



**CITY EXPLORATION THROUGH THE EYES OF THE
VISUALLY IMPAIRED**

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ABSTRACT

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Is urban space something seen, experienced, and perceived only with eyes? If we remove the sense of sight from this experience, will this experience be incomplete? Based on these questions, we will find the answer to what an urban experience would be like without the sense of sight by exploring the city together with the congenital visually impaired participant. Two researchers Henri Lefebvre and Michel de Certeau will accompany us in this study to understand the ways in which the visually impaired individual experiences the urban space. The purpose of this study is to understand the tactics developed by the visually impaired individual to reveal the other dimensions and codes of the city while navigating 4 different walking routes determined by the researcher in the city (İzmir/ Turkey). On the specified days, the participant walks each of these routes together with the researcher. Thus, both the researcher and the visually impaired person see the urban experience through the eyes of both the sighted and the visually impaired person. Moreover, the visually impaired participant is expected to verbally describe the experience. Section photos are obtained from the captured video and this section is chosen as a communication tool with the sighted and visually

impaired. At the same time, a bridge has been established between the sighted and the visually impaired with the photographs obtained from the visually impaired.

Keywords: visually impaired, daily life, city exploration, tactic, codes of the city.



ÖZET

GÖRME ENGELLİ GÖZÜNDEN KENTİN KEŞFİ

Kocabıyık, Selin

Tasarım Çalışmaları Yüksek Lisans Programı

Tez Danışmanı: Dr. Öğr. Üyesi Didem Kan Kılıç

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Kentsel mekan sadece gözle görülen, deneyimlenen ve algılanan bir şey midir? Bu deneyimden görme duyusunu çıkarırsak, bu deneyim eksik olur mu? Bu sorulardan yola çıkarak doğuştan görme engelli katılımcı ile şehri keşfederek görme duyusu olmadan bir kentsel deneyim nasıl olurdu sorusunun cevabını bulacağız. Görme engelli bireyin kentsel mekânı nasıl deneyimlediğini anlamak için bu çalışmada iki araştırmacı Henri Lefebvre ve Michel de Certeau bize eşlik edecek. Bu çalışmanın amacı, görme engelli bireyin şehirde (İzmir/Türkiye) araştırmacı tarafından belirlenen 4 farklı yürüyüş rotasında gezinirken şehrin diğer boyutlarını ve kodlarını ortaya çıkarmak için geliştirdiği taktikleri anlamaktır. Belirtilen günlerde katılımcı, araştırmacı ile birlikte bu rotaların her birini yürür. Böylece hem araştırmacı hem de görme engelli, kentsel deneyimi hem gören hem de görme engelli kişinin gözünden görmektedir. Ayrıca görme engelli katılımcının deneyimi sözlü olarak anlatması beklenir. Çekilen videodan kesit fotoğrafları elde edilir ve bu bölüm gören ve görme engellilerle iletişim aracı olarak seçilir. Aynı zamanda görme engellilerden elde edilen fotoğraflarla görenler ile görme engelliler arasında bir köprü kurulmuştur.

Anahtar Kelimeler: görme engelliler, günlük yaşam, şehir keşfi, taktik, şehrin kodları.



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CHAPTER 1: INTRODUCTION

1.1. Problem Definition

The body sees, hears, smells, feels, and tastes. Well, if we remove the sense of sight from this experience, will the experience be incomplete? In this thesis, it has been tried to explain how the visually impaired individual relates to the urban space and what the determinants of this relationship are in daily life. At the same time, we try to understand how the visually impaired individual reveals the other dimensions and codes of the space, and how he reads the city through his eyes.

Our primary question in this thesis is, is space actually something that can be seen, experienced and perceived only with the eyes? In this thesis, which is based on this question, the visually impaired individual gives the answer of an urban experience independent of the sense of sight. It tells the urban experience by building a bridge between the people who see it with the video recordings of their own verbal narratives by walking on the city routes we have determined in daily life. For this reason, Henri Lefebvre and Michel De Certeau accompanied us in this study to understand the ways in which the visually impaired individual reads and experiences the routes they walk in the urban space. With this, Kevin Lynch also participated in the discussion.

The body is part of the lived experience. It sees, hears, smells, feels, and tastes. Is it possible to read the city without the sense of sight? Or is there only one way to read the city?

To find answers to similar questions, Kan-Kılıç, Doğan (2017) Kan-Kılıç, Doğan and Duarte (2020) used different urban contexts in their studies on the wayfinding strategies of visually impaired individuals. And they concluded that the urban context in which the visually impaired person navigates can have a significant impact on their way-finding strategies. In this study, we determined 4 different urban routes and expected the visually impaired individual to walk through these routes in daily life and record this experience. Our aim is to understand how space can be produced independently of the visual sense in urban space and to accompany this experience with the eyes of the visually impaired individual.

After the camera recordings were transferred to the computer environment, the verbal data collected for each route were turned into a transcript. Verbal data were categorized according to how the visually impaired individual expresses the other dimensions and codes of the space. The determined 4 routes have been determined as

Kıbrıs Şehitleri street, the street between Kıbrıs Şehitleri street and Kordon (1476. Street), coastline (Kordon - Gündoğdu Square), Sevinç Patisserie as the last stop. The common feature of these routes is that they are in the city (outdoor) and there are many factors that he affected while wayfinding process.

The aim of this study is to investigate and analyze the wayfinding clues that the visually impaired individual uses while completing similar routes used in daily life. One of the purposes of this study is to investigate how and to what extent a visually impaired individual in daily life is injured while exploring the city. At the same time, it is to seek an answer to the question of how we experience and discover the city without the sense of sight and how we experience this in our daily life.

Moreover, this study is very important in terms of focusing on disadvantaged groups in urban life. Considering the scarcity of such studies especially in Turkey, the contribution of this study to the literature is quite high. With this, similar studies have been carried out with disadvantaged groups, generally indoors, and doing such a study in the urban space has helped to see from the eyes of the citizens.

1.2. Research Questions of the Study

We believe that, while exploring of the city can be completed without the sense of sight in our daily life. Other senses injured in the exploration of the city give clues to visually impaired individuals and they can continue their daily lives. The significance of this study is to explain that visually impaired individuals can see and recognize the city just like sighted individuals. Moreover, while doing this, it is to analyze which senses and how it receives support. Therefore, we structured the following research questions:

1. How does a visually impaired individual discover the city in daily life?
 - 1.1. What type of environment clues that impaired individual use during wayfinding process in a complex urban environment?
 - 1.2. How does a visually impaired individual use their senses while explore the city in a daily life?
 - 1.3. How do different environmental variables affect the strategies of the visually impaired in the wayfinding process in daily life?
 - 1.4. Is urban space something seen, experienced, and perceived only with eyes?
If we remove the sense of sight from this experience, will this experience be incomplete?
2. How can we increase the livability in the city walking through various routes in a

daily life with the blind participant?

2.1. How the blind participant experiences the city on foot?

2.2. Is it possible to read the city without the sense of sight? Or is there only one way to read the city?

1.3. Methodology of the Study

The congenitally blind participant is chosen for this study to analyze the discovery of the city in daily life without the sense of sight. We tried to understand how he lives in the city and how he uses which senses while wayfinding process. We defined 4 complex urban environments in İzmir, Turkey to analyze which senses are dominant in different places. The first of the 4 selected routes are Sevinç Patisserie, which is the starting point. The reason for choosing the route from Sevinç Patisserie to the end of Kıbrıs Şehitleri street is that it is crowded and narrow. In addition, many shopping centers, restaurants, cafes, and banks located on Kıbrıs Şehitleri street are one of the biggest factors in choosing this street because it is the most likely street to go to in daily life, as it accommodates many needs for any individual. The 2nd route (1476. Street) chosen after Kıbrıs Şehitleri street is a narrow street connecting the 1st and 3rd routes. The reason why we chose the coastline (Kordon-Gündoğdu Square) for our 3rd route is the obstacles that the wind can create there. It is to analyze how a visually impaired individual will explore the city in such an open and wide space and to look for aesthetics on the route. Our last route is to Sevinç Patisserie, where we arrived back at the beginning. The peculiarities of these routes are that they are all open areas, and some are crowded, and some are quieter areas.

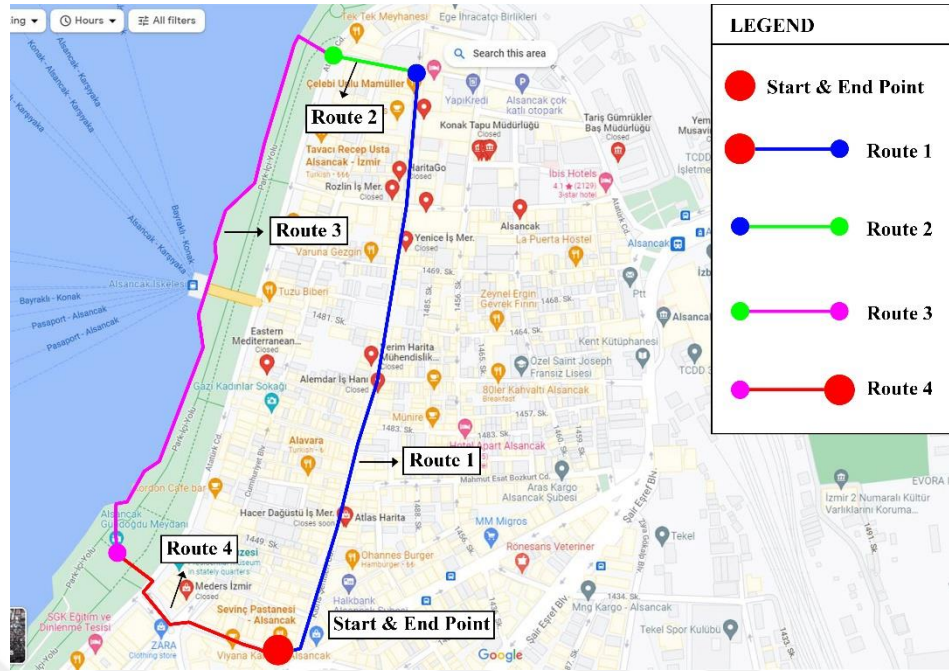


Figure 1. The selected routes in Alsancak

In Figure 1, a map located in İzmir, was showing routes that we were completed.

Before this study, verbal and written consent of the participant was obtained and the routes were completed in order. We used 2 phones, video recorder, tape and selfie stick for our study.

1.4. Structure of the Study

This thesis is composed of four chapters.

Chapter 1 is the Introduction, which discusses the purpose, research question and hypotheses, and methods of the thesis. Following the objective and methods of the study, as well as the research question and hypotheses provided in the Introduction chapter.

Chapter 2 gives insight into the literature on the role of four aspects of daily life tactics: urban experience in daily life, blind individual's urban experience in daily life, wayfinding strategies of blind participants in daily life, and senses of blind individuals during wayfinding. This literature review aimed to convey to us the tactics we use in daily life and the clues used in the exploration of the city. In addition, this chapter tried to convey how visually impaired individuals use their senses in wayfinding process.

Chapter 3 described the technique utilized in the study in to provide an understanding of how the research was carried out. It documents the work's phases, which include four field trips. The elements of the routes walked in these field investigations are explained in detail, as are the visuals.

Chapter 4 draws conclusions based on the analysis. The findings are reported, and further study directions are proposed.



CHAPTER 2: THE ROLE OF 4 ASPECTS OF DAILY LIFE TACTICS

2.1. Urban Experience In Daily Life

Space is the only way life can be freed from its captivity. It is a living, productive member of change, distinction, and shaping. Therefore, the most original approach to space entails putting aside its dead, static or immobile conceptions. Space is, in essence, something organic, lively and changeable. Not only as an abstraction but also as an abstraction of time and space, and if we make one more move, the formative nature of life itself, which creates and produces it, is very much like philosophy, literature, social sciences, positive sciences, architecture, planning and mathematics. It could not be understood in many areas.

In daily life, city and human relations are in an interactive relationship. Architecture, as a profession to increase the quality of life of people, is in a position to analyze daily life practices well. Tanyeli (2011) emphasizes the connection of architecture with daily life with the words “architectural work is a collection of daily life practices, architectural product includes daily life practices, architectural history is the history of a series of daily life practices” (Tanyeli, 2011). Lefebvre, in his work titled *The Production of Space*, brings a spatial dimension to daily life, and combines it with architecture. Lefebvre dealt with everyday life from a sociological perspective with the concepts of urbanity and space. According to him, space is a social product (Lefebvre, 2016).

The word everyday means "every day, daily" in the Dictionary of the Turkish Language Association. Everyday life, on the other hand, describes a continuous life that takes place every day. However, apart from being continuous, it has a structure that contains many features. Lefebvre (1987) defines everyday life as “a social phenomenon that occurs not only as a result of a natural phenomenon that occurs with the rising and setting of the sun, but also as a result of the interaction of this and other natural phenomena and the life of humanity on earth”. According to Certeau (2009), daily life consists of life practices such as moving, shopping, and reading, which are included in the daily time budget of the individual. Blanchot (1987) describes everyday life as “one of the hardest things to discover” (Kuru, 2015).

The human movements between private and public spaces, which are carried out for many different purposes, constitute the life of the urban space. This balanced

routine, which contains high potentials, is daily life itself. Everyday life is a situation that everyone lives but does not belong to anyone. Each life in it is special, but in the whole, it is one thing.

The concept of everyday life is an important concept that was first developed in the 1930s by the French philosopher and sociologist Henri Lefebvre and a few minutes later by his French colleague Michel de Certeau. Although they show differences in their approaches, both theorists analyze the phenomena that lie at the core of everyday rock and analyze the prevailing discourse and sanctions that aim to keep them under control. The common thought is the reality of the daily life practices of the society and the ordinary that they contain, their potential to reveal the extraordinary as well as the experienced. This approach, which puts the everyday rock in the center, is important in terms of directing critical thoughts in the field of architecture.

In Lefebvre's terms, the everyday is a product: it consists of a set of functions that connect and bring together systems that may seem different from each other. The everydayness conceptualized in this way serves as a lens for the researcher, connecting the part to the whole, the subject to the space, sheltering the ordinary and showing the extraordinary. In other words, it offers us the common ground that will enable us to see these relationships and their importance. The relationship between daily life practices and architecture examined on this ground illuminates the past, shows the interaction between the user and the space, the social production of the space and the change during this production.

In everything from a modern sofa or a coffee grinder to an automobile, the power of the form-function-structure triad read at the same time. Thus, the everyday can be defined as a set of functions that connect and bring together systems that may seem separate from each other.

Whether they realize it or not, those who occupy it carry out their work in that field of daily life practices, while thinking, designing, projecting, building, speaking, writing, visualizing, and reproducing, in academia and in the market. The first person to draw attention to the subject is Henri Lefebvre. He points out that it is possible to have a dual understanding of the field of knowledge in this framework: Science is also about discovery, but there is a daily life dimension that comes to the fore in areas such as education, training, administrative issues, and the conduct of activities.

The production of space in Lefebvre is always a social production. In this sense, every society is the production of its own space, as he states in his remarkable saying.

In other words, social space is a social production (Lefebvre, 1991).

If there is a hegemony that reveals itself as institutions and ideas, that is, the view of the upper class, the power, the powerful, then there must be knowledge that serves the power on the one hand, and information that opposes it and negates it on the other. In this sense, modern society holds oppressive and liberating forces together.

He explains the place as something to answer his call before it is read, written, or built on it. Because, according to Lefebvre (2014), the origin of space is a collection of rhythms that begin in the body. This is primarily a collection of rhythms that desire to be heard. Nature, society, or all other spheres of existence have their own rhythm, each of which comes out ceaselessly in an original harmony with the other. Therefore, it is possible to participate in the production of the space by trying to hold on to the clarity of being exposed to the call of the space and to listen to its rhythm, whose timbre we hear everywhere. This production takes place from the very beginning as our body. Because space is not a narrative created by me; it is my body. So, is there only one way to read the city? In this study, we try to question the listen the rhythm of the space by the blind person's city experience. We will testify the other ways of reading the city by the help of blind participant and try to understand his urban space experience.

It is in a tight but not yet well understood relationship with the organizational and existence modalities of a (certain) society that impose relationships between everyday life, work, leisure, "private" life, transportation, and public life. Everyday life imposes itself as a restrictive effect on all members of society who (with some exceptions) cannot go beyond exhibiting minor deviations from existing norms.

Urban space is an area where people continue their social life. Here, human acts in a relationship with both the physical environment and other people. These relations are at a level that affects people's daily practices in urban space. Thanks to his daily practices, people create their own living space in urban space. The boundaries of this space are drawn through the environment and people with whom it is in contact. Understanding these boundaries is important in terms of predicting the consequences of interventions to the urban space and designing environments suitable for the vital values of the society.

Sakal, (2015) tries to find, observe, and experience the tactics of ordinary people in daily life by exploring them one by one on a journey through the city's spaces. Later, at the end of this journey, the thoughts in the mind were transformed into striped

thoughts with sketches and it was aimed to focus on the relationship of strategy, tactics, and space.

In the tactical urbanization vision, the tactical space applied in a short time on-site is open to the experience of the user and the user during the application. The user takes an active role and is the subject. As Lefebvre (1974) mentioned, the city turns into a staged structure for the user. Activities that start on a small scale create the basis for permanent and growing projects. It focuses on the user and benefits from their experiences and offers.

In short, tactics is the art of the weak and in a difficult situation practiced in the city. The interaction continues every day, all the time (everyday, everyday time) and by anyone (ordinary person), changing the boundaries and characteristics of the space.

They are all activities carried out to meet simple human needs such as food, drink, shelter, production, security, reproduction of the lineage. In addition, "everyday" encompasses a lot of work scattered among the stacked information of routines, rituals, the social division of labor. When we restrict the everyday through the city in our lives, urban space and daily life can be seen as two tightly connected phenomena that enable and nurture each other's existence. Because urban spaces mediate and provide a place for the citizens of the city to perform their daily activities (De Certeau, 1984), such as eating and drinking, walking, shopping, talking). In the modern city structures such as cafes, restaurants, museums, cinemas, libraries, bars, coffee houses, parks, squares, some of them are built and some are open spaces for the daily activities of the city.

Unlike the dailyness here, Lefebvre tried to mean a different meaning with everyday life and everydayness. Because, according to Lefebvre, everyday life is a historical phenomenon although it is not mentioned by giving a complete temporal interval. It is the state of the everyday, which is always common in life, by losing its original qualities and feelings that it has with the capitalist social effects of modern times.

As a result of Lefebvre's work on daily life and the space within it, the space was defined as the living, designed, and perceived space (the trialectic of the space), and he mentioned that these are concepts that are intertwined in a process line. In this direction, Lefebvre integrates these three moments of space production as material production, knowledge production and the production of meaning and redefines them as spatial practice, space representations and spaces of representation. Spatial practice

consists of routine repetitive experiences, productions and reproductions that take place in daily life practice. On the one hand, it is the production of the space of the society.

Lefebvre's production of space shows us that space is neither a concrete, physical nor an abstracted and meaningful object. Space, with all its dimensions, is both a concept and a reality, that is, it is social. Again, it is not lifeless, fixed, static, but alive, changeable, and fluid.

The ordinary man, in the simplest terms, is any person in daily life, an individual. However, they differ from those who are competent and dominant in daily life, they are exposed to the side effects of what is already formed, not from those who direct daily life. In this study, we are looking for the space production of the blind person who needs to create tactics during this production process. The relations between conceived, perceived and lived are not fixed and static and exhibit historically defined features and contents. Knowledge of space has to grasp the processes of space production.

In everyday life, ordinary people are forced to work, struggle for life, deceived and captive. Lefebvre (1998) mentions that the routine, usual part of daily life is imposed on the ordinary person and sometimes forced to be a part of him. According to Lefebvre, ordinary people search for escape routes.

According to Lefebvre (1974), who emphasizes the social expression by moving the definition of space beyond its physical structure, space is a social product, and every society has produced and continues to produce space with different production styles. Lefebvre talks about a space trialect designed to describe these modes of production: space that is lived, designed, and made meaningful.

According to a study conducted in 2002, 12.29% of Turkey's population consists of disabled individuals (Önver, 2014). But in cities where the population is dense, disabled individuals are rarely found in daily life. Because while the urban space is designed and built, it is organized and constructed according to "normal" individuals. We called it "normal" because, Över says, "normal and abnormal bodies produce different lives from the same space" (Över, 2014, p. 42). Because it means that the design and organization of urban space is such that "normal" bodies can take place, move, and arrive. In this sense, as Lefebvre (2016) said, while space is the integrating tool of the city, it becomes a tool of discrimination and exclusion for people with disabilities. In cities built according to "normal" individuals, disabled individuals have

to face many difficulties. I would like to point out that the phrase "non-normal" bodies is only used as a quotation. The fundamental difficulty is to build a rights-based strategy that is independent of physical attributes. I would want to underline that in the rights-based approach, as well as in social work, persons cannot be classified as normal or abnormal.

They strive to exist in a space and society that excludes themselves and cripples them due to disability. The social model that brings a new perspective to explain disability and Lefebvre's approach, which establishes the relationship of urban space with the social, gives clues to the disability of individuals with disabilities in urban space. Disability is the absence of any organ in an individual's body or the inability to perform its function. Disability, on the other hand, is that urban space and social relations turn this disability into a disadvantage. The feature of shaping and influencing each other of urban space and society makes disability permanent unless it is broken in a positive way. Therefore, in this study, the participant is a blind (congenitally blind) person to show how it is difficult to find his route experience. Because human was affected by the social structure of the place and reflected this on the life process. (Hillier, 1996) In parallel with this, not only physical structures but also user diversity made spaces meaningful.

Architects (who are the sighted individuals of the society) may want to rationalize design variables, but people perceive the space emotionally, largely through the senses. We believe that space is not 3 dimensional, it is multi-dimensional. And the blind participant, we try to reveal the other dimensions of the space in daily life of the blind person.

According to Pallasmaa (2005), the body knows and remembers, architectural meaning originates from archaic reactions and reactions remembered by the body and the senses. And Holl (1993) adds that, bridges the gap between the mind and the thought gap between the senses of sight, hearing and touch and the inner and emotional desires of the body. So, we believe that the space experience contains sensory process. All senses overlap to each other. For instance, when Zumthor spoke of architecture primarily as an internal experience, he was referring to architecture as a haptic process, which he described as "going back to reality from the truth.

"Haptic" is a term traditionally attributed to the sense of touch, but the scope of this term has been expanding in recent years. In this process, the child's "tactile-kinesthetic displays" are transformed into a "spatial image of the visual type". (Piaget

and Inhelder, 1956) For Pallasmaa (2005), this term treats it as a holistic method of both standing up to the ocular biases of our architectural culture and developing "significance, intimacy, and intimacy."

Touching has been referred to by some as the "mother of the senses" because it is the earliest sense to develop in the human embryo. Indeed, it functioned long before the eyes reached visual competence. Johann Gottfried Herder says, "seeing only reveals shapes, but touching alone reveals bodies." draws attention to our basic understanding of the world.

For obvious evolutionary reasons, the auditory cortex tends to determine the "what" and "where" of a sound, which of course happens in coordination with the other senses. Auditory, visual, and tactile cues come together in every architectural experience or, as Neutra puts it, architecture is "omnisensory." (Neutra, 1954)

2.2. Blind Individual's Urban Experience In Daily Life

Başyazıcı (2012) told that the study of architectural concepts is primarily concerned with the sense of hearing. In terms of spatial pleasantness, looked at the gaps between non-visual sensual impressions and visual perceptions in architectural spaces. To explain the unidirectional nature of today's architecture, an exhaustive literature review about the meanings of architecture and architectural spaces, the relationship between architectural spaces and human beings, and phenomenological approaches to architecture was undertaken to investigate the importance of visible and non-visual space interactions in terms of spatial pleasurability.

Phenomenology is a type of study that is concerned with human interpretation and perceptions of the world (objects) in general. As a result of this relationship, it is clear that the phenomenological approach is applied to all aspects of human life. In the 1990s, architectural phenomenology arose as a critique of prevailing architectural movements. About the lack of a precise definition, it is clear that phenomenology restored the architectural world's attention to human encounters.

The study of how people view the building environment is known as architectural phenomenology. It's all about how buildings make people feel, how architecture influences people, and the bodily aspects of people's architectural perceptions. Only a human being who lives and defines space by experience may describe architecture using phenomenological approaches. Similarly, a phenomenologically built building stresses the importance of sensual encounters. (Holl, 2006)

Architects such as Pallasmaa, Zumthor, and Hall argue that sensual perceptions in a room form a relationship between the space and the person. It is believed that the subject's interactions when living in space form his or her sense of space. The experiences of its users define an architectural space. In a nutshell, space is a concept that has sensual effects on its consumers and is made up of the sum of the subject's experiences. Space perception is a descriptive term that refers to humans and the life that exists in that space. In reality, in lexical sense, "experiencing a space" often refers to a topic in a space. When phenomenologically analyzing the sense of space, sensory organs learn experiential information first, which is then created by personal decisions. The sensual mechanism of space encounters, the influence of this experiential process on spatial pleasantness, and various experiences with various sensory organs will be discussed in this part. Quality and pleasurability are two terms that are intertwined. Pleasantness is described as "the condition or state of being pleasurable", where "quality" means "pleasing the customer rather than just saving them from annoyances". In a nutshell, the pleasing of users' expectations is linked to the consistency of design. It is assumed that the importance of architectural quality is a function of the acceleration of time and space interactions, virtual spatial awareness through advanced technical methods, constraint of physical space used in terms of human relations, and increased demands from the object, including sensual, mental, and physical expectations, because of shifts in labor and development model. (Perez-Gomez, 2006)

Moreover, the function of visual experiences will be examined first to explore sensual experiences of architectural spaces in between sensory experiences that make sense of space. Then, with the exception of sensory encounters, all sensual experiences can be investigated. The quickest and safest way to collect knowledge about the world is through the eyes and eyesight. Humans' most important gift, according to Plato, is sight. As a result, the concept of defining and recognizing the world is a starting point for many studies in different fields such as psychology, philosophy, physics, and architecture. Vision is also described (Pallasmaa, 2005) as the main and superior sense that comes first before the other senses. Gestalt psychology is a branch of psychology that studies how people think. Gestalt is the most common means of assessing the vision and experience of an architectural structure, according to Pallasmaa and it is fully related to visual perception. Gestalt Laws are concerned with the visual interpretation of forms and their organization. It is not specifically relevant to all architectural space perceptions, but illusionary visual experiences of shapes have an

indirect impact on our spatial experiences. In this study, we question that the space experience is incomplete without the sense of sight/vision.

The term of vision was first explained by (Gibson, 1950) as, visual impressions alone are insufficient for analyzing an architectural space. An individual who lacks sensory memory and is unable to identify the visuality of an architectural space identifies it through hearing, touching, and smelling it, and may perform all tasks normally associated with a sighted person. Many studies on visually disabled individuals, which will be discussed in this segment, show that blind people are more mindful of their sensual encounters and therefore have a better capacity to synthesize them than sighted people.

Sight, which is the most accepted and trusted human perception, forms the basis for the production of many types of information. The primary place of seeing has been repeatedly emphasized and criticized in philosophy or the history of science as well as in art. Martin Jay says that the adventure of modernity, which started with the Renaissance and Enlightenment, is ocular centered. The basic assumption of ocular or vision-centeredness is that the power of seeing is a social and historical phenomenon rather than the physical activity of light. The eye is not a passive lens system through which light enters and creates images, but the result of social processes involving bodies and souls. According to these approaches, we will concentrate on the subject of blind space use. And as Foulke (1983, p.234) says, "In sighted individuals, knowledge of the geographic environment is thought to be almost solely based upon visual experience."

Golledge et al, (1998) concentrated on the subject of accessibility for blind citizens. In the first test, ten blind or vision-impaired subjects, as well as ten blindfolded subjects whose primary guidance mechanism was vision, were used. The blind or visually disabled group identified people who used existing state-of-the-art mobility aids, such as guide dogs, cane users, and those who used echo position to locate obstacles; the latter group simulated the success of early blind people; the blind or vision impaired group represented people who used current state-of-the-art mobility aids, such as guide dogs, cane users, and those who used echo location to identify obstacles. The original baseline tests were conducted in an open area. Participants were led three times around a 60' x 60' square or a 60' x 30' rectangle of stanchions marking the corners. In one condition (called WTS - "Without Talking Signs"), standard direction aids were used, while in the other, each stanchion was fitted with a Talking

Signs transmitter (called the TS condition). "Blindfolded Sighted" (BS) and "Blind or Vision Impaired" (BI) were the two subject categories (B). In addition, members of the blind or visually impaired group (B) found more stanchions and finished the challenge faster than members of the blindfolded sighted (BS) group, but neither group performed well, discovering just 14/120 stanchions in the BS group and 35/120 stanchions in the B group. Both subjects in both groups found all of the stanchions using TS (r) technology, which resulted in slightly shorter response times.

Many researchers (Kitchin et al., 1997) worked on the lack of vision during wayfinding. One group contends that visually disabled people have the same ability to process and comprehend spatial definitions as sighted people, and that any variations, whether quantitative or contextual, can be clarified by intervening factors such as knowledge availability, familiarity, or tension. Indeed, with the accelerating development of new technological aids for blind people such as NOMAD (an audio-tactile graphics processor; Parkes, 1988), personal guidance systems (Golledge et al., 1991; Balachandran, 1995; Petrie, 1995), talking signs (Brabyn, 1995), and Atlas Speaks (a talking map; Fruchterman, 1995), the need for a consistent and accurate evaluation of vision-impaired people's spatial awareness systems becomes ever clearer. As a result, it's possible that a lack of vision isn't the barrier to employment that it's always believed to be. Consequently, research into the essence of spatial capacity and information on individuals with extreme visual impairments are required, as well as an understanding of how much of any loss of awareness is due to a lack of experience and opportunity to improve their spatial abilities.

There are two major hypotheses (Gale et al., 1990; Foulke, 1983) on how sighted people study and grow cognitive map skills without using their eyes. Understanding spatial principles without using their eyes. According to one hypothesis, a series of environmental cues emerges and serves as the foundation for subsequent knowledge, such as routes. The alternate proposal is to establish roads first, then position landmarks in relation to them.

The researchers (Kan-Kılıç and Doğan, 2017) investigated at how blind people compensate for a loss of sensory input by using their senses, as well as how the priority of senses varies depending on the urban setting. The most significant influences for blind participants in a crowded urban setting were found to be the sound of the city and the echo from the environment. The participants of this study mentioned these statements:

“When I need extra information for wayfinding in such a crowded environment, I follow the olfactory sensory inputs, such as coffee, corn, and new clothes.”

“There is a high wall in front of me. My words hit the wall and come back.”

“Now, the sun hits on the back of my neck. It is following me. I can recognize the row of trees while the sun appears and disappears. Therefore, I can follow the shadow of the trees along the route.”

They also investigated that without getting lost, all of the participants reached it to the target. The most commonly used environmental sensory feedback during way finding in Kemeraltı was sound (51 percent) (Kan-Kılıç and Doğan, 2017). According to Portugali (1996), auditory signals were critical for congenitally blind participants' way-finding processes because they used them to measure their distance from barriers and understand where they were.

According to Portugali (1996), blind people navigate in outdoor conditions by estimating the distance of a sound source, estimating the position of landmarks, and using reference points to help them orient themselves. The characteristics of an urban community that make up urban heritage give the area a distinct identity and serve as strong landmarks. For both residents, the bakery that has been on the same corner for many years will become a good reference point and the city's key landmark. For sighted people, it can serve as a visual landmark, and for blind people, it can serve as an olfactory landmark. Cities' identities and cultures are carried out by sites that have been in the same location and have been maintained for many years. We would need to do less to make way-finding simpler as long as those places exist.

As explained above, the sound of the city is the most significant cue for the blind individuals, however, the olfactory environmental cues are also very important during wayfinding process of blinds. Researchers (Ferdenzi et al., 2010) discussed the intuitive theory of heightened awareness of the unimpaired senses was tested in most, if not all, tests of the interaction between olfaction and blindness. The findings of comparing olfactory recognition levels in subjects with and without visual impairments were initially inconclusive. Latest experiments using more accurate approaches showed no differences in olfactory perception, sexism, or cued recognition between the two classes. The aim of the research was to perform a pilot investigation into children with visual impairments and sighted children's self-reported sensitivity and reactivity to odors. A questionnaire was used to assess when, and under what circumstances, odors can be salient signals for children with visual impairments in

daily situations including food and social cues, as well as the general environment. The children with vision impairments reported paying more attention to odors and reacting to them more often than the children who were sighted, according to this research. They performed better on the majority of products, including those involving social and food odors (Ferdenzi et al., 2010).

During this research the researchers tried to understand emotions with senses. Therefore, they created such kind of questions:

“When your mother is cooking, do you go to smell what she is preparing?” “Do you think that people without perfume have a natural odor?” “Are there odors that you like smelling when you feel sad?”

With these questions, they try to combine the emotions with the senses, in the other word with the perception. In this study, the methods for guiding blind people from one place to another can be discussed which can be called wayfinding process of blind people in their daily life.

2.3. Wayfinding Strategies of Blind Participants In Daily Life

Wayfinding activities can be divided into many categories, such as indoor and outdoor. However, we should accept that outdoor wayfinding is more difficult comparing to indoor wayfinding for blind individuals. As also cited in Kan-Kılıç and Doğan (2017), the blind people need barriers to navigate easily. These barriers can be defined as walls, etc. Therefore, navigating in indoors is easier than in outdoor environment. The suitability of such wayfinding aids for particular wayfinding tasks is influenced by a number of factors. Maps are contrasted to verbal route descriptions, and the benefits of each method of navigation are discussed. Wayfinding aids that are spatially presented, such as graphical maps, are examined in greater depth. The problem of deciding on an acceptable level of abstraction for map representations is discussed. Different approaches to making wayfinding easier are considered. The author proposes a method for investigating and designing wayfinding systems in a systematic manner. Everyone would need a different explanation if they all had the same destination but approached from different directions.

More spatial relations are usually preserved in schematic maps than in sketch maps, and schematic maps are more complete in terms of the entities represented, however there is no clear distinction between the two types of representations.

External knowledge regarding the individual navigation circumstance may help to simplify the procedure. Different situations necessitate different types of assistance.

Support is not provided for free: some work is necessary to produce situationally appropriate support and communicate it to the way searcher. As a result, in order to determine suitable wayfinding support for a specific situation, we must first identify what kind of wayfinding problem we are dealing with. Here, in our study the blind participant tries to navigate in an urban context in his daily life. Therefore, the main aim is to understand how he can reach from A to B.

A wayfinding situation includes at least one search object in a given environment, at least one starting position for the search process, at least one search instance, at least one possible route, at least one way searcher, and zero or more external supporters. Wayfinding situations can be classified as: simple or complex search situations, time-critical, space-critical, or uncritical search situations, and well-informed or uninformed searchers, and smart or helpless searchers. Furthermore, cultural dispositions, sensory abilities, orientation abilities, and individual mobility may influence the selection of an appropriate way.

The aim of this study (Hölscher et al., 2006) is to establish a connection between architectural design and human spatial cognition science. They compared thought aloud procedures and success assessments of seasoned and beginner participants in various wayfinding activities in an observational analysis of human subjects in a dynamic multi-level house. Three different navigation techniques for multilevel buildings were compared. The center point strategy uses well-known areas of the building; the path strategy uses routes that first head towards the goal's horizontal location, while the floor strategy uses routes that first head toward the goal's vertical position. They show that experienced participants favoured the floor strategy over the others, and that it was linked to better wayfinding results overall. When opposed to survey awareness, route knowledge had a bigger effect on wayfinding. The building's cognitive-architectural review showed seven potential reasons for navigation issues. The staircase design, in particular, was described as a significant wayfinding stumbling block. Finally, they discuss the advantages of cognitive methods for the architectural design process, as well as some open research questions.

Users used the central point strategy of clinging to well-known parts of the building as much as possible, such as the main entrance hall and the main connecting corridors, and the directional strategy of choosing routes to and from the horizontal position of the target as directly as possible, regardless of level changes, and independent of the horizontal position of the target. As a result, they used the floor

strategy of finding the way to the target's floor first. They also tried to answer these questions: “Which strategies do way-finders employ for navigating in the third dimension? How does familiarity with the building affect performance and the choice of navigation strategies? What is the role of survey knowledge for multi-level wayfinding performance? Which cognitive processes can be identified in verbal reports of wayfinding tasks and how do they relate to performance?”

The goal of this study was to look at wayfinding techniques in a complex indoor environment and how they relate to the knowledge of the user. The experiment gives quantitative and verbal data, as well as the chance to observe the building's deficiencies in terms of wayfinding usability.

This study's key finding is that diverse indoor wayfinding methods can be recognized on both a subjective and objective level, and that these strategies correspond to distinct variances in cognitive processes and performance metrics.

Walking a well-known route was the quickest and shortest approach to attain an objective. If it was not possible, for example, because the destination or a portion of the path to it was unclear, the floor method was the best option in our scenario. Walking through a central point or directly in the predicted direction of the destination resulted in significantly lower performance. Another conclusion was that participants who were familiar with the facility relied more on their knowledge and took a well-known route that they had meticulously prepared in preparation. As a result, they navigated faster than unknown individuals who took the same path.

There is another study (Giudice, Bakdash and Legge, 2007) focused on whether large-scale indoor models can be studied and navigated without seeing them by using verbal explanations of plan geometry that are modified based on the participant's position in the house. In previous studies, verbal knowledge was used to aid route navigation rather than to encourage free exploration and wayfinding. Their findings with blindfolded-sighted participants show that verbal representations can be used to achieve correct learning and wayfinding efficiency, and that describing only local geometric information is adequate. Furthermore, there were no gaps in learning or navigation output between the verbal analysis and a feedback study that used visual information. The results of verbal learning were compared to a random walk model's success, showing that human search behavior is not dependent on chance decision-making. After incorporating a restriction that prevented the paradigm from changing direction, it behaved much like human participants.

Walkability is a criterion that supports transportation, walking, socializing, healthy life and the environment in cities with high quality of life and walking routes, rather than just the act of going from one place to another. Today, the new lifestyle brought by technological developments has forced people to live more inwardly, and the importance of places where human-human relationship can be established has gradually increased, and urban spaces that make people want to go out and mediate the establishment of new relations with the urban has started to gain more importance (Nazifoğlu, 2016)

The aim of this study is to seek an answer to the question, “How can we increase the livability in the city walking through various routes in a daily life with the blind participant? In addition, how the blind participant experiences the city on foot?”

According to Lynch (1996, p. 153-161), there is a landscape or decor in the city waiting to be discovered, which can be seen in any situation. Every citizen has a different perception of the city. Because the structure of the city also has a structure that has been changed millions of times by people who perceive the city very differently. Legibility, comfort, character, and diversity have a positive effect on the urban space having a pleasant, refreshing and inviting atmosphere. “In the process of wayfinding, the strategic link is the environmental image, the generalized mental picture of the exterior physical world that is held by an individual. This image is the product both of immediate sensation and of the memory of experience, and it is used to interpret information and to guide action” (Lynch, 1996, p.4)

Lynch believes that these mental maps include five components: (1) paths: routes along which people move throughout the city; (2) edges: boundaries and breaks in continuity; (3) districts: areas characterized by common characteristics; (4) nodes: strategic focus points for orientation such as squares and junctions; and (5) landmarks: external points of orientation, usually a readily identifiable physical object in the urban landscape. Paths are particularly significant among these five aspects, according to Lynch, because they coordinate urban mobility. In this case how would an individual without vision act in these 5 methods, which are very important in finding direction? How would he/she use these wayfinding methods? And how could it help him/her? In our study, we question the city perception through the eye of blind participant. Therefore, Lynch (1960) is so significant for us to direct the study as Lefebvre and De Certeau. Therefore, some researchers accompany us in this thesis writing process. Among these researchers, we give priority to Lefebvre, De Certeau and Lynch.

2.4. Senses of Blind Individuals During Wayfinding

The senses have very significant role during wayfinding process of blind users. Even in modern cities, blind people have a tough time finding their way around. It was shown that the easiest way to guide blind people is to use visual explanations and directions. The aim of the research presented in this paper is to affirm Gaunet and Briffault's user-centered guidance rules for verbally directing blind pedestrians in both basic and organized unfamiliar urban environments as well as nuanced and unstructured urban areas. Localization accuracy, environmental features (currently only stable features present in GIS), the position where verbal direction and knowledge must be delivered, and verbal route guidance rules are examples of such guidance rules.

Hearing, feeling, touching, and being touched, and direction integration are used to view the world where sensory input is absent. Consequently, the verbal instructions given must provide hints about the spatial design array in order for pedestrians to construct a local and temporary mental image of the world that allows them to regulate their locomotion and make decisions.

In basic and structured urban environments, automatic wayfinding verbal aids for blind pedestrians are said to depend on basic interface functionality and guidance functions (i.e., instructions and spatial information provided at specific places). This paper describes an experiment in which 7 cane and 3 dog users tested these criteria for those environments, as well as for complex and unstructured urban settings. Further research problems for developing a localized verbal navigational assist (e.g., population expansion/diversification and phased implementation of the interface) are also discussed.

Structured urban landscapes are simple environments (i.e., streets bordered by narrow sidewalks, walls, or fences, with cross- and T-intersections, crosswalks perpendicular to sidewalks, one-step 1 crossing, and a less than 15-m-wide road). The majority of visually disabled individuals live and travel in those places.

When a blind person or a wearable system guides a blind pedestrian down a route, they must know the departure and arrival positions, compute the path to take, and know the path section already traveled and the next to be traveled (the blind pedestrian is indeed localized).

To summarize, even though blind people can lose their way if the area traversed becomes too complicated, and because database objects or collections of objects

representing a spatial array, such as an intersection (or a crosswalk), can be assigned different weights to account for complexity, it is critical to emphasize that even though blind people can lose their way if the area traversed becomes too complex (from simple to complex, from structured to unstructured). A blind pedestrian will always be able to request route re-computation from an electronic system, even in more straightforward and structured urban areas; as a result, wayfinding will always be feasible.

Furthermore, since blind pedestrians familiar with a path were able to effectively direct a sighted experimenter who was unfamiliar with the pathways using verbal directions, the results of the recorded experiment provide useful insights for direction laws derived from verbal instructions provided by blind people. Mobility-impaired and disabled people alike may benefit from these guidelines.

Another research had a study to understand the importance of hearing during wayfinding (Schenkman and Nilsson, 2010) The study was conducted with a loudspeaker on an artificial manikin was used to replicate noise bursts of 5, 50, and 500 milliseconds in a normal room and an anechoic chamber. The sounds were captured binaurally in the presence and absence of a 1.5-mm thick aluminum disk, 0.5 m in diameter, positioned in front of the manikin at distances ranging from 0.5 to 5 m. Using a 2AFC paradigm with input, these recordings were later introduced to ten visually impaired and ten sighted individuals, ranging in age from 30 to 62 years old. It was up to you to figure out which of two sounds contained the reflecting object. The blind participants outperformed the sighted participants. A follow-up experiment with the two best blind people revealed that their superior success at distances of 42 meters was not random. When using the longer-duration sounds, blind participants were able to perceive the object at greater distances in the conference room than in the anechoic chamber, and even when opposed to sighted people.

“Blind people use echoes to detect objects and to find their way. In the forties and fifties, Dallenbach and coworkers (eg Cotzin and Dallenbach, 1950) showed that the stimulation had to be aural to evoke the sensation of what was then called 'facial vision' (Supa et al., 1944).”

Research on how other species use echolocation could be applicable to human echolocation to some degree. Experiments on human echolocation can also be done to learn more about how animals like dolphins use echolocation (DeLong et al., 2007). Human ability, on the other hand, is less developed, and the sensory mechanisms used

by humans which vary from those used by animals (Griffin, 1973). A blind person may use self-produced sounds, such as his or her voice, but it is most common to use sounds generated by artificial means, such as shoes, a cane, or a clicker.

In a regulated lab setting, blind people performed better at identifying echoes than sighted people. The 'information surplus' theory has been confirmed. This study revealed that detection predictably decreases as distance increases but is affected by room and signal length. Also, the signal length was improved echolocation, i.e., longer sounds were stronger than shorter sounds. As a result, echolocation was possible at longer distances in an anechoic atmosphere than in an anechoic atmosphere for blind subjects.

Some bats and porpoises are believed to use echolocation, a sonar method in which they systematically emit sounds and decode the echoes from objects in their environment, to locate and locate food. This was particularly true in the case of bats, as well as in the case of blind people. The "obstacle sense of the blind" and "facial vision" were words often used to describe their ability to avoid colliding with objects in their way. Any signal that is transmitted must travel to the echoing surface and back; as a result, the amplitude of the sensed echo would be significantly lower than the intensity of the outgoing signal.

The amplitude of sound will differ inversely as the square of the distance from the source if it radiates uniformly in all directions. As a result, as the distance between the ringing surface and the subject increases, the subject's ability to hear the echo of a constant signal decreases. When sound energy collides with a physical source, the sound's characteristics are altered. In different degrees, it is absorbed, mirrored, or both. The collision changes the amplitude, frequency, and direction of the sound, and these factors dictate what echo information the auditory receptor receives. In comparison, the receptor is surrounded by an infinitely varying world of sound. They varied the shape and dimensions of the goal while keeping the area constant at about 31 square centimeters.

Human test subjects have been found to be capable of using echoes to detect the presence or absence of targets placed in front of them under controlled laboratory conditions. Furthermore, blind, and sighted people have been able to detect a target monaurally, make simple shape discriminations, and locate a target in space. However, it is possible that modern technology can partially bridge the evolutionary gap and bring more helpful echoes to man's ear than it currently receives.

CHAPTER 3: METHODOLOGY

This chapter of the study presents the methodology used in this research to explain how the research proceeded.

The aim of this thesis is to investigate which senses and how a visually impaired individual uses his senses while exploring the city in his daily life. It is to analyze what it references while finding his direction and the clues that support him on a particular route. In this context, a field study consisting of 4 routes was prepared in the method part of the study. The common feature of these 4 routes is that they are all outdoor places. One of the biggest reasons for this is that it will not be appropriate for both our participant and us to enter a closed area due to Covid-19. Again, due to Covid-19, only one participant accompanied us in this study. In order to avoid a crowded environment, only one visually impaired individual was selected.

Other features of these routes chosen in the open area are that some of them have crowded and narrow streets, while some of them are wider and quieter areas. The participant was briefly informed about each route before starting. The participant was asked to describe the route along the routes. What he got in his way, how he found his way using which senses, and what he took as a reference while using these senses were analyzed.

Our 1st route is the Kıbrıs Şehitleri street route from Sevinç Patisserie to the end of Kıbrıs Şehirleri street. The reason for choosing this route is that it is a busy street where we think we can collect more data. Our 2nd route is a narrow street (1481. Street) connecting route 1 and route 3. Right after this route, our 3rd route, Kordon coastline, starts (until Gündoğdu Square). One of the main reasons for choosing this route is to analyze what a visually impaired individual will take as a reference while exploring the city in his daily life in such a wide and windy area. Our 4th and last route arrives at Sevinç Patisserie, where we return to the starting point.

At the entrance of each route, the route was briefly described to the participant and the researcher was found along the route. The reason for this is to support the participant at the point where he is failed and to listen to his analysis.

In this study, two phones were used for video recording of the routes walked from through the eyes of the visually impaired. One was placed on the participant's chest with a tape, while the other was given to our friend who took the video with a selfie stick. At the end of the routes, the video transcripts were transcribed in the digital

environment and the senses of the participant while exploring the city in their daily life were analyzed with the ratios.

3.1. Participant

Yahya İşler, who was congenitally visually impaired, accompanied us in this study. He is 34 years old, employed, married, and has a child. He lives in Kütahya. Due to Covid-19, a study was conducted with one person in order not to risk anyone in a crowded environment by working with many participants. The reason for working with Yahya in this thesis is that he has not received support from anyone since he was a child, except that he was congenitally visually impaired, and he developed his other senses a lot because of this. The participant had no sense of light or shadow. He also had a self-sufficient existence and was a skilled traveler. He was able to readily board and disembark from public transportation and navigate both familiar and unfamiliar areas. This fieldwork was continued with Yahya, considering that the references he received while exploring the city in daily life on the routes we walked would yield more accurate data and results.

In this study, a control group was not used because we will try to learn the perception of urban space by blindfolding so, we think that the perception of space of sighted city users will not be equated with a congenitally visually impaired individual.

Before the case study, the purpose of this study was explained to him. It has been stated that we will analyze how the exploration of the city will be in daily life from the eyes of a congenitally visually impaired person and try to understand which senses he uses and how. Later, verbal, and written consent was obtained from him that he wanted to participate in this study.

3.2. Routes

The purpose of this research is to find a solution to the question, " How can we increase the livability in the city walking through various routes in a daily life with the blind participant?" Furthermore, how does the blind individual navigate the city on foot?" For this study, 4 routes determined by the researcher, which I specify below, were walked with the participant.

- Route 1: Kıbrıs Şehitleri Street
- Route 2: 1476th Street
- Route 3: Kordon Coastline
- Route 4: Arrival at Sevinç Patisserie

In Izmir, Turkey, we established these 4 complex urban environments in order to determine which senses are prominent in different locations. The first of the 4 routes chosen is Sevinç Patisserie, which is the starting point.

3.2.1. Route 1: Kıbrıs Şehitleri Street

The reason why Sevinç Patisserie, which is the starting point of our route, was chosen because it is starting point of Kıbrıs Şehitleri Street and is a well-known gathering point. Kıbrıs Şehitleri Street is one of the iconic streets of the city, located in Alsancak district of İzmir province. The street is closed to traffic and there are restaurants, cafes, bars, bookstores, and shopping places on it. This street, which is approximately 1 km long, can meet the needs of many individuals (Figure 2).



Figure 2. Start point – Kıbrıs Şehitleri Street

One of the other features of choosing this street for fieldwork is that it is narrow and crowded. In such a complex route, it will be a rich source of data what and how the congenitally blind participant will refer to. One of the answers we seek on this route is in this question: "Are there any clues that will make his daily life easier, or will it be difficult to explore the city on this complex and crowded street?"

The route we walked with the participant consists of a concrete floor. Since some parts of this concrete floor are broken, there are areas where it is difficult to walk (Figure 3). There are tall buildings on the right and left along the street. Under these buildings, there are stores where people can meet all their needs, such as cafes and

restaurants, shopping malls and markets. Due to the winter season, there are also restaurants that are surrounded by tarpaulins. The straight and narrow street has some side streets. And from these side streets there is a strong wind (Figure 4).



Figure 3. Pavement in Kıbrıs Şehitleri Street



Figure 4. Street connection

Ornaments hang from the balconies of opposite buildings due to New Year's Eve (Figure 2). Streetlamps and the waterway on the ground continue along the road. Some

cafes have covered this waterway with tables and chairs. The historical building to the right of the road narrowed the road. Right after this building, the road widens. This is a large square with a building with trees in its garden on the right and a park on the left (Figure 5). There is a street artist right in front of these big trees I mentioned. (Figure 6).



Figure 5. Square



Figure 6. Street artist's performance

This street, which is closed to traffic, has some parts that are open to traffic and these areas are blocked with barriers to prevent vehicles from entering Kıbrıs Şehitleri Street (Figure 7-8-9). After crossing this street, the road we are on is narrowed again. There is a big Migros on the right of the road and ATMs on the left of Migros (Figure 10). The street started to widen again and the crowd on the street decreased towards the end of the route. There are large and small plants on the right and left along the road. Since the road widens here, there is no element blocking this waterway.



Figure 7. First street to be crossed

As mentioned before, there are restaurants and cafeterias on our right and left on the route we have walked (Figure 11-12). At the last street crossing, the route is finished with pontoons (Figure 13). The route, which a non-disabled individual can complete in 10 minutes at an average speed, has been successfully completed in 27 minutes by the congenitally visually impaired participant.



Figure 8. Barriers



Figure 9. Second street to be crossed



Figure 10. ATMs and Market



Figure 11. Cafe



Figure 12. Oven



Figure 13. Third street to be crossed and The finish point – Kıbrıs Şehitleri Street

3.2.2. Route 2: 1476th Street

Second route started with the end of Kıbrıs Şehitleri street. The chosen street was approximately 200 m long. One of the first reasons we used this street in our fieldwork is that it is a narrow street with cobblestone pavements, apart from connecting the 1st and 3rd routes. The reason why the routes are chosen differently from each other is to believe that we can obtain different references and results in different textures and areas of different widths.



Figure 14. Start point – 1476th Street

On Route 2, the concrete floor continues. While the ground where the traffic flow is made of cobblestone, the other pavement consists of a flatter concrete and the end of the pavement is closed with barriers (Figure 15-16-17). There are various shops on the right and left. There are two crossroads in this street (Figure 18-19). Since the repair shop on the right of the road has spread some of its products on the road, it has become difficult to walk here. After crossing the street to be crossed road, there is a soft ground where the bicycle and walking path begins (Figure 20). This is where we get to the beach.



Figure 15. View of Route 2



Figure 16. Cobblestone in 1476th Street



Figure 17. Flat pavement in 1476th Street



Figure 18. First street to be crossed



Figure 19. Second street to be crossed



Figure 20. Walking path and The finish point – 1476th Street

The end of the route was our 3rd route, Kordon coast. The participant understood that we had arrived here by the smell of the sea. The route, which a non-disabled individual can complete in 3 minutes at an average speed, was successfully completed in 5 minutes by a congenitally visually impaired participant.

3.2.3. Route 3: Kordon Coastline

Our route, which will continue from Kordon coast to Gündoğdu Square, is approximately 750 m. One of the reasons for choosing this route is because it is different from the other two routes, and we will therefore obtain different data. The fact that it is wider and calmer than the other 2 routes is one of the features that distinguishes this route from other routes. In addition, another important question of the research is how the visually impaired participant will get support from which senses on this very windy coastal road (Figure 21).



Figure 21. Start point – Kordon Coastline

The ground of Route 3 also consists of cobblestones with recesses that are difficult to walk on (Figure 22). There is a banquet on our right that divides the sea and the path we walk. The upper part of this banquet is wooden, the lower part is concrete (Figure 23). There are benches on our left and behind these banks are the tram, walking and bicycle paths that I mentioned earlier (Figure 24). There are plants and grass areas that separate these paths. On the right side, people are sitting, and some are fishing. Since the season is winter, the wind is very strong on the beach (Figure 25). The coastal road widens as it approaches the pier.

There is Alsancak pier on our right and a portable toilet on our left. That's why the wind is breaking here. After passing the pier, the coastal road narrows again. When we come to Gündoğdu square, the stones on the ground are getting better (Figure 26).

There is a large statue in the square. There are marble steps under this large statue (Figure 27).



Figure 22. Pavement in Kordon Coastline

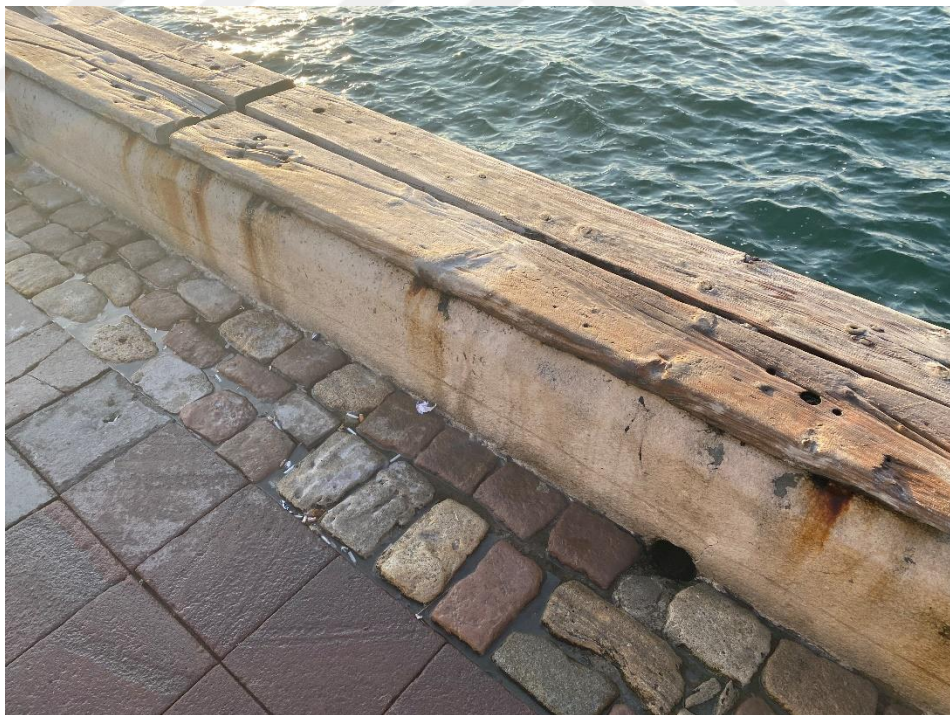


Figure 23. Banquette



Figure 24. Tramway



Figure 25. View from route 3



Figure 26. Pavement before arriving at Gündoğdu Square

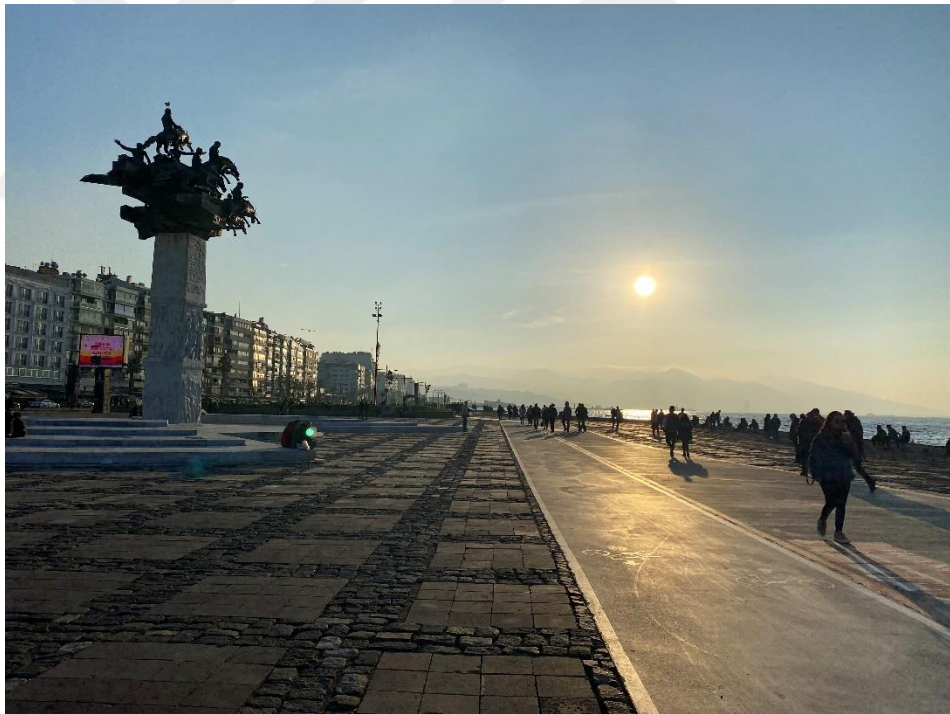


Figure 27. The finish point - Gündoğdu Square

The route, which a non-disabled individual can complete in 10 minutes at an average speed, was successfully completed in 20 minutes by a congenitally visually impaired participant.

3.2.4. Route 4: Arrival at Sevinç Patisserie

Our final route is to arrive at Sevinç Patisserie, which is our starting point, where we will pass through streets with approximately 230 m. Our reason for choosing this route is to both aim to complete the route with a full tour and to test the participant's senses since the traffic flow is more than other routes. As at the beginning of each route, the route was described to the participant by the researcher.

At the beginning of Route 4, there are tall buildings in front of us. We pass a road before we reach these buildings (Figure 28). When we pass this road, there are small plants on the right of the pavement and cafes on the left (Figure 29-30).



Figure 28. Start point - Arrival at Sevinç Patisserie



Figure 29. Small Trees



Figure 30. Cafes (taken by author)

We are crossing a street with heavy traffic (Figure 31). After crossing the street, there is a street similar to Route 1. This is a street where high-rise buildings are located on the right and left, where restaurants, cafeterias and shops are located below, just

like on the 1st route, and advertising boards are hung in the middle of the road (Figure 32). There are trees on the right and left and in the middle of the road (Figure 33).



Figure 31. Street to be crossed



Figure 32. Cafe



Figure 33. The finish point - Arrival at Sevinç Patisserie

The participant completed the last route as well as the other routes without any problems. The 4th route, which a non-disabled individual can complete in 3 minutes at an average speed, was successfully completed in 9 minutes by a congenitally visually impaired participant.

3.3 Instruments

The aim of this thesis is to analyze the other senses of a congenitally visually impaired individual that he uses while exploring the city in daily life. In order to finalize this analysis, 4 routes determined by the researcher were video recorded for a visual data. While the route that the participant walked with the researcher was video recorded with the help of the phone and selfie stick, a second phone was fixed to the chest level of the participant with the help of tape in order to analyze the route from the eyes of the visually impaired participant.

Briefly, the following 3 materials were used in this field study:

- 2 phones
- Selfie stick
- Tape

CHAPTER 4: RESULTS AND DISCUSSION

The aim of this thesis is to investigate and analyze how and to what extent a congenitally visually impaired individual uses which senses to explore the city in daily life. The main goal in the 4 routes determined by the researcher is for the visually impaired participant to make verbal descriptions while exploring the city on all routes. While the participant was making these descriptions, the entire speech was recorded visually and verbally with the consent of the participant. With the data obtained from here, it has been analyzed what a congenitally visually impaired individual explores the city by referring to in his daily life. In addition, the participant's strategies were evaluated in this study. The performances of the senses that the participant referenced were also evaluated according to the number of senses used along the route. That is, the participant's reference senses for each route were analyzed and compared with all routes. It has been tried to analyze whether the city has been discovered enough in daily life on the routes that are analyzed both subjectively and in general.

In his work titled *The Production of Space*, Lefebvre adds a spatial component to everyday life and mixes it with architecture. With the notions of urbanity and space, Lefebvre approached ordinary life from a sociological standpoint. He considers space to be a social product. Also, Lynch (1996, p. 153-161) claims that there is a landscape or decor in the city waiting to be discovered that may be observed in every setting. Every individual has a unique perspective on the city. Because the city's structure has also been modified millions of times by people who experience the city quite differently.

Moreover, the participant's descriptions were classified and presented graphically. Classification, small, beautiful, large, etc. adjectives or car-bike, obstacle, etc. made according to spatial characteristics such as names. The noun, adjective and emotion definitions used by the participant were also included in these three categories. For example, when the participant uses the noun "curb", "high, flat, sloppy, etc." adjectives such as "sad" are added under the tactile information (Table 1-Table 2-Table 3). They do not need to use words like "sound, touch and smell" directly. As stated in Foulke (1982), the world of a blind individual is composed of trees, buildings, cars, etc. can be defined by spatial properties rather than objects.

Table 1. Coding system for auditory information in case study in İzmir

	SPACE FEATURES	THE CASE STUDY IN İZMİR	
<i>1</i>	<i>SOUND</i>	Definition	Auditory information giving by <u>Adjective</u>
		Sample (P.1.)	<i>“This is a cafe with <u>wicker chairs</u> outside. We can easily hear and understand this.”</i>
		Sample (P.2.)	<i>“I can understand that we are in <u>a small street</u> with <u>small shops</u> on our right but closed due to the fact that today is Sunday, and cars on our left.”</i>
		Definition	Auditory information giving by <u>Noun</u>
		Sample (P.1.)	<i>“I can clearly hear people having breakfast, people behind us and to our right, a customer holding a <u>bag</u> and trying to place it under the table.”</i>
		Sample (P.3.)	<i>“On the right are <u>pigeons</u>. How well they flew. As we pass by, we can easily hear them take off from the sound of their wings.”</i>
		Definition	Auditory information giving by <u>Feeling</u>
		Sample (P.1.)	<i>“Needless to say, <u>a beautiful lady</u> passed us by.”</i>

Table 2. Coding system for tactile information in case study in İzmir

	SPACE FEATURES	THE CASE STUDY IN İZMİR	
2	<i>TEXTURE</i>	Definition	Tactile information giving by <u>Adjective</u>
		Sample (P.1.)	<i>“There was a great sun by <u>the large tree</u>. I act according to the reflection of that sun.</i>
		Sample (P.1.)	<i>At the same time, I orient myself in my daily life accordingly.”</i>
		Sample (P.4.)	<i>“The <u>pavement gaps and fullness</u> under our feet on the route we walked are references we have received in our daily lives.”</i>
			<i>“We passed a <u>plastic walking path</u> now.”</i>
		Definition	Tactile information giving by <u>Noun</u>
		Sample (P.1.)	<i>“The reflection of <u>the sun</u>, since I am visually impaired, I cannot know the reflection of the light, but I can determine my direction with the warmth that comes to my head, ears, nose and face.”</i>
		Definition	Tactile information giving by <u>Feeling</u>
		Sample (P.1.)	<i>“The person who had just hit me had his back turned, he couldn't see me, then he turned around and looked as if to <u>say sorry</u>. We don't need to see this. We can easily understand this from the actions of people using our sixth sense.”</i>

Table 3. Coding system for olfactory information in case study in İzmir

	SPACE FEATURES	THE CASE STUDY IN İZMİR	
3	<i>SMELL</i>	Definition	Olfactory information giving by <u>Adjective</u>
		Sample (P.2)	<i>“We came to a street on our right. A <u>wonderful</u> sea smell comes from this street.”</i>
		Definition	Olfactory information giving by <u>Noun</u>
		Sample (P.4)	<i>“At the entrance of this place, there is a shop selling <u>ground coffee</u> on the right or left.”</i>
		Definition	Olfactory information giving by <u>Feeling</u>
		Sample (P.4)	<i>“Since it is winter now and the wind blows too much, some <u>scents can mix with each other</u>. Which side it comes from can mislead us. When we focus a little more on the place we are looking for, the visually impaired can find the place we want to go more easily. For example, the smell of perfume I just bought, the smell of coffee, the smell of clothes.”</i>

3.4.1 Descriptive Analysis

The distribution of control variables and percentages from the study are examined together, and then the score means are displayed. Table 4 depicts the distribution of the study's control variables. Congenitally visually impaired participant used of hearing sense 65% (at 34 different places) and of sense of touch 35% (18 different places) in Route 1. In this route, the participant, who did not use any sense of smell, analyzed the city by using the sense of hearing the most. In Route 2, 50% used the sense of hearing (3 different places), the sense of touch 33% (in 2 different places), and the sense of smell 17% (only once). As in the previous route (route 1), the participant made the exploration of the city by using the sense of hearing the most and the sense of smell for the first time. In Route 3, he analyzed the discovery of the city

in daily life by using the sense of hearing 85% (in 28 different places) and the sense of touch 15% (in 5 different places). In this route, as in the first route, the participant who did not use the sense of smell used the sense of hearing the most in this route with 85%. In Route 4, the participant completed the exploration of the city using the sense of hearing 75% (15 different locations), the sense of touch 10% (2 different locations) and the sense of smell 15% (3 different locations). The participant, who used the sense of smell in the last route, used the sense of feeling the most in Route 2. In general, the participant who used the sense of hearing the most with 72%, used the sense of smell the least with 4%.

Table 4. Findings of the participant's in Alsancak, İzmir District

Routes	THE CASE STUDY IN İZMİR		
Number	<i>Sound</i>	<i>Texture</i>	<i>Smell</i>
1	34 (%65)	18 (%35)	0
2	3 (%50)	2 (%33)	1 (%17)
3	28 (%85)	5 (%15)	0
4	15 (%75)	2 (%10)	4 (%15)
TOTAL	80 (%72)	27 (%24)	4 (%4)

3.4.2. Auditory References of the City

On Route 1, since the chosen street was crowded and noisy, his first reference was sound. Some of the sounds he took as a reference, such as the sound of music from the cafe, the sound of the air conditioner engine, the sound of the cars, helped the participant find what he was looking for.

Our participant, who continues his daily life, also conveys what the sense of hearing is a reference while exploring the city along the 1st route. For example, many auditory factors such as the voice of the street artist he heard while walking on the route (Figure 34-35), the sound of the restaurant covered with linoleum due to winter (Figure 36-37), the sound of the tree over which bird sounds were heard (Figure 38-39), helped the participant to exploration of the city. Thanks to his sense of hearing, he was able to report that we were passing by an apartment on the route we walked. Also, the sounds of cutlery coming from restaurants or cafes give him a clue whether this is a kebab shop or a dessert shop. He even reported the occupancy rates of restaurants with this sound.



Figure 34. Street artist's performance through the eyes of the participant



Figure 35. Street artist's performance through the researcher



Figure 36. Restaurant through the eyes of the participant



Figure 37. Restaurant through the researcher



Figure 38. Tree through the eyes of the participant



Figure 39. Tree through the researcher

ATMs (Figure 40-41), which he noticed with his sense of hearing, and the cafe, which he thought to have wooden chairs, are among the other elements he discovered in his daily life (Figure 42-43).



Figure 40. ATMs through the eyes of the participant



Figure 41. ATMs through the researcher



Figure 42. Wooden chairs through the eyes of the participant



Figure 43. Wooden chairs through the researcher

On Route 2, the participant, who is congenitally visually impaired, headed for the sidewalk both to avoid the cobblestones on the street and not to make it difficult for cars to pass. While completing the route with a flat and simple pavement, he again made use of his hearing and described the stones on the road with the sound of passing cars. Hearing, one of the senses that he took as a reference while exploring the city in his daily life, was also dominant in the 2nd route. With his sense of hearing, he

described that there are small shops on our right, but closed due to the Sunday, and that there are also pontoons on our left, and he described the road where vehicles with cobblestone pavements pass on our left (Figure 44). Also, thanks to his hearing, he reported that there was a car parked in front of us towards the end of the route.



Figure 44. View of Route 2

On Route 3, he understood that the sea was on our right with the help of his hearing (Figure 45-46). Furthermore, from the echo he picked up from the ground with the help of his cane, he stated that it was a banquet where people could sit and at the same time prevent the sea from flooding. Although we thought that he would be affected by too much wind along the route we went on, he continued to explore the city with the help of his senses. In this process, thanks to his sense of hearing, he perceived that the pigeons were eating and taking off (Figure 47-48), and that there was a trash can on our right (Figure 49). He also understood from the sound of the ferry that we had arrived at the pier and were away from the sea at the end of the road (Figure 50-51).



Figure 45. Kordon Coastline view through the eyes of the participant



Figure 46. Kordon Coastline view through the researcher



Figure 47. Pigeons through the eyes of the participant

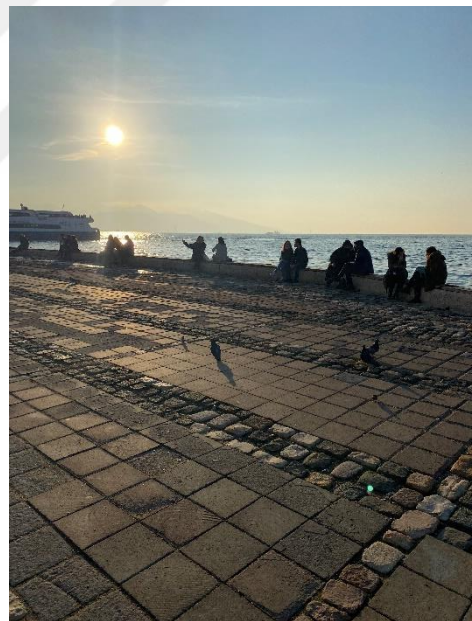


Figure 48. Pigeons through the researcher



Figure 49. Garbage bin



Figure 50. Alsancak Pier through the eyes of the participant



Figure 51. Alsancak Pier through the researcher

On the 4th route, where the sense of hearing is dominant, the participant described the route with the sense of hearing about the flight of birds (Figure 52), approaching the road we will cross (Figure 53-54), flowers, small cafes on our left, and even that we will pass through heavy traffic (Figure 55-56). It has been analyzed that this route, uses the sense of hearing the most while exploring the city in daily life.



Figure 52. Flight of birds



Figure 53. First street to be crossed through the eyes of participant



Figure 54. First street to be crossed through the researcher



Figure 55. Second street to be crossed through the eyes of participant



Figure 56. Second street to be crossed through the researcher



Figure 57. Billboard through the eyes of participant



Figure 58. Billboard through the researcher

Before we finished our route, he stated that there was an obstacle standing in front of him, that was billboard. Passing by the right of the board, which he felt with the echo of the cane, he orientated himself with his sense of hearing (Figure 57-58).

3.4.3. Tactile References of the City

On Route 1, Although the participant used the sense of hearing the most out of the three senses along the route, he also benefited from the sense of touch and smell. For example, he explained that he could find what food he had in which restaurant with the help of his sense of smell in his daily life, and he also described the smells he heard on the route.

His other strong sense, after hearing, was the sense of touch. Taking clues from the stones under his feet, the ups and downs of the pavement, and the touch of the wind and sun on the route we walked, the participant continued his route (Figure 59). The sense of touch, which indicates where to pass when it hits something and supports the participant, was a very dominant sense in this route.



Figure 59. Pavement in Kıbrıs Şehitleri Street

The participant, who explored the city with reference to his sense of feeling in his daily life, followed the waterway and found this with the cane he used, since there were no yellow lines on the route we walked, which are the most necessary for the visually impaired to find their way (Figure 60). While continuing the route, he crashed into the barges that appeared in the middle of the route many times (Figure 61). Stating that this may cause accidents, the participant stated that it is not suitable for the visually impaired way-finding procedure.

We stated that he came to crossroads by reference to his sense of hearing (traffic

noise), but another factor that referred to the participant was that the road ends with a slope and merges with the street (Figure 62). Since he felt the wind more intensely when we came to a wide area, he realized with the sense of feeling that the street on our right and left was connected to another street (Figure 63-64) or that we were in a more open area (Figure 65-66).



Figure 60. Waterway in Kıbrıs Şehitleri Street



Figure 61. Barges in Kıbrıs Şehitleri Street



Figure 62. Slope in Kıbrıs Şehitleri Street



Figure 63. Street connecting through the eyes of the participant



Figure 64. Street connecting through the eyes of the researcher



Figure 65. Square through the eyes of the participant

Figure 66. Square through the researcher

On Route 2, He stated that while walking on a flat pavement, which he described with his sense of feeling, the flow of the route was disrupted due to a ramp in front of him (Figure 67). He also mentioned that the elements that should not be on this type of pavement can be a threat to the visually impaired.



Figure 67. Ramp

On the second route, where the sense of touch and hearing is more dominant, we

passed the street before going to the coastline. After crossing the street, bicycle and walking paths welcomed us. He described here the ground has changed and we are on softer ground (Figure 68-69). This was a city exploration that he would understand which way to walk when he was going to walk in daily life.



Figure 68. The walking path through the eyes of the participant



Figure 69. The walking path through the researcher

As in the previous routes, he tried to explore the city by making use of the sense of touch in the 3rd route. For example, he also stated that he was uncomfortable with the stone shapes (recesses and protrusions) under his feet and that he could not use his walking stick properly (Figure 70). He even stated that the place where I was walking was bumpier than the place where he was walking. The participant, who was congenitally visual impaired, who stated that the ground had improved near our completion (before we reached Gündoğdu Square), completed this route without any problems (Figure 71-72).



Figure 70. Pavement in Kordon Coastline

The participant understood that we arrived at Gündoğdu Square, as we were far from the sea and the sounds of people and the change of stones shape on the route we walked.



Figure 71. The finish point – Gündoğdu Square through the eyes of the participant

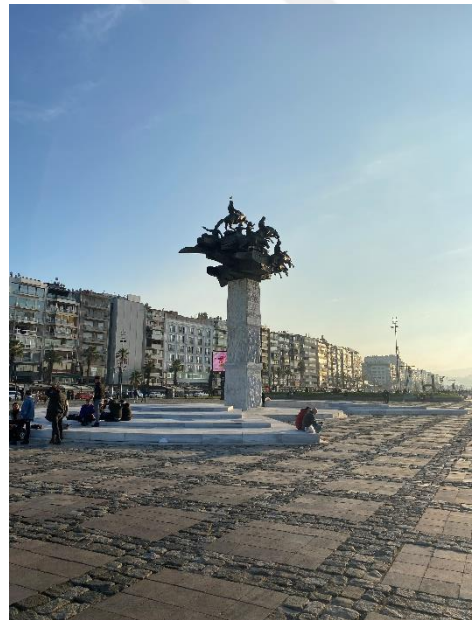


Figure 72. The finish point – Gündoğdu Square through the researcher

3.4.4. Olfactory References of the City

Although his sense of hearing is dominant, he discovered the city by making use of his senses of smell a little.

When we arrive the third route the congenitally visual impaired participant, who realized that we had reached the coastline by the smell of the sea, received a great cue from his sense of smell only once on this route. Moreover, he also stated that people have sensual odors and can distinguish whether the person in front of them is male or female. Although the sense of smell was strong in the exploration of the city and in daily life, but it was not very dominant on these routes.

Despite the fact he could not use his sense of smell efficiently in the other 3 routes we passed, he used his sense of smell to describe how we passed a cafe, and the cosmetics store was on our right (Figure 73).



Figure 73. Cosmetics store

CHAPTER 5: CONCLUSION

This section constitutes the conclusion part of the thesis. It also discusses future research proposals for researchers, addresses the limitations of the study, and explains the importance of this research.

4.1. Summary of the Thesis

The body perceives what it sees, hears, smells, feels, and tastes. So, if we take away the sensation of sight from this experience, will it be incomplete? This thesis attempted to describe how the visually impaired individual interacts with urban area and what factors influence this interaction in daily life. Simultaneously, we seek to comprehend how the vision handicapped individual reveals the various dimensions and codes of space, as well as how he interprets the city via his eyes.

A field study was prepared to analyze the senses used by a congenitally visually impaired individual while exploring the city in daily life. In this field study, 4 routes determined by the researcher were selected. These routes have been selected from Alsancak, İzmir and have common and separate features. The data recorded with video and audio recordings of which senses were more dominant and which senses were used less by the participant, who successfully completed and analyzed all the routes with the researcher, were analyzed. As a result of these analyses, the participant, who was born visually impaired, also stated that while walking on the routes, "The sound is our eye." sentence is approved. As long as, hearing was the most dominant sense in all 4 routes, although the ratios varied in some routes.

We know that the sense of smell is also very strong for visually impaired individuals. The sound of the city is the most essential clue for blind people, but smell environmental cues are also very crucial throughout the blind wayfinding process (Ferdenzi et al., 2010). However, due to the fact that the routes are in the open area, the participant in this study drew the clues from the sense of hearing and touch rather than the sense of smell, drawing his route and providing the discovery of the city.

According to Johann Gottfried Herder, "seeing only reveals shapes, but touching alone reveals bodies." focuses on our fundamental understanding of the world. Although the participant is not as dominant as the sense of hearing, he has benefited from the sense of touch and collected clues in all these 4 routes determined by the researcher.

In today's world, the sense of sight is a sense that plays a leading role in the

exploration of a city. According to Lefebvre (2004), the origin of space is a collection of rhythms that begin in the body. Also, he emphasizes space, in all of its dimensions, is both an idea and a reality, i.e., it is social. Again, it is alive, changeable, and fluid rather than lifeless, rigid, and static. From this point of view, it has been tried to explain that this experience will not be incomplete without the sense of sight in the discovery of the city. At the same time, we attempted to explain many methods of seeing and reading the environment in this study.

4.2. Limitations of the Study

The following items are listed as study limitations based on the research process.

This study, which was carried out with a single participant due to the pandemic, could have been replicated with more participants. In this way, more data could be obtained, and a classification could be made among the participants according to age and gender.

Secondly, due to the pandemic, this study, which was carried out only in the outdoor, could be divided into two different classes as open and closed areas by determining routes in closed areas as well. Thus, the data obtained from the indoor area could be compared with the data obtained from the outdoor spaces.

Finally, if there were no time constraints, this study could have been carried out in 2 different seasons, summer, and winter. Hence, according to the variability of the weather conditions, the visually impaired participant could analyze which senses he could not use effectively, and the data obtained could be classified.

4.3 Future Research Suggestions

This section gives some ideas for further research. As future research directions, the following recommendations are made based on the research methodology and a knowledge of the study's limitations.

First, the researcher can analyze and develop more navigational tactics with more congenitally blind participants. Thanks to this, the researcher can categorize the findings according to gender and age. The senses used while exploring the city can augment the data obtained thanks to more than one participant. He/she can classify the data he/she obtains according to the activities that can be done in daily life. The analysis might be carried out more statistically. Each route that the participant takes may be measured independently, and statistical analysis can be used to investigate how the length and characteristics of the path effect the blind participants' wayfinding behavior.

The researcher can divide the fieldwork into 2 areas, both indoor and outdoor. Data obtained in the open field can be compared with the data obtained in the closed area. It can achieve more results thanks to two different venue features. In this way, the findings obtained can be reproduced since the senses used by the participant in the open area will differ from the senses used indoors. In fact, the routes selected in the open and closed areas can be repeated to walk in summer and winter months. In other words, the same routes can be maintained in different time zones of the year and in different weather conditions. Further research can look at spatial knowledge of many sorts of locales, environmental factors, demographics, and cultures.

As mentioned in the previous sections, there are many studies on exploring the city in daily life by Henri Lefebvre and Michel de Certeau. However, these studies are based on people who sighted. In this study, we investigated how a visually impaired individual can explore the city just like a sighted individual and from which senses they collect clues while doing this. Accessibility and exploration must continue in everyday life. Because the city is a living area, not a static one, and it is constantly waiting to be discovered. This study showed that a visually impaired individual can see the city and moreover, he can feel and experience the city.

4.4 Significance of the Study

The importance of this study was the participation of a visually impaired individual in the exploration of the city in daily life, which had been done before. As we explore the city, the designers were informed that the visually impaired perceive the space and experience the city. With this study, it was also analyzed how a visually impaired individual makes the concept of direction. Elements that will prevent him from exploring the city will offer designers a different perspective. Visually impaired individuals also need to explore the city in their daily lives to live like us. It will draw attention to poorly designed elements that do not think about the user, such as broken roads and narrow streets that will prevent him from perceiving the city, and the city will become more accessible and exploration more sustainable. As designers, we have to provide them. My dissertation study, I believe, will improve awareness in society and assist blind individuals in better integrating their activities in society, both actively and independently. It is feasible to enhance the living conditions of the blind and to meet their requirements across the country.

We have shown that the city is a living area waiting to be discovered. We searched that we could find direction not only by sight but also by our other senses.

And as Foulke (1983) says, “In sighted individuals, knowledge of the geographic environment is thought to be almost solely based upon visual experience.” Perhaps, with this work, sighted people will not be content with seeing the city, but will hear, smell and touch the city like a visually impaired individual. This study will give readers the idea that they can explore the city with their other senses.



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APPENDICES

APPENDIX A: PARTICIPANT CONSENT FORM

CONSENT FORM FOR THE PARTICIPANT WHO CONGENITAL VISUALLY IMPAIRED TO WALK ON 4 DIFFERENT ROUTES

İzmir Ekonomi Üniversitesi Tasarım Çalışmaları Yüksek Lisans programı öğrencisi Selin Kocabıyık olarak yüksek lisans tezimin saha çalışmasında sizin desteğinizi almak istemekteyim.

Yapılacak olan saha çalışmasının amacı:

- Bir kentin yürünebilirliğinin ölçütlerini tanımlama;
- Bu ölçütlere bağlı kalarak görme engelli bireyin deneyimi ile kentsel bir mekanın yürünebilirlik kapasitesini araştırmak;
- Bu çalışmayı, görme engelli birey ile birlikte kentin merkezinde bulunan 4 rotada (Kıbrıs Şehitleri Caddesi, 1476.Sokak, Kordon Sahili ve Sevinç Pastanesi'ne geri dönüş) test etmek;
- Çalışma bulgularına göre, bir kentin görme engelli bireyler tarafından deneyimlenen yürünebilirlik kapasitesine katkıda bulunabilecek stratejileri tartışmaktık.

Yapılacak olan çalışma öncesi, çalışmanın detaylarını katılımcıya aktarmak ve çalışmaya katılım onayını almak önceliğimizdir. Bu sebeple, bu çalışmada sizin (katılımcının) onayınızı alarak yapılan video kaydı ile toplanan veriler yüksek lisans tez çalışması kapsamında sadece bilimsel amaç için kullanılacaktır. Bu bilgiler ve yapılan çekimler sizin (katılımcının) haberiniz olmadan herhangi bir özel amaç için kullanılmayacaktır.

TARİH

İMZA

**APPENDIX B: VERBAL DESCRIPTIONS IN CASE STUDY IN
ALSANCAK, IZMIR**

R.1. (19.12.2021 – 13.00)

Video – 1st.mp4

<i>Start</i>	<i>End</i>	<i>Text</i>
03:25	03:28	(Selin) Şu an Kıbrıs Şehitleri Caddesi rotamıza başlıyoruz.
03:29	04:01	Görme engelli bir bireyin günlük hayatta hedef alacağı, yürürken kendisine metot olarak kullanacağı bir güzergâh vardır. O güzergahta herkes işine gider, evine gider, markete gider. Bu güzergahta herhangi bir ses herhangi bir yolun hareketi ve günlük hareketler görme engelli bir bireyin hayatını etkiler.
04:14	04:35	Burada yapılan yol çalışmasının sesi tam karşımda, bu bir görme engellinin hedef aldığı noktadır bu yüzden yapılmakta olan yol çalışmasının kenarından geçmem lazım. Bile bile tehlikenin üstüne gitmeye gerek yok. Burada işitme duyumu kullanarak sağımızda bir araç olduğunu bilebiliyorum, ben bu su yolunu takip ederek gittiğimde hiçbir engele takılmadan geçeceğimi düşünüyorum.
04:38	04:46	(Selin) Biraz daha sağa doğru gidebiliriz. Tamam oradan kurtulduk şu an.
05:20	05:39	Mesela sağ tarafımızdaki arabanın geçtiğini görmemize gerek yok bunu rahatça duyabiliyorum hatta bu bir iş makinası. Kamyon ya da kamyonet olabilir.
05:43	06:52	Günlük yürümüş olduğumuz güzergahta bizim hedef alacağımız noktalar ilk önce sarı çizgisidir. Sarı çizgi, yürümüş olduğumuz güzergahta yoksa yanımızdaki kafelerin sesi, rüzgârın bize yön vermiş olduğu hızı ve yükselişi, kulaklarımıza vermiş olduğu basınç duygusu, bunlar bizim yön tayinimizdir. Nasıl mesela? Şu an yürümüş olduğumuz güzergahta hem sağ tarafımızda hem

sol tarafımızda kapalı bir alan var. Ben şu an sağ tarafa daha yakınum. Çünkü ben bir yeri hedef almalıyım. Yani geniş bir alanda yürürken, yürümüş olduğum rota, bastonumla kontrol etmiş olduğum nokta ya da sağ ve sol taraftaki binaya yakınlığım ve uzaklığım benim hedeflerim. Ben şu an sağ tarafta görmüş olduğunuz su yolunu takip ederek gitmek istiyorum. Çünkü, herhangi bir insan veya görme engelli kişi günlük hayatını idame ettirirken kendisine bir hedef noktası ayarlaması lazım.

07:00 07:15 Mesela bana az önce çarpan insanın arkası dönüktü, beni göremedi, sonradan döndü ve kusura bakmayın der gibi baktı. Bunu görmemize gerek yok. Bunu da altıncı hissimizi kullanarak rahatça insanların hareketlerinden anlayabiliyoruz.

07:25 08:12 İş yeri, ev, market gitmiş olduğumuz güzergahlarda referans almış olduğumuz direk, herhangi bir çukur, yürürken dikkat etmiş olduğumuz herhangi bir ses veya boşluktan gelen herhangi bir rüzgâr görme engellilerin günlük hayatında almış olduğu bir hedef noktasıdır. Bu hedef noktaya göre görme engelli hareket eder. Mesela biz şu an yürüyerek hareket ettiğimiz için, yürümüş olduğumuz güzergahtaki ayaklarımızın altındaki kaldırım boşlukları, kaldırım dolulukları bunlar günlük hayatımızda almış olduğumuz referanslardandır.

08:29 08:32 (Selin) Bir de yerdeki mozaikler.

08:33 08:37 Evet yerdeki karo taşlarının inişi çıkışı veya bitişi.

08:38 09:04 Mesela sağ tarafımızda bir apartman kapısı var ve apartman kapısından birisi çıkıyor ve kapıyı kapatıyor. Günlük hayatımızda hedef alacağımız noktaları da bu şekilde duyabiliyoruz. İlla görmeye gerek yok, görmeden de hayatımızı idame ettirme adına duyularımızı çok iyi kullanarak, duyularımızın hareketini bilinçli bir şekilde yönlendirerek onu rahat duyabiliyoruz.

- 09:05 09:10 Mesela sađ tarafımızda demir gibi bir Őey vardı.
- 09:11 09:12 (Selin) Evet, mobilet vardı.
- 09:17 09:40 Őimdi sađ tarafımızda bir boŐluk var, bunun bir sokak olduđunu dŐŐnuyorum. Kıbrıs Őehitleri Caddesi'ni ortadan sađ tarafa bolen geniŐ bir sokak. O sokađın iinde, caddenin uzerinde yemek masaları olabilir, kenarda kŐŐk kŐŐk sehpa lar yani oyle bir duyum alıyorum gibi.
- 09:52 09:58 Yanımızdan elektrikli bir bisiklet geti herhalde, sađ tarafımızdan.
- 10:05 10:13 Burada elektrikli bir Őey geliyor sađ taraftan. Ya bir trafo ya da trafoya benzeyen elektrikli bir mekanizma.
- 10:13 10:14 (Selin) Evet, klimanın motoru.
- 10:20 10:38 Burada flut alan bir arkadaŐımız var. Bile bile bu flut alan arkadaŐımızın uŐtune gitmeye gerek yok unkŐ onun sesini duyuyoruz. O da zaten gorme engelli yaklaŐtıđında flut almaya baŐlıyor, yoksa gormanmez bir kazaya sebebiyet verebiliriz.
- 10:44 10:50 Aslında gŐnlŐk hayatımızda insanların sesleri, sizinle birlikte yŐrŐmŐŐ olduđumuz hareket bana yŐn veriyor.
- 10:51 11:14 Sol tarafta bir araba var mesela arabaya Őu an Őp atıyorlar ya da malzeme getirmiŐler dŐkkana, el arabası gibi, o el arabasına malzemeleri koyuyorlar. Bu arabanın sesini duyduđumuz zaman bile bile uzerine gitmemize gerek yok. Bu gŐnlŐk hayatta almıŐ olduđumuz bir hedeftir. Gorme engellilerin hayatını kolaylaŐtıran bir duyu.
- 11:30 11:59 İnsanların eŐitli tensel kokuları vardır. Bu terle veya herhangi bir parfŐm kokusuyla alakalı deđil. Bu tensel kokuyu gorme engelli gŐnlŐk hayatında duyar ve kullanır. Yanılıyor olabiliriz ama herhangi bir iletiŐim kuracađımız insana, hanımefendi beyefendi diye kime hitap edeceđimizi anlayabiliyoruz. Bu tensel koku bizim iin önemli, hedef almıŐ olduđumuz bir nokta.
- 12:00 13:12 Őu an sađımızda ve solumuzda restoranlar var, hatta sol

tarafımızda biraz geride yemek yeniliyor. Ama şu an da restoranın müşteri pek fazla yok. Mesela yarın bu restoranın markasını bilip buraya gelmek istediğimde almış olduğum bir nokta. Nedir? Kaşık sesi... Restoranların kaşık sesleri hiçbir zaman birbirine benzemez. Çünkü her restoranda aynı sistem yoktur, mekân farklıdır, ortam farklıdır, birisi kenardadır örnek vereyim birisi Kıbrıs Şehitleri Caddesi'ndeysen bir diğeri sahildedir. Onların rüzgâr sesi ve dükkânın içine giren elektrik dahi bizim almış olduğumuz ses noktasını değiştirir.

- 13:14 13:21 (Selin) Her restoranda yenilen yemek de farklı olduğu için, siz oranın çaycı mı yoksa kebabçı mı olduğunu ses ve koku ile ayırt edebiliyorsunuz.
- 13:21 13:25 Aynen öyle. Aslında burada bizim ilk baz aldığımız şey koku.
- 13:33 14:04 Sağ tarafımızda bir restoranın kış dolayısıyla müşterileri üşümesin diye etrafını çevirmişler. Onun yankısının duyabiliyorum. Bu bizim için bir hedef noktadır. Görme engelli biri bu sesi duya duya o muşambanın üstüne gitmez. Mesela muşambanın sağ veya sol tarafı kafenin girişi, ona göre insanların ayak seslerini, nefeslerini, konuşmalarını, sohbetlerini duyarak ona göre hareket ederiz.
- 14:05 14:14 Sağ tarafımızdan motor geçti. Hatta motorcu aslında hızlı geliyordu, biraz yavaşladı beni ve bastonumu görünce.
- 14:18 14:25 Solumuzdan bebek arabalı veya pazar arabalı birisi geçti önümüzden.
- 14:30 14:56 Şu an bir dört yol ağzına geldik. Bunu nereden anlayabiliyorsun dersin görme engellilerin günlük hayatta en verim alarak kullandığı referanslardan biri de rüzgârdır. Rüzgâr bize birebir nerede olduğumuzu ifade eder. Çünkü burada sağdan, soldan, önden ve arkadan çok rahat rüzgârın basıncı kulaklarımıza yansıyor.
- 14:56 15:03 (Selin) Sağ, ön ve arkamız açıldı ama sol tarafımız

- kapalıydı. O yüzden sağdan daha çok rüzgâr geliyor.
- 15:04 15:15 Solumda siz varsınız bir de sağa daha yakınım. Bazen uzak noktaları kontrol edemeyebiliyoruz.
- 15:35 15:45 Sol tarafımızda bisikletiyle ilgilenen birileri var. Hatta bekliyorlardı binip binmemeyi veya tamir işi varsa onu kararlaştırıyorlardı.
- 15:45 15:50 (Selin) Mobicetine binmeye çalışıyordu.
- 16:04 16:16 Bizim asıl baz almış olduğumuz hedef noktalarımızdan birisi de rüzgâr diye konuşmuştuk hani, şu an mesela daha sert bir rüzgâr geliyor bana bunu sebebi sokak veya cadde genişledi. Biz de o caddenin veya sokağın genişliğine göre hareket ediyoruz.
- 16:40 16:55 Şu an sokak müziği yapan bir amcamız var herhalde. Amca olduğunu da sazdan anlayabiliyoruz. Alakası yok aslında, sazı bir genç de çalabilir yaşlı da çalabilir ama türkülerden, uzun havalardan bunu çıkarabiliyoruz.
- 16:56 17:11 Sağ tarafımızda da bir ağaç var herhalde ve ağacın üzerinden bana çok güzel kuş sesleri geliyor. İşte bu bir görme engellinin ortamdaki doğa seslerini rahat alıp günlük o hedef noktasına göre hareket etmesidir.
- 17:15 17:23 İleride sol tarafımızda da bir araba var ve o arabaya malzeme indiriyorlar.
- 17:23 17:27 (Selin) Evet bir çöp arabası. Malzeme ve çöp atıyorlar.
- 17:44 18:07 Belki kamerada görülür belki görülmez ama, arkamızdaki bulunmuş olduğumuz geniş ağacın yanında harika bir güneş vardı. O güneşin yansımalarına göre, ağacın dahi vermiş olduğu ısıyı güneşin yönlendirmesiyle ona göre hareket eder ve duyularımızı ona göre kullanır, ona göre kendimizi günlük hayatta yönlendiririz. Bu bir hedef noktası mesela.
- 18:17 18:55 Mesela şu an sol arkadan araba geliyor ya, benim arabanın sağa yanaştığını düşünerek sola çekilmem gerektiğini düşünüyorum. Hatta araba geri geri giderek yanaşıyor

oraya. Bir esnaf da onun içine çöp attı. Benim o aracı duyduğumda sola doğru çekilmem gerektiğini anlayabilirim. Bu işte ağacın, aracın veya insanların bana geliş ve gidiş noktasına göre benim kendi yönümü tayin etmemle alakalı.

- 19:01 19:06 Bu güzel rüzgârın sesi de bana sahile yanaşıyorsun diyor.
- 19:07 19:56 Burada görme engelliler için uygun olmayan, kötü bir direk var. Günlük hayatımda baston kullandığım için rahatça bu direği hissedebiliyorum. Biz bu direkleri baston kullandığımız için rahatça hissedebiliyoruz ama baston kullanmayan yarı görme engelliler bununla ilgili olarak zorluk yaşayabilir. Direk var mı yok mu derken direğin üstünden atlayabilir. Dolayısıyla baston bizim için çok güzel bir araç ve bu araç ile engellerin sağından mı geçmem gerekiyor solundan mı geçmem gerekiyor bunu tayin edip, nasıl hareket etmem gerektiğini anlayabiliyorum. Mesela insanlar şu an sağ tarafımızdan geçiyor. Direğin solunda biz olduğumuz için.
- 20:12 20:33 Şöyle dönüp güneşinde yansımasını gösterelim. Bu telefonda daha net görülecektir belki de. İnsanların kahvaltı yaptığını, arkamızda ve sağımızda da insanların olduğunu, bir müşterinin elinde poşet olduğunu ve onu masanın altına yerleştirmeye çalıştığını rahatça duyabiliyorum.
- 21:08 21:50 Binaların yakınlığını ortalamış durumdayım. Ortalamak da bir hedef noktasıdır. Sağa ve sola yakınlığımı ayarlısam restoranların önündeki masalara sandalyelere, park edilmiş araçlara çarpmamış olurum. Çünkü benim bir hedef noktası belirlemem lazım çünkü ben duyularıyla hareket ediyorum. Ve bu duyularımı iyi kullanmam için ışığın yansıması, -biz görme engelli olduğumuz için ışığın yansımasını bilemeyiz ama- kafamıza, kulağımıza, burnumuza, yüzümüze gelen sıcaklığıyla yönümüzü tayin edebiliyoruz.

- 21:55 21:58 Güzel bir bayan geçtiğini söylememe gerek yok.
- 22:02 22:05 Bir duba vardı yolda araçların girmemesi için.
- 22:12 22:58 Şu an bir yol ayrımına geldik, bu yol ayrımını kaldırımın eğitiminden anlıyoruz. Bu yol ayrımında da birilerinden yardım isteyerek hareket ediyorum. Siz yanımdaysanız ‘‘Buradan karşıya birlikte geçebilir miyiz?’’ deyip sizin kolunuza girerek karşıya geçiyorum. Biz görme engelliler birisinin koluna girerek yürümeliyiz. Siz önden biz arkanızdan yürümeliyiz. Çünkü ben önden yürüdüğüm zaman önümüzdeki herhangi bir basamak söylemeyi unuttuğunuzda ilk önce engele ben takılacağım. Sizin kolunuzda olduğumda ve önden siz ilerlediğinizde, bir adım gerinizde kalarak engeli hissedeceğim. Bu da yine aldığımız hedef noktalardan birisidir.
- 23:00 23:06 Yine bebek arabasıyla yanımdan geçen bir aile hem bebek arabasında bir bebek hem de sağ tarafında bir başka bebek var.
- 23:07 23:38 Mesela tehlikesiz bir şekilde, biz görme engelliler için belki bazen uygun olmayan, trafiğin aktif olduğu bir yerden birinin koluna girerek geçtik. Günlük hayatımızda birbirimize destek çıkarak, birlikte hareket ederek, trafik tehlikesini atlattığımız oldu. Günlük hayatımıza bu şekilde devam edebiliyoruz. Bu bir birlikte hareket etme adına, günlük hayatımızı paylaşma adına çok güzel bir şey.
- 24:32 24:54 Solumuzdaki kafenin önüne geldiğimizde, buranın kafe olduğunu, marketin önüne gittiğimizde yazarkasa sesini duyarak buranın market olduğunu anlayabiliyoruz. Kasadan ürünler geçirildikçe çıkan sensor sesiyle anlamak mümkün. Almış olduğumuz güzel bir hedef noktası.
- 24:55 24:57 Sağ tarafta bir ATM var mı?
- 24:58 24:59 (Selin) Evet ATM’ler var.
- 24:59 25:30 İnsanlar orada para çekiyor, iki veya üç kişi sırada. Bunu da bir görme engelli günlük hayatında ATM’ye para

çekmeye gidebilir, aktif olarak rahat hareket etme adına bankaya gidebilir. Bu almış olduğu bir hedef noktası. Marketin yanındaki ATM. Bu gelmiş olduğu yeri bir görme engelli hayatta unutmaz.

25:43 25:59 Yine burada bir su yolumuz var aslında görme engelliler için su yolunun kenarlarında minik bir çıkıntı olsa görme engelli çukura düşmez, ayağını burkalmaz ya da su yolunun kenarında olduğunu anlayabilir.

26:06 26:39 Yine burada sağ tarafımızda bir ağaç var herhalde, bu ağaç ince yapraklı bir ağaca benziyor. Elinde poşeti olan insanlar buradan gelip geçiyor ağacın altından. İkili üçlü gruplar halinde insanlar geliyor. Bunları rahatça duyabiliyoruz. O insanların ayak seslerine göre, ellerindeki poşet seslerine göre biz yönümüzü tayin ederek insanlarla çarpışmamaya gayret ediyoruz.

26:53 27:40 Yine sağ tarafımızda ön bahçesinin etrafı ve üzeri çadırla çevrilmiş gibi olan kafenin içerisi dolu gayet. %50-%60 gibi bir dolulukta kapasitesi. Boş masaları olsa da görüyormuş gibi konuşmama gerek yok. Net duyuluyor. Ve bu kafenin sağ tarafında bir ağaç daha var. Kafenin konumu iyi bir yerde, ben bir gün bu kafeye yemek yemeye veya kahvaltılık yapmaya geleceksin bu ağaçları baz alırım. Ağaçların sesini duyduğum zaman giriş kapısından kafeye giriş yaparım. Yine sağ tarafımızda ağaçlar devam ediyor, küçük küçük ağaçlar.

27:47 28:13 Bu bastonu da bu şekilde kullanmamızın sebebi, dikkat ederseniz sağ ayağımı attığımda baston sola gidiyor, sola adım attığımda baston sağa gidiyor. Sebebi de adımlarımızın yönünü tayin edebilmek. Ben bastona göre hareket ediyorum.

28:36 28:38 Burada güzel bir ağacımız var sağ tarafta.

28:40 28:42 (Selin) Ağaçları nasıl hissediyorsunuz?

- 28:43 29:54 Rüzgârın ağaçlardan dolayı biraz daha kesik kesik gelmesinden, insanların ayak seslerinin ağaçlardan yansısıyla almış olduğum bir hedef noktadır. Örneğin şu an iki tane erkek arkadaş yürüyor yan yana, onların çıkardığı ayak sesleri havaya dağılmıyor. Ve ağacın dallarına çarpıp geri dönüyor. Bu yankıdan faydalanıyoruz, nerede olduğumuzu anlayabildiğimiz için bizim üzerimizde ağaç mı var, muşamba mı var yoksa balkonun altından mı geçiyoruz algılayabiliyoruz. Aldığımız bu yankı ses çıkaran herhangi bir şeyi bizim hedef noktası haline getirmemizi sağlıyor.
- 30:30 30:48 Çok güzel ahşap sandalyeleri olan küçük bir kafe var sağ tarafta. Ahşap sandalyelerde az müşterisi olan, salaş bir yer. Sol taraf biraz daha elit gözüküyor. Çünkü bir bardak sesi bir fincan sesi bizim hedef noktası almamız için yeterli oluyor.
- 30:50 31:06 Şu an bir yol kenarına geliyoruz büyük ihtimalle. Bir yol geçeceğiz, bu yolu da günlük hayatımızda anlamamız ve strateji geliştirmemiz gerekiyor, illa kaldırımın kenarında iniş ya da çıkış olmasına gerek yok. Hızlı akan trafikteki arabaların sesini duyabiliyoruz.
- 31:11 31:20 Yine bizim dubalar... Arabaların park etmemesi için olan. Aslında bu dubaların plastik olması bir görme engellinin günlük hayatını kolaylaştıracak bir etken.
- 31:21 31:25 (Selin) O dubalar bizim ilk rotamızın bittiğinin de resmiydi. Rotamızı tamamladık.

R.2. (19.12.2021 – 13.45)

Video – 2nd.mp4

<i>Start</i>	<i>End</i>	<i>Text</i>
00:25	01:00	Yürümüş olduğum güzergahımızda sağ tarafımızda küçük dükkanların bulunduğu, ama bugünün Pazar olması sebebiyle kapalı olduğu, sol tarafımızda da arabaların akıcı geçtiği küçük bir caddede olduğumuz anlayabiliyoruz. Sol tarafımızdaki caddenin de Arnavut kaldırımlardan oluştuğunu anlayabiliyoruz. Nasıl anlayabiliyoruz? Arabaların seslerinden, üzerinde hareket ettikleri tekerleklerin çıkardığı seslerden anlayabiliyoruz.
01:07	01:33	Bizim üzerinde yürümüş olduğumuz güzergâh aslında görme engellilerin günlük hayatında rahat hareket edebileceği çok güzel bir kaldırım. Çünkü şu an bu kaldırımda hiçbir engel yok. Herhangi bir tezgâh, masa vb. Görme engellilerin yürüyüş güzergahında kafasına veya ayaklarına takılabilecek bir engel olmadığından daha hızlı yürüyebiliyoruz. Mesela sağımızda bir sokağa geldik. Bu sokaktan harika bir deniz kokusu geliyor.
01:34	01:38	Mesela sağımızda bir sokağa geldik. Bu sokaktan harika bir deniz kokusu geliyor.
02:24	02:47	Strateji geliştiriyoruz demiştik, görme engellilerin bu gibi kaldırımlı yerlerde bastonu sürterek değil sağa sola vurarak kullanması lazım. Ama burada rahat bir şekilde bastonumuzu kullanıp günlük hayatımıza devam edebiliriz.
02:50	03:00	Burada yürümüş olduğumuz yolda bir satıcı dükkanının buzdolabının malzemeleri var, onu hemen geçtik.
03:01	03:13	Burada bir tamirhane var aslında, tamirhanenin malzemeleri, parçaları, bisikletleri, tekerlekleri var.
03:14	03:25	Aslında bu günlük hayatımızda rahat hareket etme alanı için hiç iyi bir şey değil. Çünkü benim yürüme güzergahımı yani kaldırımını işgal ediyor.

04:05	04:17	Burası deęişik bir dükkanın önü ve sağda solda çok eşya olduęu için bir daha o eşyalara çarpmamak adına bir gören eşliğinde gitmemiz bizim daha sonrası için hedef noktaları belirlememizde ve ona göre hareket etmemizde önemlidir.
04:19	04:22	Önümüzde park etmiş olan bir araç var.
04:37	04:44	Mesela siz kaldırımı söylememenize rağmen otomatikman düz bir yer olduęu için hissettim. Artık burası sahil.
04:56	04:59	Plastik bir yürüyüş yolundan geçtik şu an.
05:05	05:45	Görme engellilerin günlük yaşamlarında kullanmış olduęu kıyafetten ayakkabıya kadar her şey iyi olması lazım. Örneğin iyi bir ayakkabıdan kasıt sadece kaliteli olması değildir. Biz görme engelliler için önemli olan zemini hissetmektir. Zemini hissetmemiz için de iyi tabanlı bir ayakkabı almamız lazım. Biz önümüzü görerek yürüyen kişiler değiliz. Yoldaki boşlukları ayağımızla rahat hissedebilmemiz için, iyi eşyalar seçmemiz lazım.

R.2. (19.12.2021 – 14.00)

Video – 3rd.mp4

<i>Start</i>	<i>End</i>	<i>Text</i>
00:15	01:38	Biz Alsancak veya Kordon'un devamındaki bir sahildeyiz, deniz sağ tarafımızda. Ayak seslerinin çok önemli olduğunu ifade etmiştim. Kullanmış olduğumuz bastonun yankısı da çok önemli. Çünkü sağ tarafımda deniz direkt olarak basamak inmiyor. İnsanların oturabileceęi yüksek bir banket gibi bir duvar var. Hatta bu da dalgaların insanların üzerine gelmesini engelliyor, aynı zamanda insanların oturabilmesini sağlıyor. Bunu nerden anladın dersiniz, bastonu yere sürterek aldığı yankı ile anlıyorum. Sağ tarafımda bir çıkıntı var ve o çıkıntının yüksekliğinin dizime kadar geldiğini düşünüyorum. Önceden gördüğümünden dolayı değil, sesin yankısından dolayı. Bina

yankısı daha farklı oluyor çünkü binalar bizden büyük. Biz ayağımızla yürüyoruz veya bastonumuzu yere vuruyoruz, yürümüş olduğumuz güzergahta binaların yankısı bize çarpıyor ve kafa hizamıza geliyor. Bu yankıyı rahat duyabiliyoruz. Ama buradaki yankı biraz daha alçak seviyede kalan bir yankı. Ve çabuk kesiliyor. Bu da bunu hissetmemiz için almış olduğumuz bir hedef noktasıdır.

01:46 02:05 Gündelik hayatınızda sahile çıktınız, yürüyeceksiniz. Bu Arnavut kaldırım taşları sizi rahatsız eder mi? Daha konforlu bir yürüyüş alanı mı olmalı? Bu sizin için iyi bir referans mı?

02:10 02:50 Bir görme engellinin günlük hayatını en kolaylaştıran şey sarı çizgidir. Arnavut kaldırımlarda yürümemiz biraz daha zorlaşıyor. Çünkü bastonun ucu da sürekli çukurların olduğu bir zeminde daha zor hareket ediyor. Topuklu ayakkabı giymiş bir kadının burada yürümesi nasıl ki zorsa, bizim de bastonla yürümemiz zor oluyor.

02:59 03:22 Solumuzda bir çöp bidonu var herhalde, nasıl anladın dersenez, çöp bidonunun içinden bir poşetin rüzgarla sağa sola savrulması almış olduğumuz mükemmel bir püf noktası. Onu siz veya başkası söylemedi, rahat bir şekilde duyabiliyorum.

03:40 03:46 Bankta oturmuş bir insan, telefonundan müziğini dinliyordu ve bir şeyler yiyordu.

03:47 03:57 (Selin) Evet, orada oltaları var ve balık malzemeleri satıyor. Aynı zamanda dediğiniz gibi bankta oturuyor.

04:40 05:20 Bisiklet sesi, insan sesi, ayak sesi bu sesler almış olduğumuz hedef noktalardır bizim. Biz ona göre hareket eder, ona göre adımlarımızı atarız. Mesela sizin yürüdüğünüz yer biraz daha bozuk benim yürüdüğüm yere göre. Bunu da ayak seslerinizden anlıyorum. Ses bizim için gözdür. Beni iyi yerden yürütüyorsunuz gibi, öyle gidiyor güzergâh. Sizin yürüdüğünüz yerde ayağınız bir boşa

gidiyor bir doluya gidiyor, yankı sesinden çok rahat anlayabiliyorum.

05:43 06:41 Mesela şu an bu sesi anladım, İzmir Büyükşehir Belediyesi'nin BİSİM'i var. Onun bisikletlerinden geçti şu an. Onu anlama nedenim de bisikletin amortisör sesi, zil sesi. Bu bir hedef noktası. Erişilebilirlik; gören, gözüyle neye erişebiliyorsa görme engellinin de ona erişebilmesi demektir. Görme engellilerin günlük hayatta kullanmış olduğu bir şey. Örneğin şu an sağ taraftaki sahilin duvarlarının bana uzak olduğunu düşünüyorum, uzaklaştık oradan. Onu yürüme sesinden, yankı sesinden her şeyden duyabiliyorum.

06:47 06:52 (Selin) Peki bu yolda yürürken estetik açıdan size güzel gelen bir şey var mı?

06:54 07:08 Arnavut kaldırım, görme engellinin günlük hayatında kullanması için zor bir güzergâh. Ama düz ve daha yürünebilir bir yer olduğunda biz daha konforlu yürüyebiliyoruz.

07:09 07:25 Sağ tarafta güvercinler var. Onların kanat seslerini duyarak sağ tarafa gitmeme gerek olmadığını anlıyorum. Ne güzel havalandılar. İşte bu güzelliği görebilen görüyor, biz de kanat seslerinden havaya yükseldiğini, .biz yanlarından geçerken havalandıklarını çok rahat duyabiliyoruz.

08:24 08:44 (Selin) Biz az önce dar bir caddeden geçtik, ondan önce daha geniş bir caddeden geçtik. Burada sağ tarafımız tamamen açık, sol tarafımızda da binalar çok uzakta. Bunun farkını rahat hissedebiliyor musunuz? Açık alanda yürümek dar bir alanda yürümekten daha mı kolay daha mı zor?

08:47 09:32 Böyle geniş bir alanda yürümek yön tayin etmek açısından bazen zor olabiliyor. Çünkü, ayaklarımızın altında yürüyebileceğimiz bir çizgi yok. Çizgi olmaması sebebiyle, biz daha rahat hareket etme adına takip edebileceğimiz bir

nokta yok. Sol tarafta bir tane çöp bidonu var herhalde. Sesini çok rahat anlayabiliyoruz. Onun sesini duya duya üstüne gitmek olmaz. Mesela sağ tarafta güzel kuşlar uçuşuyor, insanlar yürüyor. İnsanlar balık tutuyor oltalarını atarak, bunları duyuyoruz.

- 09:45 09:48 Sol tarafımızda park etmiş bir araç...
- 09:50 09:58 (Selin) Sol tarafımızda da park etmiş araç dediğiniz aslında bir tuvalet. Sağ tarafımızda ne var biliyor musunuz? Alsancak iskelesine geldik.
- 10:00 10:20 Geniş alandaki yankılar, rüzgarlar bazen duylara engel olabiliyor. Çünkü geniş alanda rüzgâr her taraftan geliyor. Rüzgârın yönü belli değil. Veya nereden geleceğini anlayamadığımızdan dolayı neyin önünden veya neyin yakınından geçtiğimizi bilemiyoruz. Bu da zorlandığımız bir şey.
- 10:21 10:27 (Selin) Ama rüzgârın kesildiğini hissettiniz. Çünkü sağınızda iskele vardı, solunuzda da tuvalet vardı.
- 10:28 10:40 İskelenin binası bizim nereye geldiğimizi ifade ediyor. Çünkü sahilden sonra sağ tarafta takip edeceğimiz ilk şey yankı. Yankı, bastonu yere vurduğumuzda sağımızdan yansıyor. Mesela solumuzda da bir ev var, ufak bir ev.
- 10:41 10:48 (Selin) Küçük bir büfe var. Bunu da rüzgâr yine kesildiği için anladınız sanırım.
- 10:53 11:27 Bu büfenin önüne geldiğimde yanımdan birisi geçtiğinde, mesela şu an arkadan birisi geliyor. Onun yanıma yaklaşmasını duyarım ve ona buranın ne olduğunu sorarım. Onlar da bana cevap verir. Aslında bir bakıma insanlarla birlikte yardımlaşma, strateji geliştirme ve sosyalleşmiş de oluyoruz aynı zamanda. Oranın ne olduğunu öğrenmem için, bu pandemi sürecinde Corona Virüs döneminde her yere dokunup ellemem uygun değil. Neresi olduğunu sorarsam boşu boşuna gidip dokunmama gerek kalmaz.
- 11:32 11:35 (Selin) İnsan faktörü sizin için yararlı oluyor.

- 11:35 11:55 Kesinlikle yararlı oluyor, günlük yaşantımızı kolaylaştırıyor. Aynı zamanda kolaylaştırdığı gibi yürüyüş güzergahlarımızda da çıkan engellerin bir nebze azalmasına sebep oluyor. Mesela az önce siz beni dükkânın önünde uyarıştınız. Uyarmadığımız takdirde ufak bir kaza, takla atma, ayaklarımızın yerden kesilmesi gibi şeyler olabiliyor.
- 11:56 12:10 Karşımızda da sokaktan bira şişelerini toplayan birisi var. Onlardan para kazanıyor olmalı.
- 12:15 13:09 Gördüğünüz gibi yürümesi çok zor olan bir güzergâh, çünkü bizim adımlarımızı takip edebileceğimiz bir çizgi ve hedef noktası yok. Aslında şu an sağ tarafımızda güzel takip edebileceğimiz bir çizgi var. Kaldırım çıkıntısı, oturma yerleri. Burayı duyarak biz çok rahat şu tarzda da hızlı şekilde yürüebiliriz. Mesela denizin dalga sesi, burada deniz aşırı köpüklü değil. Daha düz. Çarşaf gibi dedikleri. Sakin yani. Sol taraftan elektrikli bir bisiklet geçiyor. Onu mesela sesinden anlayabiliyoruz.
- 13:36 14:36 Yani temelde bizim için şu önemli, günlük olarak insanlar çoğu ihtiyaçlarını gidermek için bir yerden bir yere gidiyorlar. Markete, bankamatiğe, nefes almak için sahilde yürüyüşe vb. Almış olduğumuz hedef noktaları insanların sesleri, insanların yönlendirmeleri, ayaklarımızın altındaki kaldırımların şekilleri, sokaktaki nesnelere yankıları... Bunlar almış olduğumuz hedef noktaları. Biz bu yankıları duyarak ona göre hareket eder ve vücudumuzu ona göre yönlendiririz.
- 14:46 15:05 Mesela şu an dalga seslerinden anlayabiliyorum. Burası az önceki yere göre biraz daha dalgalı. Çünkü burda rüzgar çok.
- 15:18 15:34 Gördüğünüz gibi çukurlu ve tümsekli olan Arnavut kaldırımlarında yürüme süremiz biraz daha fazla oluyor. Ufak bir çöp kutusunun yanından geçtik yine.

- 15:41 15:44 Bankta iki arkadaş oturuyor...
- 15:53 15:55 (Selin) Yine sahile yaklaştığımızı fark ettiniz mi?
- 15:55 16:00 Yaklaştığımızın sesini duyabiliyoruz. Şu an yarım metre yok deniz ile aramızda.
- 16:11 16:14 Sahilden şimdi uzaklaşıyoruz biraz.
- 16:30 16:50 Mesela harika bir güvercin yine yere indi, onlar yem yiyorlar. Onları sesinden anlayabiliyorum çok rahat. Ve bir tane değil birçok güvercin var orda üç beş tane olabilir...
- 17:07 18:31 Yürümüş olduğumuz bu tür düz yüzeylerde biraz daha rahat ve biraz daha hızlı yürüyoruz. İnsanların her zaman yetişmesi gereken bir işi ve bir ortamı var. Arkamızdan bir vapur kalkıyor. Yanaşıyor da olabilir. Onun sesi geliyor. Hatta bir tanesi de çok uzaklaştı gibi geliyor bana. Ses şu an tam benim karşımdan geliyor. Bu bizim günlük yaşamda işe vapurla gidiyorsak almış olduğumuz bir nokta yine. Dümdüz gidemeyiz çünkü bizim hedef almış olduğumuz, takip etmemiz gereken bir nokta var o da sahilin kenarlarındaki beton çıkıntı bandı. Orayı takip ederek, denize doğru o vapurun sesine dümdüz gidemeyiz. O zaman denize düşebiliriz. Belirlemiş olduğumuz güzergahlarda engel olmadan daha rahat yürüyebiliyoruz. Örneğin bir Arnavut kaldırımını bizim için bir engel, bozuk kaldırım görme engelliler için bir engel. Aslında herhangi bir yürüyen için de bir engel.
- 18:57 19:20 Şu an yürümüş olduğumuz güzergâh ve zemin biraz daha iyileşiyor. İyileştikten dolayı açık bir alana geldiğimizi hissediyorum. Artık denizden uzaklaşıyoruz. Uzaklaşıp uzaklaşmadığımızı o vapurun sesinden, sahil bandındaki güvercinlerin seslerinden, balıkçıların sesinden anlayabiliyoruz.
- 19:21 19:23 Ayağımın arkasından bir şey geçti.
- 19:25 19:27 (Selin) Bendim.
- 19:30 19:45 Bir meydan burası. Büyük bir meydan olduğunu nasıl

anlayabiliyorsun diyeceksiniz. Çünkü artık insanların sesi kesik kesik ve dalga dalga geliyor. Geniş bir yerde olduğumuzu buradan anlayabiliyoruz.

R.1. (19.12.2021 – 15.00)

Video – 4th.mp4

<i>Start</i>	<i>End</i>	<i>Text</i>
00:22	01:15	Karşımızda değişik türde kuşların uçtuğunu duyuyoruz. Kargalar veya kuzguncuk da diyebiliriz. Onların uçtuğunu duyuyorum. Çünkü onlar açık alanda, denizde değil biraz daha karada uçmayı seven hayvanlardır. Sağda solda insanların yine oturması için çeşitli banklar var. Etrafımızda yürüyüş yolları var. Kargaların sesi karşıdaki binanın tepesinden geliyor. Deniz şu an arkamızda kaldı.
01:18	01:53	Karşımızda bir sokak var gibi geliyor bana. Karşımızdaki sokağın içinde de ilk baştaki yürümüş olduğumuz güzergahtaki gibi benzer yerler var. Canlı müzik yapan insanlar vb. Ve önümüzde bir yol var, o yola yaklaştığımızda insanların adımlarının kaldırımlara inip çıkması sesinden bunu rahat anlayabiliyorum.
02:05	02:08	Solumuzdan bir tane araba geliyor şu an.
02:40	03:40	Bazı engeller var insanlar için veya araçlar için, o sokağa girmemesi gerektiğini belirten. Bence insanların bu engellere çarpıp yaralanmaması için bunların etrafının köpük, silikon vb. maddelerle kaplanması gerektiğini düşünüyorum. Bu günlük hayatımızda bizim çok daha rahat etmemizi sağlar. Aynı zamanda yankının dağılmasını sağlar. Mesela sağ tarafımızda bir şey var. Kendi boyuma yakın büyüklükte çiçeklikler sazlıklar gibi. Bunları ben rahat duyabiliyorum. Dizime kadar gelen bir yükseklik bastonun sesinin daha iyi duyulmasını ve yankının kulağımla daha iyi alınmasını sağlar. Ve ona göre hareket

ederim.

- 03:52 04:00 Solumuzda yine küçük kafe restoran tarzında yapılar var. Benim hedef noktam burada bunları takip etmek. Şu an solumuzda küçük bir duba var.
- 04:16 04:43 Aslında biz görme engelliler hareket ederken sürekli etrafı tarıyoruz. Şimdi burada karşıdan karşıya geçmemiz gerekiyor, ben sizin kolunuza girerek hareket etmeliyim. Çünkü biraz yoğun trafikli bir yer burası. Birisinin desteğiyle daha rahat hareket edebilirim.
- 05:06 05:10 Şu an Sevinç Pastanesi'nin olduğu sokaktayız. Yolun sonu pastaneye varacak.
- 05:15 05:29 Buranın girişinde sağda veya solda öğütülmüş kahve satan kuruyemişçi benzeri bir dükkân var. Bunu rahat duyabiliyorum.
- 05:38 06:28 Sağdaki müzik sesinin de sakın, soft bir kafeden geldiğini rahatça anlayabiliyoruz. Hoparlörlerin dağılışımdan, sesin yankısından bunu analiz edip yürüyebiliyoruz. Biraz daha yürüdüğümüz güzergahta, solumuzda bir ağaç olduğunu biliyorum. Ve burada binaların biraz daha yüksek olduğunu düşünüyorum. Binalar yüksek olduğu için biraz daha güneşin açısı farklı açılarda olacağından dolayı, rüzgârın bize kesik kesik gelmesinden dolayı bunu anlayıp analiz edebiliyorum. Nerde olduğumu daha rahat kestirebiliyorum. Yürüyüş rotamın hangi kısmında olduğunu daha rahat anlayabiliyorum.
- 06:32 06:36 (Selin) Bu yol zaten Kıbrıs Şehitleri Caddesine çok benziyor.
- 06:45 07:08 Sağ tarafımız bir mağaza olabilir, bir parfümeri mağazası gibi. Bu mesela bizim kozmetik dükkanına ihtiyacımız varsa, oralara rahat gidebilmemiz için almış olduğumuz güzel bir referanstır.
- 07:15 07:20 Sol karşıda da kıyafet satan bir yer var mı hiç?
- 07:22 07:30 (Selin) Orada kafeterya var. Ama hemen sağınızda bir

mağaza var.

- 07:33 08:33 Şu an kış olduğu ve fazla rüzgâr estiği için bazı kokular birbirine karışabiliyor. Hangi taraftan geldiği bizi yanıltabiliyor. Aradığımız yere biraz daha fazla odaklandığımızda gitmek istediğimiz yeri görme engelli daha rahat bulabiliyor. Mesela az önceki almış olduğum parfüm kokusu, kahve kokusu, kıyafet kokusu gibi. Bunlar bizi rahatça gideceğimiz yere yönlendiriyor. Koku, ses, baston ve adım hissiyatı, çevremizdeki insanların akış yönü vb. Mesela önümüzde bir şey var şu an, ben bunun sağından veya solundan gitmeliyim. Ben sağı tercih ediyorum. Bu da bastonu iyi kullandığım için onun yankısı geldi.
- 08:36 08:41 (Selin) Önünüzde bir şey olduğunu nasıl hissettiniz? Orada bir reklam tabelası vardı.
- 08:42 09:21 Siz bir insanla tanıştığımızda gözünüzle onu yukardan aşağıya süzersiniz. Tararsınız. Biz de yürümüş olduğumuz güzergahlarda her şeyi referans alarak ona göre rota çizeriz. Mesela ben panoya doğru gitseydim ona çarpacaktım. Baston kullandığım için bastonun yankısı ve yaklaştığım cismin yankısı bana o cisme yakınlaştığımı veya uzaklaştığımı ifade ediyor.
- 09:26 09:40 Şu anda da karşımızdan çok güzel bir at arabası geçiyor. Gören kişi bunu görüp gülümsüyorsa, biz de bunu duyup gülümsüyoruz.