


A Study on Sensory Analysis of Memory Places

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Abstract: Sensory analyses carried out for the perception and experience of the city emphasize the importance of trying to understand the city with different senses, beyond seeing it with the naked eye. While we aim to obtain information about how these changes in the field are remembered through verbal interviews, the use of sensory perception analyses as a tool makes the study different and original from other studies conducted on a city scale. Cities are not only physical spaces but also carriers of collective memory. The study, which aims to map the sensory perceptions of individuals who have experienced the city for a long time, seeks to present projections for the present and the future by collecting information about the urban space, social life, and memory areas of the city of Isparta that have continued for centuries. Qualitative and quantitative research methods were used in the study. Verbal interviews and sensory analyses form the basis of the study. Concepts, such as common areas shared by groups, group life stories, family relations, national consciousness, and belonging, came to the fore in the emergence of collective memory. In this context, potentially valuable memory spaces were analyzed to determine the perceptual meaning continuities formed in the minds of the urban dwellers.

Keywords: memory place; sensory analysis; Isparta City; İstasyon Street



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1. Introduction

Memory is a complex structure that shapes individuals' past experiences, perceptions, and emotional reactions. This study examines the data obtained through oral interviews in order to understand the interaction of memory with spaces. Memory is not limited to the past but is a process in which images, events, and people accumulated over time are reconstructed in relation to current and future experiences. In this context, investigating how the place and meaning of spaces in individuals' memories are formed is important for understanding social and cultural memory.

This study aims to determine the visual, auditory, olfactory, taste, and tactile elements that participants residing in Isparta feel the most and provides the visualization of these sensory perceptions in collective mind maps. The effects of variables such as the participants' socio-economic status, life expectancy, and occupational background on sensory perceptions were examined. The results help us better understand the relationship between sensory perceptions and space and contribute to the analysis of the cultural texture, history, and evolution of cities.

In particular, İstasyon Street, as one of the focal points of this study, plays a central role in the historical and collective memory of the city. The sensory images of this street draw attention as an area where individual and collective memories come together. The study aims to make significant contributions to the cultural and memory continuity of the city by examining memory spaces from a sensory perspective.

The term memory comes from the Latin root "memoria". The word memoria has two meanings: memory and remembrance. These two meanings present the connection

between people's memories and the tools discovered to record information separately from these memories (Draaisma 2000). Although the concept of memory initially emerged as a branch of philosophy, today, it is the subject of study in many branches of science. Memory, in its most general definition, is the ability to keep information in mind. Memory is a process that also includes the present.

Memory is a phenomenon open to the dialectic of remembering and forgetting, is suitable for all uses, and is in constant development (Nora 1989). The formation of memory is under the influence of forgetting and remembering. In the introduction of his book, *How Modernity Makes You Forget* (2009), Connerton comments, the most beautiful streets are the ones that can be remembered. They leave strong, lasting, and positive impressions on people. When we think of a city (this could be the city we live in), a certain street immediately comes to our mind, and we desire to be there; he, Connerton, touched upon the relationship between remembering and forgetting with the words, "Such a street is unforgettable" (Connerton 2009).

Remembering has a formation that occurs through layers of history. It is not just about remembering, it is about the importance of remembering the past correctly. Connerton gives examples of which remembering processes through commemoration ceremonies and physical practices explains the relationship between forgetting and remembering. Apart from singular experiences, such as personal experiences, images, or some traces in urban spaces within the urban order, social ties and intersections create remembrance (Assmann and Tekin 2001). Ricoeur explains the connection between memory, remembrance, and the search for truth with two concepts: the "veritative" dimension and the "operation of memory" (exercice de la mémoire). The correct memory in memory processing is the memory that is compatible with past events (Ricoeur 2004).

Forgetting is a way to resolve the negative emotions of the past. There is a close relationship between remembering and forgetting. It is the effort to remember that creates the memory of forgetting. The search for memories is one of the most important tools in the act of remembering (Ricoeur 2004). Forgetting is a way to resolve the negative emotions of the past. It has been assumed that forgetting (rather than remembering) helps overcome the negative past (Assmann and Tekin 2001).

In addition, memory has a wide variety of types that include the act of remembering and forgetting. Many aspects of memory are effective in the formation of memory. Collective/social memory, which is a phenomenon that can go back in time with the life experiences of the individual and his contemporaries or reach individuals through direct experience or through their stories (Assmann and Tekin 2001), is a prominent concept in terms of the subject of the study.

Collective memory develops in relation to the sense of continuity of the past (Halbwachs 1980). In the transmission of collective memory, devices that provide temporal and spatial memory intervals, such as advanced media technologies, writing, film, and the internet, have an important place. Collective memory is formed by a number of different elements operating within various symbolic systems. Examples of these are religious texts, historical paintings, historiography, documentaries, monuments, and commemoration ceremonies. Oral narratives, texts, ceremonies, and rituals (Nora 1989; Halbwachs 1992; Connerton and Şenel 2019) are social values that nourish collective memory and ensure the continuity of memory, and they are effective in reaching future generations.

As a result, collective memory is a conceptualization that expresses the feeling of the constant presence of the past (Crane 1997). The collective memory shared by urbanites (Halbwachs 1980; Nora 1989; Fentress and Wickham 1992; Crane 1997; Assmann and Tekin 2001; Kansteiner 2002; Ricoeur 2004; Pethes 2019) is the memory that connects the past, present, and future of a society. It is the most basic common denominator that clarifies the identity of society.

Memory has a sociological dimension that makes people human. Memory differs and transforms in every society as a result of historical experiences. According to Assman, the biggest driving force that caused collective memory to become popular was the Industrial

Revolution. The increase in mechanization that came with the Industrial Revolution indicates that machines came between humans and nature; as these machines became stronger day by day, they surrounded life, and eventually, it became impossible to forget and remember without technology (Assmann 2011). In the introduction of his book, *How Do We Remember?* (2009), Neyzi comments that the increase in memory studies is due to many reasons, such as the change in human life that came with the Industrial Revolution, the developments in the field of informatics and mass communication, the emergence of revolutionary inventions, the continuous change of social, economic, and cultural life, and human memory undergoing versatile changes (Neyzi 2011). The most important reason why collective memory has come to the fore is that the periods in which crimes against humanity were committed are erased from memory and forgotten (Assmann and Tekin 2001). Nowadays, collective memory studies have gained value in terms of remembering wars and revolutions, colonial history, and overcoming negative conditions (Pethes 2019; Dreyfus and Wolff 2019).

What is important for the historian is not to identify the place but to explain the memory of the place. History is a vision of the past and the recreation of what is not present today. However, memory is a current event, a phenomenon experienced in the present. Considering a monument as a place of memory does not in any way mean merely writing its history. In this case, according to Nora, the definition of memory space is, "Every meaningful unit in the material or intellectual order that people, by their will or by the process of time, have made into a symbolic element of the common memory property of any community" (Nora 2006).

Nora (2006) states that memory is based on emotions and is magical, nourished by special and symbolic memories; he mentions that it has a structure that is sensitive to all kinds of transfer, screen, censorship, and reflection. The feeling of continuity is rooted in space (Nora 1989). All kinds of experiences related to daily life involve space, and memories are nourished by space and its parameters. Due to the intertwined contextual aspect of space and memory, they are constructed as spaces where daily life takes place and where perceptions and experiences transform into memory. Accordingly, it builds not only the public memory of the city but also the collective memory of the people (Nora 1989). When memory places are examined in general, they are especially effective in areas that have cognitive and sensory properties; although, they have physical structures. This makes it easier to understand the space–memory relationship.

2. Methodology

Memory is based on emotions; it has a structure that is sensitive to all kinds of transference and reflection, nourished by foggy, confused, special, or symbolic memories (Nora 2006). When people lose touch with sensory impressions, "memory images" that contain a combination of previous perception and action, they become unable to orient themselves and find their way. Sensory experience improves perception and guides the body's interaction with the senses (Bergson 2007). Memory is not just a function of the brain. There is only a difference in intensity between perception and memory. Memory is a weakened perception. When a memory is updated through influence, it ceases to be a memory and becomes a perception again (Bergson 2007). Bergson's (2007) approach to the difference in density between memory and perception interprets memory as a structure that is constantly reshaped by perceptual interaction rather than a passive storage unit. Memories continue to exist as weakened versions of an individual's sensory perceptions and can be transformed into an active perception again when necessary. This indicates that memories are not experiences frozen in the past but rather dynamic structures that can be updated and merged with the individual's current perceptual world.

Carruthers' (2010) studies, on the other hand, evaluate memory as a living product of the body. Memory is thought to be the final output of sensory perception; therefore, memories are based not only on mental but also on physical and sensory foundations. This

perspective emphasizes the relationship of memory with the body and the senses, arguing that memory is not only a mental process (Carruthers 2010).

Neyzi's (2011) studies on food rituals suggest that memory can be strengthened through sensory rituals. Food, thanks to its sensory qualities, takes a permanent place in memory and contributes to the formation of collective memory when combined with rituals. Especially in religious rituals, food is not only a physiological need but also enables the revival of past memories through the senses of smell and taste. This reveals that rituals build collective memory by connecting concrete memories beyond abstract ideas (Neyzi 2011).

The sensory perception method is important for identifying an environment (Özak and Gökmen 2009; Xiao et al. 2020; Deng et al. 2021). This method is a talent demonstrated by all living things. When using this ability, apart from visual sensations, such as light, color, and form, factors such as smell, sound, and touch are effective (Lynch 1990). Sensory analyses have an important place in the perception and experience of cities. Experiencing the city beyond the sense of sight allows one to look at the qualities of the city from a different window. These sensations include the visual sensations of color, shape, movement, or polarization of light, as well as smell, sound, touch, kinesthesia, and the sense of gravity. Other senses are factors that affect perception; these sensory cues that come from the external environment have an organization within themselves. This organization is necessary for the efficiency of a livable environment (Lynch 1990).

Sensory perception is in a constant state of change, as the moving elements in a city change, especially regarding people and their activities. This perception is often partial, fragmented, and mixed with many concerns. Almost every sense is active, and the image is a combination of all of them. The city is not only an object perceived by millions of people of various classes and characters but also the product of many factors that constantly change its structure for their own reasons. Although the general outline of a city remains constant for a while, its details are constantly changing. In this context, it is important to find sensory pleasure in the city. Sensory perception should not be seen as an act quite separate from architecture, music, or literature; this is the art of shaping cities. Sensory perception is also intertwined with other arts (Lynch 1990).

A city must be perceivable to its inhabitants. This means that it must have distinct and recognizable elements—such as landmarks, streetscapes, and cultural symbols—so that its inhabitants can recognize the city, orient themselves, and develop a sense of belonging. Sensory perception studies gain importance at this point. Because the environment is necessary to expand and deepen perception and to sustain a long biological and cultural development from contact senses to distant senses and from distant senses to symbolic communication (Lynch 1990).

Lynch, in his book *The Image of the City* (1990), also includes the influence of factors beyond visual perception. According to Lynch, the perceptual elements that are effective in the formation of mental images are related to the five senses: vision, smell, taste, hearing, and touch.

(A) Vision—the eye: It is the organ of distance and closeness (Pallasmaa 2024). Eyes want to cooperate with other senses, and all senses, including vision, can be considered extensions of the sense of touch. Senses are the interfaces between the skin and the environment, that is, between the opaque interiority of the body and the exteriority of the world. While describing the philosophy of the senses, Merleau Ponty states that he touches the sun and the stars through vision (Pallasmaa 2024).

(B) Smell and taste: (Zucco et al. 2012) In the preface of the book *Olfactory Cognition*, it is argued that the perception of whether a smell is pleasant or not depends not on the stimulus itself but on the memory of previous experiences with it. Pleasant scents are generally familiar scents. Most unfamiliar odors are called unpleasant. There are studies on how beliefs and expectations affect the response to odors, and the psychological effects of odors depend on acquired associations.

Memory literally sanctifies the memory and makes it the most important element (Nora 1989). Associating a familiar smell with a memory or a place shows the power of the

sense of smell. For example, the expression “hospital smell” creates a common association for many people. The smell can be used in architecture to stimulate emotions, guide, or distract. The thought that some cities have smells is an example of the relationship with architecture (Türk and Sari 2020). For example, when an architectural structure has open or semi-open spaces, and a section continues in these spaces, it can be predicted that the sense of smell arises because the users inhale natural scents, such as rain, soil, and flowers outside.

According to Pallasmaa et al. (2011), the scent of a confectionery shop among the narrow streets of an old city makes one think of the innocence of childhood. The intense smell of the shoemaker’s shop reminds people of horses and the excitement of horseback riding. The smell of a bakery conjures the image of health, wellbeing, and physical strength, or the smell of the pastry shop reminds people of happiness. Fishermen reminds people of the sea and earthy scents. Every city has its own tastes and smells. The stalls on the streets are appetizing displays of smells, the sweet smell of the humid summer air, and the fruits and the menus displayed outside the restaurants evoke different sensations in people from beginning to end (Pallasmaa 2024).

(C) Hearing: According to Pallasmaa (2024), it is impossible for space to have its essence without sound (Pallasmaa 2024). The sense of hearing is often underestimated in experiences with space. However, the voice is the element that stimulates the eyes to visualize the current space (Türk and Sari 2020).

According to Pallasmaa (2024), recalling the acoustic harshness of a derelict and unfurnished house, as well as the friendliness of a lived-in house, where objects are softened by its countless surfaces, each building or space has its own unique sound, whether it is sincerity, monumentality, or an inviting feeling. Hearing is a sensation that structures the experience and understanding of space. Despite the sound we experience most of the time, we are aware of the importance of hearing in spatial experience, even though it provides a temporal continuity in which visual impressions reside (Pallasmaa 2024).

(D) Touch: According to Rousseau (2014), the sense of touch is one of the most used senses by individuals. However, touching an object with the eyes before the hands can cause the mind to make judgments about that object without needing the sense of touch. On the other hand, the judgments given after touching that object may be more solid. Feeling the roughness of a surface and evaluating its weight, density, texture, or temperature in a space are related to the sense of touch. The sense of touch operates as a sense that complements the judgments given by other senses from afar (Türk and Sari 2020).

In this context, three different research methods are mentioned in the study systematics. These are qualitative and quantitative research methods, which are listed as oral interviews and sensory analysis methods. Concepts, such as common areas shared by groups, group life stories, family relations, national consciousness, and belonging, come to the fore in the emergence of collective memory. The position of places within the urban order, which are remembered or remembered with meanings in the memory of the society, stands out in this respect. Therefore, it is important to identify potential value memory places in order to determine the perceptual meaning continuities in the minds of the citizens within the scope of the cultural and memory continuity of cities. As a result, collective mind maps were created in which the perceived senses of smell, taste, sound, texture, and vision were visualized for the analysis of memory spaces with the sensory mapping method, and general map representations were obtained for both situations.

Verbal interviews enable the unknown side of collective memory to come to light, by revealing the collective aspect of memory, in case experiences cannot be experienced collectively or are experienced less collectively. Pierre Nora mentions that society will need special people who are themselves “memory people”. Oral interviews are aimed to read the memories of the city dwellers and the meanings they attributed to the places. In the study, it was desired to obtain concrete results based on quantitative data. For this reason, questions were asked that would also provide data for quantitative results. It is revealed through verbal interviews how İstasyon Street, which has changed in a spatial sense, exists in

collective memory, how it is remembered, and how it is forgotten (Akdağ 2024). Questions were presented to the participants during the oral interview (in Appendix A), while A3 size maps prepared for vision, smell, taste, sound, and touch analysis in the appendices section were presented to the participants for them to mark during the interview. Markings were made on the presented maps by the participants. The sensory data obtained were examined and tabulated by the author. The three methods applied in the study were carried out with 23 people in separate periods of time (approximately 2–3 h), during oral interviews.

In the study, general maps and tables were created where visual and verbal analyses were combined. The data obtained by the intersection of the methods used were systematically tabulated and evaluated in depth. The research was shaped around two main scales: “city scale” and “street scale”. City scale offers a broad perspective based on data obtained from the literature; it addresses urban dynamics, socio-economic structures, and spatial arrangements. This scale provides a critical framework for understanding the general structure and functioning of the city. On the other hand, street scale evaluates the data obtained from verbal narratives and reveals the effects of streets on user experiences, perceptions, and social interactions. This scale helps us understand daily life in urban areas and the relationship of individuals with space by providing a more micro perspective. Evaluating both scales together allows us to understand the multidimensional structure of urban space and allows us to better grasp the interactions between different layers of the city.

3. Specific Literature Review

It is necessary to identify the location of the subject of study in the literature, to identify gaps in this field, areas that have been hardly studied or not at all, and to mention relevant research in order to give an idea about the subject and to create the systematic of the study. In this context, a summary of the literature within the subject area is presented. While examining urban memory, which is the focus of the study, texts on memory, urban studies, oral history used, and cognitive techniques were also examined.

The study by Lak and Hakimian (2019), titled *Collective Memory and Urban Transformation in Urban Spaces*, is aimed to contribute to the reproduction of memories in Baharestan Square in Tehran, Iran. Identity inquiries were made through Baharestan Square, the symbol of modernization in Tehran, Iran, and the historical-cultural structure and environmental arrangements of the place were evaluated. In the study, it is seen that urban transformation also affects collective memory due to the loss of belonging. It is noteworthy that it was developed as a theoretical model to maintain and reconstruct the characteristics of collective memory in urban spaces. It is a guide for studies on memory.

Edward Nilsson (2017) in his study titled *Urban Memory and Preservation in Kuwait: A Case Study of Souk Al Wataniya*, Kuwait City was chosen as the research material, and Kuwait's urban building types were discussed. Data regarding urban memory were discussed in the study. Today, it is stated that rising land values in Kuwait's city center have caused a transition from residential to commercial use and a lot of destruction, with many modern buildings having deteriorated or been replaced with high-rise buildings. This encourages the architectural preservation community to develop low-rise traditional buildings of the early 20th century and preserve memory images of the city's historical past. The subject discussed in the study is the axis of urban change and transformation. The content of the study was found relevant in terms of interpreting the physical change experienced in the city of Isparta.

In their study titled *A Methodological Suggestion for Determining Memory Places within the Framework of Remembering and Forgetting Cycles: Duzce Example*, Mutlu and Kaya (2020) present a method to identify the memory places of the people of Duzce. The research method consists of two stages, including oral interviews and mental map use. Urban spaces determined in the light of survey data, where the number of times remembered and the order in which they are remembered are important criteria, were grouped under the headings of remembering and forgetting cycles by comparing the frequencies obtained

through the developed scoring technique on a yearly basis (before and after the disaster). While the memory spaces in the cycle of remembering are described as potential identity spaces, the spaces in the cycle of oblivion are described as memory spaces that are under threat and waiting to be restored to the city. As a result of this research, a methodological proposal has been prepared to determine memory places whose continuity is important for identity acquisition, and it is open to development in terms of being applicable to different cities. The use of oral interviews, the mental map method, and the applied method is closely related to the methods of the study. In particular, the characterization of memory spaces within the remembrance cycle as potential identity spaces supports the conceptual infrastructure of the study's method.

Karapostoli and Votsi's (2018) *Urban Soundscapes in the Historic Centre of Thessaloniki: Sonic Architecture and Sonic Identity* was carried out to analyze, define, and design the sonic space in the historical center of Thessaloniki; an interdisciplinary research framework combining quantitative and qualitative sound and architectural data is proposed. Five areas with unique sound identities were selected in the historical center of Thessaloniki, and in these areas, sound level measurement, sound source classification according to sound walk and auditory landscape components, and interviews with city users were conducted. The symbol sounds of the selected areas were determined, and the architectural features of these areas were compared. Combining sound analysis and architectural data, the study plays a supporting role in the classification of sound sources and the presentation of technical data through sound level measurement and in the development of the application of the sensory analysis method included in the method of the study.

In De Alba's (2012) *A Methodological Approach to the Study of Urban Memory: Narratives about Mexico City*, the collective memory of a group of older adults residing in the metropolitan area of Mexico City was discussed. Using Atlas.ti tools, a tool used to perform semantic analysis of interviews within the scope of the study method, the levels of analysis of narratives about the past experiences of a large city such as Mexico City were discussed. The remarkable aspect of the study is that past experiences were analyzed with certain technical tools. However, the time-consuming and complex nature of the analysis process of the program used is a negative aspect of the working method.

Özak and Gökmen's (2009) study titled *A Model Proposal on the Relationship between Memory and Space* reveals the relationship between space and memory. The proposed model was created based on the idea that individual characteristics and physical and social environment characteristics are effective in the formation of the elements that are stored in permanent memory from past to present in the space-individual relationship. According to the proposed model, the time factor is an important element in identifying the place in the individual's memory. Various studies have shown that positive or negative experiences in the past create differences in the individual's perception of space today. Permanent memory is included in the study; it is handled in three processes: the sensation phase of the space, the perception of the space, and its coding in memory. The study, which draws attention to the sensory and perceptual aspects of memory in a conceptual dimension, is an example of the cognitive and sensory perception method discussed in the study's method.

In Pınar and Ökem's (2015) study titled *A Field Study on the Phenomenon of Touch and Tactile Mapping in Architectural Design*, tactile mapping, the expression of the phenomenon of touch with graphical methods through architectural expression techniques, was created by performing three analyses. As a first analysis, it is shown in the "tactile distribution diagram", whether the design concepts that define the phenomenon of touch in architecture are detected in the examined structure. The second analysis, the "material effect chart" expresses the effect of the materials in the building on the human body. In the last analysis, "sensation analysis", bodily sensations, and the difference in intensity between them are presented as a diagram. In the construction of the diagrams, Kelum Palipane's mapping technique, which was created based on the relationship between space, time, movement, and music in films, and which visualizes the relationship between time and sensation in the space experienced on an urban scale, was used. As a result, sensation analyses were

created in which the data regarding the bodily sensations detected in the field study were revealed. In the analyses, drawing attention to the effect that the phenomenon of touch can have on the experience of architectural space was seen as positive in terms of matching experience and sensory analysis. It establishes a relationship with the working method.

Xiao et al. (2020) argue in their study *Understanding Smellscapes: Sense-Making of Smell-Triggered Emotions in Place* that smells can evoke strong emotions and convey meanings associated with people and places. The main concern of the study is how people make sense of their emotional experiences of smell as part of the perceptual process. As a result of the study, the idea that the emotions triggered by scent experiences in places reflect individuals' evaluations of both the environment they live in and their existence in society. The aspect of perceiving the sense of smell by creating walking routes is an example of the examination process of the sensory analyses included in the study.

Yazıcı and Alp (2017) in their study titled *The Shaping of Spatial Experiences by the Senses: Sagrada Familia Church*, a survey was conducted with 31 visitors who visited the Sagrada Familia Church in order to understand the effect of the building on human senses. It was determined which of the visitors' senses was most affected, what kind of sound and smell they felt inside, what kind of taste the church evoked, and whether they wanted to touch any building element or object in the building. At the end of the research, whether there was a statistical connection between dependent variables, such as gender, age, nationality, and occupation, in the visitors' sensory responses was analyzed using the SPSS v24 statistical analysis program and, for nonparametric data, the Kruskal–Wallis test, which performs one-way analysis of variance between groups. It is related to the subject of sensory analysis and the method used in this research. The way the sensory analyses of the study participants was handled was seen as positive in terms of obtaining statistical data.

In Deng et al.'s (2021) study titled *A Case Study on Soundscape Analysis for the Historical and Ethnic Village of Dong Nationality in Zhaoxing County*, based on soundscape research conducted in 2019 in the historical and ethnic village of the district, a case study of soundscape analysis with acoustic sound pressure levels and an impressive sound event or sound sign was introduced. The view that a soundscape is a solid environment of auditory perception and social or cultural awareness constitutes the main problem of the study. In the study, the oral history method, the combined use of cognitive and sensory perception methods, the scope of the content of the study, and the way it was handled in terms of sample area made it different from the previous studies. It is thought that the study, with the methodology of applying these three methods within the same study, will guide future research carried out in this field in the literature. How the oral history method was applied in the studies examined support the methodology of this study.

In André Breton's work *Nadja* (Hubert and Bernier 2002), the practice of urban walking was adopted as an important method in order to overcome the monotony of urban chaotic and daily life. In this direction, psychogeography enables the individual to discover his/her individuality and make sense of it in a sensory, emotional, and mental interaction. As those casually wandering around Paris, the complex relationships between the individual's physical structure and the individual's unconscious world are revealed. The arrangements, pieces, and people during these walks create different associations in the individual's memory, and the symbol, thus, leads to a kind of memory construction. This process supports Breton's effort to explore his. In addition, Iain Sinclair's writings on London (Hay 2013) demonstrate a deep engagement with the intersections between form, space, and memory, demonstrating how urban landscapes can be carriers of individual and collective histories. His explorations of the city are not limited to geographical mapping but also delve deeply into the materiality of the environment and its impact on human experience and consciousness, establishing a meaningful link between the city and individual memory.

Art and literature serve as important tools in expressing the relationships between memory and space. These disciplines offer deep and multilayered themes that enrich the spatial experiences, emotional bonds, and historical narratives of individuals and communities.

In conclusion, sensory analysis is widely discussed in the literature, and many studies have been carried out in singular dimensions with senses, such as smell, sound, and touch. Sensory analyses have an important place in the perception and experience of cities. Experiencing the city beyond the sense of sight allows one to look at the qualities of the city from a different window. According to studies, the smell factor in urban perception can be a determinant of the value of a city. Marcel Proust's scents are cited for their claim to be particularly powerful and associative clues, mentioning that he emphasizes the distances between memory and the senses in his work *In Search of Lost Time (À la Recherche du Temps Perdu)*. In this work, the central role played by a smell or taste in the revival of past forgotten memories is very evident (Chu and Downes 2000). Like smell, the vision/light factor also has an important place in the city. The concept of hearing, which is another sensory feature, reveals the sound characteristics of the city and provides an idea about the spaces of the city. The sense of touch allows the individual to create an image in his mind based on the texture of the structural material of the city by touching any part of the city. Therefore, sensory perception is one of the ways of establishing cognitive oral with the city. As in the studies in the literature, cultural, economic, and socio-cultural changes in cities create diversity in the perception of the city. In addition, the differentiation of perceptions and experiences reveals the examination ability of the subject of the study and the breadth of the study area.

4. Investigation of the City's Memory Spaces in Terms of Sensory Perception

In this context, the answers to the questions asked through oral interviews (in Appendix A) were evaluated (Alay 2023; Atabakan 2023; Ayaz 2023; Beyhan 2023; Boşgelmez 2023; Boylu 2023a, 2023b; Çağlar Güç 2023; Çağlar 2023a, 2023b; Davraz 2023; Döndüren 2023; Hızlan 2023; Oğuz 2023; Özkahraman 2023; Özmen 2023; Pehlivan 2023; Poyraz 2023; Şensöz 2023; Tuncuk 2023; Uyar 2023; Üncü 2023). Definitions made on memory state that memory is not only about the past; it has the ability to keep alive concepts, such as experience, sensation, and perception. According to these definitions, images, events, or people stored in the past are associated with present and future memories and overlap and form a whole.

Memory involves concrete traces that exist in the space and contain the characteristics of the past, including individual, social, historical, cultural, etc., traces, in the minds of the individuals who are users of the space. It combines with values and creates "place memory". The traces left by the place in the memory continue their existence through the communication and interaction of certain indicators, symbols, and social groups (Assmann and Tekin 2001; Halbwachs 1992). In this context, in order to reach concrete traces containing the characteristics of the past, the elements of sight, hearing, smell, taste, and touch, perceived through the five senses, were considered as another method of the study (Table 1).

Table 1. Sensory mapping method: sight, smell, taste, hearing, and touch elements.

Sensory Mapping Method
Visual All urban elements that require visual perception at the street scale have been evaluated in this context.
Hearing All elements that can be experienced with the sense of hearing on a street scale have been evaluated in this context.
Smell All elements experienced through the sense of smell, which have been found to be directly related to memory in studies, have been evaluated in this context.
Taste All elements experienced through the sense of taste, which have been found to be directly related to memory in studies, have been evaluated in this context.
Touch Since the sense of touch is a sense that complements the judgments given by the other senses from a distance, all elements that experience the sense of touch on the street scale were evaluated in this context.

The expression of spatial perception acquired as a result of spatial experience, in which senses other than vision also participate in the interaction, is important for this study. There-

fore, it is determined whether factors, such as perceived sound, smell, and taste, are significantly present in experiences. Legends were created on how perceived sensations could be represented in the visualization of the analyses. The results obtained are shown schematically with mapping. Taste analyses (lokum, tea, dirgit, kabune, etc.), hearing/sound analyses (bird sound/horn sound/train sound/child's voice/noise/silence, etc.), and touch analyses (soil/foilage/keystone/kövke¹/stone/concrete, etc.) were carried out. Various data were obtained in line with the answers.

Detection of Memory Places with Sensory Mapping Method

To detect visual items in memory, the data obtained in line with the questions asked to 23 participants (see Appendix A) were examined. The data obtained from 23 participants were evaluated, and a sensory perception analysis table was created. The answers given by the participants are shown in a table (Table 2). When the charts were examined, sensory perceptions were directly related to many variables, such as people's socioeconomic level, duration of stay, urban living area, and profession, and their recall levels varied.

This analysis reveals different characteristics of sensory perception in and around each specified region. These factors are elements that enrich the participants' experiences in those regions and express the characteristics specific to those places.

In determining the sensory elements dominated by the street and in the analysis of the sense of sight, the architecture and colors of the buildings around the street, showcases on the street, signs, street art, or other visual elements were effective. In the analysis of the sense of smell, odor elements emitted from businesses on the street were effective; for example, food smells coming from restaurants, bread smells coming from bakeries, etc. In the analysis of the sense of taste, the taste elements emitted from cafes, restaurants, or food outlets on the street were effective. In the analysis of hearing/sound, traffic noise on the street, people's conversations, music, or other sound elements were effective. In the analysis of the sense of touch, it was determined that the texture of the ground on the street, the texture of the buildings, and the texture of the products displayed in the shop windows were effective. The collective representation of the visual elements expressed to the participants based on the regions marked on the maps is shown on the city map (Figure 1).

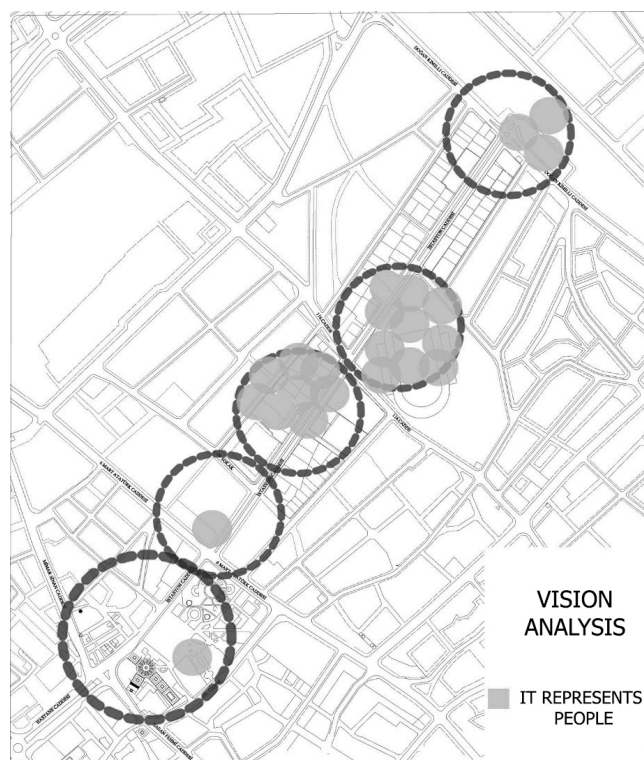


Figure 1. Display of vision analysis on the city map.

Table 2. Sensory mapping method: sight, smell, taste, hearing, and touch elements.

Participants' Sensory Perception Analysis						
Regions Marked on the Map	Station and Surroundings	Stadium and Surroundings	Ülkü Primary School and Its Surroundings	Şaik High School and Its Surroundings	Kaymakkapı and Its Surroundings	
1.	Visual	Station Building	-	-	-	-
	Smell	Soot, the Smell of Carriages	Greens	The Smell of Bakery	Greens	Kebab, Bread, Coffee, Rose, Essences
	Taste	Burnt (Smoky Air)	Fresh Air	Tea, Coffee, Cake	Fresh Air	Kebab, Bread, Coffee, Rose, Essences
	Hearing/Sound	Train, Horse	Concert	Student, Noise		Tradesmen's Voices, Noise
	Touch	Soil	Foliage, Grass	-	-	-
2.	Visual		Stadium	-	-	-
	Smell	Work	Greens		Greens	Kebab, Bread
	Taste	Burnt (Smoky)	Fresh Air	Tea, Coffee, Cake	Fresh Air	Kebab, Bread
	Hearing/Sound	Train	Marching Band, Crowd	Traffic, Bird, Child	Traffic, Bird, Child	Bird, Traffic, Crowd
	Touch	Soil	Foliage, Grass	-	Greens	-
3.	Visual		Stadium			
	Smell	Exhaust, Coal	Exhaust, Coal, Greens	Exhaust, Coal	Greenery (Trees, Flowers)	Bread, Kebab
	Taste	Tea	Tea, Sweet	Ice Cream, Chips, Bagels	Burnt (Smoky)	Bread, Kebab
	Hearing/Sound	Train, Bird, Silence	Football Sound (Cheering), Traffic Noise	Student, Child, Traffic	Student, Child	Noisy
	Touch	Soil, Gravel, Greenery	Greens	Concrete	Kövke Stone	Keystone, Concrete
4.	Visual		Stadium	-	-	-
	Smell	Work	Greens	Exhaust	Exhaust	Rose, Kebab, Bread, Exhaust
	Taste	Burnt (Smoky)	Ice Cream, Tea	Rose Delight, Ice Cream	Fresh Air	Kebab, Bread
	Hearing/Sound	Train	Music	Traffic	Traffic	Traffic
	Touch	Stone	Foliage, Grass	Concrete	Greenery, Concrete	Concrete
5.	Visual		Stadium	-	-	-
	Smell	Coal, Izmir Simit	Izmir Simit, Cake	Pine	Pine	Tea, Coffee, Spices, Shish Meatballs—Kebab, Bread
	Taste	Yanık, (Smoke), Simit	Simit	Fresh Air	Fresh Air	Shish Meatballs—Kebab, Bread
	Hearing/Sound	Train Whistle	Cheering Sound	Horn Sound, Vehicle Noise	Horn Sound, Vehicle Noise	Bird Sound, Horn Sound, Water Sound
	Touch	Stone, Stone	Concrete, Greenery	Greens	Kövke Stone	Kövke Stone, Greenery, Stone, Concrete

Table 2. Cont.

Participants' Sensory Perception Analysis						
Regions Marked on the Map	Station and Surroundings	Stadium and Surroundings	Ülkü Primary School and Its Surroundings	Şaik High School and Its Surroundings	Kaymakkapı and Its Surroundings	
6.	Visual	-	Stadium	-	-	-
	Smell	Work	Pine Trees	Pine Trees	Pine Trees	Kebab, Carpet
	Taste	Burnt (Smoky)	Fresh Air	Fresh Air	Fresh Air	Kebab, Bread.
	Hearing/Sound	Train, Traffic	Bird	Bird	Bird	Traffic
	Touch	Soil, Stone	Old Trees, Concrete	Old Trees, Concrete	Old Trees, Concrete	Tin, Concrete, Stone, Greenery
7.	Visual	-	Caglar Apartment	-	-	-
	Smell	Work	Rose, Linden	Rose, Linden	Rose, Linden	Coffee, Flowers, Nokul, ² Kebab, Bread
	Taste	Burnt (Smoky)	Fresh Air	Fresh Air	Fresh Air	Candied Walnuts, Kebab, Bread
	Hearing/Sound	Traffic,	Traffic, Cheering	Traffic, Child	Traffic, Child	Traffic, Noise
	Touch	Traffic,	Traffic, Cheering	Traffic, Child	Traffic, Child	Traffic, Noise
8.	Visual	-	Stadium	-	-	-
	Smell	Work	Greens	Greens	Greens	The Smell of Coffee, Flowers, Mothballs, the Smell of the Mosque
	Taste	Burnt (Smoky)	Fresh Air	Fresh Air	Fresh Air	Grapes, Sweets, Kebab, Bread
	Hearing/Sound	Traffic	Traffic, Music	Traffic	Traffic	Traffic
	Touch	Soil, Stone, Greenery	Greens	Greens	Greens	Kövke Stone (Bedesten ³) Stone Buildings, Greenery, Water (Atatürk Park)
9.	Visual	Stadium	-	-	-	-
	Smell	Greenery (Honeysuckle Scents)	Foliage (Flowers)	Greens	Greens	Exhaust
	Taste	-	Nokul Cinnamon, Rose Scents	Cake	-	-
	Hearing/Sound	Kebab, Bread	Traffic	Traffic	Traffic	Traffic
	Touch	Asphalt, Concrete	Asphalt, Concrete	Asphalt, Concrete	Asphalt, Concrete	Asphalt, Concrete
10.	Visual	-	-	Governor's Mansion	-	-
	Smell	Soot, the Smell of Carriages	Jasmine and Rose Scent	Jasmine and Rose Scent, Vanilla Scent	Jasmine and Rose Scent	Jasmine And Rose Scent
	Taste	Burnt (Smoky)	Fresh Air	Tea, Coffee, Cake	Fresh Air	Kebab, Bread, Coffee, Rose, Essences
	Hearing/Sound	Train	Concerts, Celebrations, Ceremonies	Childish Cheerful Sounds	Childish Cheerful Sounds	Tradesmen's Voices, Noise

Table 2. Cont.

Participants' Sensory Perception Analysis						
Regions Marked on the Map	Station and Surroundings	Stadium and Surroundings	Ülkü Primary School and Its Surroundings	Şaik High School and Its Surroundings	Kaymakkapı and Its Surroundings	
11.	Visual	-	-	Governor's Mansion	-	-
	Smell	Work	Pine Trees	Pine Trees	Pine Trees	Rose, Kebab, Carpet
	Taste	Burnt (Smoky)	Fresh Air	Fresh Air	Fresh Air	Nokul, Walnut Candy, Halva Kabune, Kebab, Bread
	Hearing/Sound	Train, Traffic	Bird	Bird	Bird	Traffic
	Touch	Soil, Stone, Greenery	Greens	Greens	Greens	Kövke Stone (Bedesten) Stone Buildings, Greenery, Water (Atatürk Park)
12.	Visual	-	Caglar Apartment	-	-	-
	Smell	Work	Pine Trees	Pine Trees	Pine Trees	Coffee, Bread, Halva
	Taste	Burnt (Smoky)	Fresh Air	Cake, Walnut Baklava	Fresh Air	Coffee, Bread, Kebab, Halva
	Hearing/Sound	Train	Birds, Cheering	Birds	Birds	Traffic, Horn, Band (Music), Announcement
	Touch	Soil, Stone, Greenery	Greenery, Soil	Greenery, Asphalt (Roads)	Greenery, Asphalt (Roads)	Kövke Stone (Bedesten, Station Building,) Stone Buildings, Greenery, Water (KarbuZ Fountain, Atatürk Park)
13.	Visual	-	-	-	-	Old Town Hall
	Smell	Steam, Soot, Phaeton (Horse Smell)	Pine Trees	Vanilla, Cake	Pine	Kebab, Pita with Meat, Cheese, Tahini, Coffee, Rose, Essences, Soap, Metal
	Taste	Toast, Tea, Coffee, Soda	Tea, Coffee, Soda	Ice Cream, Cake, Damascus Dessert	-	Soda, Rose Delight, Kabune, Tea, Coffee, Kebab, Bread, Halva (Semolina and Tahini), Spices
	Hearing/Sound	Train, Horn, Bird	Audience Sound, Bird, Noise	Child, Horn, Noise	Marching Band, Music	Noise, Rally, Music, Band, Call to Prayer, Various Tradesmen's Voices
	Touch	Soil, Greenery (Station Park) Locomotive; Iron Rails, Wooden Sleeper, Kövke Stone	Greenery, Grass, Soil, Concrete	Concrete	Chalk Powder (Şaik High School), (Army House), Kövke Stone (Divisional Headquarters Building), Wooden Stone	
14.	(Millet Kiraathanesi)	Cobblestone Pavements, Soil, Greenery, Water (Atatürk Park), Cobble Stone, Hemp (Grape Market), Wood (Bey Bath)				
	Visual		Petek Patisserie			
	Smell	Work	Greens	Crushed Mulberry Fruit	Greens	Bread, Carpet Rope, Rope, Shoes, Kebab
	Taste	Burnt (Smoky)	Fresh Air	-	-	Kebab, Bread
Hearing/Sound	Train Sound	Cheer	Child Voice		Hammer, Knife Scraping on the Bedesten Side	

Table 2. Cont.

Participants' Sensory Perception Analysis						
Regions Marked on the Map	Station and Surroundings	Stadium and Surroundings	Ülkü Primary School and Its Surroundings	Saik High School and Its Surroundings	Kaymakkapı and Its Surroundings	
15.	Visual	-	Governor's Mansion	-	-	-
	Smell	Work	Acacia Scent (In Season)	-	Greens	Coffee, Bread, Kebab
	Taste	Burnt (Smoky)	Fresh Air	-	-	Kebab, Bread, Halva
	Hearing/Sound	Train Sound Concerts	Cheering, Marching Sound	Child Voice		Noisy
	Touch	Iron Rails	Grass, Soil, Greenery	-	Greens	-
16.	Visual		Stadium			
	Smell	The Smell of Carriage Horses	Sunflower Seed	Paper	Pine	Bread, Nokul, Rose
	Taste	Burnt (Smoky)	Tea, Coffee, Soda	-	-	Bread, Nokul, Rose
	Hearing/Sound	Train, Horse	Noise, Core	Students, Music (Guitar), Children on Bicycles	Student, Music (Guitar)	Bus
	Touch	Soil	Greens	Stone	Greens	Stone, Pavements
17.	Visual		Governor's Mansion			
	Smell	Trees	Trees	Trees	Trees	Meat, Bread, Kebab
	Taste	Fresh Air	Tea, Coffee, Cake	Cake	Fresh Air	Coffee
	Hearing/Sound	Train	Noisy	Traffic, Horn	Traffic, Horn	Noisy
	Touch	Soil	Greens	Concrete	Concrete	Carpet, Rose Products
18.	Visual	-	Stadium	-	-	-
	Smell	Greenery (Honeysuckle Scents)	Foliage (Flowers)	Greens	Greens	Exhaust
	Taste	Burnt (Smoky)	Cake	Cake	Fresh Air	Kebab, Bread
	Hearing/Sound	Traffic	Traffic	Traffic	Traffic	Traffic
	Touch	Asphalt, Concrete	Asphalt, Concrete	Asphalt, Concrete	Asphalt, Concrete	Asphalt, Concrete
19.	Visual	Station				
	Smell	Work	Trees, Flowers	Trees, Flowers	Trees, Flowers	Wedding Meal (Halva, Kabune), Nokul, Kebab
	Taste	Burnt (Smoky)	Tea, Coffee, Cake	Cake	Fresh Air	Wedding Meal (Halva, Kabune), Nokul, Kebab
	Hearing/Sound	Train	Silent	Silent	Silent	Silent
	Touch	Soil	Greenery, Concrete	Concrete	Concrete	Concrete, Greenery, Stone

Table 2. Cont.

Participants' Sensory Perception Analysis					
Regions Marked on the Map	Station and Surroundings	Stadium and Surroundings	Ülkü Primary School and Its Surroundings	Şaik High School and Its Surroundings	Kaymakkapı and Its Surroundings
20.	Visual	-	-	-	Former Director of National Education Building
	Smell	Exhaust			Kebab, Bread, Coffee
	Taste	-	Cookie	Ice Cream, Cake	-
	Hearing/Sound	Train		Sports Competitions, Public Holidays, Festival Sounds	Child Voice
	Touch	Soil	Greens	-	Don't Touch the Desk/Board (Wood)
21.	Visual	Station			
	Smell	-	Greens	Greens	Greens
	Taste	-	Tea	Cake	Fresh Air
	Hearing/Sound	Train	Traffic	Traffic	Traffic
	Touch		Keystone	Keystone	Keystone
22.	Visual		Caglar Apartment		
	Smell	Work	Greens	Greens	Greenery, Seven-Giving Roses
	Taste	Burnt (Smoky)	Tea	Cake	Fresh Air
	Hearing/Sound	Train	Fight, Cheer	Traffic, Student	Marching Band (Music), Traffic
	Touch	Soil	Concrete	Concrete	Concrete
23.	Visual		Medicine Club		
	Smell	Soot, Burnt (Smoky)	Greens, Cake	Greens	Greens
	Taste	Burnt (Smoky)	Tea, Coffee, Ice Cream	Tea, Coffee and Cake, Ice Cream	Fresh Air
	Hearing/Sound	Train, Bird Horn, Noise	Match, Cheer, Whistle	Children, Spoons, Plates	Traffic, Noise
	Touch	Soil, Stone	Greens	Greens	Concrete, Stone

In line with the answer to question C.1 (see Appendix A) asked to 23 participants, 3 people identified Isparta Train Station building and its surroundings, 10 individuals identified the stadium and its surroundings, 8 individuals identified Ülkü School and its surroundings. It was observed that one person marked ŞAİK High School and its surroundings, and one person marked Kaymakkapı and its surroundings.

To detect the odor elements in memory, the data obtained in line with the answer to question C.2 (see Appendix A) were examined. The collective representation of the odor elements expressed based on the regions given to the participants as marked regions on the maps is shown on the city map (Figure 2).

SMELL ANALYSIS CHART

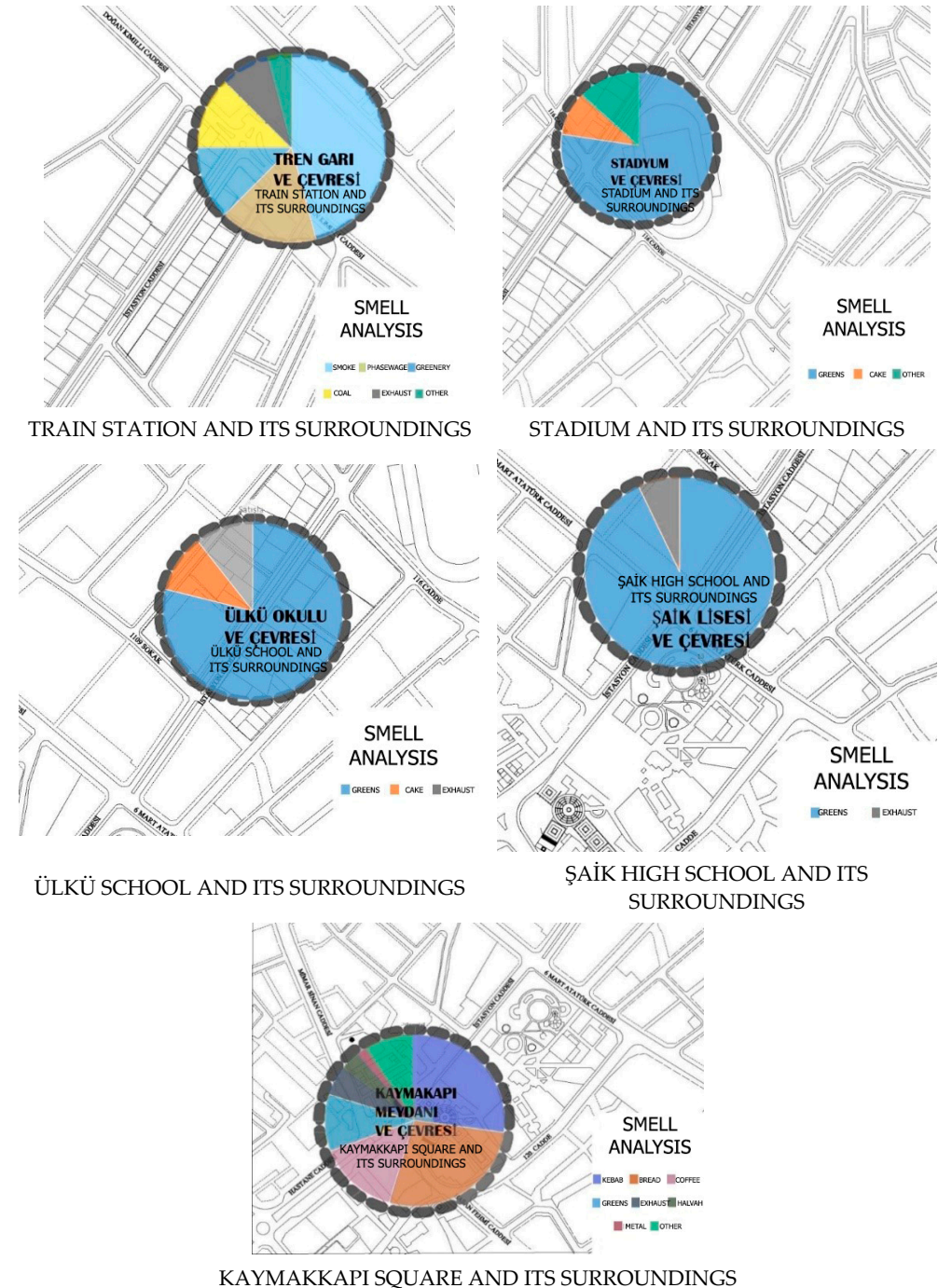


Figure 2. Odor analysis chart.

To detect taste elements in memory, the data obtained in line with the answer to question C.3 (see Appendix A) asked to 23 participants were examined. The collective representation of the taste elements expressed to the participants based on the regions marked on the maps is shown on the city map (Figure 3).

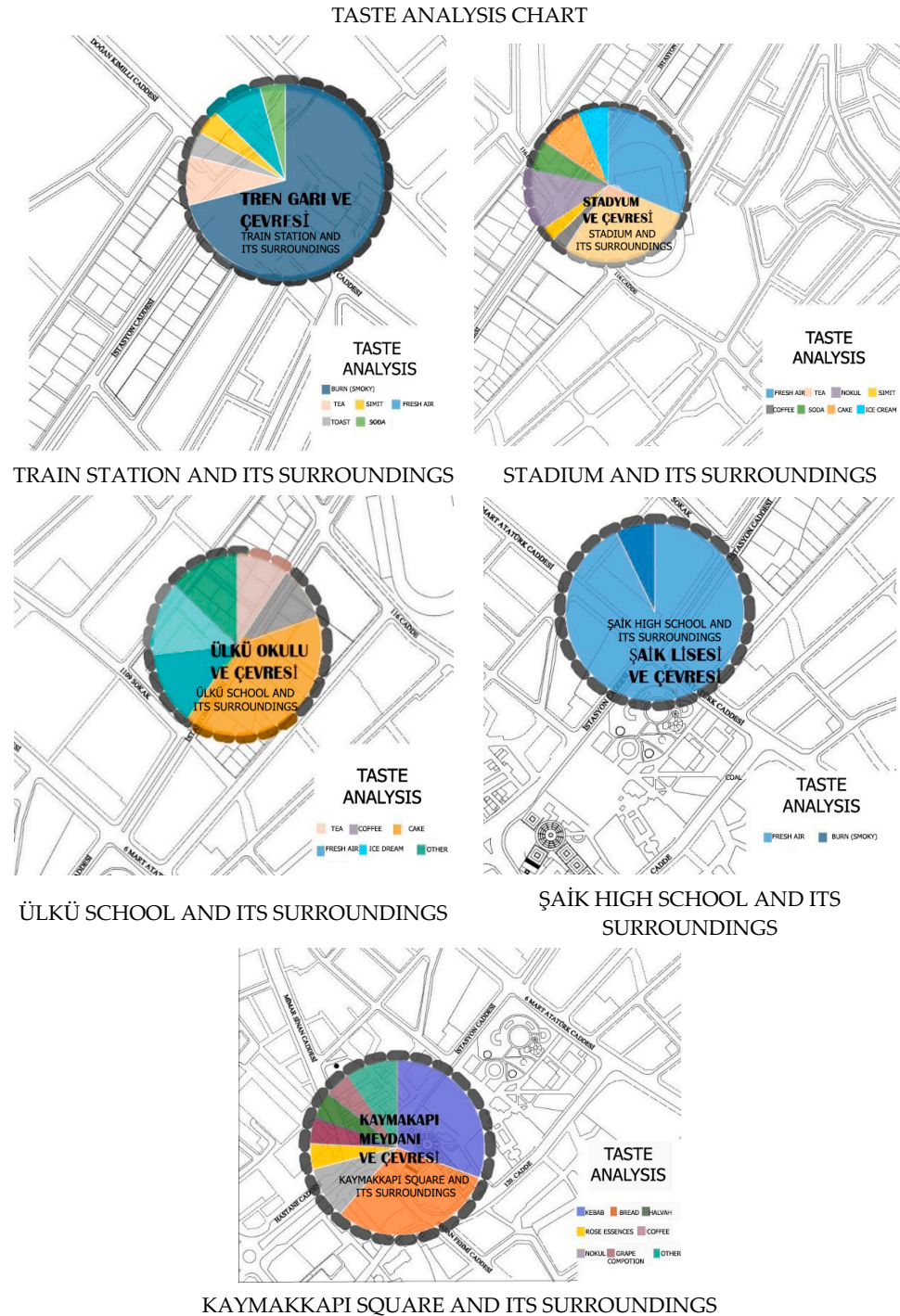


Figure 3. Taste analysis chart.

To detect sound elements in memory, the data obtained in line with the answers to question C.4 (see Appendix A) asked to 23 participants were examined. The collective representation of the sound elements expressed based on the regions given to the participants as marked regions on the maps is shown on the city map (Figure 4).

SOUND ANALYSIS CHART

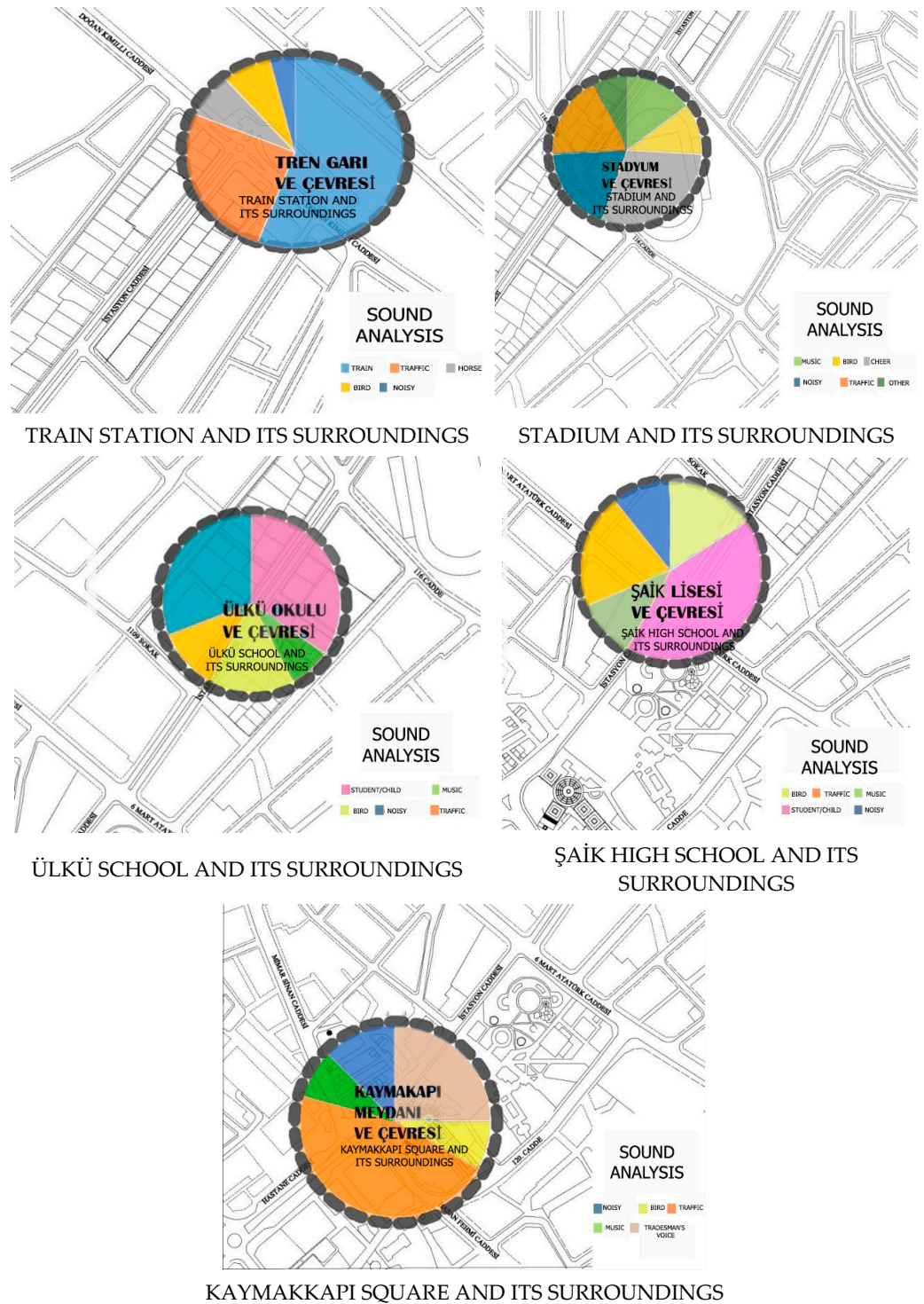


Figure 4. Sound analysis chart.

To detect touch items in memory, the data obtained in line with the answers to question C.5 (see Appendix A) asked to 23 participants were examined.

The collective representation of touch elements expressed based on the regions given to the participants as marked regions on the maps is shown on the city map (Figure 5).

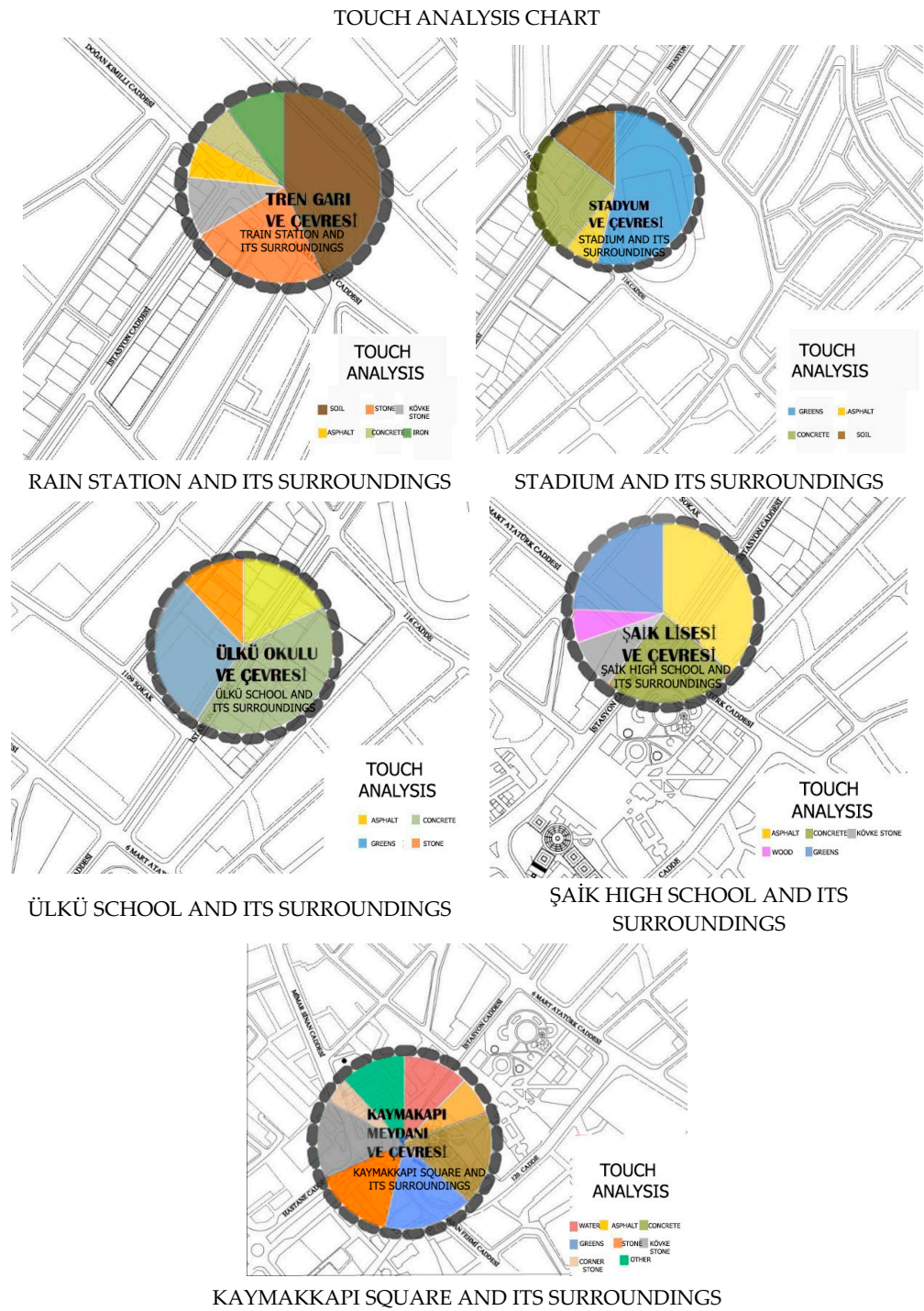


Figure 5. Touch analysis chart.

According to the sensory perception analysis chart data, the urban elements defined by the visual element were determined. Collective mind maps were created in which the sensory perceptions of the participants were visualized, regionally (which were also given to the participants as marked regions on the maps), based on the train station and its surroundings, the stadium and its surroundings, Ülkü Primary School and its surroundings, Şaik High School and its surroundings, and Kaymakkapı and its surroundings (Figure 6).

TOUCH ANALYSIS CHART



Figure 6. Collective mind maps.

5. Conclusions

In this study, the elements of sight, smell, taste, sound, and touch that were most felt by the participants in various regions of Isparta were determined, and collective mind maps were created to visualize these sensory perceptions. The findings made in line with regional investigations and participants’ perceptions are as follows:

The most sensed visual elements were found in the stadium and its surrounding area. In terms of odor elements, the smell of “soot” was dominant in the Isparta Station building and its surroundings, the smell of “greenery” in the stadium and its surroundings, the smell of “greenery” in Ülkü Primary School and its surroundings, the smell of “greenery” in ŞAİK High School and its surroundings, and the smell of “kebab” in Kaymaklı and its surroundings.

When evaluated in terms of the taste elements, the “burnt (smoky)” taste left in the air by the smell of toxic substances, such as soot in the Isparta Station building and its surroundings, was detected. “Clean air” representing the freshness and relief felt by the

green texture in the stadium and its surroundings was detected. “Cake” in Ülkü Primary School and its surroundings was detected. The taste of “fresh air” was detected in ŞAİK High School and its surroundings, and the taste of “kebab and bread” was detected in Kaymakkapı Square and its surroundings, located in the city square.

In the evaluations made in terms of the sound elements, the “traffic” sound in and around the Isparta Station building, the “cheering” sound in the stadium and its surroundings, the “student/child” sound in Ülkü Primary School and its surroundings, and the “traffic” sound in ŞAİK High School and Kaymakkapı and their surroundings were the most frequently heard sounds.

In terms of the tactile elements, the feeling of “earth” in and around the Isparta Station building, the feeling of “greenness” in the stadium and its surroundings, the feeling of “concrete” in Ülkü Primary School and its surroundings, the feeling of “greenness” in ŞAİK High School and its surroundings, and the feeling of “concrete and greenery” in Kaymakkapı and its surroundings were determined to be the most felt.

It is envisaged that these findings will help determine the sensory elements dominant in various regions of Isparta by revealing the sensory experiences and perceptions of the participants in different regions. The collective mind maps created provide important information in terms of city planning and urban design. The map where all the senses are shown collectively on the current plan of Isparta, İstasyon Street is given in Figure 7.

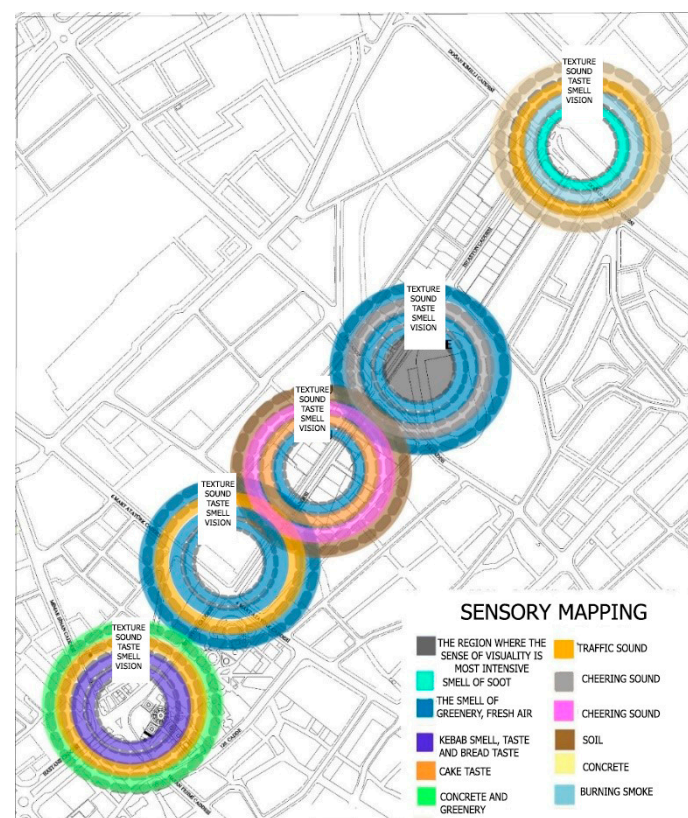


Figure 7. Sensory mapping.

Among the data obtained from the literature research and archive scanning, sensory data, including sight, smell, taste, sound, and touch, are also included in the data from verbal narratives at the street scale. The detection of common points in these data supports the results of the study. A schematic representation of the intersection of the methods is included in Figure 8. The inferences expressing these relationships are shown in Table 3. As a result, both visual and verbal data were used to analyze the reflections of memory on urban space. The data obtained from the literature review and verbal narratives were considered within the framework of two main scales, and their common aspects were

determined and presented in tables. These two scales were determined as city scale and street scale.

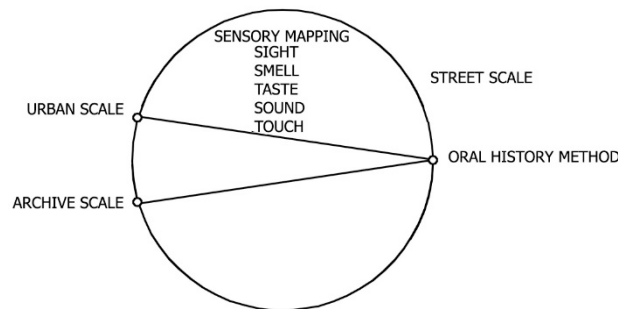


Figure 8. Intersection diagram.

Table 3. Vision intersection table.

Sensory Mapping Method		
Sense /Scale	“Urban Scale”	“Street Scale”
Sense Of Sight	The sense of sight has an important role in the formation and development of memory. Many places can be detected by the sense of sight. First of all, the architectural conditions of the places attract attention. Places bearing traditional and modern architectural traces within the city have a place in the city’s memory.	The place that stands out in the sense of sight is the stadium structure. Other prominent places on İstasyon Street were also identified using the oral history method. The Old Government Mansion, the Old Municipality building, the prison building, the kebab shops’ area, and the row of shops mentioned in the oral narratives continue to be visible in the minds of the citizens, even though they have undergone major changes and disappeared.
Sense Of Smell	Smells are recorded in the olfactory bulb in the brain, and when we smell, a memory comes to life immediately. It comes in the form of an unforgettable memory aid. The most important factors that enable the sense of smell to become active are recreation areas, crops grown, food and beverage units, and various business areas. The rose gardens of the Isparta region are famous. The scent that rose gardens give to the environment is referenced in many articles about the city. İstasyon Street smelled like roses because there were rose beds and rose gardens after the train station building. This can be deduced from the following proverb that the rose element has such a place in urban culture that it is identified with a moon: “rose moon, flood moon”. (Rain is expected along with the scent of roses, and it is hoped that the rose month will be fruitful.) Restaurants, cafes, patisseries, which are food and beverage units, and haberdasheries, hardware shops, herbalists, coffee shops and rose essences in the Historical Grape Market, and various nut shops are places where the effect of the sense of smell is felt intensely. Halva, kabune, kebab, and nokul wedding meals (yayla soup, beans, and rice or roasted meat) are still made and distributed collectively in homes and on the streets. This shows that many points of the city interact with the sense of smell.	Apart from the scent elements that stand out in the oral narratives, the scent of roses is one of the deepest traces in the history of İstasyon Street, because it was stated that the street was used as a rose garden and a garden in the memories of the participants who witnessed the street’s original state directly or indirectly. When the oral narratives are examined, it is seen that the scent element of the street has actually undergone a great change today. It is said that the street has become a point where the smells of old roses, jasmine, daffodils, and lilacs are replaced by the smells of coal exhaust. However, although there is a lack of green space throughout the city, the green texture of the street has caused the feeling of greenery to have an important place in the scent elements. Kebab, bread, halva, and meat dishes, which have an important place throughout the city, are the most mentioned smells in the odor analysis of the street. The intense expression of these scent elements, especially in the Kebabçılar Arasta ⁴ area, shows that this area has a place in the memory as an eating and drinking area. The participants told stories about the grape market and its surroundings and bought rose delights, mothballs, carpets, tea, coffee, etc. They also referred to smells. In addition, the smell of cars reminds people of the old days when horses were used as a means of transportation, the smell of coal reminds people of steam trains, the smell of nokul reminds people of the coming of holidays, and the smell of cat diapers reminds people of death. The smell of the bread of the Değirmenci bakery behind the government and the covered bazaar, the kebab smell of the Kebabçı Kadir and Hacı Benli Kebab shops on this side, the presence of Ferah Kebab and the coffee shops on the Üzüm Pazarı side, the smell of freshly ground coffee, and the compotes drunk after eating kebabs represent unforgettable memories.

Table 3. Cont.

Sense /Scale	Sensory Mapping Method	
	“Urban Scale”	“Street Scale”
Sense Of Taste	<p>The most important factor that enables the sense of taste to become active is the culture of eating and drinking. Isparta has dishes, such as kabunesi, toygu soup, wedding roast, and pumpkin halva. The Isparta region is especially famous for Kabune, crushed halva, and tel halva. Halvas are eaten at family gatherings and night conversations.</p> <p>Restaurants, cafes, patisseries, and shops in the Historical Grape Market, Ferah Kebap, Kebapçı Kadir, and Hacı Benli kebab shops, which are featured in Isparta’s promotional bookstores, have been in service for many years and contribute to the city’s food and beverage culture with its sense of taste.</p>	<p>Kabune, halva, meat dishes, and bread, which have an important place throughout the city, have been referenced in many narratives in the taste analysis of the street. The intense expression of these taste elements in the Kebapçılar Arasta area shows that this area has a place in memory as a food and beverage area.</p> <p>In addition, it has been observed that the patisseries located on the street, Petek, Elit, Lozan and Özüt are meeting places and also serve as tea, coffee, cake, and ice cream items in terms of taste.</p> <p>In the texts describing the historical Grape Market and its surroundings, items such as candied walnuts, coffee, spices, grapes and rose delight are expressed as key tastes.</p>
Hearing/ Sense Of Sound	<p>The urban environment has a density of population and vehicles and provides religious, commercial, administrative, etc., services to the public. The presence of units reveals the discernible aspect of the sense of sound. According to the information obtained from the city archive research in general, population growth is dominant in the city center. However, it is possible that the city’s important transportation arteries are dominated by horn and brake noises. In public areas of the city, the sounds of people, children, tradesmen, ceremonies, celebrations, etc., are said to be common sounds. It is stated in many archives and documents that the stadium structure, which is the only sports structure on a large scale in the city center, includes match sounds, Republic Day celebration and ceremony sounds, or musical sounds of vocal artists coming to the city during festivals. Moreover, given the fact that the train line, which provides the economic development of the city, has reached Isparta, it is understood that people participate in these celebrations with enthusiasm. Therefore, the people of Isparta hear train sounds from the station building, from which İstasyon Street takes its name.</p>	<p>Included in the narratives, it is possible to say that various animal sounds are among the sound elements of the street, since it was a vineyard, garden, and rose garden in the past. Today, it is included in verbal expressions that in the street, for example, bird sounds are replaced by traffic sounds. There are references to the fact that the noise level has increased due to the increase in the development activities of the street, and that the street, which is described as calm and decent, has become a noisy structure where crowds and chaos prevail.</p> <p>The sound of the train whistle coming from the train station and the sound of the phaetons used as a means of transportation in the past are important sound elements that remain in memory. The place of ceremonies and holidays celebrated with enthusiasm on the street scale has been emphasized in many places in the memory of the city’s citizens. Cheering, match sounds, and music sounds are referred to in many places as the sound sensory elements of the stadium and its surroundings.</p>
Sense Of Touch	<p>The textures and materials of the urban environment enable the sense of touch to become active. In general, the architecture of the city has an environment where traditional and modern buildings are seen together. It is possible that textural elements can be diversified in terms of the combination of traditional materials in the governorship building and train station building, historical bathhouse and bazaar buildings, and many buildings with wood, reinforced concrete, and stone materials. It is also possible to mention elements, such as asphalt, keystone, and cobblestone, whose tactile effects are felt by vehicles and passengers.</p>	<p>Included in the narratives, the soil element was mentioned, referring to the street’s past state. Keystone and iron rails, concrete, stone, and cobblestone etc., are densely present expressions of the elements.</p>

City scale generally examines the role played by the physical structures, architectural features, and social spaces of cities in the formation of urban memory. This scale was structured based on studies in the literature that examined the connection between memory and the physical structures of cities. City scale aims to reveal how memory interacts with physical space by analyzing the spatial and cultural elements that cities have in the process of shaping memory. Cities can be considered as memory carriers; social spaces, such as architectural structures, squares, and parks, ensure that memories intertwined with urban identity remain alive in the collective memory. The historical and cultural characteristics of cities play an important role in the construction and transmission of collective memory.

The street scale offers a more microlevel assessment. It is used to understand how the daily experiences of individuals living in streets, avenues, and certain areas are processed into memory. This scale is built on individual and social memories obtained from verbal

narratives. The street scale investigates how the spaces that individuals experience in daily life are loaded with memories and meanings of the past. Streets are places where memories are revived, and where connections are established with the past within the rituals of daily life. Individuals become a part of the memories of these spaces with the memories they experience on the streets or in the neighborhoods. Street names, monuments, or certain characteristics of the neighborhoods hold an important place in the memory of individuals and ensure the reproduction of collective memory through individuals.

The sensory mapping method demonstrates that memory is a multidimensional construct that relies on the integration of various sensory experiences. Isparta's collective memory is sustained by the interplay between sight, smell, taste, sound, and touch, all of which contribute to the city's unique identity. On both the urban and street scales, sensory experiences foster a strong connection to place, offering continuity between the past and present. This method emphasizes that cities are not only built environments but also repositories of sensory memories that shape personal and collective identities. Isparta, through its distinct sensory landscape, illustrates how urban spaces can function as powerful memory spaces that preserve cultural heritage and foster a sense of belonging among its inhabitants.

In this study, it was examined how the senses respond at the urban and street scale, and how they preserve the traces of the past in today's urban life. The intersection table of the sense of sight emphasizes the role of the sense of sight in this process by focusing on how spaces at the city and street scale shape memory. A sense of smell intersection table has been created to discuss the place of the sense of smell on the city and street scale, how the smells of the past exist in today's urban life, and how these smells affect memory. This table reveals the connection of the smells felt in various parts of the city with the past, and how these smells leave a mark on memory. The sense of taste is in close relationship with the cultural structure of the city, and this relationship is examined in the taste intersection table. The role played by the sense of taste at the city and street scale and the contribution of the cultural structure of the city to the sense of taste enable us to understand the gastronomic culture of the city and the effects of this culture on daily life.

The sense of sound has become a prominent element due to the city's dense population, commercial activities, and noise in transportation arteries. Information based on historical background provides information about how the sounds in the city center have changed over time.

The tactile intersection table examines the effects of the city's architectural structure and various materials on the sense of touch. The coexistence of traditional and modern buildings increases the diversity of textural elements and contributes to different tactile experiences in the city. The materials that vehicles and passengers come into contact with also play an important role in the fabric of the city.

In general, senses at the city and street scale are important tools for understanding how spaces and environments shape memory. The intersection tables of the senses of sight, smell, taste, sound, and touch offer a rich resource to understand the cultural texture, history, and evolution of the city. These sensory elements are important components that determine the character of the city and form the memory of the city as a living organism. These sensory components of the city carry traces of the past in daily life, leaving permanent traces in the memory of individuals living in the city.

As a result, in this study, sensory perception and memory examinations carried out on İstasyon Street, one of the important axes of Isparta, shed light on the history, architecture, and cultural texture of the city. İstasyon Street, located at the intersection of the old and new texture of the city, serves as both a dividing and unifying function with urban developments and changes. This street is an example of urban formations shaped by national consciousness during the Republican period and is important for the preservation of values that will be transferred to the future.

The main source of the study was participants who directly or indirectly experienced the formation, change, and transformation process of İstasyon Street. Verbal interviews

and sensory mapping studies conducted with the intellectual background of Pierre Nora's memory space concept have offered a new approach to examining the city's memory spaces.

Memory places are places where individuals and communities keep their memories, emotions, and experiences of the past together. İstasyon Street stands out as a place of memory where events throughout history, historical and literary concepts, processes of change and transformation, as well as sensory meanings, are experienced in depth.

Sensory perceptions were intensely experienced in different parts of the city. The train station and its surroundings attracted attention as areas where visual and auditory sensations are intense; the stadium and its surroundings are areas where auditory and visual sensations are experienced during sports events; Ülkü Primary School and ŞAİK High School's surroundings are areas where student mobility and school bell sounds are intense; and Kaymakkapı and its surroundings are areas where shopping and social interactions are intensely experienced. Sensory imagery and experience were clearly felt on İstasyon Street. Areas, such as Üzüm Pazarı and its surroundings, Kebabçılar Arasta, and food and beverage areas, are associated with certain smells and tastes and have a place in the sensory memories of visitors. Areas, such as Government Square, Kaymakkapı Square, Ulu Mosque, and the stadium and its surroundings, are the centers of social meetings, celebrations, and ceremonies and stand out as places where socialization takes place intensively.

As a result, İstasyon Street holds an important place in the historical, social, and sensory memory of the city. This street attracts attention as an area where individual and collective memories come together, and sensory images and experiences are concentrated, along with the events and changes experienced in different periods. The study makes a significant contribution to the cultural and memory continuity of the city by examining and mapping these memory spaces from a sensory perspective. These findings have been revealed as important elements to be taken into account in urban development processes, providing valuable data for future planning and design decisions.

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Appendix A

Oral History Research Questions

- A. Personal information of the interviewed individual
 - (A.1) Your name and surname.
 - (A.2) Your date of birth and place of birth?
 - (A.3) What is your profession and where is your workplace? Is your workplace and the line of business you engage in related to İstasyon Street?

B. Information about the place of İstasyon Street in the memory of the interviewed individual

(B.1) How was the commercial life on İstasyon Street? Which business lines have the businesses in which trade is diversified? Could you describe the workplaces that existed in the past but do not exist now, with the information you have in your memory? (The name of the trade place, its reputation in the city, information about the owner, the nickname of the person/family who owns the business, the name of the tradesman, what the trade is, etc.)

(B.2) What do you remember about the education life on İstasyon Street?

(B.3) How were national holidays, ceremonies, and celebrations held on İstasyon Street? (Answers can be given by considering venues, such as stadiums, school gardens, on the street, in tea gardens, in local restaurants, etc.)

(B.4) What can you say about the places with food and beverage functions on İstasyon Street? (Information such as the name of the place, its location, cafeteria, patisserie, other related places, apartment name, etc., can also be given.)

(B.5) Which age groups spent the most time on İstasyon Street? Can you explain using your memory?

C. Questions prepared for the detection of memory places with the sensory mapping method

Through the current map of Isparta given to you, which includes the roads and important street names of İstasyon Street, answering the following questions:

(C.1) When you close and open your eyes on İstasyon Street, what is the first place/object/equipment/etc., that comes to your mind? Can you mark it on the map?

(C.2) If you were to describe İstasyon Street with a smell, which smell(s) would you describe the areas marked on the map?

(C.3) If you were to describe İstasyon Street with a taste, which taste(s) would you describe the areas marked on the map?

(C.4) If you were to describe İstasyon Street with a voice, which voice(s) would you use to describe the areas marked on the map?

(C.5) How would you feel if you were touching the areas of İstasyon Street marked on the map and what textural features would you identify with it?

(C.6) Many different, important places and areas have been identified on İstasyon Street from the past to the present. These areas include Isparta Train Station, Station Park, the medical club, Lausanne Patisserie, Kyrenia Patisserie, Elite Patisserie, Atatürk Stadium, Stadium Park, the Vocational High School for Girls, hairdressers, cafeterias, the Governor's Mansion, the Division Commander's residence, ŞAİK High School, Army House Summer Garden, Atatürk Park, Division Headquarters building, the Old Municipality building, the old prison, Junior High School, İdadi School (Former National Education Directorate), Governorship Square, the Government Mansion, the Grand Mosque, the PTT building, İş Bank, Ziraat Bank, Üzüm Market and the iconic business lines and shops within it, Bedesten, Halit Aktan Pharmacy, Kebapçılar Arasta and the memorable business lines and shops within it, Özsüt, Roma Ice Creams, Isparta Arya Culture and Arts, Değirmenci Bakery, Kebab and Pide Restaurants, Rosense, Dalboyunoğlu Turkish Bath, Bey Turkish Bath, dry cleaning, grocery stores, etc. Can you explain what remains in your memory through the senses for the areas and places on the list and the adjectives that correspond to the feeling they left in you?

(It is expected that you write next to the place/area which sense(s) it expresses (sight, smell, taste, sound, touch), the adjectives it makes you feel (calmness, discomfort, noise, crowded, serene, pleasant, sweet, etc.), and the words it represents.)

(The names of the shops located in Üzüm Pazarı and Kebapçılar Arasta and the products they sell must be stated.)

Finally, is there anything you would like to say or add?

Thank you very much for your time.

City maps with its streets and axis were presented to the participants. Maps thought to be helpful in answering questions C.1, C.2, C.3, C.4, and C.5 are listed below, respectively (Figures A1 and A2).



Figure A1. Vision analysis sheet.

In order to reach the first trace in the participants' memories, they were asked to mark the first item that came to their eyes when they closed and opened their eyes. In order to easily mark the item determined by the participant on this map, certain streets and street names are included on the map.

For the odor analysis from the participants, they were asked to write down which of the marked fields they matched with the smell of coffee, the smell of tea, the smell of kebab, the smell of bread, the smell of soap, the smell of wood, the smell of exhaust, the smell of coal, and the other smells that had a place in their memories. If there were places they wanted to add other than the marked areas, they were expected to add them and write down the smell that came to mind.

For the taste analysis from the participants, they were asked to write down which of the marked areas they matched with the tastes of rose delight, dirgit, kabune, tea, coffee, kebab, bread, soot, and other tastes that had a place in their memories. If there were places they wanted to add other than the marked areas, they were expected to add them and write down the smell it evoked. For sounds analysis from participants, they were asked to write down which of the marked areas they matched with the sounds of birds, horns,

trains, children's voices, noise, silence, and other sounds that had a place in their memories. If there were places they wanted to add other than the marked areas, they were expected to add them and write the sound they evoked. For touch analysis from participants, they were asked to write down which of the marked areas they matched soil, greenery, keystone, stone, concrete, water, and other touch sensations that were in their memories. If there were places they wanted to add other than the marked areas, they were expected to add them and write down the sense of touch that it evoked.

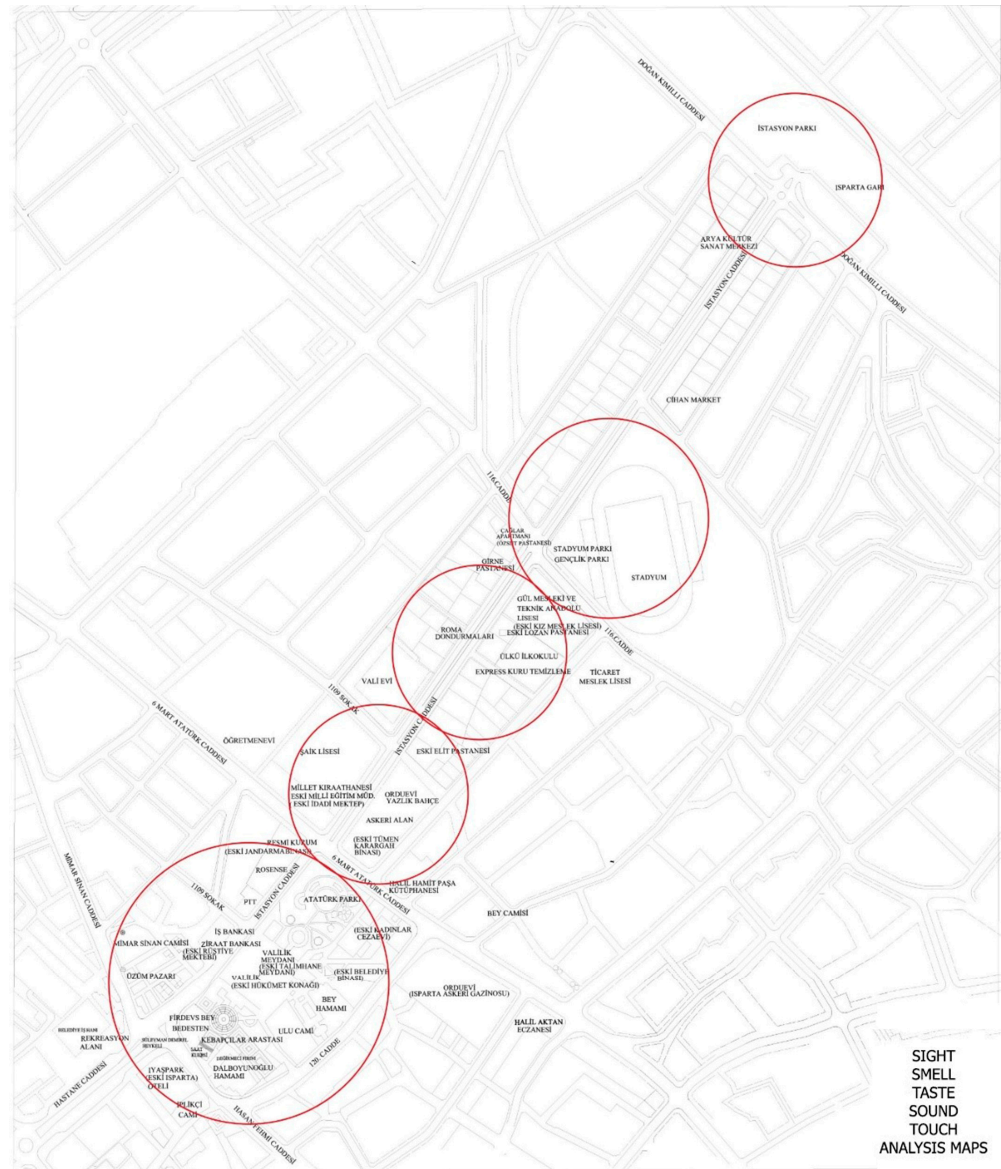


Figure A2. Smell, taste, sound, and touch analysis sheet.

Notes

- 1 Stone Kövke is a material found in Isparta and its surroundings, which is in a mud state when first removed, is shaped by pouring the mud into molds, is hardened and petrified after drying, and then, is used in buildings. It was used to construct old churches, such as Aya Yorgi Church and some minarets in Isparta.
- 2 Nokul, dirgit, and kabune are local types of pastry.
- 3 Bedesten is a covered Turkish bazaar.
- 4 Arasta is where kebab shops are located.

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