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IN TERMS OF ARCHITECTURAL PLEASURABILITY:
A CRITIQUE OF VISUAL DOMINANCE
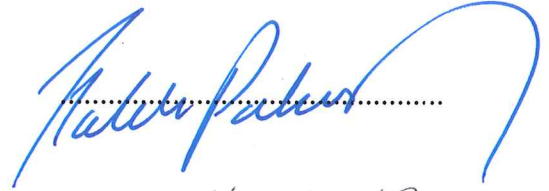

by

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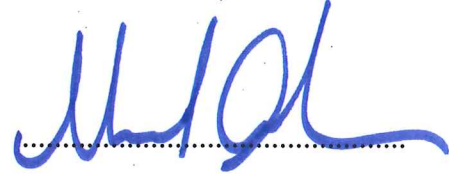
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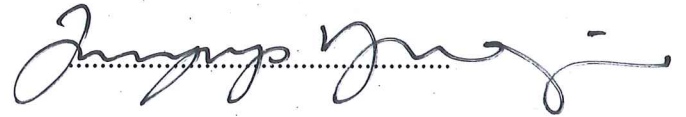
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ABSTRACT

A PHENOMENOLOGICAL STUDY OF SENSUAL SPACE EXPERIENCES IN TERMS OF ARCHITECTURAL PLEASURABILITY:
A CRITIQUE OF VISUAL DOMINANCE

During recent years, due to the advancing technology and visual representation techniques, architecture has evolved as a virtual image. As a consequence, the relationship between architectural space and its users has been neglected in buildings. When the human-space relationship is analyzed, it could be seen that, experiential integrity between the subject and the space is constructed through sensual experiences of space. This relativity is emphasized by architectural phenomenology. Taking the architectural phenomenology approach, this thesis explores the effects of senses on space experiences. It is assumed that multi-sensorial spaces are more pleasurable for every user.

As a criticism against the tendency to represent architecture as only a visual image, the thesis aims to examine role of nonvisual space experiences on spatial pleasurability. For this purpose, a comparative study had been studied between visual and nonvisual space experiences.

For the purpose of exploring experiential integrity of architectural spaces, the relationship between blind people and space had been examined by interview method and then it had been tested both blind and sighted participants as the case study of the thesis.

At the scope of this thesis, by comparing visual and nonvisual space experiences, a multi-sensorial approach for architectural design had been proposed.

ÖZET

MİMARİ MEKAN MEMNUNİYETİ AÇISINDAN DUYUMSAL MEKAN DENEYİMLERİ ÜZERİNE FENOMENOLOJİK BİR ÇALIŞMA:
GÖRSEL BASKINLIĞA BİR ELEŞTİRİ

Son yıllarda gelişen teknoloji ve görsel sunum teknikleri ile mimarlık giderek sanal bir imaja dönüşmekte ve bunun bir sonucu olarak, günümüz yapılarında mimari mekan ve kullanıcısı arasındaki ilişkinin göz ardı edildiği düşünülmektedir. İnsan-mekan ilişkisi incelendiğinde, özne ve mekan arasındaki deneyimsel bütünlüğün duyumsal deneyimler ile sağlandığı görülmekte ve bu ilişki mimari fenomenoloji disiplini içinde incelenmektedir. Bu tez, çoklu duyumsal mekanların kullanıcıları için daha memnuniyet verici olduğu kabulü ve mimari fenomenoloji yöntemi ile duyuların mekan deneyimleri üzerine etkilerini incelemektedir.

Mimarlığın yalnızca görsel bir imaj olarak sunulmasına bir eleştiri olarak tez, görme harici duyuların mekan deneyimlerinin mekan memnuniyetindeki rolünü araştırmayı hedeflemiştir. Bu amaçla görsel ve görsel olmayan mekan deneyimleri arasında karşılaştırmalı bir çalışma yapılmıştır.

Mekanın deneyimsel bütünlüğü keşfetmek amaçlı, vaka çalışması olarak, görme engelliler ve mekan arasındaki ilişki mülakat yöntemi ile incelenmiş ve hem gören hem de görmeyen katılımcılara uygulanan anket ile de test edilmiştir.

Vaka çalışması sonucunda, görsel ve görsel olmayan mekan deneyimlerinin karşılaştırılması ve yorumlanması ile mekan tasarımlarında kullanıcı memnuniyetini arttırmak için çoklu duyumsal bir bakış açısı öneri olarak sunulmuştur.

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LIST OF ABBREVIATIONS

DSC   Demirören Shopping Center

ITU   Istanbul Technical University

P   Participants

PCB   Participants with Congenital Blind

SP   Sighted Participants

TBP   Totally Blind Participants

Q   Question

1. INTRODUCTION

This chapter introduces the subject and objectives of the study. The aim of the chapter is to outline structure of the study by presenting research problem, limitation of the study, and research method used.

1.1. INTRODUCTION

Architecture and, as a product of it, architectural spaces have always been described by their visual properties. Studying principles of architecture is mostly related to the sense of sight. Every architect initially imagines how the project will look before designing it and then production begins with drawing sketches, plans and perspectives which are all visual processes. During the recent years with the help of advanced technology, modeling programs and visual representation techniques, architecture has become even more of a visual production and has lost its reality through the evaluation of virtual image; so much that this virtuality has started to manipulate the presentation of architectural products by making them appear more realistic and imposing. As a consequence of virtuality being capitalized by real estate companies, visual representation of an architectural design have become the major marketing tool.

This study claims that these strategies and design approaches that rely too much on vision may damage architecture negatively, since it is not fair to say that architecture and/or architectural spaces are just visual. Architectural space as visible constructed entity and the life behind the walls are different from each other. In other words, spaces are also a part of human life; people spend their life in and around physical settings. Although they are not always designed by an architect, still people live in spaces and have a relationship with them. This relationship between human and space is constituted by an experiential process. Human beings experience the world around them through their senses and attribute meanings to it. As much as human beings affect and change the space, space also has an effect on human beings. This effect may not olnly increase spatial comfort and pleasantness but also make people feel uncomfortable. This spatial psychology even affects preferability of an architectural space. Hence, getting pleasure out of an architectural space

plays an important role in human life. Instead of reducing architectural designs into a single layer of vision as it is in the contemporary world, it is advantageous to raise an awareness of the human-space relationship that gives pleasure to human beings by accepting architectural spaces as a sensually integrated phenomenon. This phenomenological tendency on architectural designs makes architectural space more pleasant and these designs do not contradict time, they even make it acceptable by concretizing it.

Accepting that architectural spaces are multi-sensorial fields, as a criticism of today's architecture's visual dominance, this study began with the question of; *Is architecture just a visual phenomenon, and what would an architectural space mean if it did not have any visual property?* This was not a question that went unanswered, because architectural spaces are also definable by and pleasing to people with visually impairment. However, the important issue for architects is to truly understand their experiences and by doing so hopefully enrich the knowledge of the space phenomenon. Besides these approaches, if visual properties and experiences are dominant in the contemporary architecture world, their effect on spatial pleasure should also be examined. What if the pleasurability of visual experiences is insufficient and even illusional in comparison with other sensual experiences?

For this reason, there is a need to investigate the role of nonvisual and sensual space experiences on pleasurability, and to make a comparison with visual experiences. Such a study can reveal the multi-sensorial structure of architectural space and indirectly enrich the content of architectural designs.

1.2. OBJECTIVES

When asked to define architecture, the general tendency of society is to describe architecture as a shelter which is aesthetically built. Although this is not an incorrect description, it is still inadequate and superficial. Furthermore, this tendency is reinforced by virtual visual images of buildings for promotion in today's architecture. As a consequence, nonvisual sensual experiences are ignored in architectural designs. The objective of this study is to explore both visual and nonvisual sensory experiences that

affect the pleasurablity of architecture. by investigating these sensual experiences comparatively between sighted and blind participants, this stusy aims;

- To investigate the relationship between human and space.
- To investigate the sensual integrity of architectural space as a phenomenon.
- To criticize the dominance of visuality in architectural designs.
- To analyze the role of nonvisual sensual space experiences in spatial pleasantness in comparison with visual experiences.

According to this objective, definition of architectural space and its experiential relationship with human beings that culminated in pleasurability of space will be analyzed. During the study, concepts of architectural space, architectural phenomenology, perception, experience and pleasantness will be examined in the light of philosophical, psychological and architectural perspectives. Two different sites will be analyzed in terms of their design characteristics that are sensually experienced by their users. Due to the nature of phenomenological approach, personal experiences of human beings will be explored without manipulations and inducements. This means that these design characteristics can be about general sensual properties such as aural, haptic and olfactive, as well as visual.

1.3. LIMITATIONS

The topic of this study is limited to interior architectural spaces. Two example sites to be experienced by the participants were determined for the study. Due to difficulties of analyzing experiential relationship between human beings and space as well as the aim of enrichment in architectural designs, the examples were limited to the ones in architectural scale, not urban ones. On the ground of comparative nature of the study, fieldwork sites should be in similar scale, building type and climates. However, the actual examples were determined according to the result of interviews with those with total blindness.

Participant groups were composed with small number of research participants due to the qualitative methodology of the study. However, this is to explore meanings and

experiences of architecture using the phenomenological approach. The aim was not generalize but to understand individual experiences.

1.4. POTENTIAL OUTCOMES OF THE RESEARCH

This study investigated differences between non-visual sensual experiences and visual experiences of architectural spaces in terms of spatial pleasantness. According to previous work, it can be said that architectural spaces could be more pleasurable and permanent if they are designed considering multi-sensorial integrity. With a critical perspective to visual dominance, it is thought that visual experiences are not reliable alone. This unity misled architectural designs and supports the involvement of superficial architecture.

Potential results of the research are changeable depending on how the investigation goes. However, it could be said that non-visual sensual experiences are as important as visual ones and even more reliable than them, this result may make a difference in architectural design approaches by emphasizing the effects of non-visual experiences on spatial pleasantness. By concentrating on design properties which increase sensual pleasantness, architectural spaces would be more comfortable and preferable.

1.5. METHODOLOGY

For investigating the role of visual and non-visual space experiences in terms of spatial pleasurability, an extensive literature review about the concepts of architecture and architectural spaces, the relationship between architectural spaces and human beings, and phenomenological approaches to architecture was conducted to understand the unidirectional structure of today's architecture.

This relationship that is between space and subject was investigated in terms of spatial experiences and their effects on spatial pleasantness. Firstly, differences between perception and experience were emphasized. After that, the term of spatial pleasantness was examined in terms of human beings' experiences in the light of spatial quality theories and parameters. This investigation is intended to provide a basis for analyzing sensual

space experiences, which are not a complete process. Afterwards, sensual space experiences were analyzed according to the sense of sight, hearing, touch and smell.

To understand what is experienced sensually as an architectural space without vision and the effects of nonvisual experiences on the spatial pleasurability, two studies were conducted. In the first study, an in-depth interview was conducted with seven visually impaired people about their general architectural experience. As a consequence of this, sensually pleasurable and non-pleasurable design key words were determined for testing visual and nonvisual experiences in a space. In the second study, two locations were determined and those spaces were tested in terms of their sensual experiences and sense of pleasure by twelve visually impaired and twelve good-sighted people. To investigate these experiences a questionnaire study was conducted with twenty four participants.

The methodology adapted by the author is summarized in Figure 1.1. below.

IS ARCHITECTURE JUST A VISUAL PHENOMENON ?
WHAT MAKES SPACE IF IT DOES NOT HAVE ANY VISUAL PROPERTY

Architectural Phenomenology	
	Architectural space as a multi-sensorial experiential field
Space Experiences	
	What is experience ? Which spatial experiences cause pleasantness ?
Sensual Space Experiences	
	Visual space experiences Aural space experiences Haptic space experiences Olfactive space experiences
A Critical Approach to Visual Dominance	
	Role of nonvisual space experiences in spatial pleasurability Reliability of visual space experiences
Case Study	
	Comparison of visual and nonvisual space experiences in spatial pleasurability
1. In-Depth Interview to Understand Nonvisual Space Experiences 2. Determining Design Keywords for Comparitive Space Experiement 3.Determining Questionnaire Study	

ANALYZING QUESTIONNAIRE RESULTS TO INVESTIGATE ROLE OF VISUAL AND NONVISUAL SPACE EXPERIENCES IN TERMS OF SPATIAL PLEASURABILITY

Figure 1.1. The methodology adapted by the author

1.6.   THE STRUCTURE OF THE STUDY

This thesis consists of six chapters. The first chapter introduces the subject and explains objectives, with general outline of the study process.

Chapters 2 and 3 consist of literature review. In chapter 2, architectural phenomenology is reviewed from the philosophical and architectural perspectives. This chapter emphasizes different theories about the concept of space and focuses on phenomenological thought. It starts with the definition of architecture and architectural spaces and concludes with taking an architectural space as a phenomenon. Chapter 3 presents the concept of pleasantness and space experiences. Spatial pleasantness is analyzed in terms of spatial quality theories and its relation to the concept of space experiences. Sensual space experiences are examined as visual, aural, haptic and olfactive experiences.

Chapter 4 is composed of the theoretical framework of the thesis and includes inferences that are made from literature review. This chapter implicates the main proposition and explains the testing method in a detailed. Constitution of in-depth interview, the choise of fieldwork sites for a questionnaire study, and the composition of questionnaire are explained to form a methodological base of the research.

Chapter 5 presents two studies conducted for this thesis which is about a comparison between visual and non-visual space experiences in terms of spatial pleasantness. Participants, interview questions, fieldwork sites for the questionnaire study and the questionnaire are described in detail and the findings were presented.

Chapter 6 is the final chapter that contains an overall discussion of the study. This chapter concludes the thesis by summarizing findings and the interpreting of these findings phenomenologically.

2. ARCHITECTURAL PHENOMENOLOGY

This chapter reviews the concept of architectural phenomenology, which is the main title and method of this research within the frame of main notions that are included the study area of this thesis. For the purpose of describing architectural phenomenology, first of all a comprehensive literature review about the concepts of architecture, architectural space and phenomenology that are difficult to qualify, will be conducted. According to the definitions of these terms in terminology, the relationship between architecture and phenomenology will be analyzed. In order to explain this relationship, examples of architectural projects that are designed in the background of this relationship will be examined. Finally, to seek the effects of this relationship on spatial thought, architectural spaces will be analyzed as a phenomenon.

2.1. DEFINITION OF ARCHITECTURE AND SPACE

The aim of the section is to research definition of architecture and architectural spaces through the ages. The emergence of architecture is related to the primitive men's needs for refuge from severe weather conditions, rain, sun and wild animals. They needed to separate themselves from the infinite universe in which they existed and needed to create a defined space that was easy to perceive [1]. This definition shows that architecture and architectural spaces are completely related to human beings and human needs. When we analyze the definitions of these concepts from past to present, it is seen that many philosophers, sociologists, engineers and architects review them from different perspectives. Due to the social, cultural and psychological responsibilities of architectural discipline, it is reviewed in a large range of view. Besides, it is conspicuous that spatial approaches that are directly related to architecture are much more philosophical and psychological.

Definition of architecture as defined by Britannica Encyclopedia is "the art and technique of designing and building, as distinguished from the skills associated with construction." The practice of architecture is employed to fulfill both practical and expressive requirements, and thus it serves both utilitarian and aesthetic ends [2]. In his Encyclopedic

Dictionary of Architecture, Doğan Hasol defines architecture as *designing buildings for the basic needs of communities and individuals such as refuge, recovery, working and amusement* [3]. However, when definitions are analyzed from past to present, in view of their relation with users, it is seen that architecture is not only about designing but also constructing a building.

One of the first definitions of architecture is from Marcus Vitruvius who was a Roman writer, architect and engineer. He defined architecture as major of arts and a unique discipline which is inspired from nature and the human mind. In his book *De Architectura* he asserted that a successful structure must exhibit these three qualities; *Utilitas, Firmitas, Venustas* [4]. *Utilitas* is a Latin word that means *useful*, which implies that a building must provide adequate space for the intended usage. However, this notion has been causing a controversy since 1960. The reasons of this controversy are; many of buildings that do not provide the proper space for their purpose but still can be accepted in the architectural world and also there are many historical buildings which are used for another purpose than for the one they were originally planned. It is conceivable that this statement evolves the famous dilemma of architecture in the modernist era, which is *form follows function* or *function follows form.* The other quality, *Firmitas*, means *solid or firmness*. Maybe the best definition of this notion was made by Auguste Perret, who is the pioneer of reinforced concrete in architecture. He defined architecture as the art of organizing space, which can only express itself by construction. *Venustas* is also a Latin word which means *beauty.* It implies a visual quality in architectural works. However, in the 15th century, Leon Battista Alberti, an Italian architect and sculptor who was one of the pioneers of the Renaissance Movement, criticized the notion of beauty and said that architecture should provide more than visual satisfaction and he proposed *Amoenitas* which means pleasure instead of Vitruvius, M.'s anthropomorphic term *Venustas* [5]. In the Reneissance Era, this definition evolves to *Comodità, Perpetuità, Bellézza* which means *comfort, persistence, fineness* [6].

In 1563, Giorgi Vasari, who was one of the founders of the Academy of Arts of Drawing in Florance, defined architecture as an art of beauty with painting and sculpture which was later defined as *fine arts* [7]. German philosopher Immanuel Kant also defined architecture and sculpture as plastic arts. He classified art in two groups as aesthetic and mechanic, and he categorized plastic arts in a subgroup of aesthetic arts [8].

In the 19th century, English critic John Ruskin defined architecture as *a violation of truth* by contemptible ways. He said that architectural thoughts can be considered in three headings. First of them is the suggestion of a mode of a structure like in pendants of late Gothic roofs. Second heading is paintings on surfaces that represent other materials like the marbling of wood or sculpture ornaments on the surfaces and the last one is cast ornaments of any kind [9]. When we analyze Ruskin, J.'s statements we can see that for him architecture means only an ornament upon the building façade. However, in the early 20th century, with the help of modernism, architecture was completely alienated from this ornamental image. Adolf Loss, who is one of the modernist architects, claimed that *ornament is crime*. The foundation of the Bauhaus School was the most notable reason for this development. Walter Gropius, founder of the Bauhaus school, defined architecture as an entire discipline made by the combination of architects', painters' and sculptors' works [10]. Le Corbusier, who is the pioneer of modern architecture, defined architecture as *the use of raw materials to establish stirring relationships* and he declared the elements of architecture as *light and shadow; walls and space* in his book Toward an Architecture [11]. Frank Lloyd Wright, who is the pioneer of organic architecture, declared architecture as the mother of arts and the other forms of arts are subservient. He defined architecture as *a life that appears as a form* [12]. An opposite view of these, Steen Eiler Rasmussen claimed that architecture is not merely called art just because it appeals to the eye. According to him, architecture is a functional art that defines the space in which people live. As a consequence of this, buildings should not be judged with external appearances, they should be evaluated by the space experienced while living in them. He declared space is the soul of architecture [13].

When we analyze the concept of space, it could be seen that it has been pondered since the Ancient Greek Era. The effects of philosophical movements from Socrates to modern day are also influential for the definition of space. Socrates claimed about two and a half thousand years ago that the idea of spatiality is known by human beings before birth [14]. Space is defined as an abstract and hollow shape in today's mathematical world [15] but it was not a hollow shape for Aristotle. According to him, space means something surrounding something else. He defined this with *topus* by the example of a glass of water, it is not the emptiness in the glass, it is what makes the glass; it is *topus*. It is said that the space concept of Aristotle is influenced by Plato's *chora*. *Chora* is described as a

receptacle, a space, or an interval by Plato. It is neither being nor non-being, it is an interspace. *Chora* is both cosmic place and abstract space. [16]. If there is a space, it must take the place of another space. *Chora* can be considered as bringing pieces together [17]. However, Plato's examining approach of knowledge affects the definition of space. According to his approach, definite knowledge which is not related to sensual experience is dominant. For Plato, the source of knowledge is related to neither perception nor experience, only the thinking human mind can get the information [18]. Another rationalist philosopher Rene Descartes's cartesian thinking also corresponds to Plato and Aristotle's space concept. Like Aristotelian space, cartesian space is also independent of human thought. Space is abstracted from body movement and contains many generic spaces in a broad sense [19]. In other words, Descartes, R. describes space as a geometrical progression. According to him, space does not affect its user and they must be analyzed separately. This unconnected system between subject and object means human-space separation [15]. It is claimed that the dual philosophy of Descartes, R.'s affects all definitions and design methodologies that include subject-object relationship in the architectural field. This system of thought caused separation of form and function or aesthetic and practicality in architecture and architectural space analyses [20]. All these conceptual definitions show that space was discussed as a physical concept and analyzed separately for a long time from those living in it.

On the contrary, Martin Heidegger was the first philosopher who analyzed space according to the subject-object relationship. He criticized Descartes, R.'s cartesian space estimation by phenomenological view point according to his existential philosophy. He discussed space as an experimental field, not just pure construction. Heidegger, M. analyzed the human and space relationship and defined this relationship by *being-in-the-world* in his book*, Being and the Time*. He tried to examine buildings according to experiences of space by persons which claim that these experiences are our traits of being in the world [21]. This approach of Heidegger, M., makes us understand the relationship between subject and place. One of the other existential philosophers Maurice Merleau-Ponty also defined space by subject. Space is founded by subject and is a circumstance for spatial objects and also for the subject's experiences of this object. In his space notion, *the body* plays an important role, he admits his body as an object in space and space exists with it [22].

When we analyze Heidegger, M. and Merleau-Ponty, M.'s space definitions, the concept of subject-object relation that they emphasized in consideration of existential philosophy, corresponds to the relation between space and its user in contemporary world architecture. Christian Norberg-Schulz is known as the first person, who first takes Heidegger, M.'s philosophical thought in to the architectural field. Norberg-Schulz, C., emphasized the *atmosphere* of space and defined space as a qualitative phenomenon. Architectural space means concretization of existential space for him. Schulz believed that places encompass the human existence. In contrast to objective analyses of the environment, he claimed that understanding spaces as a phenomenon is completely subjective in human cognition. He said that the human response to space is both poetic and analytic [23]. He claimed that every space has its own *genius loci*, which means every space has a particular identity. *Genius Loci* is a Roman concept that means every independent being has its genius, its guardian sprits. These spirits give life to people and places [24]. One of the philosophers and psychologists of the 20th century, Michel de Certeau, made a distinction between space and place. He defined place as an order that elements are positioned in according to the relationship of their coexistence. Place is a tercentenary configuration of positions and implies a stability for him. Space is a different concept from place. It is combined by mobile elements like velocities, time variables and vectors of directions. Certeau, M., defined space as a sense that actuated by the union of movements deployed in it. In contrast to place, space does not have the stability of a property. Shortly, he announced space as a practiced place [25].

When all these approaches are reviewed, space can be defined as an environment that provides the exploration of our existential potential and a place where subject and object meet. Therefore, it contains a dimension far beyond the need for refuge. In a similar perspective with Heidegger, M. and Merleau-Ponty, M.'s hermeneutical approaches also review space with togetherness of a subject that interprets the space and soul that is interpreted by subject. When considered from this point of view, it can be said that in every age space takes form by the current period's cultural, aesthetic and politic tendencies [20].

Tendency to consider architecture and architectural space as a livable concept that cannot be viewed separately from human beings is also applicable for contemporary architects. Steven Holl said that architecture has the power to inspire the existence of human beings. It

has more to offer than the other art forms; architecture has a relation with our sensory perceptions. Light, shadow, color, texture and detail are all present in the complete experience of architecture [26]. Another architect Juhani Pallasmaa claims that the ideal completeness of architecture could be discussed only by detaching architectural objects from the reality of time and the traces of use. As a consequence, time and subject could be felt with architecture [27]. In addition to this opinion, he asserts that buildings transform to an image product with the help of psychological effects of advertising instead of a spatial experience [28]. Alberto Perez-Gomez also emphasized the distinction between contained space and material container when he defined architecture [29].

Architecture is a reflection of space that honors human life by including time and life in it. However, contemporary architecture becomes just a rational priority by neglecting this reflection [20]. Pallasmaa, J., also questions about modern architecture by asking why many buildings of today's architecture have a relation with our sentiments. He claims that they just draw attention with their creative design, but barely give any sense of our own existence [30]. Rasmussen, S., E., also criticized the definition of architecture as adding plans and sections to elevations. He asserted that it is something more, if architecture is an art it should be explained and experienced [13].

When we analyze the consideration and improvement of architecture and space from the date architectural discussions began until today, one of the most important critics on architecture is ignoring of human beings' role in these concepts. Primarily, Heidegger, M. considered the human as a subject and space as an object which evolve mutually. After that, this process was promoted by Merleau-Ponty, M. and he also emphasized human's relations and experiences while defining the concept of space. This evolvement is accompanied by the idea that architecture and architectural spaces can exist as long as they are experienced. These approaches bring the methods of architectural phenomenology together. To discuss the concept of architectural phenomenology, firstly method of phenomenology will be analyzed as a philosophical context.

2.2. PHENOMENOLOGY

Phenomenology is a philosophical thought which has been founded by Edmund Husserl in 20th century. It is considered to be influenced by the general depression of sciences in the first quarter of the century [31]. When we analyze the phenomenological studies we can say that they are granted as a philosophical method rather than a philosophical movement. Phenomenology as a word that defined by Oxford dictionary means an approach that concentrates on the study of consciousness and the objects of direct experience [32]. The broad meaning of the concept could be defined as an interpretive study of human experience which aims to analyze human situations and exercise as they spontaneously occur in the course of daily life [33].

Phenomenology can be defined as a method that is related to the human consciousness of perception and experiences of the environment (objects) in general. As a consequence of this relation, it could be seen that phenomenological method is used for every aspect of human life. As mentioned above, in this thesis architecture is analyzed based on phenomenology. In order to understand the architectural phenomenology, phenomenology will be primarily examined philosophically.

2.2.1. Definition of Phenomenology as a Philosophical Method

Edmund Husserl, German physicist and philosopher, is considered to be the father of phenomenology. He argued that; phenomenology did not deny the existence of the real world, but sought instead to clarify the sense of this world (which everyone accepts) as actually existing [34]. According to Husserl, E., perception is the absolute knowledge of soul. Each perception that provides data about the soul of the space is a source of knowledge. Perception that is based on sensual experiences evolves into self-perception by bracketing reality [35].

Phenomenology is also defined basically as the study of structures of experience, or consciousness. In the proper meaning of the word, phenomenology is the study of *phenomena* which means things as they appear in our experience, or the ways we experience them and it does this with respect to all senses of *phenomenon* [36, 37]. To

understand the whole phenomenon, phenomenology claims to get rid of preconceived ideas of perception and focuses on the pure experiences of them [38]. In other words, phenomenologists try to explore the essential nature of the phenomena and why they have been experienced that way [39].

When we analyze the definition of the term we may say that phenomenology emphasizes the word *experience.* Shortly, we could define phenomenology as studies on subjective experiences. As a consequence of this subjectivity, phenomenological approach rejects any subject/object or people/world division. The basic assumption of phenomenology is that *people are their world and the world is its people* [39]. We can find the roots of the phenomenological thought in the philosophy of Immanuel Kant. Kant, I., distinguished between *phenomenon* which he defined as objects that interpreted by human sensibility and *noumena* which he defined as objects that are *things-in-themselves* which humans cannot directly experience [40]. Hicks, S., classified 19th century Kantianism in two categories; structural linguistics and phenomenology. While structuralists are interested in subjective noumenal categories, phenomenologists seek the content by describing the phenomena [41].

When we examine the conceptual progress of phenomenology, it is seen that it has a large range of development that reaches from pure phenomenology of Edmund Husserl to the hermeneutic phenomenology of philosopher Paul Ricoeur to the existential phenomenology of Martin Heidegger and Maurice Merleau-Ponty.

Husserl. E.'s phenomenological approach, as mentioned above, is defined as *pure* or *transcendental* phenomenology. He emphasized the substantial structure which allows the objects taken for granted in the natural attitude to constitute themselves in consciousness [36]. According to pure phenomenology, all acts and mental processes have to be unconscious; it is not psychological because it is not altered by the facts [37]. He tried to investigate the pure subjectivity in isolation from the world. However, he was also criticized of being idealistic and even cartesian because of his thoughts about the world are constituted by transcendental subjects [42].

Hermeneutic phenomenology is not as constative as transcendental, it is a more interpretive method. This is because it is thought that all kinds of human awareness are interpretive. It is considered as a philosophy of culture. Hermeneutical phenomenology approach studies exploration of human experiences that are expressed spontaneously by speech, writing or art. As a consequence, hermeneutical works are conceived as empirical protocol studies [43]. Ricoeur, P. and Heidegger, M., are regarded as the pioneers of the hermeneutic phenomenological movement. Yet Heidegger, M.'s hermeneutic attitude is about existential thoughts of human beings [44]. Hence, it will be discussed later under existential phenomenology. Ricoeur, P.'s hermeneutic is also existential but his method is not. Ricoeur, P. claimed that the meanings of the symbols are not so clear and they must be interpreted in a hermeneutic way. He analyzed how the human sense was conciliated by myth, religion and language. He emphasized language. So, in the hermeneutic phenomenology the word *object* replaced the word *language* [45].

Existential phenomenology is a term which was used largely in the late 1950's and early 1960's. Existential phenomenology stressed the preconscious lived-experience over the phenomenon of the lived-body. Existential phenomenologist generally research human situated experiences and analyze existence in point of people's inclusion in a situation in the world. [33]. Heidegger, M. is considered the pioneer of this school of thought and Sartre, J.P, and Merleau-Ponty, M. were the other philosophers who were influenced by him. Sartre, J.P.'s phenomenology differs from other phenomenologists. He announced this phenomenological method as *existential psychoanalysis* instead of a philosophical approach [46]. He described this concept as a new approach to psychoanalysis. He claimed that behaviors can be explained in the sense of the way we see the world [47].

Heidegger, M. described his approach to phenomenology as "analysis of existence" rather than an existential philosophy. Heidegger, M.'s phenomenology is about being, specifically the human being experiencing *Dasein* which means being there. He described *Dasein* as an existence in its very Being and suits itself comprehensively towards that being. He described this approach by *being-in-the-world* [21]. The hyphenation between these words means the inseparability of human existence, world and the existential relationship between them [22]. In Heidegger, M.'s existential phenomenology, the idealistic and realistic relationship between person and world in psychological or

conventional philosophical approach is criticized [46]. According to idealistic approach, the world is considered as a function of a person who acts on the world through consciousness, so the person can actively affect the world. In contrast to this view, realistic approach claims that the person is a function of the world and the world can affect the person and shape how he/she acts. Heidegger, M. asserted that both approaches make a distinct separation between human and world, which is not like this in the natural life experience. He claimed that phenomenological method could not be considered without this relationship. He admitted space as fundamental of being in the world and he sought the buildings that had an experiential relationship with human beings. This method helps analyze the relationship of person and space. In his book *Being and the Time*, Heidegger, M. said that if a person is in a space then that space is not just a construction it is an experimental and interactive relation field for that person. The relationship between person and the world is indivisible. Person and world are a whole, one instead of two parts [21].

The other existentialist philosopher Maurice Merleau-Ponty also considered phenomenology as an existential philosophy like Heidegger, M. did, but he emphasized the importance of body and perceptual experiences. Merleau-Ponty, M. described being in the world as an objective agreement with the world and the body is the objective intermediary between person and world, the same relationship Heidegger, M. claimed to be true [48]. He claimed that the bodily subjectivity of a person frames his/her experience of the world. Merleau-Ponty, M. defined space as a condition for spatial objects and the subject's experiences of them; space is formed by the subject according to him. For Merleau-Ponty, M., the word *subject* refers to the who experiences and the word *object* refers to that being experienced. He criticized science and psychology which treat the body only as an object [22]. The relationship between the mind and the outside world is constituted by the body's movement in it. He defined body as visible and mobile and a thing among things, so he assumed *body* to be an interface between the mind and the world [49]. Like Merleau-Ponty, M., in philosophy, Edward Casey, professor of philosophy and one of the past presidents of the American Philosophical Association, defined body and place relationship as *congruent counterparts*. He claims that place is where the body is and they suit each other. He also claims that our existence is embodied being. We are *bound by body* [50]. For Casey, E., we define and perceive places by our body and regularize the world in terms of here-there, near-far, up-down, above-below. When we analyze these approaches we

could see that they are similar statements to Meleau-Ponty, M.'s approach about the body expressed through actions and body movement - spatial perception relationship.

Gunnar Karlsson, professor in Stockholm University who works on phenomenological philosophy, examines the subjects' spontaneous experiences in three headings. He describes the first point with Husserl, E.'s *consciousness-as-intentionally.* Karlsson, G., claims that this approach divides experiences analytically into a subject and object pole, in other words, subject generates object. *Consciousness-as-intentionally* is the starting point for him regarding all experiences being explicated in terms of how the subject shaped the object and this object also can be interpreted as the act of consciousness. The second point is about meaning of the person's experience in the light of the phenomenon being studied. Meaning relates to the object and is constituted by subject. So, he summarized that meaning of something is related to the specific way of how the subject comforts himself/herself with the object. And the last heading is about experience itself. He described phenomenological study as expressing the essential in the experience, which is indispensible for the phenomenon [51].

When it is analyzed the historical progress and definitions about phenomenology, we may say that phenomenology studies the relationship between person and the world according to the person's experiences of the environment. It defines the object as a product of the subject's experience. Several researchers claim that these experiences could be gained from any object or event that people can see, hear, touch, smell, taste, feel, understand or live through. As a consequence, there can be a phenomenology of anything such as light, color, place, seeing, blindness, landscape and architecture [52]. In consideration of this, in the next section, architecture and architectural space will be analyzed by the phenomenological method and the concept of architectural phenomenology will be examined.

2.2.2. Relationship between Architecture and Phenomenology

The concept of phenomenology is involved with architecture in terms of the subject-object relation and perception that is based on experience. The phenomenological approach seeks to find the cause of reactions in an object as a result of sensual experiences between human

and environment. This is the reason why it is claimed that phenomenology helps to perceive architecture as a whole [20]. When we consider architecture and its primary topic, space as a phenomenological matter, subject-object relation that is the basic substence of phenomenology evolves into the human-space or building-user relationship. Hill, J., categorized architecture in two parts; architecture and its users. He claimed that defining architecture as only a building is unfair. He stated architecture is the relationship between the object and its users [53]. The idea that space cannot be considered independent from human beings in existential phenomenology also can quote a reference to the relationship between architecture and human beings. In parallel with this approach, it can be said that an architectural space makes sense only with the life in it and its effects on its users. These acknowledgements bring phenomenological approaches with them.

Architectural phenomenology was raised in the 1990s as a criticism to dominant architectural trends. Even though it has not been defined clearly, it is clear that phenomenology returned the focus on human experiences in the architectural world. Architectural phenomenology stresses how humans perceive the built environment [54]. It is also about the sense of buildings, how architecture affects human beings or bodily dimensions of human beings' architectural experiences [55]. Merleau-Ponty, M. defined his phenomenology approach on architecture. He described an apartment as not a set of closely associated images, but as a familiar domain around him as if his body had invisible threads running out towards it [48]. Christian Norbeg Schulz claimed that humans do not experience buildings as isolated phenomena; they experience them as a part of the comprehensive environment. He said that real architectural experience is the perception of architectural totality and this perception does not include only the visual impression [56]. Pallasmaa, J., defines phenomenology in architecture as looking at architecture from within the consciousness experiencing it [30]. He clarifies this thought by door and window examples. The visual image of a door is not an architectural experience but if you enter through that door it is an architectural experience. Windows also have a similar effect, a window frame does not provide an experience but looking through a window or feeling the light coming through it is an architectural encounter [27]. In similar perspective, it is claimed that the pragmatic facts in real life and architecture can only be understood by living them [20].

When we analyze the relationship between architecture and its user according to phenomenological method, it is proposed that this relation is gained by a person's sensual perceptions. Architecture is defined as multi sensorial despite being assumed as a visual experience [57]. Holl, S., claims that are we able to experience joy from our sensual perception of phenomenon even if we live in constructed space that is surrounded by physical objects [26]. Hall, S., , Pallasmaa, J., and Perez-Gomez, A., claim that only architecture can provide tactual sensations of textured materials like stone and wooden pews according to the sensorial experiences of building materials or the experience of light while walking inside a building, the smell of the space and the bodily relations of scale and proportion [25].

For analyzing experiences and vivacity of architecture and architectural spaces according to architectural phenomenology, we should also analyze Heidegger, M.'s concept of *dwelling*. In *Building Dwelling Thinking*, Heidegger, M. claimed that not every building is a dwelling. He said that today's houses can be well planned, open to air, light and sun but those do not mean that these houses hold a guarantee that dwelling occurs in them". He defined dwelling as *a staying with things* and he clarified these things as elements which gather the fourfold of earth, sky, mortals and divinities. By these definitions Heidegger, M. claimed that architecture is about feeling and feelings change according to time, place and subject. He described the relationship between space and man as the epitome of dwelling [58]. Norberg Schulz, C., interprets the concept of dwelling as *being at peace in a protected place.* He claims that architecture should support dwelling and thus the main purpose of architecture is making the world visible [59]. This notion could be considered as phenomenological. As an example of this, Norwegian architect Thomas Thiis-Evensen's works can be examined. He seeks the understanding of dwelling. He analyses architectural elements in relation to dwelling. Thiis-Evensen, T., categorizes architectural elements according to most basic elements which are *floor, wall and roof* and he calls these elements *Archetypes in Architecture.* He claims that buildings can be interpreted experientially according to these archetypes. He aims to describe the architectural experiences as different variations of floor, wall and roof. He argues in the existential ground of floor, wall and roof there is a relationship between inside and outside. He says that buildings' relative degree of insideness or outsideness can be explained through *movement, weight and substance.* Movement is related to architectural elements' sense of dynamism, weight

is related to heaviness of the materials, and substance is related to the sense of materials such as soft, hard, warm, cold, rough or smooth etc. He asks about the role of these archetypes as experiencing architecture as; what is it that the roof, the floor and the wall do? As a motion, the roof rises or falls. The walls stand up or sink, the floor spreads out, climbs or descends. In this way, weight is also implied. That which rises is light that which falls is heavy. And if the roof is bright and soft as a sail, it is open. If it is dark and stone, it is closed. If the openings in a wall are tall and narrow, they ascend, if they are short and large, they sink. A soft and fine floor is warm and open, but if it is hard and coarse, it closes and is heavy [60].

Seamon, D., claims that Thiis-Evensen, T.'s these analyses contribute to illustrating the sense of dwelling and, in fact, receive a considerable attention in phenomenological research in architecture [61].

When the relation of phenomenology and architecture is analyzed, subject-object relation that is based on experiential perception corresponds to the relationship between human and space which is interrelated by sensual touch. Thus, architectural phenomenology can guide architectural design. In this day and age, many architects who criticized architectural design's independency from human beings adopt phenomenological approaches in their architectural thought. Even, Holl, S. and Zumthor, P., claim that they design their buildings in consideration of multi sensorial space ideas. In the next title, examples of projects that are designed in terms of architectural phenomenology groundwork will be analyzed.

2.2.3. Examples of Buildings In Terms of Architectural Phenomenological Approach

In previous passages, when describing architecture and architectural space, it was emphasized the tendency to define architecture as a visual art or a built environment that is independent from human beings. On the other hand, some architects consider architecture as an interactive relation place and they prefer people oriented designs. As an example of this, Pallasmaa, J., declares Frank Lloyd Wright's and Alvar Aalto's architecture is based on the recognition of human condition and instinctual reactions of the human unconscious. In the most general sense it can be said that, architects who work with phenomenological methods design their buildings in terms of sensual recognition of human and experiential

perspective. In this chapter, the projects of contemporary architects who are associated with architectural phenomenology Alvar Aalto, Peter Zumthor, Steven Holl, and Charles Willard Moore, and the memorial park of Maya Lin will be examined.

2.2.3.1. Alvar Aalto and Paimio Sanatorium

Alvar Alto is a Finnish architect who is known as one of the greatest names of modern architecture. Yet he is set apart with his rationalism approach from his modernist colleagues. He engaged rationalism with humanism. Aalto, A.'s rationalism is about the cognitive realities of human experience and his conflation of rationalism with humanism makes historical and intellectual sense in terms of phenomenological approach [62]. Pallasmaa J., claims that Alvar Aalto rejected the universalist ideal of modernity on behalf of regionalist, organic, historic, and romantic aspiration. He emphasized that Alvar Aalto's architecture suppresses the visual dominance of architecture and grows through separate architectural scenes and detail elaborations [27].

Paimio Sanatorium is Alvar Aalto's tuberculosis sanatorium which is considered important as it puts Finland on the modern architecture map. The hospital is located among the thick forest of Turku, Helsinki. It was constructed between 1929 and 1933 as a result of a competition. The building has an informal plan; each department is placed in a separate wing that can be seen in Figure 2.1.a. Aalto, A. planned this department according to sunlight, view and fresh air [63]. Pallasmaa, J., interprets his design philosophy, progressing from identification of experiential situations. By analyzing these situations, Pallasmaa, J., claims that Aalto, A., apprehended the sanatorium empathetically for healing human beings. He declares the sanatorium as the only one in the history of modernity due to it being rooted in human experiential reality in addition to its technical innovations. For him, instead of cartesian realism of the eye in architecture, Alvar Aalto's building was based on sensory realism because of the textured surfaces that create a desire to touch [27]. The sanatorium was declared as *The Humanizing of Architecture* in 1940 and Aalto, A., was declared *humanly rational, phenomenological oriented, architecturally modernist young architect.* Instead of the mathematically regular notion of space, he designed Paimio around human cognitive experiences and patients' psychological reactions. The patients' experience of entering the hospital metaphorically reminds them of healing. They leave their automobile which is an icon of modernity and walk toward the sun while looking at

the forest. Windows of the rooms are designed according to patients' height when they sit that can be seen in Figure 2.1.b. He thought that these kinds of patients should sit and lie all the time and he designed vertically aligned, single loaded corridors so all rooms were oriented towards the forest. The building also has auditory and tactile features. He designed special noiseless sinks for reducing the auditory disruption of tap water splashing that can be seen in Figure 2.1.c. and packed one wall of each room with noise absorbing material. He thought as the materials that are in close proximity to the touch of the skin should be hot enough to have an effect and therefore, he designed wood handrails for metal staircases [62].
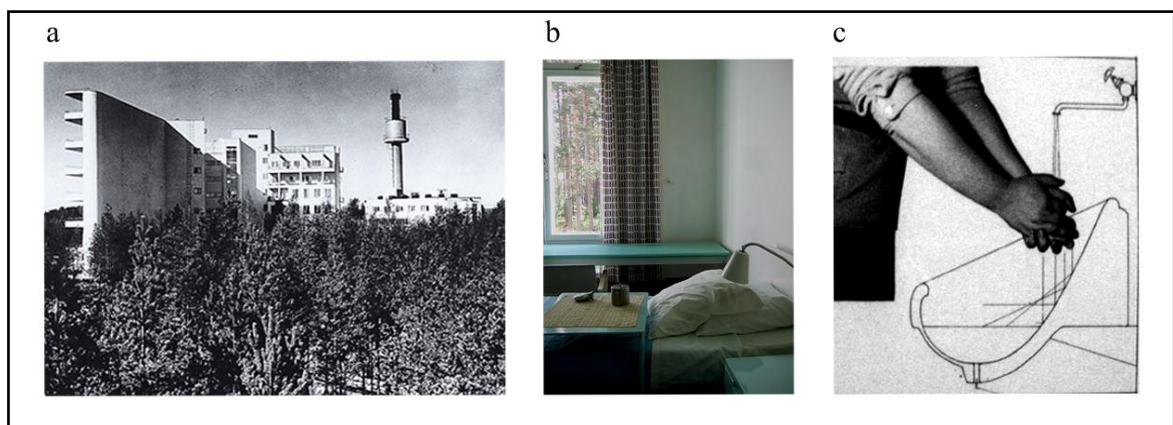
Figure 2.1. Paimio Sanatorium of Alvar Aalto [64, 65]

2.2.3.2. Steven Holl and Kiasma, Museum Of Contemporary Art

Steven Holl is an American architect. He is well-known for his phenomenological studies and watercolor paintings. Holl, S., is generally known for embodying the *existential phenomenology* concept of Heidegger, M. and *the living body* concept of Merleau-Ponty, M. in his architecture [66]. He describes his phenomenological approach of architecture in an interview with Intercontinental Curatorial Project Inc. in June, 2011, as;

> I believe in phenomenology of architecture, the experiential dimension of architecture. So you can have the intellectual dimension and the ideas and the theories but it is the experiential dimension that is the taste, the food, the joy of all the efforts… real important part is the phenomenological experience of the spaces, of the textures, of the light and therefore all these things are intertwined [66].

Holl, S., aims to design his buildings according to bodily experiences of spaces, forms, light and texture. The famous building by him is Kiasma, Contemporary Art Museum in Helsinki which engages phenomenology and architectural design.

Kiasma is a competition project which was opened in 1998. It is located in the centre of the Helsinki, see Figure 2.2.a. Chiasma is a Greek term which means *intertwining*. Holl, S., said that they call the building Kiasma, because it refers to Merleau-Ponty, M.'s famous text *The Intertwining, The Chiasma* about the intertwining of all senses [66]. So the concept of the building is the intertwining of urban fabric and landscape, between the arc of the building and the arc of the sun. The shape of the building is the intertwining of the cultural line of Helsinki, which lies in Alvar Aalto's Finland Hall, and the natural line, which lies in the landscape of Töölo Bay. The Museum provides a variety of sensual experiences, as an example, the shape of gallery rooms that is seen in Figure 2.2.b. are rectangular with one side curved, which makes the space quiet and a dramatic background for art [67]. Holl, S., also intertwined the concept of object and space, movement and stasis, and light and material. While directing from one gallery to another the circulation path provides multiple viewpoints of the same space. Moving along these paths gives the visitors a sense of being among objects. They can be aware of the objects above, below and on the side of their bodies. Each gallery is similar in shape and size, but they have different openings and different amounts of daylight, example of one's can be seen in Figure 2.2.c. As a consequence of this, the sensual experience of each gallery is different. Different daylight degrees carry visitors from one gallery to another until the combined effect is noticed. Galleries activate the senses by stressing their liminality [68].
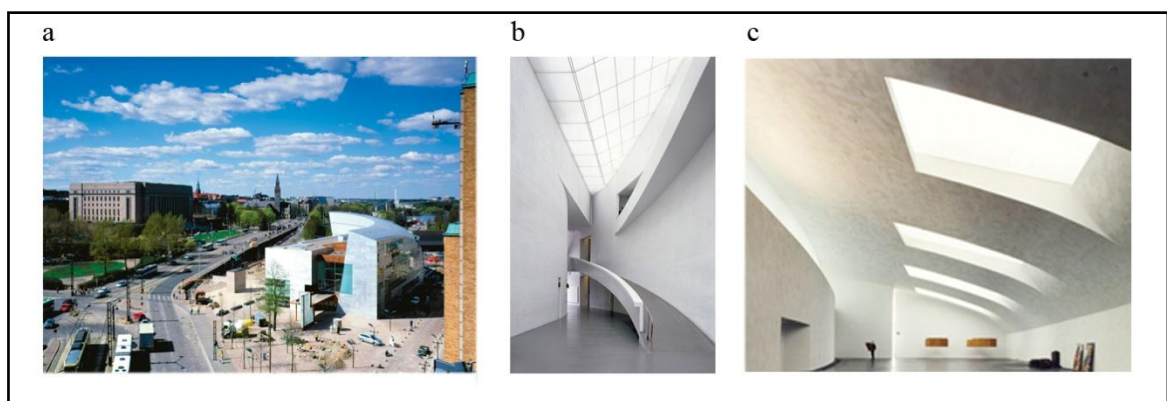
Figure 2.2. Kiasma, Contemporary Art Museum, Steven Holl [69]

2.2.3.3. Peter Zumthor and the Therme Vals

Peter Zumthor is a Swiss architect who works on phenomenological architecture [54]. He defines architecture in terms of sensual experiences of humans. He says that when he thinks about architecture, he remembers his childhood experiences. To describe his architectural experiences when he was not thinking about architecture, he recalls a door handle which he used to hold in his aunt's garden when he was a child. He describes this object as;

> It was a special sign of entry into a world of different moods and smell.

He also says that he remembers the sound of gravel and hearing the heavy door close behind him when he walked through the dark corridor [70]. Because of his carpentery background, he reflects his material knowledge onto his architecture. Hence, his buildings have tactual and sensory qualities.

One of his major works that carried him to international prominence in 1996 was The Therme Vals project. The building is a hotel and a spa that gives complete sensory experiences, located in Vals, Switzerland. The concept is about the experience of bathing in different temperatures of water in a natural mountain landscape. The inspiration point of the project was interpreting the sensual effects of mountain, rock, water, which are architectural properties of the landscape. Reflection of his idea on his design can be seen in Figure 2.3.a. Zumthor, P., describes his project in terms of sensual experiences such as the touch, smell and sound of the building. The sequence of the building is from light to dark, hot to cold and it is protected from being exposed to the climate. Chambers are cave like, designed for providing intense sensorial experiences. As an example, an icy blue filtered light is in the coldest bath in a dark chamber which is seen in Figure 2.3.b. Another chamber which is in Figure 2.3.c. has a heated bath and jasmine-scented water for the visitors to ponder what is called primal existence. The ceiling of the building enables the light to slip away and it emphasizes textures and colors of the materials inside [54].
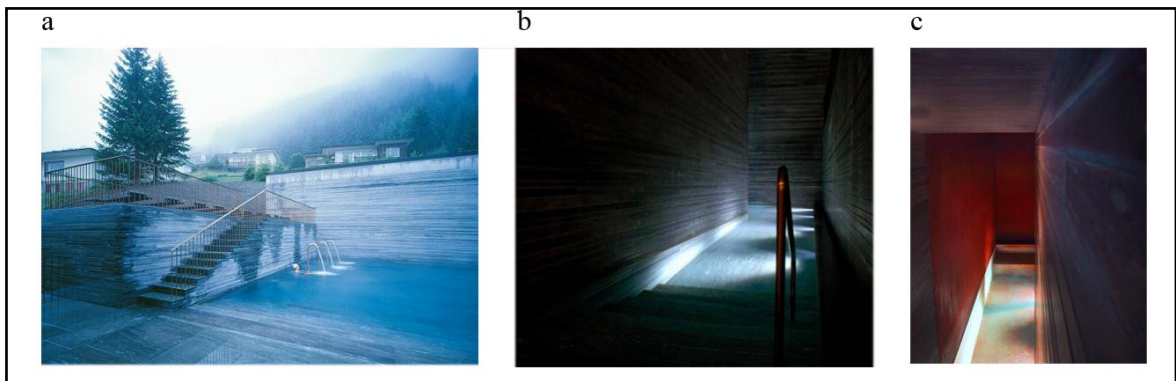
Figure 2.3. Therme Vals, Peter Zumthor [71]

2.2.3.4. *Charles Willard Moore and Private House in NY*

An American architect and writer Charles Willard Moore's architecture emphasized body-centered, sensorial experiences of buildings. Due to his aim regarding experiential architecture, Moore, C.'s works can be defined as phenomenological groundwork. He suggested that integrating the body centered view and space in architectural designs [72]. In his book *Body, Memory and Architecture,* he and Kent C. Bloomer discuss the bodily sensorial perspective of architecture in terms of touch, hearing and smell. He criticized the overemphasizing of sight in perception and he claims that as a consequence of this architectural models are experientially imbalanced and lead us away from our bodies [1].

The most popular work of Moore, C., which creates his sensorial architecture, is the house of partly sighted client in New York, Figure 2.4. The architects of the house, Charles Moore and Richard B. Oliver, thought that the user of the house can never see the result of the project and they should design a house which can be felt as well as seen. In the book *The Architect's Eye,* Tom Porter defines the design concept as sensorial experiences like touch, hearing and smell are integrated with design and have locational messages. As an example, the house has a high-level window ventilation system which provides different scents from different directions that help characterize the rooms perceptually. The windows carry the scent of the pine forest from the north and the peach orchard from the south. The orientation of the house is determined according to the sensual effects of the controlled sun light and shade on the skin and the indoor garden's aromatic plants, such as lemon trees. Besides the olfactory effect of the house, Moore, C. and Oliver, R., designed a special sunken fountain to be able to hear the musical reflection of water. They designed

each room in a different size and proportion for different reverberation ambiance, by this means the client can locate position in the house by hearing the space. The upper level's floor covering is paved with different flooring materials like oak-planked or rug covered floors for differentiating the underfoot texture. This helps the orientation and makes space a sensual experience [72].

Figure 2.4. House for Partly Sighted Client in NY, Charle's Moore [72]

2.2.3.5. *Maya Lin and Vietnam Veterans Memorial*

Maya Lin, a Chinese-American architect, won the competition for memorial park design for Vietnam veterans in 1980. Her design for the park was different from all memorial park concepts; it is believed that her interest in phenomenology led her design for that project. It is a minimalist project that provides multi-sensorial experiences about death, loss, memories and history.

The design is a V-shaped wall one side of which is buried in to the ground, in Washington D.C., Figure 2.5.a. The wall is 150 meters long and its height varies from 20 centimeters to 3 meters. The material of the wall is black granite and the names of the veterans are on the wall which can be seen in Figure 2.5.b. and Figure 2.5.c. Lin, M., emphasized the phenomenology of silence, she wanted the visitors to walk along the wall and think and she avoided from dictating what they should be thinking. She describes this ceremony as a personal experience to walk back up in to the light and each visitor's experience is unique.

She also emphasized healing psychology. Rosinky, N., cited from Lin in his book Vietnam Veterans Memorial that Lin imagined that if she took a knife and cut open the earth, then grass would heal it in time. Thus, she designed the memorial with such thoughts as the healing grass growing over the black wall [73].
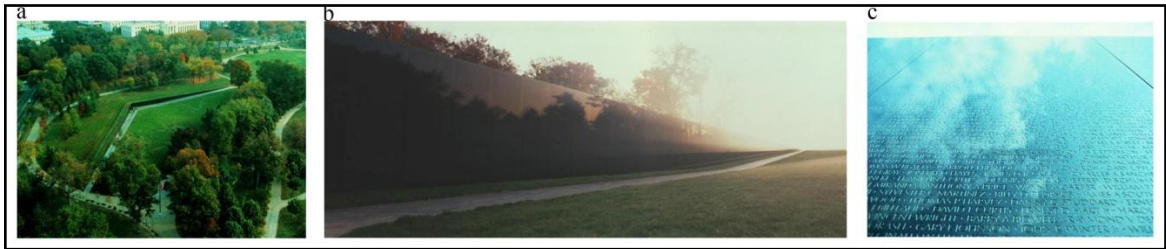
Figure 2.5. Vietnam Veterans Memorial Park [73]

2.2.4.   Architectural Space as a Phenomenon

When the definition of architectural space is analyzed through the ages, commonly it is considered as the primary issue of architecture and it has an essential role during human life. However, the evolution of space as a concept that exists with people and has a relation with it mentioned by Heidegger, M. and Merleau-Ponty, M., comprised by the idea that it is experienced by people. In architectural phenomenology, architecture is reviewed with a different experiential dimension than its function and three dimensional effects. Architectural phenomenology equals to sensual experiences of spatial features. These experiences in between human and space cause to consider architectural spaces as a phenomenon. When architectural spaces are analyzed as a phenomenon the term of experience becomes prominent. In other words, existence of a space is defined and limited by the experiences of its user.

Relatedness of experience and space emerges from the idea that space is a moral environment that surrounds human beings. This relation against rationalist ideas claims that defining space is an objective element. Experience, due to its subjectivity, includes psychological, cultural and sociological features. This is because the term experience subjectifies *space* and turns it to *place* [20]. Dovey, K., emphasized that this relation does not mean that space should be taken as an abstract notion. On the contrary, he says that

lived experiences of *body-in-space* provide concrete data while defining a built environment. According to him, space gets form by moving in it. Space is the sum of the subjects' gatherings that gains from the surrounding possession [74].

While considering the experiential sequences in an architectural space Pallasmaa, J., Holl, S. and Perez-Gomez, A., describe this process by imagining sitting in front of a window in a room. The vista that is seen through the window, sunlight and air that comes through, the floor covering material of the room and the texture of the chair is sit on get together and generate experiential integrity and a sense of space. In summary, coinciding of all subjective sensual experiences such as sight, touch and hearing creates a space [26]. In a similar perspective, Norberg-Schulz, C., also said that if we want to describe the atmosphere of an architectural space we should first ask ourselves how is the floor that we walk on, how the sky above affects us and the psychological effects of the design elements that define space [75]. Norberg-Schulz, C.'s approach supports the theory of how we define an architectural space according to our personal experiences.

Consequentially, human beings centered their body in a space and experience the surrounding environment sensually. Architectural space as a phenomenon corresponds to the subconscious perception of a space emerges with subjective experiences in that space and human body and sensual organs are the mediator of these experiences.

2.2. CHAPTER SUMMARY

When the definition of architecture and architectural space is analyzed, obviously two different opinions are conspicuous. The first is the cartesian thought that is raised under the leadership of Descartes, R. This system of thought distinguishes space and human and defines space by geometrical progression. However, this system identifies space only by its physical features. Cartesian thought had been criticized in the beginning of the 20th century and it was emphasized that space is not just physical integrity; it also has more moral features. Therefore, a new perspective emerged under the leadership of Heidegger, M. and Merleau-Ponty, M. that emphasized the role of human beings in the sense of space. This approach is termed as phenomenological thought and identifies space as an

experiential area that only exists with a subject. Due to the aim of this research, this thesis will analyze architecture in terms of phenomenological approaches.

The relation of phenomenology as a philosophical thought and architecture is conducted by subjective experiences of architectural environment or space. Defining architecture by phenomenological methods is only possible with a human being who lives and defines space by experiencing it. Similarly, a building that is designed in phenomenological approach also emphasizes the role of sensual experiences. Architects like Pallasmaa, J., Zumthor, P. or Holl, S, claim that sensual experiences of a space constitute a relation between space and its user. Hence, the building has an effect of giving a sense of pleasantness. They consider buildings as a system that is integrated and exists with human beings and has an effect on its users.

This phenomenological approach about architecture is certainly related to experiences. That is the primary issue of architecture. When space is taken as a phenomenon, human-space relation is also examined. It is claimed that sense of space is constituted by the subject's experiences while living in it. An architectural space is identified by its user's experiences. In short, space is a phenomenon owning to the sensual effects on its users and is the sum of the subject's experiences. All this research proposed that phenomenological studies include a subjective and experiential progress. In the next chapter, as a result of phenomenological approach, space experiences and effects of experienced space on the subject will be analyzed.

3. SPACE EXPERIENCES

Space experience is a subjective concept that is related to human beings and the life which is in that space. As a matter of fact, "experiencing a space" also corresponds to a subject in a space in the lexical meaning. When the sense of space is analyzed in a phenomenological manner, experiential process is first gained by sensory organs and then formed with personal judgments. In this chapter, sensual process of space experiences, effects of this experiential process on spatial pleasantness, and different experiences with different sensory organs will be analyzed. First of all, to express why the word *experience* is preferred instead of *perception*, the differences between two concepts, experience and perception, will be explained. After that, for the purpose of analyzing the effects of these experiences on spatial pleasantness, theories of architectural and spatial pleasantness and quality will be examined. Comprehensive literature review about architectural quality and pleasantness parameters will be conducted to analyze the role of sensual experiences in these parameters. At the end of this chapter, under the title of *Space Experiences by Senses*, spatial experiences of different sensory organs are examined separately. At this stage, to criticize the visual dominance in architectural space design, hearing, touching and smelling experiences will be analyzed without using vision in a separate title.

3.1. DIFFERENCES BETWEEN PERCEPTION AND EXPERIENCE

The concepts of *experience* and *perception* are generally defined similarly and in the same context. For example, the definition of perception in Britannica Encyclopedia is as in the following;

> The process whereby sensory stimulation is translated into organized experience. That experience, or percept, is the joint product of the stimulation and of the process itself [76].

Although they look similar, when perception and experience is analyzed in various sources separately, it can be seen that there is a fine line between their meaning and scope. In this section, concepts of *perception* which are related to sensation, observation and reception and the concept of *experience* will be analyzed.

In psychology, perception is simply defined as the ability to recognize an object. It is claimed that form is the primary element to recognizing objects. The concept of perception is generally defined by vision; detailed analysis of visual experiences will be found in the next chapter. However, it is emphasized that although perception can be defined using a simple and immediate intuition as in we open our eyes and see, this definition is misleading because perception involves some complexities other than vision [77].

Perception is generally compared with observation and sensation. The difference between perception and observation is defined by relating perception with physical properties. In perception, objects are segmented in a scene by perceptual state, it involves no concept. Hence, perception corresponds to *seeing,* whereas observation corresponds to *seeing as* [78]. When perception and sensation are compared, perception is claimed to be more than sensation. Sensation is described as a neural activity that is produced by a sensitive organ, but this internal activity or motion cannot be observed, it can only be felt. For instance, eye is the organ for sight and can see the surrounding motion because of its externality. But when the light runs across the eye, it causes sensation, which is an internal motion. In sensation we need the existence of physical objects, if there is no light we cannot see or without vibration we cannot hear, but we may have a perception of objects of sensation and this perception does not need external effects. It is claimed that sensation always exist in an organ, but perception does not [79].

When the definition and concept of experience is analyzed, it is seen that the term is defined in a more complete way. Experience is described as a cover-all term for various modes which a person knows and uses to construct a reality. This variety ranges from direct or passive senses of smell, touch and taste, to active visual perception. Lang, J., said that experience is related to what people pay attention to in the environment and what is important to them [80]. Experience also involves feeling and thought. As seen in Figure 3.1. feeling and thought are described as opposites as; feeling is registered subjective states while thought is registered objective reality. In fact, they are claimed to be two ends of an experiential continuum.
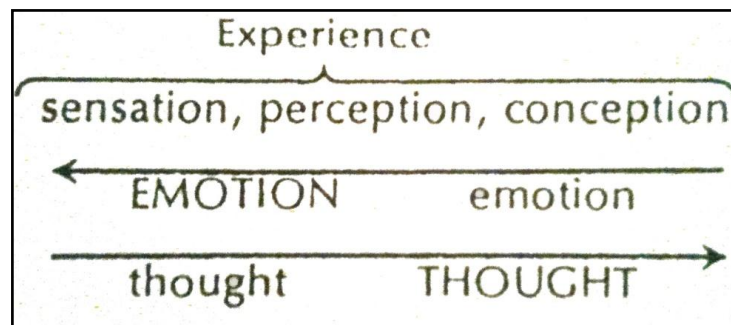
Figure 3.1. The extent of experience [81]

Tuan, Y., claims that experience is directed at the external world and shares a common root with *experiment, expert* and *perilous.* Experiencing an active sense requires experiment with the uncertain [81]. John Locke also stated experiencing as the way of getting knowledge. He described the mind as a blank sheet, that he called *tabula rasa,* until experiences provide the basic materials. He claimed that by this way our knowledge is constructed. Locke, J. rejected the cartesian philosophy and emphasized that human beings are born without innate ideas, these ideas could only be obtained by experiences [18].

When we analyze the definition of two terms, we can say that perception is generally represented by seeing. Even if perception has a complexity in itself like sensation, or observation, it is related to external and physical properties. However, experience is defined more subjectively, not just by seeing. It contains sensation, perception, emotion and thought. Experience is claimed to be the foundation of knowledge and it is a more complex and hermeneutical way of perception. Probably the most explanatory definition that emphasized the distinctness of these concepts is in environmental psychology research. Environmental psychologists distinguish environmental perception and place experience. In perception, the environment is accepted as an object and a person is taken as a passive element. The perceptual process between the environment and a person occurs in one direction. The person is influenced by the environment. But the place experience is taken as an embedded process. The person and his/her surroundings are part of the same system. In experience, a person is an active element, not passively influenced by environmental forces [82]. As a consequence, *experience* is more suitable for phenomenological thought as it involves subjectivity, because the personal meaning of a space is essential to our experience of the environment and this meaning of the

environment has been the province of phenomenology [83]. Hence, in this thesis experience will be used instead of perception. Effects of space experiences on spatial pleasantness will be analyzed in the next section

3.2.   SPACE EXPERIENCES IN TERMS OF SPATIAL PLEASURABILITY

Up to this chapter, the role of space experiences in human-space relation was examined. However, this relationship and these experiences do not only provide, define and identify space, but also help getting pleasure out of it. All sensual experiences that the subject has gained in a space structured the sense of spatiality for its user and this sense of built environment also influences our emotional state. In other words, visual, aural and haptic experiences of a space affect the pleasantness of spatiality positively or negatively.

It is difficult to base these experiences on definite properties. Due to the subjectivity of experiences, a systematic investigation between physical spatial features and emotional experiences of a space could not be done in a quantitative manner [84]. Therefore, the effects of these experiences on spatial pleasantness can be analyzed by phenomenological methods. As an example to the subjective character of spatial experience and pleasantness, an architectural space can be acoustically comfortable and pleasurable, but at the same time it can be irritating and non-preferable in a visual sense. Herein, spatial pleasantness of user is formed by subjective decisions. In the same way, physical properties of an architectural space also have different meanings and experiences for human beings. Color is more subjective than a number and warmth is a more subjective decision than color. Hence, pleasantness is also a subjective manner. In a phenomenal sense, the pleasantness of experience does not indicate a feature of the external objects, it is more related to the way which affects the subject, in a different word, it is a *feeling-tone* [85]. Besides all these abstract approaches, on the ground of the idea that architectural space is a physical concept essentially, increasing the quality of space can be considered to affect spatial pleasantness positively and defined by different methods and theories.

In this chapter, in order to examine the role of sensual experiences in spatial pleasantness, the main topic of the thesis, initially concepts of quality and pleasantness in architecture

will be analyzed. Following, in order to prepare a substructure of methodology for the research, theories and parameters of spatial quality will be analyzed.

3.2.1. Pleasurability and Quality in Architecture

Pleasurability and quality are interrelated concepts. The definition of pleasantness is as follows; the quality or state of being pleasurable [86] and quality means pleasing the consumer, not just protecting them from annoyances [87].

Cold, B., a Norwegian architect and professor, who works on environmental aesthetics, claims that architects are trained to have a special sensibility for a high quality environment and our task is to design pleasurable architectural spaces [88].

In the most general sense, the concept of quality is analyzed according to some categories. Postulated eight dimensions of quality concepts are performance, features, reliability, conformance, durability, serviceability, aesthetics and perceived quality. Performance refers to a product's running characteristics. As an example, for a television, *performance* means color, sound and picture clarity. This dimension of quality is generally measurable performance, but in some cases performance standards are based on subjective preferences. Features are related to performance similarly. This is because this dimension of quality is a secondary aspect of performance. *Features* of a product involve more objective and measurable attributes, not prejudices but objective individual needs. *Reliability* reflects the probability of a product malfunctioning or failing in a timeline. Reliability is commonly measured by the mean time of first failure, the mean time between failures and failure rate per unit time. *Conformance* is a related dimension of quality that a product's design and operating features meet established standards. *Durability* is an economic and technical dimension, which is measured by a product's life. Literally, it is defined as the amount of use before it becomes unusable. *Serviceability*, in other words speed, is courtesy and the convenience of repair. *Perceived Quality* is about the consumers' perception of the product. This is because consumers cannot always perceive the complete features and information. Reputation is an important part of perceived quality. *Aesthetic* dimension is a subjective dimension of quality. How a product looks, feels, sounds, tastes, or smells is

clearly a matter of personal judgment and a reflection of individual preference, it is not universal. Hence, in this dimension it is impossible to please everyone.

Quality in architecture is defined from various viewpoints. Some researchers analyzed quality in terms of aesthetical features or practicability and others emphasized its subjectivity. It is proper to discuss this concept as a whole that includes physical and psychological features. As an example, a building could be inadequate architecturally but it could be perfectly durable in terms of structural features. Hence, architectural quality is not completely related to professionalism, professionalism is not enough to make a building an architectural artifact [89]. In brief, quality of architecture is related to the pleasing of users' needs. It is thought that the prominence of architectural quality is a consequence of acceleration of time and space experiences, virtual spatial perception by advanced technological techniques, limitation of physical space used in terms of human relations, as a result of the changes in labor and production paradigm, expectations from the product (it is a building in architecture) including sensual, emotional and physical, are raised [90].

Cold, B., asserts that, architectural quality cannot be static, objective, rational and reasonable. Quality experience is the relationship between subject and object and it is related to subjective characteristics, object and condition. For increasing quality in architecture, Cold, B., offers to improve our attention on spaces of architecture, training sensibility and increasing sensual experiences; finally she emphasized the cognition of the relation between human and environment [91]. Hildebrand, G., also analyzed the sense of pleasure according to architectural thought from the basic human instinct for survival to modern architecture and he claimed that our historical enthusiasm for some architectural spaces resonate with our evaluations of the qualities of various landscapes. And this hypothesis presumes that visual form dominates over other apperceptions (such as of material, olfactory, or aural phenomena). He points out another aspect of pleasantness. He describes architectural pleasure as an open door to fashion, style, taste, and to their operations within a specific culture and society. He claims that fashion has the most powerful effect within these and fashionable trends and its accessories affect how we construct our environment [92].

Another standpoint is defining quality and pleasantness in terms of aesthetics and architectural forms. Aesthetics is declared as the first impression of human's in surrounding world. Direct aesthetics experiences through the sense of sound, touch, movement and vision is defined as a gateway to the emotional and cognitive process when we discover and recognize the world. Cold, B., described aesthetical quality as a necessary and pleasurable sense to be aware; she said that it is not about survival but about enjoying life and environment. She criticized Maslow's diagram and claimed that aesthetic need is not separate and relevant when the other important needs satisfied, on the contrary it is a part of all other needs and integrated with them. Cold, B., also emphasized that aesthetic quality is related to a person's history of experiences and assented by cultural ideas [88]. It is also said that architectural pleasure is generated by physical forms like Vitruvius, M. and Le Corbusier said. The prime essence of architecture, satisfying the elemental need for protection, is found in spatial quality, but spatiality is more than this. We experience a spatial impression, a three dimensional phenomenon that is experienced by our bodies. The important point of this experience is the relationship between the size of our body and the size of the building. This experience is related to architectural proportion and it affects our architectural pleasurability [93].

Some methods provide an analysis of pleasantness with differential scales. Sense of pleasure is measured with semantic differential scales, which are angry–satisfied; unhappy–happy; dissatisfied–very pleased; sad–joyful; disappointed–delighted, and bored–entertained [94]. This method is subjective and could be applicable in spatial studies.

Consequentially, when we analyze the pleasantness of architecture, we can say that it is related to the quality of an architectural product. The general dimensions of quality have more objective features, except subjective dimensions such as aesthetic dimension. This characteristic is usually more relevant to architectural pleasurability, but it is not the one. Pleasantness from an architectural space's quality is analyzed from various standpoints like forms, styles, culture and sensual experiences. On behalf of categorizing these main pieces to evaluate pleasantness of architecture, there are some spatial quality theories. In the next chapter, these theories and parameters of architectural quality will be analyzed for assessing pleasantness from architecture.

3.2.2. Spatial Quality Theories

The aim of investigating spatial quality theories is to prepare a substructure for analyzing sensual pleasurability of architectural spaces. The importance of spatial quality and the reasons for studying are necessary before analyzing the spatial pleasurablity theories. Spatial quality carries with it spatial pleasurability. For this reason, the physical characteristics of an architectural space leave an impression on its users and affect subjective judgments about that space. In fact, it is claimed that the pleasantness from the view of an architectural space could even affect people's experiences and attitudes. As a consequence of this, physical characteristics that are experienced by the users affect the personalities of them. Therefore, human attitudes and experiences are defined depending upon specific environmental features [83, 90]. For this reason, it can be said that spatial pleasurability affects human-space relation and many researchers' studies on different theories intended to increase this pleasantness.

According as different theories about spatial pleasantness that are analyzed in the previous chapter, there are also different approaches regarding the quality of an architectural space. Hildebrand, G., specified the pleasure principle as refuge, prospect, enticement, peril, complexity and order. As in architecture, pleasantness is related to the desire to have a place for *refuge,* from which one can survey a *prospect,* rhapsody in being the subject of an *enticement*, symphonious by a sporadic joy and *peril*, due to the need for intellectually relaxing and inspiring of simultaneous *complexity and order* [92]. Complexity and order are also emphasized in some other spatial quality theories. In perception and knowledge theories for describing determinants, comparator concepts like complexity, diversity, visual equilibrium, perceptual richness, legibility, harmony and order are available. However, as a complete approach, the two basic concepts are complexity and order. Hence, Weber, R., claims that some psychological research studies the effect of complexity in spatiality [89, 90].

Cold, B., propounded three basic theories about spatial quality. These are minimalist, instrumental and spiritual approaches. The minimalist approach defines an architectural space as a shelter, such as Hildebrand, G.'s refuge, against climate, enemies, etc. The instrumental approach defines architecture as an instrument to gain behavioral and

economic prolificacy. However, architectural space is not just an instrument for a building; it is a content that includes human experiences. Therefore, the spiritual approach describes architectural quality as a concept about human needs, spatiality, cultural and artistic courage to create a spiritual architecture and technological developments. Spatial quality is more than aesthetic and cultural values [88].

Another research claims that physical environment can affect human beings' pleasantness in terms of seven qualities of built environment. These are *permeability, variety, legibility, robustness, richness, visual appropriateness, and personalization*. Permeability is related to the way that a design affects where people can and cannot go. Variety refers to the range of use a space provides. The third element of a responsive environment is legibility, which relates to the ease with which people can understand the spatial layout of a place. Yet permeability, variety and legibility are much more related to large-scale or urban scale's overall spatial order and sense of place. Robustness, which describes the design of which does not limit users to a single fixed use but, rather, supports many different purposes and activities. Visual appropriateness is the way in which the design physically can make people aware of the choices the place provides. Personalization refers to designs that encourage people to put their own mark on the places where they live and work, and finally richness is the most experiential part of these qualities and is related to the ways to increase the choice of sensual experience that users can enjoy such as the experiences of touch, sound, light, and so forth [95].

In a similar vein with quality of richness some researchers analyzed spatial quality in terms of sensual experiences. Tactile qualities like hardness, roughness, temperature, and weight occupy an essence beyond the visual field alone or sense of smell can help us experience a space's character and quality. Our bodies can assess the quality of space around them and this experience is relevant with their pleasure. As an example, through our bodies, we reveal the quality of a stone wall or the echo of our footsteps on a hard floor and the momentary warmth of our skin as we pass from sunlight into shade. If an architectural space design can provide us these kinds of sensual qualities, the pleasantness from that space increased [96].

Lynch, K., also declares spatial quality in terms of subjectivity and sensations. He claims that due to the nature of the phenomenon we are dealing with, subjective judgments will coincide. Even if regarding his studies on public spaces, he declares the quality criteria that we seek in a designed space are; comfort, diversity, identity and relatedness. He propounded that visual and all other sensations should be in a comfort range. A designed space should not be too hot, too cold, too noisy, too silent, too crowded. In diversity criteria, there should be a reasonable variety of sensations and environments such as calm or stimulating, crowded or empty, dense or open. The quality of identity is related to *sense of place*. A designed space should be visually differentiated from other spaces; it should be recognizable and memorable. Lack of these criteria in a space causes a chaos because the observer cannot recognize or remember the space. With the help of sense of place, human-space relation is raised. Finally, relatedness is about visual comfort and legibility of a space. Arrangement of identifiable parts of a space should help the observer understand the pattern in space [97].

The quality of a product is generally defined in terms of its measurable and objective criteria as mentioned in the previous chapter. Yet when the subject is architecture, concept of quality is evolved to pleasantness from an architectural product. Theories of these pleasantness and architectural qualities generally include psychical criteria like legibility of a space, instruments or material. Despite these psychical features, psychological and subjective effects stand out more, such as comfort, aesthetics, security or sensuality, which is the most important theory for this research. In order to study the pleasantness of a space in terms of sensual experiences, it is essential to analyze the parameters of spatial quality to find a method for the research.

3.2.3. Parameters of Spatial Quality

Spatial quality theories have a large range of definitions, as mentioned above. To delimitate these theories, different theoreticians create different parameters. These parameters guided some research about spatial quality [90].

The reference of the paper that the former government architect Tjeerd Dijkstra wrote in architectural policy entitled Architectonische Kwaliteit (Architectonic quality), dating from

1985 and adapted in 2001, is considered so explicit by Voort, D.J.M, et al, he constituted a clear relation between architectonic quality and utility value. According to him, Voort, D.J.M, said, the form of a building should be derived from the user's requirements, constructability with available materials and techniques and harmony with urban design context. His parameters for architectonic quality are; utility value, clarity and complexity, object and context and associative meanings.

- Utility value refers to the extent to which the building is suitable for predicted use and gives it an extra dimension.
- Clarity and complexity the composition of a building should be suitable with how it is perceived. The design should be clear, comprehensible and familiar. But this clarity should not cause oppressiveness; at the same time an architectural design should have a complexity to stimulate users. Complexity means different themes in a building composition, for example when a building derives not just from its function but also from urban design context.
- Object and context refers inwardly to things as the links of treatment between public and private or between collective use and private use, externally it refers to the influence of the building to the public space. He also emphasized the way of use is made of architectonic quality like size, ratios, materials, texture, colour and light [90, 98]

Another viewpoint is to discuss the spatial quality in micro and macro senses. In the narrowest sense, spatial quality is related to perceptual qualities, cultural values and symbolic meaning. In an extended sense, it includes original, stimulating, efficient and cost-effective syntheses achieved by form, function and technique. Therefore, in a larger sense, architectural quality is defined by the following parameters.

- Functional quality or utility value is the usability of a building in practice. In this parameter, it is seeked that if the building is suitable for the life which have to be able to take place in side.
- Aesthetic Quality is related to the way it is experienced. It refers to pleasantness like perceptual beauty, stimulative or originality. It extends to which it are seen as a piece

of culture or whether it is representative of a particular style or period of building. Representative of a particular style or period of building.

- Technical quality is related to technical requirements and structural system of a building. Strength, rigidity, stability and sustainability of foundations, the load-bearing structure, the shell and technical services. Physical quality is reviewed in this parameter. It corresponds to how a building can provide safe and healthy interior climate, measured in terms of temperature, humidity, illumination, natural lighting and acoustics, in an environmentally friendly and energy-saving way.

- Economic quality is extended to financial resources if applied efficiently and effectively. If we consider a building inevitably as an investment object, its economic quality is also an important parameter [98].

Besides these broad perspectives, Gerald Franz constituted the spatial quality parameters in a unidirectional way, in the back ground of a visual field. He tried to evaluate spatial quality by isovist-based and graphical analyzing methods. Franz, G.'s four main parameters of spatial quality are; spaciousness, openness, complexity and visual order.

- Spaciousness is considered as the most essential constitutes of space experiences. Scientific researches about agoraphobia and claustrophobia, shows that emotional responses to dimension of a space could be very intensive. Spaciousness quality parameter is related to basic measurands such as mere isovist area that also called neighborhood size and the area of the convex part of the isovist. By partitioning the visibility graph into multiple depth segments and calculating the proportion between actually and theoretically visible graph nodes it is determined to test the influence of distance.

- Openness is constituted by theories of prospect and refuge, defensible space, and predictability. Behaviorally based measurands was designed called revelation coefficient that was calculated on the visibility graph as the relative difference between the current and the adjacent isovist areas. Like clustering factor, high revelation coefficient refers to an area of low visual stability and potential information gain by moving further.

- Complexity factor include indicating either the absolute amount of information or features, or the relative information density. For measuring complexity could

therefore be the number of vertices or segments making up the current isovist, vertex density, and again clustering coefficient, or the isovist jaggedness.

- Visual order is described as normative architectural theory by Franz. It refers to approximate properties contributing to visual order by looking for redundancy patterns within the isovists, such as symmetries. But the existent measurands from isovist literature are not related to this kind of factors, so mathematical combinations of the basic measurands were generated for empirical validations [99].

To promote the research, virtual spaces and real spaces are compared and parameters of speciousness, openness, complexity and order are converted to isovist measurands. As mentioned before, these quality parameters are just related to visual quality of a space and are very complex. There are not any studies about sensual judgments. Hence, this method is not suitable for this research.

On the contrary, Stephan Boyd Davis who is the research leader of School of Design in Royal College of Art, reviews spatial quality as a whole. He declares the following parameters;

- Extent and Scaling comprise height, depth and breadth
- Position and Movement refers to location in three-dimensional space; translation, rotation, including non-linear velocities
- Passive visual qualities is related to colour; hue, saturation, value; transparency, and translucency; reflectivity (matt, lustrous, shiny, gloss, part-mirrored); texture (surface texture, solid texture)
- Active visual qualities refers to light source type and lightning; colour of light; distance, direction and spread of light sources
- Dynamics and dependencies mean free movement independent of all other objects; rigid fixing to other objects
- Passive physical qualities include mass, hardness, brittleness, flexibility, isotropy and directionality and insulating/conducting properties for heat, sound, electrical current etc
- Active physical qualities include emitting heat and other forms of radiation

- Textural qualities such as fluffiness and cloudiness
- Atmosphere refers to color, opacity, humidity, air currents
- Responsive sounds mean reflecting sound that occurs as a result of a movement and autonomous sounds [100].

When we analyze the pleasurability of architecture, it could be said that it is evaluated in terms of the quality concept. Quality could be an evaluable concept for a general product. However, if it is architecture due to the influence on pleasantness, spatial quality contains a large range of perspective. Some theoreticians claim that quality and pleasantness of architecture are subjective concepts and are difficult to evaluate, and some others emphasize objective aspects and constitutes as more physical theories. Aesthetic, visual and sensual experiences, cultural influences are considered to be on the subjective side of the concepts, while physical characteristics such as functionality, legibility, structural resistance and air circulation are considered as the measurable and objective side of the spatial quality.

Spatial quality parameters help delimitate the evaluation of spatial pleasantness. For analyzing the effects of space experiences in spatial pleasurability that is the starting point of this research, physical parameters could not be suitable. On the contrary, Davis, S., B.' parameters could be taken as examples for the research method, because they include not only all physical and emotional qualities but also emphasize the sensual qualities of a space. Like many researchers mentioned above, spatial pleasurability is a concept that is difficult to measure due to its subjectivity. Sensual experiences are also reasons for this subjectivity and also different senses cause different spatial experiences. It could be seen that even effects of visual experiences and others are generally defined separately. To analyze these experiential effects on spatial pleasantness, space experiences by senses will be examined in detail in the next section.

3.3. SPACE EXPERIENCES BY SENSES

The concept of experience in addition to including all perceptual and cognitive process, also involves multiple definitions. Space experiences create a collective system by visual, aural and haptic senses and affect spatial psychology in a positive and/or negative way.

Effects of sensorial experiences in spatial psychology, psychologists ask about which senses create the spatiality and what the differences of spatial awareness are that rise from different senses. However, these kinds of approaches include both spatial perception and spatial imagery. As an alternative view, some researchers emphasize that senses do not function separately; they constitute a coherent system in terms of spatial experience [101]. From a similar standpoint, it is claimed that we all have spatial awareness through the multiple stimulations of our senses. Our sensory organs gain the sensory inputs from the environment, which is close enough to see, hear, touch and smell, and then engage them in a complete perception [102]. While Aristotle also categorized the senses of sight, sound, smell, taste and touch, Gibson, J., who is considered as one of the most important psychologists in the 20th century about visual perseption, described these basic senses as perceptual systems and categorized them as the visual system, the auditory system, the taste-smell system, the basic orienting system and the haptic system as seen in Table 3.1. [103]. Gibson, J., emphasized the type of information that is received from space instead of psychological details of the receptors and his systematizing method has been surveyed largely in architectural literature [1]. However, Aristotle's categorizing system is more suitable than Gibson, J.'s for this study. Hence, this study only seeks the subjective experiences of senses not their scientific progress.

Nevertheless, sensorial experiences are considered to be formed in the subconscious, except vision. Visual experiences are declared as primary in the architectural world. Holl, S. and Pallasmaa, J., criticized that in the contemporary world, architectural forms and spaces are analyzed and produced according to their visual characteristics instead of their multi sensorial characteristics. They emphasized the bodily existence experiences, which are formed in the subconscious, and claim that if a person is aware of this sensorial integrity consciously, s/he also realizes that the eye is not the only one which creates spatial experience [28].

In this chapter, in order to analyze sensual experiences of architectural spaces, in between sensory experiences that make sense of space, the role of visual experiences will be analyzed initially. After that other sensual experiences, except visual experiences, will be examined.

Table 3.1. Gibson. J's categorizing of senses considered as perceptual system [103]

Name	Mode of Attention	Receptive Units	Anatomy of the Organ	Activity of the Organ	Stimuli Available	External Information Obtained
Basic Orienting System	General orentation	Mechano receptors	Vestibular organs	Body equilibrum	Forces of gravity and acceleration	Direction of gravity, being pushed
Auditory System	Listening	Mechano receptors	Cochlear organs with middle ear and auricle	Orienting to sound	Vibration in the air	Nature and location of vibratory events
Haptic System	Touching	Mechano receptors and possibly thermoreceptors	Skin (Including attachment and opening), joints (including ligaments), muscles (including tendons)	Exploration of many times	Deformation of issues, configuration of joints, stretching of muscle fibers	Contact with the carth, mechanical encounters, object shapes, material states-solidity or viscosity
Taste-Smell System	Smelling	Chemo receptos	Nasal cavity (nose)	Sniffing	Composition of the medium	Nature of volatile sources
	Tasting	Chemo and mechano receptors	Oral cavity (mouth)	Savoring	Composition of ingested objects	Nutritive and bio chemical values
Visual System	Looking	Photo receptors	Ocular mechanism (eyes with intrinsic and extrinsic eye muscles as related, to the vestibular organs, heads and the whole body	Accommodation, papillary adjustment, fixation, convergence	Variables of structure in ambient light	Everything that can be specified by the variables of optical structure (information about objects, animals, motions, events and places

3.3.1. Visual Space Experiences

Eye and eyesight are the fastest and easiest way to gather information about environment. By means of eyesight, people and animals continue their existence by recognizing the surrounding environment, analyzing it, protecting themselves, using tools, being aware of

danger; specifying situations and movement, being happy or uncomfortable etc. Plato defined sight as the major gift for human beings [104]. Yet when it is reviewed in literature, seeing is not described as a simple and instant biological event, it is defined as a sophisticated system that is connected to the physical characteristics of environment, individual, culture, perception and memories. For this reason, sense of sight is a subject of various disciplines such as psychology, philosophy, science and architecture, and the process of distinguishing and identifying the environment is a starting point for a lot of research. Visual experiences of a space are formed by variables that depend on the physical features of the space. In this title, variables that affect visual space experiences and Gestalt theories, which are reformed oriented to visual perception, will be analyzed.

Gibson, J., declared that sight depends on a complicated chain of circumstances. He claimed that seeing does not *feel like* that, it *feels as if* things were simply there [105]. Palassmaa, J., also defines vision as the major and dominant sense that is the first source of before the other senses. He said that vision is an active process. We look and see, but odors and sound come to us. Seeing is a complex process that is related to distance, colors, shape, textural and contrast gradients [106]. Visual world is extended in distance and depth; it is upright, stable, and without boundaries; it is colored, shadowed, illuminated, and textured; it is composed of surfaces, edges, shapes, and interspaces, finally and most important of all, it is filled with things which have meaning [105]. These qualities impress how we experience the visual space.

The form of an object is claimed to be the primary element of visual process in the previous title. How do we organize and interpret the form or shape of a thing? Searching to find an answer to this question provided a basis for a new approach to psychology about thirty years ago, Gestalt psychology [77]. According to Pallasmaa, J., Gestalt is the most frequent way of analyzing the perception and experience of an architectural form and it is completely related to visual perception [28]. The word *gestalt* is derived from German a word which means *form* or *appearance*. Gestalt psychology is a school which emphasizes composition. Psychologists claimed that composition is the main feature of all mentality. Elements of visual input are linked to each other and their identity depends on this linkage. For example, when we are pleased by music, we do not identify all notes individually; we perceive the whole [77]. Gestalt psychologists differ from structuralist conjectures that

reduce perception to sensation. They claim that behaviors are based on subjective reality, not objective. They retain an introspective approach that claims perceptual experiences are a result of dynamic field forces inside the brain and this affects human behavior and every day experience [107]. *Gestalt Laws* are about visual perception of forms and organization. It is not directly related to the whole of architectural space experiences, but illusional visual experiences of forms indirectly affect our space experiences. The main idea of Gestalt Laws is the *Law of Pragnanz* that was introduced by Wertheimer. According to the Law of Pragnanz, if the environment is disorganized, the human mind tends to organize it perceptually with help of some visual arrangements. Gestalt psychologists formulated some principles about visual organization. These are proximity, similarity, connectedness, symmetry and regularity, closure, figure- ground.

The principle of proximity claims that things that are close together are also perceptually grouped together [107, 108]. In Figure 3.2.a. Dots are located at the same distance, Figure 3.2.b. however some dots are close together and visually they are perceived as columns. Similarly, the principle of similarity claims that things which look similar are grouped together visually [107]. In Figure 3.2.c. similarity of shapes makes us see them as a row even if they are located in the same distance from dots.
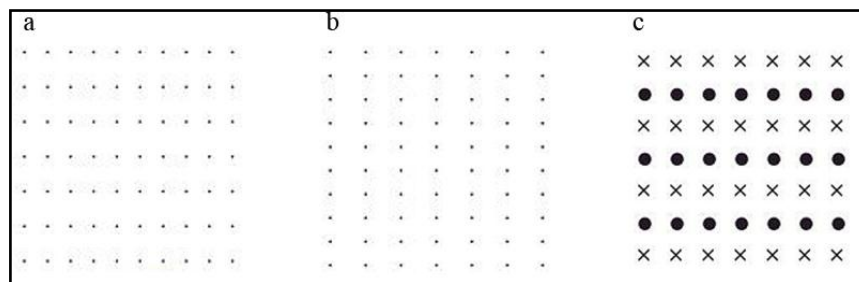
Figure 3.2. Proximity principle of Gestalt Laws [108]

Connectedness is the most powerful grouping principle among proximity, similarity even color and size. When we draw or recognize a line between two forms or objects, it is understood that there is a relationship between them. In Figure 3.3. even if they have different colors or shapes, it is expressed that they have a relation.
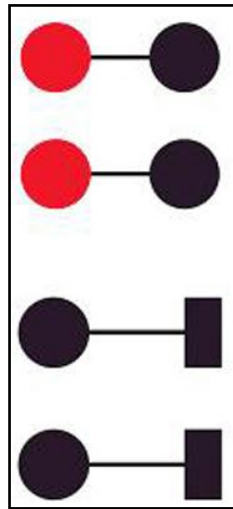
Figure 3.3. Connectedness principle of Gestalt Laws [89]

Symmetry and regularity are two of the basic principles of gestalt theory in terms of organization. Data in the visual field have more than one interpretation, but our vision interprets data as simply as it can and generally gives them symmetry. In Figure 3.4. the human mind sees the shape as two symmetric squares instead of a complex geometry [108, 109].
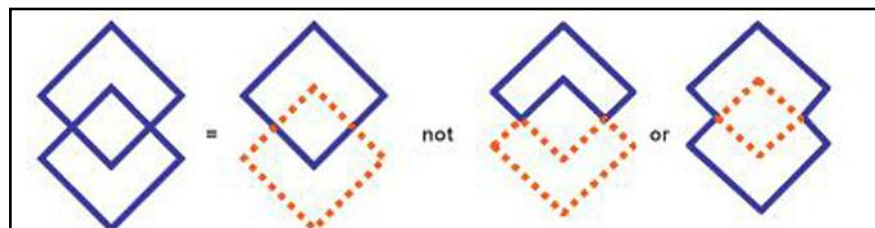
Figure 3.4. Symmetry and regularity principles of Gestalt Laws [109]

In the principle of *closure*, our visual system tries to close the open figures or shapes to perceive them as a whole rather than in pieces. Hence, in Figure 3.5. we see a circle, not separate curved lines or we identify a triangle in the middle of the shape [109].
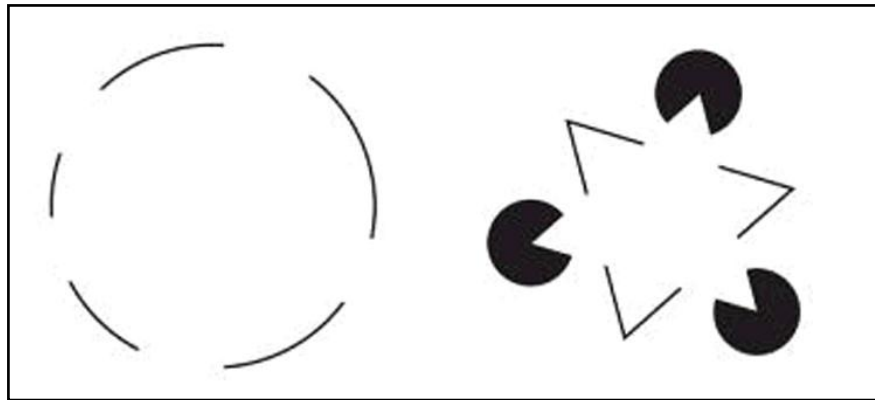
Figure 3.5. Closure principle of Gestalt Laws [109]

Figure-ground effect is related to our visual system's tendency to separate the visual field as a figure which is the foreground and the ground which is the background. Figure represents an object like shape and the ground lies behind it. All Gestalt Laws contribute to create a figure or figures and ground can be equally balanced. In Figure 3.6.a. Symmetry, closed figures contribute to make this shape a figure, but in Figure 3.6.b. figure and ground are equally balanced. Figure is visually remarkable but ground could be everything else. Hence, the identified figure depends on the viewer's focus of attention. The German artist Escher's painting could be an example of this. In Figure 3.6.c. Figure and ground switches according to the viewer's attention [108, 109].
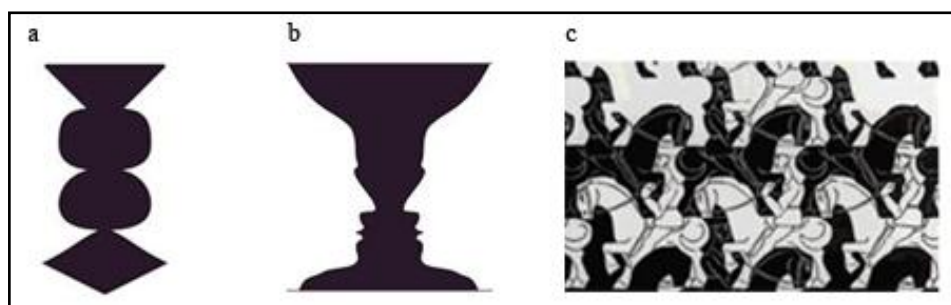
Figure 3.6. Figure-ground effect of Gestalt Laws [108, 109]

As it is seen Gestalt is an illusional way of visual perception. However, it is not only the one, there is also another optical illusion in visual experiences. Longitudinal and horizontal surfaces affect our visual perception of the depth of a space. Parallel lines converge as they go ahead towards the horizon as seen in Figure 3.7. [80, 105]. Lang, J., claimed that some

architects intentionally manipulated this illusion to create depth in a space. In Figure 3.8. The backstage of Palladio Teatro Olimpico in Vicenza is an example of this.
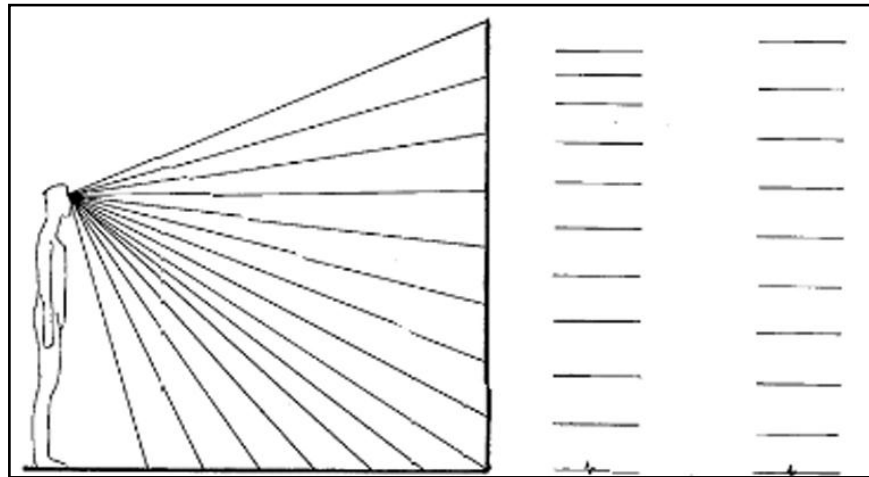
Figure 3.7. Optic Array From Front and Longitudinal – Gradient of Optical Texture on Horizontal and Vertical Surfaces [105]

Figure 3.8. Palladio Teatro Olimpico [110]

Color is another element of visual experiences and it originates in light. If wavelength of light is not reflected by the surface there would be no colors. Color perception affects the psychology of human beings. Cool colors such as green, blue and purple have a calming effect on psychology. On the other hand, hot colors like red, orange and yellow make us feel excited and represent movement. Hot colors' light refraction in the retina is less than cool colors and objects that have hot colors seem bigger and effective as compared with

objects that have cool colors [111]. Color's effect on interior spaces can also be illusional. It influences the visual weight, light, size, distance and objects. As an example, advancing colors expose intimacy in large scale spaces like hotels and auditoriums and can be dramatic in small spaces. They emphasize the enclosure of spaces. Similarly, using dark and light colors also affects visual experiences by illusional perception of depth and size [112]. In Figure 3.9.a. all walls are white for comparison with other figures. In Figure 3.9.b. Dark color is used on side walls and the enclosure appears narrower. In Figure 3.9.c. dark color is used on margins and back wall and enclosure appears shallower and the back wall seems closer.
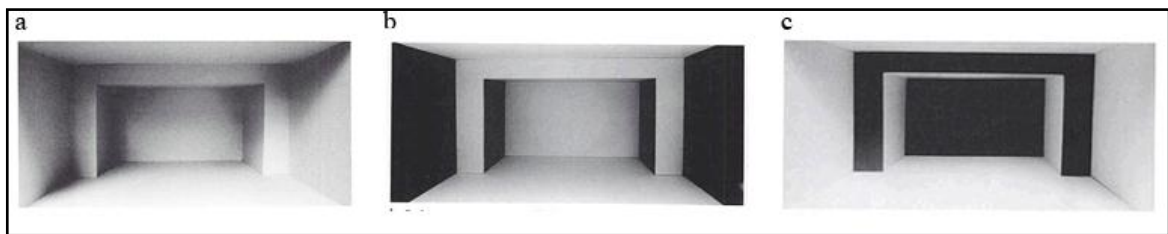
Figure 3.9. Effects of light and dark colours in visual perception [112]

Form, light and color are all physical elements of a space. Yet visual experiences are not just related to physical effects. Personal and social conditions are as effective as physical ones in visual process. Vision is no doubt composed by light. When light falls on the eye, the seeing process begins. However, it is not just recording of light stimuli, it is a selective process and attention is the important side of this selectivity. Visual scene has more information than the visual system can get. Attention and interest of the observer provide for the filtering of inputs from a visual scene. Observer selects what s/he needs by paying attention to the visual environment. Some inputs that are gathered from the visual field are faster and deeper than some other inputs and they can influence the behavioral response of the observer and it is claimed that this fact can distort and falsify our visual experiences [78, 81, 103]. As well as subjective choices, cultural differences and even gender are also effective in visual experience. The perceptual world of two people of the same culture has fewer differences that that of two people of different cultures. It is claimed that men and women also have different visual worlds. They simply have learned to use their eyes in a different way according to their habits and priorities [113].

Gibson, J., emphasized that visual experiences are also related to boundaries of visual field. The field is oval in shape and about 180 degrees laterally and 150 degrees up and down. Visual data that have been gathered from the environment occur in that field with boundaries. However, when we close one eye, about a third of the field disappears and the boundary comes through the outline of your nose. The drawing of Ernst Mach could be an example to analyze this theory in Figure 3.10. In his famous drawing, Mach, E., did not draw the room; he drew how he experienced the room while his right eye was closed. In Mach, E.'s visual field, his nose limits the right side and his moustache appears below. But there are some misleading points in his drawing. His body was drawn so detailed, even though he could not see it in such detail while he focused on the center of the room. And the margins of the room were very clear, whereas their actual appearance could be very vague [105]. Yet this representation shows that difference in boundaries of visual field or the position of the body and eyes can also affect our visual experiences about depth and width.
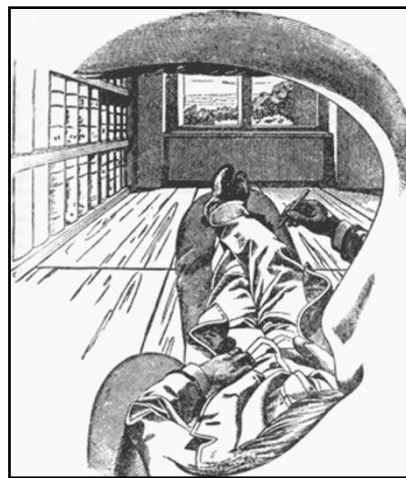
Figure 3.10. The drawing of Ernst Mach while his right eye closes
[105]

As a consequence, vision is considered the primary sensory organ to gain data from the environment and visual process is a complex and dominant element of space experiences. Visual experiences contain biological, psychological and philosophical processes. It depends on physical conditions such as light, color, depth and optical illusions to psychological conditions such as attention, memory, cognition and cultural conditions such

as cultural environment, family and even country. It should not be forgotten that, if space is a multi sensorial field as mentioned in the previous chapter, visual experiences should not be the one in space experiences. As a criticism to preponderance of vision in architectural space, in order to emphasize other sensorial experiences' effects, space experiences without vision will be analyzed in the next section of the chapter.

3.3.2. Space Experiences without Vision

When sensual experiences of architectural spaces are analyzed, it is seen that although these experiences proceeded integrally, even then eyesight has the primary role. The dominance of visual experiences orientated contemporary architecture through visual based architectural designs by over simplifying it. This tendency caused a unilateral process in our architectural perception and impoverished our spatial experiences [114].

Millar, S., studies visual effects in perception through psychology and emphasizes that even if visual experiences are the prior in interpreting objects and spaces, it is not enough on its own. She claimed that in an attempt to perceive and comprehend the environment, a human being needs the other sensory organs as much as she does the eyes. She exemplifies her theory by showing sighted babies who are not satisfied with visual data and need haptic clues to comprehend surrounding objects from six months old onward [14]. Similarly, it could be said that visual experiences are not enough to analyze an architectural space. As it is mentioned in literature, architecture and architectural spaces are phenomenon that can be experienced even with a lack of vision through other sensory organs and they also defined concepts for blind people.

A person, who has not any visual memories and cannot define the visuality of an architectural space, defines architecture by listening, touching and smelling it and can carry out all activities as well as a sighted person [115]. Phenomenological research that study visually impaired people's space experiences generally seek what makes space in a situation without vision. A lot of research about visually impaired people that will be analyzed in section 3.3.2.4. indicates that blinds are consciously aware of their sensual experiences and thus their ability to synthesize these experiences is more successful than sighted people. They can also have an integrated perception about surrounding

environments. Besides, sighted people are aware of these sensual experiences in the subconscious due to their reliance on their eyes, but these non-visual experiences are still effective in providing pleasantness for them [51].

In this chapter, the space concept will be analyzed in a situation where there is a lack of vision, using aural, haptic and olfactive experiences with a critical theory regarding the dominance of visual judgments in architectural design.

3.3.2.1. *Hearing Space*

Acoustics is one of the most important variables in architecture because of characterizing a building. Every building, every space and even every city has its own sound according to the life, users, scale and materials in it. Sound is an effective variable of physical features of an architectural space such as acoustics; isolation etc. Spatial psychology therefore has an essential role in space experiences.

The effect of sound and sense of hearing in spatial experiences interests many architects and collimates for many architectural designs. In Turkish traditional architecture water is used for its restful sound as a way of hearing space. It is said that running water is certainly used in sultan's sons' bedrooms to calm them down at night at palaces in Bursa [116].

Schulz-Dornburg, U. says that we cannot see sound, but it has a power to change the character of perceived space [117]. It is claimed that in some European cities, the effects of the sound of a church's bell also creates a psychological space [118].

Rasmussen, S. E., who studies the relationship between architecture and sense of hearing, said that sound reflects like light and the human body can feel this reflection. He also claimed that different spaces with different forms and materials also have different sounds and acoustics. He emphasized that sense of hearing is not a single focal such as sight, it is a multifocal situation and buildings reflect their life in them with acoustical reflection [13]. Holl, S. also emphasized the effects of sound with the relations of materials. He reminds the echoes of stone cathedrals that make us aware of the vastness and geometry of space. He appended that the experiential dimensions of architecture are lost if the same space had

an acoustically softened material. He claims that, if we shift our attention from visual to how the space is shaped by sound, we can redefine space [118].

When we compare vision and sound, Pallasmaa correlates sight with exteriority and sound with interiority. He said that we are not aware of the effects of hearing in spatial experiences, acoustic perception remains as an unconscious background to experiences, but sound provides the temporal continuum in which visual impressions are embedded. He claims that hearing the building articulates the experience and understanding of space. He emphasized that the acoustics of desolate spaces differs from a lived-in home. Hence, sound also reflects the personal life that spaces have due to the reflection from the surfaces of the objects that people choose. He said that hearing creates a sense of connection and declares hearing as a sense that makes us solitary whereas sight makes us solidary [28].

The relationship between human being, sound and space is also analyzed according to ages. Acoustic archeologists believe that early humans discovered acoustic effects that were unusual sounds for them [119]. It is claimed that, early humans choose their cave characteristics according to their paintings on cave walls. For example, their drawings about an animal whose movement generates loud sounds are generally placed in a cave that has enhanced echoes. Hence, when they experienced the sound and acoustics in the cave they felt like the animal they drew was alive [120].

Auditory spatial awareness is defined as something more than just recognizing the sound that changed in a space; it also creates emotional and behavioral experiences of space. Blesser, B. and Salter, L.R. claim that auditory space awareness occurs in four ways. First of them is related to our social behavior. They claim that some spaces emphasize our privacy and loneliness; meanwhile others reinforce our social connection with their auditoria character. Second, it helps orient in a space. Hearing the acoustic features of an object, surface or another source in a space assist vision and even replaces vision in case of visual disability. Third, it affects our aesthetic sense of space. Lack of sound in a space makes it boring and very sterile. Like the visual embellishments that make space pleasing to the eye, the richness of sound also makes space aesthetic in an auditory way to the ears. Last, it enhances our experience of music and sound. The acoustical quality of a space creates combined aural experience. The concept of an acoustic arena is also an important

side of auditory spatial experiences. For example in an anechoic space and in your acoustic arena, your bodily sounds are audible, but in a noisy restaurant even your dining partner cannot be your acoustic arena [119]. Manipulating architectural design by emphasizing preferred sounds, space experiences could be pleasurable according to spatial characteristic.

3.3.2.2. Touching Space

Haptic experiences are as essential as the sense of sight and hearing in experiencing space with senses. Touching an architectural space varies from feeling the wind or airflow on skin in a space to scale or textural experiences that are gained by touching directly a material or design element. Haptic experiences carry on with subjective judgments such as hot, cold, rough or soft. Thus, it can be said that this brings a phenomenological approach to space experiences.

Vision could be thought of as more specialized than touch for spatial information, but researchers claim that it does not mean that seeing provides more information than touching and movement. Spatial experiences could be gained from touching as well as seeing [121]. Even when tactual experiences are considered like only touching by hands, it should be taken as a every haptic experience that the skin fells. The word *haptics* is introduced by Revesz, G. in 1931. He defined the term as a derivative of Greek words that *haptikos* means able to touch and *haptesthai* means able to lay hold of [122]. When we compare haptic experiences with other senses it is different with its concrete feeling. Hearing, smelling and even seeing is more abstract senses in terms of experience. For example, you can see a place or hear a sound from a distance, but you can only touch a real thing that you can reach [1]. Skin is considered as the oldest and most sensitive of human organs. British anthropologist Ashley Montagu defined touching as the parent of our eyes, ears, nose and mouth. He claimed that the distinctness of touching into the other senses was known since age-old evolution and called as the mother of senses [123]. Bloomer, K.C and Moore, C. also consider touching to be first of all senses. They claim that the body image is informed by haptic and orienting senses early in human life and visual images are developed later in collaboration with the fundamental experiences that are gathered in a haptic way [1].

Revesz, G. has analyzed the traits of vision and tactile sense to perceive objects; he claimed that tactile sense provides to perceive structures while visual sense helps to perceive shape [121]. Pallasmaa, J. also says that touching incorporates with vision. Skin reads the texture, density and temperature of the matter and reinforces sight. He claims that with the loss of tactility, architectural structures become flat, immaterial and unreal. The unconscious tactile ingredient in vision is neglected in architecture of our time, whereas it is strongly present in historical architecture [28].

An experimental research seeks the role of haptic perception in space experiences. The researchers studied blind participants and asked about haptic qualities and constraints in the built environment. The results show that the visual context of Kevin Lynch in a city such as landmark, path, edge, node and boundary are also applicable in haptic experiences. For example, a tower may be a visual landmark in a city and a different floor texture may be a landmark or edge in a building. Even material characteristics can also be a landmark themselves. Furthermore, the perception of furniture is as important as architecture itself and both are perceived as a whole. They claim that if we feel a line on the floor, it is not the same as when we see it. When we feel it, it makes us remember that it is the meeting point of two surfaces and has a different function [124]. This research shows the effect of haptic experiences in built environment and also in architecture. Touching a space creates a consciousness experience about that space and increases spatial cognition.

3.3.2.3. Smelling Space

Scent is a subconsciously effective feature of a space that is felt by every user in architecture. However, it is overshadowed by vision like all other senses in spatial pleasantness. Particularly in the contemporary world, people tend to use artificial odors for spaces they live in, in order to disinfect the natural odor of space. As a consequence of this, sense of smell stays in the background in architectural designs. However, it should not be forgotten that scent of a space depends on function, material, ventilation, lighting etc. of that space and gives information about the characteristics of it and definitely affects spatial pleasantness.

American naturalist, Diane Ackerman defines smell as the primary sense because the perception of olfactory stimulates and grows into the brain quickly compared to the other

senses [125]. Every day, every person smells a variety of scents without being aware of it, we only notice scents only if they irritate us, please us or warn us [126]. With these effects, it could be said that the sense of smell is correlated with our psychology. The sense of smell is also bounded by memory; hence a particular scent can transport us back to an experience of a place that we could not recall on our own [114]. Some researchers claim that past experiences and memories which make us remember by our sense of smell surpass the memories that are gained by sight [126].

When we analyze the relation between architecture and sense of smell, it could be said that there is an important but unconscious relationship between them. It is criticized that contemporary architecture theory has anosmia, which means a lack of olfaction. If architecture is composed of materials, and all materials have their own odor, it is emphasized that the role of olfactory experiences in architecture should be re-discovered. The olfactory senses are neglected in western architecture whereas eastern cultures benefit from the psychological and symbolic effects of odors in their architecture. As an example, the mud walls of the Chinese concubines' residences were infused with Sichuan pepper during the construction because pepper has many seeds and symbolizes fertility. In the same way, rose has a spiritual symbol in Islamic culture and some mosques' walls were constructed by rose-scented mortar to increase the psychological experiences of the spiritual space [114].

Pallasmaa, J. said that the most persistent memory of any space is its smell. He claims that every city has its own characteristic scent [28]. Like cities, buildings also have their characteristic scent. You can identify the space when you enter a hospital, even if you don't see the space, because of its specific smell. Just the same, you can find the bakery or a coffee shop in a street. Even if it is neglected and unconscious, every user experiences the smell of any space in one way or another and it is sufficient to use olfactory cues for designing architectural space.

When these nonvisual sensual experiences are analyzed, it is seen that they affect spatiality separately. They provide for increasing awareness of surrounding the environment both individually and in harmony with vision. However, in order to analyze the effects of these

experiences in literature, applicability in practice, visually impaired people's spatial experiences will be analyzed in the next section.

3.3.2.4. *Examples of Studies about Space Experiences of Visually Impaired People*

When we analyzed sensual space experiences in order to demonstrate the effects of other sensual experiences, there was a lot of research in literature about spatial analysis of visually impaired people. It must be known that a lot of research about blind people is much more related to accessibility and disabled design. Due to the being irrelevant to the aim of this thesis, this study does not contain such research. Instead of this, studies about spatial experiences including cognition, perception and sensual approaches of space are adapted. Although contents and methods are different, selected studies are generally about what makes sense of space and spatial cognition in case of lack of vision.

In literature, some researchers claim that vision is the only way to understand spatiality, whereas others claim that there is no difference at all. A research that is contucted by Simon D., seeks the experience of spatiality for congenitally blind people in phenomenological approaches. The research that heads away from the idea of phenomenological analysis is based upon the experience itself. To investigate these hypotheses, a research about understanding congenitally blind people's constitution of spatiality, the research analyzed their imagination of spatiality and spatial objects by half structured interviews with 9 blind people. As a result, the researchers claim that congenitally blind people do experience spatiality and spatial objects due to their capacity to synthesize impressions, and tactile experiences are the most important data for them. To set an example, one participant defines *sky* when he is asked what it means to him; he describes it as *far*. This is because he says that he does not imagine it due to its intangibility. He can only image these kinds of concepts with the help of integrated thought of references of somebody and feelings of himself. He says that if the weather is chilly and windy, he understands that the sky is grey because someone told him that when the sky is grey it means clouds cover the sun. Similarly, another participant says that she can define spatiality of the place where she lives, but she cannot experience the whole house. She says that she cannot imagine the relationship of the roof and the walls because she cannot touch them [51].

Millar, S., searched which inputs code spatiality in total absence of sight by experiments with blind children. She claims that external sounds help indicate location and have reference cues about the environment, but unfamiliar sounds are not reliable. The research emphasized that spatial information can normally be available in the total absence of sight by embodying centered references. According to research, Millar, S., claims that, without vision, bodily experiences are more reliable than the information from external cues [14].

Another study that is studied in University of Turin, Italy, seeks the role of visual experiences to create spatial inferential representations of the survey type; the researchers compared the performance of persons with congenital blindness, blindfolded sighted persons and late blindness with experiments. For the first experiment, researchers took them in a room separately and told them to walk in an established path, and then asked them to go back to the beginning point and to the door on a free direction, which they thought was the shortcut and draw the shape of the room, as seen in Figure 3.11. The result showed that blind people were better than the blindfolded sighted persons. For the second experiment, they repeated the same test with late blind persons, again the late blind persons performed better than the blindfolded sighted people and there were no significant differences between congenitally blindness and late blindness. Participants perceived and cognized space by moving in it with help of sound reverberation and calculations of their step lengths and sticks. The researchers claimed that, lack of visual experience does not affect the survey-type spatial processing in terms of performance. This experimental research shows that learning to rely on nonvisual modalities provides true and reliable results in spatiality, and also emphasized that collecting data from sources, except vision, allows spatially being well-informed [127].
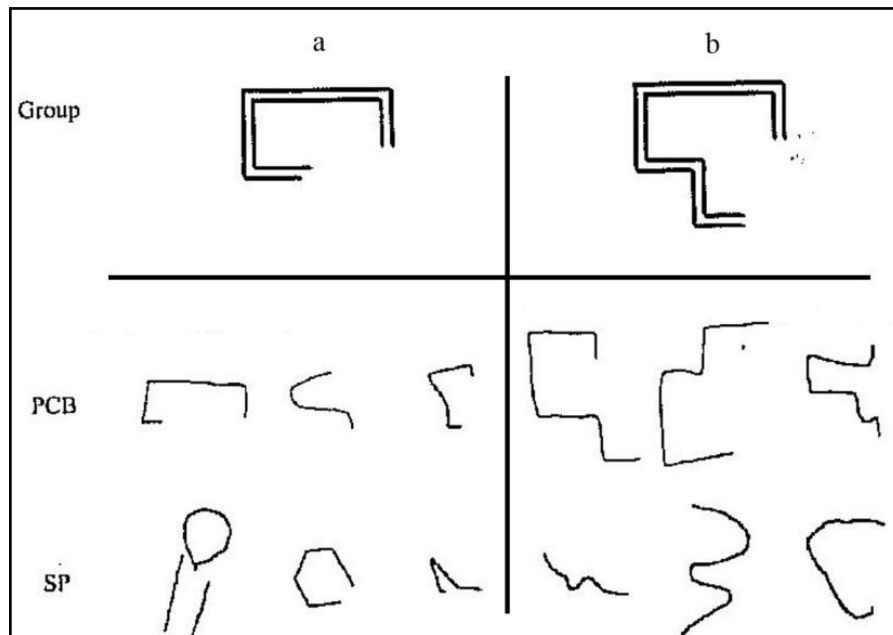
Figure 3.11. Pathway a and Pathway b

Examples of some drawings that made by participants with congenital blind (PCP) and

blindfolded sighted participants (SP) [127]

As a consequence, these examples of studies show that visual experiences are not the one in spatiality which are often mentioned in literature and also demonstrate that an architectural space is a defined concept in case of no vision by contribution of different nonvisual experiences. Vision is surely the easiest way to cognize and experience surroundings, but when it is not possible, the human mind is aware of nonvisual sensual experiences and memories that are normally sub mental. However, this research mainly considers the role of vision and other senses as a general acceptance and they are about the sense of spatiality, not about pleasantness of it.

3.4. CHAPTER SUMMARY

In this chapter, as a consequence of defining space as an experiential area for subjects, space experiences are analyzed. The reason to use the word experience instead of perception is because experience is a more integrated and subjective concept and perception generally refers to visual process. Because of the nature of the space phenomena, in phenomenological thought the experience is more suitable rather than the

term perception. Due to the primary role of pleasantness in human-space relation, spatial pleasantness is analyzed in the first place. The essential point of this concept is the integrated relation of spatial pleasantness and spatial quality. Although the concept of quality is taken as a measurable term in general, in architectural approaches it is much more related to pleasantness from every side of the building or just a designed space. Spatial quality theories and parameters provide to analyze architectural pleasantness with delimited and detailed methods. When we examine these theories and parameters in the architectural background, many theoreticians define pleasantness of architecture in different approaches. Some of them emphasize the psychological effects, such as sense of confidence, identity that provides cultural and emotional commitment, while others emphasize physical effects like the robustness of structure or the performance of lighting and ventilating systems. Besides, in terms of sensual experiences, some theoreticians like Gerald Franz, emphasize visual satisfaction in spatial quality while some others like Stephan Boyde Davis, take it as a whole. Yet when we think of all these parameters, all of them depend on personal and subjective experiences of the space. For example, one can feel secure in a place while the other does not or one can define quantity of light adequately while the other needs more. However, space experiences are also complete processes that include different senses and different experiential systems.

For analyzing the effects of space experiences in spatial pleasantness, space experiences by senses are analyzed in a detailed manner. Since the beginning of the research, it could be seen that visual sense and the other senses are defined separately. Visual experiences are primary and depend on many variables that are mentioned in the previous chapter. Although there's a dominance of visual experiences in the architectural world, it is seen that sense of space and spatial pleasantness is also possible with nonvisual experiences and nonvisual senses surely are not a united concept. Nonvisual experiences of a space occur with hearing, touching and smelling space. All these different senses cause different spatial experiences. It is seen that the sense of hearing and touching is much more effective than the sense of smell in an architectural sense of spatiality and designs.

The idea is that architecture is not just for people who can see, but also for blind people who are aware of an architectural space consciously. Examples of studies about blind people's space experiences show that when vision is removed from experiential equation,

other senses also provide a sense of spatiality. Moreover, positive effects of haptic and aural senses in experiences as mentioned in literature are also shown by such experiential research.

As a consequence of these, reviews demonstrate that space is a phenomenon that has a relation with its users. This relationship is formed by personal experiences and these experiences constitute subjective spatiality. Sensual experiences also affect pleasantness from space. Except for physical qualities of architecture, sensual qualities are also significant in spatial quality. Yet when these experiences are analyzed, the major tendency is about visual experiences which are considered as preferential, while other experiences are subsidiary. With the implications of all these, literature review theoretical frameworks of this thesis will be examined in the next chapter.

4. THEORETICAL FRAMEWORK FOR NONVISUAL SPACE EXPERIENCES IN PHENOMENOLOGICAL APPROACH

General theories in literature about spatial phenomenology and experiences have been analyzed up to this chapter. The major point of all these approaches is interpretability by different point of view. Many researchers analyze these topics from different perspective. But these researchers are either accepting these theories as a reality or evaluate them technically. As a consequence, there are many studies about spatial phenomenology, space experiences or even sense of spatiality in the case of visual loss but there is no study that examines the meanings and effects of these approaches. This chapter phenomenologically reinterprets of visual and nonvisual space experiences in literature, in terms of spatial pleasurability.

4.1. INTERPRETATION OF SPACE EXPERIENCES IN TERMS OF SPATIAL PLEASURABILITY

Comprehensive literature review about the concept of architectural space and space experiences in chapters 2 and 3 is analyzed with phenomenological approaches. It is seen that in architecture, phenomenological theories seek the meanings of human beings' experiences in the light of the space phenomenon. If space is a phenomenon, the concept of spatiality and spatial pleasurability are also gained through the whole experiential processes. Hence, this meaning that phenomenology is interested in, is comported with sensual experiences, according to many theoreticians, philosophers and architects.

Multi sensorial experiences increase the sense of spatiality by eliciting pleasure about space. These experiences are gained by sensory organs and the senses of sight, hearing, and touch and even smell affect the sense of spatiality and pleasure. Yet when the whole sensual space experiences are analyzed in literature, it is seen that the sense of sight is considered to be dominant sense in architectural designs. It is because the association of pleasantness of a space with balanced forms, scale and colors. As a consequence, the visuality of an architectural design seems to be one of the primary aims of contemporary

architecture. In comparison, the other sensual experiences are less emphasized. They are considered to be engraved in the subconsciousness.

Dominance of visuality has been a global acceptance in the architectural world. This acceptance results in a narrow point of view in architectural thought and this tendency misleads architectural designs in one direction, thus potentially decreasing the architectural pleasantness. Effects of this approach also can be seen in literature. Most studies about sensual space experience, even in the case of blindness, only investigate if other senses are adequate for spatial cognition. Although it is known that nonvisual space experiences are also as correct as visual experiences in literature, still general judgments about an architectural space are made on the basis of visuality. General acceptance is that nonvisual experiences also provide sense of spatiality, but maximum pleasantness occurs under the leadership of vision. Despite this, such architects as Pallasmaa and Holl criticize the tendency of contemporary world architecture to impress humans only by the visual illusions in architectural design [28]. Nevertheless, there is no critical or experimental research about the dominance and reliability of visuality in spatial pleasantness.

Visuality of course plays an essential role in architectural designs. As mentioned in the visual space experiences section, while defining architecture or just an architectural space, many architects and philosophers emphasized the visual aesthetic, proportion or beauty of architecture. Besides all approaches and theories, architecture means to construct a physical and visible thing. However, experiencing visuality is a complex process due to the complex psychological system of seeing. The sense of seeing is not an instant biological reaction or perception, it also contains all past experiences, memories and judgments. This complexity can affect spatial decisions according to the viewer's personal frame of reference. As mentioned before, the dominance of visuality can also screen other sensual experiences. As an example, an architectural space could be judged as unpleasant just because the user does not like the color of it, but it could be pleasant with its aural experiences, spaciousness, materials texture and smell. In other words, visual experiences can cause prejudice because of their dominancy over other sensual experiences. Besides, visual pleasantness of an architectural space can be manipulated by illusional designs.

As seeing can sometimes be deciving, nonvisual space experiences could be relatively more reliable for overall judgement of pleasurability. In order to analyze the role of sensual space experiences and the reliability of visual experiences in spatial pleasurability, visual and nonvisual space experiences will be compared in the next chapter. To achieve this goal, a series of research was conducted. The research methods are presented in the next section.

4.2. RESEARCH METHOD

The research was designed to make a comparison between pleasurability of visual and nonvisual space experiences within the framework of phemenology. It focuses on the qualitative nature of experience and pleasurability. Phenomenological studies are based on qualitative research of personal experiences. Therefore, in order to analyze the effects of visual and nonvisual space experiences on pleasurability as a spatial phenomenology, qualitative research methods were used. These methods can reveal subjective concept and meanings how the individuals experiences space.

There were two phases of research. The first phase used in-depth interviews which were one of the phenomenological research methods, the second phase used the questionnaire, which will be detailed in the next chapter. It was decided that in the study of nonvisual space experiences, they should not be affected by visual experiences. Therefore, nonvisual experiences should be explored in the cases of visual loss. Therefore, participants who are totally blind were recruited. For a comparison, sighted participants were also included in the second phase.

4.2.1. In-Depth Interview

The aim of the first phase of research was to lay the foundation for the fieldwork in the second phase by exploring sensual space experiences in the case of vision loss. In this way, it was possible to understand what makes space pleasant if visual experiences is lacking. The most important point was not to direct their attention and perception in a certain way. Thus, interview questions were open-ended and semi-structured. The results of the interview were used to determine fieldwork sites for the second phase of research.

4.2.2. Fieldwork in Selected Spaces

In the second phase, the aim of the fieldwork is to investigate the relative importance of nonvisual space experiences in terms of spatial pleasurability and the reliability of visual experiences. To reach this aim, the sites chosen according to the results of interviews with totally blind participants' interviews were tested in terms of the pleasurability by both sighted and visually impaired participants. While determining the fieldwork sites, nonvisual sensual features which had been taken from visually impaired people's answers were taken into consideration; together with visually remarkable features such as new or old, materials and etc. This study addressed the following questions:

- Do visual preferences and judgements affect spatial pleasurability negatively even the space is comfortable in terms of sensual experiences?
- Is it enough to make the space pleasurable even it is not sensually pleased?

Unlike in-depth interview questions, the questionnaire was composed of structured questions. It was aimed to understand the specific role of visual and nonvisual space experiences in terms of spatial pleasurability. For this reason, the questionnaire survey was conducted with both sighted and totally blind participants. The questions were asked directly about visual, aural, haptic and olfactive experiences of spaces.

5. CASE STUDY: VISUAL AND NONVISUAL SPACE EXPERIENCES IN TERMSOF SPATIAL PLEASURABILITY

This chapter presents the case study of the thesis which is comparison of visual and nonviual space experiences in terms of spatial pleasurability. Firstly, objectives of the study, participants and testing methods will be introduced, and then findings of the research will be analyzed to conclude the study.

5.1. OBJECTIVES OF THE STUDY

This case study is a qualitative exploration of similarity and differences between visual and nonvisual space experiences in the light of spatial plesurability. The aim of the study is to investigate the role of visual experiences on architectural preferences with a critical perspective. The study unfolded following the stages described below;

- In-Depth interview with totally blind participants
- Analyzing interview results
- Determining location for fieldwork
- Structuring survey questions
- Giving questionnaires to both blind and sighted participants in determined locations
- Analyzing questionnaire results

First two stages grouped under the title of *Pre-study* and following four stages are grouped under *Main Study*. Details of each stage of the study will be presented in the following sections of this chapter.

5.2. PRE-STUDY: INTERVIEWS WITH TOTALLY BLIND PARTICIPANTS

In-depth interviews with totally blind people were the first step of the case study which aims to compose a background for the following stages of the study. The results were used

to determine two locations for the fieldwork. This section will present the profile pf the participants, composing in-depth interview questions and discussion on results.

5.2.1. Participants and Procedure

Seven people with visual impairment participated in the study. Participants were chosen by the help of Technology and Education Library of Visually Handicapped (GETEM), Platform of Visually Handicapped Students and Six Points Association of the Blind. All participants were in similar social group. Results of the interviews may be different with different participants' profile.

The participants were chosen as totally blind either congenitally or late sight loss. Four of the participants were congenitally blind and remaining three were late blind. The reason for choosing participants from two different blindness categories is to examine if visual memories that are gained before blindness affect spatial preferences.

The voluntary interview participation form, as seen in Appendix A, was read for each participant and personal identity informations of participants will be undisclosed. Thus instead of using their names they will be enumerated such as P1, P2, P3 etc. The profile of each participant of the interview is presented in Table 5.1. below.

There was no time-bound for answering any question. All questions were asked and recorded by the author.

Table 5.1. The profile of each participant in in-depth interview

Participants	Age	Gender	Blindness Category	Occupation
P1	32	Male	Late blind	Librarian
P2	30	Male	Late blind	Public servant
P3	46	Female	Late blind	psychologist
P4	28	Male	Congenitally blind	Public servant
P5	32	Male	Congenitally blind	Librarian
P6	29	Female	Congenitally blind	Civil servant
P7	35	Male	Congenitally blind	Public servant

5.2.2. Preparation of Interview Questions and Answers of Participants

The interviews were made up of semi structured and open-ended questions. As mentioned in the previous chapter, the aim of the interview was to deepen the understanding of blind people's spatial experiences. Interviews were done with only totally blind participants. This is to determine such spatial design features that come into prominence in sensual experiences. The participants' answers to the questions were analyzed using content analysis in order to elicit common themes which can be seen in Table 5.2.

In order to explore participants' spatial preferences in terms of pleasurbility, four main questions were addressed to participants, as seen in Appendix B. The first question, asked them to describe what an architectural space means for them. The aim of this question is to be able to understand the meaning of space for them. Second question is about the place where they live and the aim is to elicit their sense of space by making them describe the most personal space for them. Third question, asked them to describe the most important design feature that affect their experience in either positive or negative way. This question seeks sensual design features that draw their attention in a space. Finally, the last question asked the most favorable and unfavorable space they had ever been. The aim of this question is to analyze their architectural preference. Two locations that represent a sensually positive space and a negative space were determined. These locations were used for the fieldwork, which will be described in section 5.3.

Table 5.2. Common answers of participants in in-depth interview

| Questions And Participants | What is important in an architectural space in the absence of visual experiences | The most remarkable design property | | Unfavorable spaces |
		Possitive	Negative	
P1	-Aura (quality of sensual integrity) -Spaciousness -Acoustic -Plainness and Simplicity	- High ceiling -Yard-type spaces -Comfortable acoustic	-Ornaments -Overrated furnishing -Low ceiling	-Mimar Sinan Sübyan Mektebi -Shopping Centers -Atatürk Airport
P2	-Acoustic -Material -Spaciousness	-Comfortable acoustic -High ceiling -Wooden, stone and puddle clay	-Undefined large spaces -Unnatural materials -Low ceiling	-Boğaziçi University Southern Campus -Shopping Centers
P3	-Ambiance (sensual and physical integrity) -Acoustic -Security -Spaciousness	- Proportion of height and depth - Comfortable acoustic - Yard-type spaces - Water -Green elements	-Undefined large spaces - Extra height ceiling -Long corridors -Lightless spaces	Shopping centers
P4	-Acoustic -Ceiling height -Breathable spaciousness	- Comfortable acoustic -Yard-type spaces - Pleasant odor - Green elements - Natural materials	- Low ceiling - Extra height ceiling -Ceramic tile and plastic materials -Meander floor plans	- Atatürk Airport -Shopping centers
P5	-Acoustic -Odors and Air circulation -Movability	-Yard-type spaces - Comfortable acoustic -Green elements -Natural materials	-Undefined large spaces -Low ceiling -Overrated furnishing	Shopping centers
P6	-Sense of belonging (Pleasantness of sensual integrity) -Spaciousness and Odors -Surprising design properties -Acoustic -Depth	- Yard-type spaces -Green elements -Galleries - Odor -Water	- Ornaments -Carpet floor covering - Low ceiling	Shopping centers (except Kanyon and Meydan)
P7	-Acoustic -Material -Odors -Floor covering	- Comfortable acoustic -Yard-type spaces - Green elements - Marble and Granite materials	- Undefined large spaces - Low ceiling - Extra height ceiling	Shopping centers

Qestion 1: Could you describe an architectural space subjectively according to your experiences?

All participants consider this question according to spatial legibility for moving in that space. However, as they described an architectural space in detail, sensual experiences became prominent. Interview statements will be presented featuring common and notable answers.

General tendency of participants while describing what an architectural space means for them, is categorizing spatial properties into groups such as acoustic, material and proportion. On the other hand, P1 and P6 define an architectural space as an experimental integrity. P1 used the word *aura* for defining what is important for an architectural space. He called architecture of today as;

> Concentrated buildings, the core has been consumed. It's like they took the important part and pumped it full of water. It has no taste; it also doesn't have an identity.

He said he cares first of all comfort in terms of spatial organization, material, height and furnishing. Orthogonal to these, he emphasized that the most significant identity of an architectural space is its aural property. He said that he understands a space's spatial property as soon as he comes through the door from the echo of the security detector's sound. Similarly, P6 claims that she can identify the character of an architectural space as soon as she comes into the space by its smell, haptic properties (not just touching by her hands, but also by feeling the wind on her skin), acoustics and the people that in the space. She said that architectural space should provide a sense of belonging for her, if a space is unpleasant, and then this sense disappears. She added that the difference between a regular space and an architectural space is its well-thought design. She said that she prefers puzzling and surprising designs in an architectural space.

P2, P4, P5 and P7 also stated that acoustical properties and materials give space its identity. Material characteristics become important due to their effect on acoustical and haptic experiences of them. P2 said that he prefers such natural materials as wood, stone and puddle clay in an architectural space due to their echo. P7 declares that wood is the

best material for acoustics, but texture and echo of marble or natural stone are also pleasant. P4 and P7, on the other hand claimed that some materials such as rubber, carpet and plastic absorb all sound and eliminate the boundaries of the space. P5 emphasized sound is the most important property that composes space. He said that he imagines and recalls a space with its sound and he prefers stone instead of concrete because of the material's acoustical properties. Invariably, P7 said that the first impression about a space is its acoustics.

P4 describes an architectural space as a *refuge* that makes him comfortable and P3 defines it by the word *ambience*. However, in common, they emphasized the height of a space and light as important properties while defining an architectural space. Even though neither can feel light, they said that experiencing sunny spaces differs from dark ones. P3 said that she can feel sunny spaces by other sensual properties. She claims that sunny spaces make an impression of being cleaner compared with dark ones. Accordingly, P4 also claims that light is not only experienced by eyes, it can also be felt by other senses, but he could not describe how. With respect to height, when P3 was asked to explain the word *ambience* that she used while defining space, she said that it is difficult to describe this ambience, but also emphasized that height of a space is very effective in this feeling. Besides, they identify a sense of space by resembling adjectives. P3 said that a sense of space is composed by its spaciousness, acoustics, ventilation, color and light. P4 said that if a space makes him peaceful and comfortable due to its air ventilation, material, acoustics and if he can breathe easily in that space, then he calls that place as a *good space*.

P5, P6 and P7 describe an architectural space as large, high ceiled, spaces. P5 and P6 identify architectural space as pleasing if it seems comfortable. P5 describes an architectural space by its width and height. He claimed that air circulation and smell give the space its characteristics. Similarly, P6 defines an architectural space according to its smell. She also said that she also remembers cities and countries according to their smell. She added that the scent of a space also makes her experience the size of space. Even though she cannot know colors; she claims that different colors create different senses in a space. She said that dark colors mean textured and sound absorbing materials and even have different scents for her.

Question 2: Could you describe the space in which you live?

Participants' general tendency was to describe the furnishing. Conspicuously, late blind participants describe their space by defining a picture with the help of their visual memories.

P1 described his bedroom in his home step by step as he moves in the space. He benefits from haptic experiences and movement habits while describing his room. He defined his house as *"freak"* and *"pressed"* due to its useless plan and ceiling height. P2 also said that he feels like he is going to walk into somebody while walking in his house because of the low ceiling height. P4 also describes his house as low ceiled.

P3 prefers to describe her office building and she said that she can imagine its visuality by benefiting from what people told her. She emphasized entrances of the buildings and said that instead of narrow hallways in the entrance, she likes large and closed spaces like courtyards in her office.

P5 also describes his office according to his movement in it. He emphasized that after more furnished rooms, the meeting room is more comfortably spacious due to its long span plan. Yet he also said that if a space is large and long spanned, then he needs a landmark for both acoustics and movement.

Question 3: Could you describe the most important design feature that affects their experience in either positive or negative way?

All participants talked about courtyards as a positive design type. Furthermore, most of the participants (P3, P4, P5, P6 and P7) said that trees and green areas make space more comfortable. Besides, all participants emphasized complicated and crowded designs as negative properties.

P1 said that he prefers semi-open spaces due to the sense of air. Thus, he said that he likes courtyards because hypaethral spaces with surrounding walls give him a sense of enclosure and feel comfortably spacious. P3 said that yard-type buildings increase space perception

due to acoustics. She also described how a courtyard should be; she claimed that if it is surrounded on three sides, that space makes her more comfortable. She added that if a courtyard is too large, it makes her feel insecure. She described this feeling as;

If I cannot hear my voice's echo, it means that the space is huge and I am too small in it.

Similarly, P4 also prefers semi-open and hypaethral spaces because of their multi sensorial experiences. P6 said that when she is in a yard-type building she hears all sounds, in and out of the courtyard more comfortably and the air circulation makes her feel better. She defines a space where she visited, with different sizes of courtyards. She said while passing through one courtyard to another, she liked to hear inner and outer sounds together. P7 also prefers courtyards due to their airy structure and he emphasized that the resonation of sound is better on walls than in ceiling. According to him, that's why hypaethral spaces are more pleasurable instead of spaces with a closed ceiling and open walls.

Another common answer was about trees and green areas. P3 said that walking and sitting in a green area makes her feel comfortably spacious and trees change air circulation even in an open space. P4 claimed that trees and green areas lighten spaces, change the scent of it and make it pleasurable. P5 emphasized the relationship between trees and wind. He also said that green elements change acoustical properties. P6 said that she likes to touch green elements; she claimed that the texture of a tree is very good. In the same way as the previous participants, she said that trees change the scent of space. P7 also talked about trees and scents, but he also emphasized that they change the temperature of space positively.

Other design elements that are described as positive in an architectural space differ according to participants. Female participants, who are P3, P6 and P8, emphasized water elements in a space. They separately said that the sound of water makes space more comfortably spacious and positively affects the acoustical properties. P6 said that galleries in a building makes her experience and understand the space three dimensionally. P3 claimed that she feels better if the width-height proportion is 3 to 5. For example, she said that if the width of a space is 3 meters, the height of that space should be 5 meters. She claimed that this proportion affects the *"ambience"* of the space by affecting

acoustics and ventilation. She added that, she cannot describe this feeling properly. Different from others, P1 emphasized the entrance and the entrance doors. He said that if an entrance provides good acoustics and scent, it causes a positive bias and also affects spatial pleasantness.

As regards negative design properties, common tendency in answers was; low ceiling height, uncomfortable acoustics and complicated floor plans. P1 criticized shapeless spaces; he said that if a space does not have a regular shape, then it affects its acoustics and the movability in it. P2 said that noisy spaces make him uncomfortable and if a space is too large to experience then it makes him feel lost. He also emphasized that if floor plans are complicated, then he focused on finding his way which affects him negatively. Due to this negative feeling, he said that he does not prefer going to shopping centers. P3 claimed that some shopping centers make her feel breathless due to their inward-oriented architectural plans. She added that these kinds of spaces are generally lightless because of their largeness, and consequently she said that she feels as if that place is dirty. P4 emphasized that the height of a space increases its spaciousness and low ceiled spaces make him depressive. P7 also complained about low height, he said that if ceiling height is very low, then sound resonates from ceilings first and it is not preferred. As a contrast, if the ceiling height is too high then it also removes acoustics. Different from others, P7 also emphasized the floor covering of a space. He said that if there is no separation or a different floor covering according to function, then it affects spatial cognition negatively.

Another common answer on negative design properties was over-furnishing and ornaments. P1 and P6 emphasized ornaments on walls and furniture. Both of them said that they affect acoustics negatively and lead to misjudgement of space size. P1 said that;

> Reality is simple but people like to disorder it architecturally, architecture should also be real, plain and simple.

Similarly, P6 said that an architectural space should be surprising by its own design properties, not by added ornaments or furnishings. She emphasized that if there are overrated ornaments in a space, and then she tends to think it as crowded and noisy space.

Forexample, existence of too many things at the corners of a space narrows the limits of the space acoustically.

Question 4: Could you define the most favorable and unfavorable spaces you have ever been.

Conspicuously, all participants define shopping centers as unfavorable places. Even though the details of answers differ, participants mostly emphasized acoustical discomfort and complication in those spaces.

P1 used the word *"disaster"* for shopping centers. He said that they have complicated plans and noisy spaces. Similarly, P2 said that he fells like being lost when in a shopping center. He added that undefined open spaces, complicated floor plans, different scents that come from shops and noise bring out that feeling. P7 also emphasized that it is hard to decide where to go and the echo is uncomfortable. P5 said that in addition to the materials' acoustical problems, crowded spaces also absorb sound. P4 said that besides acoustical problems, even the effect of electric density tires him in shopping centers. He explained this feeling as;

> I don't like shopping malls. The reason is air, there's air inside but it's an artificially cleansed air. They are not schematic, I find the architecture absurd, it's terrible. For example, I don't like Cevahir at all. Yes it's got height but the air is terrible, the scheme is bad. It's also exhausting due to electricity flow, it feels tiring because there's a lot of electrical components.

P6 said that she prefers open air shopping center instead of regular ones because they are like a part of a street and more natural. She explained as;

> I think when you go into a place, you shouldn't think about how you'll get out, this is to do with the sense of freedom. For example the shopping malls of Akmerkez, Cevahir, Capitol are disturbing in regards to this. It's as if the architect tried to do something but got bored after a while and neglected these… If I give an example, I love Meydan and Kanyon shopping malls, but I don't like Akmerkez at all. I feel those are more paid attention to. The fact that there's a street style in shops makes me think that the place is well thought.

Favorable spaces differ depending on the participants. No single space or building could be specified as their favorite. The answers to this question share similarities with the possitive design properties that they specified in the previous questions. Although the names of the buildings that they prefer are different, it is found out that the general tendency was to prefer acoustical comfort, high ceiled or yard-type planned and green spaces was found.

The answers of the interview are used as a guide to determine fieldwork sites for comprising visual and nonvisual space experiences in spatial pleasantness. Information that is gained from these interviews will be further dsscussed in the next section.

5.2.3. Discussion on Interview Results

When results of interviews were analyzed it was seen that questions had been interpreted differently by every participant. However, the first question that is about describing an architectural space, were mostly answered in terms of what is important for them in an architectural space. When the answers are analyzed, it is seen that sound (comfortable acoustics) and material (pleasant texture, scent and acoustics) are the most important properties in a space in the absence of visual experiences.

In the second question which asked to describe where they live, it was seen that participants defined their houses and offices in terms of ceiling height, proportions of height and width and furnishing for their movability.

When possitive and negative design properties that affect their experience were asked, the most common and dominant answer was high ceiled spaces are seen as positive and low ceiled spaces as negative. As an example, court-yard buildings are described as positive and pleasant by all participants. The reasons were their sensual integrity of acoustics, haptic as feeling air on their skins, comfortable spaciousness and a sense of enclosure and security. On the other hand, low ceiled, crowded, ornamented, built by artificial materials, disproportionably large spaces are defined as uncomfortable and irritating.

The last question is not properly answered by participants. Most of the participants did not give a specific building name. They tend to describe their preferred design properties as

favorable space, and similarly, properties that are not preferred as unfavorable spaces. The common answer that all participants gave for an unfavorable space was shopping centers.

With the help of Table 5.2. it is aimed to find design keywords that will be used to specify fieldwork sites. As a consequence, it could be said that the most important spatial feature in the case of visual loss is acoustics. All participants emphasized aural experiences when they define an architectural space. Many preferred properties such as materials and ceiling height are in fact related to acoustical properties. In this respect, low ceilings, undefined large spaces and ornaments are defined as negative. In reply to these, high ceilings, courtyards, natural materials and even green elements and water were defined as positive in an architectural space. The second important property was spaciousness that mostly correlated with feeling air circulation by participants. Since air being felt by the skin, the feeling of spaciousness may also be interpreted as haptic experiences. Therefore, large and enclosed spaces are defined as negative. The third important experience is the sense of smell. They said that it helps to characterize the identity of the space. If it is fragnant, it increases pleasantness, which is the reason why they prefer green elements and trees in a space and why they feel insecure in a musty space. The last experience that is used to describe an architectural space is touching by hands. Only participants P6 and P7 said that they touch surfaces by their hands to identify the space. P6 said that she likes the texture of green elements, and P7 said he likes to touch marble and granite. When the rest of participants talked about materials, they were concerned with the acoustical and olfactive properties.

As a result of analyzing interview results and common answers in a table, spaces that include "positive design elements" could be considered as sensually positive spaces; while spaces that include negative design elements could be considered as sensually negative spaces. With the help of these design keywords, two locations which are assumed to be sensually positive and negative even without visual experiences, were chosen for a comparative study of sighted and visually impaired participants. That will be described in the next section.

5.3. MAIN STUDY: FIELDWORK WITH SIGHTED AND TOTALLY BLIND PARTICIPANTS

The following sections present the stages of fieldwork. Up to this chapter, participants and interview results were analyzed and some keywords were determined as sensually positive and negative in an architectural space.

As a result of interviews with totally blind participants a space that includes the design properties below is found to be sensually positive;

- Courtyard (yard-type buildings)
- Natural materials (wood, stone etc.)
- Green areas (trees, shrubs etc.)
- Water

On the contrary, a space that includes the design properties below is defined as sensually negative;

- Large and complicated floor plans
- Low ceiling or extra high ceiling
- Ornaments and overrated furnishing
- Carpet, rubber and plastic materials
- Crowded spaces

In consideration of these design keywords, two example locations were chosen for a comparative study between visual and nonvisual experiences.

In addition, survey questions are composed to investigate the participants' evaluation of pleasantness from those locations and the level of awareness of their sensual space experiences. At this stage of the survey, unlike the in-depth interview method, the number of participants is raised to 12 visually impaired and 12 sighted subjects for a comparison and also with the aim of increasing reliability of the results.

5.3.1. Participants and Procedure

There were two groups of participants in this part of the study. The first group were 12 sighted participants and the other group were constituted by 12 totally blind participants for comparative research. As it is in in-depth interview, participants were chosen by the help of Technology and Education Library of Visually Handicapped (GETEM), Platform of Visually Handicapped Students and Six Points Association of the Blind. Personal identity informations of participants will be undisclosed. Thefore, instead of using their names they will be enumerated such as P1, P2, P3 etc. Numbers of the each group's participants, age range, genders and occupations are shown in Table 5.3.

Table 5.3. Presentation of participant groups for fieldwork

Sighted Participants (SP)				Totally Blind Participants (TBP)				
	Age	Gender	Occupation		Age	Gender	Blindness Category	Occupation
SP1	20	Female	Student	TBP 1	20	Female	Congenitally blind	Student
SP2	28	Female	Economist	TBP 2	21	Female	Congenitally blind	Student
SP3	29	Female	Marketing manager	TBP 3	28	Female	Congenitally blind	Civil servant
SP4	25	Female	Dentist	TBP 4	19	Female	Congenitally blind	Student
SP5	45	Female	Public servant	TBP 5	36	Male	Congenitally blind	Public servant
SP6	32	Male	Engineer	TBP 6	32	Male	Late blind	Librarian
SP7	28	Male	Engineer	TBP 7	25	Male	Congenitally blind	Sociologist
SP8	25	Male	Economist	TBP 8	32	Male	Late blind	Librarian
SP9	22	Male	Self employment	TBP 9	20	Male	Congenitally blind	Student
SP10	32	Female	Public relations colsultants	TBP 10	28	Male	Congenitally blind	Public servant
SP11	35	Male	Engineer	TBP 11	30	Male	Late blind	Public servant
SP12	26	Male	Self employment	TBP 12	20	Female	Congenitally blind	Student

Participants were taken to both locations individually. They were asked to spent time in everywhere of the places as they want in both locations. Participants spent approximately 30 minutes in both places. However, due to the scale of the place some participants spent more time in DSC. There was no time-bound for answering any question. All questions were asked and noted by the author.

5.3.2. Preparation of the Questionnaire

Survey questions are identified as semi-structured and structured according to ordinal scale. It is aimed to compose the questionnaire from the general to the specific questions. Each step of the system is constructed to prove previous questions.

There are two semi-structured open-ended questions in the questionnaire. One of them is asked before closed-ended questions and the other is asked after closed-endedquestions. In the first question the participants asked if they were pleased or displeased from the space and why. They were asked to list the properties that affected the answer. With the help of this question it is intended to discover the differences between visual and nonvisual experiences in terms of given attention and priority. In the second question, they were asked which senses were dominant while experiencing the spaces. This question helps to differentiate sensual dominancy of sighted and blind participants

Structured questions of the questionnaire were for studying their experiences systematically. Thus, closed-endedquestions were composed. The reference theory to examine spatial pleasurability is Stephan Boyde Davis spatial quality parameters. According to these parameters, spatial pleasurability of visual and nonvisual experiences were exlpored under the titles of extent and scaling, position and movement, passive and active visual qualities which are not asked to visually impaired participants, dynamics and dependencies, passive and active physical qualities, textural qualities, atmosphere and responsive sounds.

In order to systematize titles of the questions, Parameters of Stephan Boyde Davis are interpreted and collected under two main titles by the author. Those are indirect and direct

sensual experiences as seen in Figure 5.1. Pleasurability of direct sensual experiences is questioned in terms of indirect sensual experiences.
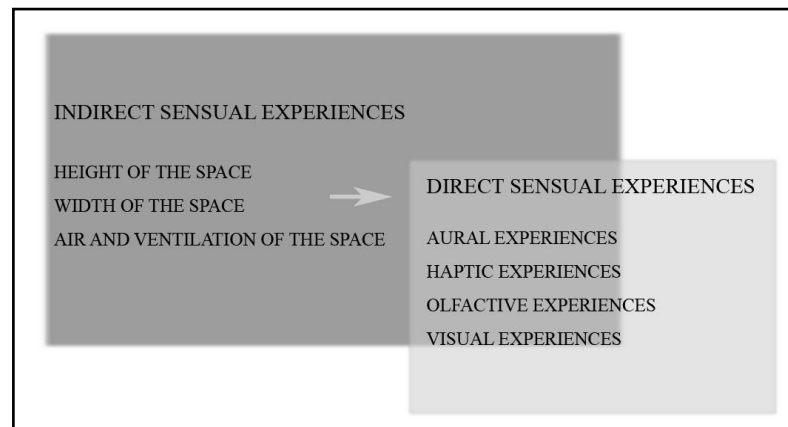
Figure 5.1. Direct - Indirect sensual experiences that are grouped for questionnaire

Two types of questionnaire were prepared. One of them is for sighted participants, which includes questions about visual space experiences. The other questionnaire is for totally blind participants. Hence, the number of questions for sighted participants were more than that of totally blind participants.

A three-point scale was used for all the closed-ended questions, as seen in Appendix C. The first group of closed-endedquestions was about pleasurability of space in terms of direct and indirect sensual experiences separately (questions from 1 to 7 for Sighted Participants/SP and 1 to 6 for Toatally Blind Participants/TBP). The second group of questions were about the effect of direct sensual space experiences on pleasurability of indirect spatial experiences, in the case of both visual preponderance and without vision (questions from 8 to 19 for SP and 7 to 15 for TBP).

In order to analyze the role of visual and nonvisual experiences in spatial pleasantness, questionnaires are made with participants individually. They are asked to stroll around in experiment spaces. They are not forced to do something in those spaces in order not to direct their experiences. However only in DSC they are asked to spend more time under the gallery in order to feel its typological similarities with a courtyard.

Results of fieldwork will be presented in section 5.3.4.

5.3.3. Criteria for Determining Locations of Fieldwork

Before determining locations for fieldwork, a pilot study was conducted by totally blind participants who had attended the interview. The aim of the study was to understand their space experiences. They had been taken to Süleymaniye Mosque referring to interview of blind architect Carlos Mourao Peirra which is about sensuality of the mosque [128] and asked them to spend time in the mosque and explain their experiences. However, the results of the study were not efficient to reach a conclusion. Although all participants pleased from the building, the study was comparable in terms of neither design features nor participants' profile. It is thought that, popularity and function of the building also could affect the experiences. Thus, fieldwork locations were determined to choose according to the interview results of participants and tested both in terms of possitive and negative design features by sighted and blind participants. As a consequence, it is decided to study in two spaces for a comparative study.

While determining locations for fieldwork, it is taken in to consideration that these two spaces should have similar climate and scale. Thus, both locations are chosen in same region of Istanbul, Taksim as seen in Figure 5.2. Besides, the fieldwork was conducted at weekends and at a similar time of the day to control the human density.

In consideration of positive design elements found in the previous section, the first fieldwork site is determined as the Courtyard of Istanbul Technical University (ITU), Taşkışla. For negative example, a shopping center was considered firstly because all participants gave the same answer for the unfavorable space, and secondly because they include all design properties that evaluated negatively by the participants. As a consequence of this thought, Demirören Shopping Center (DSC) is determined as the second fieldwork site. These two examples will be described architecturally in the following sections.
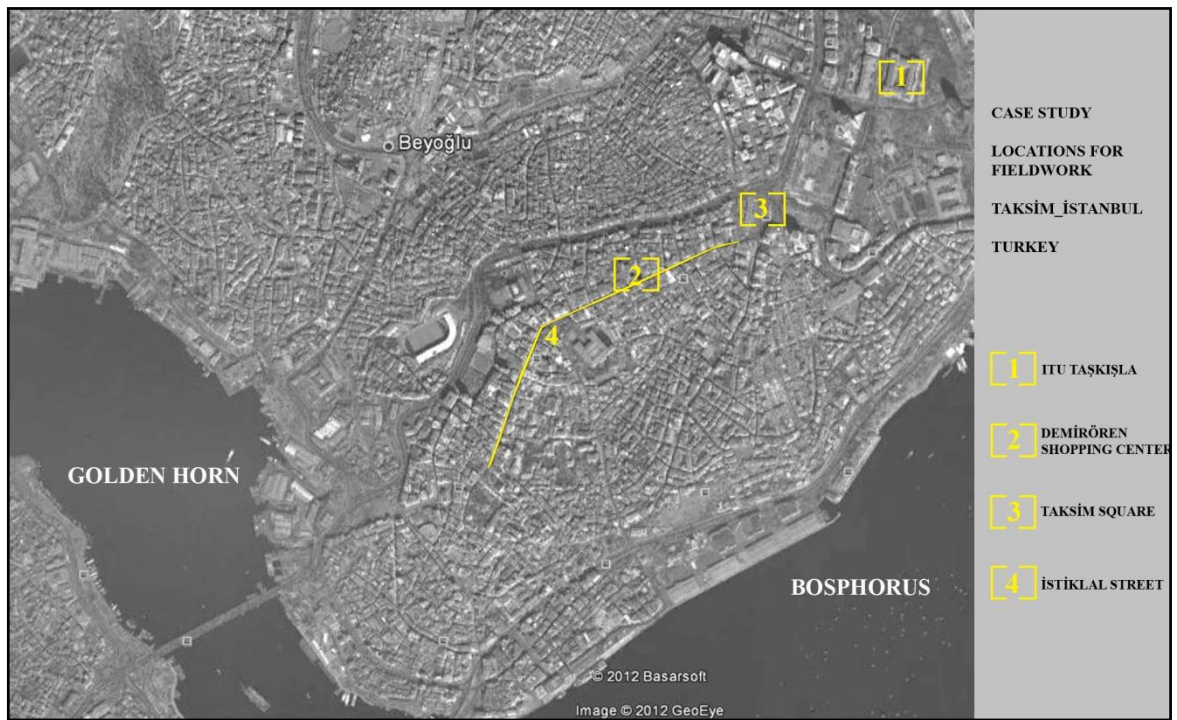
Figure 5.2. Locations of fieldwork in Taksim

5.3.3.1. Courtyard of Istanbul Technical University, Taşkışla

First space that is determined as sensually pleasurable according to the interview result is Courtyard of Istanbul Technical University, Taşkışla. Both sighted and visually impaired participants were taken there and answered the survey questionnaire for a comparison between visual and nonvisual space experiences in terms of spatial pleasurability.

Taşkışla is located in Taşkışla Street, Taksim. Courtyard is a rectangle hypaethral space that is surrounded by two-storey high walls of the building, as seen in Figure 5.3. and Figure 5.4. It is placed at the heart of the building and has four main gates from the north, south, east and west of the building. There is a decorative pool in the middle of the courtyard. The main material of the building as well as the courtyard is natural stone. Hard landscape is composed by a rectangle patio between east and west gates and pathways running through north and south gates, the remaining floors are covered by grasses and trees, as seen in Figure 5.5.
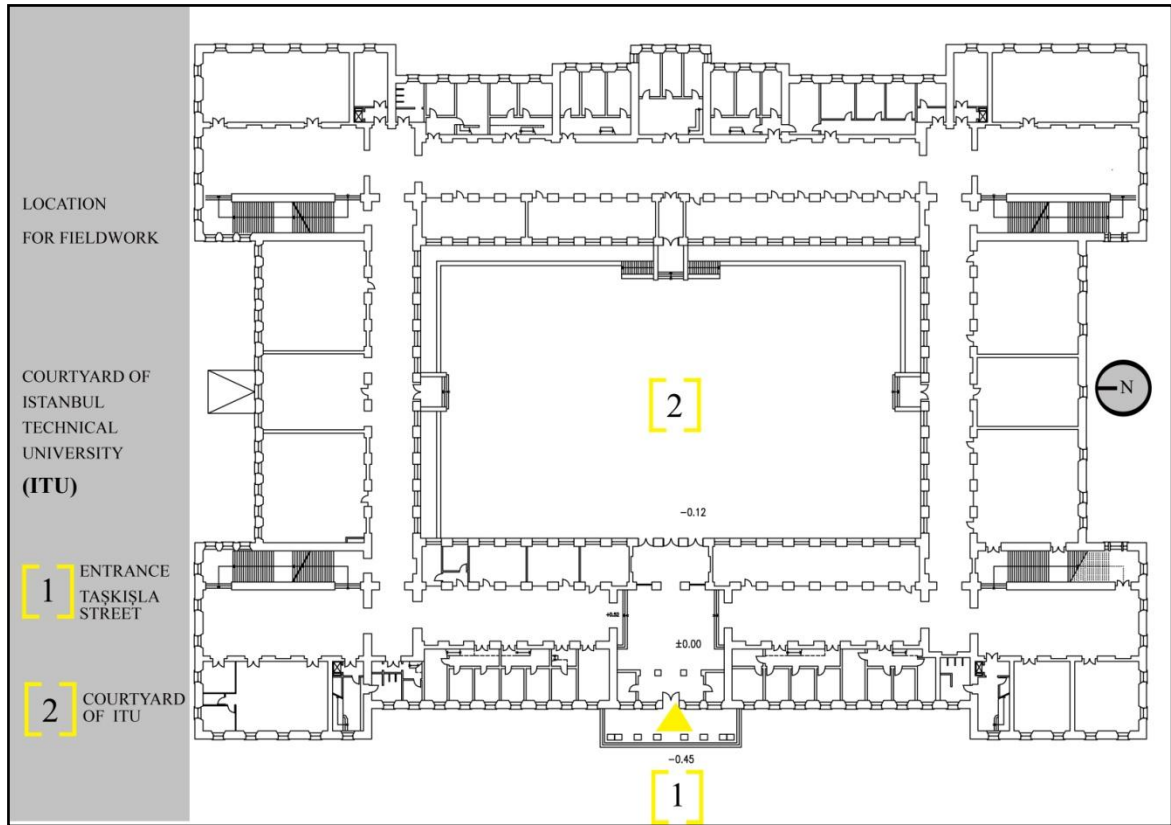
Figure 5.3. Ground floor plan of Courtyard of Istanbul Technical University (ITU), Ground floor plan of the University was taken from *İstanbul Teknik Üniversitesi Rektörlüğü, Yapı İşleri Ve Teknik Daire Başkanlığı*
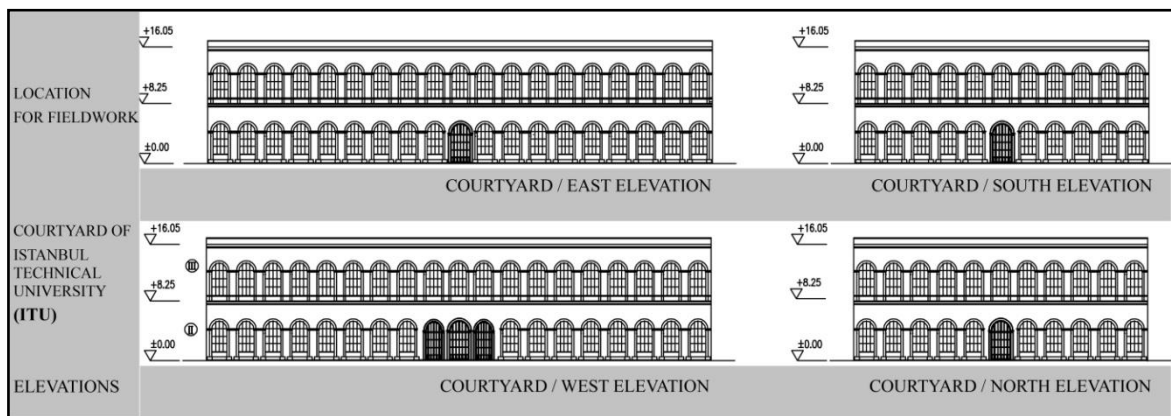
Figure 5.4. Elevations of Courtyard of Istanbul Technical University (ITU) Elevations of the University was taken from *İstanbul Teknik Üniversitesi Rektörlüğü, Yapı İşleri Ve Teknik Daire Başkanlığı*

VIEW FROM EAST OF THE COURTYARD

VIEW FROM NORTH OF THE COURTYARD

VIEW FROM WEST OF THE COURTYARD

VIEW FROM SOUTH OF THE COURTYARD

Figure 5.5. Images of Courtyard of Istanbul Technical University (ITU)

Due to its typical courtyard design, natural building material, green areas and water elements that are determined as sensually pleasant by interview participants.

5.3.3.2. Demirören Shopping Center

The second site which is considered as sensually unpleasurable according to the interview result is Demirören Shopping Center. As in first space, the same visually impaired and sighted participants were taken to this place and answered survey questionnaire for a comparison between visual and nonvisual space experiences in terms of spatial pleasurability.

Shooping center is a contemporary building as opposed to the courtyard of ITU, Taşkışla. It is located in Istiklal Street, Taksim. It is a rectangle, seven-storey building and has an

elliptic gallery in the middle, as seen in Figure 5.6. There are three storeys in the basement and four storeys on the ground. The entrance of the shopping center is on the same level with Istiklal Street and the granite floor covering on the ground, as seen in Figure 5.7., and upper floors, except the basement floors, which are carpetteed. Ground and upper floors have a typical shopping center design. There is a circulating road around the gallery and in front of shops. But the basement has freer floor plan than upper floors. Free standing benches are placed everywhere, thus making it difficult to walk among them.
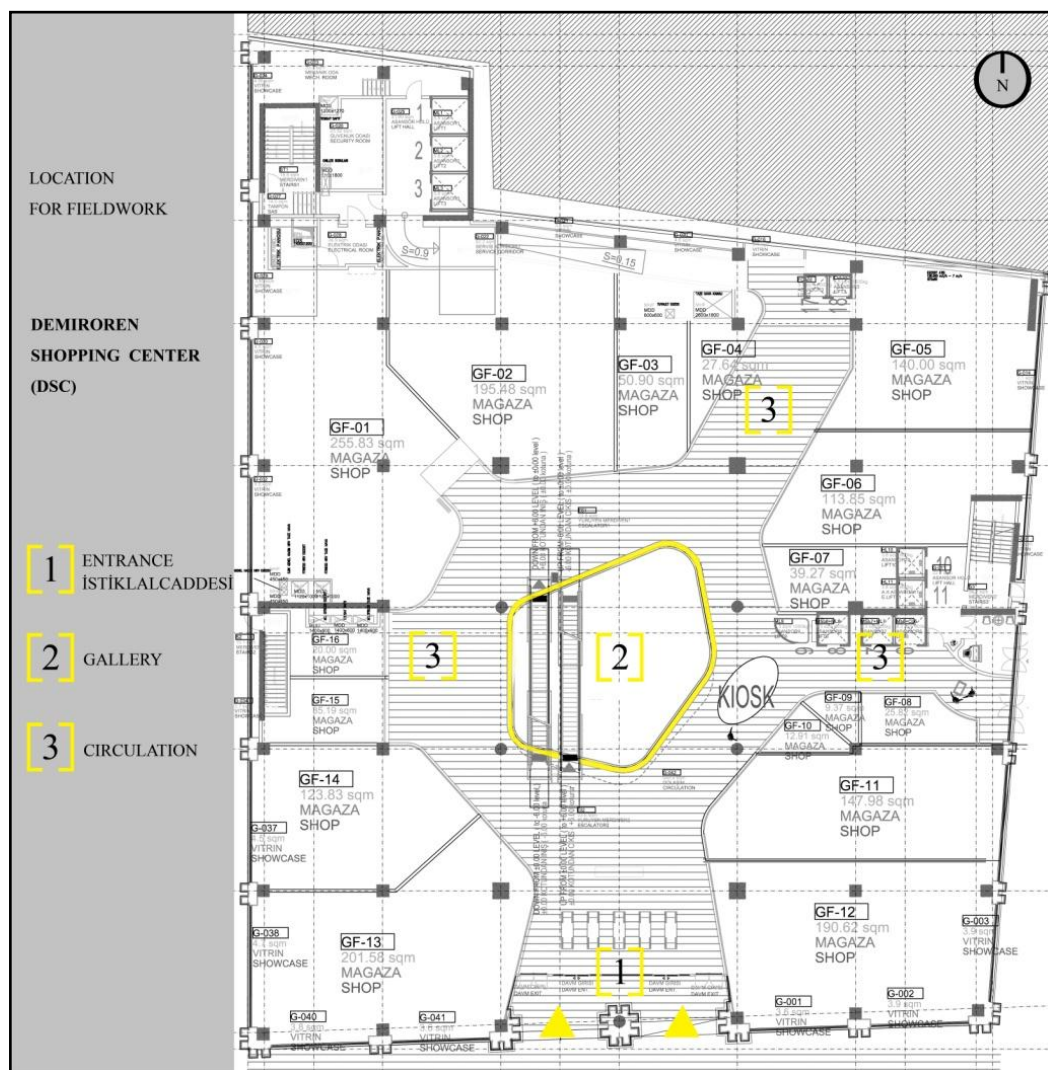
Figure 5.6. Ground floor plan of Demirören Shopping Center (DSC)
Ground Floor Plan of shopping center was taken from *Autoban Mimarlık*

GROUND FLOOR OF DEMIROREN SHOPPING CENTER

Figure 5.7. Images of ground floor of Demirören Shopping Center (DSC)

GALLERY OF DEMIROREN SHOPPING CENTER
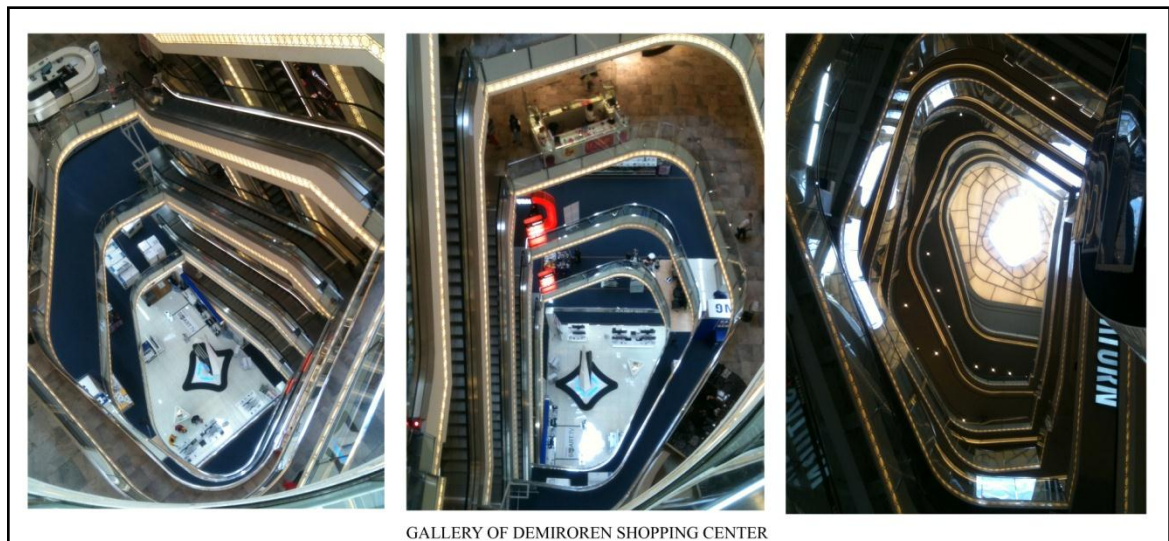
Figure 5.8. Gallery of Demirören Shopping Center (DSC)

Due to its extra ceiling height in the bottom of gallery, carpet floor covering, complicated floor plans that are determined as sensually unpleasant by interview participants, DSC is considered as unpleasurable in terms of nonvisual sensual experiences. Hence, it is chosen as a negative example to test for.

The gallery's similarity with courtyard-type spaces, as seen in Figure 5.8., makes it ideal for a comparison with the courtyard of ITU. The participants were taken to the bottom of gallery especially because the space gives the sense of height.

5.3.4. Discussion on Questionnaire Results

Results of the questionnaire will be presented in the following order in this section.

- The results of open-ended questions for both SP and TBP
- Presentation of common answers to open-ended questions in Table 5.4., 5.5., 5.6. and 5.7.
- The results of first group of closed-ended questions that are about general pleasurability of space by direct and indirect sensual experiences for both SP and TBP.
- The results of the second group of closed-endedquestions that are about hierarchy of direct sensual space experiences in terms of spatial pleasurability both in case of visual preponderance and without vision for both SP and TBP.
- Presentation of answers of participants to closed-ended questions in Figure 5.9. – Figure 5.13.
- Interpretation of results by comparison of common answers to achieve conclusion

5.3.4.1. *Findings of Open-ended Questions*

There were two open-ended questions in the questionnaire as mentioned before. Results of the both open-ended questions will be examined for SP and TBP separately and analyzed according to common answers. Results of the first open-ended questions can be seen in Table 5.4. and Table 5.5. and Table 5.6. results of the second open-ended question can be seen in Table 5.7.

The first open-ended question was; *Is this space pleasant or unpleasant and could you please put in order properties of the space that affect your decision?*

Table 5.4. Results of the first open-ended question for both participant groups

1st open-ended question	PLEASANT		UNPLEASANT	
	The courtyard of ITU	DSC	The courtyard of ITU	DSC
SP	58 %	75 %	42 %	25 %
TBP	100 %	0 %	0 %	100 %

In the the courtyard of ITU, SP who answered positively, describe the courtyard as in order of spaciousness, historical, calm and restfull. They said they like the space because it is abloom, green, acoustically comfortable and historical. Besides, SP who judged it negatively, described the courtyard as dirty, neglected and old. All of them also emphasized that they do not like pink that is the colour of the walls.

As mentioned above, all TBP found the space pleasant. They emphasized spaciousness, acoustic and movability of the courtyard. Four of them also emphasized the effect of green elements on creating a sense of pleasure.

For the the courtyard of ITU, results of this question show that 100 % of TBP and 58 % of SP were impressed by the spaciousness and acoustic of the space. TBP expressed acoustical effects more consciously and in detail as describing the echo while SP expressed their acoustical pleasantness by by using such adjectives as calm or restful. Besides, 42 % of SP who describe the courtyard as unpleasant, only emphasized visual properties such as colour.

In the Demirören Shopping Center, SP who answered possitively, describe DSC as radiant, large, modern and even fascinating. 4 of 12 (33 %) SP emphasized the gallery as a positive design feature due to its impressive visuality.

On the contrary, all TBP described DSC negatively as lowness, loud, disturbing and not legible in terms of floor plans. 6 of 12 (50 %) TBP pointed to carpet in the basement floors. They said that it affects acoustic and smell of the space in a negative way.

With respect to DSC, the results show that SP generally like the space while TBP certainly do not. SP tended to describe visual properties such as light or form as a source of pleasure. Any of them did not talk about other sensual experiences such as sound although they did while in ITU. On the contrary, none of TBP would like to be in there. They commonly described disturbing acoustical conditions. The biggest difference between the two groups was about width of the space. Even though it is not a small building, TBP consider spaces as lowness and depressed due to its aural properties while SP consider it sas large.

These results can be considered as an indicator of the effect and dominance of visual experiences on spatial pleasurability. According to the answers of participants, SP tend to experience a space more sensually if it does not have a notable or polished design property for them. But it is seen that visual preferences also affects pleasurability. Some participants like SP5, SP6, SP7, SP9 consider the courtyard as pleasant because it is a historical building. Yet, 42 % of SP found it as unpleasant just because of their visual preferences. But the remarkable differences between SP and TBP were about their evaluation of DSC. Almost all SP describe the space as pleasant while all TBP found it unpleasant. It can be easily said that visual preferences cause this differences. SP generally liked visual design properties and this affect their decision but TBP did not have any visual experience and also did not like the nonvisual properties of DSC.

Table 5.5. Positive answers of first open-ended question in order

Question	Is This Space Pleasant or Unpleasant and Could You Please Put in Order Properties of Space that Affect Your Decision?			
Location	The courtyard of ITU, Taşkışla		Demirören Shopping Center	
Participants	SP	TBP	SP	TBP
Common answers of participants who consider the space as "pleasant"	**P1-** Spaciousness Large Restful / Good Acoustic **P3-** Spaciousness Fresh **P5-** Historical Spaciousness Green **P6-** Historical Restful / Good Acoustic **P7-** Restful /Good Acoustic Historical Green **P9-** Quiet Resfful Historical Abloom **P10-** Green Fresh Form of Windows/Doors Water **P11-** Good Acoustic Restful Fresh	**P1-** Spaciousness Legible plan Yard type Green **P2-** Spaciousness Good Acoustic Legible plan **P3-** Spaciousness Fresh Legible plan **P4-** Quite Fresh Green **P5-** Spaciousness Legible plan Large **P6-** Good Acoustic Spaciousness Green and Natural **P7-** Good Acoustic Spaciousness Smells Good **P8-** Spaciousness Legible plan Large **P9-** Good Acoustic Spaciousness Green and Water Legible plan **P10-** Spaciousness Legible plan Large **P11-** Good Acoustic Spaciousness Green Legible plan **P12-** Restful Legible plan	**P1-** Radiance Large **P2-** Modern Large **P4-** Large Modern Geometric Radiance **P5-** Large Surprising **P7-** Modern Radiance **P8-** Aesthetic Modern **P9-** Radiance Modern **P10-** Radiance Large **P11-** Spaciousness **P12-** Modern Aesthetic	**P1-** Spaciousness Large Restful / Good Acoustic **P3-** Spaciousness Fresh **P5-** Historical Spaciousness Green **P6-** Historical Restful / Good Acoustic **P7-** Restful /Good Acoustic Historical Green **P9-** Quiet Resfful Historical Abloom **P10-** Green Fresh Form of Windows/Doors Water **P11-** Good Acoustic Restful Fresh

Table 5.6. Negative answers of first open-ended question in order

Question	Is This Space Pleasant or Unpleasant and Could You Please Put in Order Properties of the Space that Affect Your Decision?			
Location	**The courtyard of ITU, Taşkışla**		**Demirören Shopping Center**	
Participants	**SP**	**TBP**	**SP**	**TBP**
Common answers of participants who consider the space as "unpleasant"	**P2-** Old Neglected Colour of walls **P4-** Dirty Old Neglected Colour of walls **P7-** Colour of walls **P8-** Old Neglected Colour of walls **P12-** Colour of walls Neglected		**P3-** Crowded Narrow Airless **P6-** Crowded Soulless **P9-** Unaesthetic Lowness	**P1-** Bad Acoustic Uncomfortable Loud Material / Carpet **P2-** Bad Acoustic Complicated Lowness **P3-** Bad Acoustic Complicated Material / Carpet **P4-** Bad Acoustic Loud Complicated **P5-** Complicated Material / Carpet Bad Acoustic **P6-** Bad Acoustic Loud Lowness Undefined Form **P7-** Bad Acoustic Complicated Lowness **P8-** Bad Acoustic Material / Carpet Large **P9-** BadAcoustic Loud Undefined Form Distracter Perceptual Chaos **P10-** BadAcoustic Loud Chaotic **P11-** Bad Acoustic Narrow Distracter Undefined Form **P12-** Compllicated Loud

The second open-ended question is; *Which two senses were dominant while evaluating pleasurability of the spaces?* This question is asked at the end of the questionnaire to examine the level of awareness and dominance of their senses. The results are presented in Table 5.7., differences between sighted and totally blind participants' experiences can be compared according to their answers.

Table 5.7. Results of second open-ended questions for both participant groups

2nd open-ended question	SP					TBP	
	Vision Aural	Vision Haptic	Vision Olfactive	Aural Haptic	Aural Olfactive	Aural Haptic	Aural Olfactive
The courtyard of ıstanbul Techical University (ITU)	100 %	0 %	0 %	0 %	0 %	50 %	50 %
Demirören shopping Center (DSC)	25 %	75 %	0 %	0 %	0 %	58 %	42 %

These results show that in both two spaces, vision is the primary sense for SP and hearing is the secondary sense that accompanies with sight; none of them rely on olfactive experiences. But for the TBP, hearing is the primary sense. Haptic experiences have secondary dominancy in case of the lack of vision. On the contrary to SP, smell is also very effective for TBP that accompany with aural experiences. Olfactive experiences share equal role with haptic experiences for TBP in the courtyard of ITU and similar in DSC.

These two open-ended questions were asked to explore general experiential factors affecting space pleasurabilty. For more detailed and specific answers closed-ended questions will be analyzed in the next section.

5.3.4.1. Findings of Closed-ended Questions

Closed-endedquestions are divided into two sections as mentioned before. In the first section (questions from 1 to 7 for SP and 1 to 6 for TBP) pleasurability of space in terms of spesific direct and indirect sensual experiences. The 3-degree evaluating system that used for questions corresponds to;

- 1 for "not pleasurable"
- 2 for "pleasurable"
- 3 for "very pleasurable"

Answers of the both SP and TBP for closed-ended questions can be seen in Appendix D. Comparative results graphics for first section of closed-endedquestions for SP and TBP are shown in Figure 5.9., Figure 5.10.
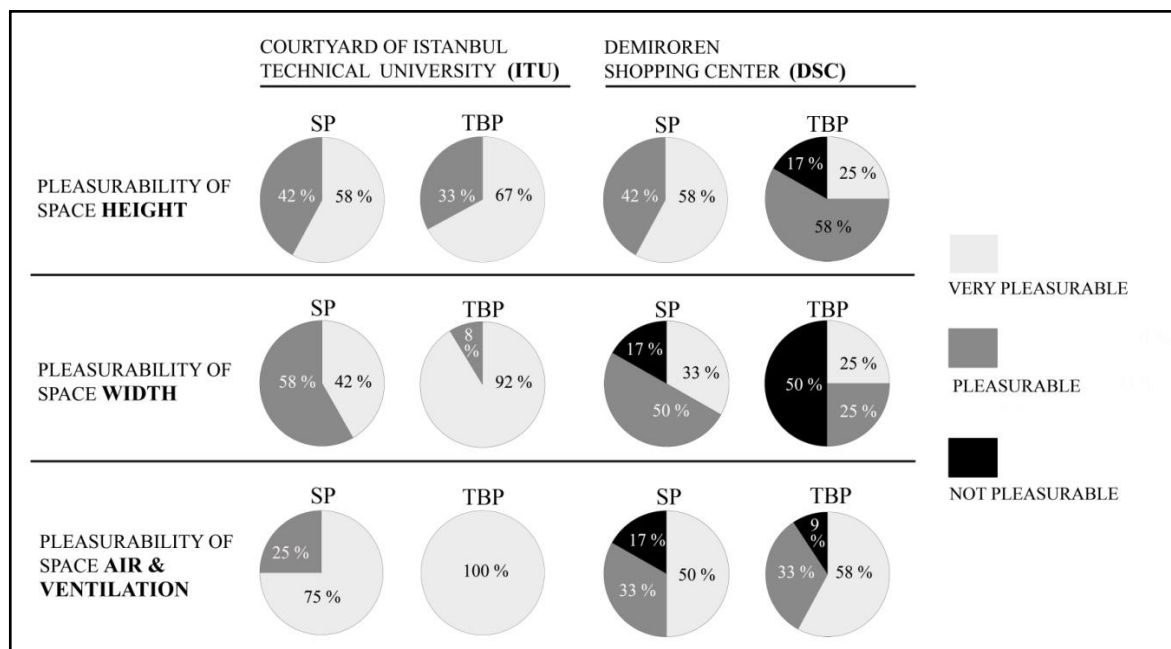
Figure 5.9. Pleasurability of space height, width, air and ventilation for both SP and TB
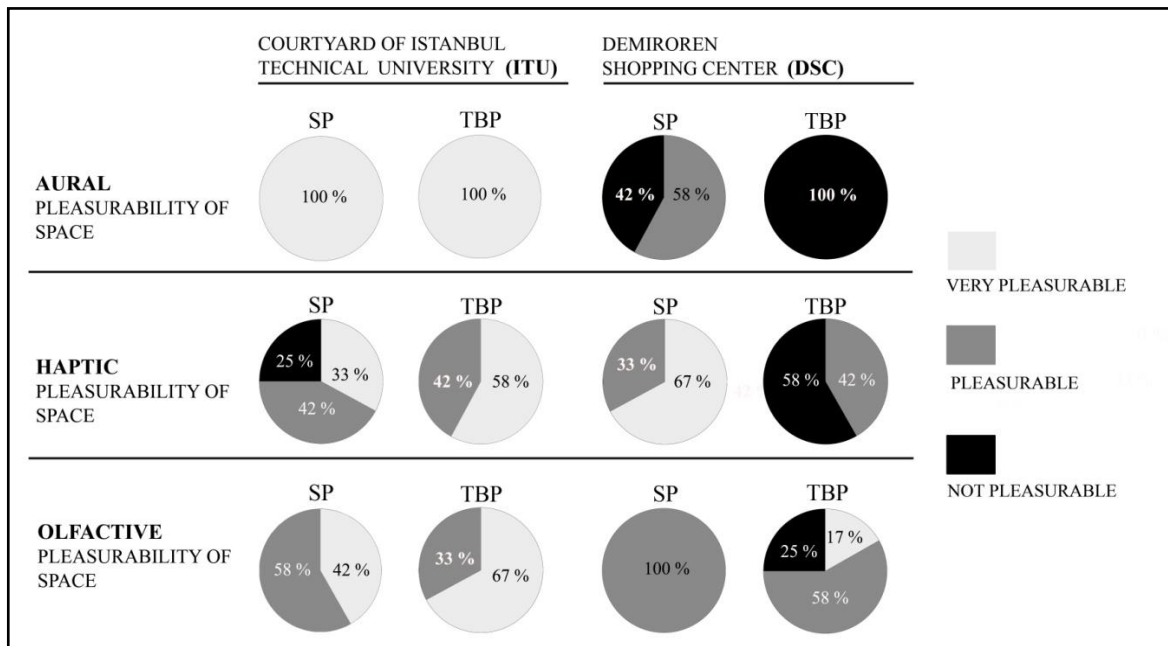
Figure 5.10. Sensual pleasurability of spaces both SP and TBP

Questions of the first section and answers of the participants are as in below;

Question 1: Could you evaluate the pleasurability of height of the space.

In the courtyard of ITU, this question was asked in terms of height of the walls that surround the courtyard. 58 % SP and 67 % TBP considered the height of the space as "very pleasurable". 42 % SP and 33% TBP considered it as "pleasurable". None of the participants consider the height of the space as "not pleasurable".

In DSC, 58 % SP and 25 % TBP considered the height of the space as "very pleasurable". 42 % SP and 58 % TBP considered it as "pleasurable" while 17 % TBP considered as "not pleasurable".

These results show that the courtyard of ITU is pleasurable in terms of wall height for visually and sensually. But DSC was judged to be more pleasurable for SP than TBP. This means that the height of the space can be considered as sufficient visually but it is not enough to promote feelings of comfort and pleasure in terms of nonvisual esperiences.

Question 2: Could you evaluate the pleasurability of width of the space.

In The courtyard of ITU, 42 % SP and 92 % TBP considered the width of the courtyard as "very pleasurable" while 58 % SP and 8 % TBP considered it as "pleasurable". None of the participants considered the space as "not pleasurable".

In DSC, 33 % SP and 25 % TBP considered the width of the space as "very pleasurable" while 50 % SP and 25 % TBP considered it as "pleasurable". Besides, 17 % SP but 50 % TBP considered the width of the space as "not pleasurable".

These results indicate that the courtyard of ITU is pleasurable in terms of width of the space for every participants. But as in the fist question there are differences between SP and TBP in DSC. Width of the space was not interpreted as "not pleasurable" for SP but the majority of TBP considered it as "not pleasurable". This also means that width of the space can be considered as sufficient visually but it is not enough to make the feeling of comfort or pleasure in terms of nonvisual experiences.

Question 3: Could you evaluate the pleasurability of air and ventilation in the space.

In the courtyard of ITU, due to its open air planning, this question was answeres comparing the courtyard with the urban spaces outside the building. 75 % SP and all TBP considered the air ventilation as "very pleasurable". Besides 25 % SP considered it as "pleasurable" and none of the participants considered as "not pleasurable". All participants explained that the courtyard was not as windy as outside and more sheltered.

In DSC, 50 % SP and 58 % TBP considered air and ventilation of the space as "very pleasurable". 33 % SP and 33 % TBP considered it as "pleasurable". In addition, 17 % SP and 9 % TBP considered the ventilation as "not pleasurable".

These results show that there are no difference between visual and nonvisual experiental pleasurability of air and ventilation in spaces. Lack of visuality does not influence experiential pleasurability.

Question 4: Could you evaluate the pleasurability of sound in the space.

In the courtyard of ITU, 100 % of SP and TBP considered the sound in the space as "very pleasurable". Acoustical pleasurability was also emphasized in the answers to the open-ended question about pleasurable features of the courtyard by TBP.

In DSC, none of SP and TBP considered the sound in the space as "very pleasurable" and 42 % SP and 100 % of TBP considered it as "not pleasurable". But, 58 % SP considered it as "pleasurable".

These results indicate that acoustical pleasurability of DSC is not sufficient for participants. Especially due to the importance of aural experiences in absence of vision, which was also revealed in the in-depth interview results, TBP felt very unpleasant in the space.

Question 5: Could you evaluate the pleasurability of surfaces of the space.

In the the courtyard of ITU, 33 % SP and 58 % TBP considered surfaces and materials of the space as "very pleasurable". 42 % SP and 42 % TBP considered them as "pleasurable" and 25 % SP considered it as "not pleasurable" while 0 %TBP chose that answer.

In DSC, 67 % SP considered the pleasurability of surfaces and materials in the space as "very pleasurable" while none of TBP chose that answer. Besides, 33 % SP and 42 % TBP considered it as "pleasurable". In addition none of SP considers the surfaces as "not pleasurable" while 58 % TBP considered as "not pleasurable".

These results show that, differences between visual and nonvisual experiences are certain in haptic experiences. As mentioned in the interview results, SP estimated haptic pleasurability through their eyes. Some of them said they like the appereance of stone so it is highly pleasurable while others said they do not like the colour of pink so it is not pleasurable. But TBP decide their surface pleasurability according to the properties of the materials that affect their haptic senses.

Question 6: Could you evaluate the pleasurability of smell in the space.

In the the courtyard of ITU, 42 % SP and 67 % TBP considered the pleasurability of smell in the space as "very pleasurable" while 58 % SP and 33 % TBP found it "pleasurable". None of the participants chose "not pleasurable" for the courtyard.

In DSC, none of SP but 17 % TBP considered the pleasurability of smell in the space as "very pleasurable". Besides 100 % of SP and 58 % TBP considered it as "pleasurable" and 25 % TBP's answer was "not pleasurable".

These results suggest TBP are more sensitive about smells. Especially in DSC, SP said they do feel neither highr nor low pleasantness for the smell of the space but some TBP who found it "very pleasurable" said that they liked fresh fragnances of the stores and the others who found it "not pleasurable" said that they did not like smell of meals. In the the courtyard of ITU, all participants gave similar answers and they bind their pleasurability to green elements of the space.

Question 7: Could you evaluate the pleasurability of visual properties of the space.

This question was asked only for SP. In the the courtyard of ITU, 58 % SP considered visual properties of the space as "very pleasurable" while 42 % considered it as "not pleasurable". But none of them considered it as "pleasurable". These participants also found it unpleasant in the open-ended question as shown in Table 5.4. In DSC, all SP considered the visual pleasurability of the space as "pleasurable".

In the second section (questions from 8 to 19 for SP and 7 to 15 for TBP) was about the dominance hierarchy of direct sensual space experiences in the pleasurability of indirect experiences in the cases of both visual preponderance and without vision. The threefold evaluating system used corresponds to;

- 1 for "affect in a negative way"
- 2 for "do not affect"
- 3 for "affect in a positive way

Answers of the both SP and TBP for closed-endedquestions can be seen in Appendix D. Comparative results graphics for second section of closed-endedquestions for SP and TBP are shown in Figure 5.11., Figure 5.12. and Figure 5.13.
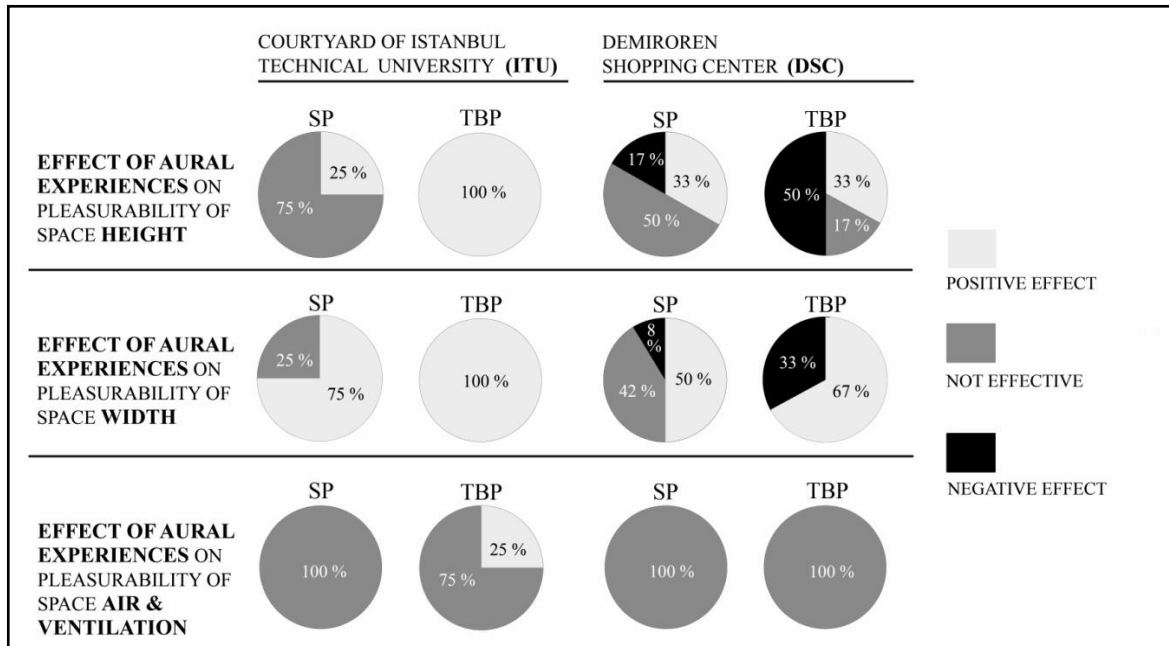
Figure 5.11. Effect of aural experiences on pleasurability os space height, width, air and ventilation for both SP and TBP
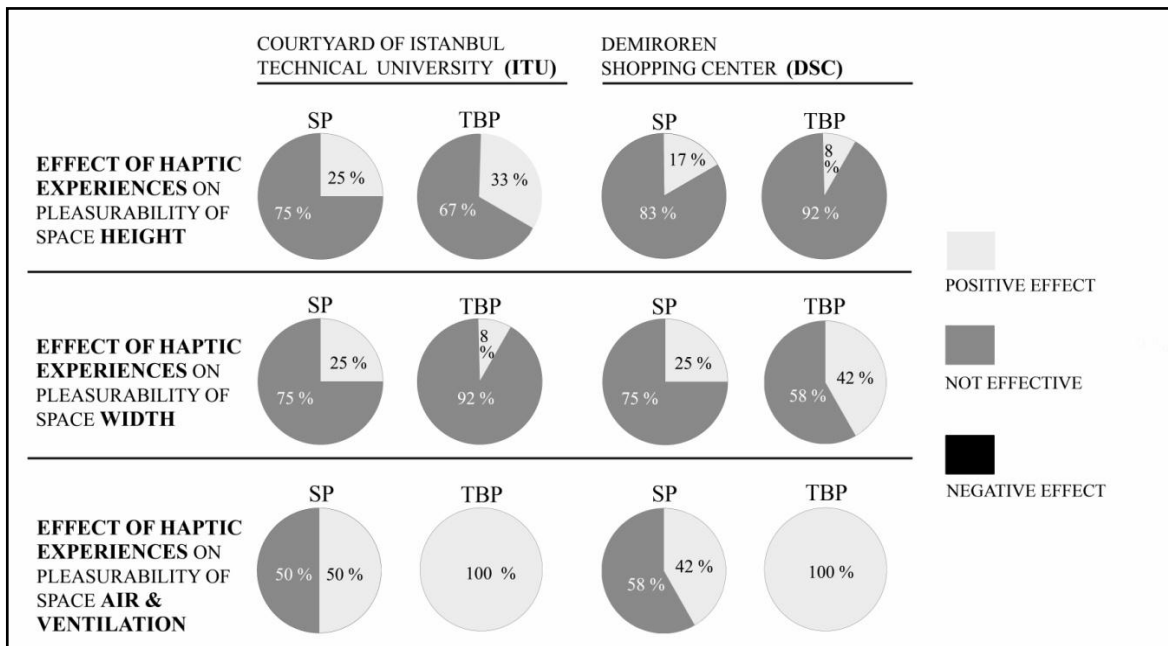
Figure 5.12. Effect of haptic experiences on pleasurability os space height, width, air and ventilation for both SP and TBP
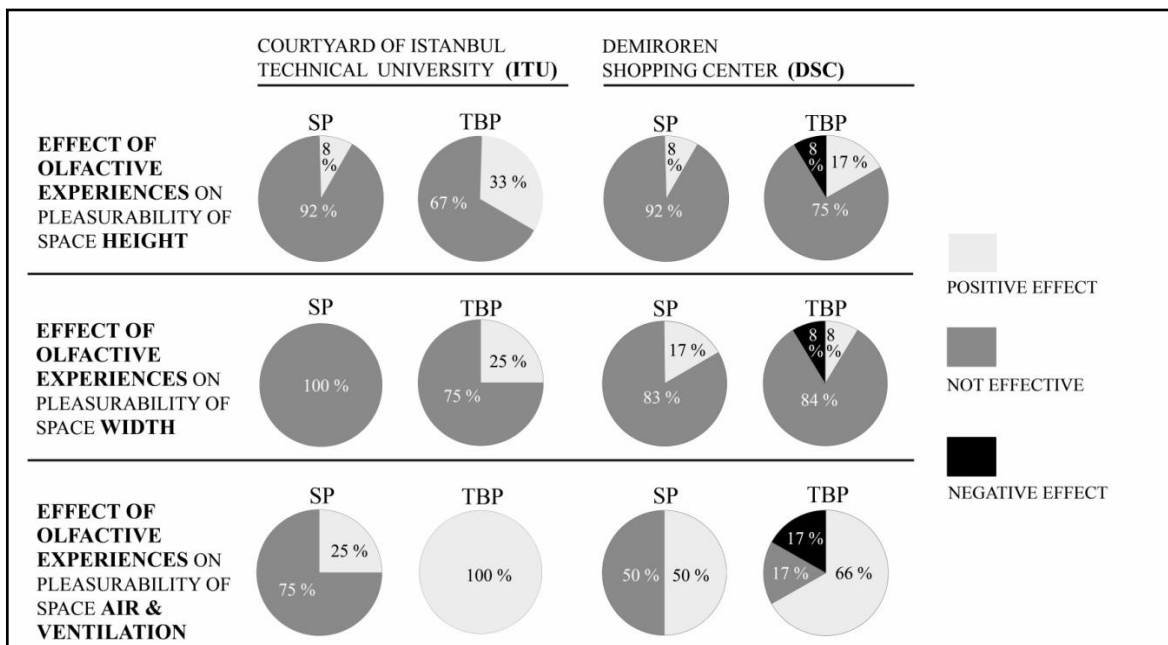
Figure 5.13. Effect of olfactive experiences on pleasurability os space height, width, air and ventilation for both SP and TBP

Question 8 (SP): Could you evaluate the effect of visual experiences on the pleasurability of space height.

This question was only asked to sighted participants. In both spaces, 100 % of SP considered visual experiences as "affect in a positive way". This result shows that seeing is absolutely effective in experiencing height of a space.

Question 9/7 (SP/TBP): Could you evaluate the effect of aural experiences on the pleasurability of space height.

In the the courtyard of ITU, 25 % SP and 100 % of TBP considered aural experiences as "affect in a positive way". 75 % SP consider as "do not affect".

In the DSC, 33 % SP and 33 % TBP considered aural experiences as "affect in a positive way". 50 % SP and 17 % TBP considered it as "do not affect" and explained as the space is very noisy so he could not decide. 17 % SP and 50 % TBP considered it as "affect in a negative way". Participant explained that they could understand the height but aural experiences affect these experiences in a negative way due to its noise.

These results show that experiencing height of a space is certainly associated with its aural experiences if it cannot be seen. Besides, if there are distracting sounds in the space as in DSC, this may affect experiences in a negative way in the absence of vision. For this reason, even if considered the height as pleasurable by using integrated sensual experiences, some TBP were confused about aural effects. However, SP did not feel that dilemma because they could see and know the height of the space and did not need to listen.

Question 10/8 (SP/TBP): Could you evaluate the effect of haptic experiences on the pleasurability of space height.

In the the courtyard of ITU, 25 % SP and 33 %TBP considered haptic experiences as "affect in a positive way" and all the participants described the sensation of wind as an example. 75 % SP and 67 % TBP consider it as "do not affect".

In the DSC, 17 % SP and 8 % TBP considered haptic experiences as "affect in a positive way". Besides, 83 % SP and 92 % TBP considered it as "do not affect".

These results indicate that except the participants that found wind as a haptic experience, general tendency of participants does not associate height experience with haptic senses.

Question 11/9 (SP/TBP): Could you evaluate the effect of olfactive experiences on the pleasurability of space height.

In the the courtyard of ITU, 8 % SP and 33 % TBP considered olfactive experiences as "affect in a positive way". These participants explained that smell of the space is fresh so height of the space does not prevent air circulation. Besides, 92 % SP and 67 % TBP considered it as "do not affect".

In the DSC, 8 % SP and 17 % TBP considered olfactive experiences as "affect in a positive way". 92 % SP and 75 % TBP consider it as "do not affect". Besides, 8 % TBP consider this experience as "affect in a negative way".

These results show that olfactive experiences are not very effective in height experience of a space with or without vision. As expected, TBP tended to be more affected by olfactive experiences than SP.

Question 12 (SP): Could you evaluate the effect of visual experiences on the pleasurability of space width.

This question was also only asked to sighted participants. In both sites, 100 % of SP considered visual experiences as "affect in a positive way". This result shows that as in experiencing space height, seeing is absolutely dominant in experiencing the size of a space.

Question 13/10 (SP/TBP): Could you evaluate the effect of aural experiences on the pleasurability of space width.

In the the courtyard of ITU, 75 % SP and 100 % of TBP considered the aural experiences in pleasurability of space width as "affect in a positive way". 25 % SP considered it as "do not affect".

In DSC, 50 % SP and 67 %TBP considered the aural experiences in pleasurability of space width as "affect in a positive way". 33 % TBP explained that even though they were not pleased about the size of the space, aural experiences helped them positively in terms of understanding space size. 42 % SP considered it as "do not affect" and 8 % SP and 33 % TBP considered the effect of aural experiences as "affect in a negative way".

These results indicate that aural experiences are effective in pleasurability of space width both in cases of seeing and not seeing. As in previous questions, TBP were more sensitive about aural experiences but SP were not. In this question only % 8 of SP consider aural experiences as inconclusive. This may be interpreted as even with vision aural experiences affect the sense and pleasantness of spaciousness of the space.

Question 14/11 (SP/TBP): Could you evaluate the effect of haptic experiences on the pleasurability of space width.

In the courtyard of ITU, 25 % SP and 92 % TBP considered the haptic experiences in pleasurability of space width as "affect in a positive way". 2 of 3 SP and 8 of 11 TBP explained this effect using the example of the sensation of wind in the courtyard. 75 % SP and 8 % TBP considered it as "do not affect".

In DSC, 25 % SP and 42 % TBP consider the effect of haptic experiences in the pleasurability of space width as "affect in a positive way". 75 % SP and 58 % TBP consider it as "do not affect".

These results show that pleasurability of space width that was experienced through haptic senses was also more effective for the case of not seeing. However, differences between

two locations in terms of air and ventilation consitions may affect these results. General tendency of SP was to neglect these experiences for understanding space width. For TBP and some of SP who paid attention to their haptic experiences in judging pleasurability of space width, the wind felt in the space was one of the important haptic elements. For this reason, in the courtyard of ITU where they can feel natural air and wind, their answers is concentrated on "affects in positive way". In DSC, 66 % of all participants did not feel the effect of haptic experiences for the evaluation of space width.

Question 15/12 (SP/TBP): Could you evaluate the effect of olfactive experiences on the pleasurability of space width.

In the the courtyard of ITU, 0 % of SP and 25 % TBP considered the olfactive experiences in pleasurability of space width as "affect in a positive way". 100 % of SP and 75 % TBP considered it as "do not affect".
In DSC, 17 % SP and 8 % TBP considered the effect of olfactive experiences in pleasurability of space width as "affect in a positive way". 84 % SP and 83 % TBP considered it as "does not affect". Only % 8 TBP considered this experience as "affect in a negative way".

These results indicate that as in the pleasurability of space height, olfactive experiences in the pleasurability of space width are not very effective in cases of either seeing or not seeing.

Question 16 (SP): Could you evaluate the effect of visual experiences on the pleasurability of air and ventilation in the space.

This question was also only asked to sighted participants. In the courtyard of ITU, 50 % SP considered the effect of visual experiences as "affects in a positive way", 33 % SP considered this as "affect in a negative way" and 17 % SP consider as "do not affect". They explained their answer with the visual effect of hypaethral typology of the courtyard. 4 of 6 SP who gave positive answers said that when they saw the sky they thought that this is an airy space. The participant who gave negative answer said when he saw the space is open the air it reminded him that he could get cold.

In the DSC, 33 % SP considered this effect as "affect in a positive way" and 58 %SP consider it as "do not affect". 8 % SP considered it as "affect in a negative way".

These results show that as in experiencing height and width of a space, seeing is not so effective in experiencing air and ventilation. However, at the same time it can affect the pleasurabilty of a space by causing a prejudice for the space before experiencing it with other senses.

Question 17/13 (SP/TBP): Could you evaluate the effect of aural experiences on the pleasurability of air and ventilation in the space.

In the the courtyard of ITU, 0 % of SP and 25 % TBP considered the effect of aural experiences on the pleasurability of air and ventilation in the space as "affect in a positive way" and 100 % SP and 75 % TBP considered this effect as "do not affect". 2 of 3 TBP who gave positive answer explained it using an example of the sound of birds. They said that the sound made them think that it is an airy and fresh space.

In DSC, 100 % of SP and TBP considered aural experiences in the pleasurability of air and ventilation in the space as "do not affect".

These results indicate that aural experiences are not strongly effective in judging the pleasurability of air and ventilation in the space wheter seeing or not seeing.

Question 18/14 (SP/TBP): Could you evaluate the effect of haptic experiences on the pleasurability of air and ventilation in the space.

In the the courtyard of ITU, 50 % SP and 100 % of TBP considered the haptic effect on the pleasurability of air and ventilation in the space as "affect in a positive way" and 50 % SP considered it as "do not affect".

In DSC, 42 % and all TBP consider haptic experiences in pleasurability of air and ventilation as "affect in a positive way". 58 % SP considered it as "do not affect". 50 % TBP explained their pleasantness as they felt the air circulation on their skin.

These results show that, haptic experiences are effective in the pleasurability of air and ventilation in the space. But SP were less sensitive about natural ventilation unless they feel the wind or artificial ventilation system.

Question 19/15 (SP/TBP): Could you evaluate the effect of olfactive experiences in the pleasurability of air and ventilation in the space.

In the the courtyard of ITU, 25 % SP and 100 % TBP considered the effect of olfactive experiences in pleasurability of air and ventilation in the space as "affect in a positive way". 4 of 12 TBP emphasized fresh smell of the courtyard as a reason. 75 % SP considered it as "do not affect".

In DSC, 50 %SP and 66 % TBP considered olfactive experiences as "affect in a positive way". 50 % SP and 17 % TBP consider it as "do not affect" and 17 % TBP considered it as "affect in a negative way".

These results indicate that, olfactive experiences are more effective in the pleasurability of air and ventilation in comparison with height and width of a space. TBP are more sensitive in smell of the spaces while SP tend to neglect this unless there is a specific scent.

Results of closed-ended questions indicate the differences between visual and nonvisual senses in terms of experiential pleasurability. If one can see, vision is undoubtly the dominant sense to gather data from environment for him/her. Nevertheless, results show that aural experiences are also effective despite the dominance of vision. As seen in Table 5.5., the common answer of SP, in terms of nonvisual sensual experiences, is about acoustic of the spaces. Sighted people are not aware of pleasurability of other sensual experiences such as haptic and olfactive. They just think them when asked to do but still do not really experience. However, if visual experiences do not exist in a space then aural experiences become primary and dominant in experience of pleasurability.

According to these findings, it can be said that aural experiences are also effective next to visual in experiences pleasurability. Thus, the most common answers of both SP and TBP

were related to the pleasurability of sound in selected spaces. Another finding concerning aural experiences is that the effect of aural experiences is more dominant in experience of size than that of the height of the space because it is preferred that sound reflect from walls at first instead of ceiling.

It has also been found that haptic experiences become important in lack of vision. But, it should be emphasized that even though it affects pleasurability of space height, width and ventilation respectively. No participants talked about haptic pleasurability of spaces until it is asked. They just mentioned about it when they described the spaciousness of the space according to the air on their skin. Moreover, all TBP also discussed the sensation of wind as an example of haptic situation. In accordance with interview results, touching by hands was not found to be effective for space experiences for both SP and TBP.

According to result the third important sense is the olfactive sense in experience pleasantness. Due to its natural environment, the effect of olfactive experiences was found to be more dominant for the courtyard of ITU for all participants. Green elements affect the pleasurablity of space because of their smell. However, just as visual experiences, smelling and taking pleasure from it is relative and subjective. It depends on personal preferences.

5.4. CHAPTER SUMMARY

This chapter presented the study about sensual space experiences both in dominance and lack of vision. Results of this comparative study reflect differences between visual and nonvisual space experiences and their effects on spatial pleasurability.

In terms of systemizing the study, methods are grouped in two titles. Pre-study includes in-depth interviews that were made to understand nonvisual space experiences and Main Study includes a questionnaire survey as a part of fieldwork that were made to compare visual and nonvisual space experiences in terms of spatial pleasurability.

In Pre-study, in-depth interviews with seven blind participants indicated what consist of an architectural space without visual experiences. Even the major tendency of an architectural space representation by visual aesthetic, results of the interviews show that architectural

spaces can be still definable and pleasurable even if it does not have any visual property. The major result of in-depth interviews is the dominance of aural experiences in determining spatial pleasantness. The design properties that participants considered as pleasurable were mostly related with aural experiences. Haptic and olfactive experiences were also important in the case of visual loss. However, they are not as strong as aural ones. Answers of the participants were analyzed and categorized into common contents. Sensually positive and negative design properties were elicited in the light of these common answers and used to determine the location for fieldwork.

In the Main Study, fieldwork was conducted with twelve sighted and twelve totally blind participants. Questionnaire study in the courtyard of ITU and DSC indicated that visual experiences are more dominant than sensual experiences. As seen in Table 5.6. judgements of pleasantness by sighted and totally blind participants differed from each other. The major differences occurred in DSC. Architectural preferences and pleasantness judgements of sighted participants seems to be configured in the light of their personal aesthetic preference such as colour, modern versus old materials or a figure of an ornament. In general, sighted participants just look and decide instead of experiencing through the whole senses. On the contrary, totally blind participants' evaluations were more experiential. They tried to explore spaces by listening, moving in it and even smelling. On the other hand, the second open-ended question showed that even with vision, aural experiences were stil effective on spatial plesurability. Thus, most of the sighted participants defined their two dominant senses as being visual and aural. Further, in the case of visual loss, aural experiences become prior.

6. CONCLUSION

Architecture and space have been an important issue for philosophers, psychologist and architects since the beginning of the first century. Besides, architecture's concrete nature, the sense of space has been analyzed as an abstract concept. During the past centuries, two main thoughts, rationalism and empiricism, have become dominant on theories of space. Rationalist and cartesian philosophers such as Platon and Descartes defined space with its physical and mathematical features by relying on their mind. On the other hand, empiricist and existantialist philosophers such as Heidegger and Merleau-Ponty defined it as a concept that only can exist with human's experiences by relying on their senses. Phenomenological approach also had been constituded under the leadership of empirical and existential thoughts that emphasized human's bodily experiences.

Phenomenology is a term that is completely related with architectural experiences. In this thesis, on the contrary to cartesian thought, space is defined as a concept that has a relation with human beings and as an entity that is experienced by them. According to this phenomenological approach, object and subject have an effective role on each other. So, architectural spaces are also experienced by their users and have an effect on them. These experiences are multi-sensorial. As a consequence, human being experiences a space by his/her body through his/her senses and these experiences affect spatial pleasurability. Thus, it is proclaimed that architectural designs should induce the whole sensorial experiences. But when the definiton and application of contemporary architecture is analyzed, it can be said that contemporary architecture is relatively insensible and merely under the dominance of visuality. To explore the multi-sensorial nature of an architectural space and effect of visual experiences, the present research analyzed the role of visual and nonvisual space experiences as a criticism to visual dominance in the theories of spatial pleasurability. The following conclusions were reached as a result.

Results of the study which was conducted with sighted and totally blind participants to explore and compare visual and nonvisual space experiences, indicated that, vision is both dominant and relative in experiental pleasurability while other nonvisual senses are more nonoriented.

Even the nonvisual space experiences are as correct as visual ones while defining a space, they, especially haptic and olfactive experiences, affect spatial pleasurability much more in the case of visual loss. On the other hand, the dominance of visual experiences also has a potential to dominate other senses. Visual experiences can manipulate spatial pleasurability as in such a way that sensually uncomfortable spaces could be evaluated as pleasant sorely due to its visual properties. Answers of the open-ended questions present important arguments for this proposal. For example, if the the courtyard of Istanbul Technical Unıversity was as sensually comfortable as what totally blind participants had experienced, all sighted participants should have been pleased by it. However, only a part of participants got pleasure out of this space. They just criticized its visual properties that they did not like without experiencing the space with total senses. It was not so different for the remaining participants who found the courtyard pleasant. Their pleasantness judgment also relies on visual preferences. The historical identity of the courtyard was the common answers for being pleased by the space. In a similar perspective, if Demirören Shopping Center was as sensually uncomfortable as what blind participants had experienced, it should have been the same for sighted participants. However, they were generallypleased about its modern materials, form and lighting elements. Sighted participants did not tend to think about the space as a whole, while blind participants tried to experience whole features. Thus, it can be concluded that visual experiences are dominant but not always as reliable as nonvisual experiences in architecture as a determinant of spatial comfort and pleasurability of users.

The other important finding of the study is about the effects of aural experiences. A part from visual pleasurability, aural pleasurability of an architectural space was the only sensual property that is emphasized by sighted participants. Even under the dominance of vision, sighted participants are also impressed by acoustical properties of the spaces in either positive or negative way. Undoubtedly, it is the major sense in the case of visual loss. Its role on spatial pleasurability is powerful and in the case of visual loss, the sense of hearing creates a sense of space.

The results of the present research, especially spatial experiences of blind participants, show that architectural spaces can be defined as multi-sensorial phenomena as claimed by some architects such as Pallasmaa and Holl. However, the integration of visual and nonvisual space experiences which only could be analyzed according to sighted

participants' answers are not strongly effective in spatial pleasurability except aural experiences. Only aural and visual experiences are integrated each other in terms of spatial pleasurability. But, it should not be forgotten that the limited numbers of participants may cause these results.

In the light of these findings, senses other than vision have such an important role on experiencing an architectural space. Especially if aural effects are more emphasized in contemporary architectural environment, by this way, all people can participate and get pleasure from their surrounding and regain their experiential identity in architectural spaces.

In this thesis, differences between visual and nonvisual space experiences were studied by particular spaces and participants. Still, the effects of nonvisual space experiences on different types of environment with different variables are open for exploration in further studies.

REFERENCES

1. Moore, C., W., Bloomer K., C., *Body, Memory and Architecture*, Yale University Press, USA, 1977.

2. Ackermen, S., J., Collins P., Gowans, A., Scruton, R., *Encyclopedia Britannica*, http://www.britannica.com/EBchecked/topic/32876/architecture, [retrieved 13 Octocer, 2011].

3. Hasol, D., *Ansiklopedik Mimarlık Sözlüğü*, YEM Yayın, İstanbul, 2008

4. Kruft, H-W., *A History of Architectural Theory: From Vitruvius to the Present*, Princeton Architectural Press, New York, 1994.

5. Kuiper, K., *The Britannica Guide to Theories and Ideas That Changed the Modern World*, Britannica Educational Publishing, New York, 2010.

6. Hasol, D., "Mimarlık Sanat değil Mi?", *Batı Akdeniz Mimarlık/48*, Antalya Mimarlar Odası Şubesi, Antalya, Ocak 2011.

7. Cheney, L., *The Homes of Giorgio Vasari*, Peter Lang Publishing, New York, 2006.

8. Kant, I., *Critique of Judgment*, Cosimo Classics, New York, 2007.

9. Rosenberg, J., D., *The genius of John Ruskin: selections from his writings,* Universityof Virginia Press, USA, 1998.

10. Gropius, W., "Weimar'daki Staatliches Bauhaus'un Programı, 1919", in *Modern Mimarlığın Öncüleri Walter Gropius ve* Bauhaus, pp. 19-27, Boyut Yayın, İstanbul, 2002.

11. Le Corbusier, *Toward an Architecture*, translated by Goodman J., J. Paul Getty Trust,London, 2007.

12. Tafel, E., *Years with Frank Lloyd Wright: Apprentice to genius,* General Publising Company, Canada, 1979.

13. Rasmussen, S., E., *Experiencing Architecture*, MIT Press, USA, 1964.

14. Millar, S., *Space and Sense*, Psychology Press Taylor&Francis Group, 2008.

15. Hisarlıgil, B. B., "Martin Heidegger'de Mekan Düşüncesi : Hermeneutik-Fenomenolojik Bir Yaklaşım", *Sosyal Bilimler Enstitüsü Dergisi,* Vol. 25, p. 23-34, 2008.

16. Kavanaugh, J. L., *The Architectonc of Philosophy: Plato, Aristotle, Leibniz, Kavanaugh*, Amsterdam University Press, 2007.

17. Algra, K., *Concept of Space in Greek Thought*, E.J. Brill, The Netherlands, 1995.

18. Öktem, Ü., "John Locke ve George Berkeley'in Kesin Bilgi Anlayışı", *Ankara Üniv. Dil ve Tarih Coğrafya Fakültesi Dergisi*, Vol.43, pp. 133-149, 2003.

19. Des Chene, D., *Physiologia: Natural philosophy in late Aristotelian and Cartesian thought,* Cornell University Press, USA, 1996.

20. Aydınlı, S. "Epistemolojik Açıdan Mekan Yorumu", in Şentürer A., Ural Ş, Atasoy A., *Mimarlık ve Felsefe*, pp. 40-52, Yapı Yayınları, İstanbul, 2004.

21. Heidegger, M., *Varlık ve Zaman*, translated by. Ökten. K. H., Agora Kitaplığı Düşünce ve Felsefe Dizisi, İstanbul, 2011.

22. Priest, S., *Merleau-Ponty*, Routledge, London, 1998.

23. Mehrhoff, W., A., "The Phenomenology of Place", *Humanities Education*, pp. 9-15, St. Cloud State University, Summer 1990.

24. Norberg-Schulz, C., Khan, Heidegger and the Language of Architecture, *Oppositions*, Vol. 18, pp. 29 – 47, 1979.

25. de Certeau, M., *The Practice of Everyday Life*, The University of California Press, California, 1984.

26. Hall, S., "Question of Perception - Phenomenology of Architecture , in Hall S., Pallasmaa J., Perez-Gomez A., *Question of Perception Phenomenology of* Architecture, pp. 39 - 44, William Stout Publisher, San Francisco, 2006

27. Pallasmaa J., "Hapticity and Time: Notes on a Fragile Architecture", in *The Architectural Review*, USA, 1 May 2000.

28. Pallasmaa, J., *The Eyes of the Skin; Architecture and Senses*, John Willey&Sons, England, 2005.

29. Perez-Gomez, A., "The Space of Architecture: Meaning As Presence And Representation", in Hall S., Pallasmaa J., Perez-Gomez A., *Question of Perception Phenomenology of Architecture,* pp. 7 - 27, William Stout Publisher, San Francisco, 2006.

30. Pallasmaa, J., "The geometry of Feeling: A Look at the Phenomenology of Architecture", in *Theorizing A New Agenda For Architecture: An Anthology of Architectural Theory,*p.458-452, New York; Princeton Architectural Place, 1996.

31. Eagleton, T., *Literary Theory: An Introduction,* The University of Minnesota Press, USA, 2008.

32. Oxford Dictionaries, http://oxforddictionaries.com/definition/phenomenology, [retrieved 13 October, 2011].

33. von Eckartsberg, R., "Introducing Existential-Phenomenological Psychology",in R. Valle (Ed.), *Phenomenological İnquiry in Psychology,* pp. 3-20, New York: Plenum, 1998.

34. Husserl, E., "Phenomenology: A Science of Consciousness", in *Ideas : General Introduction to Pure Phenomenology*, Chapter 6, translated by W. R. Boyce Gibson, London, New York: Collier,Macmillan, 1962.

35. Macann, C., *Four Phenomenological Philosophers: Husserl, Heidegger, Sartre, Merleau-Ponty*, Routledge, London and New York, 1993.

36. Stanford Encyclopedia of Philosophy, Mon Jul 28, 2008, http://plato.stanford.edu/entries/phenomenology/, [retrievedin October, 2011].

37. Husserl, E., *Ideas Pertaining To A Pure Phenomenology And To A Phenomenological Philosophy*, translated by F. Karsten, Kluwer Academic Publishers, The Netherlands, 1998.

38. Azimzadeh M., Klarqvist B., "Phenomenal Space: Attidudes And Methods", Proceedings of 4th International Space Syntax Symposium, London, 17-19 June, 2003, pp. 70.1-70.14, London. UK, 2003.

39. Seamon, D., "The Life of the Place: A Phenomenological Commentary on Bill Hillier's Theory of Space Syntax", *Nordic Journal of Architectural Research [online]*, Vol. 7, pp. 35-48, 1994.

40. Kant, I., *Critique of Pure Reason*, Abridged, translated by Pluhar, Werner, S., Abridged by Watkins, Eric. Hackett Publishing Company, USA, 1999.

41. Hicks, S., R., C., *ExplainingPostmodernism: Skepticism and Socialism from Rousseau to Foucault*, Scholargy Publishing, USA, 2004.

42. Zahavi, D., *Husserl's Phenomenolgy*, Stanford University Press, California, 2003.

43. von Eckartsberg, R., "Existential-Phenomenological Research", In; R. Valle (Ed.), *Phenomenological İnquiry in Psychology*, pp. 3-20, New York: Plenum, 1998.

44. Spiegelberg, H., *The phenomenological movement: a historical introduction*, Kluwer Academic Publisher, The Netherlands, 1994.

45. Ihde, D., *Hermeneutic Phenomenology: The Philosopher of Paul Ricoeur*, Northwestern University Press, USA, 1971.

46. Dreyfus, H., L., Wrathall, M., A., *A Companion to Phenomenology and Existentialism,* Blackwell Publishing, UK, 2066.

47. Sartre, J-P., *Jean-Paul Sartre: Basic Writings,* Routledge, USA, 2001.

48. Marshall, G., J., *A Guide to Merleau-Ponty's Phenomenology of Perception*, Marquette University Press, Wisconsin, 2008.

49. Merleau-Ponty, M., *Phenomenology of Perception,* Translated by Routledge & Kegan Paul, Routledge, UK, 2003.

50. Casey, E., S., *Getting back into place: toward a renewed understanding of the place-world*, pp.104, American University Press, USA, 1993.

51. Karlsson, G., "The Experiences of Spatiality for Congenitally Blind People: A Phenomenological-Psychological Study"*, Human Studies*, Vol.19, No.3, pp. 303 – 330, Kluwer Academic Publisher, Netherland, Jul. 1996.

52. Seamon D., "A Way Of Seeing People And Place : Phenomenology In Environmental-Behavior Research". in Warpner S., Demick J., Yamomoto T., Minami H. (Ed.) *Theoretical Perspectives İn Environmental-Behaviour Research Underlying Assumptions, Research Problems And Methodologies.* Kluwer Acedemic / Plenum Publisher, New York-Boston-Dordrecht-London-Moscow, 2000.

53. Hill, J. *Occupying Architecture- Between the Architect and the User*. Routledge, London, 1998.

54. Mallgrave, F., H., Goodman,D., *An Introduction to Architectural Theory: 1968 to the Present* , Wiley - Blackwell, UK, 2011.

55. Environmental & Architectural Phenomenology. Vol. 1, Issue. 1, Kansas State University. Architecture Department, 1990.

56. Norberg_Schulz, C., *Intentions in Architecture*, Universitetsforlaget, Oslo, 1965.

57. Herssens J., Heylighen A., " Haptic Architecture Becomes An Architectural Hap", *Annual Congress of the Nordic Ergonomic Society (NES) Edition:39 Location:Lisekil (Sweden) date:1-3 October 2007.*

58. Heidegger, M., "Building Dwelling Thinking", in *Poetry Language Thought*, translated by Hofstadter A., pp. 143 – 160, Harper Colophon Books, New York, 1971.

59. Nesbitt, K., *Theorizing A New Agenda For Architecture: An Anthology Of Architectural Theory*, New York; Princeton Architectural Place, 1996.

60. Thiis-Evensen, T., *Archetypes in Architecture*, Scandinavian University Press, Oslo, 1987.

61. Seamon, D., "Concretizing Heidegger's Notion of Dwelling: The Contributions of Thomas Thiis-Evensen And Christopher Alexander", published as in *Building and Dwelling Bauen und Wohnen.*, edited by Eduard F., pp. 189-202, Munich, Germany: Waxmann Verlag GmbH; New York: Waxmann, 2000.

62. Goldhagen, S., W., "Ultraviolet: Alvar Aalto's Embodied Rationalism", *Harward Design Magazine*, Vol. 27, pp. 38-52, Fall 2007/Winter 2008.

63. Trencher, M., *The Alvar Aalto Guide*, Princeton Architectural Press, New York, 1996.

64. Designboom, figure of Paimio Sanatorium
 http://www.designboom.com/history/aalto/paimio.html, [retrieved 24 February, 2012.]

65. Figure of Paimio Sanatorium Rooms
http://www.flickr.com/photos/glintofpurpurina/3883002411/   ,   [retrieved   24, February, 2011.]

66. Vladimir B., "Interview with Steven Hole", Manhattan, Intercontinental Curatorial Project INC., June 09, 2010, http://curatorialproject.com/interviews/stevenholl.html, [retrieved 5 November, 2011].

67. Holl, S., *Intertwining,* Princeton Architectural Press, New York, 1998.

68. Drake, S., "The Chiasm and the Experience of Space Steven Holl's Museum of Contemporary Art, Helsinki", *Journal of Architectural Education*, Vol. 59, PP. 53-59, Wiley Online Library, November, 2005.

69. Figure of Kiasma Contemporary Art Museum, Steven Holl Architects, http://www.stevenholl.com/project-detail.php?type=&id=18, [retrieved   5 November, 2011].

70. Zumthor, P., *Thinking Architecture,* Lars Müller Publisher, Switzerland, 1998.

71. The Therme Vals, project definition, http://www.archdaily.com/13358/the-therme-vals/, [retrieved 5 November, 2011].

72. Porter, T., *The architect's eye: visualization and depiction of space in architecture,* Chapman & Hall, London, 1997.

73. Rosinsky, N., M., *Vietnam Veterans Memorial,* Compass Point Books, USA, 2007.

74. Dovey, K., *Framing Places: Mediating Power in Built Form*, London: Routledge, UK, 1999.

75. Norberg-Schulz, C., "The Phenomenon of Place", In *Theorizing A New Agenda For Architecture: An Anthology Of Architectural Theory,*pp.420, New York; Princeton Architectural Place, 1996.

76. Dember, W., N., Epstein, W., West, L., J., *Encyclopedia Britannica*, http://www.britannica.com/EBchecked/topic/451015/perception, [retrieved 11 December, 2011].

77. Gleitman H., Gross, J., Reisberg, D., *Psychology* (Eight Edition), W.W. Norton & Company, Inc, Canada, 2011.

78. Raftopoulos, A., *Cognition And Perception: How Do Psychology And Neural Science Inform Philosophy?,*Massachusetts Institude of Technology, USA, 2009.

79. Rauch, F., A., *Psychology: or, A View of The Human Soul; Including Anthropology,* M.W. Dodd, NewYork, 1844.

80. Lang, J., *Creating Architectural Theory The Role of the Behavioral Sciences in Environmental Design*, Von Nostrand Reinhold, New York, 1987.

81. Tuan, Yi-Fu, "Experiental Perspective", in Tuan, Yi-Fu, *Space And Place: The Perspective of Experience*, pp. 8 – 19, University Of Minnesota Pres, USA, 1977.

82. Gifford, R., *Environmental Psychology Principles and Practice*, Fourth Edition, Optimal Books, Canada, 2007.

83. Buttimer, A., Seamon, D., *The Human Experience of Space and Place*, Croom Helm, London, 1980.

84. Franz, G., von der Heyde, M., Bülthoff, H., H., "An Empirical Approach To The Experience Of Architectural Space in VR", Article for *DIGITAL DESIGN - 22nd eCAADe Conference,* Sept, pp. 17-20, 2003.

85. Duncker, Karl, "On Pleasure, Emotion, and Striving", *Philosophy and Phenomenological Research*, Vol. 1, pp. 391-430, June 1941.

86. Wiki-Based Open Content Dictionary, http://en.wiktionary.org/wiki/pleasurability, [retrieved 12 December, 2011].

87. Garvin, A., D., "Competing On The Eight Dimensions Of Quality, *Harward Business Review*, pp. 101 – 109, November – December, 1987.

88. Cold, B., *Aesthetics, Well-Being And Health: Essay Within Architecture And Environmental Aesthetics*. Ashgate Publishing Limited, England, 2001.

89. Weber, R., *On the Aesthetics Of Architecture: A Psychological Approach to the Structure and The Order of Perceived Architectural Space*, Avebury, UK, 1995.

90. İnceoğlu, M., *Kentsel Açık Mekanların Kalite Açısından Değerlendirilmesine Yönelik Bir Yaklaşım: İstanbul Meydanlarının İncelenmesi,* Doktora Tezi, YTÜ, İstanbul, 2007.

91. Cold, B., "Quality in Architecture", in Farmer, B., and Louws, H. (eds), *Companion to Contemporary Architectural Tought*, pp. 502 – 511, Routledge, London, 1993.

92. Hildebrand, G., *Origins of Architectural Pleasure*, University of California Press,California, 1999.

93. von Naredi- Rainer, P, "Measurement and Number in Architecture", in Hodgson, P, H., Toyka, R., *The Architect, The Cook, And Good Taste*, pp. 22 – 30, Birkhäuser Architecture, Basel, 2007.

94. Bigne, E., J., Andreu, L., Gnoth, J., "The Theme Park Experience: An Analysis of Pleasure, Arousal And Satisfaction", *Tourism Management,* Vol. 26, pp. 833–844, December 2005.

95. Bentley, I., Alcock, A., Murrain, P., McGlynn, S. & Smith, G., *Responsive Environments: A Manual for Designers.* The Architectural Press, London, 1985.

96. Clark, T., R., *On Sensorial Encounters With Architecture*, Master Thesis, Virginia Polytechnic Institute and State University, Virginia, 2009.

97. Lynch, K., *City Sense And City Design: Writings And Projects Of Kevin Lynch*, (ed.), Banerjee, T., Southworth M., MIT Press, 1996.

98. Voort, D.J.M., van Wegen, H.B.R, *Architecture in Use: An Introduction to Programming, Design and Evaluation of Building*, Architectural Press, Netherlands, 2005.

99. Franz, G., Wiener, J., M, "Exploring Isovist-Based Correlates of Spatial Behaviour and Experience", Germany, January, 2005, http://www.spacesyntax.tudelft.nl/media/longpapers2/geraldfranz.pdf, [retrieved 25 December, 2011].

100. Davis, S.,B., "The DESIGN of Virtual Environments with particular reference to VRML", Advisory Group on Computer Graphics, Centre for Electronic Arts Middlesex University, June, 1996.

101. Karlsson, G., "The Experiences of Spatiality for Congenitally Blind People: A Phenomenological-Psychological Study", *Human Studies*, Vol.19, No.3, pp. 303 – 330, Kluwer AcademicPublisher, Netherlands, 1996.

102. Jacobson, R., D., Cognitive Mapping without Sight: Four Preliminary Studies of Spatial Learning, *Journal of Environmental Psychology*, Vol.18, pp. 289-305, Academic Press, 1998.

103. Gibson, J., J., *The Senses Considered as Perceptual Systems,* Greenwood Press Reprint, USA, 1983.

104. Jay, M., *Downcast Eyes; The Denigration Of Vision in The 20thh Centruy French Thought*, University of California Press, USA, 1994.

105. Gibson, J.J, *The Perception of the Visual World*, The Riverside Press, Cambridge, Massachusetts, USA, 1950.

106. Pallasmaa, J., *Encounters: Architecrural Essays*, Edited by Peter Mac Keith, Finalns, Rakennustieto Publishing, Helsinki, 2008.

107. Bruce, V., Greeen, P., R., Georgeson, M., A., *Visual Perception: Physiology, Psychology, & Ecology*, Psychology Press, UK, 2003.

108. Ware, C., *Information Visualization: Perception For Design*, Morgan Kaufmann Publishers, San Francisco, 2004.

109. Johnson, J*., Designing With The Mind in Mind: Simple Guide To Understanding User Interface Design Rules*, Morgan Kaufmann Publishers, USA, 2010.

110. Darmouth Foreign Students Program in Rome, 2003, http://www.dartmouth.edu/~classics/rome2003/updates/week7_8/nov13.html, [retrieved 25 December, 2011].

111. Dora, R., "İç Mekanda Renk Kullanımı", *MSGSÜ İç Mekan Düzenleme*, İstanbul, 1983-1984.

112. Millar, M., C., *Color for Interior Architecture*, John Wiley & Sons, New York, 1997.

113. Hall, E., T., *Hidden Dimension*, Doubladey & Company, Inc. Garden City, New York, 1966.

114. Boyle S., Frascari M., "Architectural Amnesia and Architectural Smell", in Ponte A. (ed.), *Architecture Technology: Sense, Architecture and Ideas*, Vol. IX, pp. 36-48, Carleton University, Ottawa, 2010.

115. Ungar, S., "Cognitive Mapping Without Visual Experience", in Kitchin, R. & Freundschuh, S*., Cognitive Mapping: Past Present and Future,* pp.221-248, Routledge, London, 2000.

116. Dökmen Ü., Dökmen, S., *İnsanın korunakları-2: Mimari*, Remzi Kitapevi, Istanbul, 2011.

117. Schulz-Dornburg, J., *Art and Architecture: New Affinities*, Gustavo Gili, Barcelona, 1999.

118. Hall, S., "Of Sound", Hall S., Pallasmaa J., Perez-Gomez A., *Question of Perception Phenomenology of Architecture,* pp. 85 – 90, William Stout Publisher, San Francisco, 2006.

119. Blesser, B, Salter, L., R., *Spaces Speaks, Are You Listening Experiencing Aural Architecture*, MIT Press, Cambridge, 2006.

120. Waller, S., J., "Psychoacoustic Influences of the Echoing Environments of Prehistoric Art", Paper presented at First Pan-American/Iberian Meeting on Acoustics, Cancun, Mexico, December 4, 2002.

121. Beers R., J., Van, Wolpert M. & Haggard P., "When Feeling is More Important Than Seeing in Sensorymotor Adaptation", *Current Biology*, Vol. 12, pp. 834-837, Cell Press, USA, 2002.

122. Revesz, G., *Psychology and Art of the Blind*, Longmans, Green and Co., London, 1950.

123. Montagu, A., *Touching: The Human Significance of the Skin* (second edition), Harper & Row Publishers, Toronto,USA, 1977.

124. Herssens, J., Heylighen, A., "Haptic Design Research: A Blind Sense Of Place", *ARCC/EAAE 2010 International Conference on Architectural Research*, Edition:7, Washington DC, 23-26 June 2010.

125. Ackerman, D., *A Natural History of the Senses*, Vintage, UK, 1991.

126. Green, A., *Living Well With Your Sense of Smell*, The Sense of Smell Institute, Ltd., New York, 1992.

127. Tinti, C., Adenzato, M., Tamietto, M., Cornoldi, C., "Visual Experience is not Necessary for Efficient Survey Spatial Cognition: Evidence From Blindness", *The Quarterly Journal Of Experımental Psychology*, Vol. 59 pp. 1306–1328, Psychology Group Taylor And Francis Group, 2006.

128. Erken, N. "Osmanlı Mimarisine Hayranım", Interview with Carlos Mourao Pereira, *Arkitera*, İstanbul, June, 2010.
http://v3.arkitera.com/h53752-osmanli-mimarisine-hayranim.html,   [retrieved,   10 November, 2011.]

APPENDIX A: VOLUNTARY PARTICIPATION FORM FOR IN-DEPTH INTERVIEW

Table A.1. Voluntary Participation Form for In-Depth Interview

YEDITEPE UNIVERSITY   **INSTITUDE OF SCIENCE AND ENGINEERING**   **IN-DEPTH INTERVIEW VOLUNTARY PARTICIPATIN FORM**
This interview is conducted within the scope of master thesis of Burçin Başyazıcı who is the graduate student in Yeditepe University, Institude of Science and Engineering, Department of Architecture. The main purpose of the interview is exploring effect of nonvisual space experiences in architectural pleasurability with a criticism to visual dominance in architectural world. Thus, visually impaired people who experience architectural spaces by nonvisual senses are chosen for the interview to explore their spatial experiences.   Attending this interview is optional. The research will not be used for any purpose except scientific purposes. Participants can contact the coordinator if need to ask anything for the interview. The contact information of the coordinator is as below;
Coordinator: Name-Surname: Burçin Başyazıcı   Occupation   : Architect   İletişim   : e-mail : burcinbasyazici@gmail.com   Tel. : 0535 825 94 85
I have read this document and understand the content of the research. I am volunteer to participant the interview and I know that I have a right to withdraw from the research if I want.   Signature .... Date ....

APPENDIX B: ANSWERS OF IN-DEPTH INTERVIEWS WITH TOTALLY BLIND PARTICIPANTS

B.1. IN-DEPTH INTERVIEW WITH P1 AND P2

How do you define architecture and an architectural space?

P1: When I go into a structure, I don't think about architecture, but there are things I think about when asked regarding architecture in the general sense. However when I go inside a structure, the first thing I look at is whether I can move in there or not. For example, is there a trellis that I may run into when passing from the side of a staircase.

P2: When we go inside, the echo gets mixed, which makes finding directions difficult. For us having floor directions is beneficial for us.

P1: Apart from these, I look at door/staircase relationship. If I need to walk through 2 or 3 hallways in order to get to the staircase from the door, this is problematic for me.
Under the staircases is worrying. Apart from that I am bothered if there is a single step in the middle of the hallway when I am walking straight. Besides, spiral staircases are also uncomfortable; it gets difficult to go up and down because step area gets narrow.

P2: It is easier to find directions inside a wooden structure due to echo. In a huge structure, due to increased echo, it gets more difficult to find directions. If reflection is minimal, it feels better. Tiles and such are not good.

P1: When you consider a big building, whatever the material is, you understand as soon as you go in. It has a different aura.

Can you describe what you mean by aura?

P1: It's simple, you can feel it when you talk and when you breathe. For example you can feel it when you go into the Beyazıt State Library. It has a wooden two-winged door, when you go inside even the "beep" sound of that security gate in the entrance or the dispersion of your voice when you say, for example, "Hi Aziz, what's up?". The sound doesn't spread in the area with an echo, it remains full, it doesn't diminish or return. It is a flexible sound that fills the area.

So you understand the place from its entrance?

P1: Of course, like this for example, if there is a desk in the entrance that may reflect the sound, or something that blocks the sound, that can be misleading.

P2: For example when I go into a shopping center, I cannot understand. I feel lost.

P1: Yes shopping centers are a disaster, really.

P2: But when I find a wall, I move close to it. At least it gives me sound and direction. They are all the same.

P1: There's a saying about something being odd-looking. If the structure isn't totally weird in regards to its form. I mean, if you don't see a totally unrelated pile of form behind that door, you may gain some information. So, unless it's such a place that has a mosque-door like door in the front and is like a disco inside, it's no problem.

P2: A structure without character misleads perception.

Can you describe the structure in which you spend the most time in your daily routine? Or how can you describe it?

P2: Including interior design?

However you wish.

P2: I asked this question because for example, if there is a table or something in an area, that radiates energy and you perceive it.

How can you define energy?

P2: It's actually a feeling. For example at the office, if there is a desk and a chair in front of it, I understand that, that there's something in front of the desk. I don't know whether that's due to sound. After I understand, a picture forms in my mind. For example, I don't smell the scent most of the time.

So your previous visual experiences also have an effect on this then?

P2: Yes, absolutely. For example when someone is describing something to me, things come to life in my mind immediately.

P1: I can talk about my room. My room is rectangular; the entrance is on the right corner of the rectangle. There is a two-winged window, with a width of about 1.5 meters that covers the wall facing the door, on the narrow part of the rectangle. My computer desk is right by the entrance on the left, about 1,5 to 2 meters away. Behind that is my bed that is right next to that. There are two chests of drawers when I follow the long direction on the right from the entrance.

My ceiling is neither too high nor too low, about 2.5 to 3 meters nor so. The floors are laminated and carpeted, with a nice texture on my feet.

What are the general properties of your house?

P1: Actually most of our buildings are freakish. My mother re-modeled this apartment when we bought it because the areas are so poorly blocked. There was a wall in the middle, for example, and you can't use the areas in front or behind it. It's neither rectangular, nor square; it's a strange shape like a triangle.

P2: The inside of my house feels stuff.

P1: A friend of mine has this apartment; the ceilings are like a musem's. It really gives a great sense of height.

This is what I suggest when defining our buildings. Concentrated buildings, the core have been consumed. It's like they took the important part and pumped it full of water. It has no taste; it also doesn't have an identity. For example our apartment is 110 m2, but like I said, although my ceiling isn't too low, my room feels very stuffy to me. It's like the difference between a medium and a small size, not too big, but noticeable when worn.

P2: The houses in our village are adobe. The walls are thick, I feel so comfortable when I go inside those houses, they are spacious. Now the walls in the new house are thin, the ceiling is lower and I feel stuffed when I go inside. I feel like I will run into someone any minute. The adobe house was much more comfortable.

Could material make the difference? You mentioned adobe and brick, for example, does the sense of refreshment have anything to do with this, or is it just the height?

P2: Of course material is important, but ceiling height is a priority.

P1: Here's an example for ceiling height. The children's school in Mimar Sinan University, it has low ceilings because it is for children, it's a disaster to be in there. I also don't like Mimar Sinan Science and Literature School either, it's an old tobacco storage room. When they turned it into a school, it was disastrous. I don't go there unless I have to.

P2: For example the second dormitory building in Boğaziçi University. I thought it was really good at the entrance, but the inside was a disaster. I immediately hit a wall, the staircase is behind that. But the first dormitory building is not like that. There is a staircase straight ahead, a hallway to the left. It is spacious as soon as you enter. That hallway doesn't just show the way, the air flow inside gives you a sense of direction. In the first dormitory, there are doors that open to the inside of the hallway, I always hit those.

Does glass have a different perception as a material?

P1: In my childhood apartment, there was a space in the middle of the building where windows opened to. That place gave that terrible building a sense of light and sound, we would hear the rain.

Glass helps with direction because it gives the heat of the sunlight inside. Another thing I like about it is it lets you hear the rain. When the rain hits the windows in a place like this, even if there is no other sound inside, you can guess the size of the room. As a person who cannot use his visual elements but uses his auditory elements, the sounds coming in from a window, like the rain, have a psychological effect, make me feel comfortable.

I just thought this; a structure that's good for me may be meaningless to the seeing. Why is there need for so much form inside structures? I decided it's because people are afraid of emptiness. Because emptiness tires the eye and the mind. There's a saying about staring at the ceiling, in novels the hero stares at the ceiling, to emptiness. Why? Because the modern man fills the walls unnecessarily, when you look at a wall an object catches your eye, it keeps your mind busy. Fake ivy that is used as décor, to fill the space, for example. But when you look at the ceiling, that's empty, then you can think.

What you say coincides with modernism, a little. Modernist era structures in architecture are based on plainness and minimalism, but most times people prefer more grand structures. So do you think the eye is misleading?

P1: Yes, for example Sütiş in Taksim. There are lots of fake flowers when you are going up the stairs. That makes me very uncomfortable, but I'm sure it's appreciated visually. We look at things in a more primitive way.

The seed is in the core of the fruit. People don't like the seed, they always eat the fruit. This is also true for structures, there should be structures that are simply drawn and that manage to tell their story. An architectural structure in its essence is a meal, but what you try to do on that basic structure are spices. The more spices the architect uses, the more she interferes with your taste bud. You are not left with any spice choices. As a society, we

have no taste, from palate to shelter to dressing. This is because everything is ready made, fast food. Architecture also has fast food. I have this question, should architects build the ideal mentioned in the ideology of the Republic or should they lean towards things that will feed the desires and tastes of the common people?

AKM *(Atatütk Kültür Merkezi),* for example, was built in the 1940s ? A sighted friend of mine said it looks like a matchbox. I didn't have a chance of wandering around in there for long, I went into the theatre, I walked around a little, but I think it's a spacious and beautiful place. I will use this analogy, visual perception is wrapped and non-visual perception purifies. We have a saying regarding how when you are entering a building it's to do with your attire and when you are exiting it, it's to do with your conversation. Architecture is like this as well. A sighted person first looks at form, is formalistic to the end.

Can you perceive the boundaries of the space?

P2: Yes. For example, I prefer places that are open on top and closed around the sides. It's easier to be in than in a closed area.

P1: Yes, I like those better as well.

Is it more comfortable than a closed area due to air circulation, perhaps?

P1, P2: Absolutely.

P1: Of course it has to do with sound. A sense of spaciousness is something else.

P2: Smell also has an effect. The smell of humidity going down to the metro scares me, for example. A nice scent attracts people. I don't go there willingly, every time I feel like I'm going somewhere I don't know, despite having used it many times.

Can you name some structures that you especially enjoy or don't enjoy going, including the reasons for it?

P1: I liked Sabiha Gökçen, for example. It's very relaxing, I could walk without any fear. The floor was also very good.

P2: I also liked it. I felt the difference in Atatürk Airport. It is so high ceiled and has so much echo, it's impossible to find direction. The height of Sabiha Gökçen is much better.
P1: It's a vast area, but it has more of a hallway feel to it.

P1: The garden of Çerkezköy Polis Evi. It was amazingly beautiful, no nooks and crannies. The layout of the tables was very good. For example, I found my table easily after I came out of the bathroom. I was very comfortable, it was spacious. It's open on top, has boundries on the sides. The door is very easy to find. The door attracts you, pulls you to itself. The door was large and with the force of attraction it creates, it attracts you.

How do you define that power of attraction?

P1: It's to do with sound. Like light coming out of a lantern, light goes out in space but when it hits a wall it stops and freezes. So does sound. Sound literally takes you there in this area, like going down a hill. Like the sink hole in the bathroom with water going down it.

P2: It's easier to live somewhere that's not noisy. Even a small sidewalk changes that sound.

P1: Just as there are different formats like Waw, Audio, MP3 when you listen to music on a computer, it's the same in architecture. If the sound is in Mp3, it's better, it gives a sense of comfort and pleasure. If ıts Waw it's worse. It's like the difference between an LP and CD. You perceive the depth.

For example, imagine a courtyard with nothing in the middle. This triggers the fear of being lost. Even if people don't think about this consciously, it makes you feel that fear in your subconscious.

P2: I began thinking that modern architecture is the symbol of dear. Like high walls and buildings behind them. It makes people lonely. Of course, this is something that also has a sociological dimension.

You mentioned an empty courtyard, is this landmark desire?

P1, P2: Yes, absolutely.

B.2. IN-DEPTH INTERVIEW WITH P1 AND P2 IN TURKISH

Mimarlığı ve mimari bir yapıyı nasıl tanımlarsın?

 P1: Bir yapıya girince mimarlık düşünmüyorum ama mimarlık genel manada sorunca düşündüğüm şeyler var. Ama bir yapıya girince ilk baktığım şey orada rahat hareket edip edemeyeceğim, örneğin bir merdivenin yan tarafından geçerken çarpacağım bir kafes perde var mı, gibi.

P2: İçeri girince alan cok geniş olunca ses yankısı karışıyor, yön bulmak zorlaşıyor buna karşın zemin yönlendirmesi olması olumludur bizim için.

P1: Bunların dışında kapı merdiven ilişkisine bakarım. Kapıdan girince merdivene gitmek için 2-3 koridor yürümem gerekirse benim için sıkıntıdır.

Merdiven altları endişelendirir onun dışında düz yürürken bir koridorun ortasında tek bir basamak olması beni rahatsız eder, ayrıca döner merdivenler rahatsızlık verici basamak alanı bir anda daraldığı için çıkıp inmek zor oluyor.

P2: Ahşap bir yapıda yankıdan dolayı yön bulmak daha kolay oluyor, geniş bir yapıda yankı fazla olunca yön bulmak zorlaşıyor. Yansıma azsa daha iyi hissettiriyor, fayans falan iyi değil.

P1: Büyük mekan diyince, onu zaten malzemesi ne olursa olsun girer girmez anlıyorsun. Aurası farklı oluyor bir kere.
Aura dediğini tarif edebilir misin?

P1: Çok basit, konuştuğunuz zamnadan nefes aldığınız ana kadar onu hissedebiliyorunuz. Mesela Beyazıt devlet kütüphanesine girince o kendini belli ediyor. Böyle ahşap çift kanatlı büyük bir kapısı var, içerisye girdiğinde o girişteki güvenlik kapısının "dit" sesi bile ve ya "Selam Aziz abi, Naber?" dediğinde mesela orada sesin dağılışı belli ediyor. Ses eko yaparak dağılmıyor, dolu dolu gidiyor, sönmüyor da geri dönmüyorda. Esnek ve mekaı doldura bir ses yani.

Mekanı girişinden anlıyorsunuz yani?

P1: Tabi ama mesela şöyle. Binanın girişinde sesi yanıltacak bir banko versa, ya da sesi engelleyen bir şey varsa, o yanıltıyor.

P2: Mesela ben alışveriş merkezlerine girdiğimde anlayamıyorum. Kaybolduğumu hissediyorum.

P1: Evet alışveriş merkezleri facia hakkaten.

P2: Ancak bir duvar bulduğumda ona yakın hareket ediyorum. En azından ses ve yön veriyor. Hepsi aynı.

P1: Üstü kebap altı şişhane diye bir laf vardır. Eğer yapı tamamen biçime dayalı bir saçmalığa gitmediyse. Yani o kapının ardında tamamen alakasız bir form yığını görmüyorsanız bir bilgi edinebilirsiniz. Yani önde cami kapısı, içerisi disko gibi bir yapı değilse sorun yok.

P2: Karakteri olmayan yapı algıyı yanıltır.

Gündelik hayatta en çok vakit geçirdiğiniz yapıyı tarif edebilir misiniz? Ya da nasıl tarif edersiniz?

P2: İç dizaynını da katalım mı?
Nasıl isterseniz

P2: Bu soruyu sordum çünkü mesela eğer mekanda bir masa gibi bir şey varsa o etrafına bir enerji ayayıyor ve onu algılıyorsun.

Enerjiyi nasıl tarif edebilirsin?

P2: Bu bir his aslında. Ofiste mesela, masa ve önünde koltuk varsa bunu anlıyorum, yani masanın önünde bir şey olduğunu, sesten mi bu bilmiyorum. Anladıktan sonra kafamda bir resim canlanıyor. Kokuyu çoğu zaman almıyorum mesela.

Bunda eski görsel tecrübelerinizin de etkisi var o zaman?

P2: Evet, kesinlikle var. Bana mesela bir şeyi betimlerken birileri anında canlanıyor kafamda.

P1: Ben odamı anlatayım mesela. Odam, dikdörtgen, kapı girişi dikdörtgenin sağ köşesinde. Dikdörtgenin dar olan yanın, kapının karşısında duvar kaplayan ve genişliği 1.5 m.'yi bulan, çift kanatlı camları olan bir pencere var. Hemen kapı girişinde sol tarafta, yaklaşık 1,5-2 m ye yakın bir mesafe sonrasında bilgisayar masam duruyor. Arkasında da ayak ucuna iliştirilmiş yatağım mevcut. Kapıdan girince sağ tarfatki uzun yönü takip ettiğimde iki şifonyer var. Tavanım çok yüksek de değil, basık da değil yaklaşık 2.5-3 m. falan. Yerler lamine ve halı, dokusu ayağımı rahat ettirecek bir yapıya sahip.

Evinin genel özellikleri nasıl?

P1: Aslında binalarımızın çoğu ucube. Annem mesela bu evi aldığımızda yeniden yaptı çünkü alanlar o kadar yanlış bloklanmış ki. Ortaya bir duvar çekilmiş mesela, önünde ve arkasında kalan mekanları asla kullanamıyorsun, ne dikdörtgen ne kare, üçgen gibi bir garip bir şekil.

P2: Benim evimin içi bana çok basık geliyor.

P1: Benim bir arkadaşımın evi var, tavanları müze gibi. Yüksekliği çok iyi hissettiriyor. Binalarımızı tanımlarken şunu öneriyorum. Konsantre binalar, yani özü tüketilmiş. Önemli bir kısmını almışlar sonra suyu basmışlar gibi. Hiç bir tatı yok, kimliği zaten yok. Mesela bizim ev 110 m2 ama dediğim gibi tavanım çok alçak olmamakla beraber, benim odam bana çok dar geliyor. Medium ile Small arasında çok büyük bir fark olmamasına rağmen giydiğinde farkı anlarsın, bunun gibi.

P2: Bizim köydeki evlerde mesela, kerpiçten evler. Duvarlar kalın kalın, o evlere girdiğim zaman kendimi o kadar rahat hissederim ki, çok ferahtı. Şimdi yeni yapılan evde duvarlar ince, tavan daha alçak ve içine girince çok basık hissediyorum. Sanki her an birine çarpacakmışım gibi geliyor. Kerpiç ev çok daha rahattı mesela.

Mazlemeden fark ediyor olabilir mi? Kerpiç ve tuğladan bahasettin mesela, ferahlık hissinin bununla mı ilgisi var, yoksa sadece yükseklik mi?

P2: Tabi malzeme de var ama tavan yüksekliği daha öncelikli.

P1: Tavan yüksekliği için şöyle bir örnek, Mimar Sinan Üniversitesindeki sübyan mektebi mesela, çocuklar için olduğundan tavanı alçak, içerisnde bulunmak resmen bir facia. Mesela ben Mimar Sinan Fen Edebiyat Fakültesini de sevemem, eski bir tütün deposu. Orayı okula çevirince bir facia olmuş, işim düşmedikçe zorunlu, gitmiyorum.

P2: Bizim Boğaziçi Üniversitesi'ndeki ikinci yurt binası mesela. İlk girişte çok iyi sandım ama içerisi felaketti. Direkt bir duvara çarptım, merdiven onun arkasında. Ama mesela birinci yurt öyle değil. Karşında hemen bir merdiven var, solda bir koridor. Girer girmez bir ferahlık var. O koridor sadece yol göstermiyor, içerisindeki hava akışı falan size bir yön

hissi veriyor. Birinci yurtta koridorda içeri doğru açılan cam kapılar var mesela, her seferinde çarpıyorum.

Camın malzeme olarak farklı bir algısı var mı?

P1: Benim çocukluğumdaki apartmanımızda, apartmanın ortasında camların açıldığı bir boşluk vardı. Orası o berbat apartmana bir ışık, bir ses verirdi, yağmur yağdığında sesini duyardık.

Cam güneşin sıcaklığını da içeriye verdiği için yön belirlememe de yardımcı oluyor. Sevdiğim başka bir tarafı yağmurun sesini içeri verir. Büyük bir yerdeki camlara yağmur vurduğunda içeride başka hiç bir ses olmasa da odanın büyüklüğünü tahmin edebilirisin. Görsel öğelerini kullanamayan, işitsel öğelerini kullanan bir insan olarak, cam dan gelen sesler, yağmur gibi, psikolojik bir etki veriyor, kendimi rahat hissettiriyor bana.

Az önce şunu düşündüm, benim için iyi olan bir yapı görenlere anlamsız geliyor mesela. Neden yapıların içerisinde bu kadar çok forma ihtiyaç duyuluyor? Ben şuna karar verdim, çünkü insanlar boşluktan korkarlar. Boşluk görmeyi ve zihni yorduğu için. Tavana bakmak diye bir deyim vardır, romanlarda kahramanlar kafasını tavana diker ve boşluğa bakarlar. Neden? Çünkü modern insan duvarları gerekli gereksiz doldurur, siz duvara baktığınızda gözünüz bir nesneye takılır, zihninizi oyalar. Sırf dekor olsun, boşluğu doldursun diye konulan yapma sarmaşıklar mesela. Ama tavana baktığınızda boştur, o zaman düşünebilirsiniz.

Bu söyledikleriniz modernizme karşılık geliyor biraz. Mimaride modernist dönem yapıları, sadelik ve minimalizme dayanır ama çoğu zaman insanlar daha ihtişamlı yapıları tercih ederler. Göz yanıltıyor mu yani sizce?

P1: Evet, Taksimde'ki Sütiş mesela. Onun merdivenlerinden çıkarken bir sürü yapma çiçek var. O mesela beni inanılmaz rahatsız ediyor ama görsel olarak çok beğenildiğine eminim. Biz daha primitif bakıyoruz meselelere.

Çekirdek meyvenin özündedir. Çekirdeği sevmez insanlar, hep meyveyi yer. Yapılar içinde böyle, çok basit çizilmiş ve derdini anlatan yapılar olmalı. Mimari yapı aslında özü itibariyle bir yemektir ama o temel yapının üzerinde ne yapmaya çalışırsan o baharattır. Mimar ne kadar baharat katarsa sizin yemek zevkinize o kadar müdahale ediyor. Tercih edebileceğiniz bir baharat kalmıyor. Biz toplum olarak, damak tadından barınmaya, giyinmeye kadar o kadar zevksiz yaşıyoruz ki. Çünkü her şey hazır kalıp, fast food. Mimarinin de fast foodu var işte. Şu soru aklıma geliyor, mimarlar Cumhuriyet ideolojisinde de belirtilen ideali mi yapmalı, yoksa avamın istek ve zevklerini besleyecek şeylere mi yönelmeli?

AKM mesela 1940'larda mı yapılmıştı? Onun için gören bir arkadaşım kibrit kutusu gibi dedi mesela. Ben çok uzun gezemedim içinde, tiyatroya girdim, biraz dolaştım ama ferah ve güzel bir yer aslında bence. Şöyle bir benzetme yapacağım, görsel algı sarınır, körsel algı arınır. Atasözümüz var, bir mekana girerken kıyafetinden çıkarken muhabbetinden diye. Mimari de böyle. Gören bir insanın önce baktığı şey biçim, sonuna kadar şekilci. Mekan sınırlarını algılayabiliyor musunuz?

P2: Evet. Üstü açık kenarları kapalı yapıları daha çok tercih ediyorum mesela. Kapalı bir yere göre tanımlamak daha kolay.

P1: Evet, ben de daha çok seviyorum.

Kapalı alandan daha rahat gelmesi acaba hava sirkülasyonundan dolayı mı?

P1, P2: Kesinlikle.

P1: Ses ile de alakalı tabi. Yani ferahlık başka bir şey.

P2: Kokunun da etkisi var. Metroya inerkenki o rutubet kokusu beni korkutuyor mesela. Güzel koku insanı çeker, isteyerek gitmiyorum, her seferinde bilmediğim bir yere gidiyormuşum gibi hissediyorum, defalarca kullanmama rağmen.

Gitmekten özellikle keyif aldığınız ve keyif almadığınız yapı ismi söyleyebilir misiniz, nedenleri ile?

P1: Sabiha Gökçen'i beğendim mesela. Çok ferah, hiç korkmadan yürüyebildim. Zemin çok iyiydi.

P2: Ben de beğendim. Geçem Atatürk havalanında o farkı şöyle hissettim. O kadar yüksek tavanlı ve çok geniş ki, çok yankılı. Yön belirlemek imkansız. Sabiha Gökçen'in yüksekliği çok daha iyi.

P1: Geniş bir alan ama daha koridorumsu.

P1: Çerkezköy Polis Evi'nin bahçesi. İnanılmaz güzeldi, hiç bir girinti çıkıntı yoktu. Masaların düzenlenmesi çok iyiydi. Mesela tuvaletten çıkar çıkmaz masamı buldum. Çok rahat ettim mesela, çok ferah. Üstü açık, etrafı sınırlı. Kapısını çok kolay buluyorsun mesela. Kapı mesela seni çekiyor. Kapı genişli ve yarattığı çekim gücü ile seni çekiyor.

O çekim gününü neye göre tanımlıyorsun?

P1: Sesle alakalı. Fenerden çıkan bir ışık gibi, ışık boşlukta söner ama bir duvara çarptığında duru ve donar. Ses de böyle. Resmen bu mekanda ses seni oaraya götürüyor, yokuş aşağı gider gibi. Lavabodaki giderin suyu toparlaması gibi.

P2: Gürültünün olmadığı yerde yaşamak daha kolay, küçücük bir kaldırım bile o sesi değiştiriyor.

P1: Nasıl ki bilgisayarda müzik dinlerken Waw, Audio, MP3 gibi formatlar vardır. Mimaride de öyle. Ses Mp3 olunca daha iyi oluyor, rahatlık ve keyif artıyor, Waw olunca daha kötü oluyor. Plak ile CD arasındaki fark gibi. Derinliği algılıyorsunuz.
Mesela ortasında hiç bir şey olmayan bir avlu düşünün. Bu kaybolma korkusunu tetikler. İnsanlar bilinçli olarak bunu düşünmese de biliçaltında o korkuyu hissediyor.

P2: Modern mimarinin korkunun sigesi olduğunu düşünmeye başladım. Yüksek duvarlar, arkasında binalar gibi. İnsanı yalnızlaştırıyor. Sosyolojik boyutu olan da bir şey tabi bu.

Boş bir avludan bahsettiniz, bir landmark isteği mi bu yani?

P1, P2 : Evet, kesinlikle.

B.3. IN-DEPTH INTERVIEW WITH P3

How do you define architecture and an architectural space?

P3: First of all, it's very important to get a description, so the way the person next to you describes that place affects you. For example we understand the color and the glass roof of our building by descriptions. Apart from that ambiance is important.

How do you define ambiance?

P3: That's a difficult question, if we talk about technics and art, according to me architecture is creating technical limitations, creating art confined by requirements, but I guess some artsy parts are boring – maybe to do with the height of the building. For example, let's talk about 2 popular shopping malls that were recently built. Palladium and Optimum; I enjoy walking around in Palladium, but I find Optimum boring, I hate it because of its ambiance.

Is accessibility important at this point?

P3: No, that doesn't make a difference; maybe Optimum might even be better at it.

Do you perceive light?

P3: No, I don't feel it but I feel that Palladium is more lit up, more spacious, with more free space, shinier and cleaner. I also feel the high ceiling and the width. It's to do with the echo. Many blind people make sounds with their mouths and perceive the area with the echo. Maybe everyone does this, but because the sense of sight is dominant in sighted people, this is not used and not noticed. This is how I understand whether a space is large or narrow. I don't know how I feel light but I know the feeling of brightness, spaciousness,

cleanliness from the smell. So I understand brighter and spacious areas and decide whether the ambiance is good or bad.

You mentioned scent, you mentioned air… since you already know bright spaces, and could it lead to the bias that only places with successful acoustics can be bright spaces?

P3: I don't know, but even if we can't see light photos, we perceive them, photons run into us. For example, I find houses with blue white lights more peaceful and houses with yellow lights more surpassing and boring. The idea of dust also affects me, whether the area is clean or dusty affects my perception.

Can you describe your house or your workplace in terms of sensorial perception?

P3: I can define my school as a workplace. First of all, what we are told create prejudice. For example the ceiling height of the room is 6m, I asked that. However, it feels like the preparatory part of the building is run down and the Presidency part has a good ambiance. The reason for this might be the courtyard entrance.

Can you get general information regarding the building from the building entrance?

P3: I think courtyards and water increase the general quality of a building. Places with an open top and covered on three sides give a sense of enclosure and comfort. For example, I like the entrance of our fine arts building. This might also be because of my visual past. I think it's discomforting when a building is smaller than it should be and it's scary if it's bigger than it should be. I don't know why.

What are some places you like in Istanbul, what aspects do you like?

P3: First of all, I like all places on the seafront in Istanbul. Apart from that, I like Hidiv Kasrı, although it is not what it used to be. I like Yeşilköşk. I like the areas of Moda and the Moda Ferry Dock. Right on the Bosporus is the municipality facilities in Paşa limanı, I think that place is special. I mostly like simple places.

What do you think makes a place feel more comfortable?

P3: I set a ration. You might find it strange but I think it's a ratio of 3/5. For example in a room with a width of 2m, a 6m ceiling is boring, it should be 3m.

Is this due to the effect of air or is it because of acoustics?

P3: I define this as ambiance.

Can places where sound is muffled give you a clue? What do you take as a reference when you want to walk around?

P3: I am arguing with someone over something, I walk on the margins. So I don't just cut the space diagonally. If I am talking about regular things, I talk about them in more mediocre places. Also I don't prefer staying too long in open areas because I don't like the idea of continuously having hiding eyes on myself. If my sound doesn't come back to me, that means I'm too out in the open.

Window size also affects the ambiance of the room. I can tell you that rooms that have windows from ceiling to floor are more spacious.

B.4. IN-DEPTH INTERVIEW WITH P3 IN TURKISH

Mimarlığı ve mimari bir yapıyı nasıl tanımlarsın?

P3: Öncelikle tarif edilmesi çok önemli, yani yanınızdaki kişi o mekanı nasıl anlatırsa o bizi etkiler. Mesela bizim binanın rengini, tepesinin cam olduğunu vb. tarifle algılıyoruz. Onun dışında ambians önemlidir.

Ambiansı nasıl tanımlarsın?

P3: Zor bir soru, teknik ve sanatı ele alırsak mimarlık teknik kısıtlamalar, zorundalıklar içerisinde bir sanat yaratmaktır bana göre ama galiba bazı sanat kısımları sıkıcı oluyor

belki yüksekliğiyle ilgili binanın. Örnek vermek gerekirse son dönemde yapılan 2 popüler alışveriş merkezini ele alalım. Palladium ve Optimum; Palladium'da dolaşmaktan keyif alırken, Optimum'u çok sıkıcı buluyorum, nefret ediyorum ambiansından ötürü.

Acaba ulaşılabilirliği bu noktada etkili mi?

P3: Hayır, fark yok belki Optimum bu konuda daha önde bile olabilir.

Işığı algılıyor musunuz?

P3: Hayır hissetmiyorum ama sanki palladium bana mekan olarak daha aydınlık, ferah, daha fazla alan bırakılmış, daha parlak, temiz hissi uyandırıyor, bir de yüksek tavanlı ve genişlik hissediyorum. Sesin yankılanması ile ilgili. Pek çok kör, ağzıyla ses çıkarıp onun yankısıyla mekanı algılıyor. Belki herkes bunu yapıyor ama görenler görme duyusu dominant olduğundan kullanılmıyor ve fark edilmiyor. Bir yerin dar veya geniş olduğunu bu şekilde az çok algılarım. Işığı nasıl hissediyorum bilmiyorum ama daha aydınlık, ferah mekanları yani kokunun, aydınlığın, temizliğin hepsinin bütün olarak verdiği ferahlık hissi bir mekanın ambiansının iyi veya kötü oluşunu belirliyor bana göre.

Koku dediniz, hava dediniz, siz aydınlık mekanları zaten bildiğiniz için acaba hava akımı, akustiği başarılı yerlerin ancak aydınlık mekanlar olabileceği önyargısına yol açabilir mi acaba?

P3: Bilemiyorum ama mesela ışık fotonlarını göremesek de algılıyoruz belki bir şekilde, fotonlar bize çarpıyor. Mesela ben mavi beyaz ışıklı evleri daha ferah huzurlu, sarı ışıklı evleri daha basık ve sıkıcıymış gibi düşünüyorum. Toz kavramı da beni etkiliyor, ortamın tozlu veya temiz olması da algımı etkiliyor.

Yaşadığınız evi veya iş yerinizi duyumsal algılama üzerinden tarif eder misiniz?

P3: İş yeri olarak okulu tarif edyim. Öncelikle anlatılanlar bir yargı oluşturuyor, mesela odanın tavanı 6m bunu sordum. Ama binanın hazırlık tarafı köhne, rektörlük tarafı ise ambiansı iyi tutulmak istenmiş gibi geliyor. Bunu sebebi girişin avlulu olması olabilir.

Bina girişlerinden bina ile ilgili genel bir bilgi sağlıyor mu?

P3: Avlu ve su binanın genel kalitesini yükselttiğini düşünüyorum. Üstü açık üç tarafı kapalı mekanlar ferah ve korunaklı bir his veriyor. Mesela bizim güzel sanatlar fakültesinin girişini seviyorum. Ama belki bu benim görsel geçmişimden kaynaklanıyor. Bence bir binanın gereğinden küçük olması sıkıntı veriyor, büyük olması ürkütüyor. Sebebini bilemiyorum.

İstanbul'un beğendiğiniz mekanları hangileri sizin için, sevdiğiniz yönleriyle?

P3: İstanbul'da denize kıyısı olan her yeri seviyorum önceliklie. Onun dışında eski tadında olmamasına rağmen Hidiv Kasrını seviyorum. Yeşilköşk'ü beğeniyorum. Semt olarak Moda ve Moda iskelesini seviyorum. Paşa limanında belediye tesisi var Boğaz' a sıfır bence orası çok özel. Salaş yerlerden hoşlanıyorum daha çok.

Sizce bir mekanı neler daha konforlu hissettirir?

 P3: Kendimce bir oran belirledim. Size saçma gelebilir ama 3/5 gibi bir oran olduğunu düşünüyorum. Mesela 2m en olan bir odada 6m tavan sıkıcıdır, 3m olmalıdır.
Bu his acaba hava etkisi mi yoksa akustik sebebiyle midir?

P3: Ben bunu ambians olarak niteliyorum.

Geniş açıklıklı mekanlar sizde nasıl bir his uyandırıyor, içinde dolaşmak rahat mı, bir landmark eksikliği hissediyor musunuz?

P3: Geniş alanlarda 3 şey beni etkiliyor birincisi oran – büyüklük, ikincisi ışık, üçüncüsü toz belki.

Peki, sesin yutulduğu yerler size bir ipucu verebilir mi? Dolaşmak istediğinizde neyi referans alarak hareket ediyorsunuz?

P3: Bir şey tartışıyorsam biriyle sınırlardan yürürüm. Dolayısıyla diklemesine yarmam mekanı. Orta karar bir şey söyleyeceksem daha orta bir yerde sohbet ederdim gibi geliyor. Bir de sınırsız geniş alanlarda çok fazla durmayı tercih etmem çünkü sürekli gizli gözlerin üzerimde olabilmesi ihtimalinden hoşlanmıyorum., eğer sesim bile bana geri gelmiyorsa demekti çok göz önündeyim.

Pencere boyutu da odanın ambiansını etkiliyor. Yere kadar cam olan odaları daha ferah bulduğumu söyleyebilirim.

B.5. IN-DEPTH INTERVIEW WITH P4

How do you define architecture and architectural structure?

P4: When I think of architecture, I think of a structure that is built with a purpose, that has a design. I expect architectural comfort. If it's for shelter, I expect comfort, if I can breathe easily, if I feel peaceful by the wall heights and the spacious quality, it's a good place for me.

You mentioned wall height, can you elaborate on that?

P4: wall height is very important, it should definitely be high. I feel suppressed and depressed in places with low ceilings. Height isn't enough on its own. For example, I lived in a house in Beşiktaş with a 3.5m height; it was on the ground floor on one side and sub-level on the other. It was a suppressing house, despite the high ceilings. I think it has to do with air circulation.

Can you identify light?

P4: I don't see light but you don't need light perception to be able to differentiate between a dark place and a bright place. I'm not talking about artificial light, but a bright place is always spacious.

How do you understand this sense of being spacious?

P4: there are many windows in a bright place and this makes the atmosphere spacious. It's not just to do with air. According to some things I read, light is not only perceived by the eye, the body also perceives it. I can't express it well but I feel it. For example, before people guess a storm coming from the smell of the air, now we can't understand it because we suppressed this awareness. I cannot turn my sensation into knowledge, but there is a difference between a dark and a bright space.

Do materials affect this perception?

P4: I never thought about it in terms of material. The important thing for me is the sound, ceiling height and then air circulation.

Also, I feel more comfortable in large but echo-free places. Echo limits me, I take data with the return of sound and echo changes these date. Still, I like structures with hallways. Could that be related to the space being more readable schematically?
P4: Yes, you draw the map visually in your mind and we draw it with the shape we walk and the sound and the shape as we touch.

Can you describe spaces that have positive-negative connotations regarding sound and echo?

P4: For example, there's rubber material in metrobuses and it completely absorbs the echo. It's disturbing because it absorbs all the sound that hits the floor and I have a hard time sensing the margins of the space. However, Istanbul Sabancı School for the Blind has a lot of echo and is systemized like a labyrinth, but this is done on purpose, to educate. It is built

so that the place where we are educated is bad that we can get used to these things in normal life. Echo should be loud enough to be able to get some data, but not too little to distort it. For example, the echo in places that are clad in tiles, or large and sparsely-furnished places is disturbing. The area is also too large in mosques, the floors are covered with carpets and there's no way the sound can hit a wall and come back to me. It makes it very difficult to understand the depth of the space.

You said air circulation was important, is there a place that you specifically noticed for that?

P4: Air circulation affects the spaciousness of a place. Breathability is very important to me, for example. It is written that before air circulation was very important in the buildings that were constructed, but Sultanahmet Mosque seemed inadequate to me regarding this, the smell inside didn't go out. Actually this is said mostly about Mimar Sinan, but I didn't try it.

For example, before when I went through town I would open the windows and understand the surroundings, feeling the wind, smelling the scents. When buildings end and begin the air changes. When I was little, I would pay a lot of attention to this when I was riding my bike.

So you pay attention to the smell?

P4: Smell is important to me, but it's difficult to explain this. I usually remember places with my breath. That's how I commit it into memory, but I don't know why. I guess air gives me more data and therefore I register with that. Touching comes after air and sound. Also, entrances are very important, entrances must give me something. For example, there's Orhan Veli café on İstiklal. The stairs used to be neglected and humid, it's actually a modern structure after the stairs, such a shock is nice for me. Or a transition from the entrance that gives the information about the place is good for me, but if there's an irreleveant relationship between the place and the entrance, that's disturbing.

What else provides a referance for the characteristics of a place at the entrance?

P4: Door and walls are important. For example, only a glass door resembles a store.

Does glass have an effect as a material?

P4: I don't have memory of a note-worthy data.

Can you describe the space in which you spend the most time in daily life?

P4: Home and the streets. I like the seaside, I like streets. I feel a sense of vastness when I sit on the grass by the seaside. The boundaries are far away. Walls, the boundaries of a house are all far away and that relaxes me. I like Moda seaside, but there's a wall there, boundaries are more obvious but it's very quiet.

The ceilings of my house are low, I don't like it very much. It has a very basic scheme, a flat hallway; you can fit the place of each door in the scheme. As far as airing it goes, there're not many windows, but it has a very interesting air corridor. There's no direct sunlight so it's usually cool. Usually I don't like having anything around. This way I can walk about easily.

Is it also true for you that you don't like anything around the middle in a place with a large opening?

P4: If there's anything around in the middle, there needs to be something that defines it, if there isn't, it has no meaning. If there's no definition around you may run into it and it's dangerous.

For example, airports are places with high echo, but it's much easier to walk if there's a direction on the floor in the middle. Sabiha Gökçen is much better on this.

However, I like places that are surrounded by three walls and have an open ceiling in large places in regards to sound.

Why not closed on top and open around the sides?

P4: I don't know, I think the echo becomes weird.

Can you name a place that you especially like to go or just the opposite, avoid going?

P4: I don't like Mecidiyeköy at all but I like Gülhane Park. As a building, I don't like shopping malls. The reason is air, there's air inside but it's an artificially cleansed air. They are not schematic, I find the architecture absurd, it's terrible. For example, I don't like Cevahir at all. Yes it's got height but the air is terrible, the scheme is bad. It's also exhausting due to electricity flow, it feels tiring because there's a lot of electrical components. İzmir Fair site also feels tiring and I think that's to do with electrics. There's a lot of voltage, in shopping malls I get more tired than I do walking in the street. The sound could be tiring as well.

I like places with balconies. Like I said, covered on three sides, open on top. You can be in a specific area, and listen everything. It's open but safe, it has privacy and openness and it's controlled. You can feel the trees and be happy.

So green elements are important as well?

P4: I think they do, green gives light. Even at night I feel the areas on top of the empty green areas are lit up. I like vast and unfilled green areas better. Of course it has a positive effect on smell as well.

B.6. IN-DEPTH INTERVIEW WITH P4 IN TURKISH

Mimarlığı ve mimari bir yapıyı nasıl tanımlarsın?

P4: Mimarlık deyince, belli bir amaca göre yapılmış, belli bir tasarıma sahip olan bir yapı aklıma geliyor. Mimari bir yapıdan konfor bekliyorum. Barınma ise mesela, rahat etmeyi bekliyorum, rahat nefes alıyorsam, içinde duvar yüksekliğinden ferahlığına kadar huzurlu hissediyorsam benim için iyi bir mekandır.

Duvar yüksekliği dedin, biraz daha açar mısın?

P4: Duvar yüksekliği çok önemli, kesinlikle yüksek olmalı bence. Alçak tavanlı yerlerde basık ve depresif hissederim. Sadece yükseklik yetmiyor. Örneğin Beşiktaş da 3,5 m yükseklikli bir evde yaşamıştım bir taraftan zemin bir taraftan bodrum bir evdi. Tavanı yüksek olmasına rağmen basık bir evdi, sanırım bu hava sirkülasyonundan dolayı.

Işığı ayırt edebiliyor musun?

P4: Işığı görmüyorum ama karanlık bir mekan ile aydınlık bir mekanı ayırt etmek için ışık algısına gerek yok. Suni ışıktan bahsetmiyorum ama aydınlık ortam her zaman ferahtır.

Nerden anlıyorsun bu ferahlığı?

P4: Aydınlık ortamda çok fazla pencere vardır ve bu ortamı ferahlatır. Hava ile de ilgili değil sadece. Okuduğum bazı şeylere göre ışık sadece gözün algıladığı bir şey değil, vücut algılıyor. Bunu tam anlatamıyorum ama insan hissediyor. Örneğin eskiden insanlar havanın kokusundan fırtına geleceğini tahmin ederlermiş, şu an bu farkındalığımızın üstünü örttüğümüz için anlayamıyoruz. Hissimi bilgiye dönüştüremiyorum ama aydınlık ile karanlık ortamın farkı var.

Malzemelerin bir etkisi var mı bu algıya?

P4: Malzeme olarak hiç düşünmedim. Benim için en önemli şey ses, tavan yüksekliği sonrasında ise hava sirkülasyonu.

Ayrıca, geniş ama yankısız mekanlarda daha rahat ediyorum. Yankı beni sınırlayan bir şey, sesin geri dönüşü ile veri alıyorum ve yankı bu verileri değiştiriyor. Yine de koridorlu yapıları daha çok seviyorum.

Bunun, mekanın şematik olarak daha okunabilir oluşuyla ilgisi olabilir mi?

P4: Evet siz zihninizde haritayı görsel olarak çiziyorsunuz biz ise yürüdüğümüz şekli ile sesi ve dokunabildiğimiz şekli ile.

Ses ve yankı hakkında olumlu-olumsuz çağrışım yapan mekanları tarif edebilir misin?

P4: Örneğin metrobüslerde zeminde kauçuk malzeme var ve yankıyı tamamen yok ediyor. Tamamen yere vuran sesi emdiği için rahatsız edici, mekanın sınırlarını algılamaktan zorlanıyorum. Ama mesela İstanbul Sabancı körler okulu tamamen çok yankılı ve labirent sistemli bir yapı ama bu bilerek eğitim için yapılmış. Eğitim alınan yer en kötü olsun ki normal hayatta bu tip şeylere alışalım diye. Yankının ayarı veri alınabilecek kadar çok ama arızalıyacak kadar da az olmalı. Mesela tamamen fayanslarla düzenlenmiş, geniş ve az eşyalı mekanlarda yankı rahatsız edici oluyor. Camilerde de alan çok geniş, her yer halı kaplı, sesin duvara ulaşıp bana gelmesine imkan yok ve Mekan derinliğini algılamak zor oluyor.

Hava sirkülasyonu da önemli dedin, bununla ilgili özel olarak fark ettiğin bir mekan özelliği var mı?

P4: Hava sirkülasyonu mekanın ferahlığını etkiliyor. Nefes alabilirlik benim için çok önemli mesele. Eskiden yapılan yapıların hava sirkülasyonuna çok önem verildiği yazılır mesela ama Sultanahmet cami bana bu konuda çok yetersiz geldi, içerideki koku dışarı çıkmıyordu. Aslında bu en çok Mimar Sinan için söylenir ama onu denemedim. Örneğin eskiden şehir içinden geçerken arabanın camlarını açardım, çevreyi öyle anlardım. Binalar bitip başladığında hava değişiyor. Bisikletle giderken de buna çok dikkat ediyordum küçükken.

Kokuya dikkat ediyorsun o zaman?

P4: Koku benim için önemli, bunu anlatmak biraz zor ama. Ben mekanları genelde nefesimle hatırlarım. Hafızama kaydedişim böyle ama neden bilmiyorum. Hava bana daha

çok veri veriyor demekki ki onunla kaydediyorum. Dokunmak hava ve sesten sonra geliyor.

Ayrıca girişlerde çok önemli, girişler bana bir şey vermeli. Örneğin İstiklal'de Orhan Veli kafe var. Eskiden merdivenleri çok bakımsız ve rutubetliydi, merdivenlerden sonra da modern bir yapı aslında, böyle bir şok benim için güzel mesela. Ya da girişten mekanın bilgisini veren bir geçiş de benim için iyi ama alakasız bir ilişki varsa mekan ve girişi arasında bu rahatsız edici.

Mekan girişlerinde mekan karakterine referans veren başka neler var?

P4: Kapı ve duvarlar önemli. Örneğin sadece cam kapı dükkanı çağrıştırır.

Camın başka bir etkisi var mı malzeme olarak?

P4: Dikkat ettiğim bir veri yok hafızamda.

Günlük hayatta en çok vakit geçirdiğin yapıyı tarif edebilir misin?

P4: Ev ve sokaklar. Sahilleri severim, sokakları severim. Sahilde çimlere oturduğumda bir genişlik hissediyorum. Sınırlar çok uzağımda kalıyor. Duvarlar, evlerin koyduğu sınırlar hep çok uzağımda, bu beni rahatlatıyor. Moda sahili çok seviyorum ama orda duvar var sınırlar biraz daha belli ama çok sessiz.

Evimin ise tavanları alçak, sevmediğim bir ev. Çok basit bir şeması var, dümdüz bir koridor var, her kapının yeri şemada oturtulabiliyor. Havalandırma açısından, çok cam yok ama ilginç bir hava koridoru var. Güneş direkt içeri girmediği için genelde serin. Genelde ortada bir şey olmamasını tercih ediyorum. Böylece rahatça dolaşabiliyorum.

Geniş açıklıklı bir mekanda da ortada bir şey olmaması geçerli mi senin için?

P4: Eğer ortada bir şey varsa onu belirleyen de bir şey olmalı yoksa hiçbir anlamı yok. Bir belirteci yoksa çarpabilirsin ve tehlikeli.

Mesela havaalanları da yankının yüksek olduğu bir yer ama ortasında zeminde bir yönelim varsa yürümek çok rahat. Sabiha Gökçen bu konuda daha iyi.

Geniş mekanlarda ise ses için üç tarafı duvarlarla çevrili ve üstü açık yerleri seviyorum ama.

Neden üstü kapalı yanları açık değil?

P4: Ses garip geliyor, bilmiyorum.

Özel olarak gitmeyi tercih ettiğin ve tam tersi gitmekten kaçındığın bir mekan ismi söyler misin?

P4: Mecidiyeköy'ü hiç sevmiyorum ama Gülhane Parkını seviyorum. Bina olarak ise, alışveriş merkezlerini sevmiyorum. Burada sebep hava, içerde bir hava var ama yapay bir hava, yapay olarak temizlenmiş bir hava. Hiç şematik değiller, mimarilerini saçma buluyorum, çok berbat. Cevahir'i hiç sevmiyorum mesela. Yükseklik var evet ama havası berbat, şeması kötü. Zaten elektrik akımından da çok yorucu, binada çok fazla elektrik aksamı olduğu için yorucu gelir. İzmir fuarı da yorucu geliyor mesela bence bu elektrik ile alakalı. Çok fazla voltaj var, sokakta yürümeye göre daha fazla yoruluyorum alışveriş merkezlerinde. Ses de yoruyor olabilir tabi.

Balkonlu yerleri seviyorum. Dediğim gibi üç tarafı kapalı üstü açık. Belirli bir bölge içerisinde olup her yeri dinleyebiliyorsun. Açık ama güvenli, mahremiyeti ve açıklığı var, kontrollü. Ağaçları hissedebiliyorsun.

Yeşil elemanlarında önemi var mı yani?

P4: Bence var, yeşil aydınlık sağlıyor. Gece bile boş yeşil alanların üstü daha aydınlık gelir. Geniş ve doldurulmamış yeşillikleri daha çok seviyorum. Kokuyu da çok olumlu yönde etkiliyor tabi.

B.7. IN-DEPTH INTERVIEW WITH P5

How do you define architecture and architectural spaces?

P5: At first I pay attention to how large or narrow it is, you can feel it from the walls and the echo. Then I pay attention to the existence of furniture, if there is how they're designed, is there are a table in the middle or not, things like that.

How do you define space from your own perspective?

P5: I think of Akmerkez or metro stations, closed, large and large areas. I can also think of a house as well.

What are your expectations regarding a space?

P5: Being able to walk around easily is important for me. If there's furniture everywhere, things that get in my way bother me. Smell is also important, in order for me to understand if the place I'm in smells clean, there shouldn't be humidity.

Where do you spend the most time in your daily life?

P5: I am usually at work.

What is your office like, can you describe it?

P5: It has three rooms. One is a laboratory. The laboratory is a little narrow because there are booths and computers. It feels suppressing when you first enter. There's a long hallway, on the left recording booths and on the right our computer laboratory. In the middle we have a round meeting table. My office feels spacious to me. This is because there's an area in there that's mine.

How do you organize the space in which you live?

P5: I prefer not to have a table in the middle at my house. Constantly having something in my way may be disturbing, I don't want to have to live with the psychology of constantly moving around things.

Do you prefer large or the hallway system?

P5: It depends on the place for me. For example, if it's a house, large areas are better. But in shopping malls width is not very good because you get confused and lost if you have emptiness in front of you all the time. It's like everywhere is identical, you are in the middle of a street. If there was a hallway or aisle I could follow, it would be very useful. I like half open places, because they are more spacious.

When you say half open, do you mean places with open top and covered sides, or open sides, covered top?

P5: Open on top, covered on the sides areas are better for me. Because it means there are walls I can follow.

Speaking in terms of sound and echo, are there places that you specifically notice that reflect sound better?

P5: When I'm in a concrete area I notice the sound better and due to the sound my stick makes when I tap it on the floor, I can grasp better the parts I will follow.
If we think about mosques, I don't think I can fully perceive sound there. The sound will mostly disappear because it's a high space. And the floors are covered with carpet. I can't use my stick in such areas because I can't hear the sound it makes.
Sounds don't help me in shopping malls either. Because the crowd and the noise swallow up sounds. In such places, I get closer to a side as much as I can and try to form a map in my head, go this far and then turn left. This map is formed with the way the space sounds.

Does the entrance of a building give you a feeling of character specific to that building?

P5: It usually does. Some entrances are narrow, some are large. This changes the character of the building in our mind. For example, there are revolving staircases in many buildings, I hate those buildings. They tire me psychologically.

Are there any places that you enjoy going in your daily life?

P5: Actually that depends on how well you know the place and how well informed about it you are. For example, I know AFM very well. I am comfortable there. The more I know, the better it is for me.

Similarly, are there areas that make you feel uncomfortable and uneasy when you are in them?

P5: Places that are set on totally empty areas are harder for me, such as shopping malls.

B.8. IN-DEPTH INTERVIEW WITH P5 IN TURKISH

Mimarlığı ve mimari bir yapıyı nasıl tanımlarsın?

P5: İlk olarak ne kadar geniş ya da dar olduğuna dikkat ediyorum, bunu da duvarlardan ve var olan yankıdan hissedebiliyorsun, daha sonra dikkat ettiğim şeyler içinde eşyaların olup olmadığı, varsa nasıl dizayn edilmiş, ortada sehpa var mı yok mu gibi şeylerdir.

Mekanı kendi açınızdan nasıl tanımlarsınız?

P5: Aklıma Akmerkez ya da metro istasyonları gibi kapalı, geniş ve büyükçe mekanlar geldi. Bunun yanında bir evi de düşünebiliyorum.

Bir mekanla ilgili beklentileriniz nelerdir?

P5: Rahat dolaşabilmek benim için önemlidir. Her yerde eşya varsa önüme çıkan şeyler beni rahatsız ediyor. Koku da önemli bir nokta aslında, bulunduğum mekanın temiz olup olmadığını anlayabilmem için, rutubet kokmamalı girdiğim bir alan.

Gündelik hayatta en çok vakit geçirdiğiniz mekanlar nelerdir?

P5: Daha çok işyerinde bulunuyorum.

İşyeriniz nasıl bir yer, tarif edebilir misiniz?

P5: Üç odadan oluşuyor. Biri laboratuvar. Laboratuvar biraz dar bir kısım çünkü kabinler ve bilgisayarlar var. Girince biraz basık hissettiriyor. Uzun bir koridor, koridorun sol tarafında kayıt kabinleri, sağ tarafında bilgisayar laboratuvarımız var. Benim çalışma odam diğerlerine göre daha büyük ve daha geniş bir oda. Ortada yuvarlak bir toplantı masamız var. Çalışma odam bana daha ferah geliyor. Çünkü içinde bana kalan bir alan var.

Kendi yaşadığınız mekanın organizasyonunu nasıl yapıyorsunuz?

P5: Evimde ortaya sehpa koymamayı tercih ederim. Sürekli önüme bir şeyler çıkması rahatsız edici olabiliyor, bir şeylerin etrafından dolaşma psikolojisiyle yaşamak istemem.

Geniş mekanları mı tercih edersiniz, koridor sistemini mi?

P5: Benim için bu mekana bağlı bir şey. Örneğin bu mekan ev ise geniş alanlar daha iyidir. Ama bir alışveriş merkezinde genişlik çok iyi değil çünkü önünüz daima açık olduğunda, nereye gideceğinizi şaşırıp, kayboluyorsunuz. Sanki her taraf birbirine benziyormuş, cadde ortasındaymış gibi hissettiriyor. En azından takip edebileceğim bir koridor veya bir ara olsa çok daha faydalı olur. Yarı açık mekanları seviyorum çünkü daha ferah.

Yarı açık deyince, üstü açık, yanları kapalı mekanları mı yoksa yanları açık, üstü kapalı mekanları mı tercih edersiniz?

P5: Üstü açık, yanları kapalı mekanlar benim için daha iyidir. Çünkü takip edebileceğim duvarları var demektir.

Ses ve yankı üzerinden konuşacak olursak, özel olarak fark ettiğiniz ve sesi daha iyi yansıttığını düşündüğünüz mekanlar var mı?

P5: Beton bir ortamda olduğumda sesi daha çok fark ediyorum ve bastonumu yere vurduğumda, çıkardığı sesten dolayı, takip edeceğim yerleri daha kolay kavrayabiliyorum. Camileri ele alacak olursak, orada sesi tam olarak algılayabileceğimi sanmıyorum. Yüksek bir mekan olduğu için sesin çoğu yok olacak. Yerleri de halılarla kaplı. Böyle yerlerde bastonumun sesini duyamadığım için onu kullanamıyorum.

Alışveriş merkezlerinde de bu seslerin bana faydası olmuyor. Çünkü kalabalık ve uğultu bu sesleri yutuyor. Bu tür yerlerde, elimden geldiğince bir kenara yanaşıp oradan ilerliyorum ve kafamda bir harita oluşturmaya çalışıyorum, şu kadar git ve oradan sola dön gibi, bu harita da mekanın duyuluşuyla oluşuyor.

Bir binanın girişi size o binaya ait bir karakter hissettiriyor mu?

P5: Çoğu zaman hissettirir. Bazı girişler dardır bazıları geniş. Bu zihninizdeki binanın karakterini değiştiriyor. Mesela çoğu binalarda dönen merdivenler var, o binalardan nefret ederim. Psikolojik olarak yoruyor beni.

Gündelik hayatınızda gitmekten hoşlandığınız bir mekan ya da mekanlar var mı?

P5: Aslında bu mekanı ne kadar bilip, oraya ne kadar hakim olduğunuza bağlı. Mesela AFM'yi çok iyi biliyorum. Orada daha rahat oluyorum. Ne kadar bilirsem o kadar iyi benim için.

Aynı şekilde içinde bulunduğunuzda sizi rahatsız ve huzursuz eden alanlar var mı?

P5: Tamamen boş bir alana kurulmuş mekanlar benim için daha zor. Alışveriş merkezleri gibi.

B.9. IN-DEPTH INTERVIEW WITH P6

How do you define architecture and architectural space?

P6: When I think of architecture, I don't think of a house or a room, instead I think of stairs, big malls, airports, shopping malls, churches, mosque minarets, etc, large based, high structures. "Width" and "height" notions come to mind. When I go into a shopping mall, that area needs to be open and "spacious" to some extent. If I give an example, I love Meydan and Kanyon shopping malls, but I don't like Akmerkez at all. I feel those are more paid attention to. The fact that there's a street style in shops makes me think that the place is well thought.

The first thing that comes to my mind when I enter a place is usually, "how would it be more spacious if we changed this with that?" During my first visit to a place the first thing I prefer to do is to go to the lowest and highest floors. I like the sense of height, depth on the top floors and I feel the weight of the upper floors when I am at the bottom floor. It could be a sense of gallery space, but I can't define it exactly. When I first go into a closed space, the first thing I pay attention to is where everything is located. I want to make space from things. I want net areas. I have such thoughts for small and large spaces. I think book stores and CD stores are untidy. It's important to efficiently use spaces, makes it harder for me to warm up to a place, I don't feel a sense of belonging.
I don't like corners. I like turns inside spaces. I like areas with surprises, like rooms inside rooms.
Smell gives an idea of the ambiance; I think about the smell of the city, the house, the restaurant, I try to guess the place from the smells. "How does a city smell?", when I depart the airport I pay attention and try to form thoughts about the city. I don't know if they are true, but there are things I create in my mind. I can guess the color of the sofas in houses I go into, I think it gives an idea. Actually I have no notion of color. I can learn

colors only with my color detector, and I judge based on what those colors make me feel. Dark red and black define crowdedness for me. The color of Istiklal street feels grey to me. I have never seen light, so I have no concept of light. White feels bright and smooth, pink, purple, lilac feel refreshing like the wind from the sea when sitting on the seaside. Black feels like a rough area.

In short, I can say that width, spaciousness, height, area covered, effective use and the places being open for explanation and full of meaningful surprises are my criteria for evaluation and satisfaction.

Are there things that you take as a reference, that change your perception with design elements and place elements?

P6: I find designs with bridges and pathways successful. It affects me to have stairs, bridges, pathways in intermediary areas and unexpectedly passing through them into other areas. I feel a sense of intelligence in such design styles. Having ramps be a part of a place, not used as functionally only, this makes me excited and makes the experience valuable.
I think architecture is what makes me belong to an area. The texture, smell of the building and my evaluation of the interior are what I use to determine whether I like it.
Comfort is as important in choosing the place I live in as it is when choosing a pair of shoes. I want to be able to achieve that comfort. Shoes are like the houses of our feet. Usability, comfort, functionality are all very important in the house I live in.

When I enter and experience a place, I wonder who made it. When I leave the place I think about what I felt and what is left lingering behind.

I don't like carpeted but large spaces, but I don't like houses that don't have carpets. It's completely to do with acoustics. The smell, the feeling of my foot on the floor, the sound of the chandelier on the ceiling, the feelings I get from the material, I can call this the energy of the space, I can feel the size of the building and also these help me feel the seriousness of the place.

If there are objects hanging on the ceiling or the wall, they change the echo of the place and take away from the core of the space and distort the specialness, which disturbs me. These objects that are added afterwards make the place feel stuffed. I don't feel secure, I feel constantly like I will run into things and fall over. The design of the place should be rich, it should have surprises, I don't think things should be tried to be captured with the objects inside. It should be full of surprises, but there should be a meaning, a locational richness.

I think when you go into a place, you shouldn't think about how you'll get out, this is to do with the sense of freedom. For example the shopping malls of Akmerkez, Cevahir, Capitol are disturbing in regards to this. It's as if the architect tried to do something but got bored after a while and neglected these. It doesn't have to do with the places being narrow or large. I feel some narrow places are spacious. Also places that are closed with walls but are open are also spacious but walls alone don't define confinement, the organization inside and the way furniture is places makes you feel the confinement and the crowdedness.

You answered all my questions before I needed to ask, finally are there other characteristics that give you a sense of spaciousness?

P6: The trees make me feel this, their smell. Water and the sound of water in an unexpected spot in a place. I can say this makes even a narrow area feel spacious. Therefore I think water is neglected largely in architecture. But I'm not talking about the fountain and the water that increases the noise in a place. But the trees inside the building, on the margins don't feel nice to me. Like I said before, they take up space and that of course changes the quality of the place. However, the trees outside, on the side of the road feel good.

B.10. IN-DEPTH INTERVIEW WITH P6 IN TURKISH

Mimarlığı ve mimari bir yapıyı nasıl tanımlarsın?

P6: Mimarlık denilince benim aklıma hiç "ev, oda…" gelmiyor, bunun yerine merdivenler, büyük çarşılar, hava limanları, alışveriş merkezleri, kilise, cami minaresi vb. gibi geniş

tabanlı ve yüksek yapılar geliyor. "Genişlik" ve "yükseklik" kavramları geliyor. Alışveriş merkezine girdiğimde, o alanın ne ölçüde açık ve "ferah" olması gerekiyor. Bunları örnekliyecek olursam; Meydan, Kanyon alışveriş merkezine bayılıyorum ancak Akmerkez'i hiç sevmiyorum. Onlar üzerinde daha bir özen gösterilmiş gibi hissediyorum. Sokak anlayışının çarşı gibi olması, mekan üzerine düşünülmüş, kafa yorulmuş gibi düşündürüyor.

Bir mekana girdiğim zaman ilk aklıma gelen, "şunun yerini neyle değiştirseydik daha ferah olurdu?" oluyor genelde. İlk gittiğim bir yerde ilk önce, En alt katlara ve üst katlara gitmeyi tercih ederim. Sebebini de en üstte olmanın verdiği o yükseklik, derinlik hissini, alt kattaydayken de üst katların ağırlığını, yükünü hissediyorum. Galeri boşluğu hissi olabilir ancak tam olarak da tanımlayamıyorum. Kapalı alana girdiğimde dikkat ettiğim şey neyin nerede durduğu oluyor, bir şeyin kapladığı yerden hep yerden kazanmak istiyorum. Net alanlar kalsın istiyorum. Küçük alanlar için de, büyük alanlar içinde böyle düşüncelerim var. Kitap ve Cdcilerin çok dağınık yerleştirildiğini düşünüyorum. Alanları düzgün kullanmak önemli, mekana ısınmamı engelliyor, aidiyet duygusu hissetmiyorum.

Köşeliliği sevmiyorum, Mekanlar içindeki dönüşleri seviyorum. İç içe geçmiş, oda içinde odalar gibi sürprizli mekanları seviyorum.

Mesela, koku, ambiansla ilgili bir fikir verir; şehrin, evin, restoranın kokusu gibi şeyler üzerinde düşünürüm, mekanı tahmin etmeye çalışırım duyduğum kokulardan. "Bir şehrin kokusu nasıl olur?", hava alanından indiğimde dahi dikkat ediyorum şehirle ilgili fikir yürütmeye çalışıyorum. Doğru olup olmadığını bilmiyorum ama kafamda canlandırdığı bazı şeyler oluyor. Girdiğim evdeki kokudan da koltukların renklerini tahmin edebiliyor, fikir verdiğini düşünüyorum. Aslında renk kavramım yok. Sadece renk dedektörüm ile renkleri öğrenebiliyorum ve bu renklerin bana ne hissettirdiğine göre değerlendirme yapıyorum. Bordo, siyah bana kalabalıklığı anlatıyor. İstiklal caddesinin rengi hep bana gri rengi çağrıştırıyor. Hiç ışığı görmedim ben, dolayısıyla ışık kavramım da yok. Beyaz bana pırıl pırıl, pürüzsüz geliyor, pembe, mor, eflatun; sahilde oturunca yüzümüze esen rüzgar gibi ferahlık hissi veriyor. Pürüzlü bir alan gibi geliyor siyah.

Özetle; genişlik ve ferahlık, yükseklik, kapladığı alan, effektif kullanma, mekanların keşfetmeye açık, anlamlı süprizlerin olması mekanı değerlendirme ve memnun olma kriterlerim diyebilirim.

Tasarım öğeleriyle, mekanın öğeleriyle senin algını değiştiren, referans aldığın şeyler var mı?

P6: Köprü ve geçitlerin olduğu tasarımları başarılı buluyorum. Hiç düşünmediğim bir yerde, ara mekanlarda merdiven, köprü, geçitler olup başka bir mekana geçilmesi beni etkiliyor, bu tarzda tasarımlarda bana zeka pırıltısı varmış gibi geliyor. Rampaların mekanın bir parçası olması ve sadece fonksiyon olarak kullanılmaması beni deneyimlemek için heyecanlandırıyor, değerli kılıyor.

Benim bir yere ait olmamı sağlayan şey bence mimarlık denilen şey. Mekanın dokusu, kokusu, iç mekanını değerlendirerek, mekanı sevip sevmediğime karar veriyorum çünkü. Konfor, rahatlık ayakkabı tercih ederken ne kadar önemliyse, yaşadığım mekanda da o rahatı, konforu yakalamak istiyorum. Ayakkabı da ayağımızın evi gibi sanki zaten. Yaşadığım evde de kullanabilirlik, konfor, fonksiyona uygunluk çok önemli.

Mekana girdiğim ve tecrübe ettiğim zaman, binayı kimin yaptığını da merak ediyorum. Mekandan çıktıktan sonra da hissettiklerim ve bende bıraktığı hisleri de düşünüyorum.
Halılı ama geniş mekanları sevmiyorum ama halısız evleri sevmiyorum. Tam anlamıyla akustik ile alakalı bir şey. Koku, ayağımın yere basmasıyla bana verdiği his, tavanda asılan avizenin sesi, malzemenin hissettirdiği hisler, mekanın enerjisi diyebilirim buna, mekanın büyüklüğü ve küçüklüğünü hissedebiliyorum ve bunlar aynı zamanda bana mekanın ciddiyetini de farkettiriyor.

Duvarda, tavanda asılı objeler varsa mekanın yankısını değiştiriyor ve mekanın özünden uzaklaştırıyor ve özelliğini bozuyor gibi beni rahatsız ediyor. Sonradan eklenen bu objeler mekanı tıkış tıkış hissettirmeye başlıyor. Kendimi güvenli hissetmiyorum, sürekli bir yerlere çarpıcakmışım ve devrilicekmiş gibi hissediyorum. Mekanın tasarımı zengin olmalı, mekanın kendisi süprizli olmalı, içindeki eşyalarla birşeler yakalanmaya

başlanmamalı bence. İçi süprizlerle dolu olsun ama vardığım yerlerde bir anlam olsun, mekansal zenginlik olsun.

Bir yere girdiğin zaman nasıl çıkıcağını düşünmemelisin bence, bu özgürlük hissiyle alakalı diyebilirim. Mesela Akmerkez, Cevahir ve Capital alışveriş merkezi beni bu konuda çok rahatsız ediyor. Sanki mimar birşeyler yapmaya çalışmış ama bir dakikadan sonra sıkılmış ve bunları atlamaış diye düşünüyorum. Mekanların dar ve ya geniş olmasıyla alakalı bir durum da değil. Bazı dar mekanların çok ferah olduğunu hissedebiliyorum. Duvarlarla kapalı ama kendi açık mekanlar da ferah mesela ama tabi kapalılığı sadece duvarlar ifade etmiyor, mekan içindeki düzenleme ve eşyaların yeri, o kapalılığı ve sıkışıklığı hissettiriyor.

Sorularımı sormama gerek kalmadan hepsine cevap verdin, son olarak, sana ferahlık hissi veren başka özellikler var mı?

P6: Ağaçlar bana iyi hissettiriyor, kokusu. Bir mekanın içinde cok beklenmedik bir yerde su ve bu suyun sesi. Çok dar bir alanı bile çok ferah hissettiriyor diyebilirim. Dolayısıyla suyun mimaride çok ihmal edildiğini düşünüyorum. Ama Akmerkezdeki fıskiyeden, mekanın gürültüsünü arttıran birşey olarak tasarlanan sudan bahsetmiyorum. Ama binanın içinde kenarlarında bulunan ağaçlar bana hiç hoş gelmiyor. Daha önce de dediğim gibi yeri işgal ediyor ve mekanın kalitesini değiştiriyor gibi. Ancak dış mekanda, yolun kenarındaki dizilmiş ağaçlar güzel hissettiriyor.

B.11. IN-DEPTH INTERVIEW WITH P7

How do you define architecture and architectural structure?

P7: How a structure is designed, including visuality, for example if we are considering a big area, shopping malls, it's important to use this area efficiently for the seeing and the blind.

How do you tell apart comfortable and uncomfortable spaces?

P7: If it has acoustics that may hinder perceptions, I can tap my stick on the floor and may be directed based on the reflection from the wall, but if echo comes from every direction, sounds get mixed up. I could call that bad acoustics. I can detect the column or the wall around me based on the echo reflecting from the wall when I tap my stick. If the echo comes from all directions, I have a hard time finding my way. I think a well-designed place needs to have good acoustics; there shouldn't be things I can't understand the echo of as walk. If there are objects I can't detect with my stick, I might hit my head. If there are objects shorter than me, this is not a good structure for me. I can't detect head-height objects with my stick. For example, if they hadn't told me to duck my head at the restaurant under Şehzade mosque, I would have hit my head on the door. I don't like such places. I also don't like places that have a high threshold.

Can you think of anything that causes bad echo in a building?

P7: Wall coverings may prevent echo, wood reduces echo, for example in CRR there are fabric-like things on the wall. But it shouldn't be overdone. For example in Boğaziçi, there were things like egg cardboards on the walls of the reading room, which is too much; it swallows up the whole sound. Such a covering destroys the echo that we need, therefore maybe wood is the most reasonable, and neither totally mutes the sound, nor causes echo pollution.

Between places with and without lights, is there a difference when you can't feel the light well?

P7: Maybe if sun's hitting that place, it might change the circulation there by warming it up. It doesn't affect me whether it's lit up or not. In fact, when the lights went off in university, I directed my friends.

Can you make a connection between tactile senses and a place?

P7: When I touch the walls, I can guess whether it's a nice place or whether it's clean or dirty.

Are there materials you particularly like or dislike?

P7: I like plaster, marble, and granite; even if I can't see them I can sense them. I like flat coverings, but slipperiness when wet might cause a problem. Aside from that, finding a metal surface on the floor with my stick helps me find my way, even if it's not made for that purpose.

How does your first perception occur when you first enter a place?

P7: I understand from the reflections I get from the noise whether it's vast or whether the ceiling is high. The acoustics in places with high ceilings is usually good. Or I understand with the help of echo by tapping the stick. Acoustics, conversations, stick taps give a sense of size, crowdedness, presence of furniture. For example, it could be a big area, a store, the sounds come from the deep but there's no echo, it means it's a big area with a lot of furniture. When you go into a building, if the sound first gets from the wall the echo is better, especially in open areas.

What's the difference between covered all around, open on top and covered on top open all around?

P7: It's more comfortable if it's open on top and covered all around because you can get reflections from the wall with the stick. But if the top is closed and the sides are open, you don't know which way you are walking to. If there are no definitions around, there's nothing to reflect the sound. When you walk in a courtyard, you perceive the walls, so there is something. For the visually impaired the noise around is very important. For example in university there was a helipad and it's a place I always walk past but one day I got caught just as it was taking off. I found myself on the grass. There's something called echolocation, sound influences that.

What directs you in large open places?

P7: Shopping malls are the worst example. I can't go anywhere without asking directions. You can't understand anything from the noise and the echo. There are a lot of noises and a lot of movement. It's easier to move there when there's no noise, because then you get a reflection.

What are the common qualities of spaces whose echo you especially like? I ask because you always talk about sound.

P7: For example, places with a high ceiling are good. A very low ceiling is not good, because the reflection comes first from the ceiling, you can't tell the walls. If there's another hallway you pass by as you walk, the echo coming from there is a separate director. Places with a lot of columns are also misleading. You feel like you have come to a wall. Manhole covers or trees may be determiners. You say for example, after I get to that manhole cover, I should turn or the sound of the trees' leaves give a direction.

Does green affect sound?

P7: Trees do. A tree with not so high branches covers you and provides shade, it changes the echo. Grass fields also offer direction when walking; you can align the stick on the side and walk away. In school on my way to the dormitory, when my head touches the branch of the tree, I know I am where I need to turn.

Is smell a determinant in space?

P7: This is how I can tell it apart: if a place is new, it has an air of a construction. Sometimes when I can't find the stairs at work, I noticed that smell increases when I am passing by the stairs. Smell is effective, but not as much as sound echoes, because that's more specific. For example, when you're walking on a street and you smell pastry, you say there's a bakery here.

Can you describe the space you spend the most time in?

P7: When I go to my place of work, there're 3-4 steps down. There used to be a doormat that showed me the place of the door, but it's been removed. And then there're stiles for students, they pass with their cards. I take the stairs because it's on a lower floor. Then there's another step, sometimes I forget that. When I get there I step right off. And then there's a hallway, an echo comes from there because the doors to the classrooms are open.

What's it like, is it specious, is it suppressing? How do you define it?

P7: For speciousness you shouldn't have narrow hallways. The ceilings should be a certain height. Not too narrow or too large. For example, hallways only two people can walk in are boring for me, three-four people should be able to walk. The ceiling should not be too low, lowness bothers me. The floor should not be uneven.

Finally, the spaces that make you comfortable and those that make you uncomfortable?

P7: I don't like shopping malls. They are too crowded, I can't get an echo, they feel chaotic for me. There're no determinants, it's a monotonous floor. I can more or less guess the shape of Akmerkez and Metrocity. I don't like shopping malls. I like Boğaziçi University campus very much.

Probably due to accessibility?

P7: Yes, it can be learned. It's hard when you go outside.
I guess you say that because you know the campus, any outside the campus?

P7: I like İstiklal. For example, you get the sound of music. Ağa mosque, for example, has a different echo because it has a wall. That place is different than others. The track change on the tracks let me know I'm on the Square.

It's interesting that walls and stores have different reflections.

P7: For example stores give sound from the inside. There's a space in the entrance of some stores. That is different than others. The stick echo there is different. I like the entrance of the Fitaş cinemas. It's spacious, has a good echo, although it's crowded I can get an echo.

B.12. IN-DEPTH INTERVIEW WITH P7 IN TURKISH

Mimarlığı ve mimari bir yapıyı nasıl tanımlarsın?

P7: Bir yapının nasıl dizayn edildiği, görselliği de dahil tabi, mesela büyük bir alan düşünürsek, örneğin alışveriş merkezleri, bu alanın en elverişli biçimde kullanılması önemlidir görenler ve körler arasında.

İyi ve kötü mekanı nasıl ayırt ediyorsunuz?

P7: Algıları önleyecek akustiği varsa, baston vurarak karşıdaki duvardan yansımaya göre bir yere yönelebilirim, ama yankı her yönden olunca sesler karışıyor, buna bozuk akustik diyebilirim. Bastonu vurunca karşıdaki duvardan gelen yankıya göre çevremdeki sütunu, duvarı fark edebiliyorum. Yankı her yerden olunca yönümü bulmakta zorlanıyorum. İyi tasarlanmış mekanın bana göre iyi akustiği olmalı, yürürken yankısını anlayamayacağım şeyler olmamalı. Bastonumla anlayamayacağım nesneler varsa kafamı vururum.

Boyumdan daha alçak nesneler varsa bu yapı benim için iyi değildir. Baş hizasındaki nesneleri bastonla algılayamam. Örneğin Şehzade camisinin altındaki restoranda başını eğ demeselerdi, kafamı kirişe çarpacaktım. Böyle yerleri sevmiyorum. Çok yüksek eşikleri olan yerleri de sevmiyorum.

Bina içinde kötü yankıya sebep olarak aklınıza gelen bir şey var mı?

P7: Duvar kaplamaları yankı önleyebilir, ahşap yankıyı azaltıyor, duvarlarda bez gibi şeyler var mesela CRR'de… Ama tabi o da aşırıya kaçmamalı. Mesela Boğaziçi'nde okuma odasında duvarda yumurta kabı gibi şeyler vardı, o da aşırı, bütün sesi yutuyor. O

tip bir kaplama alınması gereken yankıyı yok ediyor, o yüzden ahşap belki en mantıklısı, ne sesi tamamen yutuyor, ne de yankı kirliliğine neden oluyor.

Cam cephe yankısı nasıl sizce?

P7: Ben camı betondan ayıramıyorum yankı bakımından. Ama çok az ışık algım var, o sayede cam mı beton mu anlayabilirim.

Işıklı mekanlarla ışıksız mekanlar arasında, ışığı çok hissedemediğiniz zaman bir farklılık oluyor mu?

P7: Belki oraya güneş vuruyorsa, havayı ısıtarak oradaki sirkülasyonu değiştirebilir. Onun dışında ışıklı ya da ışıksız olması beni etkilemez. Hatta üniversitede elektrik kesilmişti, arkadaşları ben yönlendirdim.

Dokunsal şeylerle mekan arasında ilişki kurabiliyor musunuz?

P7: Duvarlara dokununca şık bir mekan mı, temiz mi pis mi öngörülerinde bulunabiliyorum.

Özel olarak sevdiğiniz ve sevmediğiniz malzemeler var mı?

P7: Sıva, mermer, granit hoşuma gidiyor, her ne kadar göremesem de algılayabiliyorum. Kaplama olarak düz olanı severim, ama ıslakken kayganlık sorun olabiliyor. Onun dışında, bazen bastonla yerde değişik metal bir yüzey bulmak, yolumu bulmada faydalı oluyor, o amaçla yapılmamış da olsa.

Mekana girerken ilk algı nasıl oluşuyor?

P7: Gürültülerden aldığım yansımalarla geniş mi, ya da tavanı yüksek mi anlarım. Tavanı yüksek yerlerin akustiği iyi oluyor genelde. Ya da bastonu vurarak yankılar yardımıyla algılıyorum. Akustik, konuşmalar, baston vuruşları mekanın büyüklüğü, kalabalıklığı, ne kadar eşya olduğu hakkında fikir veriyor. Mesela büyük bir yer, mağaza olabilir, sesler

derinden geliyor ama yankı yok, bu çok eşyalı büyük bir mekan demek. Bir binaya girerken ses önce duvardan geliyorsa eko daha iyi oluyor, özellikle açık mekanlarda.

Çevresi kapalı üstü açık, çevresi açık üstü kapalı farkı nedir?

P7: Üstü açık çevresi kapalı daha konforlu, çünkü bastonla duvarlardan yansıma alabiliyorsun. Ama üstü kapalı yanları açık olursa ne tarafa yürüdüğünü bilemiyorsun. Eğer belirleyici bir şey yoksa etrafta, sesi geri yansıtacak bir şey yok. Avluda yürürken duvarı anlıyorsun, demek ki bir şey var. Görme engelli için çevresindeki gürültü çok önemlidir. Mesela üniversitede helikopter pisti vardı, sürekli yürüdüğüm bir yer ama tam havalanırken yakalandım. Kendimi çimlere yuvarlanmış buldum. Ecolocation diye bir olay var, ses bunu etkiliyor.

Geniş açıklıklı yerlerde sizi yönlendiren ne oluyor?

P7: En kötü örnek alışveriş merkezi. Yol sormadan gidemiyorum. İnsanların gürültüsünden yankı da alamıyorsunuz. Bir sürü ses ve sürekli hareket. Oralarda hareket etmek gürültü olmadığı zaman daha kolay, çünkü yansıma geliyor.

Özel olarak yankısını beğendiğiniz mekanların ortak özellikleri neler? Sürekli sesten bahsettiğiniz için soruyorum.

P7: Mesela tavanı biraz yüksek yerler iyi oluyor. Aşırı alçak tavan iyi değil, çünkü yansıma önce tavandan geliyor, duvarlar anlaşılmıyor. Yürürken yanından geçilen ayrı bir koridor varsa, oradan gelen yankı farkı yönlendirici oluyor. Aşırı sütunlu yerler yanıltıcı olur. Duvara geldim zannedersiniz. Bazı sesleri de kırıyor. Mazgal kapakları ya da ağaçlar da belirleyici olabiliyor. Buna kadar gittikten sonra dönmeliyim diyorsunuz mesela ya da ağaçların yapraklarının sesi yönlendirici olabiliyor.

Yeşilin sese etkisi var mı?

P7: Ağacın oluyor. Dalları çok yüksek olmayan bir ağaç, üstünü örtüyor, gölge veriyor, yankıyı değiştiriyor. Yürürken çim alan yönelim de sağlar, bastonu kenarına hizalayıp

gidebilirsiniz. Okulda yurda giderken ağacın dalına kafam değdiği an, döneceğim yere geldiğimi anlıyorum.

Koku ile aranız nasıl? Mekanda belirleyici oluyor mu sizce?

P7: Şöyle ayırt edebiliyorum: Bir mekan yeni ise yeni inşaat havası veriyor. Bazen işyerinde merdiveni bulamayınca, fark ettim ki merdiveni geçerken koku artıyor. Koku da etkili ama ses yansımaları kadar değil, çünkü o daha spesifik. Mesela bir caddede yürürken poğaça kokusu gelince, burada bir pastane var diyorsun.

En fazla vakit geçirdiğiniz yapıyı tarif edebilir misiniz?

P7: İşyerime gidince, girişte 3-4 basamak iniş var. Paspas vardı, bana kapının yerini gösteriyordu, ama kaldırmışlar. Sonra işte turnikeler falan var öğrenciler için, kartlarını basıp girip çıkıyorlar. Alt katta olduğu için basamaklardan iniyorum. Sonra bir basamak daha var, bazen onu unutuyorum. Birden iniyorum oraya gelince. Daha sonra bir koridor, sınıfların kapısı açık olduğu için oradan bir yankı geliyor.

Nasıl bir yer, ferah mı, basık mı? Nasıl tanımlarsınız?

P7: Ferahlık için çok dar koridor olmamalı. Tavanları belirli yükseklikte olmalı. Çok dar ya da geniş değil. Mesela iki insanın yürüyebileceği koridorlar bana sıkıcı gelir, üç-dört kişi yürüyebilmeli. Tavan da çok alçak olmamalı, basıklık beni rahatsız eder. Zemin kırık dökük olmamalı.

Son olarak sevdiğiniz ve rahatsız olduğunuz mekanlar?

P7: Alışveriş merkezlerini hiç sevmem. Çok kalabalık, bir yankı alamıyorum, çok karmaşık geliyor bana. Belirleyici bir şey de çok yok, tekdüze giden bir zemin. Akmerkez ve Metrocity'nin şeklini az çok tahmin edebiliyorum. Alışveriş merkezlerini sevmiyorum. Boğaziçi Üniversitesi kampüsünü çok severim.

Erişilebilirlikten herhalde?

P7: Evet, öğrenilebiliyor. Dışarıya çıkınca zor geliyor.

Kampüsü tanıdığınız için söylediniz sanırım, kampus haricinde var mı?

P7: İstiklali seviyorum. Mesela bir müzik sesi gelir. Ağa camii mesela, duvar olduğu için yankısı farklıdır. Orası diğer yerlerden farklıdır. Raylardaki makas değişimi meydana geldiğimi anlatır.

Duvar ve dükkanların farklı yansıması olması ilginç.

P7: Mesela mağazalar içeriden ses verir. Bazı mağazaların girişte bir boşluğu vardır. O da farklı olur diğerlerinden. Oralardaki baston yankısı da farklıdır. Fitaş sinemalarının girişi de hoşuma gider. Ferah, yankısı güzel, kalabalık olmasına rağmen yankı alabiliyorum.

APPENDIX C: QUESTIONNAIRE FORM

Table C.1. Questionnaire form for totally blind participants

YEDITEPE UNIVERSITY **INSTITUDE OF SCIENCE AND ENGINEERING** **DEPARTMENT OF ARCHITECTURE** **MASTER PROGRAMME**
EFFECTS OF VISUAL AND NONVISUAL SPACE EXPERIENCES IN ARCHITECTURAL PLEASURABILITY EVALUATION QUESTIONNAIRE
Participant: Date: Location:
Is this space pleasant or unpleasant? Could you please put in order properties of the space that affect your decision?

Table C.1. Questionnaire form for totally blind participants (Continue)

Evaluation for Question 1 to 6 is as below; **1. Not pleasurable** **2. Pleasurable** **3. Very pleasurable**			
1. Could you evaluate the pleasurability of height of the space?	1	2	3
2. Could you evaluate the pleasurability of width of the space?	1	2	3
3. Could you evaluate the pleasurability of air and ventilation in the space?	1	2	3
4. Could you evaluate the pleasurability of sound in the space?	1	2	3
5. Could you evaluate the pleasurability of surfaces of the space?	1	2	3
6. Could you evaluate the pleasurability of odor in the space?	1	2	3
Evaluation for Question 7 to 15 is as below; **1. Affect in a negative way** **2. Do not affect** **3. Affect in a positive way**			
7. Could you evaluate the effect of aural experiences on pleasurability of space height?	1	2	3
8. Could you evaluate the effect of haptic experiences on pleasurability of space height?	1	2	3
9. Could you evaluate the effect of olfactive experiences on pleasurability of space height?	1	2	3
10. Could you evaluate the effect of aural experiences on pleasurability of space width?	1	2	3
11. Could you evaluate the effect of haptic experiences on pleasurability of space width?	1	2	3
12. Could you evaluate the effect of olfactive experiences on pleasurability of space width?	1	2	3

Table C.1. Questionnaire form for totally blind participants (Continue)

13. Could you evaluate the effect of aural experiences on pleasurability of air and ventilation in the space?	1	2	3
14. Could you evaluate the effect of haptic experiences in pleasurability of air and ventilation in the space?	1	2	3
15. Could you evaluate the effect of olfactive experiences in pleasurability of air and ventilation in the space?	1	2	3

Table C.2. Questionnaire form for sighted participants

| **YEDITEPE UNIVERSITY** |
| **INSTITUTE OF SCIENCE AND ENGINEERING** |
| **DEPARTMENT OF ARCHITECTURE** |
| **MASTER PROGRAMME** |
| EFFECTS OF VISUAL AND NONVISUAL SPACE EXPERIENCES IN ARCHITECTURAL PLEASURABILITY EVALUATION QUESTIONNAIRE |
| Date:

Location: |
| Is this space pleasant or unpleasant?
Could you please put in order properties of the space that affect your decision? |

Table C.2. Questionnaire form for sighted participants (Continue)

Evaluation for Question 1 to 7 is as below; **1. Not pleasurable** **2. Pleasurable** **3. Very pleasurable**			
1. Could you evaluate the pleasurability of height of the space?	1	2	3
2. Could you evaluate the pleasurability of width of the space?	1	2	3
3. Could you evaluate the pleasurability of air and ventilation in the space?	1	2	3
4. Could you evaluate the pleasurability of sound in the space?	1	2	3
5. Could you evaluate the pleasurability of surfaces of the space?	1	2	3
6. Could you evaluate the pleasurability of odor in the space?	1	2	3
7. Could you evaluate the pleasurability of visual properties of the space?	1	2	3
Evaluation for Question 8 to 19 is as below; **1. Affect in a negative way** **2. Do not affect** **3. Affect in a positive way**			
8. Could you evaluate the effect of visual experiences on pleasurability of space height?	1	2	3
9. Could you evaluate the effect of aural experiences on pleasurability of space height?	1	2	3
10. Could you evaluate the effect of haptic experiences on pleasurability of space height?	1	2	3
11. Could you evaluate the effect of olfactive experiences on pleasurability of space height?	1	2	3
12. Could you evaluate the effect of visual experiences on pleasurability of space width?	1	2	3

Table C.2. Questionnaire form for sighted participants (Continue)

13. Could you evaluate the effect of aural experiences on pleasurability of space width?	1	2	3
14. Could you evaluate the effect of haptic experiences on pleasurability of space width?	1	2	3
15. Could you evaluate the effect of olfactive experiences on pleasurability of space width?	1	2	3
16. Could you evaluate the effect of visual experiences on pleasurability of air and ventilation in the space?	1	2	3
17. Could you evaluate the effect of aural experiences on pleasurability of air and ventilation in the space?	1	2	3
18. Could you evaluate the effect of haptic experiences in pleasurability of air and ventilation in the space?	1	2	3
19. Could you evaluate the effect of olfactive experiences in pleasurability of air and ventilation in the space?	1	2	3

APPENDIX D: RESULTS OF THE QUESTIONNAIRE

Table D.1. Results of closed-ended questions for SP

SP Closed-ended Questions Section 1		Q1	Q2	Q3	Q4	Q5	Q6	Q7	Evaluation of Section 1
ITU	1	% 0	% 0	% 0	% 0	% 25	% 0	% 0	1 for "not pleasurable"
	2	% 42	% 58	% 25	% 0	% 42	% 58	% 42	2 for "pleasurable"
	3	% 58	% 42	% 75	% 100	% 33	% 42	% 58	3 for "very pleasurable"
DSC	1	% 0	% 17	% 17	% 42	% 0	% 0	% 0	**Evaluation of Section 2**
	2	% 42	% 50	% 33	% 58	% 33	% 100	% 100	1 for "affect in a negative way"
	3	% 58	% 33	% 50	% 0	% 67	% 0	% 0	2 for "do not affect" 3 for "affect in a positive way"

SP Closed-ended Questions Section 2		Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19
ITU	1	% 0	% 0	% 0	% 0	% 0	% 0	% 0	% 0	% 33	% 0	% 0	% 0
	2	% 0	% 75	% 75	% 92	% 0	% 25	% 75	% 100	% 25	% 100	% 50	% 75
	3	% 100	% 25	% 25	% 8	% 100	% 75	% 25	% 0	% 50	% 0	% 50	% 25
DSC	1	% 0	% 17	% 0	% 0	% 0	% 8	% 0	% 0	% 9	% 0	% 0	% 0
	2	% 0	% 50	% 83	% 92	% 0	% 42	% 75	% 83	% 48	% 100	% 58	% 50
	3	% 100	% 33	% 17	% 8	% 100	% 50	% 25	% 17	% 33	% 0	% 42	% 50

Table D.2. Results of closed-ended questions for TBP

TBP Closed-endedQuestions Section 1		Q1	Q2	Q3	Q4	Q5	Q6			
ITU	1	% 0	% 0	% 0	% 0	% 0	% 0	**Evaluation of Section 1** 1 for "not pleasurable" 2 for "pleasurable" 3 for "very pleasurable"		
	2	% 33	% 8	% 0	% 0	% 42	% 33			
	3	% 67	% 92	% 100	% 100	% 58	% 67			
DSC	1	% 18	% 50	% 9	% 100	% 58	% 25	**Evaluation of Section 2** 1 for "affect in a negative way" 2 for "do not affect" 3 for "affect in a positive way"		
	2	% 58	% 25	% 33	% 0	% 42	% 58			
	3	% 25	% 25	% 58	% 0	% 0	% 17			
TBP Closed-endedQuestions Section 2		Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
ITU	1	% 0	% 0	% 0	% 0	% 0	% 0	% 0	% 0	% 0
	2	% 0	% 67	% 67	% 0	% 8	% 75	% 75	% 0	% 100
	3	% 100	% 33	% 33	% 100	% 92	% 25	% 25	% 100	% 0
DSC	1	% 50	% 0	% 8	% 33	% 0	% 8	% 0	% 0	% 17
	2	% 17	% 92	% 75	% 0	% 58	% 84	% 100	% 0	% 17
	3	% 33	% 8	% 17	% 67	% 42	% 8	% 0	% 100	% 66