Spatial Intelligibility: Creating a Sense of Belonging

A report submitted to the Faculty of Graduates Studies and Research
in Partial Fulfillment of the Requirement of the Degree of Master of Architecture with
Concentration in Urban Design and Housing

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September 2012

Table of Contents

Abstract

The exponential increase in urbanization, global migration, and the resultant movement of people around the world can reinforce feelings of detachment from our surroundings. We tend to lose our sense of connection to the environment we inhabit. For this reason, we should have an opportunity to more easily identify with new environments and be equipped with the knowledge of how to engage with and feel involved in these initially unfamiliar settings. To aid in overcoming these potentially negative feelings of dislocation and displacement, this study explores the question of how Psychogeographical strategies can influence spatial intelligibility. To explore this question we consider how such strategies help with familiarizing one self with the urban space of large North American cities – in this case Montreal, Canada. Original primary research was conducted to create written representations of collective mental maps detailing how various groups of students (e.g. Montreal residents vs. newcomers to the city, architecture students vs. students from other departments) perceive and respond to particular areas in the city of Montreal. Through the use of mental maps we can analyze both the subjective and objective perspectives of people on the urban landscapes, which surround them daily. This study will develop these maps as tools of recording people's reactions to their surroundings. The resulting picture from these mental maps will indicate the physical configuration and functional qualities of the space, whereas responses of photographs analysis illustrate the experiential qualities of the same space. This disconnect between humans and their environment creates constantly challenges urban planners, architects, designers and other similar professionals. With the results of the maps created by this study, we will be able to bridge this gap and help to create locales that are not only unique, but that also possess a self-evident and enhanced sense and style of intelligibility.

List of Figures

Introduction

The exponential increase in urbanization, global migration, and the resultant movement of people around the world can reinforce feelings of detachment to our surroundings. We tend to lose our sense of connection to the environment we inhabit. For this reason, we should have an opportunity to easily identify with new environments and be equipped with the knowledge of how to engage with and feel involved in these initially unfamiliar settings. To aid in overcoming these potentially negative feelings of dislocation and displacement, this study explores the question of how Psychogeographical [1] strategies can influence spatial intelligibility. To explore this question we consider how such strategies help with familiarizing one self with the urban space of large North American cities – in this case Montreal, Canada.

Based on research on architectural phenomenology of imagibility by K. Lynch and social legibility by T. Ramadier and G. Moser, the term 'intelligibility' is introduced and concentrates on the cultural familiarity and personal experience of people in their surrounding environments. Original primary research was conducted to create mental maps of how various groups of students (e.g. Montreal residents vs. newcomers to the city and architecture students vs. students from other departments) perceive and respond to particular areas in the city of Montreal.

Through the use of mental and bio maps we can analyze both the subjective and objective perspectives of people on the urban landscapes, which surround them daily. Furthermore, progressing from old Psychogeographical mental maps, this study will develop these maps as tools of recording people's reactions to their surroundings. The resulting picture from the mental maps will indicate the physical configuration and functional qualities of the space, whereas the emotion maps will illustrate the experiential qualities of the same space. This disconnect between humans and their environment creates constantly challenges urban planners, architects, designers and

[1] Psychogeography – is a complex concept, that in one the side is a study of the effects of physical environment on people's feelings and behaviour (McMillan Dictionary) and on the other is the practice of exp;oaring urban environment relying on curiosity and paused sense of time and place (Urban dictionary).

other similar professionals. With the results of the maps created by this study, we will be able to bridge this gap and help to create locales that are not only unique, but that also possess a self- evident and enhanced sense and style of intelligibility.

Human movement at this scale is a completely new phenomenon and we have yet to truly embrace it with our existing built form. In the coming months, I wish to express my work with a new term that grasps at the inherent legibility and imageability of urban space: *intelligibility*. With a more formal understanding of intelligible design frameworks, we can hope to ease the pressures on the individual undergoing massive societal reorientation.

Newcomers and visitors to a city are more likely than residents to be observant and sensitive to the changing particularities of their urban landscape. Locals, having resided in the area for a longer period of time, have usually become accustomed to their surroundings, and see right through the wonderful intricacies and details noticed by visitors. Examining the city of Montreal, visitors pay more attention to the city because they often want to develop a feeling of familiarity through establishing a spatial relationship. An urban landscape that possesses a self-evident style and appeals to foreigners through spatial intelligibility also benefits the local inhabitants through enhancing the sense of community and cohesiveness.

The aim of this research is to delineate the diversity of ways that users make sense of the city. Specifically, my primary research objectives are thus twofold:

- examine the literature across multiple domains in order to discover the prevailing theories concerning how people comprehend their particular urban environments;
- conduct a primary study with human participants. The subject pool was two groups of students from McGill University and their task was to complete a survey. The survey elucidated how subject's define the physical configuration according to them, and how the city influences an individual's attentiveness. The differentiating factor between subjects and two main points of study was to determine the effect of their specialty/field of study and level of existing familiarity with the space, i.e. Montreal.

In order to accomplish the stated aims of this study, the narrative is organized in the following order: first, Chapter one is set aside to determine the statement of the issue, establishing that difficulties can arise for people who are in the process of developing a sense of familiarity and attachment to a new place. The growing awareness of this problem stems from the increased level of mobility within and across societies; the second chapter, titled "State of the Debate and Conceptual Framework", describes the empirical background of Environmental Behaviour Studies, Phenomenological and Psychogeographical contexts and gathers knowledge on related essential terms, such as Legibility, Intelligibility, Familiarity and differences of perception; chapter three covers the primary methods used in this study, which is a survey and mental map drawings from many subjects; the fourth chapter presents findings of the received information from a questionnaire, then interprets and patterns it; and finally, the fifth Chapter discusses the results and provides the conclusions.

State of the Debate and Conceptual Framework

Nowadays people have the opportunity to move easily not only within one state, but also to other countries, unions, continents and worldwide. Diverse resources such as transportation, information, or finances encourage a person to travel. The world became more available; the physical boundary between countries no longer constitutes a border, instead borders appear as paperwork and electronics. Authorized documents, visas, passports, etc. –these papers are intended to make the word more accessible. The new possibilities of people migrating increases the likelihood of facing new cultural issues. Two of these issues are detachment and assimilation. Through an architectural prism, the sense of detachment and assimilation can be attributed to a relationship between the person and their living environment. In this case we are talking about urban landscapes. In this review I identify key ideological elements that form person-surrounding systems and outline the interrelation between environmental perception and Psychogeography.

In order to anticipate concerns about definitions, I would like to take the opportunity to describe what I mean when I talk about a "sense of place." Shamai argues that "sense of place" means "feelings, attitudes, and behavior towards a place which varies from person to person, and from one scale to another (e.g. from home to country)" (1991, p. 354), while Stedman and Jorgensen suggest that it is "multidimensional construct comprising: believes about the relationship between self and place; feelings towards the place; and the behavioral exclusivity of the place in relation to alternatives" (2001, p. 233). My understanding lies somewhere in between. I cannot avoid projecting my own heritage and experience on my understanding of what creates place. So as I see it, "sense of place" is a fusion of emotions, memories and actions influenced by human seclusion.

Before proceeding with the narrative I would like to reveal the foundation of my literature review gathered from a variety of sources. It includes primary sources that are empirical as they report on a study done by individuals and their perception of space. There are also primary in the sense of articulating a theoretical or conceptual approach and there are also secondary sources, which are synthetic.

Environmental Behaviour

A lot of social research in architecture and urban design is about interactions between individuals and their milieu. This is an interest of Environment behaviour studies, a field that aroused in 60s and it involved architects, geographers, urban planners, psychologists, sociologists, who were interested in cross-pollinating the work that they have been doing in their own disciplinary science. For instance, people who specialize in psychology and cognition are interested in understanding how people think, perceive and evaluate situation in context rather than in a laboratory. Whereas architects and urban designers are interested how people comprehend space so that they can improve design qualities of the space.

In the field of environmental behaviour studies, there are two important international associations: EDRA and IAPS. These organizations focus on the area of Environmental Design Research. The Environmental Design Research Associaltion known as EDRA is an international, interdisciplinary organization that was founded by design professionals, social scientists, students, educators, and facility managers, and has existed for more than 40 years. The purpose of EDRA is displayed on their website as: "the advancement and dissemination of environmental design reserch, thereby improving understanding of the interrelationships between people, their built and natural surroundings, and helping to create environments responsive to human needs" (EDRA). The International Association of People-Environment Studies (IAPS) is a multidisciplinary and active association whose objectives are: "to facilitate comunication among those concerned with the relationships between people and their physical environment, to stimulate research and innovation for improving human well-being and physical environment, and to promote the integration of research, education, policy and practice" (IAPS). Both orgnizations arrange annual and biannual conferences which are held in different cities all over the world, and creates an opportunity for professionals to share knowledge and experience, deleniate new directions for the field of environmental-behaviour design and research.

The importance of the environmental situation was highlighted in a different period of time. At the beginning of this century Thierry Ramadier and Gabriel Moser realized that if ignoring social or cultural characteristics of a person/surrounding

relationship, there would be a risk of building a meaningless environment for many social groups of town dwellers that might also affect their cognitive representation of their setting, and consequently their behaviour. They studied the work of Abu-Ghazzeh, who noticed that ambiance with prevalence of uniformed environmental characteristics and the consequent shortage of landmarks have both effect on the appearance of surroundings and on wayfinding behaviours, because people have difficulties in comprehension spatial information. Hence, they concluded: "behavioural legibility depends on environmental information rather than simple physical stimuli." But without rushing to conclusions, the authors took into consideration that images generated by these cognitive processes the symbolic information are also likely to depend on the environment. And the question is: "what happens when people evolve in a new urban environment where codes and physical signs do not have particular meanings because they are socially elaborated and shared by another social group?" (p.308).

One way to gather information about people's attitudes in their surroundings is through direct observation. "Observing behavior in physical settings generates data about people's activities and the relationships needed to sustain them; about regularities of behavior; about expected uses, new uses, and misuses of a place; and about behavioral opportunities and constraints that environments provide" (Zeisel, p. 191). From Zeisel's overview on observation of environmental behavior we can conclude that complex environmental components with varied properties and settings have an impact on the relationship of people to place, which can have an impact on social behavior. Architects, urban planners and designers have an opportunity to program the script that will set the tone for perceptual and behavioral patterns (p. 226).

Environmental Perception and Urban Experience

Perception of urban experience is another factor to be considered. Two Israel sociologists Gustavo Mesch and Orit Manor investigate the factors of attachment to place (1998). To support their argument that positive perception of neighborhoods influences attachment to a place, they examine a few areas in Haifa, Israel. Through conducted interviews, they ascertains that a first, a sense of community and second, a level of satisfaction with the environment are the key factors that can directly contribute to

developing a sense of attachment to a place. According to the authors, future studies should involve expanding upon these two key factors by studying their variance. Positive emotions for a place develop a bond between habitat and inhabitant. This idea is discussed in the research of Altman and Low (1992), where it became a central concept of in their discussion of place attachment. The psychological comfort of the individual is affected by level of access to a place. By "access" I believe the authors refer to overall access needs at the intersection of transportation, architectural, and societal. Thus the perception of a certain environment depends on its surrounding atmosphere and environmental quality. Furthermore, for the place attachment process, new social relationships can play a more significant role than the place itself. Thus, I began to think about how an individual's behaviour and how their environment can influence the ability to communicate.

Self-reference and historic preservation

Self-identification as "outsider" or "insider" is a loose ideal. At what point can someone claim that they are an "insider"? Being fluent in their new language? 10 years? 20? Or is it understanding, fluently, the forms of their physical surroundings, feeling like the place they have arrived in is home? When it comes to environmental perception research, it is sometimes clear that subjects are in search of a sense of place. Datel and Dingerman's (1984) paper reviewed many scholarly works that examined how historic preservation, for example, is significant in creating a sense of the place. "Sites associated with famous events and people and distinctive architecture are important to the senses of place of many people…" (1984, p. 138). Indeed, historical objects ground us in the culture in the very act of defining them as "historical".

Back to the topic of self-identification - in Datel and Dingerman's work, perceived inequality between "outsiders and insiders" is not ignored. Their interpretation of sources regarding the notions of a sense of place states that: "Insiders, who are intimately acquainted with a place, will have a very different sense of it than outsiders" (p. 138). James Corner in his "*Eidetic Operations and New Landscapes"* (1999, p. 155) went further; he interpreted Denis Cosgrove's (1984) description of distinction between "outsiders" and "insiders". Based on Corner's interpretation, my own understanding has

evolved into believing that the insider's prism is affected by routine occasions, tending to obscure the landscape particularities. An outsider – "the tourist, the spectator, the state, the administrative authority, the designer and planer – view[s] landscape as an object, a thing to behold, and nor only scenically bur instrumentally and ideologically." (p. 155). But how can historical objects take part in outsider reidentification?

Datel and Dingerman raise various questions in their research about the role historic preservation plays in creating a sense of place. Specifically, the way they link historic preservation to place making accomplishes initiation community with conservation issues as a way to increase awareness of social responsibilities. To examine the questions and expectations of their results, they come up with a mix of methods: "A combination of these admittedly diverse methods would provide the richest and the most reliable portrait of the sense of a place" (Datel and Dingerman, 1984, p. 139-140) especially noting that "perhaps cognitive mapping can offer valuable insights." To paraphrase, their methods were questionnaire survey and interviews requiring examinees to speculate about the surrounding environment. I find this mix of methods to be a valuable and refreshing way to arrive at their conclusions similarly appreciated preservation strategies might convert the whole process of conservation "into a general approach to humanistic place-making" (1984, p. 143).

Collin Morris also explores the issue of historic townscape conservation. Based on the semantic differential method, which is a standard psycholinguistic exercise that asks users for their numerical judgments on a spectrum between to opposite descriptors on a scale. The study gathered individuals' evaluations and appreciations of buildings from different time periods in English urban landscape planning, like Medieval and Renaissance. Morris concedes, "the destruction of old buildings should be prevented wherever possible, and that contemporary architecture should in future be based on traditional concepts of scale and design" (1981, p. 259). Keeping these ideas in mind, we can see that it is crucial to balance that which is contemporary with that which roots us in the past.

Finding roots in Phenomenology

This research touches not only on the exposed (outward) expression of the seen but also on a profound understanding of the process by which people experience their surroundings that refers to environmental psychology. These issues can be discussed through the philosophical school of phenomenology, which addresses concepts of immediate feelings, emotions, and experiences related to human life and culture, contributing to issues of identification and self-identification. *The Stanford Encyclopedia of Philosophy* gives the following interpretation of the term: "Phenomenology is the study of structures of consciousness as experienced from the first-person point of view. The central structure of an experience is its intentionality, its being directed toward something, as it is an experience of or about some object. An experience is directed toward an object by virtue of its content or meaning (which represents the object) together with appropriate enabling conditions" (Smith).

Edmund Husserl is known as the founder of the philosophical school of phenomenology. His work focuses on the smallest details of experience, which in his opinion provide a deeper sense of art, religion, law, history and all other aspects of culture and the universe. These elements are a vital part of an individual's background. An influential German philosopher, Brentano, believed that the most important activities carried out by a human soul are referring and intending. These activities let us experience something other than ourselves. In fact, it is only when referring to other things that we can be familiarized with ourselves. In Morton White's book, *The Age of the Analysis,* he explains "… when we reflect on our thinking, our observing, our understanding, we discover what Husserl called the 'act of experience', which is intentional in Brentano's sense and which therefore refers to 'phenomena' that are not evident to us in unreflective moments, that is in moments when we adopt what Husserl called the natural attitude" (p.103). In experiencing the street scape, individuals may focus not only on the different experiences or appearances of the surrounding environment but also on the differences of their experiences and the act of experiencing, or so-called "pure experience". It is important to let your senses absorb the space around you, feel the atmosphere, history and character of the landscape. These intuitive feelings and experience are primary interest of Psychogeographical movement.

Psychogeography as a Perceptual Approach to Urban Landscape

It is not always necessary to rely on others when evaluating a place's *sense of place*. Simply imagining yourself as a participator, or even an outsider, may suffice. An entire field of research has grown out of this idea. Introducing the term Psychogeography, I refer to Mikhaylenko's paper *The naked city: psychogeography in context of urban history 1950-1960* (2010). His description is straightforward, so I will cover it in depth.

Psychogeography is a method of experiencing social environment that appeared in Paris in the 1950s among members, who refer to themselves as Situationists, of Lettrist International. Guy Debord coined the term "psychogeography" in his work *Introduction to a Critique of Urban Geography* (1955, trans. 1995, p. 5) as "the study of the precise laws and specific effects of the geographical environment, consciously organized or not, on the emotions and behavior of individuals." In other words, this playful method brings the place-sensing into the head of the researcher.

As a self-conscious method of cognition Situationists developed "dérive" as a tool of exploring new urban spaces based on individual emotional experiences. In 1956 Debord published an article *Theory of the Dérive* (trans. 1995), where the principles were outlined. "In a dérive one or more persons during a certain period drop their usual motives for movement and action, their relations, their work and leisure activities, and let themselves be drawn by the attractions of the terrain and the encounters they find there… But the dérive includes both this letting go and its necessary contradiction: the domination of psychogeographical variations by the knowledge and calculation of their possibilities" (p. 50-51). Dropping the usual norms of behaviour encourage a person to become more aware of their surroundings. Time limits and number of participators are variables, however Debord assumed "dériving" in groups of two of three people was the most productive way of achieving objective results.

Ten years after Psychogeography appeared in France, American urban planner Kevin Lynch generated the foundations of the field at Clark University, which subsequently was named the in the same way. The field of "Clark Psychogeography" relies on the writings of Dennis Wood (2010). To paraphrase, Lynch introduced Psychogeography through the book *Image of the City* (1960), where he gives the notion

of what encouraged him to investigate a new field: curiosity in the relationship of psychology and urban environment; desire to understand the routine perception of the city; and his interest of city evaluation criteria. Lynch had inventive strategies of exploring urban landscape, despite exercising a "dérive", through walking around the city and recording his results each time.

Both Psychogeographies required special language for recording the results. Map-drawing emerged as one important tool and will be covered in a later section of this review. Wood made an attempt in order to understand the development of mental maps; he went to Europe with group of students to produce mental maps of some areas (2010, p. 192-193).

Wood states that the main distinction of the two Psychogeographies is their different approaches: where Situationists were inspired by the Surrealism and were far removed from the urban planning profession, and Lynch was motivated by city planning issues. In his research, two central themes occupy "the controlling characteristics of people's images" (p. 194): *legibility* and *imageability.* Through these particular terms, legibility and imagibility imply a governmental strategy that can be developed for better city sense. Enhanced comprehension of the surrounding environment provides the ability to engage with place. "Understanding the public's image of the city would enable planners to make the city both more imageable and legible, and this would make the city easier to negotiate and thus less intimidating and more friendly" (p. 194).

Defining Legibility

Legibility is a broad concept in the urban place-setting sense. In Lynch's book "Image of the City" he defines legibility as an "apparent clarity of the streetscape" and claims that it is key in the city setting (p. 2). Lynch formulates concept of *place legibility*, which is the ease with which people recognize and shape the layout of a place. A bipartite process between observer and the environment creates an outcome - environmental image. And as a consequence: "A good environmental image gives its possessor an important sense of emotional security" (p. 4). According to Sundilson, Lynch was able to isolate separate features of a city, and understand what in particularly make the city vibrant and attractive to people by presenting idea of place

legibility. “To understand the layout of a city, people first and foremost create a mental map. Mental maps of a city are mental representations of what the city contains, and its layout according to the individual”. Generated through the analysis of three American cities: Boston, Los Angeles, New Jersey, mental representations contain five types of elements, which have reference to the physical form are: *paths, edges, districts, nodes, and landmarks*.

Another important way of defining legibility is in the social dimension. “Social legibility is a complement to the spatial and behavioral legibility already developed in the literature” (Ramadier and Moser, 1998, p. 307). Legibility is essentially considered to be a physical and spatial quality of the surroundings. “Social legibility is based on continuum of cultural distance between individual and surroundings.”

Explaining the need for social legibility is a tricky concept. T. Ramadier and G. Moser in their introduction, review a series of works and through this demonstrate that one can make the hypothesis that diversity in the person/surrounding system reflects inequality of spatial cognition; hence, “controlling for experience of the city (familiarity) and social class, we can use the cultural origin of individuals as an indicator of the cultural distance of the person/surrounding system to operationalize social legibility” (Ramadier and Moser, 1998, p. 309). This approach has merit because it provides an opportunity to study the effect of the social notions of spatial awareness within the person/surrounding system.

I feel it is important to cover Ramadier’s and Moser’s method in depth because it directly covers cross-cultural comparisons. Interviews were conducted with city residents with different cultural origins (European vs. African students) “in order to analyze the influence of propositional representation on spatial representation and urban behavior”. The interviews were conducted in Paris in three experimental steps: 1) hand-sketching images of spatial representation 2) memorizing fifteen key features of the sketch and 3) a questionnaire survey. This gave them the opportunity to evaluate the evolution of spatial cognition between the two groups. I hope to use it as an example for my research. The implication of “social legibility seems to determine the qualitative bond between the adaptive and the exploratory stage” (Ramadier and Moser, 1998, p. 307).

Moser and Ramadier were interested in investigating the relationship between town dwellers and their surroundings with a focus on the propositional representation of the city. They advocate a communal acceptance of legibility, which controls the impact of the surrounding ambiances on behaviours. The authors claim, "The social legibility corresponds to the facility with which individuals use the socio-physical characteristics of their surroundings to produce or to internalize environmental meanings. From the transactional perspective, social legibility depends on cultural distance between the entities of the person-surrounding system." Hence, they considered cross- cultural comparison as a possible way to investigate social legibility. I intend to use their approach, which investigates both social legibility and its effect on spatial cognition and urban behaviour, in my research. Even though, the environmental situation differs, the authors are confident that: "… cultural distance between the entities of the person-surrounding system is closer for Anglo-Americans than for Afro-Americans" (p.309). My research will test their hypothesis that this variation involves significant alteration of propositional representations of the city under the belief that codes or physical signs cannot be equally comprehensible and significant. In monitoring how experiences of familiarity with the city relate to social class, Moser and Ramadier use the cultural background of a person as an indicator of the cultural distance of the person-surrounding system to operationalize social legibility. I will use the cultural background of a person as an indicator of the difference in city familiarizing processes.

Perception and Experience

Speaking of social and cultural characteristics of a person/milieu connection, if we focus on the historical aspects, we will be lead to research that constitutes an objective justification for the preservation of old buildings. Collin Morris in his work, "Townscape Images: a Study in Meaning" explores psychological importance of old buildings, and their affect on users as potentially significant source of contentment. He is concerned with their future, conservationists' restoration approach that might be retrograde if it is only about choosing the right materials instead of focusing more on saving the "aura of the past which they instinctively derive from them" (buildings). He wants to test his intuitive hypothesis the that visual plainness of modern architecture

"constitutes a negative component in townscape, whereas visually richer buildings from different periods in the past possess qualities which tend to provide aesthetic pleasure and inspire feelings of general well-being" (p.261).

In order to support Morris's aspiration, I would like to introduce another important person, whose work notably contributed to this research. Finnish architect, designer, professor and theorist of architecture - Juhani Pallasmaa, questions "the concept of architecture is based on the idea of the perfectly articulated architectural objects" (Pallasmaa, Identity, Intimacy and Domicile). He convincingly and passionately opposes the manipulation of images of rigid and intrusive formalization, which designed for a "flashy effect". One of his most cited phrase from "The Geometry of Feeling" questions the increasingly popular style of modern architecture: "Why do so very few modern buildings appeal to our feelings, the buildings of our own time may arouse our curiosity with their daring or inventiveness, but they hardly give us any sense of the meaning of our world or our own existence" (Pallasmaa, "The Geometry of Feeling"). Pallasmaa is concerned with the revival in/through architecture of immediate feelings, emotions, experiences that refers to the human experience, culture, aiding identity and self-identity. He thinks odd the separation of architect's personality, when his/her professional values are not in harmony with individual priorities as a space user.

He criticizes new architecture for over-simplifying and bemoans the loss of the different layers of experience except the singlular layer of vision. Juhani Pallasmaa claims: "*Instead of an existentially grounded plastic and spatial experience, architecture has adopted the psychological strategy of advertising and instant persuasion; buildings have turned into image products detached from existential depth and sincerity*" (p.30). Pallasmaa further explains that our roles have changed from being a participants of our surroundings to a spectators of it, gazing at a visual image as on a billboard. According to Pallasmaa, domination of vision, among other senses, initiated with thinking and is a tribute to the Renaissance tradition of perspective images and perception.

But any truly human perception is multisensory, people are in contact with their outer world through the skin, ears, nose, tongue, spine and muscles. Pallasmaa reservers a special role in architecture for the particular sensation of touch, and explores the deep real and metaphorical connections of human skin.. I think these issues that Pallasmaa

impute to new architecture can be applied to contemporary urban landscape as well, since it consists of a combination of architectural objects. That is why we feel alienated in many contemporary urban environments and as a consequence we feel detached from our surroundings.

Imageability

In general, the term imageability is by the relationship of the physical environment of the city to the range of qualities that influences one's perception. Lynch argues that environmental image can be analyzed into three components: identity, structure and meaning. Meaning can vary from individual to individual, due to his/her vision, background, sensitivity, etc. and therefore cannot be easily influenced by physical manipulation, in comparison with other two components. Since this study is focused on perception of physical environment, I will follow Lynch's approach seeking for physical qualities, which relate to the attributes of identity and structure in the mental image. Sundilson reviews that "Lynch made several conclusions from people's responses in the experiment", which he conducted while analyzing American cities for the book *Image of the City. "*Lynch took the areas that people found vivid and assigned these areas a high *imageability* ranking" (2011). Lynch defines imageability as "…visually vivid and well structured; its component parts should be easily recognized and easily interrelated. This objective should encourage the use of intensive centers, variety, sharp grain (clear outline between parts), and a differentiated but well-patterned flow system" (1990, p. 61). Lynch's purpose for formation a new criteria – imageability of the city, was attempt to consider the need for identity and structure in urban landscape and demonstrate the special relevance of this quality to current conditions of urban environment. Hence, according to Lynch, very imageable (which is also "apparent, legible, or visible") city has to be remarkable, distinct, with formed layout, compel one's attention and encourage participation, as well as keep ease of apprehension over the time.

Mental maps

"A mental map is a special type of image which is even less directly related to sensory experience. A percept is not only the registering of current environmental

stimuli but also an imaginative effort produced under the needs of the moment" (Tuan). Urban designers have been using mental maps for a long time (Luka). They seek to get a sense of the space that the user occupies. In terms of legible urban design, mental maps could start to be a way to probe new users for understanding the ways that their new space is *illegible* to them. This has huge implications in architecture, urban design, and sociology. This study will use mental maps as a primary source of individual's perception of surrounding environment in order to reveal subjective qualities, such as personal preferences, level of attention and how they determine the space around them.

Kevin Lynch operates with crucial five elements (*paths, edges, districts, nodes, and landmarks*) of urban landscape that he identified in the study of how users perceive and organize spatial information of the city obtained through mental maps. Here is brief description of these elements: paths may be streets, walkways, transit lines, canals and other channels that people use for movement. Edges are linear elements that break continuity or boundaries between areas, such as shores, walls, etc. Districts are large sections of the city that possess identity or character. Nodes are strategic points that can be entered by an observer. In a city nodes can be starting/ending benchmarks for travelling, or important junction, or concentration of some use or physical character, etc. Landmarks are external points of reference that are usually identified as physical objects of different scale from building or river to street signs and urban detail. Generally those elements are overlapped and penetrate one into another, none of them can be found strictly isolated from each other. Despite the selective power of the human eye, there are visual qualities in some landscapes, which make them unavoidable subjects of attention. It is also interesting what kind of information can be obtained from mental representation of the space from a group of people.

Difference in Perception

Professor from Stanford University Barbara Tversky is interested in understanding the how individuals generate mental representation of a space in relation to its function and how they operate within the urban environment. In the article *Structures of Mental Spaces: How People Think About Space* she created spatial relation classification: *the space of the body* – space for movement of body parts depending on the

activity, *the space around the body* – space for objects that are visible and reachable, *the space of navigation* – larger scale space of passing by or exploring while moving from one place to another, and *the space of graphics* – space that represent space in shape of map, diagram, graphs, etc. way to enhance cognition. This classification is brief, however it gives opportunity to reflect on other functionally distinctive spaces, activities it causes and entities it engages.

Significant amount of research have been done in Environment Behaviour Study, and how differently people perceive situation depending on their cultural background, confession, or professional training. The last is important in particular. This study is interested in how different professional groups comprehend urban environment from epistemological and cognitive perspectives.

Recent study published in the Journal of Environmental Psychology have been done by a professor from Turkey (Aysu Akalin). Primary aim of the study was to investigate relationship between complexity and impressiveness of appearance of private suburban cooperative housing developments in Ankara, Turkey. Investigators used survey method to test their hypothesis and questioned 100 undergraduate students from the Architecture and Engineering Departments. As a side result, they noticed that architecture students' responses were more critical compared with engineering students, because vision and skills developed through professional training allowed them critically question proposed design solution of residential developments.

Architects and professionals from related fields might have special vision, due to education and experience, rather than a person who is not architect. However that doesn't mean that non-designer or non-architects cannot perceive the same things at the same level. What kind of distinction can be revealed in this sense? Is there possibility different professional groups can perceive things equally when we speak about urban landscape?

Physical Characteristics of Successful Streetscape

When a person travels through this area for the first time, how can he/she begin to navigate the urban fabric? The primary means of navigation used will depend largely on the situation the person finds himself in. If he is lost, he may purposely look for some

informative element to orient himself. During a relaxing walk, on the other hand, an individual may enjoy the more beautiful, colorful elements of the scenery. Observing and being observed are necessary activities for experiencing the street scene. However, not only aesthetically pleasing elements can be memorable and helpful for orientation. Visually unappealing details can also be remembered for a long time, especially when seen repeatedly everyday. What we see on the street can vary enormously from what we recreate when observing the same element. Only with countless numbers of subjective impressions of the object's appearance can the objectively correct data can be achieved. Allan Jacobs collected such information in a written manifesto, composed with more than 200 illustrations, all prepared by the author, along with analysis and statistics.

In his book, *The Great Streets*, Jacobs questions which are the world's best streets and what about their physical and designable characteristics make them successful. Jacobs, while studying a wide array of street types and urban spaces around the world, interviewed street users and design professionals to find answers to these questions. Jacobs is particularly interested in the human and social details that bring life to streets and communities. He created a list of practical design qualities and strategies that have contributed to the making of great streets. In Jacobs' opinion certain physical qualities are required for a great street, which correspond to social and economic criteria. His work's objective is to provide knowledge of the best streets for designers and urban decision makers. In this research I would like to rely on these qualities as a base and expose the extent to which they appeared on the chosen streetscapes of Montreal as well as how many of them the respondents recognized and what their reactions were. Even though I am not claiming those four chosen Montreal streetscape as an example of Great Streets, however it is interesting to track how close are they in pursuit of a honorable title.

The list of qualities is simple and short: Trees, Beginnings and Endings, Architectural Diversity, Special Design Features, Places, Accessibility, Density, Diversity, Length, Slope, Parking, Contrast, Time.

- Jacobs refers to trees as the most effective physical improvements that can be made to transform a street. The reasons for this are that they provide oxygen, create

shade for comfort, regulate levels of natural and artificial light, and separate the pedestrian and car paths.

- One of the Jacobs's observations is that a great street should have a notable starting and stopping point. Legibility is an important quality, because it gives a sense of place with demarcated boundaries. Memorable entrances can always be open and inviting, and they can significantly contribute in transforming good streets into great streets. Image 2 shows an archway, which serves as an example of a starting point as defined by Jacobs.. We could debate how well it designed, however that is not the goal of the discussion. The archway on St. Laurent Boulevard welcomes both pedestrians and drivers and marks the beginning of the "Little Italy" area. However, while many of the participants noticed the arch, few recognized the area, calling attention to the lack of local identity actually established by this marker.

- On the subject of diversity, Jacobs explains the importance of a single vertical line that separates one building from another and gives a sense of scale, which "adds interest" and as a consequence a greater feeling of diversity. The author made an assumption that an increased number of buildings on a street may or may not result in greater diversity of uses and activities, but different buildings can. Buildings, programmed for a mixture of uses and activities, attract diverse groups of people from a neighborhood or all over the city, aiding in the community building process. Jacobs' particular interest is the way in which physical diversity influences the social. In other words, the short-term and long-term outcomes from contributors, participants, owner activity, all of which add interest in visual appearance and sense of community of the street.

- In Jacobs' list of special design features are lights, paving, benches, fountains, signs, canopies, etc. The streetlights' sizes, forms, structure, and materials can dramatically vary in order to improve the quality of the street and support its livelihood. Outstanding design aims to enrich the visual experience. However, the pragmatic and practical side of design should also be taken into account, especially when choosing paving for the street, which requires the careful consideration of performance characteristics, cost-effectiveness and durability. The issue of location and number of benches on a street is a public dilemma. Benches are less desirable for shopkeepers on

commercial streets and less expected by pedestrians on residential streets.. According to Jacobs, sitting places help to foster community. All these design features bring liveliness to the street and excitement to passersby, but Jacobs would not rely on them alone, because: “Details are the special seasonings of a great street” (p.301).

- Places like plazas, widening, small parks or open spaces, especially along stretched and narrow streets, are important, because they offer different scenarios. Breaks in the urban fabric offer places to stop, to eat, to rest, to talk, to linger, and to meet, which can provide a sense of community as it said by Jacobs.

- One of the main qualities of the contemporary urban landscape is accessibility, which has many different meanings. In this case, it is meant to imply ease of access from one place to another with no danger arising from the interaction of cars and pedestrians en route, as well as a variety of options for transportation (whether by foot, public mode or private automobile) with diverse speeds. Delving further into the meaning of ease of access to the street, the scale of the city should not matter - whether it is city-scale or block-scale – all portions of the space should be accessible by walking to it or by public transit. Accessibility is also a matter of public access at places along the street, by intersecting or crossing streets or public ways. And last but not least, when great streets are available and usable for people of all abilities and disabilities, they will give the opportunity for people to engage and participate in many more facets of the social life of that city.

- Residential density and activity (or land-use) are designable and buildable elements according to Jacobs. Designers can influence and contribute to urban policy to create more diverse environments that will directly and purposely attract people. Jacobs concludes: “it is difficult for streets to help make community if there are not people to get to them easily: nearby density”. It is exactly matter of numbers and ease of access, since people are those for whom streets were created, who can activate them and bring them to life.

- Diverse uses enliven the area and the street; they bring different people for different purposes. The presence of different kinds of buildings designed for mixed uses add interest and activity. Jacobs assumes that all the variety, activity, liveliness of physical places are likely to effect its diversity of uses.

- Jacobs questions the optimal length of the Great Street. Excess length of the street could lead to difficulties in sustaining visual interest, diversity and eye-catching and provocative images. In order to be special along the whole way, gentle turns or curves, change in the street section, emergence of landscape elements or unusual architecture can aid to sustain interest. There is certainly room for error or variance. Montreal provides an ideal counter-example, however, because its long and somewhat uniform streets can be quite beautiful, safe, and lively.

- Jacobs confidently states that topography and slope help by increasing views and adding drama. This is one of San Francisco's greatest assets. Great streets that have noticeable changes in elevation, although not very steep as to become inaccessible or uncomfortable for certain population groups, offer wonderful views and possibility to see where the street goes.

- Automobile parking is an issue of any street or neighborhood. Jacobs understands that it is difficult to satisfy car owners' desires to have parking lots right in front of a destination point and preserve street viability without cluttering parking and garages. Though present on more streets than not, auto parking in great amounts, to any contemporary standard, is not a characteristic of great streets.

- Contrast is what makes one street differ from the next one. And it is not usually the case of shape, size, length, pattern or urban context that may set apart one street from other, make it more noticeable or special. A crucial factor in determining a great street according to Jacobs is the design of the street itself. That is what makes the difference.

- If one criterion for being outstanding is that the street stand the test of time, then there will logically be many more older examples for study that newer. Some people say that time is needed to make a great street, supposedly to gain diversity and sense of history. However Jacobs doesn't see it as the only way. Depending on conditions for different streets it takes less time to be established. Relying on a basic physical nature, changes are part of the life cycle; it is almost impossible to preserve a street from even a slight altering, improvement, restoration. No one can guarantee that the changes will make or keep a street great or give it a former status. Time can offer a sense of history

and age to the street, but greatness can be achieved using the above-mentioned strategies.

Conclusion:

The difficulties in relocating can be extremely problematic – I have had the experience myself. Critically examining ways to assess these difficulties will be paramount to formulating new urban design concepts that will carry us into a new multi-cultural age. I hope that this review has laid the groundwork for understanding the important work my colleagues have done in addressing relocation. In this study I'm using Jacobs material to operationalize that broad concepts in literature, which establishes theoretical base. Jacobs brave attempt to provide actual examples of an "ideal" street shouldn't' be perceived as a righteousness. Is it possible to create the ideal street? Is it the same for everyone? And if in the city every street is great, does it become great city?

Methods

For this research a survey method was selected as the most suitable approach for gathering descriptive information for further analyses. The structured survey contains a sizeable list of standardized questions posed to a large number of subjects in a classroom setting. Participants responded on a voluntary basis without reimbursement. The questionnaire consists of four parts: 1) general questions about the users' personal characteristics, professional training, residential history 2) questions requiring the participant's observation and opinions on four different images showing the general appearance of various streetscapes in Montreal 3) questions with an exploratory and playful component- encouraging participants to draw a map of a usual route from home to school 4) questions to determine each participant's profile. The complete version of the structured survey can be found in the appendix. The McGill Research Ethics Board - whose main goal is to protect the rights and safety of the participants in experimental research - reviewed and approved the survey. The Certificate of Ethical Acceptability of Research Involving Humans is also in the appendix.

Speaking on potential benefits, harms and risks, there was no immediate and direct material profit to the respondent; however it will benefit them at least by learning (or being aware) about the issues I highlighted in the introduction and probably make participants rethink the surrounding environment, furthering legibility research. All respondents were asked to read a waiver form outlining the terms of their participation and how the information provided will be used, and thence to agree that by signing the waiver form and then proceeding to the questionnaire itself. There is a minor possibility that kinds of task I ask people in the questionnaire might challenge participants to think about the world tend them to investigate (explore) their neighborhood more closely and try to see it differently. It might also bring nostalgic feelings of familiar images; it is unlikely that they will experience an epiphany. At the same time the risks are a minimum, the questionnaire is likely to encourage participants to be more curious and observant vis-à-vis their surrounding. The risk of a survey reigniting a debate remains small. The questions do not deal with particularly inappropriate themes. Instead it is

very flexible and carefully developed. The steps that will be taken to reduce or eliminate potential risks mentioned above include: the careful scrutiny of survey questions to specifically ascertain if any questions might lead the respondent to such claims, and carefully chosen adequate photos of the Montreal streetscape to reflect the diversity of conditions. Neither names nor contact information will be collected through this research. The information provided by respondents will be kept anonymous and the source cannot be known. Confidentiality will be guaranteed for all participants.

McGill University is one of the best in Canada institutions of higher education and well known all over the world for as research-intense university with interdisciplinary focus. It was founded almost 200 years ago, and grown into a large university with two campuses, one of which is located in a downtown of Montreal, holding a reputation for excellence that reaches around the globe. Every year lots of students come to McGill from some 150 countries representing diverse geographical and linguistic backgrounds (McGill University). That makes McGill a perfect laboratory to study student/surrounding relationships through conducting the survey. McGill students of different ages and backgrounds from the School of Architecture and the School of Urban Planning, as well as other faculties, including international students, were invited to participate in this questionnaire (fig.1).

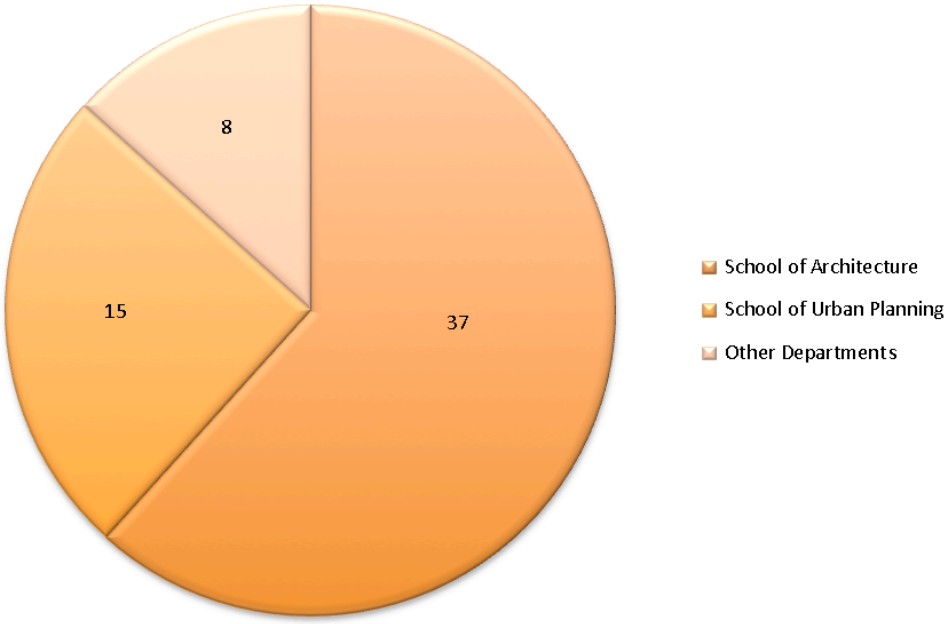

Fig.1. Chart ratio of students from different faculties

The target number of survey respondents is 60. Participants were be recruited through flyers. The survey lasted for up to twenty minutes at a time and at a public place that was convenient for the participant. There was no direct compensation for participation.

From the total sample number of 40 participants, 67% represent North and South America (Canada, USA, Columbia), other 11 people 18% came from Central and East Asian region (China, South Korea, Iran, Lebanon, India, Bangladesh) and the remaining nine students (15%) are from European countries (France, Belgium, Latvia, Romania) (fig.2). All subjects were proficient in English and completed the survey in English.

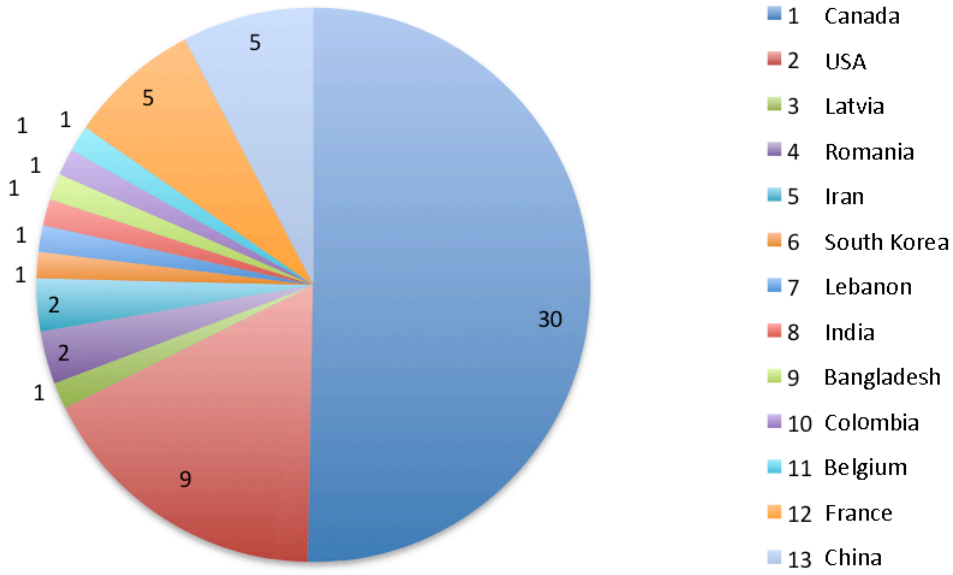

Fig.2. Chart ratio of students from different countries

About two-third (63%) of the respondents (38 students) were female and 37% (22 students) male (fig.3).

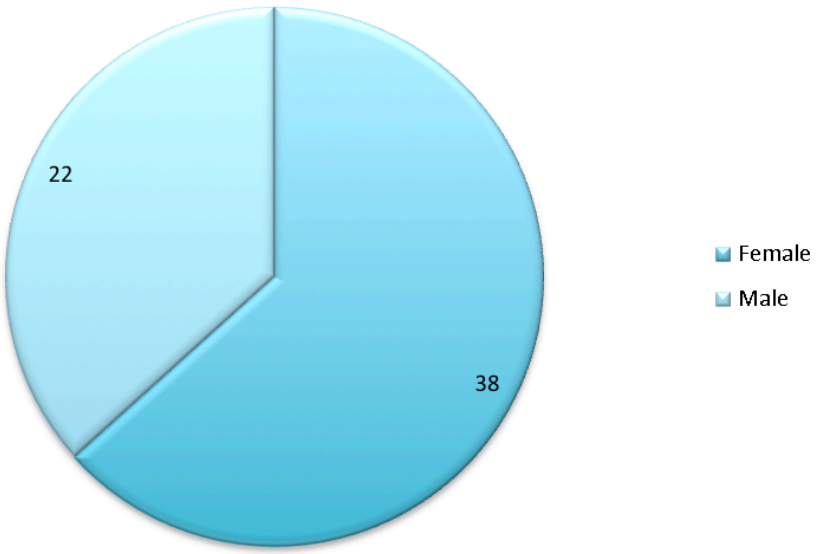

Fig.3. Gender chart ratio of respondents

The age bar chart shows that majority of the respondents are between 21-25 years old, which is 56 percent of all interviewed. 21%, which is 12 people, are among 26-30 years old. And the third large group of participants, eight people are almost turned or already 20 years old. The rest of the respondents four and two students, which are seven and three percent respectively, are in their thirties' and forties' (fig.4).

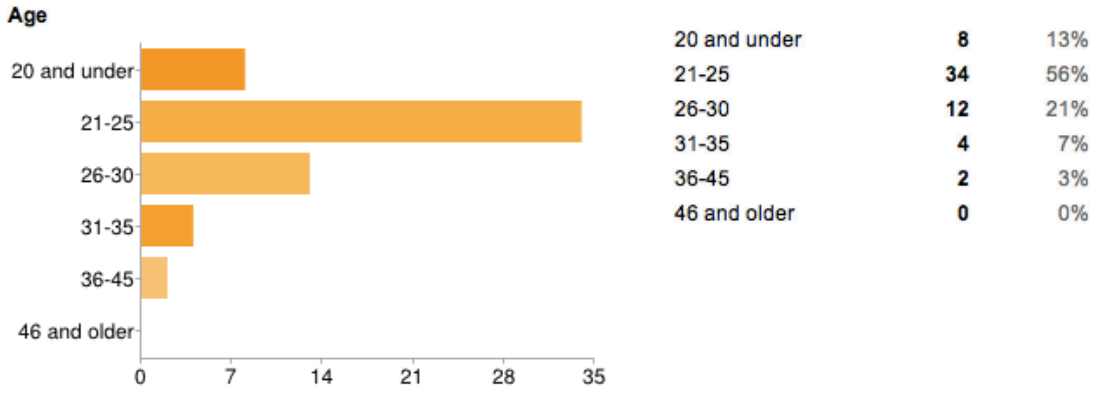

Fig.4. Age bar of respondents

As a method in my research, I decided to concentrate on examining how different students from McGill University interpreted the townscape images in Montreal. Its multinational population characterizes Montreal. Montrealers of different ethnicities have formed diverse communities, the evidence of which is the presence of neighborhoods such as “Little Italy”, “Greektown”, South-East Asian area, Outremont etc. It is difficult to track the exact process of assimilation, when new members of the society become indistinguishable from those who were born and raised in that contex.

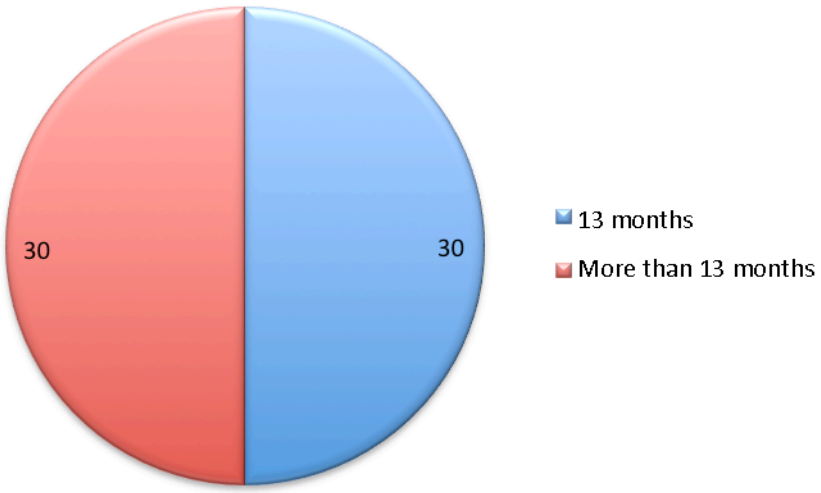

Fig.5. Respondents’ residence time period pie chart

That is why I set a thirteen-month residence period to distinguish locals from newcomers. Those students who have lived in Montreal for more than the determined period will be considered locals, while those who have not will be deemed newcomers. The last diagram shows that one half of the respondents, 30 students have lived in Montreal for less than a 13 months period. The other half that consists of international and local students has passed the 13 months period (fig.5).

Findings

What makes an impression on an individual depends not only on the object of observation, but moreover on the observer's susceptibility, mentality, education and entire environment (Rasmussen)(p.36). Therefore, the analytical portion of this study will be dedicated to understanding differences and similarities in perception, if any can be found, between participants of the survey. I began by differentiating sample categories, first by cultural assimilation and second by professional education; so, I gathered two experimental groups on those bases: Montreal residents vs. newcomers to the city and architecture students vs. students from other departments.

An analysis of the data concerning the respondents' places of residence generated the following list of Montreal districts: Cote Des Neiges, Norte-Dame-De-Grace, Westmount, Verdun, Saint Henry, Guy-Concordia, "McGill Ghetto", Downtown, UQAM/ The Village, Plateau, Mile End, Outremont, Rosemont, Little Italy, Parc Ex/ Villeray, Brossard, and other areas including Ville Saint Laurent and Mont-Royal (fig.6). A heat map diagram is graphical representation of data, where color represents the individual value. Color saturation within the heat map corresponds to the number of respondents living in each area. The brightness of the color represents the smaller value of the number of respondents living there.

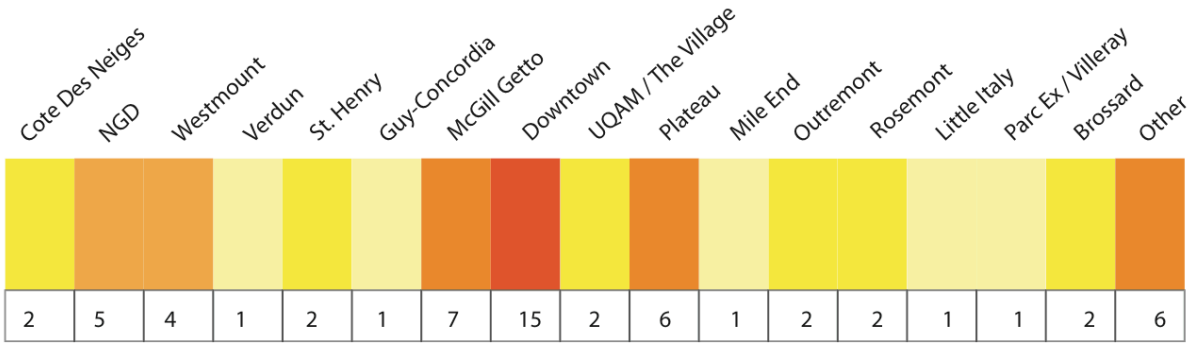

Fig.6. Heat map of the respondents' place of residence

As we can see from the diagram, a significant number of students wrote "Downtown" in the box marked "place of residence" on the survey. Significantly, downtown Montreal is quite broad in geographical and abstract terms. It combines

several neighborhoods within its territory, such as the area to the west of McGill's campus, the McGill Ghetto, and UQAM/The Village. Despite high rental prices, we can see that the Downtown area is the most popular among the respondents. The second most popular area is the neighborhood next-door to the McGill downtown campus, McGill Ghetto, which is a famous off-campus housing area. The Plateau, NDG and Westmount close the list of popular student's residential locations in the survey.

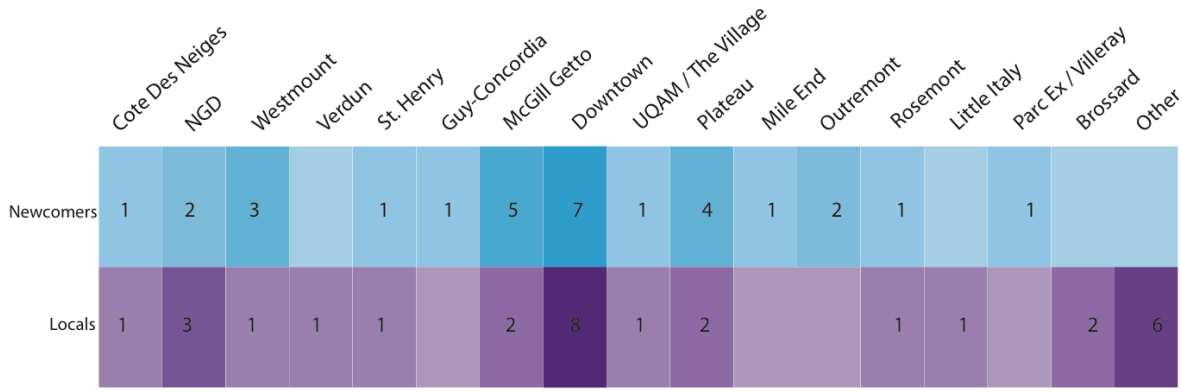

Fig.7. Heat map of the Locals vs. Newcomers' place of residence

The diagram above emerged from the heat map of the respondents' places of residence to identify the pattern between residential locations and the length of time locals and newcomers have lived in Montreal (fig.7). It became apparent that newcomers tend to settle Downtown, particularly in the McGill Ghetto, which is no surprise and can be explained by proximity to the university's downtown campus. Many consider Montreal's downtown an attractive place to live. Not only is it the central business district, but it also has many restaurants, cafes, shops, services and entertainment venues that provide sources of employment. It is also known for its contrast between old and new architecture, for example the old buildings of McGill's main campus sit nestled into the city's skyscrapers. That contributes to the skyline's unique variation and density that can be attributed as one of the factors leading people with a different cultural background to settle here. However, a majority of eight local students who participated in the survey indicated this area. One reason for this is that everything for living and studying can be easily found nearby. However, the situation with the McGill Ghetto is the opposite among local students. Many freshmen and other undergraduate students

choose to live in the McGill ghetto because the undergraduate student residence (New Residence Hall) is also located here; generally, seniors and student from professional programs prefer to stay in neighborhoods with lower rental prices. The numbers of local occupants in other areas (Westmount, Plateau, etc.) can be attributed to the students' awareness of these areas resulting from their time already spent in Montreal.

The next diagram shows the duration of the students' travel time from home to McGill University (fig.8). After accounting for the means of transportation in each case, we can assume this data point is the probable amount of time spent outside to perform movement. For most of the participants (34%) it takes about 20 minutes to get from home to school. One fourth of all students live 10 minutes or less from McGill. This fact indicated that many likely live in a close-by neighborhood, probably within walking-only distance, or they use more rapid modes of transportation. More than 40% of the students live 30 and more minutes away from school. However, one must take into consideration the diagram showing of modes of transportation - it can be 30 minutes of a good walk, intense bike ride, or drive on a vehicle sitting as a driver or passenger.

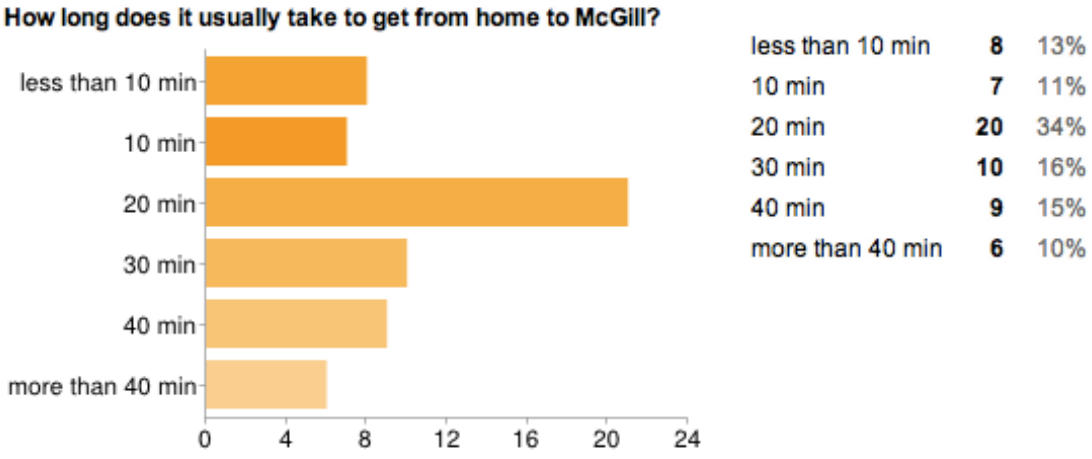

Fig.8. Duration from participants' place of residence to McGill

The diagram of means of transportation helps to track and differentiate students' ways of getting from home to McGill. From the diagram below, the frequency of non-vehicular human-powered transport which is walking or running is pretty high 56% uses frequently, 21% of respondents walk occasionally and 23% never go to school on foot.

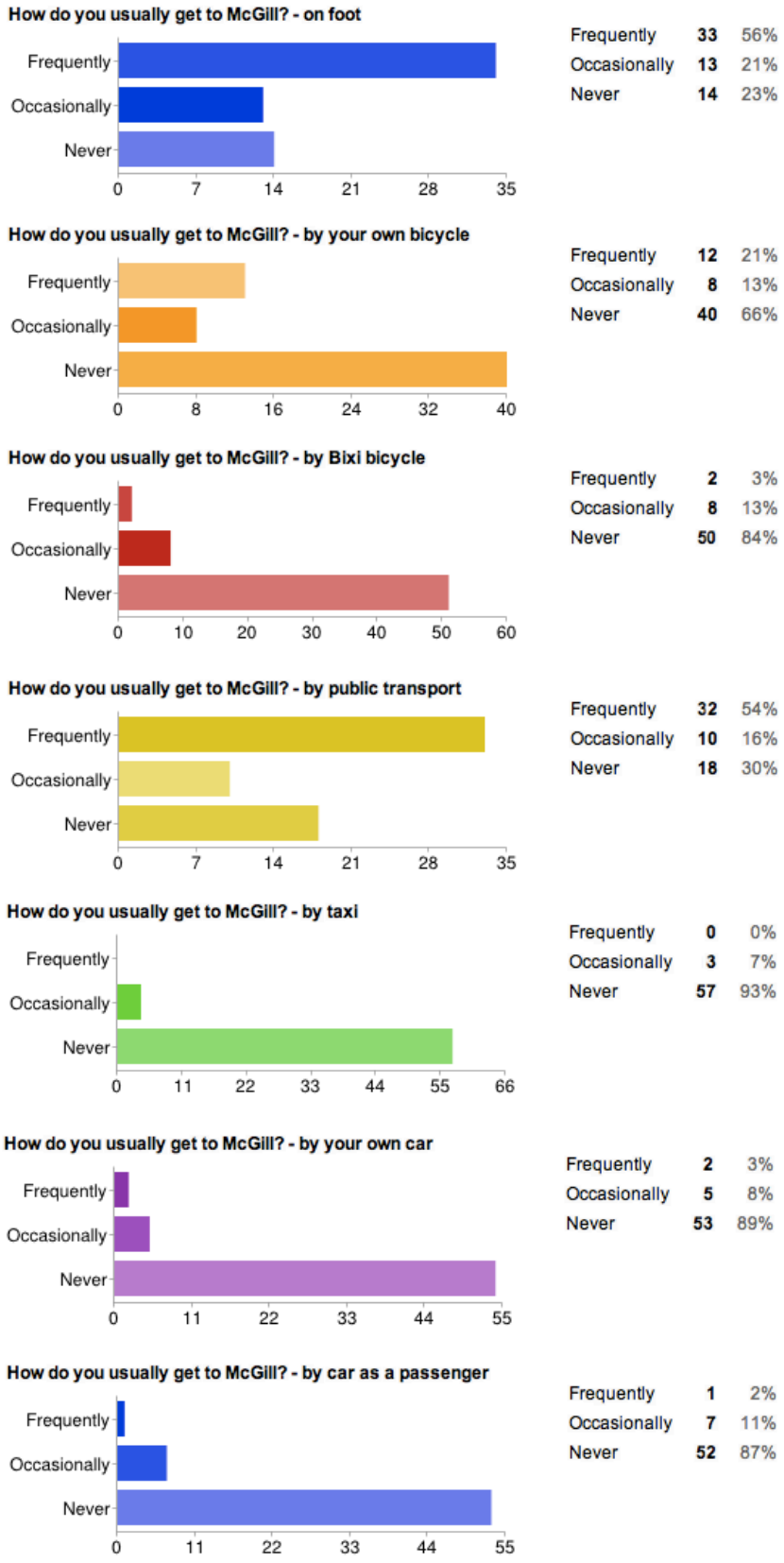

Fig.9. Means of transportation

Speaking about the “most efficient human-powered land vehicle” – the bicycle - 21% of students ride their own private bicycle with frequent regularity, while 66% never cycle to McGill. And also in this section, BIXI – Montreal’s public bicycle sharing system, didn’t get high ratings in this survey - 84% never used it to get to the university. Half of the students also use public transport, including the metro and bus system, as a usual way of movement; however 30% never considered used public transportation services in their trip from home to school. Regarding private means of transportation- cars and taxis, the rates are dramatically low, only 2% regularly use a car, and the vast majority (more than 85%) never used car or taxi to get to school (fig.9). Relying on means of transportation as a measure of study, it gives us the opportunity to reflect on what kind of surrounding a respondent can observe while taking a trip. In the case of walking or bicycling it's a direct contact with the external environment, or by taking a car, taxi or bus is through the window of the vehicle, while using a metro refers to the time spent underground and seeing no street scenery. Sometimes, participants can combine modes of transportation to make one trip, such as walking to a bus stop further away for a one-stop ride, ride-sharing in a private car to a convenient walking point, or walking from a distant BIXI station with secure parking. Trips of a combined-mode nature were not considered for this study.

Since all the participants are McGill students, it is interesting to consider how a professional education has influenced the perceptive skills of the students and, to be more precise, how architectural training distinguishes scholars’ skills from those acquired in other professions. How does professional training in architectural theory, technology and design coupled with McGill’s high academic standards contribute to the development of students’ perceptive abilities? To explore this question, three representatives from each category (Newcomers vs. Locals and Architectural Students vs. Other Departments Students) will be randomly selected, and their responses will be alternately compared (fig.10).

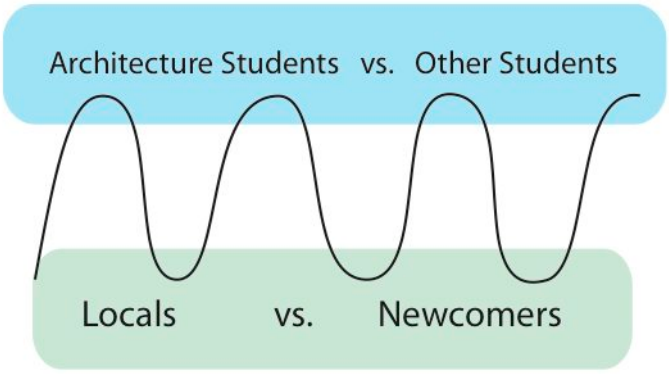

Fig.10. Comparison diagram

More than half of the respondents are from McGill's School of Architecture. This decision was made intentionally to test the hypothesis that these future young professionals, by virtue of their professional training and experience, are likely to be more perceptive and sensitive to the geometry, shape, colour and material of the urban environment.

When the retina of the eye receives a visual stimulus, it is transmitted through the optical nerve to the brain, where the complete image is generated. Sometimes a small detail is enough to make a visual impression on the observer, allowing them to form a complete image and obtain a sense of what they have seen. That is why part two of the survey encourages participants to analyze and test four images of different areas in Montreal in order to understand what elements help people to comprehend the environment and familiarize with their surroundings just by glancing at them.

Second Assignment

For the survey I provided participants with four images. Three pictures were taken during the summer and one during the winter in order to identify the influence of the weather and climatic conditions on the emotional state of an individual. It is worthwhile to mention that some respondents commented, "Winter may change my perception". Due the northern climatic conditions of the Quebec region, Montreal's winter lasts for almost five months of the year, and people's moods and emotional well-being are tested. The visual images associated with a Montreal winter can be brutal. Usually there is plenty of snow on the street, chilling wind, slushy sidewalks, icy weather, occasional snowstorms, less sunny days and duration of the natural light itself decreases during the day. However, there is another side to the winter streetscape: great numbers of Christmas lights line the streets, reaching a peak during the Montreal En Lumiere Festival, and fresh sunny morning walks are accompanied by the crisp feeling of snow under the shoes. By checking a few websites providing information about Montreal's numerous winter activities, a visitor to the city can even skate, dogsled, go ice-fishing or learn cross-country skiing. Therefore, depending on the part of the city, season and time of the day during which the image was taken, a viewer's perception of it can vary significantly.

Image 1 *was taken on Sherbrooke Street on intersection with Simpson Street next to Guy Street. The right side of the photo is occupied by a low-rise residential building—Linton Apartments, also known as Le Linton, which was built at the beginning of the twentieth century and identified as one of Montreal's finest examples of the Beaux-arts style. The materiality of its facade includes terracotta and baked clay for ornamentation* (Emporis) *(fig.11).* ***Image 2*** *shows an area on the north end of Saint Laurent Boulevard around "Little Italy", a neighborhood housing a large concentration of the Italian Community in Montreal. A long time ago before the street had its current name, it was a figurative split line dividing the city into a Francophone eastern half and an Anglophone western half. Nowadays, Saint Laurent hosts the largest mixture of immigrants and small-scale business owners in the city, with ethnic origins from all over the world. The photograph shows a commercially active street in the wintertime (fig.12).*

Fig.11-12. Images of Montreal: Sherbrook Street and St. Laurent Street ("Little Italy")

Image 3 *captures a part of St. Catherine Street at walking distance from the Saint-Laurent metro station. It is the main street for all entertainment needs and Montreal's most renowned commercial thoroughfare. This portion of St. Catherine is no exception. Moreover, this urban segment is characterized by diverse architectural styles and amplitude of decorative elements in the form of street art— graffiti, murals, and metallic sculptures. Each of these interventions in the streetscape has been done in a different technique and artistic theme (fig.13).* ***Image 4*** *is a typical scene from Saint Laurent in the Plateau area.*

The street is lined with trendy stores, shops, restaurants and bars, and it is well-known for its active nightlife. The image was taken during the daytime, allowing viewers to observe a typical summer day on this busy street, with its mixture of uses and activities and diverse architectural character (fig.14).

Fig.13-14. Images of Montreal: St. Catherine Street and St. Laurent Street (Plateau)

The first question on the survey asks participants to name what elements in the image capture their attention. The second encourages subdividing elements by category: Captures Attention, Beautiful, Colorful, Useful for Orientation, Informative and Irritating.

There were no specific instructions about the sort of the responses, so the same element could be placed in two or more categories.

Word Clouds were used to generate a graphic representation of the text data from participants' responses. I found it the best way to give greater prominence to the words that appeared more frequently. The font size of the word shows how many times it emerged in responses, with larger text indicating more repetition. Manipulation of font size, font color, intensity, weight and background color helps to display words more clearly.

Fig.15-20. Word Cloud Diagram of the responses to Image 1

Image 1

The diagram above shows the responses to the second part of the survey in regard to Image 1. The responses can be subdivided into three types: visual appearance (color, details, spatial attributes), sensorial (light, smell, noise), and imaginative (what and how it feels there) (fig.15-20).

In the fist category, "Captures Attention," all the students listed almost the same items: the red flowers, planted in a curved shape and surrounded by the lush green lawn, beautiful trees with foliage on the right of the picture, the mailbox, street signs, and the building itself, whose ornamentation was not disregarded. However, architecture students also mentioned the stone walls, metal awning of the entrance, and other terms such as pillars, molding, curved arches, supporting elements, and façade's rhythm, which were not present in the answers of other students. The same elements appeared in the categories respectively: mailbox, flowers and grass for Colourful, vegetation for Beautiful, street signs, lamppost and mailbox for Informative and Useful for Orientation.

A similarity was seen among the responses of almost all students for the first five categories, regardless of their program of study or country of origin. They listed almost the same answers, but the last "Irritating" category is different among architecture students. Students from other faculties usually mentioned only a few details, whereas architecture students, probably because of the emerging professional importance of a critical point of view, described in detail all unfavourable elements present within the image. Interestingly, most of the respondents mentioned the cherry-picker parked on the sidewalk as an irritating element, referring to it as a truck, big vehicle, machine, construction car, etc. Street signs also fell under this category because of their abundance on the sidewalk of this block. Another common remark among local architecture students was that the green grass is "too manicured", "monochromatic" or "decorative", implying its perceived artificiality. One unusual observation, made by an international student when filling the last box, was, "truck, noise, pollution, worker." Of these elements, the truck is the only one visible within the image. However, they all represent possible outcomes of its presence on the street. Since this observation is limited to a single case, I assume the personal sensitivity and perceptive skills of the participant.

Fig.21-26. Word Cloud Diagram of the responses to Image 2

Image 2

For the second image the most popular answer in all participants' groups for the category "Captures Attention" was *light*, referring to "Christmas lights" on the trees and the cars' headlights in the foreground (fig.21-26). This no surprise, because the picture was taken in the winter season in a later part of the day, so the street illumination is already on, and so are cars' headlights, which reflect from the slushy road. Participants' attention captured a wide range of elements, starting from cars, parking, snow, street,

trees, to arch, Canadian flag, stores, signage, walls and windows. Interestingly, most of the local students recognized the area as part of the "Little Italy" neighborhood

The same element "lights" appears in category Beautiful. Students find beautiful the light coming from within the stores, giving them a feeling of warmth, coziness and liveliness. However "trees" are the most mentioned element in this group, possibly because of natural beauty or attractive Christmas lighting that evokes positive associations of the holiday. It is possible that this finding lends support to Jacobs' observation about trees as a physical quality that contribute to the street. Thirteen percent of students considered the street in general and its density, mixed facades, sidewalks in particular as beautiful: "Dense fabric with a lot of stuff going on". Many students from sections other than architecture specialty considered the archway as an appealing element.

In the Colorful and Informative category, the most reported elements are street signs and service-oriented components of the street: store and restaurant signage and banners. Its diversity of shape and color, especially contrasting the prevalence of the red and black color, helps those elements to stand out from the overall grey mass.

An interesting observation by students was made for the Useful for Orientation category: the direction of parked cars helped them to identify the road as a one-way street. Local landmark archway among newcomers, stores,

Under the Irritating category, most of the architecture-related students described a disproportion of the wideness of the street to the height of the houses as "too wide street". At the same time, non-architecture students who are less familiar with urban design terms and concept articulated the relative issue in an equivalent way: "to narrow sidewalks". Assuming that both groups were getting at the idea that too much space was reserved for motor vehicles, it is worth pointing out the possible universality of this finding. Perhaps an "ideal" street dimension can be discussed; i.e. how many lanes for cars is too many (in comparison to the building heights, local conditions, etc.)? Local architecture students considered the architecture portrayed in the picture as boring, flat and "townish". Despite the commercial diversity with all the signage on the street some students attributed snow to an emptiness that "makes the area feel barren, less friendly

and welcoming". Snow, lying on the sidewalk, road, benches and its associative outcome in form of slush, wetness and grey dirty makes it the most irritating element.

It is interesting to notice how some students go beyond what is shown on the picture and try to imagine this streetscape in altered conditions: "If it was summer and active, it may be more of a place to linger", "The snow gives the site a cold feeling", "None of the buildings are very nice themselves, but as a fabric they are vibrant and human scaled". And one more curious comment on invisible component of the streetscape: "Looks noisy".

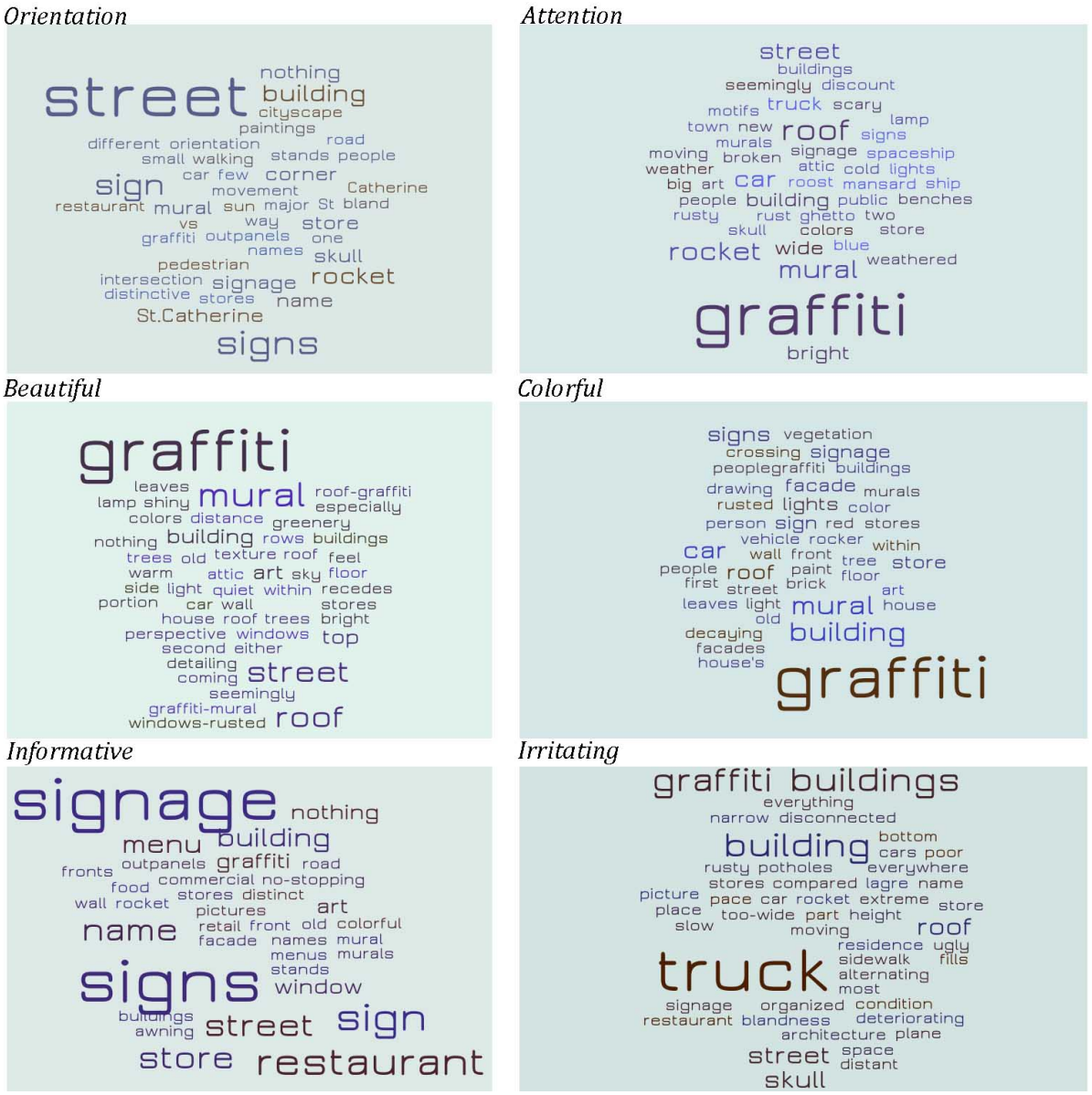

Fig.27-32. Word Cloud Diagram of the responses to Image 3

Image 3

On this image of common cross-intersection, a three-story building entirely covered with graffiti locates on the foreground. Majority of respondents considered building as an interesting one, largely due to its rusted attic and graffiti that captures attention (fig.27-32).

In Beautiful and Colorful categories, respondents mentioned almost the same elements. Graffiti is the common answer, however, it is not the only object of street art displayed on a building, there are mural, rocket sculpture as well. Therefore, many respondents relate to it as an art in general. Few students noticed how weather conditions contribute to the color: “In the sunlight even graffiti with skull seems vibrant and colourful”.

Interesting tendency have been found, local students usually didn’t fill the boxes for answers related to “Useful for Orientation and Informative” categories in case of lack of obvious elements for navigation or signs of information, whereas newcomers tried to use every detail as a helpful tool in familiarizing with the area. Restaurants menus, sings on the building, mural on a wall, commercial sings, signage, signs, storefront and banners are useful in first-hand experiencing city. At the same time, distinct building, awning, rocket on a roof, mural, can be interpreted as visual landmarks and point of orientation, influence city structuring process of individual.

Most common answer in irritating category is parked truck, even though it is parked on a side of the road, proximity to pedestrian crossing and the space it occupies in a small street evokes unpleasant and uncomfortable feelings of respondents. Some architecture students mentioned disconnection in perception of the first floor and the entire building: “while Vietnamese restaurant at the bottom floor looks inviting, the graffiti and rusty roof makes it more unappealing”. Here is another imaginable scenario for the streetscape however with negative hint: “The deteriorating nature of the building would be significantly more disconcerting at night or in poorer weather conditions” (Anonymous). Especially for newcomers, who might not be that familiar with this area, the only thought of passing by at night is scaring. That is why significant number of newcomers reported skull graffiti as irritating. Current poor condition of building and a

roof are not credible for many respondents, however there is some feel that it still has potential to be restored.

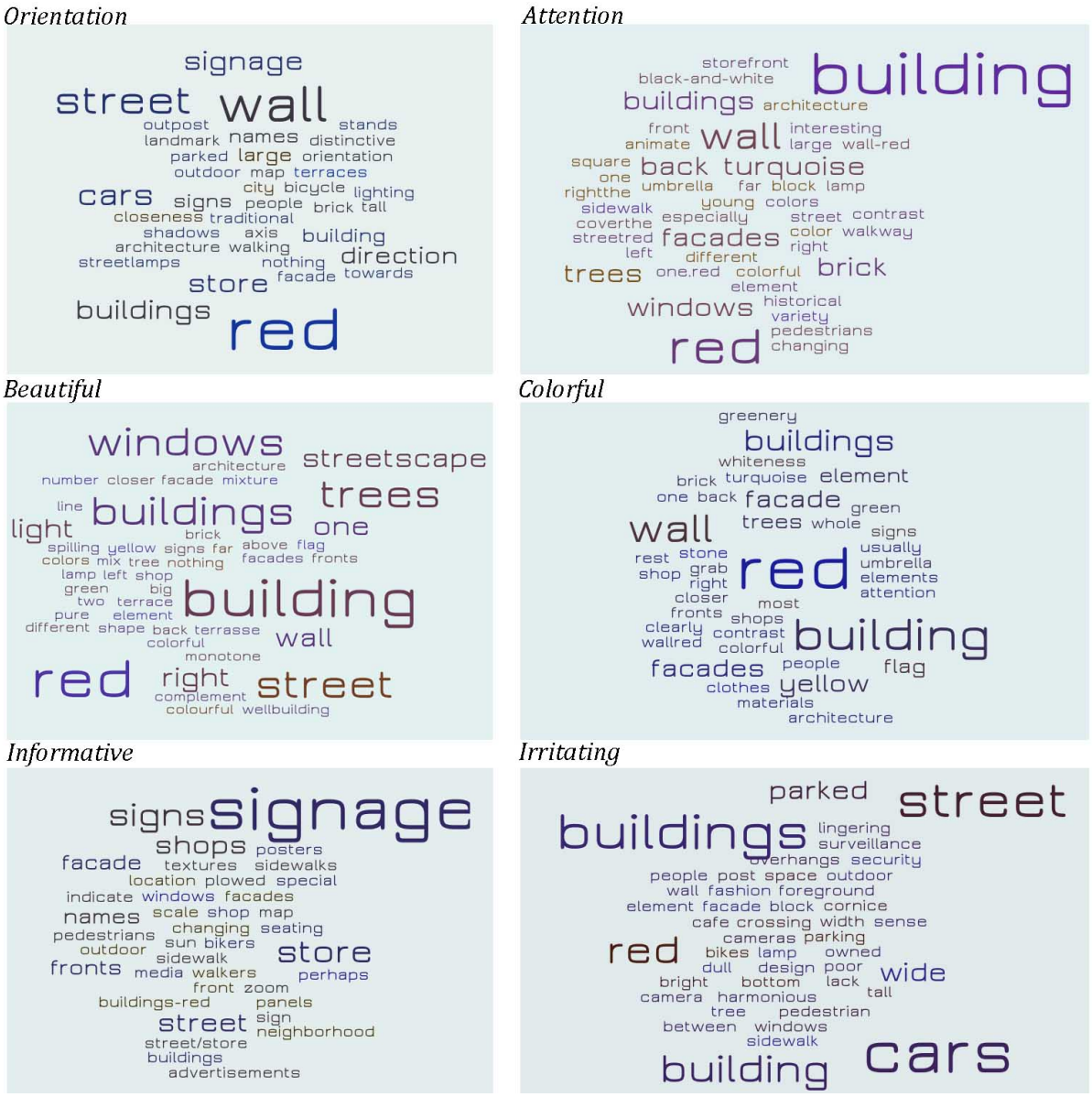

Fig.33-38. Word Cloud Diagram of the responses to Image 4

Image 4

In Captures Attention category answers about the relation of the commercial spaces with the street appeared frequently (fig.33-38). Non-architecture students usually left comments such as: “Nice street, lively, some activities” whereas architecture related students provided with the following: “Correct scale of buildings for this street’s

width and the liveliness it brings". Jacobs describes situation where terraces on the sidewalk make the space more attractive as diversity and mixed-use space. Without distinction to profession, majority of respondents reported buildings as the most capturing attention element. This street view shows a variety of architecture types, distinguished by material (stone, brick, etc.) or rich combination of elements on a façade (different size windows, canopy, doors, etc.). One of the local architecture students left a comment: "A street reflects all different kinds of architecture happened in Montreal".

For "Beautiful" category, some of the respondents are more particular in describing appealing elements, for instance: "line of windows", "building in the corner", whereas the other admire the atmosphere: "lots of lights and trees - nice!", "pedestrian and cyclist friendly environment". Diverse architecture, colorful signs, street lamps, pleasant weather, greenery and red wall appeared in the responses. The streetscape is not monotonous; it saturated with diverse facades, the shape of the streetlight, and the trees complement it as well.

Some of architecture students provided interesting concept for colour in terms of function. Young specialists thought that it was used in a sparing but efficient way that contributed to street diversity and character. Local architects also noticed shift of street "personality" in a relation to the time of the day: "…at daytime the emphasis is on the colour of the buildings where at night it is dominated by the light" (Anonymous). According to the word cloud portrayed on the image buildings are the most colorful. Range of colors from yellow to turquoise and a flashing enormous red brick wall on the background proved this observation.

In "Useful for Orientation and Informative" the very red wall serves as a reference-point, and street signage provides guidance for newcomers. As for locals it is usually signs and direction of parked cars, since this street is a one-way road.

Probably because of sympathetic atmosphere, good weather conditions or street appeal itself, a very few respondents found some elements that are irritating. First of all, presence of parked cars on both sides of the road, secondly width of the street and lack of pedestrian crossing, and, last but not least, the most popular answer in colorful and useful for orientation categories- red wall building. In this case it is the matter of taste, because only 5% of respondents from different groups considered red wall too

frustrating in overall view. Few very observant respondent detected security cameras on a street that also stimulated them to assign this item to irritating category. One of the answers was different from the others and more related to people appearance than to urban landscape: “Poor fashion sense”. The rest of the answers are blank or filled with meaningful words. Popular answer- parked cars- brings us back to Jacobs observation of the Great Streets, that parking is definitely not one of those beneficial elements.

Third Assignment

In the third section of the questionnaire I evaluated the individual's impression of images on a scale from 1 to 5 of fifteen categories. For the image evaluation diagram I used Collin Morris's tracing image approach "which is an invaluable descriptive tool". The eye may easily judge the character of each image then silhouette each edge within which the trace is drawn and expresses the range of the image from left to right extremes of the scale. Below are four sample traces, one for each image. This cumulative trace is an accurate mapping of the most pronounced responses from the group. For each category, respondents had five options to choose: from Completely Disagree, Disagree, Somewhat Agree, Agree to Completely Agree.

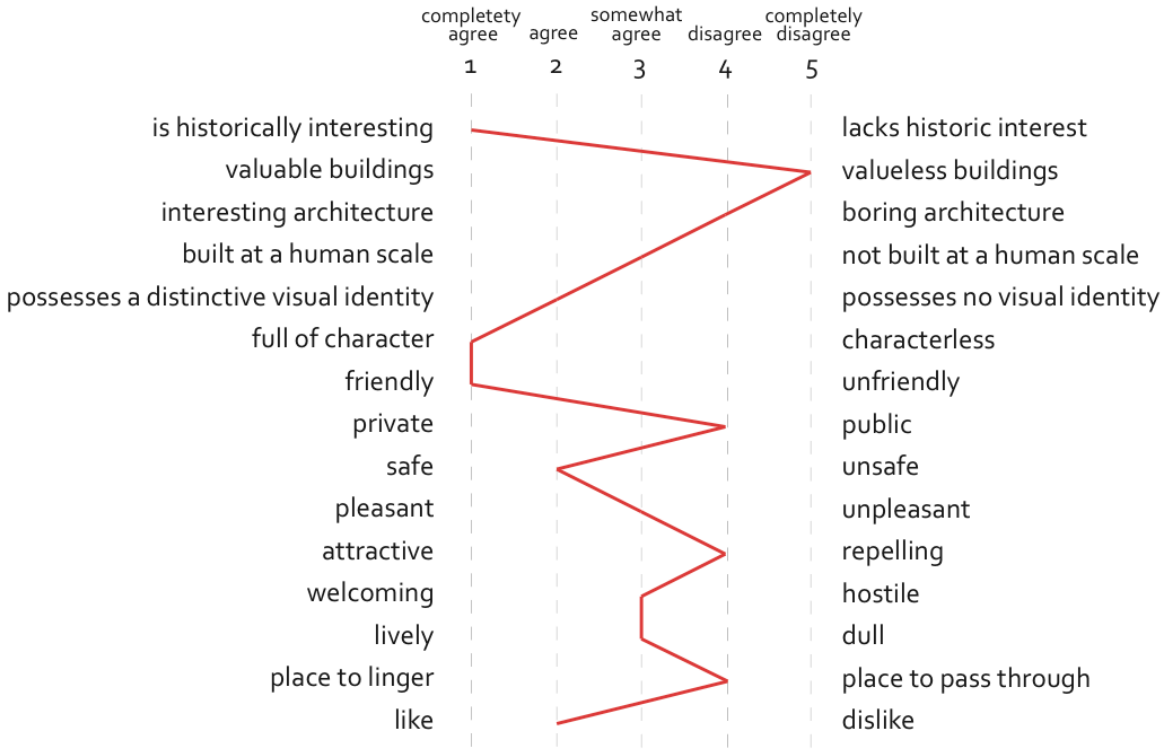

Fig.39. Trace Diagram of the responses to Image 1

The Trace Diagram (fig.39) for the Image 1 epitomizes participant's responses to the St. Catherine street scape. The rather subdued response of most people to this slide as extremely historically interesting due to the building on the right, rich with architectural detail, suggests that good restoration and maintenance play an important

role in people's appreciation and attraction to their townscape. However, very oddly, participants indicated that the very same historical streetscape was also to be identified as "valueless." The streetscape was considered somehow to be boring architecturally. In a positive extreme the streetscape is full of character and friendly, therefore, respondents considered it a public and safe place, with an overall "likeable" appeal.

Fig.40. Trace Diagram of the responses to Image 2

Trace diagram of winter streetscape of St. Laurent looks controversial. Overall participants find its architecture interesting and possessing some value in addition to human scale of the street, and almost agree with the historical appearance and probably recognizable Italian identity of the area. However, it is also considered as unfriendly and characterless, but is certainly a public place. Even though, if some elements of the streetscape are indicated as unpleasant and repelling, participants definitely consider the area safe, lively, as a possible place to spent time with hospitable atmosphere (fig.40).

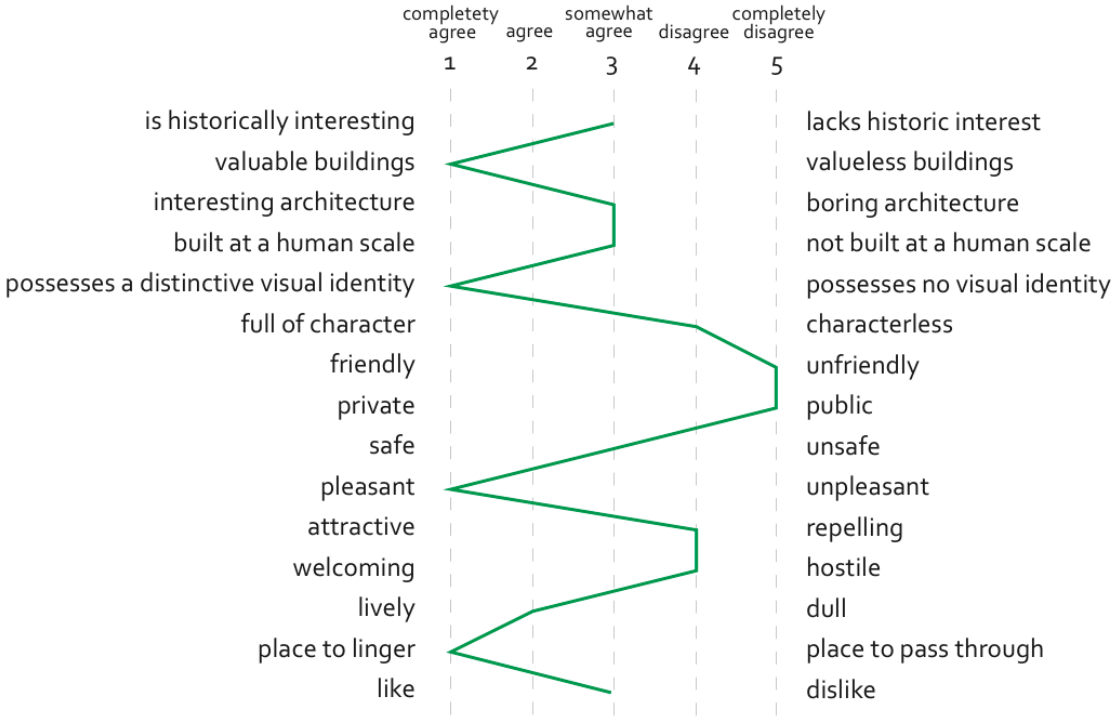

Fig.41. Trace Diagram of the responses to Image 3

Image 3 is described as by the far the most unattractive and unfriendly in all categories, presumably because of its dilapidated conditions (fig.41). It contains a rusty roof, boarded-up windows and even graffiti. Students consider this image old and boring rather than historic and worth preserving, though the specifics of what defines these two categories are unclear. This is an interesting point, because some buildings of different architectural style and period are conversely recognized old and not historic. What attributes of the building's appeal change it from the "old" designation to "historic"? However, probably because of the graphically saturated facades, the content of the image is considered as possessing a distinctive visual identity. Despite the almost hostile and repelling character of the image, respondents identified the street as a place to linger.

Fig.42. Trace Diagram of the responses to Image 4

Image 4 had the most positive responses, looking at the silhouette line and its location on a scale range. Even if the architecture itself was not considered as an example of interesting or valuable design solution, respondents thought of the area as a space with strong visual identity, comfortable human scale, and extremely historically interesting. Streetscape is friendly and open to public, therefore looking at this image respondents felt particularly safe. With all the commercial activity on the ground level of buildings, image got the high rates of last categories: *lively, place to linger, like*. Maybe weather, season or some external factors provided influence respondents' opinion, nevertheless they acknowledged pleasant, welcoming and appealing view of the street (fig.42).

Fourth Assignment

For the last part of the survey, I asked subjects to draw a map of their usual route from home to school, highlighting at least 10 important and/or memorable features or 'moments' that are passed by on the way. I did not give a more specific definition of these elements other than specifying that these concern not only the physical particularities that enter the composition of the city, but otherwise have a temporal nature. That is to say elements with material and permanent particularities together with physical particularities like smell, light, shadow, sound, weather conditions, etc. I asked subjects to show those elements in any possible way (draw, sketch, put a name tag, or even put the whole description) that came to the mind, even elements that have a negative association to them. There was no time limit for this part. This approach was different from Moser and Ramadier's who decided to exclude physical characteristics; however, they were interested in a permanent objects (for instance landmarks) that contribute to the image of the city. Our daily experience is a mix of visual and sensory attitudes that sometimes cannot be easily described in words. Therefore maps generated by participants will be analyzed relaying on elements predominantly used in order to set up structure and track the logic in responses. Kevin Lynch came up with particular classification of different element (*paths, edges, districts, nodes, and landmarks*) that inhabitants of cities such as Boston, Los Angeles and New Jersey, used to show and describe the city pattern. However, the scale of accuracy of obtained data was diverse. Donald Appleyard, professor from Berkley, also questioned how people structure city in their mind. Appleyard took more rigid approach that he described in *Styles and Methods of Structuring a City* in Environment and Behaviour journal. The author conducted interview that included broad cross-section of the population in Ciudad Guayana of Eastern Venezuela. Participants were asked to draw a map of their local area specifying a city limits and pointing special locations to reveal linearity and landmarks. Appleyard evaluated maps in two ways: according to the level of accuracy and type of elements mainly used. The following is Appleyard's observation of respondents' mental maps: "The maps predominantly used *sequential elements* (roads) or *spatial elements* (individual buildings, landmarks, or districts) (fig.43).

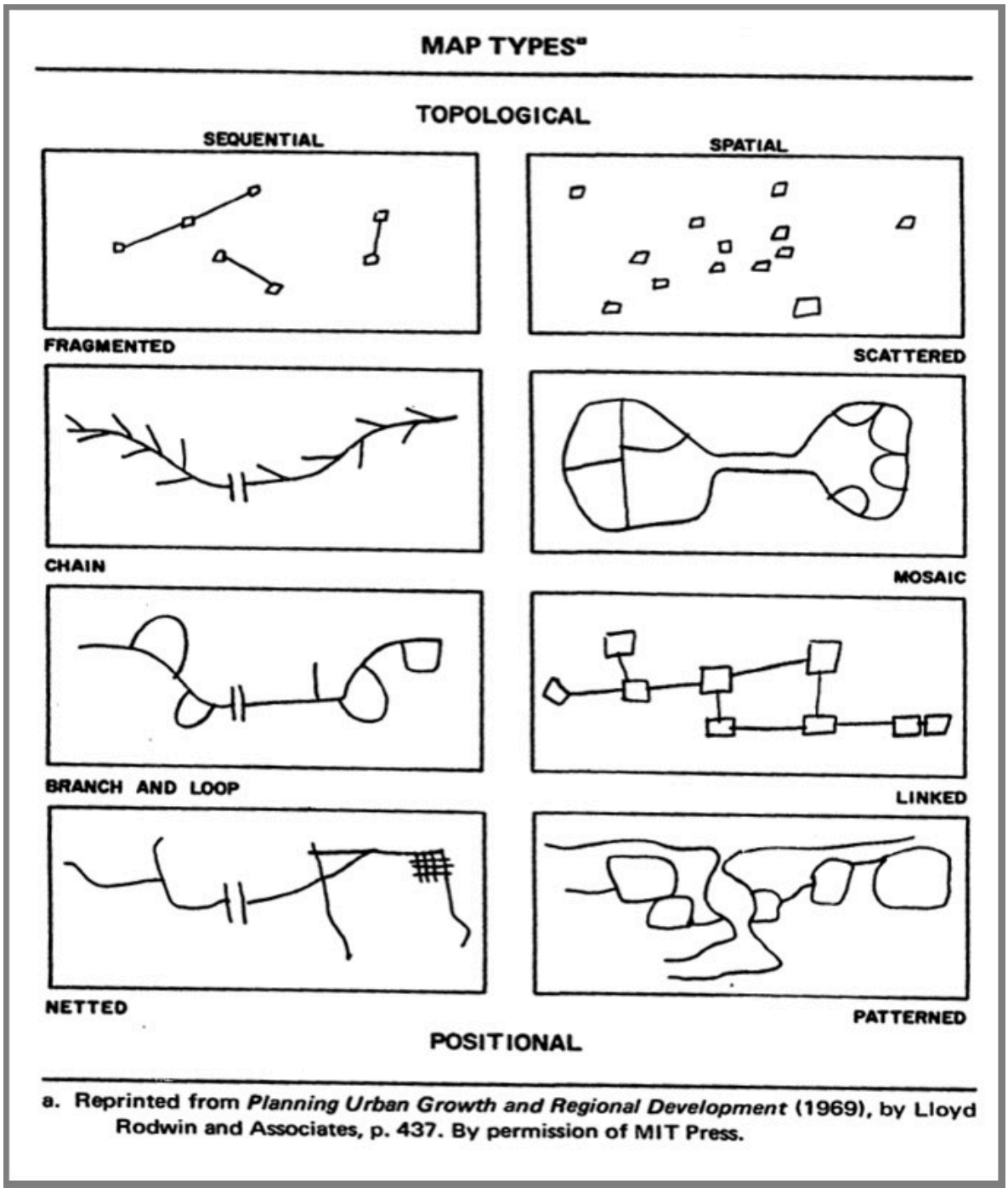

Fig.43. Appleyard's Mental Map Classification Diagram

The most accomplished maps employed combinations of both elements. In the sequential maps the parts were more obviously connected, and connections were dominant. In the spatial element maps, parts were quite scattered over the map and connections were apparently incidental" (p.103). Sequentially dominant maps include

fragmented- humble type of map with separated fragments of paths or elements not necessarily in the right order, *chain*- map with a structured layout includes major roads, intersections, turns, or list of places on the route, *branch and loop*- more detailed map with "common outcrops from the basic linear system", *netted*- more precise representation of the city, with correct road system and location of geographic elements (p. 108). Two spatially dominant maps are related *scatter and cluster*- simple type of map contains group of individual buildings and objects with no drawn (traced) link, *mosaic*- enclosure of outlined areas with representation of zonal relationship, *link*- more developed maps of connected places and districts, *pattern*- most accurate and detailed map with contours of areas and important landmarks. Appleyard tries to reconcile Lynch's elements to his classification, placing Paths and Nodes to sequential elements, and landmarks, districts, and edges under spatial elements. Following his determined approach, mental maps generated for the current study will be analyzed in the same manner.

From analyzed content of students' mental maps the following numbers appeared: 65% of all maps identified as sequentially dominant maps; hence, 35% are spatially dominant maps. Providing with more precise figures: chain subtype is the dominant type among all respondents' sketches - 33%. About 16% belong to branch and loop category. Almost 12% of all maps are of fragment type. More complete network type of maps was produced only by 4% of students. In spatially dominant section 13% of the respondents drew link maps. As many as 10% of the students illustrated scatter and cluster maps. 8% of interviewee demonstrated ability to draw a mosaic map. Only 4% of all maps belonged to the most accurate spatial pattern maps. Figure 44 and 45 reproduce one example of chain type and scattered type of maps obtained for this study. In a group of most primitive-looking maps that contains fragments of sequence and scatter and cluster of space majority of respondents do not have any relation to architecture specialty. Whereas students from schools of urban planning generated the most complex and accurate network and pattern subtypes of maps. However, these most completed maps contain elements from both sequential and spatial types, with a difference in connections being dominant or spatial elements. Since a chain type of map is the most popular subtype and prevails among built environment specialties in this research it

gives opportunity to assume that linear structure of the city is important in a process of comprehending the layout of the space and chance to create individual link between parts of the city. In this case educational aspect should be also taken into consideration. Architecture and urban planning students have an opportunity to develop ability to conceptualize gained special type of knowledge. Certain amount of maps contained a strong sense of subjective experience, describing personal observations made during a journey from home to McGill. The other amount of maps was provided with description of physical form of transportation, arranging them in the order of use, for instance, "home, bus, metro, walk". Mode of transportation can become a limited experience factor; it was interesting to see a "gap" in a route continuum in few maps. Level of familiarity plays significant role in a process of engaging with the city. Since most of newcomers live in a neighborhood close to McGill, they provided detailed maps of the nearby area and made fewer errors, indicating their desire and level of interest to familiarize with the city. While local students produced larger scale maps, that probably shows their profound experience of the city.

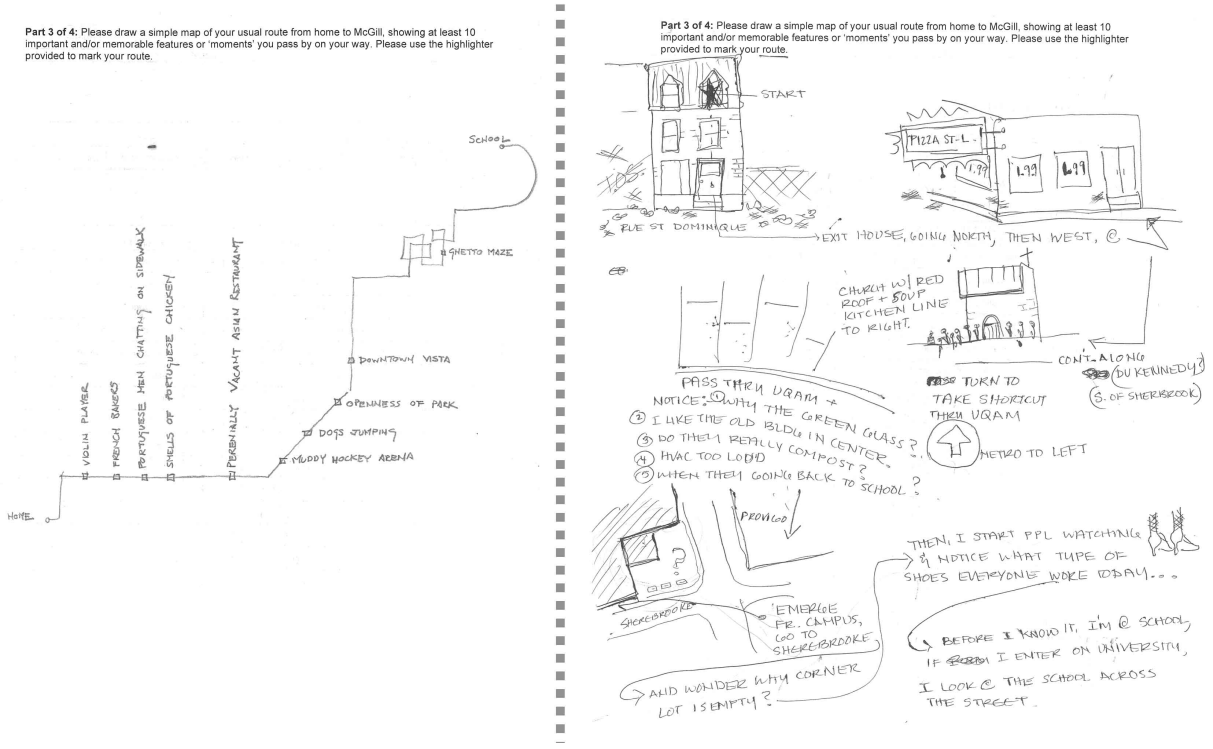

Fig.44-45. Mental Maps: Chain (left) and Scattered (right) types

These mental maps can serve as a powerful additional source of subjective visions for professionals in designing new cities or reorganizing urban pattern in the existing ones. The way how ordinary people structure their cities is extremely interesting to understand as they are inhabitants and direct users of the space, so their insight is closer to real life and therefore more relevant.

Discussion

Process of familiarity with the city can be compared with the process of learning a new language. In order to get to a new level student should spend a certain amount of hours studying and practicing, and pass the exam. Can we apply the same strategy for the process of getting acquainted with the city? Should a person spent certain amount of hours outside, or read the urban legends, or study the history of the area?

There appear to be diverse ways of how users make sense of the city, which is the aim of this research. One of the research objectives is to inspect the literature across multiple domains in order to discover the prevailing theories of how people comprehend their particular urban environments. Following is an extract of revealed concepts of literature review.

From environmental perspective surrounding atmosphere and environmental quality play an important role in act of experience. Additionally, in the place attachment process, new social relationships can become more significant than the place itself.

Psychogeographical ideas are interested however, they are difficult to operationalize and prove, because their phenomenological approaches, that have core tendency to be more inward exploring, than revealing one explicitly.

How to increase experiencing opportunities of the surrounding? One of the ways – engagement with the context, sometimes it happens even unconsciously by adapting to the environment, appealing to a new mood of behavior or way of doing certain things. Attempt of familiarizing ourselves with all sorts “playthings” – happening activity. Exterior appearance: shape, solidity texture, pattern, color- visual perceptive static qualities and dynamic qualities that can affect it: shadows, smell etc. In this approach with all the listed means individual is able to enhance the sense of the place. Each building, courtyard, square has its own particular effect upon our mind.

When we speak about surrounding environment in urban context, forms and masses comes to our mind. Relationship between shape as an architecture and as an observer, comes to a point that architecture shapes a man’s surrounding that can be seen from outside. Physical environment plays a significant role in mental activity (memory,

learning, perception, spatial orientation) (Zeisel, p.15). It leaves diverse impression due to its physical qualities (surface materials, form) and view-points (on the corner of road intersection or from the open terrace of the fifteen story building).

Facing a streetscape is not only experiencing independently architectural objects and their external features, but grasping entire picture, concept, rhythm, historic period, scale, acoustics difference, cultural pattern and saturation. Since it is a human habit to create for him/herself an enclosing space, that usually consumes time for people to give form to the entire surroundings. It takes time for newcomers to make sense of the entire surrounding by separately tracking details, signs. Rasmussen describing architects responsibilities writes: "*It is the task to bring order and relation into human surrounding"* (p.34).

Rasmussen writes about special type of places: streets, squares, plazas, parks, the spatial organizations oriented on a viewer, who is supposed to be standing in a certain spot. The size, the position - everything is laid out in a way to give the best impression of the depth of the perspective. For instance Baroque architecture is characterized by a dramatic central projection of a façade and convergent layouts. There are many significant advantages of a deliberately laid out view, it is alike when looking through a camera lens, it has only one direction and nothing distracts the attention. The surrounding background doesn't play any role. Can this design concept be applicable to the contemporary urban landscape? Is it enough for pedestrian to be only observer instead of participating and interacting with a space and within it? Should a person receive an impression not only of a thing/object itself, but of the entire space, which includes the sides and corners that are not visible of all surrounding. Nowadays people try to engage with the space in a different level of involvement, interactive art and technologies aid them in this process. Rising popularity of a cell-phone application *Instagram* is one of the tools. It is a free photo-sharing and a social network, that allows users to take a photo with a cell-phone camera, apply a digital filter to it, place a name and location tags and then expose it to other users. Architecture and other related built environment themes are trendy in this social network, letting individuals share information about new places, geographical locations, their perspectives and attraction preferences. Street art includes diverse types of visual art: graffiti art, stencil graffiti,

street installation, i.e. street artist's "attempt to have their work to communicate with everyday people about social relevant themes in ways that are informed by esthetic values without being imprisoned by them" (Schwartzman). Public art is represented in urban environment and the particular strategies that are being used to interact with audience. Peter Gibson a well-known *Roadswoth* developed a language around street markings and other elements of urban landscape using a primarily stencil based technique. Gibson wanted to create free dialog with the city and its residents as opposed to the current prevalence of commercial monologue. These playful and interactive means makes it easier to experience and introduce urban environment and its components (street, architecture, landscape etc.) as a whole ensemble rather than separate elements. In a certain way it gives a chance to the voice of architecture to be heard, their character and personality to be seen and show the drama of the relationship of built- up area.

Experiencing architecture.

"Architecture is frozen music" - Johann Wolfgang von Goethe's famous phrase (Goethe). Both create proportions in time and space, and both can be characterized in terms of material and spirit nature. Listing similarities as usage of styles, rhythms, variations and so on. It refers that architect is a composer; he composes the music that will be heard and played by others. The main distinction is that architect produces an amount of impersonal data, which in the case for an artist (composer) - a mysterious act of creation is more subjective; he/she has to rely on his/her senses and emotions. Here one can argue that architecture can be as personal as music composition, however one individual can write and perform a sonnet, a design and construction process involves different professionals that make one building a result of collective contribution.

It is worth to know how to establish path to become an architect. Initially, one can graduate from a five-year professional program in an accredited school of architecture or get a bachelor degree in other major and go to the grad school for two or three years for a masters of architecture degree. First option gives an chance to get more rapidly into a practicing environment, while the other – to acquire a dedicated research topic and more opportunities in academia. Architecture graduate works in a company as an intern for two or three years, precisely recording hours and experience under the guidance of a

registered architect. The architecture registration exam can be taken after the internship completion. Upon successfully passing exams specific to the profession a license will be given to the applicant. Sometimes, depending on the state requirements, a professional should get continuous education credits to maintain the license (Pearson). This program is a challenging process that takes a lot of time for studying to get a sense of a scale, proportion, and style. Sharpening skills in a professional practice field gives opportunity to share the experience with other experts, communicate with clients; however the missing part is a relation with direct users of space. Part of the preliminary design process is a site research: understand the current conditions, cultural pattern, climatic conditions, historical background. For instance in order to create a refined design of a small interior space or large scale urban design project, it is essential to understand the social aspect of a required program, what people you expect to attract with the completed project, and how it will be perceived at different levels. Without a social context, how a professional can get a sense of community needs? This research is a step forward to fill the gap in knowledge and show what sort of information can be obtained to aid and serve as a resource for professional uses. This is the attempt to capture ideas and notice how they might be developed (applied) and used by professionals.

Another objective of this research is conducting a primary study with human participants. Groups of students from McGill University participated in a survey. The survey questionnaire tested subject's opinion on the physical configuration of certain Montreal streetscapes, and how the city influences an individual's attentiveness. The differentiating factor between subjects and two main points of study was to determine the effect of their specialty/field of study and level of existing familiarity with the urban space in Montreal.

Students' responses of the impression from images of the streets, drawing a map, provided data for an analysis of Montreal townscape. All diagrams and graphs represent averages replies from all respondents to show the overall picture of the results. However more detailed examination of each groups' responses are presented in the discussion part, revealed that there were particular differences between locals and newcomers and architecture and non-architecture students. Local students tend to guess places from images much more than newcomers, although newcomers are more attentive to

elements that they are familiar with. At the same time in respect to common knowledge there was no particular difference between the groups, which indicated the same elements and evaluated images equally. Architecture students tended to be more critical due to professional training and culture, whereas non-architects provided more generalized answers with extended scope. Number of subjects was small (60 participants), and used methods allowed robust statistical analyses that for further research use larger sample to identify professional cultural traits.

All the analyzed data is a rich source of information about urban perception, that is relevant to studies by urban designers, architects, urban planners since mental representation of spatial relationships is sometimes difficult to verbalize. There are no direct strategies or suggestions, although taking into consideration the scope of investigated and discovered information, wide range of professional will be able to use it in their field of work. Word cloud diagrams compose precise first-hand data of Captures Attention, Beautiful, Colorful, Useful for Orientation, Informative and Irritating elements, might be useful for architects, urban designers to operationalize theoretical concepts in practice. Planners and environmental designers may properly assess information on how people structure cities in varyingly schematic ways. Cognitive psychologists may find results of this study useful in terms of exploring internal mental processes within urban environment context.

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