A SENSORY EXPERIENCE IN AN URBAN ENVIRONMENT: SOUND-WALKS AND SOUND-MAPS

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ABSTRACT
Sensory studies are important to develop an understanding of the relationship between people and the environment and to see the need to relate buildings and the spaces between them. Stimuli from the sense organs are transformed into perception through processes that take place in mind and they are signified by mechanisms, interpreted, and thus perception occurs. The aim of this study is to introduce a way to obtain sensory information from the spatial environment, to understand and realize the methods to express the results of such an experience visually. A case study is conducted with first grade architectural students in Haskoy, Beyoglu in order to acquire auditory knowledge from the environment and to visualize them. The case study consists of three steps: understanding the issue of environmental sounds, acquiring environmental sounds with direct experience, and visualizing the data as forms of sense-maps using various techniques.

INTRODUCTION
Sound has a crucial role in the definition of space and place. For example, the identity of a space is not a static structure, and can vary from one social context to another (Relph, 1976). The identity of a city is not only defined by its visual, physical features and its appearance but also by its other sensory elements like soundscape. Space turns into a place conceptually when it is shaped by experiences. Wissmann (2014) suggests that sense of place seems an everyday term that is easier to experience than conceptualize. He adopts Tuan's (1975) approach of sense of place to sound. He argues that we do not listen to sounds, we take them for granted. Thus it becomes the part of sensing the place. Nevertheless, if this process is needed to be analyzed, then sound-walks and sound-maps as the concrete products of the experience can be the methods for conscious sensory experiencing of space.
This study aims to reveal a process that consists of three steps (conveyance of the concept of environmental sounds; direct experience of urban sounds by sound-walks; and visualization of the sensory experience by sound-maps) that is conducted as a part of an undergraduate course titled Space Perception and Psychology that is supervised by the author at Fatih Sultan Mehmet Waqf University, Department of Architecture, Istanbul.

Urban Sound-walks
Urban ambiances are created and experienced as a product of different, sometimes unique, blends of sights, sounds, smells, textures, tastes and thermal conditions (Bruce, et al., 2016). Kekou and Marangoni (2010) argue that buildings and architecture are usually described in visual terms, but it is often our sense of hearing which assists us in experiencing and navigating through urban spaces. Venot and Semidor (2006) noted that all urban noises contribute to the image of the city. They claim that noises which provoke some discomfort because of their intensity or because they blur the perception of the most representative sounds of the city, have to be limited. In contrast to the static image of urban spaces, soundscape occurs as a dynamic process (Leus, 2011), so it can create relative mental pictures.
Hallsten (2014) emphasizes the collaboration of the movements of our bodies. Spaces overlap, unfold, are born and fade away with the movements of us. Sound-walks engage and direct our senses actively to the surrounding environment requiring sustained mental and physical focus on the whole environment. This kind of bodily movement advocates an engagement with the environment in which the emphasis lies not solely on the visual and aesthetic, but also on a heightened experience of sound and physical forces (Hallsten, 2014).
Sound-walk is a concept that is understood as an excursion on foot with the intention of listening closely and consciously to sounds around (Tausig, 2011). This practice is of interest to urban planners, architects, artists, and educators. Tausig (2011) notes that a review of English-language literature from the 20th century suggest that the term "sound-walk" is started to be used in the mid-1970s and become common in pedagogical texts on topics such as musical development, environmental awareness, and cultural heritage. Composer R. Murray

Schafer, leader of the World Soundscape Project and author of the 1977 Sound Studies text "The Tuning of the World", used portable recording equipment to document and analyze the soundscapes of specific locations (Tausig, 2011).
Sound-walking basically involves walking and listening, but it can be practiced in a variety of forms including walks lead by an artist along a predetermined path; walks with eyes closed or open; walks with pauses to stop and listen or walks involving small sonic manipulations or interventions (Flugge, 2014).
Tausig emphasizes pedagogical aim of sound-walks. He argues that listening is a performance that benefits from training and rehearsal like playing an instrument. Wissmann (2014) notes that we consume urban sound, we do not listen to it actively. Through sound-walk exercises, within time, people can learn to interpret the sounds around them (Tausig, 2011).

Urban Sound-maps

Maps have been considered as instruments of graphic communication using abstraction, representation and design to convey a message to a community of users (MacEachren, 2004). From this perspective on cartography, the role of representation in mapping is as a means for communicating spatial data effectively. Cartography allows us to portray raw data, the graphical combination of disparate data sets and exploration of data and the presentation of results. As a combination of abstraction and representation, cartography is a data-handling and data-communicating method. Most of the techniques used in contemporary scientific visualization have relied on mapping methods to provide their initial model. Beyond its role as a tool for representation, the map is referred to as a metaphor for the presentation and representation of spatial and non-spatial data. It advocates the representation and examination of complex information that can be mapped to display different aspects of spatial environments (Fairbairn, et al., 2001).

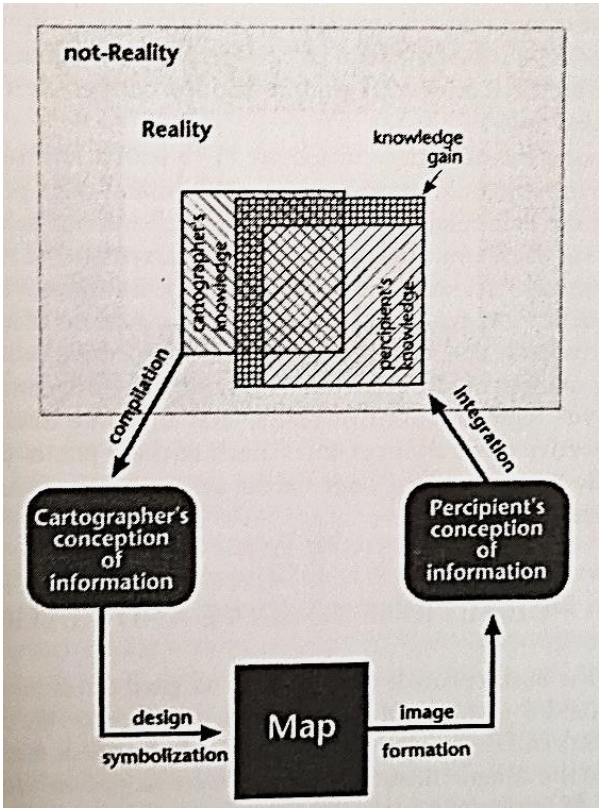


Figure 1. Cartography as a process of graphic communication (MacEachren, 2004, pp.5).

Sound-map basically refers to pinning the links of sound recordings of specific environmental locations onto a realistic, geographical map revealing the exact location of the recording (See http://www.belfastsoundmap.org/). Those projects are generally interactive ones and constitute of nude and electronical direct reflections of sounds, additionally they are the products of devices conveying the environmental sonic atmosphere. Conceptually and practically, they do not reflect human bodily experience of sensory dimensions of urban space. This type of mapping does not advocate sound-maps which are often considered psycho-geographical maps (See http://www.inenart.eu/?tag=psychogeographic-maps),

as “Psycho-geography is defined in the first volume of Situationist International as ‘the study of specific effects of the geographical environment, consciously organized or not, on the emotions and behavior of individuals.’" (1). The map is used to discover the principle paths of movement through cities and their pivotal areas (2).
Guy Debord proposed that exploration of the built environment would not include preconceptions and would not be restricted by discussions about architectural styles or residential percentages. The discussions would be based on the theory inhabiting an urban environment in a new way. Some adopted methods were, for instance, to follow one’s nose by chasing smells or navigate through Paris utilizing a map of London (3).

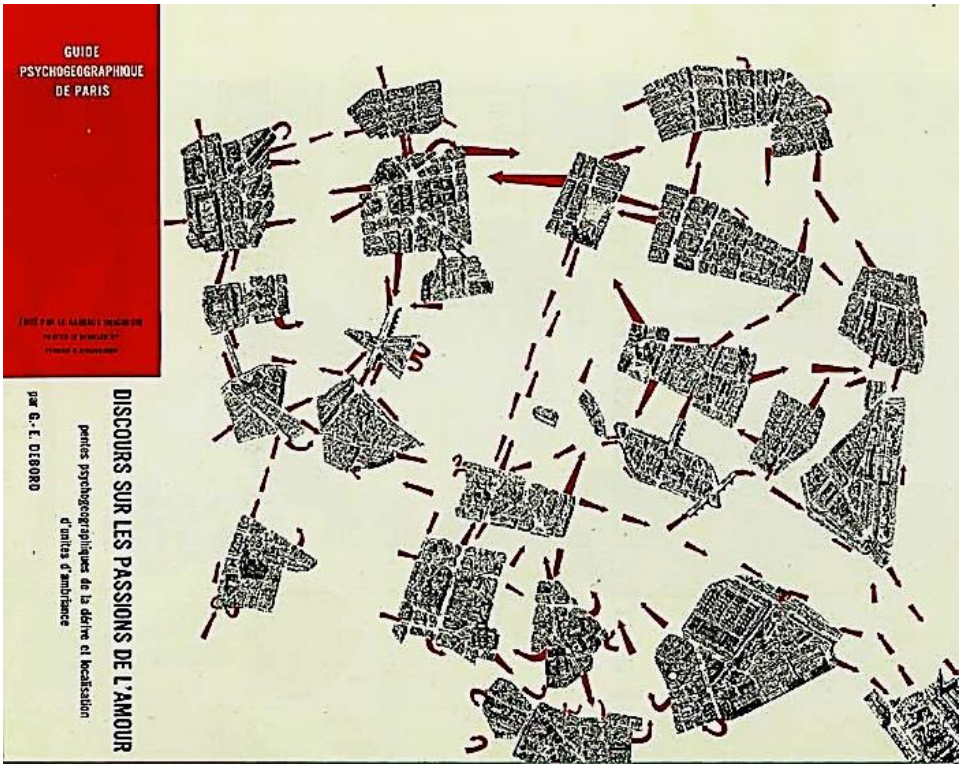


Figure 2. Debord’s psychogeographical map The Naked City (1957) (4).

In a related situationist study, Chombart de Lauwe in 1952 mapped out all of the movements of a student in Paris’s 16th Arrondissement. The spaces she visits through a year are surprisingly limited, and center on her house, her piano teacher, and her School of Political Sciences. The goal of this study was to reveal “the narrowness of the real Paris in which each individual lives within a geographical area whose radius is extremely small.” (5). It can be considered an experiential map of one person.

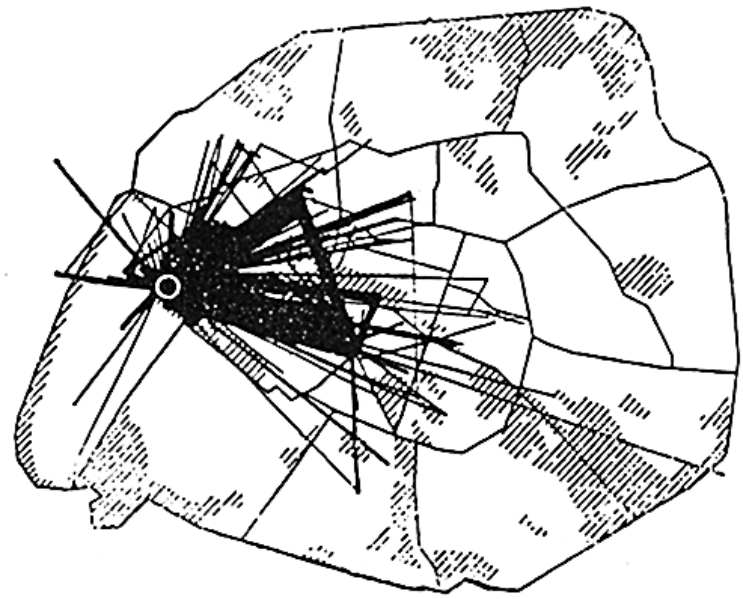


Figure 3. Chombart de Lauwe's map. (6)

Each experiential loop or line forms a unique experiential map which can be compared to collective image maps of urban space. These contrasting worlds reveal us how various realities exist simultaneously. Forster and his colleagues adopt this idea to sounds of urban space. They suggest that, in navigating a city visually, we read the city as a text, interpreting the meanings of visual stimulus and drawing correlations between points. If we can read the city as text, it is therefore possible to hear the city as audio and produce an aural "map" (Forster, et al., 2014).

So how can we express the sensory map of an urban space? Just by pinning the locations of sounds on a map, or can we think of new ways of, for instance artistic visualization techniques, of mapping experiences? Map-art is new way of such experiments of expressions. Varanka (2006) noted that map art expresses perceptual, aesthetic, and attitudinal qualities about places through mapping and other visual language systems. Universal map-modeling skills are what bring the map to map-art, and are what provide its cartographic foundations. Rather than detract from cartography, the qualities of map art augment and enrich cartography. Because it is art, aesthetics is a high-priority, but like conventional cartography, art maps are also representations of places in the world (Varanka, 2006).

Case Study

This case study presents the process and products of one of the working modules of the undergraduate course titled "Space Perception and Psychology" supervised by the author of this paper at Fatih Sultan Mehmet Waqf University, Faculty of Architecture and Design. This course consists of three modules: color, sound and smell. Each module takes three weeks; theoretical presentation of the issue, site excursion and data collection, and visualization of the data.

The sound module is called Seeing Voices which is the title of Oliver Sacks's book (1989). In the first week of the module, environmental sounds, how we sense them, and their role in understanding and designing space were presented and discussed at class. In second week, an excursion was conducted with the working groups of 3-4 students. This excursion is called sound-walking and students are asked to focus on the sounds on their routes in the given urban area and both record the sounds and note them down on the physical map using color pens and written explanations. The working area, Haskoy, is located on the west side of Istanbul, on Golden Horn. There are 7 routes in total that scan Haskoy area from west to east. The sound-walks take approximately 50 minutes each. In the last week of the module, students are asked to visualize their auditory experiential data using various techniques. The techniques were the examples of interpreted maps which would possess the features of a visual composition and/or further they would the examples of map-art.

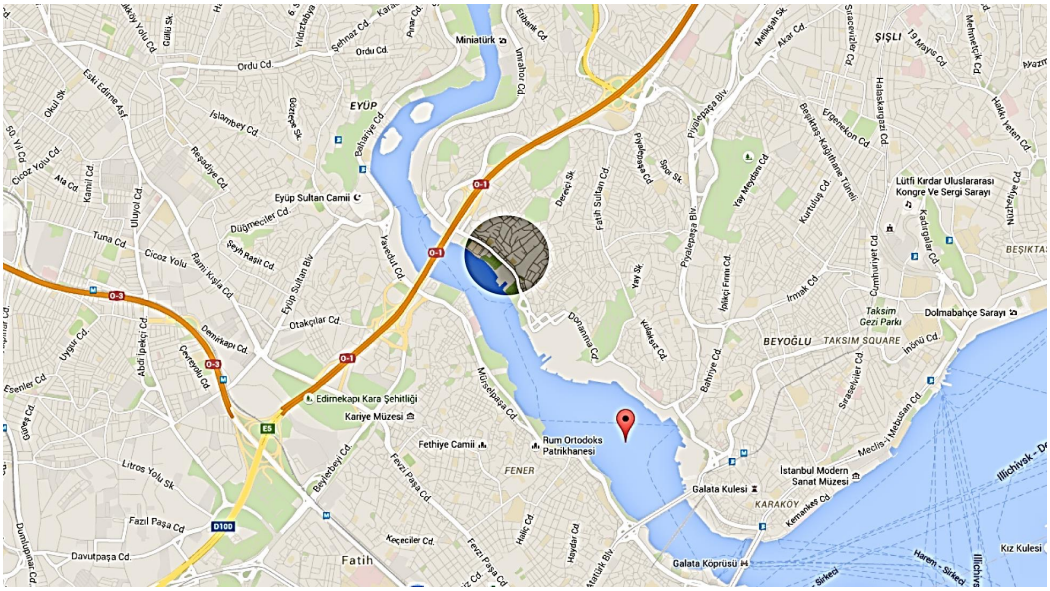


Figure 4. Haskoy area.

Figure 5. A close look at the study area.

Thus three steps in a sensory module provided students to understand the issue theoretically with contemporary topics and examples; to experience environment focusing on sensory and invisible features of urban space through their bodies; and to express the invisible sensory data they collected from the area as a form of visual expression which is called map-art. In this paper student works of Route 1, Route 4, Route 5, and Route 7 are presented respectively.

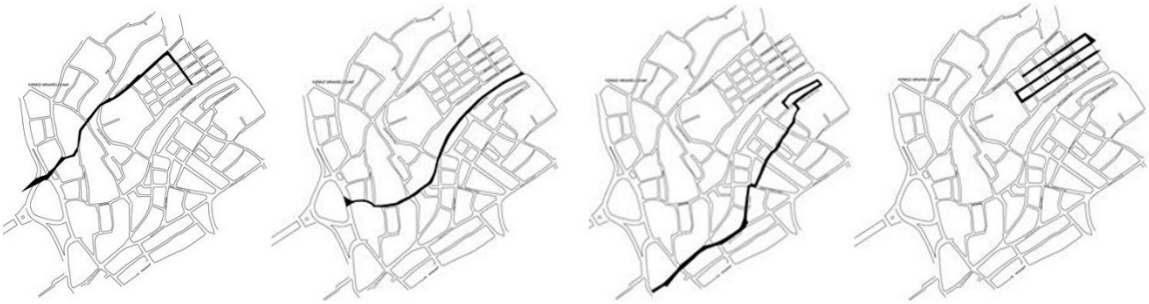


Figure 6. Routes from left to right: Route 1-Bactar Street Axe, Route 4-Harapcesme Street Axe, Route 5-Haskoy Mektebi Street Axe, Route 7-Merhamet Street Axe.

Study 1:
Route 1-Bactar Street Axe: Students classified sounds of the route as animal voices, human voices, everyday life voices, workplace voices, and vehicle voices. They used colored pieces of glass to represent the types of the environmental sounds they determined. The visual composition is separated from the actual, physical map of the area, so this composition can be considered having a high-level abstractness. Additionally, the composition shows the intricateness of the environmental sounds.

Figure 7. Study 1-Route 1-Bactar Street Axe work by Tuba Celik, Busra Kadioglu, Dilek Gunes.

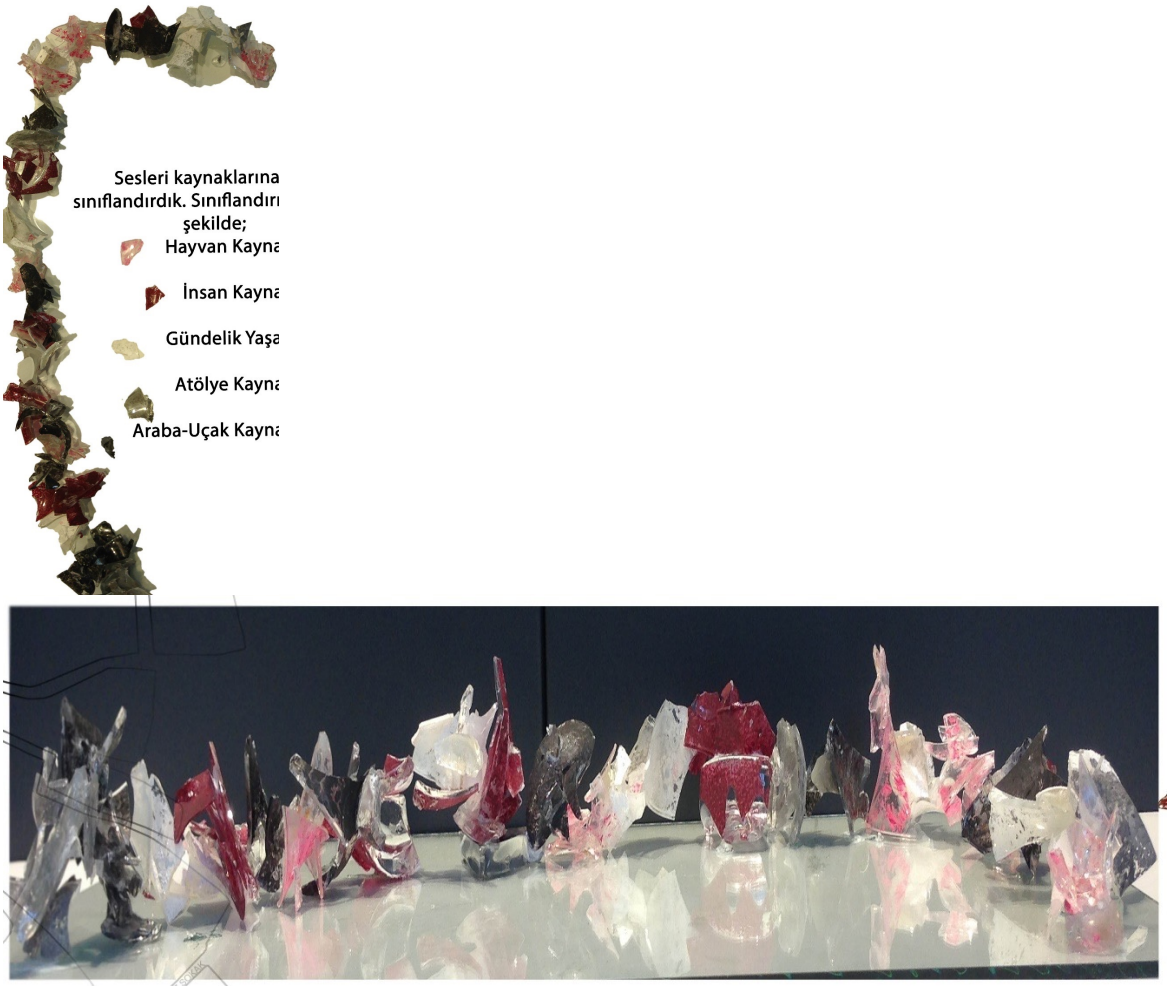
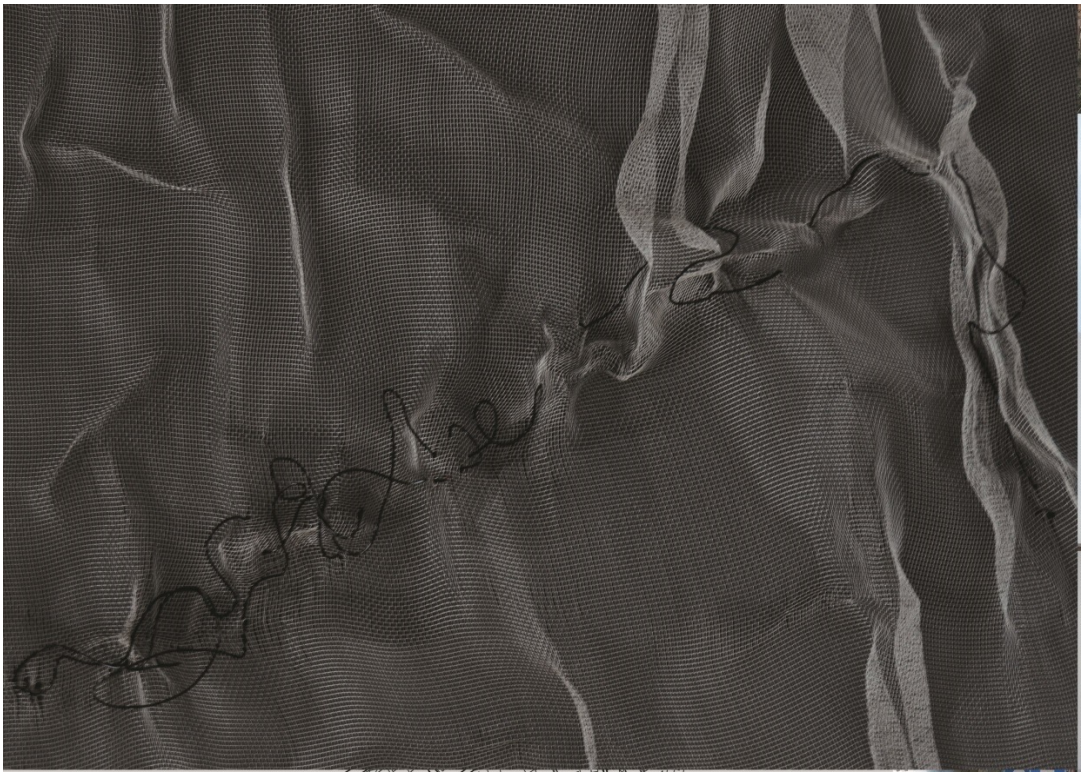


Figure 8. Study 1-Route 1-Bactar Street Axe work by Tuba Celik, Busra Kadioglu, Dilek Gunes.

Study 2:
Route 1-Bactar Street Axe: Students' classification of the sounds of the route has a quite different approach. The composition reveals two types of sounds: the sound of the students' steps and other outer sounds. They used two different materials to represent the types: metal wire and metal mesh frame. The metal fire represents the steps, while metal mesh frame shows outer environmental sounds. They reported that at the beginning of the walking they only could hear the sound of their steps, later outer sounds arouse and they got mixed in the end. The visual composition is separated here from the actual, physical map of the area, so this composition can be considered having a high-level abstractness. Also, mentioning only two distinct types of sounds made it more abstract.

Figure 9. Study 2-Route 1-Bactar Street Axe work by Edanur Macit, Fatmanur Cavusoglu, Merve Doyaroglu, Visal Okur.

Study 3:



Route 4-Harapcesme Street Axe: In this route, students classified the environmental sounds they experienced as voices of birds; voices of vehicle and klaxon; instant sounds like walking, carpet shake; sounds of yell and whistle; and voices of children. They used colored pipettes to represent the categories of sounds they experienced. The visual composition is separated from the actual, physical map of the area, so this composition can be considered having a high-level abstractness. However, it shows the route as a trace. Additionally, the composition shows the intricateness of the environmental sounds.

Figure 10. Study 3-Route 4-Harapcesme Street Axe work by Didar Buyukkocak, Zeynep Alkan, Seyma Buyukkocak.

Study 4:

Route 5-Haskoy Mektebi Street Axe: In this route, students classified the environmental sounds they collected as voices of human; voices of birds; voices of dogs; sounds of machines; voices of vehicles; sounds of construction; sounds of klaxon. They used watercolor on watercolor paper to represent the categories of sounds they experienced. The visual composition is separated from the actual, physical map of the area, so this composition is considered having a high-level abstractness. However, it shows the route as a trace. Additionally, the composition shows visually the intricateness of the environmental sounds.

Figure 11. Study 4-Route 5-Haskoy Mektebi Street Axe work by Enes Ulukoylu, Zeynep Merken, Zeynep Ebru Yilmaz.

Study 5:

Rota 7-Merhamet Street Axe: In this route, students classified the environmental sounds they collected as voices of children; voices of human; voices of construction; sounds of klaxon; voices of dogs; sounds of call to prayer-ezan; sounds of birds. They used two materials-pins and colored threads- to represent the categories of sounds they experienced. The visual composition is separated from the actual, physical map of the area, so this

composition is considered having a high-level abstractness. However it shows the route as a trace. Additionally, the composition shows visually the intricateness of the environmental sounds.

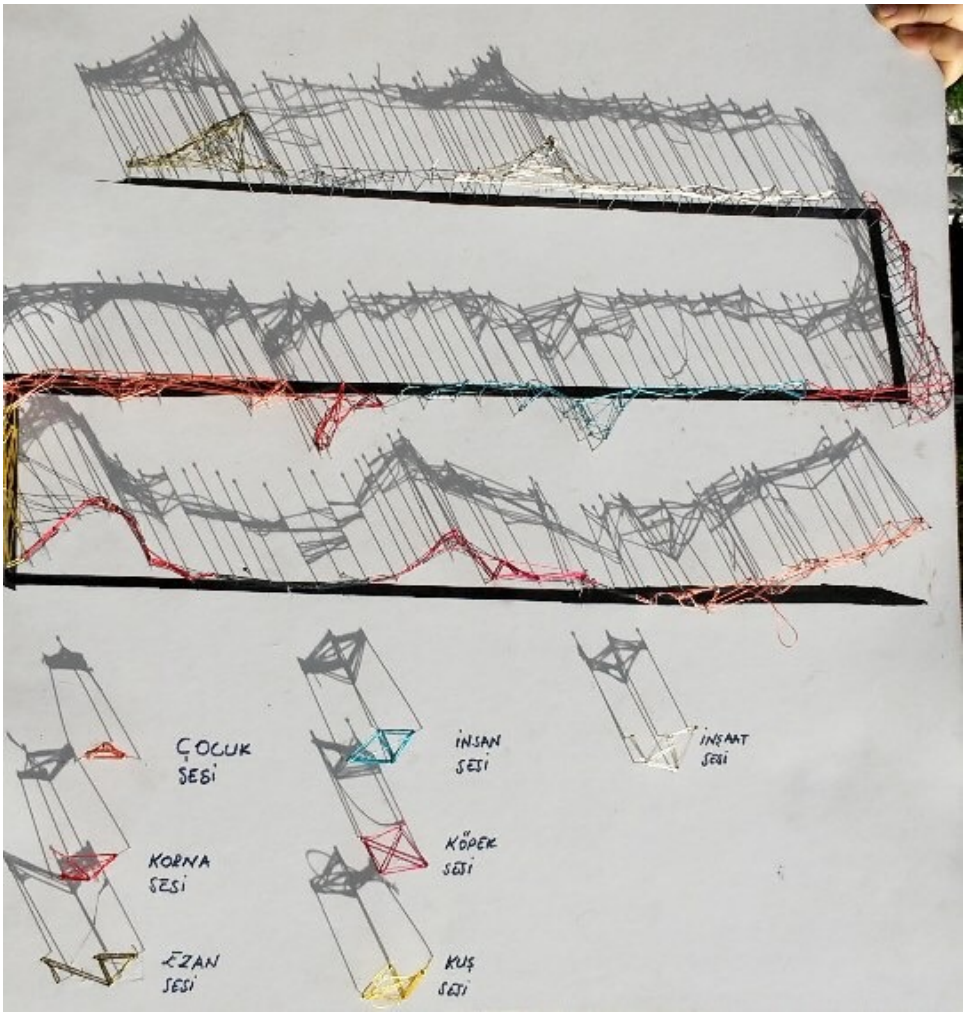


Figure 12. Study 5-Rota 7-Merhamet Street Axe work by Busra Afranur Celik, Rabia Kucuk, Zeynep Beyza Gunduz.

CONCLUSIONS

Sensory experiences have a prominent role in portraying a deeper understanding and conception of urban environments. Sounds are invisible characteristic elements of urban environments constituting sensory part of environmental identity. Sound-walks, especially in architectural design education can play a role in conceiving and furtherly obtaining sensory data from the urban environment. Sound-maps which allow and force the mind to think on the nude data, is a way of visualization of auditory information collected. Map-art method is an avant-garde approach for processing conventional types of cartographic representations and/or visualizations-maps.

This study unfolds the process of a course titled Space Perception and Psychology, conducted by the author, revealing the final products of the auditory study module called Seeing Voices. The final products by the architectural students are the examples of map-art technique. It is asserted that the whole process enhances the sensory awareness of the students towards the urban environments.

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