it fit our impression of a place in a better way. As we apply filters or crop photographs, photographs may be closer to our impressions or perception of a place.

People in the planning and design profession have argued that drawing is still a medium that can help us learn and observe the environment (Burley & Machemer, 2016; Richards, 2013). We can use freehand drawing to record the optical image in front of our eyes that the camera or a single photograph cannot capture; we can also use drawing to externalize our ideas in the design process, because by drawing, we are able to create what our eyes cannot see in reality (Richards, 2013). For example, landscape architect and graphic artist James Richards concluded in his book *Freehand Drawing & Discovery* that even though computer technology has changed the way we communicate visually, freehand drawing can help us to "allow the physical act of drawing to unlock ideas through reconnecting mind, eye and hand and, slowly perfect ourselves as vehicles for creative expression and design" (Richards, 2013, p. 261). When we are sketching, the process of selecting features and putting it on paper is itself a "design" practice, similar to the process of artialisation where people make selections of certain features in paintings or drawings. The process of selection reveals people's intentions, which may affect what the final product looks like. Frank Ching thinks that when we do freehand drawings on location, "we do not have to

restrict ourselves to the perspective views typified by travel postcards," instead, we are allowed to include more information that otherwise will not be recorded by taking a photograph (Richards, 2013, p. x).

Freehand drawing and the taking photographs can be combined to achieve better results with new technologies, such as digital sketching. For example, landscape architect and graphic artist Richard Chipman's way of drawing over a digital tablet is a "hybrid method" that has a layer of hand drawing over realistic images (Richards, 2013, p. 208). In a broad sense, the addition of information over real photographs and satellite maps can be considered a way of creating Augmented Reality (AR). The advantage of augmented reality is that we are able to sense the real environment on location with all of our senses, more than visual and auditory. As our eyes are far more advantaged than any camera on the market, the experience is different.

Researching a place is never the same as being at a place in person, although this is changing. In his TED Talk titled "The Birth of Virtual Reality as an Art Form", Chris Milk (2016) argued that in Virtual Reality, our "consciousness is the medium" whereas in other mediums "our consciousness interprets the medium". In virtual reality, the viewer is standing in the perspective of the storyteller, employing a first-person perspective. As a viewer, one is able to stand in the position of the storyteller and the images and sound come together as a complete perspective (Milk, 2016). Perhaps technologies such as Virtual Reality (VR), Augmented Reality (AR), and the use of unmanned aerial vehicles (UAV) or drones will give us new perspectives, new possibilities, as well as new challenges.

4.6 Conclusions

There are two parts of Paris. One is the Paris shared; the other one is not. People do not think Paris should be represented the same across the entire city. The streets of Paris do not have

cultural significance when the city is to be assessed as a whole; instead, focal points such as landmarks are symbols of cultural and social significance that is significant in people's perception of a city. Paris is a great city, but with a slight twist of representation, it can also become dull and unpleasant. Urban landscape is diverse, but a design that looks good in the plan view does not necessarily transfer to a good experience in person. It is important to understand the limitations of a medium (photography) to make better decisions because, in the end, we do not design and live in cities based on illusions and representations.

To design city at the urban scale is complicated. We perhaps see Eiffel Tower as the symbol of Paris, but the reason for its success seems to be more than looks. The history, the cultural values, the relationship between it and the city, and the services and programs it is able to provide all account for its success and how people like it. If the profession is highly focused on visual, to design for our other senses and the other qualities would be hard. Perhaps we can utilize new technologies to face this challenge, but we have to remember it is people that we are designing for, not just our eyes.

4.7 Limitations and Suggestions for Future Research

There are several limitations in this research. Although the second group of photographs was collected in different parts of Paris, the street-view like quality of the second group may be the result of the photograph collection method. One study that could be done is to collect photographs on the street in the areas where the student's photographs were clustered around. By comparing this group of photograph with the first group of photograph collected in this study, we will be able to see how important the streets are in the clustered areas; by comparing this group of photograph with the second group of photograph, we will be able to find out the distinctive

characters of the landmarks, although it is also possible that they do not look very different. We may also collect photographs from more areas of Paris.

The current study is focused on a specific group of students that have gone through some training in landscape architecture, so the result may not represent lay people who do not have expert knowledge of city design. Therefore, in the future studies, different groups of people can be assessed and compared.

To generalize this research into planning and design professions, I think the challenges of the ubiquitous images can become an opportunity. Because there are more visual data available, we may understand the city better. By assessing people's photographs, design professionals may be able to gather valuable information that otherwise will not be available through direct participation. Emerging areas of study in computer science may also help us to understand photographic representations in the city. Using computers as tools and utilizing technologies such as data mining and machine learning, we may be able to assess visual materials more efficiently. For example, to get a larger group of photographs, we can mine user-generated data from social networking sites such as Instagram, Facebook, and Flickr (e.g. Derungs & Purves, 2014; Hahmann, Purves, & Burghardt, 2014; Hollenstein & Purves, 2010).

Quantitative methods that use user-provided photographs may also benefit from qualitative assessments. To analyze these visual data and identify patterns, techniques such as machine learning could be used to get a bigger picture of the problem set (e.g. Brualla, 2016). For example, "Google Arts & Culture" utilized art data from museums around the world and visualized them using machine learning so that some qualitative relationships could be explored further. The pile sort method used in this study may also serve as a framework in machine

learning to study the environment so that the complex qualitative data existed in photographs can be used to guide the decision making process in planning and design professions.

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