ISTANBUL'S CULTURAL SOUNDSCAPE:
COLLECTING, PRESERVING AND EXHIBITING
THE SONIC CULTURAL HERITAGE OF DAILY URBAN LIFE

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DOCTOR OF PHILOSOPHY

DESIGN, TECHNOLOGY AND SOCIETY PHD PROGRAM

GRADUATE SCHOOL OF SOCIAL SCIENCES AND HUMANITIES

KOÇ UNIVERSITY

ISTANBUL

AUGUST 2017

Koç University

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ÖZET

İSTANBUL'UN KÜLTÜREL SES ALANI: GÜNLÜK KENTSEL YAŞAMIN İŞİTSEL KÜLTÜREL MİRASINI TOPLAMA, KORUMA VE SERGİLEME

Bu doktora tezi, kültürü ve günlük yaşamın geleneklerini işitsel bir perspektiften değerlendirmeyi, karakteristik sesleri ve ses alanlarını korumanın yollarını araştırmayı ve kentsel seslere olan toplumsal farkındalığı artırmayı amaçlar. *İstanbul'un Sesleri* başlıklı bu disiplinlerarası araştırma projesi, ses alanı çalışmaları, somut olmayan kültürel miras, müze çalışmaları, duyusal çalışmalar, etkileşim tasarımı ve deneyim tasarımı gibi alanlardan beslenir. Proje, İstanbul'un güncel kültürel ses alanını detaylı bir şekilde inceler. Günlük hayatın vazgeçilmez bir parçası olan sesler, somut olmayan kültürel miras açısından çok önemlidir ve korunmayı hak ederler. Seslerin korunması aynı zamanda kültürel hafızayı da güçlendirir. Ancak işitsel kültür, hem sesin fiziksel özelliklerinden dolayı, hem de somut olmayan kültürün dinamik yapısından dolayı yok olma tehlikesiyle karşı karşıyadır. Bu yüzden, güncel kültürel ses alanlarının somut olmayan kültürel miras kapsamında bir an önce korunmaya başlaması, günümüz seslerinin gelecek nesillere aktarılması ve kültürel kimliğin sürdürülebilirliği açısından çok önemlidir. Proje kapsamında, öncelikle İstanbul'un önemli kültürel seslerini toplumsal katılımla belirledik. Kültürel kimlik, bireylerin kültürel hafızalarına bağlı olduğu için, toplumun bu konudaki düşünceleri karakteristik sesleri belirlemede çok büyük rol oynuyor. Belirlenen bu sesleri tek tek kaydettik ve Koç Üniversitesi Suna Kıraç Kütüphanesi'nde herkesin erişebileceği bir ses arşivi oluşturduk. Bu ses arşivini sürdürülebilir, güncellenebilir ve daha zengin bir koleksiyona dönüştürebilmek için, gönüllülerin kendi kaydettikleri sesleri yükleyebileceği etkileşimli bir platform tasarladık. Daha sonra, şehir seslerine olan toplumsal farkındalığı artırmak, etkileşimli ve herkese açık olan ses arşivi fikrini tanıtmak ve toplumu sesleri kaydedip ses arşivine yüklemek konusunda cesaretlendirmek için biri etkileşimli diğeri ise deneyimsel olmak üzere iki sergi tasarladık. Sergiler sırasında yaptığımız araştırmalara göre, ziyaretçilerin seslerle duygusal bir bağı olduğunu ve onların bunu sergiye gelmeden önce farketmediklerini gözlemledik. Ziyaretçiler, sergileri gezerken kültürel seslerin önemini anladılar ve katkıda bulunmaya başladılar. Araştırmalarımızın sonuçlarına dayanarak söyleyebiliriz ki; tasarladığımız sergiler, seslere olan toplumsal farkındalığı artırmada ve işitsel kültürel mirası korumada büyük rol oynuyor.

Anahtar Sözcükler: Ses alanı, somut olmayan kültürel miras, etkileşimli sergi, deneyimsel sergi, kültürel sesler, dijital ses koleksiyonu, kitle-kaynaklı ses arşivi.

ABSTRACT

This dissertation aims to evaluate the culture and traditions of everyday life from a sonic perspective and suggests ways to protect characteristic sounds and soundscapes, as well as to raise public awareness of urban sounds. This multidisciplinary research project, entitled *The Soundscape of Istanbul*, is rooted in fields such as soundscape studies, intangible cultural heritage (ICH), museum studies, sensory studies, interaction design and experience design. It explores the larger contemporary cultural soundscape of a metropolitan city, Istanbul.

Sounds constitute an inevitable part of daily life and, are therefore very important as ICH. Thus, they deserve to be protected to strengthen cultural memory. However, sonic culture is twice endangered, due to the physical characteristics of sound itself and due to the dynamic structure of intangible culture. Therefore, the protection of contemporary cultural soundscapes in the context of ICH is particularly urgent and crucial for transferring the present sonic environments to following generations in order to maintain a cultural identity.

For the purposes of this research project, I defined culturally significant sounds of the city of Istanbul by public participation. Public opinion was very crucial for determining the most significant sounds, since cultural identity is based on individual's cultural memory. Then, I collected the sounds thus determined and created a sound archive, now located in Koç University's Suna Kıraç Library to make it publicly accessible. In order to turn this collection into a more sustainable and richer archive, we designed an interactive platform that is open to contributions so that volunteers can record and upload their own sound recordings. We then designed two exhibitions to increase the public awareness of urban sounds, to introduce this interactive sound archive, and to encourage volunteers to contribute. According to surveys conducted during the exhibitions, visitors have an unconscious emotional bond to sounds, but they generally did not realize this before the exhibitions. During the exhibitions, they became aware of the significance of urban sounds and volunteered to contribute. Thus, the exhibitions played a significant role in raising public awareness and in protecting the sonic heritage, making it live on for future generations.

Keywords: soundscape, intangible cultural heritage, interactive exhibition, experiential exhibition, cultural sounds, digital sound collection, crowdsourced sound archive

ACKNOWLEDGEMENTS

I would like to express my sincere gratitude to my advisors Assoc. Prof. Nina Ergin, Assoc. Prof. Sertaç Kakı and Assoc. Prof. Asım Evren Yantaç for their valuable comments in developing the project and carrying the research further. It was also great to know the supports of Assoc. Prof. Lucienne Thys-Senocak and Assist. Prof. Jülide Alp during the entire project.

It has been a pleasure to work with valuable librarians Hüseyin Eşki and Canan Ergün. I am very grateful for their efforts in creating the sound archive in Koç University Suna Kıraç Library Digital Collections and transferring *The Soundscape of Istanbul* collection to Europeana Sounds. I also would like to thank Tom Miles, who is responsible for metadata transfer in Europeana Sounds, for his patience in this never-ending transfer process.

I am very grateful to everyone who helped me in field recordings, namely; Uğur Yelmi (my poor husband who was with me in most of the field recordings), Hande Yılmaz, Büşra Gizem Vayvay, Gökçe Elif Baykal, Aslı Aykaya, Dorukcan Yolaçan, Aybüke Akgül, Cevat Mert Dökümcü, Tolunay Öndül, Yasemin Kapu. I also would like to thank Victoria Taylor for language editing in sound archive metadata and Hüseyin Kuşcu for the development of *www.soundsslike.com* and the technical infrastructure of the interactive exhibition.

I would like to thank Koç University very much for funding the project with a Seed Grant and supporting this research in each and every step. It would have been impossible to realize this project without the support of Koç University. I am very grateful to ANAMED and Studio-X Istanbul for giving me the opportunity of displaying the exhibitions designed for my PhD project. I would like to thank Prof. Zeynep Aycan for encouraging me for my future plans. I appreciate the assistance of Tuğçe Erim, Zehra Tosun and Gülçin Erdiş during my PhD studies and making procedures easier for me.

I also would like to thank TÜBİTAK (Scientific and Technological Research Council of Turkey) for giving me a three-month scholarship for my research at the British Library. I also would like to thank Richard Ranft for inviting me to BL and giving me this opportunity, Eva del Rey and Stephen Cleary for being with me all the time during my research at the BL, Cheryl Tipp, Tom Miles and those who contributed my research.

Finally, I would like to thank my family for their patience in supporting me during my doctoral studies. I'm sure it has been a long and hard period also for them but I hope they enjoyed it! I think they deserve a copy of my PhD diploma as well. ☺

LIST OF PUBLICATIONS

Paper A

Yelmi, P. 2013. Soundtourist: An unconventional guide for the sonic discovery of Istanbul. *Proceedings of the 6th Philosophy and the Arts Conference in Stony Brook University, New York.*

Paper B

Yelmi, P. 2015. Sound Museum of Istanbul. *International Journal of Heritage and Sustainable Development 4(1):193-200.*

Paper C

Yelmi, P. 2016. Protecting contemporary cultural soundscapes as intangible cultural heritage: sounds of Istanbul. *International Journal of Heritage Studies 22(4):302-311.*

Paper D

Yelmi, P., Kuşcu, H. and Yantaç, A.E. 2016. Towards a sustainable crowdsourced sound heritage archive by public participation: The Soundsslike Project. *Proceedings of the 9th Nordic Conference on Human-Computer Interaction, 71.*

Paper E

Yelmi, P. 2017. The Soundscape of Istanbul: Exploring the public awareness of urban sounds. *International Journal of Social Science and Humanity 7 (5):260-268.*

Paper F

Yelmi, P. and Kakı, S. forthcoming. Designing an experiential exhibition for raising public awareness of cultural sounds to safeguard the sonic intangible cultural heritage values.

TABLE OF CONTENTS

Part I: Thesis Cover

1. INTRODUCTION

The Soundscape of Istanbul project (https://soundscapeofistanbul.ku.edu.tr/) aims to define the borders of the cultural soundscape of Istanbul by identifying significant elements of sonic culture, to preserve representative examples of urban sonic heritage as a digital archive to which past, present, and future soundscapes will then be added, and to increase public awareness and consciousness by means of exhibitions.

Cultural soundscape is a term that makes more specific the term *soundscape* which was first coined by R. Murray Schafer, the pioneer of soundscape studies. Schafer used the term for defining the sonic environment of the world. Cultural soundscape, however, signifies the totality of sonic values of characteristic daily traditions in this project (Paper C).

The Soundscape of Istanbul is situated in the intersection of several disciplines; thus, the project draws from a rich literature based on soundscape studies, intangible cultural heritage, exhibition design, museum studies, interaction design, and experience design. This two-year project was developed in three phases: The first phase intended to explore everyday life traditions of the city of Istanbul by means of online surveys, interviews and soundwalks, supported by a review of literature on contemporary urban life of Istanbul. The second phase included recording the sounds determined and creating an archive with a particular classification system. The final phase aimed to interpret and present this sound collection by means of an interactive and an experiential exhibition with the intention of increasing public awareness.

1.1. Aim

Being integral parts of cities and cultures, and indeed life itself, sounds and sonic values of our everyday practices and traditions are of great importance. Sounds are temporary in terms of their physical properties, and at the same time culture is also changing and evolving. In this context, the safeguarding of intangible culture is only possible by maintaining the traditions in their own environment for which people need to be conscious about cultural values. Therefore, public awareness needs to be increased for sonic cultural heritage so as to be preserved and transferred to future generations. I aim to increase public awareness by means of exhibitions, so that the society maintains the traditions and protects the representative sonic values of the contemporary Istanbul in long term.

The objectives of the project can be highlighted as follows:

- exploring the sonic heritage of Istanbul as well as the soundmarks of the neighborhoods and the city,

- collecting representative acoustic elements, preserving the contemporary cultural soundscape of Istanbul, and transferring this soundscape to future generations,
- providing a basis for creating an archive of cultural soundscapes which contains past soundscapes (to be reproduced as similar to their originals as possible) and future soundscapes which will be recorded periodically,
- creating an interactive platform to which volunteers can contribute with their own sound recordings,
- increasing public awareness and providing a more conscious aural perception by means of exhibitions,
- comparing two design techniques used in exhibitions (interaction design and experience design) and evaluating them in terms of raising awareness,
- contributing to the soundscape studies literature with publications on Istanbul's cultural soundscape as well as methodological concerns,
- contributing to the field of intangible cultural heritage management with a preservation measure for sonic heritage, and with an exhibition design for displaying sonic ICH elements,
- contributing to the exhibition design literature with a method for displaying sound as exhibition object and designing sonic experiences, instead of using sound only as complementary information or background element.

1.2. Research Questions

In this research, I searched for answers to a variety of questions in each and every step of the project to reach the aims. I began with the main question: "What are the most characteristic sounds of the city of Istanbul, and which sounds are culturally most significant?" This question is very crucial since it is the key point in determining the content of the sound archive. The entire project is based on this question. I conducted an online survey and interviews to learn about public opinions on the most significant cultural sounds, explained in the article entitled *Protecting Contemporary Cultural Soundscapes as Intangible Cultural Heritage: Sounds of Istanbul* (Paper C). The second question was: "When and where do we need to record these urban sounds?" The results of the online survey and interviews helped us in defining the locations and time periods for sound recordings, too. I also conducted soundwalks to verify the locations of the sounds. These questions were followed by several technical questions

such as: “How do we need to record these sounds?”, “How can we create a sound archive?”, “How can we shape the metadata for a collection of cultural sounds?” and so on. I consulted with Assoc. Prof. Sertaç Kakı regarding technical details of sound recording and with Koç University’s librarians regarding archiving. Then, I created the sound collection in Koç University Library (http://digitalcollections.library.ku.edu.tr/cdm/landingpage/collection/SOI). During this process of collecting sounds and archiving them, I realized that this archive needs to be more sustainable as it is very hard for a single team to collect and go through the entire archiving processes for each and every sound. There emerged a new research question: “How can I turn this library sound collection into a more sustainable and rich archive?” For this, together with Assoc. Prof. Asim Evren Yantaç and Hüseyin Kuşcu, we designed an interactive platform to which anyone can upload his/her own sound recordings so that the archive is no longer dependent on one single team, but welcomes contributions from any volunteer who would like to contribute. This new system gave rise to several questions, such as: “If any sound can be considered as cultural sound, how can we control any abuse or misuse?” We also tried to figure out these problems as well as explained in the article entitled *Towards a Sustainable Crowdsourced Sound Heritage Archive by Public Participation: The Soundsslike Project* (Paper D) in detail.

After designing the interactive sound archive, I needed to introduce the idea of protecting urban sound heritage and encourage people to record sounds and upload them to the archive. Therefore, I searched for ways to increase public awareness, and finally I decided to design exhibitions with that aim in mind. Rather than a static exhibition, I chose to design two exhibitions: one was interactive, and the other experiential exhibition. For the experiential exhibition, I had two questions in mind: “Specifically, which cultural sounds are ignored in daily life?” and “How do visuals affect aural perception?” I found out which sounds are still alive in society and which ones are mostly ignored and not realized in daily life according to the online survey and interviews, discussed in detail in the article entitled *The Soundscape of Istanbul: Exploring the Public Awareness of Urban Sounds* (Paper E). Thus, I intended to design an experiential exhibition focusing on these ignored sounds only. Then, I conducted research on visuals and aural perception which is explained in the last article entitled *Designing an Experiential Exhibition for Raising Public Awareness of Cultural Sounds to Safeguard the Sonic Intangible Cultural Heritage Values* (Paper F). According to the research, together with Assoc. Prof. Sertaç Kakı, we designed sonic experiences that emphasize the significance of ignored cultural sounds. Eventually, I evaluated both exhibitions by means of questionnaires and wrote the results in Paper F in detail.

1.3. Thesis Context

This dissertation draws on the project *The Soundscape of Istanbul* (https://soundscapeofistanbul.ku.edu.tr/), which archives the contemporary elements of the cultural soundscape of Istanbul as they were determined by public contribution and outlines examples from this collection. This library archive is, then, turned into an online crowdsourced sound archive which is called *The Soundsslike Project* (http://soundsslike.com). This web-based crowdsourced sound archive is intended to expand and enrich the content of *The Soundscape of Istanbul* collection by encouraging people to contribute with their own sound recordings. In order to introduce this idea and *The Soundsslike Project*, I designed an interactive exhibition together with the contributions of my supervisors in which visitors can directly interact with the sounds in the exhibition area and can become a part of the exhibition by uploading their own sound recordings to the Soundsslike archive. I also found out that some culturally significant sounds are ignored in daily life. In order to raise awareness of these specific sounds, we designed another exhibition which consists of an experiential installation highlighting the importance of urban sound.

This dissertation explains the research and execution processes of the projects, as well as the contributions to the fields in which the research has its roots: soundscape studies, intangible cultural heritage, and exhibition design.

1.4. Contributions

This research project intends to contribute to all disciplines within which it is situated. The main contribution of the project is the archiving of cultural soundscapes, since many sonic elements are endangered and will be lost unless protected. The cultural soundscape is of great significance for urban identity, as it consists of both sonic values of traditions and daily culture. Sounds are unique values of identity, besides being inevitable elements of our daily lives, cities and traditions. They are, indeed, sonic symbols of daily intangible culture such as what we eat, what we listen to, how we practice our religion, thus who we are. Both sound and intangible culture are temporary, reproduced again and again, therefore original each time. Sound is limited by time because of its physical characteristics. Not being a permanent element, it needs to be reproduced every time, which makes it always original (Schafer, 1977). Intangible cultural heritage is also changing over time; it adopts new versions of cultural elements or is replaced by completely different elements due to reasons such as technological development, globalization, immigration, politics and changing life standards and

conditions. Therefore, sonic cultural heritage is temporary in both aspects and endangered twice. This is why it needs urgent protection, starting with the contemporary cultural soundscape.

Besides the archive, the project also contributes with recording method and unique metadata format. I made the sound recordings focusing on the cultural sonic item needed to be preserved but capturing it within the soundscape that it was located at that time. For example, if there were three different sonic values in a specific area, I made three sound recordings each one focusing on different one, but also capturing the other two sonic values as background sounds within the soundscape. For the cultural sounds in the collection, I created a unique metadata format together with Koç University's librarians. We determined necessary information fields that are unique for the sonic items and formed the metadata format appropriate for global standards.

Furthermore, an interactive platform--*The Soundsslike Project* was designed in order to turn this static library collection into a more dynamic and sustainable archive. *The Soundsslike Project* enables volunteers to record cultural sounds and upload their own sound recordings to the archive. This collective sound archive will hopefully be used for collecting sounds from other cities in Turkey and from even different countries.

Regarding the field of soundscape studies, I adopted the method of soundwalking during urban sonic discovery as an important contribution. Soundwalks are mostly organized as a group walk which aim to focus on sounds sometimes directed by questions and sometimes by concepts. At the end of the soundwalks, the group discusses what they have heard or what they have not. In these soundwalks, background and previous knowledge of group members were not the case, because they were just exploring the sonic environment. In this project, I conducted soundwalks both alone and with a group in order to find out cultural clues about the city. In group soundwalks, I requested participants to make 15 second-recordings of sounds which they think as symbolic with their smart phones or with professional sound recording devices if they had. Making short sound recordings help participants to focus on specific sounds and to capture them (Paper D). During the soundwalks that I conducted by myself, I found out three phases for discovering cultural soundscape: discovery, observational and analytical soundwalking. In discovery soundwalking, one has no knowledge about the place and obviously anything heard is new and maybe does not mean anything; therefore, it is only for sonic overview. In observational soundwalking, having some knowledge about the place, one tries to seek clues of familiar sonic events, thus generally observes. In analytical

soundwalking, one has adequate knowledge about the place and searches for additional sonic details (Paper B).

This project also contributes to soundscape studies by adding a new perspective which is cultural soundscape. Soundscape studies explore *sound* according to its location –urban and rural, its density, its pitch, etc. In this project, I focused only on the cultural aspect of soundscapes and the sonic values of traditions; therefore, this project brought up a new term: cultural soundscape.

The final important contribution is in the field of exhibition design. Sounds are generally used as background music, for informative purposes, or as concept of the exhibitions. In the exhibitions that we designed, however, sound is the main object that is displayed and experienced by visitors. With the contributions of my supervisors, I designed two exhibitions—interactive exhibition and experiential exhibition—each one focusing on urban sounds. We tried to use visual interpretations as less as we can. In the experiential exhibition, we did not include any visual items in the exhibition area to make the visitors focus completely on sounds.

1.5. Relevancy and Originality

The Soundscape of Istanbul project is the first of its kind in terms of presenting comprehensive research on the contemporary, non-musical, sonic cultural heritage of Istanbul, preserving and systematically archiving it.

The Soundscape of Istanbul collection, consisting of 240 sound items, 896 relevant photographs and detailed information, is preserved in the Koç University Suna Kıraç Library Digital Collections (http://digitalcollections.library.ku.edu.tr/cdm/landingpage/collection/SOI). This publicly accessible archive was created in order to analyze the changes of the sonic reflections of sociological, economic and political issues over years within the city. It may also serve for filmmakers, music producers, artists and those who wish to use the sounds of Istanbul from the year 2015 onwards.

The Soundscape of Istanbul project, then, became an associate partner with Europeana Sounds, a European organization that aims to collect Europe's sound heritage and bring them all together in a single interface. Therefore, *The Soundscape of Istanbul* collection is shared with Europeana Sounds, and it is also publicly accessible in Europeana platform (http://www.europeana.eu/portal/en/search?f%5BDATA_PROVIDER%5D%5B%5D=Ko%C3%A7+University&f%5BPROVIDER%5D%5B%5D=Europeana+Sounds&locale=en&q=%2A%3A%2A&view=grid). The collection is also available at WorldCat

(http://www.worldcat.org/search?q=Pinar+Yelmi&qt=results_page), which is a global database.

In order to expand and enrich the collection, we initiated *The Soundsslike Project* by turning the archive into a crowdsourced web-based platform (http://soundsslike.com/) to which people can contribute with their own sound recordings. There are already many online sound maps for world cities other than Istanbul, such as London[1], Paris[2], Barcelona[3], Florence[4], and so on. There are also several online sound maps which contain sounds from many cities, including Istanbul, such as Soundcities[5] and Radio Aporee[6]. However, none of them aims to collect cultural sounds, especially for the city of Istanbul (Paper D).

Moreover, Istanbul is an enormous city with an urban fabric that constantly and rapidly changing. Cultural sounds are endangered in developing urban environments, especially in such a dynamic city. We recorded many sounds before they disappear; however, there has also been an unfortunate example: we missed the chance of recording and archiving two cultural soundmarks – *narghile* sounds in Tophane and fishermen in Kumkapı – which have been of great importance in the neighbourhoods in which they were located. Although we had them in our recording list at the beginning of the recording process in January 2015, these two characteristic sounds of the city disappeared before we could record them. Thus, it is urgently necessary to preserve contemporary cultural soundscapes as expeditiously as possible.

The Soundsslike Project, however, intends to create a detailed and a systematic archive for cultural soundscape of contemporary Istanbul, which protects the representative sonic values as intangible heritage. It is the first comprehensive database and large-scale study of sounds for the city of Istanbul.

Regarding the exhibitions, the main object is the sound itself. The sound is not used as background element but it is located at the center of the exhibitions. One of the exhibitions was interactive and the other was experiential. In the interactive one, visitors actually play with the sounds and create the soundscape of the exhibition space by directly interacting with them. In the experiential one, there were not any visual elements but only sounds and short texts. In this exhibition, we intended to make visitors travel in their own sonic worlds and link the textual clues with their own sonic memories. Both of these exhibitions have an intention to raise public awareness of the significance of sounds of the city of Istanbul.

[1] London Sound Survey: http://www.soundsurvey.org.uk/
[2] Paris Soundscapes Project: http://soundlandscapes.eu/paris-sound-map
[3] Sons de Barcelona: http://barcelona.freesound.org/
[4] Firenze Sound Map: http://www.firenzesoundmap.org/
[5] Soundcities: http://www.soundcities.com/
[6] Radio Aporee: http://aporee.org/maps/

2. BACKGROUND

Sound has always been an important issue explored in various disciplines such as soundscape studies by Schafer (1977), sociology by Adorno & Horkheimer (1944), communication studies, psychology and cognitive psychology, anthropology, sensory studies by Howes (1991) and by Classen (1993), architectural acoustics by Brooks (2003), urban planning by Kang (2007), music, radio and broadcasting by Westerkamp (1978-79), cinema by Chion (1994), medicine by Gouk (2000), science and technology, history, sensory history by Corbin (1998), political economy by Attali (1977), linguistics by Barthes (1972), acoustic ecology, and sonic art by Cardiff (1991-2012) and by Fontana (1982-2012). However, sound is still not very widely considered in the field of intangible cultural heritage, where it is examined either as folk music or festivals. Yet, urban sounds that we hear or practice every day are so important for our cultural identity that they need to be protected in the context of intangible heritage.

2.1. Soundscape studies

The soundscape of the world has always evolved together with human activity. The most significance change occurred with the emergence of machines after the Industrial Revolution. Luigi Russolo, a futurist painter and composer, commented in his famous manifesto *The Art of Noises* of 1913 that "in antiquity, life was nothing but silence" (Russolo, 1967, 1). As a futurist, he argued that these new machine sounds symbolized speed, energy and production, and this new sonic palette allowed musicians and composers to create unlimited combinations, since there were numerous machines and a great variety of noises. The Industrial Revolution introduced a new kind of soundscape to the world (Schafer, 1977). Industry has continuously developed and contributed to higher urban noise levels which also threaten our physical and psychological health (Schafer, 1977). Schafer states that one needs to evaluate the soundscape as a whole to differentiate noise from sound. In addition, the soundscape needs to be analyzed in its entirety to explore various traits of sounds.

In the late 1960s, R. Murray Schafer initiated the World Soundscape Project (WSP) at Simon Fraser University, which includes a series of studies, such as recordings and soundwalks in various places in Canada and Europe, in order to explore the sonic environment globally. Schafer collected all these studies and research in his book entitled *Our Sonic Environment and the Tuning of the World: The Soundscape* (1977). The most common method used was soundwalking which is explained as "any excursion whose main purpose is listening to the environment" (Westerkamp, 1974, 18) by one of the pioneering team members, Hildegard

Westerkamp. The term soundscape, first coined by Schafer, is derived from the word landscape and contains all elements of the sonic environment including natural, mechanical, human, industrial, musical and cultural sounds. Departing from his term, I would like to use the term cultural soundscape, which signifies the totality of the sonic values of characteristic daily traditions in either urban or rural areas. For example, the call to prayer, the cries of street vendors, and the beeps of the toll gates in the subway may be characteristic acoustic values of a city, whereas the noises of children playing in the street may be those of a small village (Paper C).

Analyzing the features of the sonic environment, the team members of the WSP categorized the main three themes of a soundscape into keynote sounds, signals, and soundmarks (Schafer, 1977). Keynote sounds are mainly background sounds related to geographical location, climate, and everyday routine of a community or a region such as water, wind, and so on. Signals are foreground sounds to which we consciously listen, such as rings and bells. And soundmarks, a term derived from landmark, are unique to a certain location or a community. Schafer states: "Once a soundmark has been identified, it deserves to be protected, for soundmarks make the acoustic life of the community unique" (Schafer, 1977, 10). In this project, I conducted research for exploring the soundmarks of the city of Istanbul.

Moreover, the WSP has specified several ways to classify sounds: "according to their physical characteristics (acoustics), according to the way in which they are perceived (psychoacoustics), according to their function and meaning (semiotics and semantics), and according to their emotional or affective qualities (aesthetics)" (Schafer, 1977, 133). Truax, another pioneering WSP team member, has worked on an ontological representation of the World Soundscape Project Tape Library to organize the recorded sounds and make them easily accessible. This formal semantic representation of the library is based on Schafer's taxonomy (Thorogood, Pasquier & Truax, n.d.).

In evaluating the soundscape as a whole and considering all features of a sonic environment, the ideal one is generally found in rural areas since there exists a hi-fi soundscape there. A hi-fi soundscape is one where "discrete sounds can be heard clearly because of the low ambient noise level. The country is generally more hi-fi than the city; night more than day; ancient times more than modern" (Schafer, 1977). As mentioned above, the major transformation occurred with the Industrial Revolution, from hi-fi to lo-fi sonic environment.

2.2. Intangible cultural heritage

Daily urban life and traditions have also undergone continuous change, thus contributing to the continuous transformation of the soundscape. Quotidian life is an inevitable part of intangible living culture, but intangible cultural heritage (ICH), despite its crucial role in expressing cultural identity, has been internationally neglected until fairly recently. The first attempt to protect folklore was made by Bolivian representatives in 1973. It was not successful in action, but at least it contributed to a reconsideration of intangible aspects of cultural heritage (Bouchenaki, 2003). In 1982, UNESCO formed a "Committee of Experts on the Safeguarding of Folklore" and a particular "Section for Non-Tangible Heritage" (Bouchenaki, 2003). In 1989, the "Recommendation on the Protection of Traditional Culture and Folklore" was adopted, which played an important role for recognizing intangible traditional values. UNESCO showed the increasing significance of intangible cultural heritage by means of the Living Human Treasures System in 1993, the Proclamation of Masterpieces of Oral and Intangible Heritage of Humanity in 1998, and the Proclamation of Masterpieces of Oral and Intangible Heritage in 2001 (Bouchenaki, 2003). Eventually, in the Convention for the Safeguarding of Intangible Cultural Heritage, held by UNESCO in 2003, intangible cultural heritage was adopted and defined in Article 2, as below:

> The "intangible cultural heritage" means the practices, representations, expressions, knowledge, skills – as well as the instruments, objects, artefacts and cultural spaces associated therewith – that communities, groups and, in some cases, individuals recognize as part of their cultural heritage. This intangible cultural heritage, transmitted from generation to generation, is constantly recreated by communities and groups in response to their environment, their interaction with nature and their history, and provides them with a sense of identity and continuity, thus promoting respect for cultural diversity and human creativity.

The concept of intangible cultural heritage has always been a controversial topic, and there exist many ongoing debates such as cultural diversity being under threat, preservation measures, state policies, minority rights, variants of culture, displaying ICH as exhibition object and so on.

Culture is reflected in the daily life of a society in both its tangible and intangible aspects. Tangible culture includes buildings, monuments, objects, and costumes, while intangible culture includes festivals, music, culinary traditions, oral expressions, and so on (Oğuz, 2010).

Whereas tangible culture is relatively stable, intangible culture is constantly evolving and being enriched with the contributions of each generation (UNESCO). Both tangible and intangible traditions represent cultural identity and give us a feeling of belonging and identity both to urban space and to society. Intangible culture maintains this connectivity very well as it changes and adapts to society's needs over time. In the Convention for the Safeguarding of Intangible Cultural Heritage in 2003, UNESCO has defined the categories for intangible culture in Article 2 (UNESCO, 2003) as follows:

(a) oral traditions and expressions, including language as a vehicle of intangible cultural heritage;

(b) performing arts;

(c) social practices, rituals and festive events;

(d) knowledge and practices concerning nature and the universe;

(e) traditional craftsmanship.

In line with these categories, sound-generating practices and sonic events, occuring in an environmental context during a specific moment of time (Truax, 2007)--form a very strong human-culture connectivity and hold a very important place in society in general and in urban space in particular. As one of the most significant symbols of cultural identity, human-generated sounds are considered unique ICH elements. In the field of heritage studies, culture has been examined in its various dimensions of sound, such as the acoustic aspects of ancient buildings or ethnic music, chants, ceremonial, and so on (Bendrups, 2015). This research project highlights the sounds of everyday life in the city of Istanbul, but excludes music because it already represents a heavily researched field.

According to Schafer's research, every city has its own unique soundscapes due to its distinct urban culture. Kumi Kato, a Japanese scholar of environmental studies, posits that the soundscape forms an interactive human-urban relationship which produces cultural connectivity (Kato, 2009). Because cities may host societies inclusive of various ethnicities, religions, political views, languages and so on, urban traditions are formed based on the city residents' lives, and not only the cities' geographical parameters. Moreover, cultural sounds can be considered intangible cultural elements within the definition of ICH in the UNESCO Convention for the Safeguarding of ICH, 2003. Thus, we can speak of a cultural soundscape as a very crucial part of urban culture, which can also be referred to as sound heritage.

2.3. Soundscape as intangible cultural heritage

The cultural soundscape is of great significance for any urban identity, as it consists of the sonic values of both traditions and contemporary daily culture. Sounds are, indeed, aural symbols of our daily intangible culture, such as what we eat, what we listen to, how we practice our religion, thus who we are. Sounds also connect people to their lands, by way of auditory experiences that invoke memories of their past lives and their families. This sense of belonging forms strong relationships between people, their culture and their lands. In addition, Kato also highlights that a place can be distinguished through the sounds it contains (Kato, 2009). The field of acoustemology, for example, is concerned with recognising a location based on auditory experiences. To facilitate this recognition, the WSP categorised the features of the sonic environment in three main themes: keynote sounds, signals, and soundmarks (Schafer, 1977). Keynote sounds refer to mainly background sounds related to geographical location, climate and the everyday routine of a community or a region (such as water, wind, market noises and so on). For example, traffic noise and seagulls may be the most appropriate keynote sounds in Istanbul, as they are heard every day, anytime and almost anywhere. Signals are foreground sounds to which we consciously listen, such as rings and bells. Ambulance sirens, the call to prayers and church bells may be counted as examples of signals in Istanbul. Soundmarks, a term derived from landmark, are unique to a certain location or a community, such as the nostalgic tramway's bells in Taksim and the creaking of the horse-drawn carriages on Büyükada, one of the Princes Islands near Istanbul. Keynote sounds and signals can be found anywhere and carry no identifying values; however, soundmarks are of enormous importance for a society and for a location. For this reason, Schafer states: "Once a soundmark has been identified, it deserves to be protected, for soundmarks make the acoustic life of the community unique" (Schafer, 1977, 10). Soundmarks are sonic representatives of cultural identity, and therefore we should pay attention to their maintenance and sustainability.

Cultural sounds can represent social, spiritual, historical, national and cultural memories related to a specific place and society (Kato, 2009). Based on UNESCO's definition, sound is a representative value of knowledge, skills, expressions, and so on, which are constantly recreated by communities carrying their sense of cultural identity. Likewise, Kato states that "sound itself can also be a component of ICH, as well as a means of articulating ICH, particularly because of its transient and fleeting nature" (Kato, 2009, 85). In line with Kato's arguments, sounds are inevitable elements of our lives and culture, and even non-musical sounds

carry emotions and remind us of our own identity and can have great power as a mnemonic device. The cultural diversity found in any urban contexts means that the soundscape will itself also be very diverse and complex (Paper C).

2.4. Preserving contemporary cultural soundscapes

Sonic cultural heritage is temporary in two aspects: both sound and intangible culture are temporary, reproduced again and again, and therefore original each time. Moreover, sound is limited by time because of its physical characteristics. Not being a permanent object, it needs to be reproduced every time, which makes it always original (Schafer, 1977). ICH also changes over time; it adopts new versions of cultural elements, or is replaced by completely different elements due to technological developments, globalisation, immigration, and politics; thus, changing life standards and conditions. Sonic heritage is also rapidly changing, due to continuously changing cultural contexts and experiences. Therefore, sonic cultural heritage needs urgent identification, recording and perhaps even protection, starting with the contemporary cultural soundscape. ICH is living and changing in parallel to the changing conditions of life, thus reflecting the development of a society's culture. It includes a broad range of values such as persons involved, objects used, methods applied, sayings uttered, clothes worn, and music played. ICH is transferred from generation to generation and reproduced over and over each time, with adjustments addressing recent life conditions, so that it lives as long as society continues to practice it. Dawnhee Yim, in his discussion of the significance of preserving ICH, also questions whether ICH should be preserved in its traditional forms, or to what extent ICH can be transformed (Yim, 2004). Kirshenblatt-Gimblett (2004), however, advocates the idea that, if a tradition is alive, there is no need to protect it, and if it is almost gone, then safeguarding will not help to protect it. If an ICH element is already dead, it means that society no longer practices it and that the tradition will not survive. Thus, it is quite difficult to make it relevant to society once again. In the case that ICH includes tangible elements, these values also lose their functions, meaning and importance.

As the characteristics of tangible and intangible culture are different from each other, their preservation measures cannot be the same either. Tangible culture is the end-product or the result and thus stable, while the intangible is the process and thus dynamic (Gürçayır, 2011; Metin Basat, 2013). Instead of the word used for folklore in the 1989 Recommendation on the Safeguarding of Traditional Culture and Folklore (Article D) – that is, preservation – in the Convention for the Safeguarding of the ICH, the word suggested to protect ICH is "safeguarding" in order to highlight its dynamic nature. Safeguarding means to "maintain in

the context", as Kirshenblatt-Gimblett also argues, since the system needs to be maintained as a whole with all its components in order to sustain intangible heritage (Kirshenblatt-Gimblett, 2004). We can protect tangible artefacts by collecting, archiving, preserving and exhibiting them in museums. However, these methods are not applicable to ICH, as Lenzerini states: "ICH is not to be considered as something to be preserved under a glass case" (Lenzerini, 2011, 108). ICH needs society's involvement in order to be safeguarded, as stated in the Yamato Declaration of 2004. In some cases, the intangible includes not only traditional processes, but also tangible properties. For instance, tea culture cannot be considered without teapots and tea cups. Tangible and intangible cultures are complementary in the sense that they give clues about each other. For example, tea culture in Turkey and in England differ from each other in several aspects, such as how tea is prepared and how often it is drunk (intangible), and what kind of teapot and tea cups are used (tangible). Both of them reflect the cultural context of those who practice the tradition, and the sonic values are dependent on both tangible and intangible culture. *The Soundscape of Istanbul* project aims to collect and protect the related sonic cultural values. The safeguarding and maintenance of ICH does not mean to freeze culture, but to allow modifications and adjustments to constantly changing life conditions. These transformations may lead to a change in tangible culture in the process of practicing ICH, and they may result in different sonic values. For example, as mentioned above, in Turkey (and its predecessor state, the Ottoman Empire) tea has been consumed since the nineteenth century. Since then, tea culture has been safeguarded within society; however, its present traditions, practices, and objects differ from earlier ones. Neither have tea culture's sonic values remained the same. It would have been most interesting to collect all the sounds related to tea, such as the bubbling liquid and crinkling coal of the samovar, whistling teapots, electric kettles (the most recent addition), spoons clinking against tea glass, and the sayings used while serving tea. Therefore, all sonic values of ICH are of great importance so as to have a general idea of how it changes over time. For this reason, sonic cultural values need to be collected systematically and over certain periods of time, to observe the acoustic reflections of transformations as well as to have original forms of cultural sounds. Since sounds are lost within a very short window of time, it is necessary to start collecting sounds as expeditiously as possible (Paper C).

2.5. Archiving the cultural soundscape

In order to archive a collection of sounds, urban sounds that can be considered as ICH elements need to be determined first. Sonic culture consists of the most characteristic acoustic

values for a society and its social memory. At this point, consulting with locals is a key research strategy for drawing the outlines of their sonic environment as well as researching primary sources. In addition to consulting with locals, in the discovery of soundscapes, the most common method the WSP team members used was soundwalking, which is defined as "any excursion whose main purpose is listening to the environment" (Westerkamp, 1974, 18) by one of the pioneering members of the team, Hildegard Westerkamp. However, when it comes to discovering cultural soundscapes, this method may not be convenient. Since sonic cultural values are highly time dependent, pre-research needs to be conducted on the areas of interest before soundwalks in order to discover the cultural soundscape through personal and immediate auditory experiences.

The collection of the representative elements of the sonic environment may be preserved in online or digital archives, both of which require a systematic tagging and classifying model. Within the framework of the WSP, the team analysed sounds in a very detailed way and reached several outcomes which may be useful here as well. Whatever the archiving model, characteristic acoustic values need to be determined, collected and archived in order to preserve at least their contemporary representatives before they disappear (Paper C).

2.6. Presenting cultural sounds

Sounds do not receive much attention, despite being very important in everyday life. They are mostly ignored in contemporary Istanbul. However, this may be different in another time period, as with the invention of print the importance of auditory and olfactory communication decreased (Classen, 1993). It may also have been different in another society, as different cultures have different ways of understanding the outside world. For example, most indigenous cultures of Latin America are based on thermal dynamics of lands and bodies (Classen, 1993), the Ongee of the Andaman Islands communicate and cure with smells and control their cosmos with odors (Classen, 1993), and for the Suya of the Brazilian Mato Grosso, hearing is a symbol of the social individuals. The reflection of the significance of hearing can be observed also in their language as they use *to hear* in order to mean *to understand* (Classen, 1993). Western cultures, however, rely more on visuality, and for this reason, visual elements are more dominant and visual terms are common, such as *I see, point of view, enlighten,* and so on (Classen, 1993). Contemporary Turkish culture is also mainly based on visuality, although its roots are to be found in the Ottoman Empire's culture, where sound was a vital element of daily life, such as Qur'an recitals and the call to prayer (Ergin, 2008). Such sounds play a significant role not only in terms of religion, but also for temporally organizing everyday life and

for organizing city boundaries. For example, shopkeepers used to open and close their shops according to the call to prayers as they are heard five times at certain intervals. As for the spatial organization, call to prayer used to help also determining city boundaries. For instance, where call to prayer can no longer be heard is considered out of city. Therefore, I aim to increase public awareness of urban sounds for cultural sustainability. As a medium for raising public awareness, I chose to design exhibitions in order to emphasize the significance of cultural soundscapes.

Verhaar and Meeter define an exhibition as follows: "An exhibition is a means of communication aiming at large groups of the public with the purpose of conveying information, ideas and emotions relating to the material evidence of man and his surroundings with the aid of chiefly visual and dimensional method" (Verhaar & Meeter, 1989, 26). Exhibitions generally have one big idea (Serrell, 1996) or main message, and the collection is displayed or the installations are designed and organized around it. Exhibitions may take place in any public space, but generally occur in galleries or in museums. Besides the message that exhibitions aim to convey, museums have also further goals, such as changing the attitudes and modifying the behaviors of visitors. People usually visit museums to enrich their vision and to contribute to their personal development by engaging different experiences and gaining knowledge (Edson & Dean, 1994). At this point, exhibitions play a significant role in communicating their messages, giving an aimed impression to visitors and representing the museums in which they are displayed.

Rather than a static exhibition area, I intended to display urban sounds in an interactive and in an experiential space to increase the impact on visitors. When people interact directly and physically with an object, they feel more connected. Interaction helps creating bonds and enhancing them. Experience is one of the most powerful communication elements. All moments of our lives are literally examples for experience, and they are important for shaping our successive behaviours, feelings or thoughts. Henry James summarizes this idea: "The quality and content of a person's life is the sum total of what they've paid attention to over time" (Shedroff, 2009, 5). Experiences may be in a great variety from analog to digital, cultural to technological, and sensorial to interactive. All these experiences interpenetrate into each other in life. Therefore, it would be useful to set borders of experiences for examining them. There are mainly six key dimensions that experiences have: significance, breadth, intensity, duration, triggers and interaction (Shedroff, 2009). In my exhibition, all the principles of experience will be considered, particularly triggers which are senses (taste, sight, sound, smell, touch) and cognitive (concepts and symbols) (Shedroff, 2009). Hearing is one of the most

important sensual perceptions, and auditory elements not only convey information but also enliven emotions and bring back memories. Therefore, the exhibition intends to communicate with the public via an interactive space and through sonic experiences in the exhibition areas.

To sum up, urban sounds that we hear or practice every day are important for our cultural identity that they need to be protected in the context of intangible heritage. The safeguarding of intangible culture is only possible by maintaining the traditions in their own environment for which people need to be conscious about cultural values. The exhibition features I designed aim to increase public awareness of urban sounds so that the society maintains the traditions and to protect the representative sonic values of the contemporary Istanbul in long term (Paper F).

There have been several exhibitions on soundscapes such as the exhibition entitled "Soundscapes"[7] at The National Gallery in London in 2015 and an exhibition entitled *"Listen: 140 Years of Recorded Sound"* which will open on 6 October 2017 at the British Library, London. It is also planned to include the sound recordings I made for the *"London Soundsslike Project"*, in the exhibition. Together with the exhibition, I will encourage public to contribute to the sound archive of London (*London Soundsslike Project*) via internet and I will have the chance to observe public interest to urban sounds again with this exhibition. There are also exhibitions on sensory studies, such as on smellscapes as well as soundscapes. For example, "Scent and the City" is an exhibition focusing on smellscapes of the city where visitors can actually find the chance to experience several urban smells. "Scent and the City"[8] was curated by Lauren Davis and displayed in Research Center for Anatolian Civilazitions of Koç University (RCAC). Lauren Davis, who is a PhD Candidate at the department of Archaelogy and History of Art in Koç University, is conducting a research on urban smellscapes which is widely discussed in her article entitled "Heritage and scent: research and exhibition of Istanbul's changing smellscapes" (2017).

2.7. The significance of the city of Istanbul

Istanbul has a very rich cultural soundscape thanks to its history reaching back as far as the Neolithic era. The city has hosted numerous cultures and many peoples of different backgrounds, and it was the capital of both the Byzantine and Ottoman Empires and now is the most important city of the Turkish Republic, with a population of 13.6 million residents officially (according to 2011 statistics) and 20 million unofficially.

[7] https://www.nationalgallery.org.uk/whats-on/soundscapes
[8] https://anamed.ku.edu.tr/en/scent-and-city

As capital of the Christian Byzantine Empire from 330 to 1453, it housed innumerable churches, including the Patriarchate. Under Ottoman Imperial rule from 1453 to 1923, different Christian communities continued to use churches (even though they were not allowed to ring their bells), while hundreds of mosques broadcast the Islamic call to prayer. Each community –Muslim, Christian, but also Jewish– has its own sonic heritage related to its religious and everyday practices, its music, favored professions and food production, for example. With the advent of modernity, the sounds of trains, tramways, ferries, motorized vehicles, and so on have created new layers in Istanbul's sonic environment.

As a result of being subject to a large diversity in terms of religion, ethnicity and language, but also cultures and traditions, has formed and continues to develop a very rich acoustic environment. Being located as a bridge between Asia and Europe, Istanbul has great importance in combining European and Middle Eastern cultures. The presence of these two different cultures shapes the everyday life of the city by creating contrasts within the same society.

3. METHOD

Several methodologies were used while exploring sonic ICH elements, determining the archive content, verifying the locations of field recordings, collecting and archiving them, exploring ways of raising awareness, designing the exhibitions and evaluating the results. In Figure.1, the methods I used for research, raising awareness and for evaluation, the aims, and the outcomes are shown.

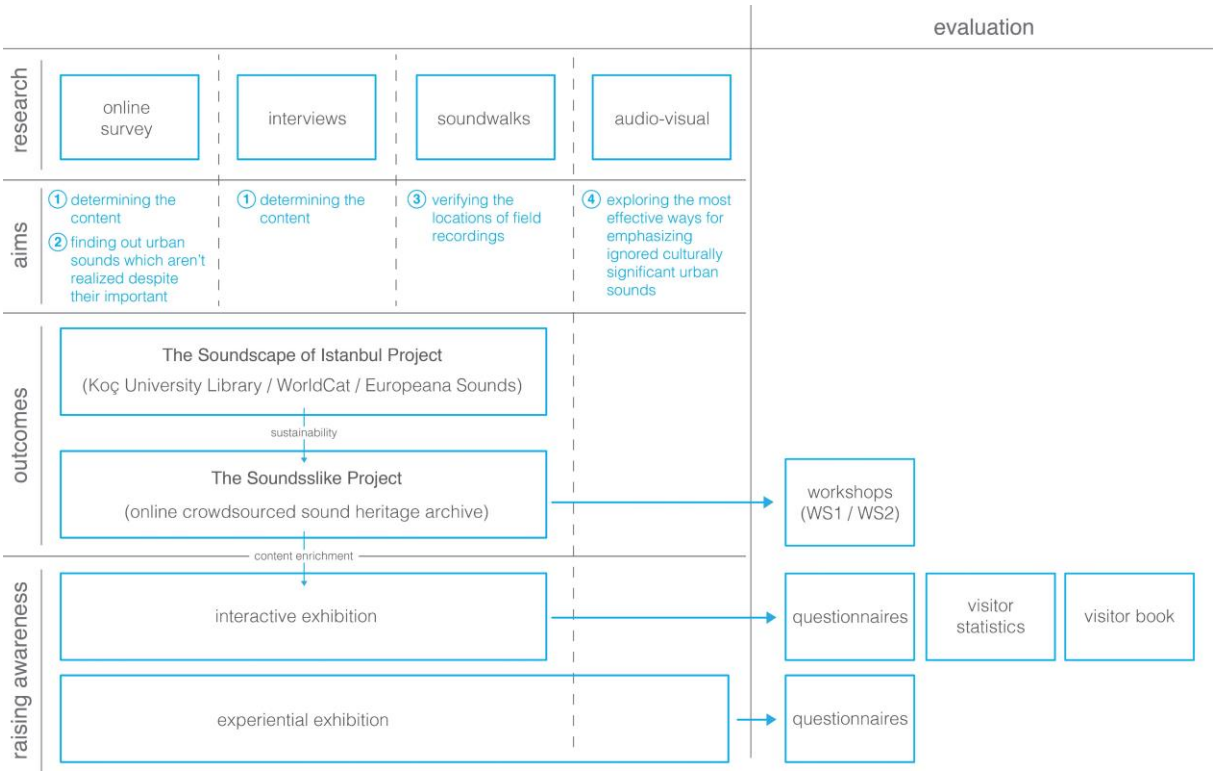


Figure.1 – Schema of methods

3.1. Methods Used

This methodology schema has five main sections namely; research, aims, outcomes, raising awareness and evaluation. The research section basically consists of two processes: determination of collection items(online survey, interviews, soundwalks) and research on audio and visual display methods for the experiential exhibition. In order to determine the collection content, I conducted an online survey and interviews. I organized soundwalks to verify the locations of sounds to be recorded and archived which can also be considered as a part of determination process. While analyzing the results of the online survey, I found out that there are several culturally important sounds ignored or not realized much in daily life despite their significance. Thus, the online survey served both for determining the content and for identifying the ignored important urban sounds which will be focused in the experiential exhibition.

As an outcome of the determination process (online survey, interviews and soundwalks), the sound collection (*The Soundscape of Istanbul* project) has been formed and archived in Koç University Suna Kıraç Library Digital Collections, WorldCat and in Europeana Sounds. In order to turn this library collection into a more sustainable archive, *The Soundsslike Project*, which is an online crowdsourced sound heritage archive, has been initiated. The project was, then, evaluated by workshops in which we created different user profiles, defined user needs in related scenarios and developed ideas together with the participants.

The Soundsslike Project is an interactive platform and can only be enriched by public contribution. In order to raise public awareness of the significance of urban sounds and to introduce this idea of collecting and preserving sound heritage, I designed two exhibitions with the contributions of the professors. The first one was an interactive exhibition which enabled visitors to interact directly with sounds and choose the ones that they want to hear. Thus, they could create the soundscape of the exhibition space with the sounds of *The Soundscape of Istanbul* collection. Moreover, when they uploaded their own sound recordings to *The Soundsslike Archive*, they could immediately listen to their recordings in the exhibition area. I evaluated this exhibition by analyzing the results of the questionnaires that I provided in the exhibition space, by the comments that visitors wrote on the visitor book and by the visitor statistics. In addition to these evaluation methods, it can also be observed in the increase of accounts created in *The Soundsslike Project* and in the increase of new sound recordings uploaded by contributors.

The second one was an experiential exhibition which was designed to emphasize the ignored culturally significant urban sounds. I conducted a research with the aim of exploring the most effective ways of displaying sounds such as by means of aural elements, or supported by visuals or texts. According to the results of the research, it came out that people tend to view if there is a visual element rather than listening to an aural element and this behavior puts the sounds in the second place and prevent them from being on the focus. However, this was not what I intended to do. Therefore, I decided not to use any visual elements in the exhibition, but to support the emphasis on sounds with textual clues. I aimed to make visitors listen to the sounds and try to establish links between the sounds and the textual clues. Therefore, I provided only brief clues about the historical background or cultural importance of the sound items instead of telling what the sounds actually belong to. In the end, I evaluated this exhibition by analyzing the results of the questionnaires that I provided in the exhibition area. Finally, I compared the two design techniques that I used in exhibitions and the results in raising public awareness.

3.2. Application

In the determination process, I aimed to identify the cultural soundscape of Istanbul in detail and to specify the sounds to be collected. For this, besides reviewing the literature on the urban culture of Istanbul, I conducted an online survey and interviews with both locals and foreigners, supported by soundwalks in selected neighborhoods. Analyzing the results of the online survey, I gathered a detailed list about the characteristic sounds of the city of Istanbul (Paper C).

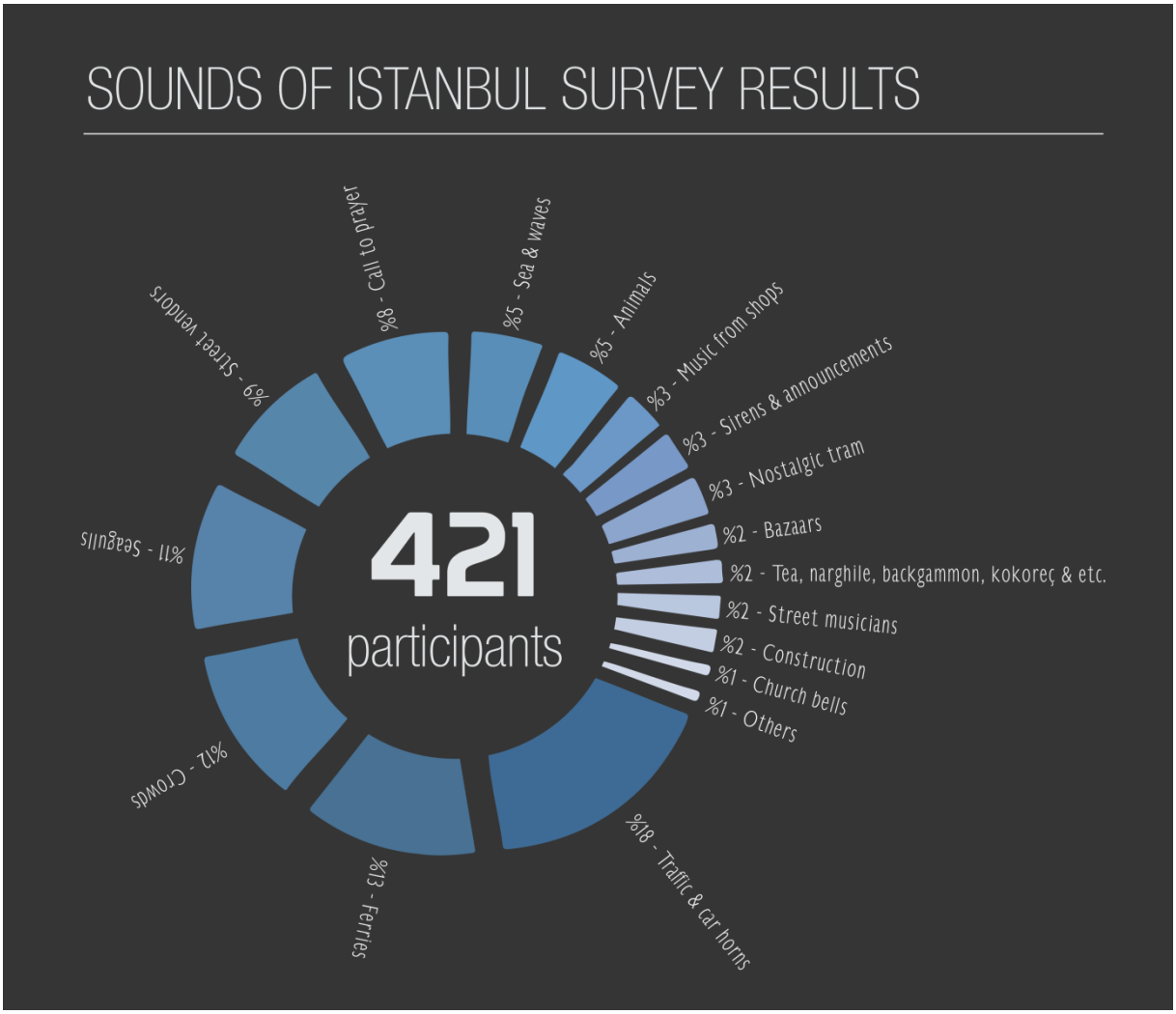


Figure.2 – Online survey results

Soundwalks were organized to verify the soundmarks and their locations. I organized four soundwalks in four different routes. I accepted maximum 15 participants to each soundwalk to increase the benefit both for me in controlling the group and for the soundwalk participants to comprehend the study. I adopted soundwalk method to *The Soundscape of Istanbul* project

and shaped it as a quiet walk having several listening stops. We had discussions about what we heard so far only in these listening stops. I also encouraged participants to record sounds that they considered as symbolic sonic values for the route we followed and for that specific time period. We also had discussions about the sounds that they recorded at the end of the soundwalks. Therefore, soundwalks helped both participants to think of aural aspects of urban fabric and me to verify the locations of the field recordings (Paper D). As an outcome of this entire phase, I created a plan for field recordings with a timeline and the geographical location of each sound marked on a map.

Figure.3 – Soundwalks

In the collecting and archiving process, I recorded contemporary, non-musical, sonic cultural heritage elements within their own soundscape context with a DPA 5100 Mobile Surround Microphone and a TASCAM DR-680 Portable Multi-track Sound Recorder. I conducted field recordings with the help of a sound recording team which consisted of ten students who assisted me one at a time. During field recordings, we took also photographs of related sound items besides recording their sounds. We also marked the exact locations of each sound recording, to be then transferred to the archive (Paper C).

Figure.4 – Field recordings

Figure.5 – Team of field recordings

A unique metadata format was created for the collection of cultural sonic values with the help of Koç University's librarians. Recordings were tagged and classified according to the taxonomy which I formed based on Schafer's and archived as *The Soundscape of Istanbul* collection in Koç University Suna Kıraç Library Digital Collections (http://digitalcollections.library.ku.edu.tr/cdm/landingpage/collection/SOI).

Title (tr/eng)	Kestaneci / Seller of Roasted Chestnuts	Martılar / Seagulls	Balık-Ekmekçi / Fish Sandwich Vendor
Description (tr/eng)	Pazar öğle Sarıyer sahilinde kestanecinin seslenişlerini, kestaneleri dizerken, çevirirken çıkardığı sesleri duyuyoruz. Bir yandan da oradan geçen arabaların motor sesleri ve balıkçı teknelerinin tadilat sesleri geliyor. / On a Sunday afternoon on the shore of Sarıyer, we hear the cries of a chestnut seller and the sounds of turning the chestnuts. In the background, there are the sounds of car engines and fishing boats.	Martıların atılan ekmekler için birbirleriyle mücadele etmelerine tanık oluyoruz. Kestanecinin geçmesini, sahilde oturan insanların konuşmasını ve oynayan çocukların sesini duyuyoruz. Arka planda sürekli balıkçı teknelerinin bakım onarım sesleri geliyor. / We hear the seagulls as they are fighting with each other for food. There are also the sounds of a chestnut seller and of people talking and children playing. In the	Müşteri ile balık-ekmekçi arasındaki konuşmaları, sipariş vermelerini, balıkların ızgarada pişme sesini ve vapurun kalkış düdüğünü duyuyoruz. / We hear the dialogs between the fish sandwich vendor and the customers, their orders, the sound of the fish sizzling on the grill, and the ferry hooting.
Subject (tr/eng)	Kestaneci; Kuşlar; Balıkçı teknesi; Motor; Kış / Chestnut seller; Birds; Fishing boats; Engine; Winter	Martılar; Kestaneci; Dalgalar; Balıkçı teknesi; Deniz / Seagulls; Chestnut vendor; Waves; Fishing boats; Sea	Balık-ekmek; Izgara; Ekmek arası; Vapur; Düdük / Fish; Grill; Sandwich; Ferry; Hoot
Keywords (tr/eng)	-	-	-
Date Original	08.02.2015	08.02.2015	04.02.2015
Date Digital	2015	2015	2015
Period of the day	13:06-13:07	13:00-13:03	14:54-14:56
Duration	00:00:51	00:02:28	00:01:07
Geographical subject	Sarıyer (Istanbul, Turkey)	Sarıyer (Istanbul, Turkey)	Karaköy (Istanbul, Turkey)
Location	41.168950, 29058147	41.168059, 29.058056	41.022049, 28.974180
Sound type	Human (verbal)	Natural	Human (verbal), Human (non-verbal)
Frequency	Seasonal	Daily	Daily
Category	Street professions	Nature	Street professions
ID no	KESTANECI 001	MARTILAR 001	BALIK-EKMEKCI 001
Type	mp3 (320 kbps)	mp3 (320 kbps)	mp3 (320 kbps)
Digital Specifications	This sound was originally recorded by TASCAM DR-680 Portable Multitrack Sound Recorder and DPA 5100 Mobile Surround Microphone in 6 channels, and edited in Logic Pro X.	This sound was originally recorded by TASCAM DR-680 Portable Multitrack Sound Recorder and DPA 5100 Mobile Surround Microphone in 6 channels, and edited in Logic Pro X.	This sound was originally recorded by TASCAM DR-680 Portable Multitrack Sound Recorder and DPA 5100 Mobile Surround Microphone in 6 channels, and edited in Logic Pro X.
Creator	Pınar Çevikayak Yelmi	Pınar Çevikayak Yelmi	Pınar Çevikayak Yelmi
Institution	Koç University	Koç University	Koç University
Digital Collection	The Soundscape of Istanbul	The Soundscape of Istanbul	The Soundscape of Istanbul
Map URL / Project website	https://soundscapeofistanbul.ku.edu.tr/	https://soundscapeofistanbul.ku.edu.tr/	https://soundscapeofistanbul.ku.edu.tr/
Rights & Usage	This work is licensed under a Creative Commons Attribution 4.0 International License.	This work is licensed under a Creative Commons Attribution 4.0 International License.	This work is licensed under a Creative Commons Attribution 4.0 International License.
Notes			

Figure.6 – Metadata format

The metadata includes basic information such as title and description of the sound item, keywords which will help to be found easily, the date I recorded and the year it has been archived, period of the day when it was recorded, duration, location (both the name of the neighbourhood and the coordinates), sound type (human verbal, human non-verbal, musical, natural or mechanical), frequency of action (daily, weekly, seasonal or annual), category (food & drink, transportation, entertainment & leisure, religion, nature, festivals & events, street professions, sports, crafts or urban), unique ID number assigned, type (mp3 or wav), equipment used for recording and for editing, creator, institution, name of the main collection, project websites and license specifications.

After each and every field recording, I edited the recorded sounds using Logic Pro X, photographs using Adobe Photoshop, and also prepared the metadata form for each sound item. I submitted the sounds, photographs and metadata forms as a package to librarians. Since we repeated this process after every field recording in a systematic way, we did not have any de-

lays in the archiving process. All the collection items are protected under a Creative Commons Non-Commercial license, which allows people to use the sounds in *The Soundscape of Istanbul* collection in their own creative works, edit and mix them and also share them with others. However, this license does not allow people to use the sounds in *The Soundscape of Istanbul* collection for commercial purposes.

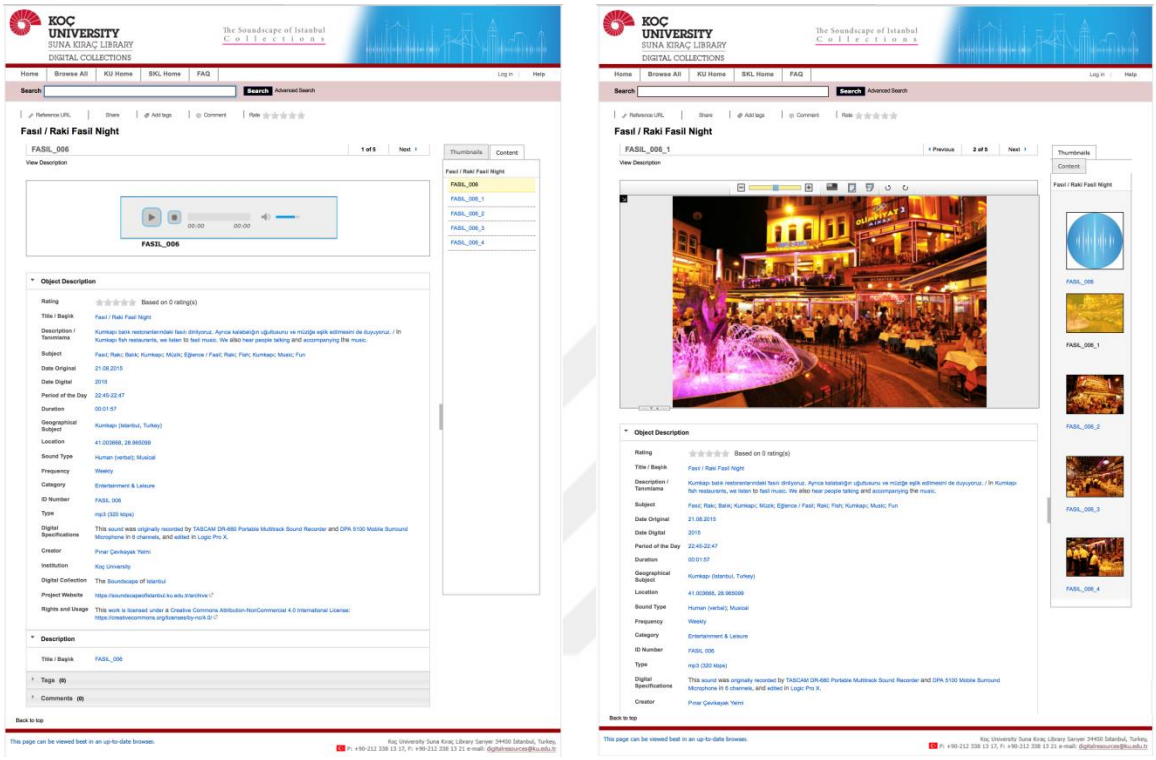


Figure.7 – Archive pages

In order to turn the archive into a more sustainable platform, we initiated *The Soundsslike Project* (http://soundsslike.com/), a crowdsourced web-based sound archive. It is open to contributions of related sound recordings, requiring specific metadata. For *The Soundsslike Archive*, we designed a simple and a more accessible visual interface. We organized two workshops to evaluate this crowdsourced web-based sound archive (Paper D).

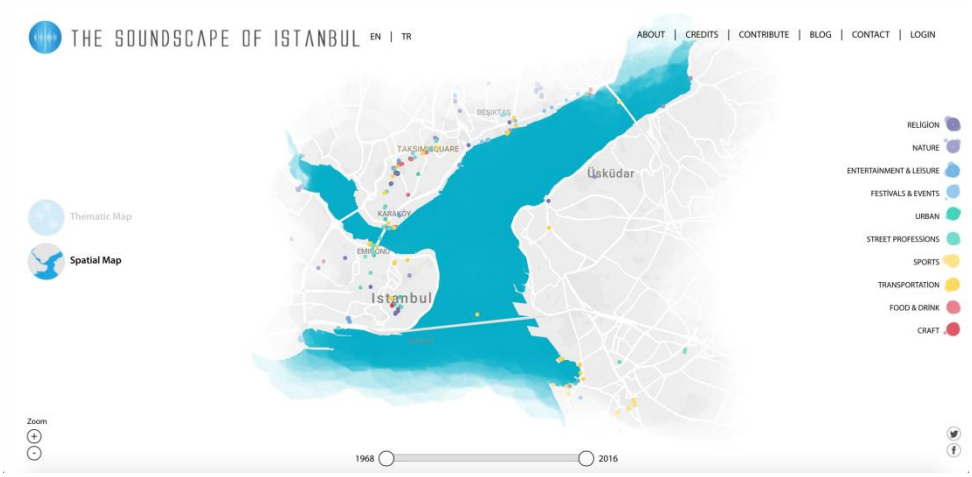


Figure.8 – Soundsslike Archive (spatial map)

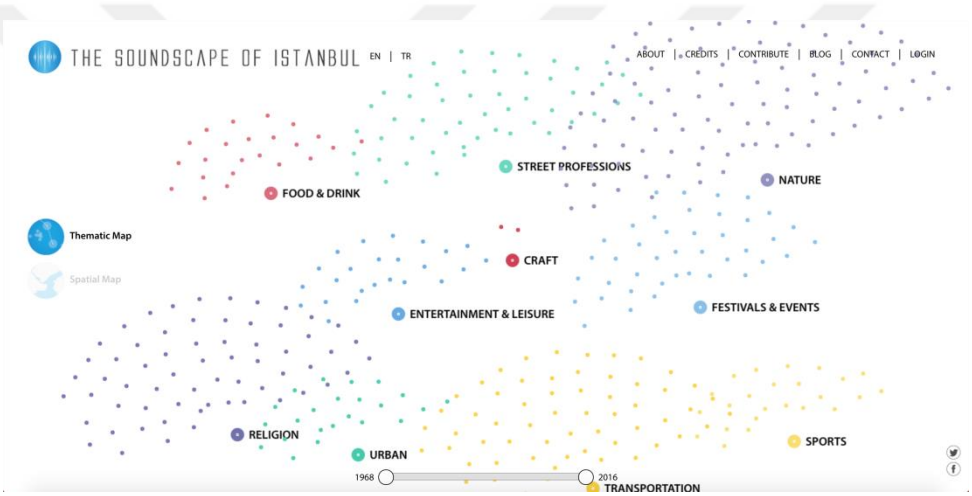


Figure.9 – Soundsslike Archive (thematic map)

After designing *The Soundsslike Archive*, we needed to introduce the project and encourage volunteers to record and upload their own sound recordings to the archive. For this, we chose to design exhibitions to reach out to people and increase public awareness. Together with the contributions of my supervisors, I designed two different exhibitions by using two different design techniques: interaction design and experience design. In the first exhibition, we presented *The Soundsslike Archive* in an interactive space. For this, we designed an interactive system in which visitors could interact with the sounds and choose those to which they want to listen; thus, they had the opportunity to create the soundscape of the exhibition area. Moreover, visitors could listen to their own sound recordings in the exhibition area just after they had uploaded them to *The Soundsslike Archive*. There, they had the chance to become a part of the archive and the exhibition. I kept questionnaires and a visitor book in the exhibition

area. I analyzed these questionnaires, visitor book and visitor statistics to evaluate the interactive exhibition in terms of public awareness (Paper D).

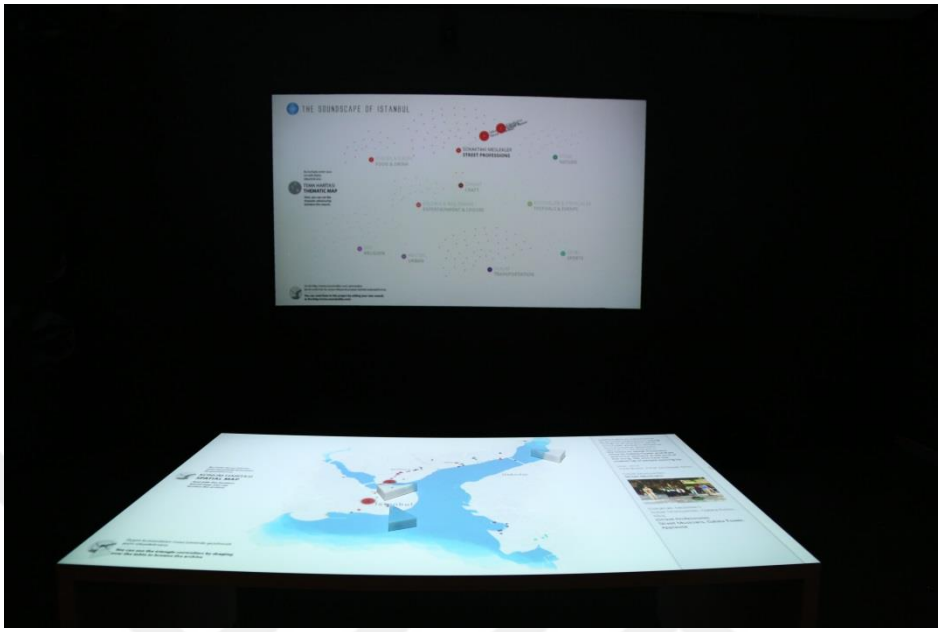


Figure.10 – Interactive Exhibition

In the second exhibition, I aimed to display culturally significant sounds that need attention. For this, I examined the results of the online survey that I conducted at the beginning of the project one more time and analyzed the culturally significant sounds. Some of them are still alive within the urban fabric and within society; however, some of them are disappearing (Paper E). Thus, I aimed to raise public awareness of only these sounds. First, I conducted research on display methods for sound as exhibition objects. Keeping in mind the intention of increasing public awareness of the cultural soundscape, I experimented with different display methods to determine the most appropriate and effective way, by interviews with people presenting various combinations of audio elements and visuals. Since sounds were taken from certain neighborhoods, I intended to transport the visitors' imagination to these specific places while they visited the exhibition. I chose the method of interview since I needed to know individuals' feelings and their perception on sounds/visuals. According to the results, I observed that people tend to view if there is a visual rather than listening. Taking these results as a base, we designed sonic experiences without any visual elements that evoke emotions and awaken people's imagination and, thus, increase their awareness of the significance of the specific urban sounds. The aim was to make locals experience the city from a sonic standpoint and to give foreign visitors a general aural idea of the complete sonic experience of the cultural ele-

ments and the city. Sonic experiences may also remind local visitors of their memories related to Istanbul, if they are already familiar with the sounds displayed, and notice that these sounds are part of their past, background, identity, or family memories. Foreign visitors may establish connections between the exhibited sonic environment and their own hometowns, and draw comparisons or realize similarities, which also results in reconsidering urban sounds. Therefore, designing effective sonic experiences contributes towards the safeguarding of the sonic cultural heritage of the city by increasing public awareness. Visitors were surveyed with the help of questionnaires, before they left the exhibition. This provided me with insights into the level and potential changes of their awareness, and whether the exhibition was successful in conveying culturally significant sounds as a short-term effect. For the long term, the expected outcomes are that visitors contribute to the project with their own sound recordings to protect representative sonic values and to maintain the traditions for safeguarding them (Paper F). According to the results of both exhibitions, it can be inferred that the exhibitions were very successful in raising public awareness. We received hundreds of sound recordings and hundreds of users have registered to the crowdsourced web archive during the exhibitions.

Figure.11 – Experiential Exhibition

4. THE STUDY AND DISCUSSION

The Soundscape of Istanbul project is the first attempt in Turkey that aims to collect culturally significant sonic values and to create an archive of contemporary (2015) urban sounds of the city of Istanbul. The project is important as it initiates the process of the protection of Istanbul's culturally significant sounds. With the help of the interactive sound archive, it offers a sustainable platform to which past and future soundscapes can be added. Thus, the project forms the basis of a systematical and conscious approach to urban sounds and makes efforts towards raising public awareness of cultural soundscapes and encouraging society to protect their own heritage voluntarily.

4.1. Lessons Learnt

Daily memories of a society reveal the fact that sounds cannot be considered separately from one's everyday life at emphasized a powerful link between social life and the city. For this, it is suggested to include locals each and every step of research. Their opinions, memories and daily life in the city are very important because sounds constitute common cultural memory and cultural identity and the most characteristic sounds of a city can only be determined by people who have an idea about that specific city. Throughout the entire study, I learnt that creating such an archive needs to be done as a collaborative work. There are millions of people living in the city, and everyone has a unique daily sonic experience in such a rich urban fabric. Each experience is valuable as it represents various neighborhoods, different time periods and a variety of daily life activities. Therefore, it is significant to build a dynamic platform to which anyone can contribute with their own sound recordings rather than creating a stable archive. It is also necessary to design a sustainable system for transferring sonic cultural heritage values to the following generations and for expanding the archive with past and future sound recordings. Moreover, including society in such a cultural project not only creates consciousness about protecting sound heritage, but also turns the action of protecting into safeguarding as it becomes a daily activity. Safeguarding requires protecting a cultural value in its own context-- an important concept in terms of intangible cultural heritage.

Istanbul has always had a significant position in bringing together European and Middle Eastern cultures. The city is very rich in terms of religion, ethnicity, language, traditions, cultures, etc., as it hosts around 20 million habitants (according to unofficial records) from different backgrounds. The diversity shaped the city's lifestyle as well as the urban cultural soundscape. Therefore, the city's cultural soundscape consists of the cumulative cultural memory of

societies of different backgrounds living together in Istanbul. *The Soundscape of Istanbul* project intends to protect representative sonic cultural values that belong to any background. For this, it was needed to learn about daily practices and traditions by asking them directly. Therefore, an online survey was conducted to gather information about living culture in addition to primary sources. Public participation to such a survey is very significant in terms of defining the city's cultural sonic heritage elements. Thus, *in The Soundscape of Istanbul* project I had detailed information about various daily practices and traditions thanks to the online survey and I recorded as many various sounds as we could; for example, I have sounds of church bells and Easter rituals as well as call to prayer broadcast from mosques in *The Soundscape of Istanbul* collection. Therefore, it is recommended to reach as many people from different backgrounds as possible and get their opinions of urban characteristic sounds which will help enriching the content of the sound archive. Moreover, it is also very important that contributors from various backgrounds record sounds of their own traditions voluntarily and upload them to an interactive collaborative archive. This encourages citizens to be part of a project protecting their own heritage. Thus, with the aim of creating a rich sound archive together with the habitants of the city of Istanbul, we initiated *The Soundsslike Project* and had very successful results.

The last point concerns big cities (in this case Istanbul) that have constantly and rapidly evolving urban fabrics as mentioned before. Cultural sounds are also changing and being replaced with new ones; thus, they are endangered in developing urban environments, especially in such dynamic cities. Therefore, it is urgently necessary to preserve contemporary cultural soundscapes as expeditiously as possible.

4.2. Discussion

The Soundscape of Istanbul project is a collection of professionally recorded sounds that have been determined based on public opinion to represent the cultural heritage of the city. The sounds were recorded by a single team for this collection over one year (throughout 2015), and the metadata for each sound was created by one person. Thus, the archive is standardized and systematically created. However, being dependent on only one person or single team raises sustainability issues. For this reason, we initiated *The Soundsslike Project*, a crowdsourced online sound archive. People can record and upload urban sounds that reflect sound heritage of Istanbul and that they consider worth protecting, anytime and anywhere in the city. Thus, we eliminate the research steps of determining the content (online survey and interviews) and verifying the location of urban sounds (soundwalks) as people (locals and foreigners) are al-

ready included as contributors. Therefore, the collection no longer depends on a single team and may grow without any limitation of time or place by means of voluntary contributions.

Besides providing many positive outcomes, a crowdsourced archive, however, may have several negative outcomes, such as low quality of sounds, lacking metadata, submission of irrelevant sounds, and incorrect placement of sounds. The first possible negative outcome is that voluntary contributors may not have professional equipment to record in high quality. At this point, content and cultural values of the sound recordings are our priorities; this means that we accept recordings of endangered sounds, even when they are not of high quality. This works like a data collection method where we learn from the users about new sounds to be added to the library archive, and we will start recoding high-quality sounds from the locations and sounds suggested by the users of the web archive. Or sounds from past may be added to the archive which may not be of high quality; but, they are unique and rich in content. We accept these sounds to the archive because we do not have the opportunity to record them again and it is better to have them in this way rather than nothing. Most of the crowdsourced projects assess the significance of the incoming items first and then, evaluate the quality in the second place if the content is of high importance.

Second, contributors may not complete the entire metadata form, and the sound files may lack information. For this, we created a new metadata form for the contributors which have less information fields compared to the library archive. We organized most of the fields as obligatory; thus, contributors cannot skip these information fields without filling to complete the upload process of their own sound recordings. In order to encourage contributors to fill in all the necessary information fields, we designed the metadata form with a very simple and user-friendly interface. Thus, this crowdsourced sound archive will have fewer metadata compared to the library collection, but at least it contains standardized information about sound recordings thanks to the required fields of the contribution form.

Third, there may be irrelevant submissions of sound recordings. For this, we developed an administration panel which enables us to approve or reject sounds before they appear in the archive. A guideline for recording sounds can also be prepared and provided in the website; so that, contributors may pay more attention to the recording rules. Thus, the quality of sounds will be similar to each other and above the average.

And finally, contributors may place their own recordings in incorrect locations. It may be necessary to design a mobile application which will let them pick the correct locations or automatically select the right locations. A mobile application may also facilitate recording

sounds and uploading them to the archive. In the future, I plan to build sustainable and crowdsourced functions to verify the user inputs as a solution to the last two obstructions.

5. CONCLUSION

Urban sounds are unique elements of daily life and significant parts of intangible culture. Sounds are also powerful values that remind people where they come from, their identity and memories. Thus, they deserve to be protected. However, there exists no archive that collects and preserves urban sounds of the city of Istanbul, despite its rich history and multi-cultural urban layers. Thus, this dissertation aims to highlight the significance of sound as a feature of ICH and the necessity of developing archives for sonic heritage. This dissertation explains the research processes conducted for a sustainable sound archive and the projects I developed for protecting the cultural soundscape of Istanbul: *The Soundscape of Istanbul* project and *The Soundsslike Project*.

Besides being crucial in terms of cultural identity and memory, *The Soundscape of Istanbul* archive provides sonic data that may be used in various research fields. As sonic culture is deeply dependent on various factors such as sociological, political and economic conditions, this archive may also lead to further multidisciplinary research by encouraging researchers to consider sonic perspectives. Therefore, it is highly significant and necessary to form such an archive that deals with urban space and daily culture from a sonic perspective.

Since urban sounds are parts of intangible culture, they are constantly evolving rather being static. Thus, it is more appropriate to protect sound heritage in a dynamic structure, as it offers a more sustainable solution. *The Soundsslike Project* may, hopefully, turn into a long-term sound heritage collection to which both future and past urban sounds can, then, be added. The project also offers a template to upload sound heritage elements not only from Istanbul, but also from other cities. Therefore, the web archive may become an interactive platform for protecting cultural and urban sounds across the country, and it may even become a global action. Thus, *The Soundsslike Project* would be a step towards collecting world's cultural sounds, and eventually it will provide the opportunity to hear how world sounds like.

For a sustainable protection of sound heritage, public awareness and consciousness need to be increased. The more people are reached, the more awareness of these sounds is increased. Regarding public awareness, sound exhibitions can be designed. One of the most effective ways of creating bonds with exhibition visitors is designing interactions between the exhibition object and the visitor. An interactive exhibition area where visitors physically interact with sounds can be designed. For the similar sound projects including location-based maps,

the main control for playing sounds in the exhibition area can be set as interacting with the location-based map. Thus, visitors can explore the neighborhoods with which they are already familiar, find out sounds that are close to their own sonic memories, and spend time with playing sounds. Thus, they may have the opportunity to think about cultural sounds and understand their significance in daily urban life.

Another effective strategy for creating awareness is designing experiences that connect the exhibition space with the urban space within which the sonic ICH is found. Through the exhibition and the auditory experiences it offers to increase the public awareness of the significance and uniqueness of cultural sounds, so that present-day visitors and future generations will make efforts towards safeguarding sonic ICH. Therefore, we suggested designing an experiential exhibition taking into consideration of visitors' background and previous experiences. This is because both sound itself and experiencing an environment evoke emotions and awaken imagination. Sonic experiences may also remind local visitors of their memories related to Istanbul, if they are already familiar with the sounds displayed and notice that these sounds are part of their past, background, identity or family memories. Foreign visitors may establish connections between the exhibited sonic environment and their own hometowns, and draw comparisons or realize similarities, which also results in reconsidering urban sounds. Thus, experiences make the exhibition message more memorable and impressive— that is, the cultural significance of urban sounds and the need to protect the cultural soundscape. Therefore, designing both effective sonic experiences and interactions will contribute towards the safeguarding of the sonic cultural heritage of the city by increasing public awareness.

5.1. Future Studies

Having conducted these two projects, I also plan to explore what new technologies such as mobile devices, wearable interfaces, sensors, and urban data can provide, in terms of sustainability of the intangible cultural heritage and ethnographic data collection methods. For example, the use of sensors or wearable technologies for soundwalks, or attentive user interfaces that help focusing on urban sounds and preserving specific sounds of the surrounding by means of these technologies would be an interesting future study.

Ways of increasing public awareness of cultural sounds are not limited to exhibitions. Different ways of increasing awareness and consciousness can be explored as a future study, and the surveys conducted during both exhibitions may lay the groundwork for further research. Exhibition is one of the most effective ways for raising public awareness; however, it is powerful as long as it is open. People tend to ignore things that they do not encounter in their daily

lives. For this reason, more sustainable ways of raising awareness can be explored so that people can be more immersed and take part actively. As an example, games can be designed in order to collect and protect cultural sonic values as a collaborative work. Thus, sounds continue to live within society in daily life and urban sounds would be safeguarded as intangible cultural heritage elements besides creating public consciousness.

Moreover, sound heritage is not limited to urban sounds but it also includes music, drama and literature, oral history, accents and dialects, radio recordings, wildlife and environmental sounds. Thus, the sound heritage archive can be expanded by systematically collecting other types of sound recordings. British Library is a pioneer in protecting sound heritage having a very detailed sound archive and is coordinating Europeana Sounds project in which *The Soundscape of Istanbul* collection is also involved. Therefore, with the aim of observing the methods of British Library in collecting and archiving sounds, I conducted a research in Sound & Vision Department at the British Library in London between May-July 2017.

British Library has a Sound & Vision Department which collects and categorizes the sound heritage of the U.K. Under the Sound & Vision Department, there are several sections each of which deals with different type of collections such as Drama and Literature, Oral History, Accents and Dialects, World and Traditional Music, Popular Music, Classical Music, Radio, Wildlife and Environmental sounds. Each section has curators who mainly conduct research, determine collection subjects, and collect items for related collections. Each section has its own methods of collecting items and forming collections. In this research, I conducted interviews with each curator and discussed the methods they use for collecting sounds.

One of the most common methods that all curators use is accepting donations. Since British Library is a prestigious national institution and is operating world's largest document delivery service, people mostly prefer to donate their collections to the British Library with the aim of both protecting their valuable collections and making them available for the use of other people. However, all donated collections are not accepted as one might expect. After an evaluation process, curators decide either to accept the donated collection or not. Wildlife and environmental sounds collection is mainly consisted of donated sound recordings. However, in several sections such as Oral History and Drama & Literature, they also do sound recordings in addition to donations. For example, in Oral History section curators create subjects, sometimes in collaboration with companies, and conduct interviews according to relevant subjects. Then, they categorize and archive the recordings of these interviews. In Drama & Literature section curators go record performances and theatres according to their relevant subjects. In Accents & Dialects section, curators organize projects or events to collect various English

accents in addition to donated academic research material. In Music sections, curators find and buy related items according to their collection. And lastly, Radio section is in collaboration with many radio stations including BBC Radio and curators of this section make efforts to build a radio archive organizing all these materials. These methodologies of the British Library Sound Archive may possibly be applied to *The Soundscape of Istanbul* project. Thus, the sound archive of Istanbul may be developed and it eventually may become an archive of Turkey's sound heritage including not only urban sounds but also different aspects of sound heritage. Collecting and preserving sound heritage in such a comprehensive way will contribute to cultural memory and strengthen the cultural identity.

In addition to these, British Library also conducts crowdsourced projects for collecting and protecting sound heritage of the U.K., including U.K. SoundMap[9] and Sounds of Our Shores[10]. U.K. SoundMap intended to collect everyday sounds from all over the country, and Sounds of Our Shores aimed to gather shore sounds of the U.K. Both of the projects were very successful in terms of the amount of sound recordings received from public and U.K. SoundMap won even a Social Media award for its success of integrating public to the project. Cheryl Tipp, who is the curator of wildlife collections, realized the crowdsourced sound project "Sounds of Our Shores Project" collecting sounds from public at the British Library. During the interviews that I conducted with Tipp, I explored answers not only for how to collect wildlife sound collections but also for how to do crowdsourced sound projects, points to consider, how to achieve successful results, challenges, etc. According to her comments and experiences, *The Soundsslike Archive* may be improved further.

Lastly, the methods developed for *The Soundscape of Istanbul* project can be applied to other cities in Turkey and in other countries. During my research at the British Library, I had the opportunity of applying my own methods of determining and collecting urban sounds to another city, in this case London. When I was building my own methods in *The Soundscape of Istanbul* project, I aimed that these methodologies can be applied to other cities for determining sound heritage items. For this, I reorganized the questionnaire about characteristic urban sounds which I used for *The Soundscape of Istanbul* project, according to the city of London. I distributed this online questionnaire to the British Library employees and I had approximately 200 participants who completed the entire questionnaire. I determined the most characteristic sounds of London based on the questionnaire results. I had a field recording plan according to the times of sounds and according to the neighbourhoods. Then, I conducted field record-

[9] U.K. SoundMap: http://sounds.bl.uk/Sound-Maps/UK-Soundmap
[10] Sounds of Our Shores: http://www.bl.uk/sounds-of-our-shores

ings including documenting with photographs around the city of London during one month. I edited sounds and photographs collected, and I prepared metadata for each sound item according to the British Library's cataloguing system. Thus, I created an archive of London's urban sounds by using the methods that I developed for *The Soundscape of Istanbul* project and I extended *The Soundsslike Project,* creating a sub-section titled *"London Soundsslike Project"* (*london.soundsslike.com*). This archive of London's urban sounds is also located at the British Library Sound Archive and it is planning to be shared with Europeana Sounds as well. By applying the same methods for another city, I have proven that the system I built for collecting urban sounds of Istanbul works successfully when implemented to other cities. Therefore, it has been proven that a global archive for urban sounds can be achieved by using this very system.

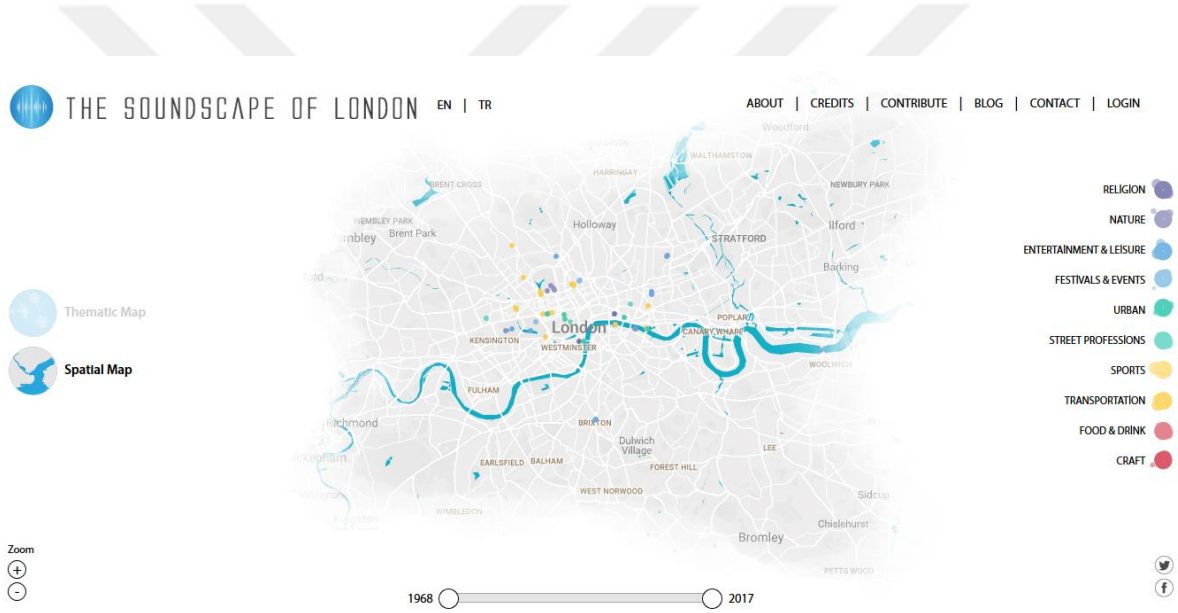


Figure.12 – London Soundsslike Project

In *"London Soundsslike Project",* I collected the urban sounds of London by myself and they will be featured in an exhibition entitled "*Listen: 140 Years of Recorded Sound"* at the British Library which will open on 6 October 2017. However, these sounds can also be collected and archived by a travelling team, and in order to increase public awareness, travelling exhibitions can be designed and these exhibits can visit several countries. Travelling projects are, indeed, quite popular in the U.S. and in Europe. For example, Europeana`s 1914-1918 Project is a travelling project which focuses on the human aspects of the World War I. In this project, Europeana collects stories, photographs, postcards, memories, and objects related to WWI by travelling across Europe. By doing so, Europeana is not only collecting items for the project

but also raising public awareness by directly getting in touch with people and listening to their unique stories about WWI. In the case of urban sounds, besides conducting research, communicating with locals about the characteristic sounds of their own cities or towns may play great role both in introducing the idea of collecting and protecting sound heritage as a collaborative work and also in raising public awareness of the significance and uniqueness of the urban sounds. Once locals are aware of this idea, they can start uploading their own sound recordings to *The Soundsslike Archive* and it becomes a globally crowdsourced urban sound archive.

As a result, this doctoral dissertation project may lead to a variety of projects, some of which are mentioned above. From heritage studies perspective, it may contribute to protection of sound heritage of Turkey not only collecting urban sounds but also collecting other sound heritage materials. It may also contribute to protection of world sound heritage by introducing *The Soundsslike Project* and raising public awareness of urban sounds globally. Moreover, the tools for developing the project may contribute to design field using emerging technologies. Possible future studies can further be derived with contributions of other disciplines having different perspectives.

6. REFERENCES

Ackerman, Diane. “Hearing”, In *A Natural History of the Senses*. Vintage Books, 1990.

Altunbaş, A. & Özdemir, Ç., *Çağdaş Müzecilik Anlayışı ve Ülkemizde Müzeler, Kültür ve Turizm Bakanlığı*, Ankara, 2012.

Atiker, Barış. “Görsel Etki Tekniklerinin Tarihçesi”, *Grafik Tasarım, vol.53*:38-44, 2013.

Atiker, Barış. “Yerleştirme Sanatında Yansıtım Hizalama ile Artırılmış Gerçeklik Tasarımları”, *Beykent Üniversitesi Sosyal Bilimler Dergisi / Journal of Social Sciences 4 (1):* 99-121, 2011.

Augoyard, J. F. & Torgue H. (eds.) *Sonic Experience: A Guide to Everyday Sounds*, Montreal: McGill-Queens University Press, 2006.

Baghli, Sid Ahmed. “The Convention for the Safeguarding of the Intangible Cultural Heritage and New Perspectives for the Museum*”, ICOM News vol.* 4:15-17, 2004.

Bendrups, Dan. “Sound Recordings and Cultural Heritage: The Fonck Museum, The Felber mayer Collection, and Its Relevance Contemporary Easter Island Culture”, *International Journal of Heritage Studies* 21(2):166-176, 2015.

Bishop, Claire. “Viewers as Producers”, In *Participation*, MIT Press, 10-17, 2006.

Bortolotto, Chiara. “Authenticity: A Non-Criterion for Inscription on the Lists of UNESCO’s”, *2013 IRCI Meeting on ICH*, 2013.

Bouchenaki, Mounir. “The Interdependency of the Tangible and Intangible Cultural Heritage”, *ICOMOS 14th General Assembly and Scientific Symposium*, 2003.

Bull, M. (ed.) *The Auditory Culture Reader*, Oxford: Berg Publishers, 2004.

Chion, Michel. *Audio-Vision: Sound on Screen*, Columbia University Press, 1994.

Classen, Constance. *Worlds of Sense: Exploring the Senses in History and Across Cultures*, London: Routledge, 1993.

Cuéllar, J.Pérez de, et al., *Our Creative Diversity*, 1996, Available at: http://unesdoc.unesco.org/images/0010/001055/105586e.pdf (last accessed 14.07.14).

Davis, L. & Thys-Şenocak, L. “Heritage and scent: research and exhibition of Istanbul’s changing smellscapes”, *International Journal of Heritage Studies* 1-19, 2017.

Dernie, David. *Exhibition Design*. New York & London: W.W. Norton, 2006.

Drobnick, Jim. (ed.) *Aural Cultures*, YYZ Book, 2004.

Edson G. & Dean D., *The Handbook for Museums*, Routledge: London & NY, 1994.

Ekici, Metin. “Bir Sempozyumun Ardından: Somut Olmayan Kültürel Mirasın Müzelenmesi (4-6 Mart 2004, Ankara).” *Milli Folklor*, *61*:5-12, 2004.

Ergin, Nina. “The Soundscape of Sixteenth-Century Istanbul Mosques: Architecture and Qur’an Recital”, *Journal of the Society of Architectural Historians,* 67(2), 204-21, 2008.

Erlmann, Veit. (ed.) *Hearing Cultures: Essays on Sound, Listening & Modernity*, Berg, 2004.

Ersoy, Ruhi. “’Performans Teori’ Bağlamında Sözlü Kültür Ürünleri’nin Müzelenmesi Sorunu Üzerine Bazı Görüş ve Düşünceler”, In *Somut Olmayan Kültürel Mirasın Müzelenmesi Sempozyum Bildirileri* (M. Öcal Oğuz et al.), Ankara: Gazi Üniversitesi THBMER 2004: 57-67, 2004.

Gammon, Ben. “Visitors’ Use of Computer Exhibits: findings from five grueling years of watching visitors getting it wrong”, In *The Informal Learning Review*, chapter 28, 1999.

Gürçayır, Selcan. “Somut Olmayan Kültürel Mirasın Korunması Sözleşmesi Üzerine Eleştirel Bir Okuma”, *Milli Folklor, 92:*5-12, 2011.

Hafstein, V. “Intangible Heritage as a List”, *Intangible Heritage*, (ed.) Smith, Laurajane, and Natsuko Akagawa. 93–111, 2009.

Handel, Stephen. *Listening: An Introduction to the Perception of Auditory Events*, The MIT Press, 1989.

Henning, Michelle. “New Media”, (ed.) Macdonald, S., *A Companion to Museum Studies,* Wiley-Blackwell, 2011.

Hillier, Bill & Tzortzi, Kali. “Space Sytax: The Language of Museum Space”, (ed.) Macdonald, S., *A Companion to Museum Studies*, Wiley-Blackwell, 2011.

Ito, Nobuo. Intangible cultural heritage involved in tangible cultural heritage. In *14th ICOMOS General Assembly and International Symposium: ‘Place, memory, meaning: preserving intangible values in monuments and sites’*, 27 – 31 Oct 2003, Victoria Falls, Zimbabwe, 2003.

Kang, J. *Urban Sound Environment,* London: Taylor & Francis, 2007.

Kato, Kumi. Soundscape, cultural landscape and connectivity, *Sites: New Series Vol.6 No.2:* 80-91, 2009.

Kirshenblatt-Gimblett, Barbara. “Intangible Heritage as Metacultural Production”, *Museum International 56, no. 1–2*: 52–65, 2004.

Kurin, Richard. “Safeguarding Intangible Cultural Heritage: Key Factors in Implementing the 2003 Convention”, *International Journal of Intangible Heritage 02*, no. 19, 2007.

Kurin, Richard, “Safeguarding Intangible Cultural Heritage in the 2003 UNESCO Convention: A Critical Appraisal”, *Museum International, Vol.56:*66-77, 2004.

Kytö, Meri, Remy, Nicolas & Uimonen, Heikki, *European Acoustic Heritage,* Tampere University of Applied Sciences (TAMK), 2012.

LaBelle, Brandon. *Acoustic Territories: Sound Culture and Everyday Life*. London: Continuum, 2010.

Lenzerini, Federico. "Intangible Cultural Heritage: The Living Culture of Peoples", *European Journal of International Law, 22(1)*: 101-120, 2011.

McLean, Kathleen. *Planning for People in Museum Exhibitions,* Association of Science Technology Centers. 1993.

Metin Basat, Ezgi. "Somut ve Somut Olmayan Kültürel Mirası Birlikte Koruyabilmek", *Milli Folklor 25*: 61-71, 2013.

Mountcastle, Amy. "Safeguarding Intangible Cultural Heritage and the Inevitability of Loss: A Tibetan Example", *Stud. Ethnol. Croat., 22*:339-359, 2010.

Munjeri, Dawson. "Tangible and Intangible Heritage: from difference to convergence", *Museum International, 56*: 12–20, 2004.

Norman, Donald A. *The Design of Future Things*, Basic Books, 2008.

Oğuz, M. Öcal. *Somut Olmayan Kültürel Miras Nedir?*, Ankara: Geleneksel Yayınları, 2009.

Oğuz, M. Öcal. (ed.) *Turkey's Intangible Cultural Heritage*, Ankara, 2010.

Paquette, D. & McCartney A. Soundwalking and the Bodily Exploration of Places,

Pearce, Susan M. "Collecting Reconsidered", In G. Kavanagh (ed.) *Museum Languages: Objects and Texts*: 137-153, Leicester: Leicester University Press, 1991.

Raimbault, M. "Qualitative Judgements of Urban Soundscapes: Questioning Questionnaires and Semantic Scales", *Acta Acustica united with Acustica 92*: 929-937, 2006.

Revesz, Geza. Introduction to the psychology of music, Dover books, 2001.

Rosenthal, M. *Understanding Installation Art from Duchamp to Holzer*, Prestel, 2003.

Russel, R. & Winkworth, K., *Significance2.0: A Guide to Assessing the Significance Collections,* Collections Council of Australia, 2009.

Russolo, Luigi. *The Art of Noise (futurist manifesto, 1913),* New York: Something Else Press, 1967.

Schafer, R. Murray. *Our Sonic Environment and the Tuning of the World - The Soundscape,* Vermont: Destiny Books Rochester, 1977.

Serrell, Beverly. *Exhibit Labels: An Interpretive Approach*, New York: Altamira, 1996.

Shedroff, Nathan. *Experience Design: A Manifesto for Design of Experiences.* Experience Design Books, 2009.

Shedroff, Nathan. *Make it so*, Rosenfeld: New York, 2012.

Simon, Nina. *The Participatory Museum*, 2010, Available at: http://www.participatorymuseum.org/ (last accessed 20 July 2014).

Singh, J. P. with Sever, N., "Measurement and Definition of Intangible Cultural Heritage: Recommendations from the Existing Literature", *UNESCO Institute for Statistics, Montreal*, 2009.

Smith, Mark M. (ed.) *Hearing History: A Reader*, Athens, Georgia: The University of Georgia Press, 2004.

Smith, Mark M. "Producing Sense, Consuming Sense, Making Sense: Perils and Prospects for Sensory History", *Journal of Social History 40, no. 4*: 841–858, 2007.

Southern, K. "Exhibitions are Our Forum for Debating Change", *Museum News, Vol. 68,* No.8, November/December, p.104, 1989.

Sterne, Jonathan (ed.) *The Sound Studies Reader*, New York: Routledge, 2012.

Tahiroğlu, K., Özcan, O. & Ikonen, A., "Sound in New Media and Design Studies", *Design Issues Vol 30 (2)*, MIT Press, 2014.

Thompson, E. *The Soundscape of Modernity: Architectural Acoustics and the Culture of Listening in America 1900-1933*, Cambridge: MIT Press, 2002.

Thorogood, M., Pasquier, P. & Truax, B. "Toward an Ontological Representation of the World", n.d.

Truax, B. *Handbook for Acoustic Ecology*, World Soundscape Project, Simon Fraser University, and ARC Publications.

Truax, B. *Acoustic Communication 2nd edition*. Westport, CT: Greenwood Press, Available at http://www.sfu.ca/sonic-studio/handbook/Alphabet_list.html#D_Anchor, 2001 (last accessed 1 March 2017).

UNESCO. Convention for the Safeguarding of the Intangible Cultural Heritage, 2003, Available at: http://unesdoc.unesco.org/images/0013/001325/132540e.pdf (last accessed 1 March 2017).

UNESCO. What is Intangible Cultural Heritage? e-leaflet. Available at http://www.unesco.org/culture/ich/doc/src/01851-EN.pdf (last accessed 1 March 2017).

Uysal, A.E. "Street Cries in Turkey", *Journal of American Folklore 81*: 193-215, 1968.

Verhaar, J. & Meeter, H. *Project Model Exhibitions*, Leiden: Reinwardt Academie, 1989.

Vecco, Marilena. "A Definition of Cultural Heritage: From the Tangible to the Intangible", *Journal of Cultural Heritage 11, no. 3*: 321–324, 2010.

Westerkamp, Hildegard. "Soundwalking", *Sound Heritage 3(4)*, pp.18-27, 1974.

Westerkamp, Hildegard. “Soundwalking as Ecological Practice”, Proceedings for the International Conference on Acoustic Ecology, 2006.

Yelmi, Pınar. 2013. Soundtourist: An Unconventional Guide for the Sonic Discovery of Istanbul. *SBU Philosophy and the Arts Conference Proceedings,29-30 March 2013, New York (Soundscapes and Territories).*

Yelmi, Pınar. 2015. Sound Museum of Istanbul. *International Journal of Heritage and Sustainable Development 4(1):193-200.*

Yelmi, Pınar. 2016. Protecting contemporary cultural soundscapes as intangible cultural heritage: Sounds of Istanbul. *International Journal of Heritage Studies 22(4):302-311.*

Yelmi, Pınar, Kuşcu, Hüseyin, and Yantaç, Asım Evren. 2016. Towards a sustainable system for a sound heritage archive by public participation: The Soundsslike Project. *Proceedings of the 9th Nordic Conference on Human-Computer Interaction, 71.*

Yelmi, Pınar. 2017. The Soundscape of Istanbul: Exploring the public awareness of urban sounds. *International Journal of Social Science and Humanity 7(5):260-268.*

Yelmi, Pınar, and Kakı, Sertaç. Forthcoming. Designing an experiential exhibition for raising public awareness of cultural sounds to safeguard the sonic intangible cultural heritage values.

Yim, Dawnhee. “Living Human Treasures and the Protection of Intangible Cultural Heritage: Experiences and Challenges”, *ICOM News, no: 4*: 10-12, 2004.

Yin, Tongyun, “Museum and the Safeguarding of Intangible Cultural Heritage”, *The Ethic Arts, 6* (in Chinese), 2006.

Zardini, Mirko (ed.). *Sense of the City: An Alternative Approach to Urbanism*, Canadian Centre for Architecture, 2005.

7. APPENDICES

7.1. Work plan (2014-2017)

September '14	October '14	November '14	December '14	January '15
- Equipment purchase	- Equipment purchase - Organization & planning	- Equipment purchase - Photography training - Online survey - Interviews (pilot - Beşiktaş) - Symposium and Workshop on Foundations in Art @RCAC	- Equipment arrived - Photography training - Analysis of online survey - Article related to survey analysis - List and timeline of current urban / cultural sounds - Kültürel Miras ve Kültürel Bellek Sempozyumu @VEKAM	- Sound recording and editing training session with Sertaç Kakı - Creating metadata & designing archive system with librarians - Article related to survey analysis

February ‘15	March ‘15	April ‘15	May ‘15	June ‘15
- Work Study Students Team! - Field recordings - Documenting the soundmarks/sites through supplementary photography and video - Editing the documents - Creating the metadata - Interviews - Article related to survey analysis - Project website	- Field recordings - Documenting soundmarks / sites through supplementary photography and video - Editing the documents - Creating the metadata - Interviews - Article related to survey analysis	- Field recordings - Documenting soundmarks / sites through supplementary photography and video - Editing the documents - Creating the metadata - Interviews - Article related to survey analysis - Soundwalks	- Field recordings - Documenting soundmarks / sites through supplementary photography and video - Editing the documents - Creating the metadata - Interviews - Cultures in Sustainable Futures Conference 6-8 May 2015 Helsinki	- Field recordings - Documenting soundmarks / sites through supplementary photography and video - Editing the documents - Creating the metadata - Interviews - Archiving in KU digital collections

July ‘15	August ‘15	September ‘15	October ‘15	November ‘15
- Field recordings - Documenting soundmarks / sites through supplementary photography and video - Editing the documents - Creating the metadata - Interviews - Archiving in KU digital collections	- Field recordings - Documenting soundmarks / sites through supplementary photography and video - Editing the documents - Creating the metadata - Editing the metadata (by Vicky Taylor) - Interviews - Archiving in KU digital collections - Researching existing exhibition strategies and designs	- Field recordings - Documenting soundmarks / sites through supplementary photography and video - Editing the documents - Creating the metadata - Editing the metadata (by Vicky Taylor) - Interviews - Archiving in KU digital collections - Exhibition design - Conferences (SOIMA & IASA)	- Field recordings - Documenting soundmarks / sites through supplementary photography and video - Editing the documents - Creating the metadata - Editing the metadata (by Vicky Taylor) - Interviews - Archiving in KU digital collections - Exhibition design	- Field recordings - Documenting soundmarks / sites through supplementary photography and video - Editing the documents - Creating the metadata - Editing the metadata (by Vicky Taylor) - Interviews - Archiving in KU digital collections - Exhibition design - Acquisition of equipment for the exhibition

December ‘15	January ‘16	February ‘16	March ‘16	April ‘16
- Field recordings - Documenting soundmarks / sites through supplementary photography and video - Editing the documents - Creating the metadata - Editing the metadata (by Vicky Taylor) - Interviews - Archiving in KU digital collections - Preparing audio files & final preparations for exhibition installation - Associate Partners with Europeana Sounds!	- Exhibition @RCAC 7 Jan. - Collecting data from visitors for visitor research (surveys & social media) - Editing the documents - Creating the metadata - Editing the metadata (by Vicky Taylor)	- Exhibition @RCAC - Collecting data from visitors for visitor research (surveys & social media) - Soundsslike paper	- Exhibition @RCAC 20 March - Collecting data from visitors for visitor research (surveys & social media) - Soundsslike paper - Workshops for developing the Soundsslike Project - Completing the sound collection at library	- 1-2 April: Symposium @RCAC - 6-9 April: Museums and the Web Conference 2016 - Soundsslike paper submission to NordiCHI - Project webpage updated

May ‘16	**June ‘16**	**July ‘16**	**August ‘16**	**September ‘16**
- Exhibition design - Exhibition paper - Developing Soundsslike website	- Exhibition design - 10 June: International Archives Day @RCAC - Exhibition @Studio X: 24 June - Sound and City Workshop - Developing the Soundss-like website	- Sound and Children Workshop - Sound and Archive Work-shop - Sound and Culture Work-shop - Exhibition @Studio X: 23 July - ICCKS paper revision	- NordiCHI-paper revision - Exhibition paper: Evalua-tion of exhibi-tion design process (writ-ten report on challenges and successful outcomes)	- Exhibition paper: Evalua-tion of exhibi-tion design process (writ-ten report on challenges and successful outcomes)
October ’16	**November ’16**	**December ’16**	**January ’17**	**February ’17**
- NordiCHI ’16: 23-27 Oct., Gothen-burg, Sweden	- Seed Fund Presentation: 25 Nov.	- Transferring “The Sound-scape of Istan-bul” collection to Europeana Sounds	- ICCKS Con-ference: 5-7 January, Kuala Lumpur	- Thesis

March ‘17	**April ‘17**	**May ‘17**	**June ‘17**	**July ‘17**
- Thesis	- Thesis	- Thesis - Research @British Library	- Thesis - Research @British Library	- Thesis - Research @British Library

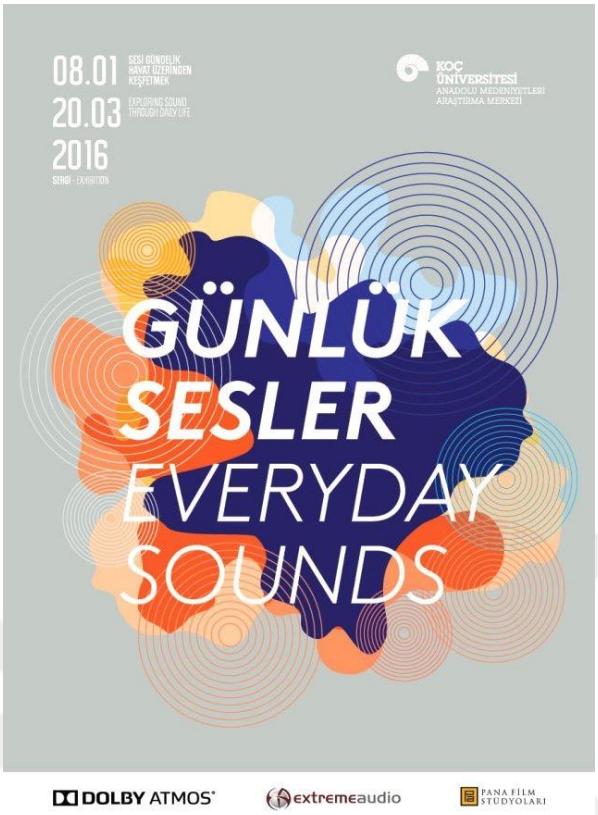
7.2. Catalogue of sounds

1	Ahşap Oyma / Wood Carving	**61**	Fasıl / Raki Fasil Night
2	Akbil / Ticket Card	**62**	Fasıl / Raki Fasil Night
3	Akbil / Ticket Card	**63**	Fayton / Phaeton
4	At Yarışı / Horse Race	**64**	Fayton / Phaeton
5	At Yarışı / Horse Race	**65**	Fayton / Phaeton
6	At Yarışı / Horse Race	**66**	Fayton / Phaeton
7	At Yarışı / Horse Race	**67**	Fener Alayı / Torchlight Procession
8	At Yarışı / Horse Race	**68**	Fener Alayı / Torchlight Procession
9	At Yarışı / Horse Race	**69**	Fener Alayı / Torchlight Procession
10	At Yarışı / Horse Race	**70**	Fener Alayı / Torchlight Procession
11	Balıkçılar / Fishermen	**71**	Fener Alayı / Torchlight Procession
12	Balıkçılar / Fishmongers	**72**	Fener Alayı / Torchlight Procession
13	Balıkçılar / Fishmongers	**73**	Fener Alayı / Torchlight Procession
14	Balıkçılar / Fishmongers	**74**	Füniküler (Tünel) / Funicular
15	Balık-Ekmekçi / Fish Sandwich Vendor	**75**	Garson / Waiter
16	Balık-Ekmekçi / Fish Sandwich Vendor	**76**	Garson / Waiter
17	Balık-Ekmekçi / Fish Sandwich Vendor	**77**	Gece Hayatı / Night Life
18	Bayram Namazı / Eid Prayer	**78**	Hurdacı / Old Goods Collector
19	Bayram Namazı / Eid Prayer	**79**	İlahi / Chant
20	Boğaz Turu / Bosphorus Tour	**80**	İlahi / Chant
21	Boğaz Turu / Bosphorus Tour	**81**	İlahi / Chant
22	Boğaz Turu / Bosphorus Tour	**82**	İlahi / Chant
23	Boğaz Turu / Bosphorus Tour	**83**	İlahi / Chant
24	Cam Üfleme / Glass Blowing	**84**	İlahi / Chant
25	Çay / Tea	**85**	İlahi / Chant
26	Çay / Tea	**86**	İlahi / Chant
27	Çaycı / Tea Vendor	**87**	İlahi / Chant
28	Çaycı / Tea Vendor	**88**	İlahi / Chant
29	Çekirdekçi / Sunflower Seeds Vendor	**89**	İlahi / Chant
30	Çiçekçi / Flower Seller	**90**	İlahi / Chant
31	Çocuklar / Children	**91**	İlahi / Chant
32	Dalgalar / Waves	**92**	İlahi / Chant
33	Denizden Haç Çıkarma / Ta Fota Feast	**93**	İlahi / Chant
34	Denizden Haç Çıkarma / Ta Fota Feast	**94**	İlahi / Chant
35	Denizden Haç Çıkarma / Ta Fota Feast	**95**	İlahi / Chant
36	Dolmuş / Minibus	**96**	İlahi / Chant
37	Dolmuş / Minibus	**97**	İlahi / Chant
38	Dolmuş / Minibus	**98**	İlahi / Chant
39	Dolmuş / Minibus	**99**	İlahi / Chant
40	Dolmuş / Minibus	**100**	İlahi / Chant
41	Dondurma / Ice Cream	**101**	İlahi / Chant
42	Dondurma / Ice Cream	**102**	Işık Ayini / Holy Fire
43	Dondurma / Ice Cream	**103**	Işık Ayini / Holy Fire
44	Döner / Doner Kebap	**104**	Kestaneci / Seller of Roasted Chestnuts
45	Döner / Doner Kebap	**105**	Kestaneci / Seller of Roasted Chestnuts
46	Ezan / Call to prayer	**106**	Köfteci / Meatball Seller
47	Ezan / Call to Prayer	**107**	Kokoreç / Grilled Sheep's Intestines
48	Ezan / Call to Prayer	**108**	Kokoreç / Grilled Sheep's Intestines
49	Ezan / Call to Prayer	**109**	Kokoreç / Grilled Sheep's Intestines
50	Ezan / Call to Prayer	**110**	Kumpirci / Baked Potato Seller
51	Ezan / Call to Prayer	**111**	Kumpirci / Baked Potato Seller
52	Ezan / Call to Prayer	**112**	Kumpirci / Baked Potato Seller
53	Ezan / Call to Prayer	**113**	Kuşlar / Birds
54	Fasıl / Raki Fasil Night	**114**	Kuşlar / Birds
55	Fasıl / Raki Fasil Night	**115**	Kuşlar / Birds
56	Fasıl / Raki Fasil Night	**116**	Kuşlar / Birds
57	Fasıl / Raki Fasil Night	**117**	Kuşlar / Birds
58	Fasıl / Raki Fasil Night	**118**	Kuşlar / Birds
59	Fasıl / Raki Fasil Night	**119**	Kuşlar / Birds
60	Fasıl / Raki Fasil Night	**120**	Kutsal Işık / Holy Fire

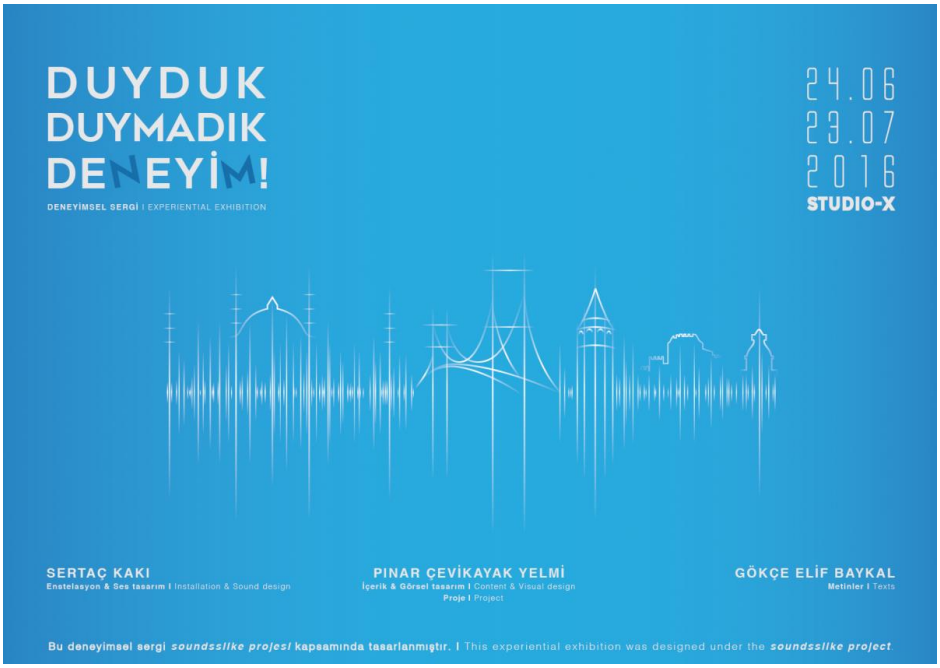
121	Kutsal Işık / Holy Fire	**181**	Tavla / Backgammon
122	Lokmacı / Turkish Doughnut Seller	**182**	Tezahürat / Cheers
123	Macuncu / Ottoman Paste Seller	**183**	Tezahürat / Cheers
124	Macuncu / Ottoman Paste Seller	**184**	Tezahürat / Cheers
125	Macuncu / Ottoman Paste Seller	**185**	Tezahürat / Cheers
126	Maraton / Marathon	**186**	Tezahürat / Cheers
127	Maraton / Marathon	**187**	Tezahürat / Cheers
128	Maraton / Marathon	**188**	Tezahürat / Cheers
129	Maraton / Marathon	**189**	Tezahürat / Cheers
130	Martılar / Seagulls	**190**	Tezahürat / Cheers
131	Martılar / Seagulls	**191**	Tezahürat / Cheers
132	Martılar / Seagulls	**192**	Tezahürat / Cheers
133	Martılar / Seagulls	**193**	Tezahürat / Cheers
134	Metro / Metro	**194**	Tezahürat / Cheers
135	Metro / Metro	**195**	Tezahürat / Cheers
136	Midye Tava / Fried Mussels	**196**	Tezahürat / Cheers
137	Motor / Ferry	**197**	Tezahürat / Cheers
138	Motor / Ferry	**198**	Tezahürat / Cheers
139	Motor / Ferry	**199**	Tezahürat / Cheers
140	Motor / Ferry	**200**	Tezahürat / Cheers
141	Motor / Ferry	**201**	Tören / Ceremony
142	Motor / Ferry	**202**	Tören / Ceremony
143	Motor / Ferry	**203**	Tören / Ceremony
144	Ördekler / Ducks	**204**	Tören / Ceremony
145	Ördekler / Ducks	**205**	Tören / Ceremony
146	Ördekler / Ducks	**206**	Tören / Ceremony
147	Otobüs / Bus	**207**	Tören / Ceremony
148	Otobüs / Bus	**208**	Tören / Ceremony
149	Patlamış Mısırcı / Popcorn Seller	**209**	Tören / Ceremony
150	Pazarcı / Market Vendor	**210**	Tören / Ceremony
151	Pazarcı / Market Vendor	**211**	Tören / Ceremony
152	Pazarcı / Market Vendor	**212**	Tören / Ceremony
153	Pazarcı / Market Vendor	**213**	Tören / Ceremony
154	Pazarcı / Market Vendor	**214**	Tören / Ceremony
155	Pazarcı / Market Vendor	**215**	Tören / Ceremony
156	Pazarcı / Market Vendor	**216**	Tören / Ceremony
157	Ramazan Davulcusu / Ramadan Drummer	**217**	Tören / Ceremony
158	Ramazan Davulcusu / Ramadan Drummer	**218**	Tören / Ceremony
159	Ramazan Davulcusu / Ramadan Drummer	**219**	Tören / Ceremony
160	Simitçi / Turkish Bagel Vendor	**220**	Tören / Ceremony
161	Simitçi / Turkish Bagel Vendor	**221**	Tören / Ceremony
162	Sokak Müzisyenleri / Street Musicians	**222**	Trafik Anonsu / Traffic Announcement
163	Sokak Müzisyenleri / Street Musicians	**223**	Tramvay (Nostaljik) / Nostalgic Tramway
164	Sokak Müzisyenleri / Street Musicians	**224**	Tramvay (Nostaljik) / Nostalgic Tramway
165	Sokak Müzisyenleri / Street Musicians	**225**	Tramvay (Nostaljik) / Nostalgic Tramway
166	Sokak Müzisyenleri / Street Musicians	**226**	Tramvay (Nostaljik) / Nostalgic Tramway
167	Sokak Müzisyenleri / Street Musicians	**227**	Tramvay (Nostaljik) / Nostalgic Tramway
168	Sokak Temizleme Aracı / Street Cleaner	**228**	Tramvay (Nostaljik) / Nostalgic Tramway
169	Su / Water	**229**	Tramvay / Tramway
170	Su / Water	**230**	Tramvay / Tramway
171	Su / Water	**231**	Tren / Train
172	Su / Water	**232**	Tren / Train
173	Su / Water	**233**	Turşucu / Pickles Vendor
174	Su / Water	**234**	Vapur / Ferry
175	Su / Water	**235**	Vapur / Ferry
176	Taraftar Ürünleri Satıcısı / Fan Products Vendor	**236**	Vapur / Ferry
177	Tasavvuf Dinletisi / Sufi Music	**237**	Vapur / Ferry
178	Tavla / Backgammon	**238**	Vapur / Ferry
179	Tavla / Backgammon	**239**	Vapur / Ferry
180	Tavla / Backgammon	**240**	Vapur / Ferry

7.3. Posters

Posters of the soundwalks



Poster of the interactive exhibition (Everyday Sounds @ANAMED)



Poster of the experiential exhibition (Duyduk Duymadık Deneyim! @Studio-X Istanbul)

7.4. List of figures

Part II: Publications

8. PAPER A:

Soundtourist: An unconventional guide for the sonic discovery of Istanbul

This paper is a summary of my master thesis project *"Attraverso i suoni. Guida non-convenzionale per la città di Istanbul: Soundtourist"* in the program of Communcation Design at Politecnico di Milano (Çevikayak, 2012). It presents a new way to challenge the ocularcentric experience of cities, by introducing an unconventional guide system which helps discovering the city of Istanbul through its sounds. As urban culture can be defined as a combination of all elements that differentiate one city from another, it necessarily includes visual, aural, olfactory, gustatory and tactile dimensions. The project *"Soundtourist"* is focused on the most characteristic aural elements of Istanbul. Technological development and the fragmented nature of urban planning in Istanbul have led to an inevitable extinction of some traditions, including their sonic values such as the cries of street vendors. This rapid change necessitates the preservation of cultural heritage. The main concern of this project is to present the sonic culture and to inform both foreign tourists and domestic visitors with the help of this guide system, by providing a further level of awareness of the acoustic environment.

SOUNDTOUR*IST*: AN UNCONVENTIONAL GUIDE FOR THE SONIC DISCOVERY OF ISTANBUL*

Abstract

This paper presents a new way to challenge the ocularcentric experience of cities, by introducing an unconventional guide system which helps discovering the city of Istanbul through its sounds. As urban culture can be defined as a combination of all elements that differentiate city one from another, it necessarily includes visual, aural, olfactory, gustatory and tactile dimensions. The project "Soundtourist" is focused on the most characteristic aural elements of Istanbul. Technological development and the fragmented nature of urban planning in Istanbul have led to an inevitable extinction of some traditions, including their sonic values such as the cries of street vendors. This rapid change necessitates the preservation of cultural heritage. As R. Murray Schafer, the "father" of soundscape studies states, "Once a soundmark is identified, it deserves to be protected, for soundmarks make the acoustic life of the community unique."[1] The main concern of this project is to present and preserve sonic culture and to inform both foreign tourists and domestic visitors with the help of this guide system, by providing a further level of awareness of the acoustic environment.

Introduction

In how far is a specific urban culture based on sounds? How can we challenge ocularcentric experiences of cities, particularly tourist experiences which are often shaped by the visual medium of a guide book? To emphasize the importance of sounds in urban culture, I have designed an unconventional guide system aiming to make people more aware of the soundscape of Istanbul. Its target is not only tourists, but also local residents because even locals often do not realize the significance of acoustic relationships in their urban environment. Any emerging technology influences the sonic environment and eventually causes some of its elements to become extinct. However, technology also offers opportunities for preserving the soundscape, as the digital media used in this project illustrates. Technology can assist in creating greater awareness of the acoustic environment.

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[1] Schafer, R. Murray, *Our Sonic Environment and the Tuning of the World: The Soundscape,* (Rochester, VT: Destiny Books, 1994), 10.

** This paper is based on my MA thesis project (2012) in the program of Communication Design at Politecnico di Milano.*

Soundtour*ist*

"Soundtour***ist***" is a concept guide system project, designed for Istanbul. It aims to bring a new approach to ordinary guide formats in terms of its contents and usage. Its most significant difference from conventional guides is that it is based on the sonic environment of the city. Rather than guiding tourists "sight-seeing," it is focused on listening to the city and hearing what it says. "Soundtour***ist***" creates paths according to characteristic sonic elements of the city and makes its users aware of the sounds around them.

Since to this date there is no interactive project based on Istanbul's acoustic environment, I want to fill this gap by designing an extraordinary guide. "Soundtour***ist***" is the first and the only guide that introduces the city with its everyday life through its sonic urban environment.

History of Istanbul

Istanbul has a very rich cultural soundscape thanks to its history reaching back as far as the Neolithic era. The city has hosted numerous cultures and many peoples of different backgrounds, and it was the capital of both the Byzantine and Ottoman Empires and now is the most important city of the Turkish Republic, with a population of 13.6 million residents officially (according to 2011 statistics) and 20 million unofficially.

As capital of the Christian Byzantine Empire from 330 to 1453, it housed innumerable churches, including the Patriarchate. Under Ottoman Imperial rule from 1453 to 1923, different Christian communities continued to use churches (even though they were not allowed to ring their bells), while hundreds of mosques broadcast the Islamic call to prayer. Each community –Muslim, Christian, but also Jewish– has its own sonic heritage related to its religious and everyday practices, its music, favored professions and food production, for example. With the advent of modernity, the sounds of trains, tramways, steamships, motorized vehicles, and so on have created new layers in Istanbul's sonic environment.

As a result of being subject to a large diversity in terms of religion, ethnicity and language, but also cultures and traditions, has formed and continues to develop a very rich acoustic environment. Being located as a bridge between Asia and Europe, Istanbul has great importance in combining European and Middle Eastern cultures. The presence of these two different cultures shapes the everyday life of the city by creating contrasts within the same society.

Classification of Sonic Culture

Raymond Murray Schafer was the first to introduce the term "soundscape". He has devoted his life on soundscape studies and conducted a series of research and field work across the world. As a result of his studies, he published his most famous book –Our Sonic Environment and The Tuning of the World: The Soundscape. According to Schafer, classification is necessary to understand differences and similarities between sounds. He has classified sounds in four different ways: according to their physical characteristics (acoustics), the way in which they are perceived (psychoacoustics), their function and meaning (semiotics), and their emotional or affective qualities (aesthetics).[2]

When culture is considered, there are many aspects to be taken into account such as religion, food, music, folkloric dance, way of living, shopping, transportation, local clothes, language accents; i.e. everything related to that specific society. The point of interest in this project is the everyday life of Istanbul's residents and how it is reflected in sounds. A great majority of cultural elements has aural dimensions, and "Soundtour***ist***" focuses on those very traditions. The sounds of interest in this project are somewhat related to one of Schafer's classes, aesthetic qualities, but overall "Soundtour***ist***" is focused on the importance of sounds in daily life rather than their pleasant or annoying qualities.

I have developed my own classification method and divided sounds into six categories according to the traditions to which they belong. For the categorization of sounds, I have selected the most basic activities of everyday life— religion, shopping, transportation, events, food and entertainment. The chosen categories for both primary and secondary sounds (to be explained in detail below) are then analyzed according to Schafer's classification based on referential aspects which is about the sources of sounds such as society, nature, people, signals and even silence. It is very important to understand in which ways the sounds are produced in relation to each tradition. The chosen sounds are also very closely related to the characteristics of the sonic environments of certain zones as well as of the whole city. Therefore, places carry as much importance as the sounds themselves in this project.

As Schafer has stated, there are three features of the soundscape: keynote sounds, signals and soundmarks. Keynote sounds are the determinative sounds for an area. Signals are the foreground sounds to which we listen consciously. The term "soundmark" is derived from "landmark" and refers to the unique and the most characteristic sound of the place.[3] I have divided Istanbul's sounds into two types as primary and secondary, in order to emphasize the differences. Primary sounds are the

[2] Schafer, 1994, 133-150.
[3] Schafer, 1994, 9-10.

most representative ones for the city, and therefore can be considered soundmarks. Secondary sounds are ambient elements of the acoustic environment of the zones in which primary sounds are located.

Sounds and the city

The sound list (Table.1) below includes both the categorization according to importance in everyday life and according to the types of sounds. In the following, I will explain some characteristic sounds and their relationships to the culture of Istanbul.

	PRIMARY SOUNDS	SECONDARY SOUNDS
1. religion	1 Call to prayer at Sultanahmet Mosque	2 Call for dinner of ramadan at Yeni Camii in Eminonu 3 Friday prayer at Suleymaniye Mosque 4 Church bells of Ayayorgi
2. shopping	1 Artisans of Kapalicarsi	2 Fishermen of Kumkapi 3 Roma flowersellers in Ahirkapi 4 Chestnut sellers in Beyoglu
3. transportation	1 Nostalgic tram of Beyoglu 2 Ferries at pier in Besiktas 3 Horse-drawn carriages in Buyukada	4 Bicycles as public transportation on the island
4. events	1 Ahirkapi festival 2 Celebration of national festival of 29 October 3 Hooters of 10 November in Dolmabahce Palace	4 National festivals of 23 April, 19 May and 30 August at stadium
5. food	1 Boza of Vefa 2 Kokoreç at Nevizade 3 Antique boat restaurants of fish&bread 4 Kumpir of Ortakoy	5 Breakfast with simit in Eminonu 6 Drinking tea in Tophane 7 Gözleme of Ortakoy 8 Wet hamburger of Taksim
6. entertainment	1 Playing backgammon in Tophane 2 Smoking narghile in Tophane 3 Entertainment in fish&raki restaurants with belly dancers in Kumkapi	4 Feeding piegons in Sultanahmet Square 5 Street musicians of Istiklal 6 Football matches of Besiktas at Inonu

Table.1 – List of Sounds

As I have already stated, Istanbul has hosted many people of different religions under various rules. It has been the center of Christianity under Byzantium Empire and then it has become the capital of Ottoman Empire and an Islamic stronghold. It is now the biggest and most important city of the Turkish Republic with a great majority of Muslims and around three thousand active mosques today. One of the most important mosques is undoubtedly the Blue Mosque (Sultanahmet Camii). The Blue Mosque (1617) is located in the historical peninsula, just across the Hagia Sophia which was a church transformed into a mosque after the conquest in 1453, and into a museum in 1935. It is very

impressing to listen to the call to prayer which is called five times a day by a muezzin. There are many important mosques in the same area, namely Yeni Cami, Suleymaniye, etc., but I have selected the Blue Mosque because it is located in the heart of Istanbul's most historic neighborhood. [Sound sample_1]

In the same area, there are also two covered markets: the Grand Bazaar (Kapalicarsi) and the Spice Bazaar (Misir Carsisi). My primary sound list includes the artisans of the Grand Bazaar as it is one of the oldest and largest covered markets in the world. Being very large, it contains many streets. In each street, only one kind of good is sold, and the streets are called by the names of the artisans producing the goods to which they are dedicated. The sellers, today, speak almost ten languages to be able to communicate and bargain with tourists, and they do so very loudly. [Sound sample_2]

Turkish culture is also known for its distinctive cuisine. Kokorec is a type of street food which is generally eaten at night. Its preparation process is like a musical symphony for stomachs, played by the street peddler. The favorite Kokorec vendors are located in the Galata region where the heart of the night life beats in contemporary Istanbul. This is, of course, not a coincidence, being the center of entertainment famous for its taverns ever since the Genoese merchant colony lived there after the 13th century and where in the 19th century the first theatres, cafés and bars in the Ottoman Empire emerged. [Sound sample_3]

Another zone which is famous for entertainment is Tophane, as it hosts a large harbor. Today, the harbor is used as part of daily transportation within the city and to welcome tourists who arrive on cruise ships. The area has now become a center of culture and art in modern Istanbul with many galleries and museums. It also includes a large number of cafés and restaurants where mostly waterpipes are smoked while playing backgammon and drinking tea. [Sound samples_4, 5 and 6]

As Istanbul expands over time, transportation solutions have always been keeping pace with the changing conditions. In the 19th and 20th centuries there were tramways all around the city but now there are only two historical lines operating old cars left. The most important soundmark is the bells of the nostalgic tram in Beyoglu, which is still working up and down Istiklal Caddesi (the most crowded street in the city center). The other nostalgic tram (Kadikoy-Moda) is lost in the traffic noises and the fabric of city. [Sound sample_7]

How does "Soundtour*ist*" work?

"Soundtour***ist***" is a guide system with three devices: a website, a smart phone application and a sonic souvenir. The system is designed considering users' "pre-visit", "visit" and "post-visit" experiences. I have examined each period and assigned different tasks to the devices according to their technological capabilities. Allocating the purposes, I have defined the mission of each device to obtain the most efficient results. Table.2 below shows a schema which indicates usage scenarios of the system devices according to where and when the devices are used.

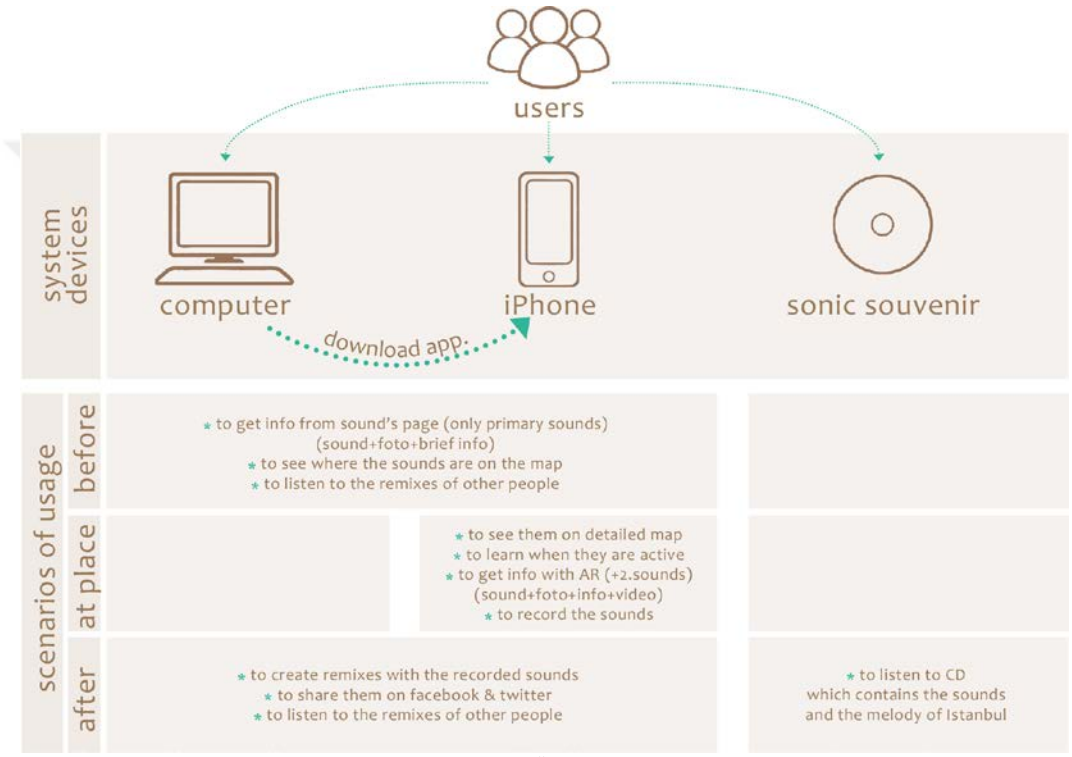

Table.2 – How does "Soundtour***ist***" work?

First of all, I want to reach as many people as possible and awaken their curiosity about the city. As internet is now an important part of our lives, I have chosen to design a website for the "pre-visit" experience for visitors from around the world, so that they will be able to access it whenever they want and from wherever they are. The website, on purpose, gives only clues about the most obvious points of interest in the city. By showing but not explaining what they really are, I aim to create great curiosity which will physically bring people to Istanbul.

Once they arrive in the city, users can use their smart phone applications more effectively than the website. In Istanbul, the application facilitates reaching the sounds at the appropriate point in time (for example, to arrive on time for the call to prayer), obtaining more information both aurally and visually and recording them with the help of smart phone technology. As visitors travel with their

applications activated, they will have the chance of discovering other typical elements of Istanbul's sonic culture. Moreover, when they are getting to know Istanbul more, they will also have the opportunity to create their own music of Istanbul with the sounds they have already recorded. Therefore, the visitors, during their journey with the "Soundtour***ist***" application switched on, obtain a unique touristic experience and return to their homes with a perspective of the urban environment different from the typical sight-seeing experience.

When they return, the "post-visit" experience starts with a sonic souvenir which will be waiting for them at home to remind them of Istanbul through its sounds. The sonic souvenir is designed only for aural purposes without any visual elements, aiming to revive the visitors' sonic memories.

Website

The website is created for future visitors to get a general idea about listening to Istanbul's most characteristic sounds. It contains only primary sounds with brief explanations and visual references and clues of where they are located. There is also the possibility of listening to remixes that have been created by previous users. Users can play with their own recorded sounds and create new remixes as well. Table.3 below indicates the system of the website.

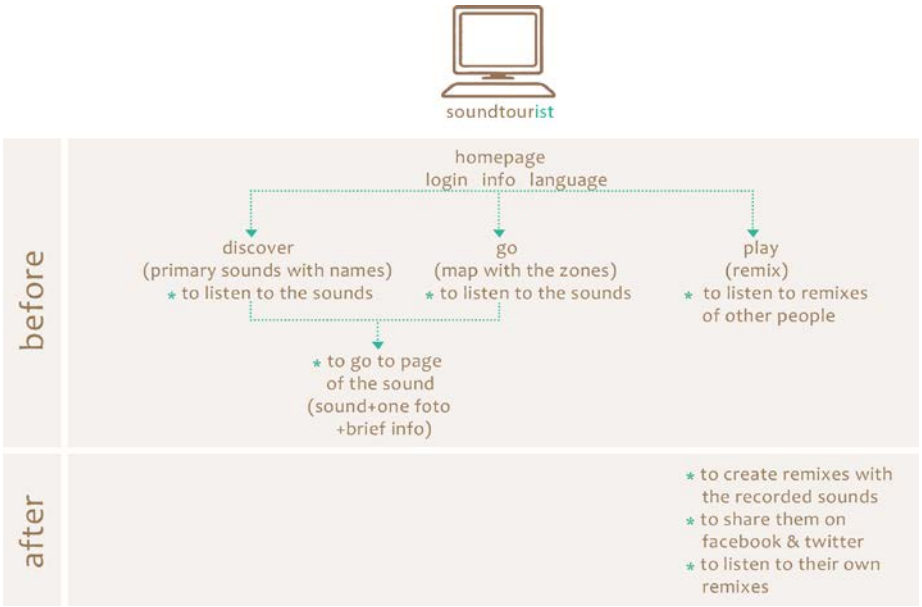

Table.3 – System of the website

Smart phone Application

The smart phone application has more functions compared to the website due to its mobility and technological capabilities. Its system is shown in Table.4 below. In Istanbul, at the locations of interest, the smart phone application is used for various purposes: finding where the sounds are located by means of two ways of navigation—that is, on a map indicating the user's location and the paths to the sounds with GPS, and activating the augmented reality component to show which way to follow with the help of the arrows.

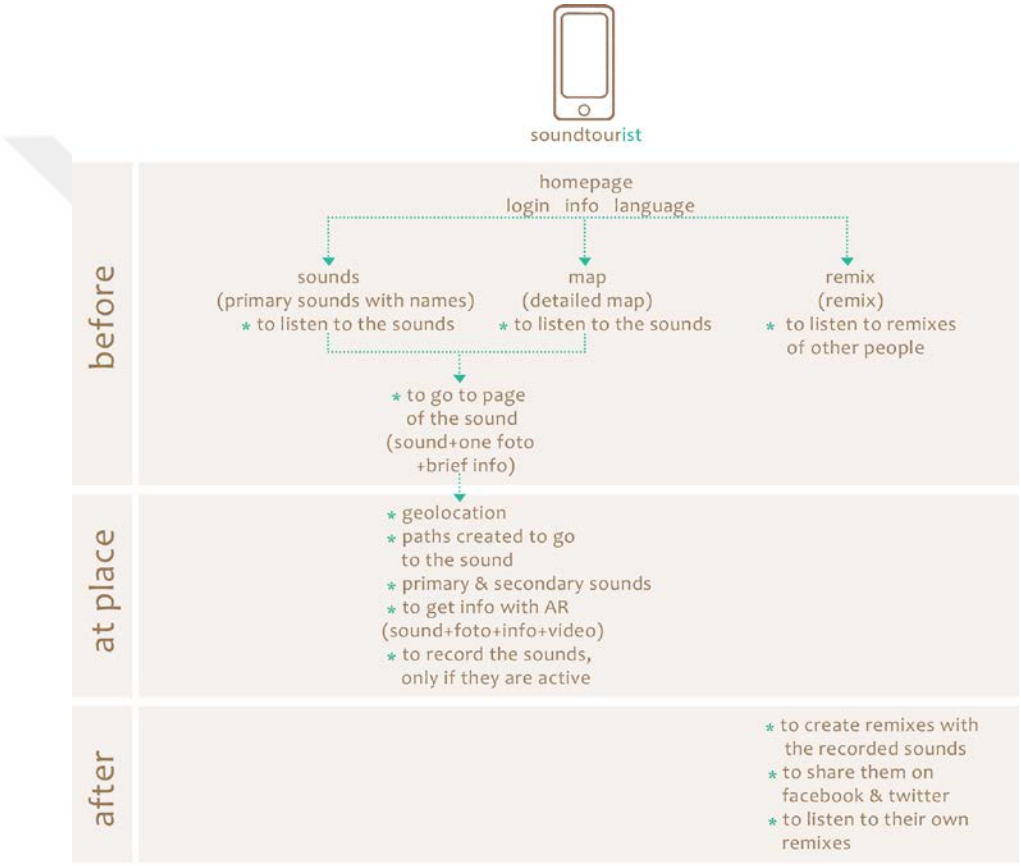

Table.4 – System of the application

The application includes also a timeline to show which sounds can be heard when so that visitors have the chance to listen to them live and to record them to use when they are creating their own remixes. If they cannot arrive at the location on time, they can also listen to representative sounds from the application guide. Table.5 and Table.6 below show the timeline of both primary and secondary sounds. The sounds can be heard at different moments depending mostly on their categories. The sounds of everyday behaviors repeat themselves daily whereas annual events, of course, happen once in a year. For example, national or religious festivals, which are listed under the category "events", are celebrated on certain days every year. However, even in the same category, actions may take place at

different times of day. For instance, kokorec is eaten only at night so it is only possible to hear its sounds then. In other cases, some foods—such as ice cream with mastic from Maras, which is beaten with a metal rod— are consumed only seasonally. There are also some sounds that are heard once a week, like the congregational Friday prayers. It certainly would be impossible for a tourist on a one-week trip to listen to all these sounds live. This application provides a detailed timeline of sounds to help visitors plan their trips and draw their paths to arrive at the right places on time, but even if they cannot catch specific sounds live, the application includes also representative versions to provide a more complete experience of the city's sounds.

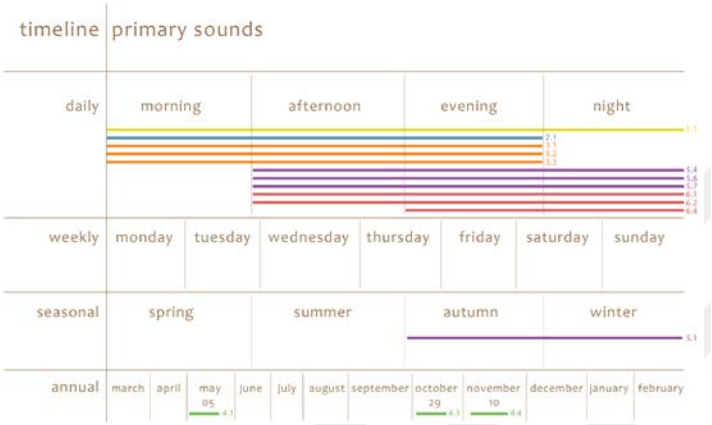

Table.5 – Timeline of primary sounds

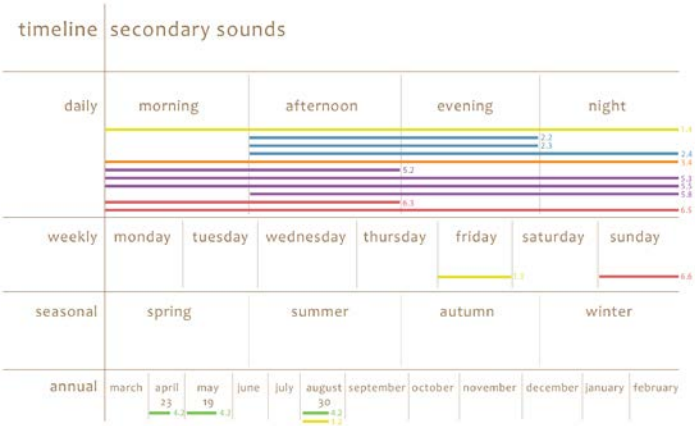

Table.6 – Timeline of secondary sounds

In the application, it is also possible to get additional information about the sounds, with short articles and pictures. When the user visits and listens to primary sounds, then there appear secondary sounds which are complementary characteristics of the zone. Thus, the application provides a higher level of awareness that is needed to discover the city more in-depth.

Sonic Souvenir

After visiting five primary sounds, the users are presented with a pop-up form to fill in order to receive a sonic souvenir which is a CD. This gift will be waiting for visitors at home. The sonic souvenir includes acoustic memories that they will always remember the times in Istanbul, especially the most characteristic sounds like call to prayer in Blue Mosque, nostalgic tram of Beyoglu, drinking tea, playing backgammon, smoking narghile in Tophane, etc.

Interfaces of the system

As for the graphics and interface, I have used as a unifying element the silhouette of Istanbul with its most characteristic monuments—Hagia Sophia, Galata Tower, Bosphorus Bridge, Rumeli Fortress, and Maiden's Tower – but designed it to look like sound waves as shown in Table.7. The sound icons on which the users will click are circular, in reference to the way in which sound waves expand in circular form. Because users should concentrate their attention on sound rather than visual elements, the sound icons, and the entire interface in general, is kept deliberately simple. Still, in order to indicate that this soundscape project combines both past and present, or history and digital technology, I have selected a modern font on one hand, and so-called "retro" colors on the other hand. Also, the sonic souvenir—a digital file on a CD sent by snail mail– bridges both past (mail) and present (digital format). In Table.8 and Table.9, interfaces of the website and the application are displayed.

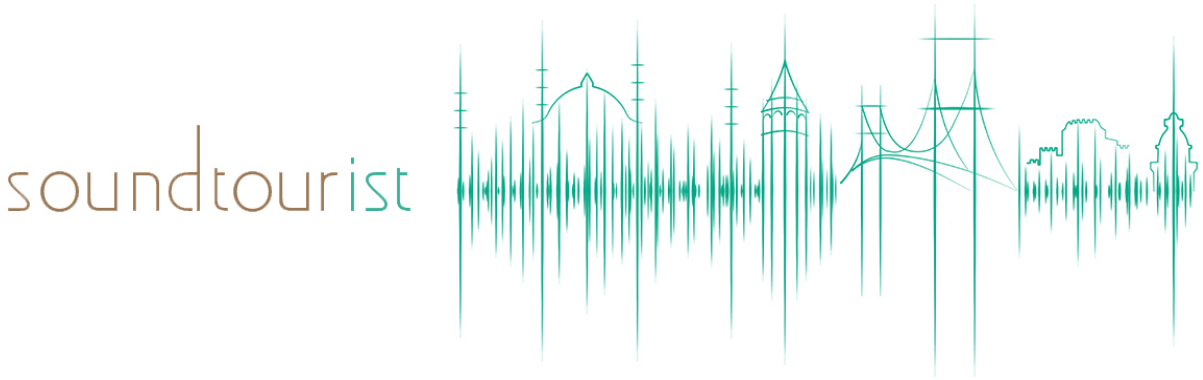

Table.7 – Logo and the silhouette

Table.8 – Interface of the website

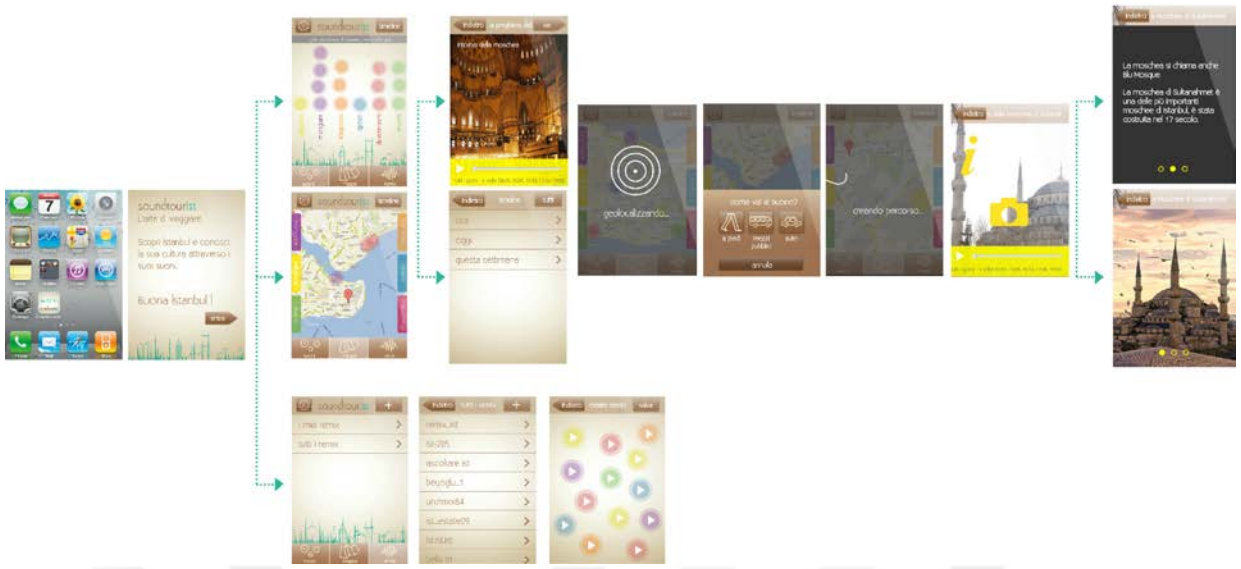

Table.9 – Interface of the application

Conclusion

"Soundtour***ist***" provides a unique city experience for foreign tourists and an opportunity for domestic visitors to discover their own urban culture. With this guide people will get to know Istanbul more in-depth through unexpected cultural elements, even though they may live with them every day. In short, it shifts our perception of the city and its traditions from ocularcentric notions to aural elements and emphasizes that these have an important place in daily life and culture.

This project will hopefully lead to further studies on the soundscape and its protection, not only for Istanbul but also for other cities or regions, and to a broader group of people considering relationships between sound and urban memory, sound and technology, as well as sound and urban territories.

Bibliography

Belgiojoso, Ricciarda, *Costruire con i suoni,* Franco Angeli s.r.l., Milano, 2009.

LaBelle, Brandon, *Background Noise: Perspectives on Sound Art,* Continuum International Publishing Group, London, 2006.

Ortayli, İlber, *Osmanliyi Yeniden Kesfetmek,* Timas Yayinlari, Istanbul, 2006.

Schafer, R. Murray, *Our Sonic Environment and the Tuning of the World: The Soundscape,* Rochester, VT: Destiny Books, 1994.

Som, Deniz, *Hey Istanbul I,* Cumhuriyet Kitaplari, Istanbul, 2007.

Tables

9. PAPER B:

Sound Museum of Istanbul

This paper introduces a very first draft of conceptualization of a museum project exhibiting the sonic environment of Istanbul. As sounds are distinctive elements of intangible cultural heritage, my objective is to capture, collect and protect them from a possible extinction and to increase public awareness of their importance and uniqueness. The paper draws the outline of the methods of recording the most characteristic sounds, archiving them in digital media and of displaying them with mobile installations, which can also be readapted to other museums or to various sites throughout the city. It is also planned that this museum project will allow us to add new recordings and to update it regularly since the soundscape and way of living are constantly changing in Istanbul. Therefore, even though recordings are frozen ICH elements, the collective soundscape will not, hopefully, represent a frozen moment in time. Being the first and only of its kind, the idea of a Sound Museum, has great importance for maintaining the sonic reflections of culture and for keeping them alive.

ISSN 1647-4112 (print) ISSN 2182-2751 (on line)
www.ijhsd.greenlines-institute.org

International Journal of Heritage and Sustainable Development
Vol. 4, No. 1, 2015, pp. 193-200

Sound Museum of Istanbul

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This paper introduces the conceptualization of a museum project which will exhibit the sonic environment of Istanbul. As sounds are distinctive elements of Intangible Cultural Heritage, my objective is to capture, collect and protect them from a possible extinction and to increase public awareness of their importance and uniqueness. Recording the most characteristic sounds, I will archive them in digital media and I will display them with mobile installations, which can also be readapted to other museums or to various sites throughout the city. Because the soundscape is constantly changing, this museum project will allow us to add new recordings and to update it regularly. Therefore, even though recordings are frozen ICH elements, the collective soundscape will not represent a frozen moment in time. Being the first and only of its kind, the Sound Museum, has great importance for maintaining the sonic reflections of culture and for keeping them alive.

Keywords: Sound Museum, everyday life, daily, traditions, sonic values, soundscape, Istanbul, intangible cultural heritage, acoustic environment.

Introduction

How many people can describe in detail the sonic world in which they are living? How many people realize the sonic values with which they are surrounded? Even when people notice them, do they consider them as a part of cultural heritage, or do they only perceive them as part of their everyday life?

This paper explores ways of raising the awareness of sonic environment within a museum concept. My project of musealization of intangible cultural heritage is to design a museum consisting of the sounds of Istanbul and exhibiting them through installations. The intention of establishing the Sound Museum of Istanbul is to make people aware of the daily acoustic environment that surrounds them. Everyday traditions are indeed fundamentals of cultural identity; however, these traditions and their sonic reflections are rarely ever consciously experienced in the moment, and unfortunately they get lost in the rhythms of daily life.

Moreover, intangible cultural heritage elements are also changing over time. If not protected, they will disappear, and so do their acoustic values. Once their sonic reflections are gone, it is not possible to create those sounds in their original form.

Hence I aim to collect and protect these sonic values and to create a public con-sciousness of the uniqueness and importance of the acoustic environment. In order for the sound heritage to have an adequate effect on visitors, experience design will be applied, rather than just playing the sounds.

In the next sections, I will give detailed information about properties of the main parts of the museum, such as collection, archive and exhibition. In the final section, I will mention potential future studies.

Museum

The Sound Museum of Istanbul, which is planned to be established within the coming three years in Istanbul (Turkey), will display the contemporary sounds of Istanbul which are unique expressions of sonic culture. They give the sense of connectedness and identity. However, these characteristic sounds are not realized within everyday life. Carrying the sounds which can be heard around the city into the museum, the exhibition has a tongue-in-cheek approach. The exhibition presents them to audience once more in a clear way. Bringing them inside, I will design an isolated space where the audience will focus on the sounds and realize their uniqueness in terms of cultural heritage. The whole objective of the project is for the visitors to have more conscious ears and a more conscious sense of aural perception than before.

What?

Sound is everywhere, as John Cage's famous phrase *"There is no such thing as si-lence".* No matter what type, level, quality or meaning it has, we hear it. First of all, there is a very crucial difference between sound and noise. To distinguish one from the other, we have to know the entire acoustic environment and its context. What is heard may be considered noise in one context and sound in another as they cannot be thought separate from their surroundings. To give a concrete example, traffic is definitely perceived as noise for those who are subject to hearing it at home, whereas for those who are in traffic, car horns are no longer considered noise, but sound-signals warning them (Redström, 1998). On the other hand, John Cage declares in his most famous book, Silence: *"Wherever we are, what we hear is mostly noise. When we ignore it, it disturbs us. When we listen to it, we find it fascinating" (Cage, 1961).*

We can classify sounds by using R. Murray Schafer's taxonomy. He puts forward several categories of classification based on physical characteristics, referential as-pects, and aesthetic qualities. To briefly explain, physical characteristics mainly concern duration, frequency, fluctuations and dynamics of sound. They define sounds with their quantitative physical features. Referential aspects give us information about sources that produce sounds. Its sub-categories include natural sounds, human sounds, sounds and society, mechanical sounds, quiet and silence, and sounds as indicators. According to Schafer, sorting sounds based on their aesthetic qualities is hardest to accomplish, as effects of sounds differ from society to society, from person to person, and even from context to context for the same person. This type of classification depends entirely on aesthetic values and perceptive differences of people and societies (Schafer, 1977).

If we are to describe an acoustic community, all relevant elements specific to that area have to be determined. For example, comparing a rural environment to an urban one, we hear completely different acoustic harmonies. In fact, they vary even among themselves from country to country or from region to region, depending on factors such as climate, agricultural properties, population, language, and nature. Or we can choose to observe a specific event or development, such as gentrification process of a certain place through the modification of its acoustic environment. This study, of course, differs from the previous one both in content and required type of research. Here, the goal is to determine the initial concept of the museum.

The very first step is to define the soundscape concept and the boundaries of the content of the acoustic environment to be put on display. The urban soundscape consists of different types of sounds and noises, such as natural sounds (wind, sea waves, birds, dogs, etc.), mechanical sounds (car horns, alarms, signals, etc.), musical sounds (street musicians, festivals, etc.) and so on, each of which can be explored under its own title. For example, the songs and cries of different types of birds of Istanbul can be considered in the context of the Natural Soundscape. Since in the Sound Museum of Istanbul, my focus is on the daily life and urban culture of Istanbul and their sonic values, I include only the sounds that belong to culture itself, no matter if they are produced by human, nature or by machines. Therefore, with the aim of emphasizing the city's everyday habits and lifestyle through their acoustic reflections, which are basically Istanbul's cultural sound heritage, I propose to use the term *Cultural Soundscape* to describe the content of the museum collection.

Even if my concentration is on sounds, they are not the initial point of the research process. I depart from the lifestyle of the city and from urban culture itself. Once the most characteristic traditions are determined, their acoustic qualities are explored. Not all the symbolic cultural items have sonic values; for example, there are many churches in Istanbul and they represent the diversity of religion in the city, but it was forbidden to ring church bells under the Ottoman Empire, and churches still continue to be silent in contemporary Istanbul. Hence, even though a fundamental cultural value may play a great role in the history of city and its culture, it may not be part of the collection of the Sound Museum of Istanbul. On the other hand, those who have also sonic values, such as the nostalgic tramway, the Ahırkapı festival, smoking nargile (water pipe), preparation of kokoreç (a kind of food), call to prayer, playing backgammon, stirring tea in a glass with a clinking spoon, marches on national festivals, car horns commemorating Atatürk (the founder of the Turkish Republic) every year on a specific day, and so on, are considered unique parts of the *Cultural Soundscape*.

Why?

Traditions and culture are not stable phenomena; they are evolving over time. Being part of intangible cultural heritage, they are endangered unless they are protected. Especially sonic culture is temporary in two aspects: First, traditions are changing, being quickly replaced due to transformed conditions of living, political situations, immigration, and so on. Secondly, the physical presence of sound depends on the factor of time. In order to listen to the same sound again, one has to rewind it or produce it once more in the same way. It might even be different from what has been heard before. In other words, unlike visual elements, sonic elements do not last for a long time. Hence they are twice endangered.

Today, the acoustic facets of Istanbul's past daily traditions, such as the cries of firemen (tulumbacılar) and street vendors are already lost due to a lack of protection. We see them in films or read about them in books, but we cannot hear them. We do not know their exact qualities. Only imagination can enliven them in our minds.

Thus, I aim to prevent at least the extinction of the present city's acoustic environment and to keep it for following generations.

How?

At present, the preliminary research toward the museum project consists of a review of primary sources, followed by soundwalking. The latter is a walk focused on listening and discovering the acoustic environment (to be discussed in greater detail below). Based on the soundwalk's findings, further, more focused research into textual sources continues, which in turn determines an adjustment of focus for additional soundwalks. As a result, a table of key traditions and daily habits including both the past and the contemporary city, day and night, will emerge for each region.

The process: first steps

As I mentioned above, my departure point is the daily city culture and then as a second step, exploring its sonic values. (Çevikayak, 2012) Starting from the historical aspect, the history of the city has led to determining and selecting the neighborhoods I currently investigate.

The chosen neighborhoods are Karaköy, Galata, Beyoğlu, Pera, Eminönü, Beyazıt, Ahırkapı, Kumkapı, Fatih, Eyüp, Balat, Beşiktaş, Ortaköy, Kadıköy and Büyükada. They all have a rich cultural history and have housed people from diverse ethnic backgrounds, different religions and with various languages since the first Megaran settlement was established starting in 8/7th century BC.

Figure 1. Istanbul map. (The selected regions are in dark grey).

The pace of Istanbul can be clearly observed in these regions as they are located in the heart of the city, as shown in the map above (Fig. 1). To have a better understanding and comprehensive knowledge, I have conducted library research for each region. This research is supported by systematic soundwalks before, during and after the studies, all of which have a different approach to sonic exploration. During the soundwalks, I have examined whether the daily traditions that I have determined from my research also have sonic values. I have prepared detailed tables for each region according to my

findings which are the fundamentals of Cultural Soundscape. Below, there is a sample table (Fig. 2) consisting of past and contemporary traditions of the neighborhood of Pera.

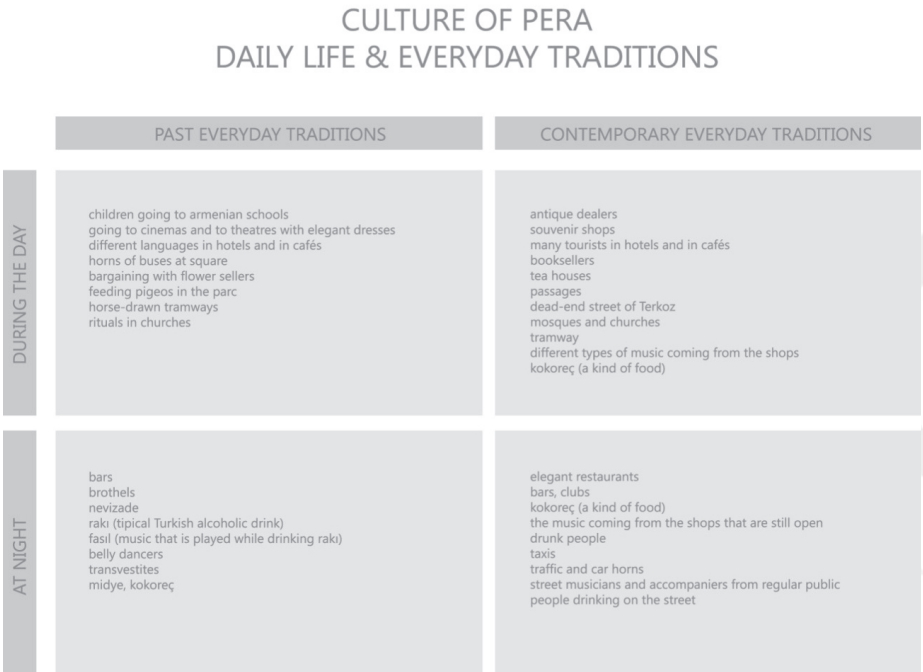

Figure 2. Table 1. Table showing past and contemporary traditions of Pera. (Note: since each neighborhood has a different demographic and cultural make-up, this is not to be considered a representative sample of the entire city. For example, drums used to wake up people at sunrise during Ramadan are not commonly encountered here).

Soundwalking

Soundwalking was born out of curiosity about how it can be adapted and engaged as a methodological tool, both for academic qualitative research and for artistic purposes. It has always been of particular importance for acoustic ecology as well as disciplines such as contemporary performing arts (Paquette & McCartney, 2012).

A soundwalk consists of a walking tour concentrated on listening to the surround-ings. It is most effective when standing at certain points with eyes closed, focusing only on listening. A soundwalk may result in different findings according to the soundwalker's previous knowledge about the area explored. It can be applied at three levels, paralleling three phases of research: discovery, observatory and analytical soundwalking.

No Knowledge → Discovery Soundwalking

Some Knowledge → Observatory Soundwalking

Adequate Knowledge → Analytical Soundwalking

Firstly, soundwalking without having any idea about the area is discovery sound-walking since whatever is heard is new and maybe not yet meaningful. Secondly, knowing some information about the region turns soundwalking into an observatory action. This knowledge makes the area theoretically familiar to soundwalkers and encourages them to seek clues about what they know. Lastly, when soundwalkers are knowledgeable enough about the zone, they reinforce what they already knew by catching additional small details.

In the step of collecting information about the areas of Istanbul, all levels of soundwalking have been applied. In other words, all regions that are covered in this project - Karaköy, Galata, Beyoğlu, Pera, Eminönü, Beyazıt, Ahırkapı, Kumkapı, Fatih, Eyüp, Balat, Beşiktaş, Ortaköy, Kadıköy and Büyükada - have been visited at least three times, according to the type of soundwalking outlined above. First, I have

carried out site discovery myself; thus the soundwalks are individual. During the individual soundwalks, I have conducted interviews and questionnaires with locals to understand the neighborhood. Then, I have organized collective group soundwalks with non-locals of the zone or the city. The route choices were always different depending on the participants' suggestions. Thus, the decision about what to collect would be more objective.

Significance assessment

Significance assessment is a common and important method applied in museums to evaluate an item's value and appropriateness for the collection during the process of accessioning. Once I have created tables of characteristic traditions and their sonic representations, further research is needed to assess their significance. The assess-ment process consists of analyzing the soundscape element, gathering information, researching its history, provenance and context, comparing it with similar items, understanding its values, consulting people, and finally writing a statement of significance (Russel & Winkworth, 2009); in other words, a concise summary of the values, meaning and importance of the object (Russel & Winkworth, 2009). The significance assessment has to be done for each and every sound, to understand its values and meanings. It also shows whether the determined sonic reflections are appropriate for the collection of the Sound Museum of Istanbul, as it is meant to be a systematic collection. A systematic collection requires the collector to be consistent and related to the theme when collecting (Pearce, 1991), and an assessment of significance will help deciding on what to include or exclude. This example below demonstrates why that specific sound item is important and how it is connected with the theme:

The first tramway of Istanbul, which was a horse-drawn type, started to operate in 1871. Before horse-drawn tramways, fiacres and phaetons were hardly affordable for middle-income families. A great demand occurred for horses with the Balkan War in 1912. Since the horses were all used for war purposes, there was a lack of transportation as tramways were the only way of transportation at that time. In 1914, electrical tramways were introduced. Over time, Istanbul expanded very much, and this has led to a search for alternative ways of transportation. Due to tremendous traffic problem in Istanbul, there are only a few tramway lines left today and just two of them are nostalgic tramways. In today's Istanbul, although there is another nostalgic tramway on the other side of the city, you can hear this sound only on Istiklal Caddesi, Beyoğlu. The other tramway has no sonic value and almost disappears in the urban fabric. Despite the fact that the sound of the tramway bells is similar to that of other cities and other countries, each one has a different meaning and history behind. In Istanbul, the sound of the tramway bells symbolizes Istiklal Caddesi, Beyoğlu. It is a very characteristic sound which has a strong relationship with the place where it is located. It has a great contribution to the sonic environment of both the zone and the city. Moreover, the nostalgic tramway of Beyoğlu not only contributes to the acoustic environment of today's Istanbul but also represents the historic sonic values, such as sounds of horsewhips and bugles and cries of vardacılar who were shouting *"the tramway is coming, get out of its way"* to warn people in the streets. Having these strong meanings, this sound fits perfectly to the theme of the exhibition which is *"Cultural Soundscape of Istanbul."* Since the aspect is related to culture and its reflections on the acoustic environment, *"The Sound of the Tramway in Beyoğlu"* is a unique piece of the collection.

Archive

Deciding on the most important characteristic cultural soundscape elements, I will record and archive these in an appropriate manner.

I will record the sounds with the method of binaural recording. Binaural recording is done with two microphones in order to give a sense of depth. Then I will transfer the recordings to the digital library. This arrangement of sound recordings will be done according to the ontological representation of the *Cultural Soundscape*, which I will explain below.

R. Murray Schafer, who was the first to propose the term soundscape, has di-rected the *World Soundscape Project*, including many studies and research project from the 1970s to the 2000s across the world. The recordings collected during these studies are kept in a digital library called the *World Soundscape Tape Library*. For this archive, a formal semantic representation of a library has been developed based on the soundscape taxonomy outlined by Schafer (Thorogood, Pasquier & Truax, n.d.). Departing from this point, the Sound Museum of Istanbul needs a model appropriate for its own specific context.

The ontological representation of *Cultural Soundscape* is mainly a categorization method for cultural sounds in order to archive them systematically. To classify these intangible cultural heritage elements, I need to pick up specific terms to define the concept clearly and I need to arrange tags to find the sounds easily in the digital archive. This ontological model will facilitate placing the cultural sounds of Istanbul according to their various qualities, such as source, type, zone, and frequency of repetition, and tags will be determined accordingly, such as food, entertainment, religion, daily, weekly, annual, at night, during the day, etc. For example, some traditions are daily actions, such as call to prayer which is heard five times a day. Therefore, for this sound item, the tags would be religion, daily, during the day and at night, as well as the name of the zone in which it is located. This is in contrast to annual events, such as national and religious festivals, which happen only once a year. With this example, a different aspect of the model arises: I need to clarify the frequency of repetition that contributes to their meaning in cultural

identity as well. Hence, this model does not offer a simple classification method by demonstrating only the physical qualities – location, source, and type – of cultural sounds, but it provides a deep perception of evaluating the essence of the cultural sonic values in the context of city life.

Exhibition

Having been determined, recorded and archived, the most characteristic cultural sounds of Istanbul can now be displayed within a well-designed exhibition in order to communicate the museum's message. According to Beverly Serrell, an authority on museums, deciding on the *Big Idea* of the exhibition is the very first step of the entire process (Serrell, 1996). The Big Idea tells the general concept of an exhibition with one sentence or statement. Considering the main message, the big idea of this exhibition is the following: *What you hear in this exhibition can easily be found and listened to in the outside world, but to be able to do so, you have to, first, hear them consciously. I would like to emphasize the importance of approaching the sonic environment consciously.* The Sound Museum of Istanbul also has the purpose of protecting sounds that are about to disappear from urban culture and providing an accumulation of sound heritage for future generations.

Most residents are not aware of the sounds collected, despite being immersed in them every day; on the other hand, for foreign visitors, visuality is more dominant when discovering the city. This museum aims to increase awareness of sonic culture and, at the same time, to create a unique experience for all visitors through the exhibition. Since my target group includes domestic visitors and tourists, the behaviors and characteristics of both need to be considered. The message I wish to convey requires the museum to be visitor-based in terms of participation and experience. Nina Simon explains the concept of participatory museum and what is intended by participation in this way:

> The goal of participatory techniques is both to meet visitors' expectations for active engagement and to do so in a way that furthers the mission and core values of the institution. Rather than delivering the same content to everyone, a participatory institution collects and shares diverse, personalized and changing content co-produced with visitors. It invites visitors to respond and add to cultural artifacts, scientific evidence, and historical records on display. It showcases the diverse creations and opinions of non-experts. People use the institution as meeting grounds for dialogue around the content presented. Instead of being "about" something or "for" someone, participatory institutions are created and managed "with" visitors (Simon, 2010).

Therefore, beyond my studies and recordings, visitors will be able to contribute to this accumulation as well. There will be a specialized area for exchanging ideas and sharing sonic memories. This sound heritage and culture belong to Istanbul, to its residents and to the entire humankind, and everyone has the right to contribute and to protect it.

A statement from the Excellence and Equity report of the American Association of Museums explains exactly my point of highlighting the importance of soundscape: *"Objects are no longer viewed solely as things in themselves, but as things with complex contexts and associated value-laden significance"* (AAM, 1992). For this reason the museum, in general, will be designed as a sonic space in which the audience gains aural experiences, rather than an object-centered museum where visitors are only viewers. This design decision can be supported with another statement from the same report: *"Changing interpretive approaches will have a strong impact on museum collections and the public's understanding of them"* (AAM, 1992).

Now I will turn to various aspects of the design process, such as the technology, colors, lighting and graphics. The sounds will be communicated to the audience through directional sound technology, which operates like an audio spotlight. In other words, speakers send sound waves to a particular direction, and visitors cannot hear the sound outside this specific direction. Using this technology for each sound, dispersal of sound waves will be prevented, and there will be no interference with other sounds. Thus, a sound can only be heard if the visitor is in the particular area dedicated to that sound. Outside of those areas, the exhibition space will be quiet. Despite creating experiences, installations are neither the final objective nor the visual focus; they are just the medium used to convey the message.

Taken as a whole, the exhibition makes use of *"white cube design"* approach – keeping the architecture and interior design as simple as possible – to emphasize the sounds themselves. The Museum of Modern Art, New York; can be given as a very successful example in which the focus always remains on what is exhibited. Hence, the space will be designed with a minimum number of visual elements, not more than necessary. For instance, since the exhibition space is silent for those who stand outside the sound spots, gently flashing lights together with an appropriate choice of graphics and colors will be used as indicators of the area of each sound. I will conduct workshops to decide whether the photographs or videos of the cultural items need to be included in the exhibition. If so, I will conduct further research on how to present them without hindering or lessening the attention on sonic values. Moreover, in order to

keep the displayed sounds on focus, possible unwanted sounds will also be prevented. For example, the floor will be designed with soft materials in order to prevent the noise of footsteps.

A representative map of Istanbul will cover the ground and determine the or-ganization and placement within the exhibition. As the sonic environment needs to be perceived as a whole, the exhibition space will be designed as a unique section without walls or any kind of separation. It will be designed on an open plan, since I want visitors to see the entire exhibition (McLean, 1993). In order to avoid confusing visual elements, there will be no permanent labels. For the duration of the visitor standing in a sound spot, the related label will be projected on the wall. Thus, visitors will see only what they absolutely need to see. The image below (Fig. 3) is a preliminary sketch to visualize the initial idea.

Figure 3. Preliminary Sketch by the author.

Labels will present information updated daily - an example for this kind of a label:

"What you are listening to now is the sound of 'Ahırkapı festival' (Hıdrellez) which was celebrated three days ago in Ahırkapı. Every year in the evening of 5 May, people dance and make wishes by tying ribbons on rose trees to welcome spring."

Sounds will also be updated regularly via live streaming technology which will be placed in the original locations of the sounds. Communicating in a dynamic manner, the exhibition will be alive, just like its content.

In this exhibition, accessibility especially for the hearing impaired is a major issue. Not to deprive them from this experience, vibrations will be designed in accordance with the rhythm of the sound which they can feel in the sound spots. For the visually impaired, information will be provided as tactile experience.

Conclusion

In the process of working towards the Sound Museum of Istanbul, such steps as assessing the significance of soundscape elements, soundwalking, archiving, and exhibition design will lead to further studies. As this

is a multi-disciplinary project, it will bring forth new terms and applications derived from the interaction of various subjects, as well as several additional projects.

First, discovering the *Cultural Soundscape* of the city and determining the sig-nificant sounds of daily culture, I will explore whether there is a distinctive soundmark, in parallel to generally visually perceived landmarks, for each zone. A soundmark is the most characteristic and unique element of the acoustic envi-ronment. Therefore, it needs to be protected, as R. Murray Schafer states: *"Once a soundmark is identified, it deserves to be protected, for soundmarks make the acoustic life of the community unique"* (Schafer, 1977). Significance assessments, as mentioned above, will play an important role to determine the soundmarks of each region and of the city as a whole. For example, the sound of the tramway bells symbolizes only one specific place in Istanbul. It is a unique sound, thus the soundmark of that neighborhood.

Second, after collecting the essential sounds from the entire city, I will analyze the distribution and prevalence of these sounds. The results of these analyses will help to draw the general outline of the contemporary *Cultural Soundscape* of Istanbul. This outline will then be compared with that of the past *Cultural Soundscape*, as far as it can be reconstructed, to see how changing life conditions affect the sonic environment. The results will lead to a longitudinal study to which future *Cultural Soundscapes* will be added.

Third, as mentioned above, in the archiving process a method will be developed to organize sounds. This method will be turned into a model that may be applied to all cities to classify the concept of *Cultural Soundscapes* across the world.

Finally, the exhibition design – which, I hope, will offer several innovations in display technology – will be planned to allow for easy transportation and travel. Installations will consist of interchangeable and moveable parts to facilitate adaptability to other museums and even to open air spaces.

Overall, I hope that the Sound Museum of Istanbul will help visitors to become aware of their sonic surroundings, to own these intangible cultural heritage elements as an important part of their daily lives, and to protect their cultural identity, as it is partly shaped by sound-related practices.

References

American Association of Museums (1992) *Excellence and Equity: Education and the Public Dimension of Museums*. Washington, D.C.: American Association of Museums.

Cage, J. (1961) *Silence*. Middletown: Westleyan University Press.

Çevikayak, P. (2012) *Attraverso i suoni. Guida non convenzionale per la citta' di Istanbul: Soundtourist*. Unpublished thesis (MSc). Politecnico di Milano.

McLean, K. (1993) *Planning for People in Museum Exhibitions*. Association of Science Technology Centers.

Paquette, D. & McCartney, A. (2012) Soundwalking and the Bodily Exploration of Places. *Canadian Journal of Communication* 37(1), pp. 135-145.

Pearce, S. M. (1991) Collecting Reconsidered. In G. Kavanagh (ed.) *Museum Languages: Objects and Texts*, pp.137-153. Leicester: Leicester University Press.

Redström, J. (1998) Is Acoustic Ecology about Ecology?. Reflections on the *International Conference on Acoustic Ecology "Stockholm, Hey Listen!"*.

Russel, R. & Winkworth, K. (2009) *Significance2.0: A Guide to Assessing the Significance Collections*. Collections Council of Australia.

Schafer, R. M. (1977) *Our Sonic Environment and the Tuning of the World - The Sounds cape*. Vermont: Destiny Books Rochester.

Serrell, B. (1996) *Exhibit Labels: An Interpretive Approach*. AltaMira Press.

Simon, N. (2010) *The Participatory Museum*. Available at http://www.participatorymuseum.org/preface/.

Thorogood, M., Pasquier, P. & Truax B. (n.d.) *Toward an Ontological Representation of the World Soundscape Project Tape Library*. unpublished.

Acknowledgements

I would like to thank to Assist.Prof. Nina Ergin for her valuable contributions and comments and to the organizing committee of the 3rd International Conference on Intangible Heritage for inviting me to present my project. Much thanks are also due to the audience at the conference, as their questions helped to reframe some of my methodologies.

10. PAPER C:

Protecting contemporary cultural soundscapes as intangible cultural heritage: sounds of Istanbul

This paper aims to evaluate culture and traditions of everyday life from a sonic perspective and to suggest ways for protecting characteristic sounds and soundscapes. This multidisciplinary research, having roots in such fields as soundscape studies, intangible cultural heritage (ICH), museum studies and sensory studies, explores the larger contemporary cultural soundscape of Istanbul. This paper discusses why sounds are considered as ICH elements, why it is important to preserve cultural sounds and how they need to be protected. It is widely explained that sounds constitute an inevitable part of daily life; therefore they are very important as ICH and they deserve to be protected to strengthen cultural memory. Moreover, urgent protection of contemporary cultural soundscapes in the context of ICH is crucial for transferring the present sonic environments to following generations in order to maintain cultural identity. It is also explained the reasons why sonic culture is endangered and the ways for protecting sonic culture are suggested. This paper also draws on the project The Soundscape of Istanbul (https://soundscapeofistanbul.ku.edu.tr/), which is archiving the contemporary elements of the cultural soundscape of Istanbul that were determined by public contribution, and outlines examples from this collection.

International Journal of Heritage Studies

ISSN: 1352-7258 (Print) 1470-3610 (Online) Journal homepage: http://www.tandfonline.com/loi/rjhs20

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To cite this article: Pinar Yelmi (2016) Protecting contemporary cultural soundscapes as intangible cultural heritage: sounds of Istanbul, International Journal of Heritage Studies, 22:4, 302-311, DOI: 10.1080/13527258.2016.1138237

To link to this article: http://dx.doi.org/10.1080/13527258.2016.1138237

INTERNATIONAL JOURNAL OF HERITAGE STUDIES, 2016
PUBLISHED WITH LICENSE BY TAYLOR & FRANCIS
VOL. 22, NO. 4, 302–311, http://dx.doi.org/10.1080/13527258.2016.1138237

Routledge
Taylor & Francis Group

Protecting contemporary cultural soundscapes as intangible cultural heritage: sounds of Istanbul

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ABSTRACT

This paper aims to evaluate culture and traditions of everyday life from a sonic perspective and to suggest ways for protecting characteristic sounds and soundscapes. This multidisciplinary research, having roots in such fields as soundscape studies, intangible cultural heritage (ICH), museum studies and sensory studies, explores the larger contemporary cultural soundscape of Istanbul. This paper also draws on the project *The Soundscape of Istanbul* (https://soundscapeofistanbul.ku.edu.tr/), which is archiving the contemporary elements of the cultural soundscape of Istanbul that were determined by public contribution, and outlines examples from this collection. Sounds constitute an inevitable part of daily life and are therefore very important as ICH. Thus, they deserve to be protected to strengthen cultural memory. However, sonic culture is twice endangered due to the physical characteristics of sound itself and the dynamic structure of intangible culture. Therefore, urgent protection of contemporary cultural soundscapes in the context of ICH is crucial for transferring the present sonic environments to following generations in order to maintain cultural identity.

ARTICLE HISTORY
Received 26 May 2015
Accepted 29 December 2015

KEYWORDS
Soundscape; intangible cultural heritage; digital archive; sound heritage; urban traditions

Introduction

In the late 1960s, R. Murray Schafer initiated the World Soundscape Project (WSP) at Simon Fraser University, resulting in the book *Our Sonic Environment and the Tuning of the World: The Soundscape* (1977). Schafer and his colleagues conducted a series of studies, including recordings and soundwalks in various places in Canada and Europe, in order to explore the sonic environment globally. The term *soundscape*, coined by Schafer is derived from the word *landscape* and contains all elements of the sonic environment including natural, mechanical, human, industrial, musical and cultural sounds. The term on which I will focus here, *cultural soundscape*, however, signifies the totality of the sonic values of characteristic daily traditions in either urban or rural areas. For example, the call to prayer, the cries of street vendors, and the beeps of the toll gates in the subway may be characteristic acoustic values of a city, whereas the noises of children playing in the street may be those of a small village.

Daily urban life and traditions have also undergone continuous change, thus contributing to the continuous transformation of the soundscape. Quotidian life is an inevitable part of intangible living

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culture, intangible cultural heritage (ICH), despite its crucial role in expressing cultural identity, has been internationally neglected until fairly recently. Within the definition of ICH in the UNESCO Convention for the Safeguarding of ICH, 2003, cultural sounds can be considered intangible cultural elements.

Soundscapes may also be in need of safeguarding in order to transmit cultural identity and traditions to following generations. For example, tea has been a very important cultural element in the everyday life of Turkey's people since the nineteenth century. Despite the fact that the implements for preparing and serving tea have changed based on new practices of daily life, tea culture has been safeguarded within society for centuries. The sonic values of tea culture have also changed due to the usage of different objects, such as electric water kettles. These types of changes in the acoustic values of a certain cultural element need to be collected before they are lost as they are powerful symbols of sonic heritage and cultural identity. For instance, we may not have the sound of the first implements to prepare tea in the nineteenth century, but we may recreate its sound. This paper, then, intends to evaluate daily life and traditions from a sonic perspective and to approach urban sounds as ICH elements, thus presenting an interdisciplinary analysis and offering multidisciplinary solutions for issues arising from the objective of preserving the cultural soundscape of Istanbul. Following an evaluation of sounds in the context of intangible culture, I explain the reason why and how the preservation of sonic culture is significant. Third, I suggest a way to develop an archiving model for the collection of urban sounds. Fourth, I explain the steps that I follow towards an archive of Istanbul's contemporary cultural soundscape (based on a two-year research project conducted at and funded by Koç University, Istanbul). Finally, I give examples of the cultural soundscape of contemporary Istanbul that are drawn from *The Soundscape of Istanbul* collection.

Cultural sounds as ICH elements

The cultural soundscape is of great significance for any urban identity, as it consists of the sonic values of both traditions and contemporary daily culture. Sounds are, indeed, aural symbols of our daily intangible culture, such as what we eat, what we listen to, how we practice our religion, thus who we are. Sounds also connect people to their lands, by way of auditory experiences that invoke memories of their past lives and their families. This sense of belonging forms strong relationships between people, their culture and their lands. In addition, Kato also highlights that a place can be distinguished through the sounds it contains (Kato 2009). The field of *acoustemology*, for example, is concerned with recognising a location based on auditory experiences. To facilitate this recognition, the WSP categorised the features of the sonic environment in three main themes: keynote sounds, signals, and soundmarks (Schafer 1977). Keynote sounds refer to mainly background sounds related to geographical location, climate and the everyday routine of a community or a region (such as water, wind, market noises and so on). For example, traffic noise and seagulls may be the most appropriate keynote sounds in Istanbul, as they are heard every day, anytime and almost anywhere. Signals are foreground sounds to which we consciously listen, such as rings and bells. Ambulance sirens, the call to prayers and church bells may be counted as examples of signals in Istanbul. Soundmarks, a term derived from landmark, are unique to a certain location or a community, such as the nostalgic tramway's bells in Taksim and the creaking of the horse-drawn carriages on Büyükada in the Princes Islands near Istanbul. Keynote sounds and signals can be found anywhere and carry no identifying values; however, soundmarks are of enormous importance for a society and for a location. For this reason, Schafer states that 'Once a soundmark has been identified, it deserves to be protected, for soundmarks make the acoustic life of the community unique' (1977, 10). Soundmarks are sonic representatives of cultural identity, and therefore we should pay attention to their maintenance and sustainability.

Cultural sounds can represent social, spiritual, historical, national and cultural memories related to a specific place and society (Kato 2009). For example, the *İzmir Marşı* (Anthem of Izmir) is crucial for Turkish citizens since it is an anthem about the Independence War (1919–1922) that resulted in the collapse of the Ottoman Empire and the establishment of the Turkish Republic (1923). Based on

UNESCO's definition, sound is a representative value of knowledge, skills, expressions, and so on, which are constantly recreated by communities carrying their sense of cultural identity. Likewise, Kato states that 'Sound itself can also be a component of ICH, as well as a means of articulating ICH, particularly because of its transient and fleeting nature' (2009, 85). In line with Kato's arguments, sounds are inevitable elements of our lives and culture and that even non-musical sounds carry emotions and remind us of our own identity and can have great power as a mnemonic device. The cultural diversity found in any urban contexts means that the soundscape will itself also be very diverse and complex.

Preserving contemporary cultural soundscapes

Sonic cultural heritage is temporary in two aspects: both sound and intangible culture are temporary, reproduced again and again, and therefore original each time. Moreover, sound is limited by time because of its physical characteristics. Not being a permanent object, it needs to be reproduced every time, which makes it always original (Schafer 1977). ICH also changes over time; it adopts new versions of cultural elements, or is replaced by completely different elements due to technological developments, globalisation, immigration, and politics; thus, changing life standards and conditions. Due to rapidly changing cultural contexts and experiences, sonic heritage is also rapidly changing. Therefore, sonic cultural heritage needs urgent identification, recording and perhaps even protection, starting with the contemporary cultural soundscape.

ICH is living and changing in parallel to changing conditions of life, thus reflecting the development of a society's culture. It includes a broad range of values such as persons involved, objects used, methods applied, sayings uttered, clothes worn, and music played. ICH is transferred from generation to generation and reproduced over and over each time, with adjustments addressing recent life conditions, so that it lives as long as society continues to practice it. Dawnhee Yim, in his discussion of the significance of preserving ICH, also questions whether ICH should be preserved in its traditional forms, or to what extent ICH can be transformed (Yim 2004). Kirshenblatt-Gimblett (2004), however, advocates the idea that, if a tradition is alive, there is no need to protect it, and if it is almost gone, then safeguarding will not help to protect it. If an ICH element is already dead, it means that society no longer practices it and that the tradition will not survive. Thus, it is quite difficult to make it relevant to society once again. In the case that ICH includes tangible elements, these values also lose their functions, meaning and importance.

As the characteristics of tangible and intangible culture are different from each other, their preservation measures cannot be the same either. Tangible culture is the end-product or the result and thus stable, while the intangible is the process and thus dynamic (Gürçayır 2011; Metin Basat 2013). Instead of the word used for folklore in the 1989 Recommendation on the Safeguarding of Traditional Culture and Folklore (Article D) – that is, preservation – in the Convention for the Safeguarding of the ICH, the word suggested to protect ICH is 'safeguarding' in order to highlight its dynamic nature. Safeguarding means to 'maintain in the context', as Kirshenblatt-Gimblett (2004) also argues, the system needs to be maintained as a whole with all its components in order to sustain intangible heritage. We can protect tangible artefacts by collecting, archiving, preserving and exhibiting them in museums. However, these methods are not applicable to ICH, as Lenzerini (2011, 108) states, 'ICH is not to be considered as something to be preserved under a glass case'. ICH needs society's involvement in order to be safeguarded, as stated in the Yamato Declaration of 2004. In some cases, the intangible includes not only traditional processes, but also tangible properties. For instance, tea culture cannot be considered without teapots and tea cups. Tangible and intangible cultures are complementary in the sense that they give clues about each other. For example, tea culture in Turkey and in England differ from each other in several aspects, such as how tea is prepared and how often it is drunk (intangible), and what kind of teapot and tea cups are used (tangible). Both of them reflect the cultural context of those who practice the tradition and the sonic values are dependent on both tangible and intangible culture. The Soundscape of Istanbul project aims to collect and to protect the related sonic cultural values.

The safeguarding and maintenance of ICH does not mean to freeze culture, but to allow modifications and adjustments to constantly changing life conditions. These transformations may lead to a change in tangible culture and in the process of practicing ICH, and they may result in different sonic values. For example, as mentioned above, in Turkey (and its predecessor state, the Ottoman Empire) tea has been consumed since the nineteenth century. Since then, tea culture has been safeguarded within society; however, its present traditions, practices, and objects differ from earlier ones. Neither have tea culture's sonic values remained the same. It would have been most interesting to collect all the sounds related to tea, such as the bubbling liquid and crinkling coal of the samovar, whistling teapots, electric kettles (the most recent addition), spoons clinking against tea glass, and the sayings used while serving tea. Therefore, all sonic values of ICH are of great importance so as to have a general idea of how it changes over time. For this reason, sonic cultural values need to be collected systematically and over certain periods of time, to observe the acoustic reflections of transformations as well as to have original forms of cultural sounds. Since sounds are lost within a very short window of time, it is necessary to start collecting sounds as expeditiously as possible.

Archiving the sonic environment

In order to archive a collection of sounds, one should first determine which urban sounds to consider as ICH elements. Sonic culture consists of the most characteristic acoustic values for a society and its social memory. At this point, consulting with locals is a key research strategy for drawing the outlines of their sonic environment as well as researching primary sources. In addition to consulting with locals, in the discovery of soundscapes, the most common method the WSP team members used was soundwalking, which is defined as 'any excursion whose main purpose is listening to the environment' (Westerkamp 1974, 18) by one of the pioneering members of the team, Hildegard Westerkamp. However, when it comes to discovering cultural soundscapes, this method may not be convenient. Since the sonic values of culture are highly time dependent, one needs to conduct pre-research on the areas of interest before soundwalks in order to discover the cultural soundscape through personal and immediate auditory experiences.

Determination of the sonic values is followed by the evaluation process. One may evaluate collected sounds by applying significance assessment tests and eliminate less significant urban sound recordings to create a valuable archive. Such significance assessment tests are commonly used in museum studies to evaluate the importance and relevance of the objects to the entire collection and to the institution itself (Russel and Winkworth 2009).

The collection of the representative elements of the sonic environment may be preserved in online or digital archives, both of which require a systematic tagging and classifying model. Within the framework of the WSP, the team analysed sounds in a very detailed way and reached several outcomes which may be useful here as well. Schafer has specified several ways to classify sounds: 'according to their physical characteristics (acoustics), according to the way in which they are perceived (psychoacoustics), according to their function and meaning (semiotics and semantics), and according to their emotional or affective qualities (aesthetics)' (Schafer 1977, 133). Truax, another pioneering WSP team member, has worked on an ontological representation of the WSP Tape Library in order to organise the recorded sounds and to make them easily accessible. This formal semantic representation of the library is based on Schafer's taxonomy (Thorogood, Pasquier, and Truax n.d.). Inspired by Truax's work, one can develop a model for the classification of sonic heritage which may be applicable to any urban or rural area in the world. Whatever the archiving model, characteristic acoustic values need to be determined, evaluated, collected and archived in order to preserve at least their contemporary representatives before they disappear.

All these suggestions lead to a systematic collection of cultural sounds. Sound is generally taken as a very broad topic and includes the analysis of its physical properties (such as density and pitch), the evaluation of its effects on human health, its consideration during urban planning processes, and so on. There are several online sound maps of cities such as London, Paris, and Barcelona; however, none

has focused on cultural sounds alone. The city of Istanbul has been included in some of the world-wide sound maps, but no map focusing on it exists as of yet. Although not very detailed, there exists a few blogs that deal with the sounds of Istanbul. Therefore, a comprehensive archive of the cultural sounds of the city of Istanbul will be the first of its kind.

Towards the archive of *The Soundscape of Istanbul*

The first step of the project was to determine which urban sounds to record and what to include in the archive as cultural soundmarks. The community's participation is necessary to evaluate personal experiences and to draw an outline of sonic memories in addition to primary source research. Both locals' and tourists' perceptions of the urban soundscape are significant in this case. Locals may have deep observations as they live within the city and so they will have detailed awareness. Therefore, their personal experiences of the soundscapes of the city and their sonic memories are very important. Tourists' opinions are also crucial in terms of the first impressions of Istanbul's sonic environment from individuals not familiar with the city. In addition, tourists may identify sounds that locals may have naturalised and no longer consciously consider being more highly immersed within and familiar with the city and its culture. For this, I conducted an online survey and interviews both with locals and tourists about their impressions of the soundscape of Istanbul.

The online survey, which was bilingual (Turkish and English), was posted on an online platform hosted by Koç University in December of 2014. It was sent to several mailing lists such as those of the PhD Design List and ETMK (Industrial Designers' Society of Turkey), and was also distributed by the snowball method. 421 participants, who are obviously internet users, completed the entire online survey. To give some demographic backgrounds, 370 of the participants are from Turkey and the rest are from different countries. 244 are women, 172 are men and 5 selected 'other' for gender. To illustrate the age groups of the participants, 4 are under 17, 126 are from 18 to 25, 198 are from 26 to 34, 59 are from 35 to 54, 13 are from 55 to 64 and 21 are 65 and over age groups. In order to diversify the participants, people aged 55 and over and from low SES groups were selected for the interview by observation. We interviewed with 43 people, of which are 16 women and 27 are men, and 26 are locals and the rest are tourists. The survey and interview questions asked respondents to identify the unique sounds that define the city of Istanbul, favourite sounds, the most annoying sounds, the most heard sounds in their neighbourhoods for locals, and the most identifying urban sounds. Local respondents were also asked how long they had been hearing these sounds and if these sounds are changed, and which sounds deserve to be protected. As a result of this research, the sounds that define the city of Istanbul are listed below:

(1) Traffic and car horns
(2) Ferries
(3) Seagulls
(4) Sea and waves
(5) Call to prayer
(6) Church bells
(7) Nostalgic tram
(8) Street vendors
(9) Markets and bazaars
(10) Crowds (protests, cheers)
(11) Sirens and announcements
(12) Animals (cats, dogs, birds)
(13) Construction noise
(14) Street musicians
(15) Music from shops
(16) Street food & leisure activities (*kokoreç, nargile, tea, backgammon*)

Interviewees generally responded explaining their daily life memories related to their favourite sounds or the sounds they found the most disturbing. For example, whereas some mentioned the relaxing effects of seagulls and waves and the moments that they listen to these sounds, some complained about traffic noises that they are subject to everyday.

As a result, a common pattern of urban sounds for the city of Istanbul that were either liked or disliked emerged from the survey and interviews. The resulting sounds included all three kinds of features of a sonic environment in Schafer's terms, including keynotes, signals and soundmarks. Despite being physically different, all resulting sounds may be considered *cultural soundmarks* as they constitute a powerful part of cultural memory and cultural identity. Interviewees' responses related to their memories highlight that sound is an inevitable part of daily life and a very powerful value in perceiving the urban space. According to the results of the online survey and those of the interviews, the primary source research and also the experiences gained during field recordings, the daily activities of Istanbul can be examined under nine categories: food and drink, street professions, sports, events and festivals, religion, transportation, entertainment and leisure, nature and urban life. These categories were formed by using Schafer's classification system based on cataloguing sounds according to their functions, meanings and sources.

Since Istanbul is such a large city, I used pilot neighbourhoods for field recordings. Pilot neighbourhoods were chosen due to their rich historical background, ability to reflect the sounds identified by the survey, and are located at the heart of the city, namely; Karaköy, Galata, Beyoğlu, Pera, Eminönü, Beyazıt, Ahırkapı, Kumkapı, Fatih, Eyüp, Balat, Beşiktaş, Ortaköy, Kadıköy and Büyükada. The representatives of almost all the cultural sounds can be found in this pilot area.

In addition to location-based assessment of sounds, temporal planning for field recordings is also essential as there is a certain timeline of cultural events. Sonic culture of the city consists of aural values of daily traditions which happen at specific time periods repetitively during the day or during the year. They can be considered sound events with different frequencies that determine the harmony of acoustic environment. Some of the traditions happen daily either once a day or more often, such as drinking tea, the call to prayer, or the call of street vendors; some happen once a year such as national and religious festivals or commemoration events; some seasonally such as vendors of ice-cream and *boza* – a typical Turkish winter drink. Therefore, I planned field recordings for each specific location according to the timeline of the cultural soundmarks.

In field recordings, I used a DPA 5100 Mobile Surround Microphone and a TASCAM DR-680 Portable Multi-track Sound Recorder. The reason for recording with a surround microphone in 6 channels is to collect sounds suitable for a life-like auditory exhibition environment, which will be designed after the archiving process in order to increase public awareness of sonic culture. However, the details of the exhibition are beyond the aim of this paper.

In order to create a comprehensive archive, supplementary visual items were also collected during field recordings and a specific metadata model was developed. I formed a metadata model, which is a set of information needed for each and every item in the archive, for the very collection by the support of librarians. This model includes title, description, keywords, date, period of day, duration, geographical location, coordinates, sound type (human, mechanical, etc.), frequency (daily, seasonally, etc.), category (street professions, transportation, etc.), and so on. It is not only compatible with international standards but also has unique and determinative information for a cultural soundscape collection such as sound type, frequency and category. Thus, in the archive, a sound file, related visuals and metadata are included for each cultural item. I preserve them both in digital hard-discs (sound files: mp3 320 kbps, wav 24 bit 44,1 kHz; visuals: jpg 300 dpi, raw) and in an online archive (sound files: mp3 320 kbps; visuals: jpg 300 dpi). The online archive of *The Soundscape of Istanbul* collection is accessible through Koç University Suna Kıraç Library Digital Collections at http://digitalcollections.library.ku.edu.tr/cdm/landingpage/collection/SOI. In the next section, some of the valuable pieces of the collection are described as representative examples.

Sounds of Istanbul

Istanbul has always had great importance in bringing together European and Middle Eastern cultures. The city is very diverse in terms of religion, ethnicity and language, but also cultures and traditions, the city has formed and continues to develop a very rich acoustic environment. Today's daily life in Istanbul is very dynamic and chaotic due to its large population of officially 13.8 million (TUİK 2013, ADNKS statistics), but unofficially as high as 20 million. Istanbul continues to host people of many different ethnic roots, languages and religions (Öncü 1999). This diversity has always been important for shaping the city's many lifestyles.

The representative and contemporary examples of Istanbul's soundscape include: *çay* (Turkish tea), *boza* (a fermented millet drink), football fans, the commemoration of Atatürk's death anniversary, the call to prayer, the nostalgic tramway, and playing *tavla* (backgammon).[1]

Tea, having sociological meanings such as hospitality, sharing, and conversation, plays a very important role in Turkish culture (Güneş 2012). Tea has been served and drunk in Istanbul for the past two centuries and today is found anytime and anywhere in the city. The day begins with tea, continues with tea after meals, and also ends with post-dinner tea. No business starts without offering tea in Turkey. There are many *çay ocağı*s (small commercial tea kitchens) that serve the beverage to shopkeepers in their neighbourhood. This deep-rooted tradition of tea comes with its own particular sonic values. For instance, the preparation of tea includes many acoustic values, such as the boiling water, pouring tea into glasses, the clinking spoons when stirring sugar into the tea, the calls of *çaycı*s (tea seller), and so on.

Another traditional Turkish beverage, usually drunk in winter, with a distinct sonic dimension is *boza*. It is made of millet fermented by yeast and lactic acid bacteria, cooked maize, wheat, or rice semolina/flour (Arıcı and Dağlıoğlu 2002). *Boza* has been consumed since the seventeenth century over a very large region. Today, in East European countries, in Egypt, on the Balkans and in Turkic countries, similar beverages are still produced (Arıcı and Dağlıoğlu 2002). *Boza* is generally sold by street vendors who chant a special and high-volume melody. In winter, they walk through the streets of their neighbourhoods, while shouting out to see if there is anyone who likes to drink it. Unfortunately, this tradition is very likely to disappear in the foreseeable future, due to a large segment of Istanbul's population living in gated communities in the suburbs, where *boza* sellers cannot go, and due to developments in the packaging industry. Because of fast consumption habits, durable packages are produced to preserve *boza* for a long time, whereas in the past it used to be sold and served immediately after production. However, today it is still common to hear *boza* sellers (*bozacı*) in the neighbourhoods of the historic peninsula, and this makes a unique contribution to Istanbul's sonic heritage as well as to the contemporary cultural soundscape of the city.

Football is the most popular and most widely supported sport in Turkey. Every week, many fans go to stadiums and watch league matches. There are three big football clubs in Istanbul: Beşiktaş, Fenerbahçe and Galatasaray. Fans of each club compose their own cheers during the matches. It is possible to identify which team is playing only by listening to the cheers audible around the stadiums. If two of these three clubs play, the cheers become particularly loud. Thus, every week during the league's season, it is usual to hear the fans' cheers and chants on public transportation or in the squares when they are on their way to the stadiums or watching the game together.

Atatürk, the founder of Turkish Republic, died on 10 November 1938 at 9:05 in Dolmabahçe Palace, upon which national mourning was declared. Since then, every year on 10 November at 9:05, everything – lessons, meetings, and so on – stops in Turkey, and everybody obeys a minute of silence. By contrast, in car traffic all vehicles honk their horns to commemorate Atatürk's death. At this specific time on that day, horns are the most dominant acoustic elements in the sonic environment of Istanbul as well as in the rest of the country.

The majority of the population in Istanbul is Muslim, but there are also non-Muslims such as Christians of various denominations and Jews. In Istanbul, there are hundreds of mosques, but also churches and synagogues. The calls to prayer are broadcast by the mosques' muezzins five times a day.

It is possible to hear a call to prayer from any location in the city. Although church bells can also be heard, the most dominant religious sonic value is thus the call to prayers.

The first tramway of Istanbul, a horse-drawn type, was introduced in 1871. With the development of technology, electrical tramways started to operate in 1914 (Çolak 2004). However, being such a large city and hosting so many people, Istanbul needed alternative ways of transportation. Today, there are only a few tramway lines left, and on just two of them (Beyoğlu and Moda) the 'nostalgic tramways' still work (Yelmi forthcoming). The bells of these tramways – especially of the one in Beyoğlu are so unique that they immediately orient those who hear it. The sound of the nostalgic tramway of Beyoğlu is indeed considered a soundmark of Istanbul. It symbolises İstiklal Caddesi, the most popular and often most crowded (pedestrian) street on which it is located, as well as the city itself. This characteristic sound is a unique piece of the sonic heritage of Istanbul and still makes a significant contribution to the contemporary acoustic environment of the city.

Tavla (backgammon) is a common board game among Turkish people which is generally played in street cafés. Tavla is a two-player game and it is mostly accompanied with tea and nargile (water pipe). Therefore, leisure times of Istanbulites sound like dice and checkers, as they are the mediums of the game. Not being a domestic activity, streets of Istanbul are dominated also by such sounds.

The acoustic environment of Istanbul is obviously not limited to the sounds discussed above. These particular examples, which are already recorded and included in the archive, may give an idea not only about the cultural soundscape of Istanbul but also about the type of sounds to be considered cultural soundmarks of any city.

Conclusion

The Soundscape of Istanbul project is the first attempt in Turkey that aims to collect culturally significant sonic values and to create an archive of contemporary (in the year of 2015) urban sounds of the city of Istanbul. The recorded sounds were determined by public contribution and this sound archive lays the foundation for the longitudinal development of soundscape preservation. The recreation of past soundscapes or the retrieval of recordings of past soundscapes, if there are any still in existence, can be added to these digital or online archives.

The Soundscape of Istanbul project approaches cultural heritage from a sonic perspective, highlighting the significance of sounds as they are integral parts of daily life, and thus, integral to cultural heritage and expressions of identity. Cultural sounds are endangered in rapidly developing urban environments, especially in such a dynamic city as Istanbul. As an unfortunate example, we missed the chance of recording and archiving two cultural soundmarks – *narghile* sounds in Tophane and fishermen in Kumkapı – which have been of great importance for a long time in the neighbourhoods in which they were located. Although we had them in our recording list in the beginning of the recording process in January 2015, these two characteristic sounds of the city disappeared before they could be recorded. Thus, it is urgently necessary to preserve contemporary cultural soundscapes as expeditiously as possible.

This paper has aimed to highlight the issue of sound as a feature of ICH and the utility of developing archives of representative examples of sonic culture. Sounds are powerful values that remind people where they come from, their origins and memories. After the archive becomes publicly accessible, we had some feedback from visitors to the archive. For example, one Turkish visitor from abroad, whose hometown is Istanbul, said 'I have been living in Italy for nine years and whenever I miss the city I have, now, the chance to visit your archive and listen to the sounds of my hometown'. This comment is strong evidence that sounds invoke cultural memories and may also remind people of their own identity. Moreover, in the interviews that we conducted, we observed that interviewees tended to answer questions by supporting their answers with their own daily memories, even when we had not asked them to elaborate. The responses of interviewees, which are related to their daily memories, reveal the fact that sounds cannot be considered separately from one's everyday life and emphasised a powerful link between social life and the city.

Besides being crucial in terms of cultural identity and memory, the archive of cultural soundscapes provides sonic data that may be used in various research fields. As sonic culture is deeply dependent on various factors such as sociological, political and economic conditions, this archive may also lead to further multidisciplinary research by encouraging researchers to consider sonic perspectives of issues. Therefore, it is highly significant and necessary to form such an archive that deals with urban space and daily culture from a sonic perspective.

Note

1. For samples of the sounds mentioned, please visit https://soundscapeofistanbul.ku.edu.tr/archive.

Acknowledgements

I would like to express my profound gratitude and deepest regards to my advisor Assoc. Prof. Nina Ergin for her time, patience and valuable comments, to Assoc. Prof. Sertaç Kakı from Music Technologies Department at Istanbul Technical University for his technical consultancy on field recordings, and finally I would like to thank to Koç University for funding this research.

Disclosure statement

No potential conflict of interest was reported by the author.

Funding

This work was supported by Koç University under Seed Research Fund Program.

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References

Arıcı, M., and O. Dağlıoğlu. 2002. "Boza: A Lactic Acid Fermented Cereal Beverage as a Traditional Turkish Food." *Food Reviews International* 18 (1): 39–48.

Çolak, M. 2004. "XX. Yüzyıl Başlarında İstanbul'da Trafik ve Tramvay [Traffic and Trolleys in Istanbul at the Beginning of the XX. Century]." *Yakın Dönem Türkiye Araştırmaları* 5: 75–87.

Güneş, S. 2012. "Türk Çay Kültürü ve Ürünleri [Turkish Tea Culture and Its Products]." *Milli Folklor* 93: 234–251.

Gürçayır, S. 2011. "Somut Olmayan Kültürel Mirasın Korunması Sözleşmesi Üzerine Eleştirel Bir Okuma [A Critical Reading on the Convention for the Safeguarding Intangible Cultural Heritage]." *Milli Folklor* 92: 5–12.

Kato, K. 2009. "Soundscape, Cultural Landscape and Connectivity." *Sites: A Journal of Social Anthropology and Cultural Studies* 6 (2): 80–91.

Kirshenblatt-Gimblett, B. 2004. "Intangible Heritage as Metacultural Production." *Museum International* 56 (1–2): 52–65.

Lenzerini, F. 2011. "Intangible Cultural Heritage: The Living Culture of Peoples." *European Journal of International Law* 22 (1): 101–120.

Metin Basat, E. 2013. "Somut ve Somut Olmayan Kültürel Mirası Birlikte Koruyabilmek." *Milli Folklor* 100: 61–71.

Öncü, A. 1999. "Istanbulites and Others: The Cultural Cosmology of Being Middle Class in the Era of Globalism." In *Istanbul: Between the Global and the Local*, edited by Çağlar Keyder, 95–121. Lanham: Rowman and Littlefield.

Russel, R., and K. Winkworth. 2009. *Significance2.0: A Guide to Assessing the Significance Collections*. Adelaide: Collections Council of Australia.

Schafer, R. M. 1977. *Our Sonic Environment and the Tuning of the World: The Soundscape*. Vermont,VT: Destiny Books Rochester.

Thorogood, M., P. Pasquier, and B. Truax. n.d. "Toward an Ontological Representation of the World."

TUİK. 2013. *ADNKS Statistics*. Accessed August 19, 2014. http://www.tuik.gov.tr/PreHaberBultenleri.do?id=13425
UNESCO. 2003. *Convention for the Safeguarding of the Intangible Cultural Heritage*. Accessed August 19, 2014. http://unesdoc.unesco.org/images/0013/001325/132540e.pdf
Westerkamp, H. 1974. "Soundwalking." *Sound Heritage* 3 (4): 18–27.
Yelmi, P. Forthcoming. "Sound Museum of Istanbul." *International Journal of Heritage and Sustainable Development* 4 (1).
Yim, D. 2004. "Living Human Treasures and the Protection of Intangible Cultural Heritage: Experiences and Challenges." *ICOM News* 4: 10–12.

11. PAPER D:

Towards a sustainable crowdsourced sound heritage archive by public participation: The Soundsslike Project

This paper explains how a user-centered design approach shapes a cultural heritage project in the sustainability context. The project aims to protect urban sounds as intangible cultural heritage elements and turn the action of protecting sounds into a collaborative work. Sounds are of great significance in daily urban life and in culture as they carry emotions and awaken cultural memories. Thus, they deserve to be protected and transferred to future generations. In this paper, firstly soundscapes are evaluated as an intangible cultural heritage element, and secondly the presentation techniques are explored in soundscape studies in the literature. Then, we explain how the methods are implemented step by step, and finally the two outcomes are introduced: the library archive (*The Soundscape of Istanbul* project) and the crowdsourced web archive (*The Soundsslike Project*). *The Soundscape of Istanbul* project aims to collect and archive cultural and urban sounds of the city while *The Soundsslike Project* constitues a crowdsourced online sound archive which invites people to record symbolic urban sounds and upload them. This online platform was built and displayed in an exhibition by means of an interactive tabletop interface to learn more from users and contributors, and to enrich the archive content by raising public awareness of urban sounds. Finally, the interactive exhibition is evaluated with the questionnaires, visitor statistics and the visitor book.

Towards a Sustainable Crowdsourced Sound Heritage Archive by Public Participation: The Soundsslike Project

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ABSTRACT
This paper explains how user-centered design approach shapes a cultural heritage project in the sustainability context. The project aims to protect urban sounds as intangible cultural heritage elements and turn the action of protecting sounds into a collaborative work. Sounds are of great significance in daily urban life and in culture as they carry emotions and awaken cultural memories. Thus, they deserve to be protected and transferred to next generations. In this paper, we first evaluate soundscapes as an intangible cultural heritage element, second we explore the presentation techniques in soundscape studies in the literature, then we explain how the methods implemented step by step, and finally we introduce the two outcomes: the library archive (The Soundscape of Istanbul project) and the crowdsourced web archive (The Soundsslike project). The Soundscape of Istanbul project aims to collect and archive cultural and urban sounds of the city while The Soundsslike project is basically a crowdsourced online sound archive which invites people to record symbolic urban sounds and upload them to the online sound archive. This online platform was built and displayed in an exhibition by means of an interactive tabletop interface to learn more from users and contributors, and to enrich the archive content by raising public awareness of urban sounds.

Author Keywords
Sustainability; Sound archive visualization; Design thinking; Cultural heritage data; Digital culture; Human heritage interaction; Open archive; Social networks & communities in cultural heritage; Participatory culture.

ACM Classification Keywords
H.5.2. User Interfaces: User-centered design.

NordiCHI '16, October 23 - 27, 2016, Gothenburg, Sweden

ACM 978-1-4503-4763-1/16/10…$15.00.
DOI: http://dx.doi.org/10.1145/2971485.2971492

INTRODUCTION
Sounds, being ubiquitous in daily urban lives, constitute an important part of intangible cultural heritage. Sounds are also crucial identifiers for cultural memory containing emotions and cultural identity. In order to protect sonic cultural memory of a society, daily urban sounds and cultural sounds need to be collected. Otherwise, sounds will disappear or change in the rapidly transforming urban life.

With this aim in mind, a traditional preservation method was chosen for protecting sound heritage: creating an archive. Recording and archiving are actions towards protecting sound heritage. Urban and cultural sounds are, however, considered intangible cultural heritage elements. Due to rapidly changing life conditions, daily traditions are also evolving with a fast rhythm. Therefore, it is also necessary to safeguard urban sonic heritage which means keeping it alive in daily social life [16]. Because once a society stop practicing a certain tradition, it becomes lost from daily lives. It would be hard to pull it in again and safeguarding would not work with an already gone tradition [7]. For this, a web archive was initiated to safeguard the unique sonic values before they are lost. Inline with many other sound archive examples [1,2,3,8], an online crowdsourced sound archive was built. While the main contribution is to create an auditory database of the city's soundscape for protecting symbolic and cultural sounds, the project also creates awareness of urban sounds, provides a sustainable process of collecting urban sounds for safeguarding sonic heritage in a crowdsourced manner, and an interface design to present the archive.

Figure 1 – The exhibition setup

In the crowdsourced sound archive, two visualization methods are used for mapping urban sounds, one of which is a sound map where people can browse and contribute and the other is a mapping based on sound categories and keywords. Creating sound maps is one of the most common methods for visualizing soundscapes, such as Sound of the Netherlands -Het Geluid van Nederland- [8], Ecouter Paris [3] and Sounds of Barcelona -Sons de Barcelona- [1]. And here in this paper, following background information on soundscapes and visualization methods, we explain the user-centered design process that were used in determining the collection content and in specifying the locations of field recordings which are online survey, interviews and soundwalks. We explain the outcomes of these research which are two archives: The Soundscape of Istanbul project and the Soundsslike project. Then, we evaluate the interactive exhibition designed in order to raise public awareness of urban sounds and to enrich the content of the sound archive. Finally, we talk over the crowdsourced sound collection in terms of its content, and discuss some possible negative outcomes in application and the potential developments of such an archive.

BACKGROUND

Soundscape as an intangible cultural heritage subject

The term soundscape, with an analogy to landscape, was first coined by Schafer during his studies [11]. Schafer, who is a Canadian composer, initiated the World Soundscape Project (WSP) with his team in the late 1960's in Simon Fraser University in Vancouver. They explored sonic environments in Vancouver, across Canada and in five villages across Europe. Their research on exploration of sonic environments resulted in a book titled "Our Sonic Environment and the Tuning of the World: The Soundscape."

Besides physical characteristics, Schafer evaluated sounds also from the perspective of semantics; i.e. meanings of sounds within societies and cultures. For example, the meaning of a car horn may be "Get out of my way!" or "I've just been married!" depending on the situation [11]. In Turkish culture, car horns are also used when sending someone to military. The young boys of a neighborhood get together and sing cheerful songs and play car horns to increase their friend's mood, who is going for obligatory military service. This traditional practice has a unique sonic value in cultural identity and cultural memory of the local society. We can infer that sounds not only affect our moods in positive or negative ways due to low or high levels, but also awaken emotions and memories. By creating a strong bond, sounds connect society to sonic environment and to culture. In other words, sounds are of great importance both in daily urban life and in cultural heritage. Kato [6] also supports the idea that sounds are considered significant parts of any urban environment and that sounds connect people to their lands and to their culture. Therefore, urban sounds deserve to be protected as intangible cultural heritage elements as it fits with the definition in Article 2 of the Convention for Safeguarding of Intangible Cultural Heritage, held by UNESCO in 2003 [15].

In the projects that are explained in this paper, we focus on cultural soundscape which refers to a totality of sounds of daily practices and traditions within urban life [18]. Cultural soundscape reflects an important part of urban identity with unique sonic values of intangible cultural heritage. However, cultural sounds are not a stable phenomena in a rapidly changing urban environments. Cultural sounds that are not protected may change or disappear. For this reason, an urgent protection is needed for the sustainability of cultural soundscapes.

Presentation of soundscape archives

Employing user interfaces for digital cultural heritage creates a strong link between the human-computer interaction and humanities fields such as history and archeology. This is an emerging phenomenon, named as participatory culture, which is explained by Jenkins et al [5] as a culture where all members of a society are ready to contribute to the cultural heritage. The current society participation is obtained by means of crowdsourced databases and rich prospect interfaces [9,10]. Ruecker [10] et al. brought together some criteria for the above mentioned interest of rich-prospect browsing; (1) welcoming the user with a dashboard screen displaying the whole archive; (2) providing alternative user controls; (3) alternative paths with links in between items; (4) strong metadata that helps displaying network diagrams; (5) alternative displays; (6) self-explanatory visual organization.

In addition to the above listed factors, in soundscape projects, spatial representation of sounds in a location with an online sound map is a very common method. There are many sound maps created for several world cities such as for Marseille [12], Paris [3], Barcelona [1], London [2], Florence [4], etc. Each one has a different motivation for mapping urban sounds, for example Marseille sound map was prepared by the tourism office of Provence, and the one for London is created for a comprehensive sound survey on urban sounds of London. The sound maps above contain sounds only from these specific cities and they are not open to contribution [19].

Several sound maps, however, encourage people to record and upload their own field recordings. For example, Soundcities (http://soundcities.com/) and Radio Aporee (http://aporee.org/maps/) are global sound maps containing sounds from many cities. These two sound maps include sounds also from Istanbul. However, none of them aims to collect cultural sounds, especially for this metropolitan city that blends many layers of cultures together today. Thus, they are not providing a sustainable solution for intangible cultural heritage.

We, however, intend to create a detailed and systematic archive for cultural soundscapes of Istanbul which protects the representative sonic values as intangible cultural heritage elements by visualizing the soundscape of the city in an inclusive and easy-to-explore interface design.

METHODOLOGY

Throughout the whole study, we used several different user-centered design methods to create, design and develop an

archive together with the users. Literature and primary source research, which are very first steps, followed by (1) an online survey and interviews; (2) soundwalks; (3) workshops; and (4) an interactive exhibition (Fig. 2).

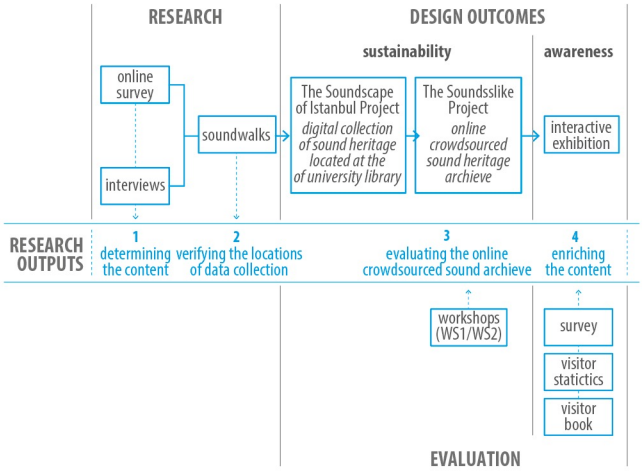

Figure 2 – The user-centered development process of the crowdsourced interactive archive.

Online survey and interviews

Sounds are of great importance for a society's common cultural memory. Cultural memory of a society includes both symbolic sounds of a city and personal sonic memories related to city. This sound heritage archive focuses mainly on symbolic urban sounds rather than personal sonic memories. At this point, society's opinion needs to be gathered for creating a pattern to specify symbolic sounds. For this, an online survey and interviews were conducted in order to determine the content of the sound heritage collection related to the city of Istanbul which is discussed widely by Yelmi [18].

To explain the research briefly, the online survey was distributed via internet and the target group is any internet user from any age group, whether locals of the city or not. Interviews, however, were conducted with randomly picked elderly locals in streets in order to reach a specific group of rooted locals of the city to which we may not reach via internet. Basically, there was one common question asked both in the online survey and in the interviews which is "Which sounds, do you think, define the city of Istanbul best?" Based on the answers to this question, a list demonstrating the most characteristic sounds of the city was formed. With the help of this list, categories of urban sounds, common locations where characteristic sounds are located and a timeline of when they can be heard were also defined. Thus, online survey and interviews were very beneficial methods in determining the sounds to be collected with public contribution as well as creating the information architecture and forming a field recording plan for one year.

Soundwalks

The locations of field recordings are as important as the sounds themselves. Some sounds are so unique that they are found only in one certain place; for example the nostalgic tram of Beyoğlu is located only on Istiklal Avenue. However, some sounds can be heard in more than one single place, each one being unique; for example the call to prayer is broadcasted from hundreds of mosques in Istanbul at the same time. Since it is quite impossible to record sounds in each neighborhood of the city. For this reason, pilot neighborhoods which include representative symbolic sounds that are not located in a single place need to be specified.

According to primary source research conducted, 15 districts (Karaköy, Galata, Beyoğlu, Pera, Eminönü, Beyazıt, Ahırkapı, Kumkapı, Fatih, Eyüp, Balat, Beşiktaş, Ortaköy, Kadıköy and Büyükada) were picked as pilot neighborhoods to conduct field recordings. These pilot neighborhoods have two characteristics in common: having a rich historical background and including most of the representative symbolic sounds. In order to verify if the chosen neighborhoods reflect the representative sonic environment of Istanbul as the online survey and interviews indicate, soundwalk method (an on-site exploration and discovery method) was used to explore sonic environments of four pilot neighborhoods; namely, Galata, Karaköy, Beyoğlu and Eminönü. (Table 1).

Soundwalk is a method for discovering and exploring sonic environments, which was first used during World Soundscape Project (WSP) by Hildegard Westerkamp [17]. Westerkamp, one of the WSP team members, focused mainly on the soundwalk method which she defines as "any excursion whose main purpose is listening to environment". Soundwalk method, being easily-adoptable, can be used for various disciplines such as soundscape studies, sensory studies, urban planning, architecture, cultural studies and so on. There are several types of soundwalk method such as walking alone or as a group, silent or with discussions, recording sounds or not, and with guidance to eyes-closed participants. One should certainly know what to explore and thus, can easily transform the method to serve the scopes of aimed research. In the library archive project, the soundwalk method was used to verify if the neighborhoods contain resulting characteristic sounds, to make participants aware of urban soundscapes, and to explore symbolic sounds in the routes in those certain days and time periods together with the participants. In order to meet these purposes, the soundwalk method was adopted to be conducted as a group, having little discussions in several stops but generally silent and including recording sounds during the walks.

	Routes	No. of Participants	Female	Male	Ave. Age
1	Galata	8	6	2	25
2	Karaköy	13	8	5	30
3	Beyoğlu	11	8	3	29
4	Eminönü	6	5	1	43
	Total	**38**	**27**	**11**	**32**

Table 1 – Soundwalks and their participants.

In April 2015, we organized soundwalks in four pilot neighborhoods; Galata (4th April), Karaköy (11th April), Beyoğlu (18th April) and Eminönü (25th April). To give

demographic information of soundwalk participants, we had 8 participants (6 females and 2 males, ave. age: 25) in 1st route, 13 participants (8 females and 5 males, ave. age: 30) in 2nd route, 11 participants (8 females and 3 males, ave. age: 29) in 3rd route and 6 participants (5 females and 1 male, ave. age: 43) in 4th route, in total we had 38 participants (27 females and 11 males, ave. age: 32) in four soundwalks.

In order to explore sonic environments and to create awareness of urban sounds, questions were prepared to be asked in certain locations during the walks exploring the most silent sounds, the most frequent sounds, the most dominant sounds, the most symbolic sounds of the routes. These certain locations can be named as listening stops and they were picked according to different characteristics of sonic environments. There were six listening stops in each soundwalk and 5-10 minute discussions were made only in these listening stops with the questions prepared before. Except the listening stops, the walks were entirely silent, everyone focusing on what they were hearing. Moreover, participants were requested to make 15 second recordings of the most characteristic sounds that they heard during soundwalks. Requesting short sound recordings makes participants more focused on what they hear. Since sound recordings were requested for discussion, they did not need to be necessarily of high quality, so they could have been recorded by smart phones. In the end, there was a discussion about sonic environments explored and the most characteristic sounds were determined together with participants by listening to the recorded sounds. Finally, a questionnaire was distributed to gather participants' experiences during soundwalks.

Workshops

Based on the information collected during these studies mentioned above, an online archive was created which then inspired the crowdsourced web archive. Later on, we organized 2 workshops in order to evaluate the interface of the online crowdsourced sound heritage archive. 4 participants attended to the first workshop and 6 participants to the second workshop which lasted for approximately 3 hours. After explaining the projects and showing the interfaces of digital collection at university's online library, other existing archives which have different themes, such as (http://www.filmingrevolution.org), text-based (http://www.ubu.-com), (http://sounds.bl.uk), visual-based (https://www.myprovence.fr/snapshots2010/#/fr/photos) and a detailed sound database (https://www.freesound.org) were showed. Introducing several online archives makes participants think from different perspectives. Then, participants were divided into three groups and were assigned with different user scenarios. First group is a researcher who needs to conduct detailed research in the online crowdsourced sound archive; second group is a random visitor who finds the online crowdsourced sound archive by chance and wants to discover the sound collection, and the third group is a dedicated contributor who records and uploads his/her own sound recordings to the archive. Participants were asked to define user needs of these three different user profiles and they finally evaluated the Soundsslike archive considering these user needs.

Interactive Exhibition

It is aimed to enrich the content of the online crowdsourced sound heritage archive by public contribution. For this, it is needed to raise public awareness of urban sounds. Therefore, an interactive exhibition was designed to present the crowdsourced sound archive with two different navigation methods: spatial and thematic.

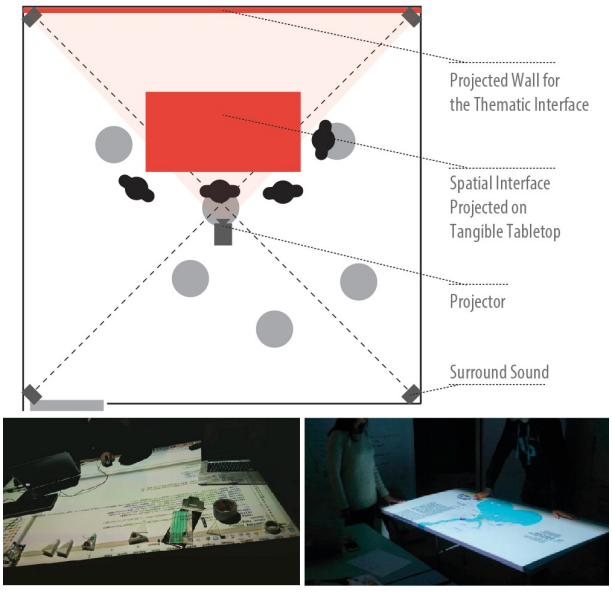

Figure 3 – The structural setup for the sound archive exhibition and the development of the interactive setup.

In the exhibition, the installation was created with a two-screen interactive HTML5 graphic projection setup (Fig. 3). In this setup, the screen that is projected on the wall shows the conceptual visualization of the sound categories in the archive and the sound recordings with their relations. This screen acts both as a feedback and visual legend for the installation. The screen that is projected on the table shows the collection content, each colored according to its category, spread over the geographical map of the city. Visitors can play desired sounds and view its metadata on this screen. Instead of tactile interaction, the table is designed to be physically interactive. The table is controlled by three cursors which are designed and printed out by a 3D printer for the installation. Visitors can select and play three different sounds at the same time by moving the cursors over the icons, thus the table can be used by more than one visitor and the sounds from different locations can be mixed. Each cursor used in the exhibition is equipped with an infrared LED which is driven by a simple circuit and battery. The positions of the cursors are followed by an image processing application written in Processing which sees the table by an infrared camera that's mounted inside the ceiling. This application sends the positions to the visualization application, which projects the cursors over the map by an algorithm.

FIRST OUTCOME: THE LIBRARY ARCHIVE (THE SOUNDSCAPE OF ISTANBUL PROJECT)

Determining the content of the collection

We had 421 online survey participants and 43 interviewees in total. According to the results of the online survey and interviews, representative sounds include traffic and car horns, ferries, crowds, seagulls, street vendors, call to prayer, sea and waves, animals, music from shops, sirens and announcements, nostalgic tram, bazaars, tea, narghile (hubble-bubble), backgammon, kokoreç (a kind of street food), street musicians, construction, church bells and others (Fig.4). Conducting further analysis on the resulting sounds, we came across three main categorization roads: according to content, according to time and according to origin.

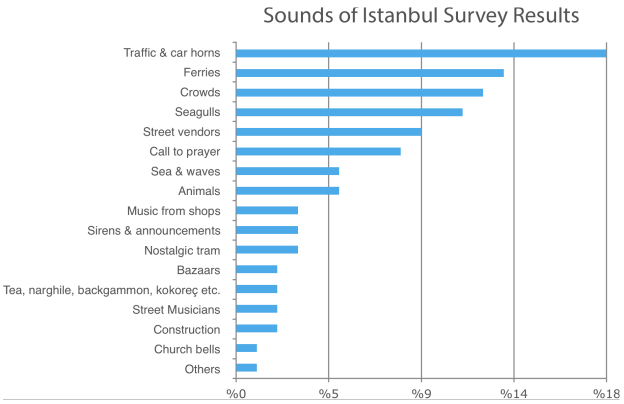

Figure 4 - Survey results from the study with 421 participants and the sounds suggested by the participants.

First, we found out a pattern which basically shapes the classification of daily urban sounds and cultural sounds according to urban life activities. This pattern, which is explained in a detailed manner by Yelmi [18], includes nine categories which are transportation, food and drink, sports, religion, entertainment and leisure, nature, street professions, festivals and events, and urban life.

Second, we came up with a timeline for action frequencies of sounds according to the resulting sounds. To explain, Turkish bagel vendor (simitçi) is an example of daily sounds, church bells are weekly heard sounds, Boza seller (bozacı) is a seasonal sound as boza is a winter drink and it is sold in the street only in winter and for annual sounds, we can indicate sirens that are heard on a 10th November at 09:10 for the commemoration of Atatürk (the founder of Turkish Republic) every year. This timeline not only offers a plan for field recordings but also plays an important role in assessing the significance of cultural values according to frequencies of action and to their places in social life. Table. 2 demonstrates a sample timeline regarding the frequencies including several urban sounds such as call to prayer, nostalgic tram, tea, backgammon, national festivals and so on.

Finally, we formed a classification for sound types which is a specification according to origins such as human (verbal and non-verbal), natural, mechanical, and musical. To illustrate, sound of a Turkish bagel vendor is a human verbal sound, whereas sound of clinking tea glass is an example of human non-verbal sound as it stems from human action, bird songs and wave sounds are natural sounds, car horns are mechanical and call to prayer or street musicians are examples for musical sounds. Based on these three classifications, specific metadata model was shaped with librarians for The Soundscape of Istanbul collection.

Traditional Sound Events	Intervals
Trams, Ferries, Tea, Backgammon, Call for prayer, Street Food...	Daily
Friday prayer, Church bells, Football matches...	Weekly
Boza (a local drink), Icecream...	Seasonal
Commemoration of Atatürk, National festivals, Religious fests...	Annual

Table 2 - Some of the sound events collected for the archive and their recording intervals.

Soundwalks in pilot neighborhoods			
	Routes	**Characteristic sounds (from the discussions with recorded sounds)**	**Other sounds heard during soundwalks (from the surveys distributed after soundwalks)**
1	Galata	Nostalgic tram bells, Street musicians, Construction noise	Flights, Radio, Different languages, Cat, Baby, Telephone, Street musicians, Tram, Birds, Construction, Motorcycle, Protests, Announcement, Music from shops, Tea glass
2	Karaköy	Fishmongers' cries, Construction and Traffic noise, Ferry announcements and hoots	Fishmongers, Birds, Fish-grill, Forks & knives from restaurants, Ventilation, Footsteps, Coughing, Sneezing, Ferries, Backgammon, Construction, Parking man, Rosaries, Children, Trucks, Music, Announcement, Wind, Waves, Conversations, Horns, Turkish bagel vendor, Ticket card
3	Beyoğlu	Ice-cream vendors, Street musicians, Noise of ventilation system, Nostalgic tram bells	Flights, Conversations, Musical instruments, Construction, Ice-cream vendor, Selfie stick vendor, Ticker card, Street cleaning machine, Forks & knives from restaurants, Shopping bags, Ventilation, Manhole, Fish-sandwich vendor, Roasted chestnuts, ATM, Barcode readers, Air-conditioning systems, Birds
4	Eminönü	Ferry announcements, Vendors' cries, Crowds' noise, Cries of fish sandwich vendors	Flights, Street vendors, Seagulls, Footsteps, Bells, Tea glass, Bird market, Bus, Wheelbarrows, Shopping bags, Homeless people, Crowds, Ferry announcements
Characteristic sounds of Istanbul according to the results of the online survey and interviews			
Traffic & Car horns, Ferries, Crowds, Seagulls, Street vendors, Call to prayer, Sea & waves, Animals, Music from shops, Sirens & announcements, Nostalgic tram, Bazaars, Tea, Narghile, Backgammon, Kokoreç, Street musicians, Construction, Church bells			

Table 3 - Characteristic Sounds

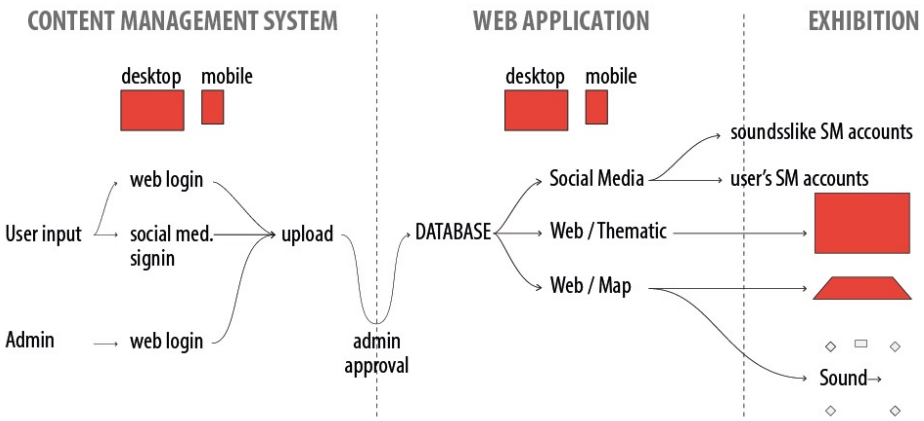

Figure 5 - The information flow structure for the crowdsourced web sound archive.

Verifying the locations of field recordings

In this paper, we explain the way that we conducted soundwalks mentioning each and every purpose of the research, however, discuss only one of the main aims of the soundwalks which is verifying the presence of representative sounds as other purposes of soundwalks are beyond the aim of this paper.

In Table 3, common sounds that were both heard during soundwalks and resulted in the online survey and in the interviews are indicated as underlined. According to this table, we can infer that most of the symbolic sounds of Istanbul that were resulted in the online survey and in the interviews, are heard in these four pilot neighborhoods. There are only four sounds that resulted in the online survey and in the interviews as symbolic sounds, but not heard during soundwalks: call to prayer, narghile, kokoreç and church bells. Two of these sounds (call to prayer and church bells) depend on time factor, meaning that they are active only in certain time periods. As both of them are religious sounds, it is expected that we can hear the call to prayer and church bells only on specific times. Although we had mosques and churches in our routes, we didn't hear them during the soundwalks. It means that we were not there when the call to prayer is broadcasted or church bells are played. If we visit these pilot neighborhoods considering the times of call to prayer and church bells, we find them. Other two sounds (narghile and kokoreç), however, have specific locations. Pilot neighborhoods, indeed, include cafés where narghile is smoked and vendors of kokoreç. However, we did not walk exactly near them during the walks. In this case, if we go find specifically narghile cafés and kokoreç sellers in these pilot neighborhoods, we will have the chance of recording these two sounds as well. Therefore, we can verify that the chosen pilot neighborhoods, reflect the representative sonic environment of the city and they are convenient for conducting field recordings.

Creating the digital sound archive

In library archive, we first determined the archive content by online surveys and interviews as explained in detail above. We also decided when and where to record sounds and thus we had a recording schedule for one year. Then, we conducted field recordings throughout the entire year of 2015 with a surround microphone. Together with sound recordings, we also documented photographs and exact locations of recordings with coordinates. Truax, another pioneering WSP team member, has worked on an ontological representation of the World Soundscape Project Tape Library to organize the recorded sounds and make them easily accessible. This formal semantic representation of the library is based on Schafer's taxonomy [14]. Being inspired by Truax's work, we developed a model for the classification of sonic heritage, which may be applicable to any urban or rural area in the world. For this, we prepared sound files and photographs for digital library and created also metadata sheets that include information such as title, description, date, time, duration, location and so on, about each sound file. *The Soundscape of Istanbul* collection is located in Koç University Suna Kıraç Library Digital Collections and it can be reached at http://digitalcollections.library.ku.edu.tr/cdm/landingpage/collection/SOI.

The sound collection is a publicly accessible online sound archive while the sounds in this collection are licensed under a Creative Commons Attribution – Non Commercial 4.0 International License. Therefore, online archive visitors are able to download sounds besides listening to them; however it is only allowed to use the sounds in non-commercial works.

SECOND OUTCOME: THE WEB ARCHIVE (THE SOUNDSSLIKE PROJECT)

Design and development of the crowdsourced online sound archive

The crowdsourced web archive was initiated with the aim of carrying library archive collection one step further. We aimed to transform the archive interface into a more accessible platform to encourage user participation for a crowd-

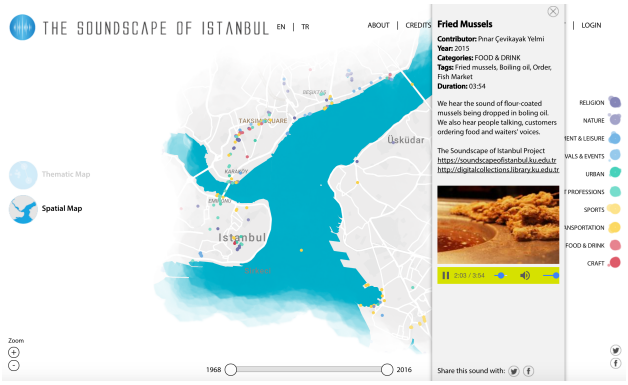

Figure 6 - Spatial representation of the crowdsourced sound archive.

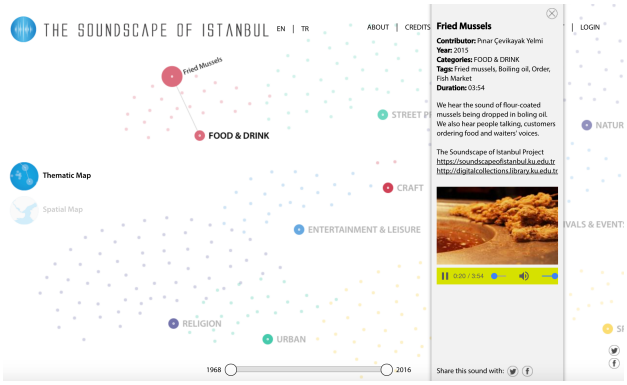

Figure 7 - Thematic representation.

sourced database for sustainable preservation of the intangible cultural heritage. Thus, contributors have the chance to upload their own recordings of symbolic sounds that they find anytime and anywhere in the city. Inline with the six user interface design criteria suggested by Ruecker [10], we proposed two different navigation methods: Location-based map (spatial map) and category-based map (thematic map) and several different navigation paths providing rich user control over the database. In the *Soundsslike* project website (http://soundsslike.com), we have two buttons on the left-side to switch the visualization type at homepage. The main reason behind the choice of having two different navigation methods comes from the nature of the sound archive which has strong relations with specific locations in the city, how this creates emotional links with users and the thematic categorization of the sounds based on the results of the survey conducted earlier in the study.

In the spatial map (Fig 6), which is a location-based visualization type, sounds, can be viewed as colored dots on a map limited by borders and explored by zoom in/out buttons which are designed for the enhancement of focusing. Locations of sounds on the map are determined by the exact places where sounds were recorded while the category is also given by the color coding, as a secondary information. Clicking on the colored dots on the map, there opens an information column related to the picked sound on the right-side. While listening to the sound, one can view the title of the sound, name of the contributor, date and category which are obligatory fields when uploading sounds. The need and structure of the meta-data is also based on the user needs data collected in earlier studies with surveys. More information can also be viewed such as description, keywords and a related visual, if provided. There are also social media (Facebook and Twitter) sharing buttons at the bottom of the information column.

In the thematic map (Fig 7), providing category-based visualization, all sounds are shown as colored dots as well; however, they are located around the primary category to which they belong as some sounds have more than one category. When none of the sounds are playing, all sounds are indicated with small dots and the categories with bigger dots. While sounds are playing, the dots that belong to the playing sounds get bigger even than the dots of categories. Also, the connections between the sounds and the categories (both primary and secondary) are shown with thin lines. Sounds play in a loop and three different sounds can be played at the same time. Thus, website visitors have an opportunity to create their own soundscapes choosing various sounds.

Moreover, we developed membership and contribution functions for the database with the aim of creating a more sustainable collection. People can create an account and contribute with the urban sounds (.mp3 and .wav) that they record. We also request some information about the sounds such as title, description, keywords, date, sound category, location and a related visual (.jpg and .png). Though necessary, it is very difficult to get too much information from people as they may get bored or do not pay attention to requested information. Because of this, we prepared a contribution form requesting basic information, as a simpler version of the metadata that we created for the library archive. Even a basic contribution form is necessary for a standardized archive. For this reason, some requested information is obligatory such as title, date, sound category and location. Besides being essential for standardization, this information organizes the interface according to uploaded sound. Recording date is necessary for classifying sounds with timeline, sound category determines the color, location is needed for exact placement on the map and title gives basic information about the sound. On the other hand, description, keywords and related visual are optional information fields as some contributors may want to enhance the collection whereas some may not want to spend more time or may not have a related visual. Finally, another important function for the system is the integration with social media which updates the community when new sounds are uploaded.

Raising awareness by means of interactive installation

In order to enrich the content of the online crowdsourced sound archive, we designed an interactive exhibition for increasing public awareness of urban sounds. The exhibition was open for 2,5 months (8th January - 20th March 2016) and we had 5827 visitors in total. 368 visitors filled

the questionnaire that was located in the exhibition area and 323 visitors wrote on the visitor book. 295 out of 368 of those who filled the questionnaires and 315 out of 323 of those who wrote on the visitor book did not know about the project before they visit the exhibition. Among the questionnaire participants, 240 out of 368 have declared that their awareness of urban sounds increased and that they think urban sounds are part of culture and it is very important and necessary to protect them. 255 out of 323 has written that the exhibition is very successful in terms of displaying urban sounds and emphasizing the significance of sonic values of intangible cultural heritage. According to the survey results and the comments on the visitor book, we can say that this interactive installation reached its aim in raising public awareness of sound heritage.

We also started a social media campaign during the exhibition. We actively used three social media channels which are Facebook, Twitter and Instagram. Since we expect public contribution to the web archive, we shared encouraging posts every day and we keep sharing. Once contributors add their own sound recordings, uploaded sounds can be listened to not only from the website but also in the exhibition area. With the help of the exhibition, there is a significant amount of new members (around 150) in the website and many recently uploaded sounds (around 300) by contributors. Therefore, we can infer that the exhibition is an effective way to raise awareness rather than a website.

Figure 8 – The exhibition setup with the tabletop and wall projections for the spatial and thematic interfaces of the system. User interacts with the system using three 3D-printed graspable controllers.

DISCUSSION

In the Soundsslike project, which is basically a crowdsourced online sound archive, people can record and upload urban sounds that reflect sound heritage of Istanbul and that they consider worth protecting, anytime and anywhere in the city. Thus, we eliminate the research steps which are determining the content (online survey and interviews) and verifying the locations of urban sounds (soundwalks) as people (locals and foreigners) are already included as contributors. Therefore, the collection may grow without any limitation of time or place.

However, there may be several negative outcomes such as low quality of sounds, non-detailed metadata, submission of irrelevant sounds and incorrect placement of sounds. The first possible negative outcome is that voluntary contributors may not have professional equipment to record high-quality sounds. At this point, content and cultural values of the sound recordings are our priorities; which means we accept recordings of endangered sounds even they are not of high quality. And this works like a data collection method where we learn from the user's about new sounds to be added to the library archive and we will start recoding hi-fi sounds from the locations and sounds suggested by the users of the web archive. Second, contributors may not complete the entire metadata form and the sound files may be lack of information except the obligatory fields. Thus, this crowdsourced sound archive will have a non-detailed metadata compared to library collection, but at least contains a standardized information about sound recordings thanks to the required fields of contribution form. Third, there may be irrelevant submissions of sound recordings. For this, we developed an administration panel which enables us to approve or to reject sounds before they appear in the archive. And finally, contributors may place their own recordings in incorrect locations. It may be necessary to design a mobile application which will let them pick the correct locations. In the future, we plan to build sustainable and crowdsourced functions to verify the user inputs as a solution to the last two obstructions.

Moreover, we observed that visitors have found sounds familiar and close to their own sonic memories and spent much time with playing sounds. One reason for that is the main control for playing sounds in the exhibition was interacting with the location-based map which was projected onto the table. As far as we could observe, people tried to explore the neighborhoods that they are already familiar with and wondered if there were sounds that they encounter in their daily lives. For example, there was a boy who was specifically searching for ramadan drummers in his neighborhood, Fatih. We had this specific sounds in the archive. When he found that sound, he had emotional moments in the exhibition. Also the results of the exhibition questionnaires supports the idea that visitors prefer searching sounds with a location-based map.

CONCLUSION

Urban sounds are unique elements of daily life and significant parts of intangible culture. However, we realized that there is not any archive that is collecting and preserving urban sounds of the city of Istanbul despite its rich history and multi-cultural urban layers. Thus, we intended to create an archive for sound heritage. In doing so, we included locals in each and every step of research. Their opinions, memories and daily life in the city are very important because sounds constitute common cultural memory and cultural identity and the most characteristic sounds of a city can only be determined by people who have an idea about that specific city. In order to determine the most symbolic urban sounds, we conducted an online survey and interviews which were very useful. We formed a very detailed list of symbolic sounds and also got information about their locations and the time periods in which they can be heard according to survey results. Then, with the aim of verifying the locations of field recordings, we organized soundwalks which were very fruitful in discovering the sonic environ-

ments of pilot neighborhoods and in discussing the sonic awareness with participants.

Throughout the entire study, we learnt that creating such an archive needs to be done as a collaborative work. There are millions of people living in the city and everyone has a unique daily sonic experience in such a rich urban fabric. Each experience is valuable as they represent various neighborhoods, different time periods and a variety of daily life activities. Therefore, it is significant to build a dynamic platform that anyone can contribute with their own sound recordings rather than creating a stable archive. It is also necessary to design a sustainable system for transferring sonic cultural heritage values to next generations and for expanding the archive with past and future sound recordings. Moreover, including people in such a cultural project not only creates consciousness on protecting sound heritage together but also turns the action of protecting into safeguarding as it becomes a daily activity. Safeguarding requires protecting a cultural value in its own context and it is very important in terms of intangible cultural heritage. Since urban sounds are parts of intangible culture, it is more convenient to protect them in such a dynamic structure.

The Soundsslike project may, hopefully, turn into a long-termed sound heritage collection to which future and past urban sounds can, then, be added. The project also lays a background to upload sound heritage elements not only from Istanbul but also from other cities. Therefore, the web archive may become an interactive platform for protecting cultural and urban sounds across the country and it may even become a global action. Furthermore, we plan to explore what new technologies such as mobile devices, wearable interfaces, sensors, urban data can provide, in terms of sustainability of the intangible cultural heritage and ethnographic data collection methods. For example, the use of sensors or wearable technologies for soundwalks, or attentive user interfaces that help focusing on urban sounds and preserving specific sounds of the surrounding by means of these technologies, would be an interesting future study. Thus, the Soundsslike project would be a step towards collecting world's cultural sounds and eventually we would have the opportunity to hear how world sounds like.

ACKNOWLEDGMENTS

The Soundscape of Istanbul project and the *Soundsslike* project are sponsored by a Seed Research Grant from Koç University and by Research Centre for Anatolian Civilizations of Koç University. We would like to profoundly thank Hüseyin Kuşcu for his efforts in developing the *Soundsslike* archive.

REFERENCES

1. Barcelona, Free Sound. 2016. Sound Collection. http://barcelona.freesound.org/ (last accessed 1 February 2016).
2. British Library. 2016. Sound Collection. http://sounds.bl.uk/. (last accessed 1 February 2016).
3. Ecouter Paris. 2016. Sound Collection. http://www.ecouterparis.net/ (last accessed 1 February 2016).
4. Firenze Soundmap. 2016. Sound Collection. http://www.firenzesoundmap.org/ (last accessed 1 February 2016).
5. Jenkins, H.. Fans, bloggers, and gamers: Exploring participatory culture. NYU Press, (2006).
6. Kato, K.. Soundscape, cultural landscape and connectivity. Sites: a journal of social anthropology and cultural studies 6.2 (2009), 80-91.
7. Kirshenblatt-Gimblett, B. Intangible Heritage as Metacultural Production. Museum international 56.1-2 (2004): 52-65.
8. Netherland Institute of Sound and Vision. 2013. Het Geluid van Nederland (Sound of the Netherlands). http://www.geluidvannederland.nl/. (last accessed 1 February 2016).
9. Oomen, J., & Aroyo, L. Crowdsourcing in the cultural heritage domain: opportunities and challenges. In Proceedings of the 5th International Conference on Communities and Technologies. ACM. (2011):138-149.
10. Ruecker, S., Milena R., and Stéfan S. Visual interface design for digital cultural heritage: A guide to rich-prospect browsing. Ashgate Publishing, Ltd., (2011)
11. Schafer, R. M. Our Sonic Environment and the Tuning of the World: The Soundscape. Vermont: Destiny Books Rochester, (1977).
12. Snapshots of Provence. 2016. Sound Collection. http://www.snapshotsofprovence.fr/ (last accessed 1 February 2016).
13. Soundsurvey, London. 2016. Sound Collection. http://www.soundsurvey.org.uk/index.php/survey/soundmaps/ (last accessed 1 February 2016).
14. Thorogood, M., Pasquier, P. & Truax, B. "Toward an Ontological Representation of the World", n.d.
15. UNESCO. 2003. Convention for the Safeguarding of the Intangible Cultural Heritage. Available at: http://unesdoc.unesco.org/images/0013/001325/132540e.pdf (last accessed 4 April 2016).
16. UNESCO. 2011. What is Intangible Cultural Heritage?
17. Westerkamp, H. "Soundwalking." Sound Heritage 3.4 (1974): 18-27.
18. Yelmi, P. "Protecting contemporary cultural soundscapes as intangible cultural heritage: sounds of Istanbul." International Journal of Heritage Studies 22.4 (2016): 302-311.
19. Yelmi (Çevikayak), P. Attraverso i suoni. Guida non convenzionale per la citta di Istanbul: soundtourist. unpublished MA thesis, Communication Design Department at Politecnico di Milano. 2012.

12. PAPER E:

The Soundscape of Istanbul: Exploring the public awareness of urban sounds

This paper puts forward the analysis of the online survey which was conducted at the beginning of *The Soundscape of Istanbul* project. Primary source research was followed by this online survey and interviews in order to specify culturally significant urban sounds and to define the archive content. Besides gathering data for archive content, I obtained a pattern demonstrating the level of awareness of urban and cultural sounds of Istanbul from the viewpoint of residents and foreigners. This paper discusses the pattern drawn from the results of the online survey that shows which sounds are primarily recognized and which ones less so, and put forward possible reasons for this outcome. It is intended to lay the groundwork for further research on which culturally significant urban sounds need more attention and how to increase awareness of the most important sounds for a sustainable urban culture.

The Soundscape of Istanbul: Exploring the Public Awareness of Urban Sounds

Pinar Yelmi

***Abstract*—The Soundscape of Istanbul project aims to explore urban sounds of Istanbul since they form a significant part of intangible cultural heritage (ICH) and to protect them by creating an archive for sounds of Istanbul's urban culture. We conducted primary source research followed by an online survey and interviews in order to specify culturally significant urban sounds and to define the archive content. Besides gathering data for archive content, we obtained a pattern demonstrating the level of awareness of urban and cultural sounds of Istanbul from the viewpoint of residents and foreigners. This paper discusses the pattern drawn from the results of the online survey that shows which sounds are primarily recognized and which ones less so, and put forward possible reasons for this outcome. This paper is intended to lay the groundwork for further research on which culturally significant urban sounds need more attention and how to increase awareness of the most important sounds for a sustainable urban culture.**

***Index Terms*—Awareness, daily traditions, intangible cultural heritage, sound archive, soundscape, urban sounds.**

I. Introduction

Culture is reflected in daily life of a society in both its tangible and intangible aspects. Tangible culture includes buildings, monuments, objects, and costumes, while intangible culture includes festivals, music, culinary traditions, oral expressions, and so on [1]. Whereas tangible culture is relatively stable, intangible culture is constantly evolving and being enriched with the contributions of each generation [2]. Both tangible and intangible traditions represent cultural identity and give us a feeling of belonging and identity both to urban space and to society. Intangible culture maintains this connectivity very well as it changes and adapts to society's needs over time. In the Convention for the Safeguarding of Intangible Cultural Heritage in 2003, UNESCO has defined the categories for intangible culture in Article 2 [3] as follows:

(a) oral traditions and expressions, including language as a vehicle of intangible cultural heritage;

(b) performing arts;

(c) social practices, rituals and festive events;

(d) knowledge and practices concerning nature and the universe;

(e) traditional craftsmanship.

In line with these categories, sound-generating practices and sonic events–occuring in an environmental context during a specific moment of time [4] form a very strong human-culture connectivity and hold a very important place in society in general and in urban space in particular. As one of the most significant symbols of cultural identity, human-generated sounds are considered unique ICH elements. In the field of heritage studies, culture has been examined in its various dimensions of sound, such as the acoustic aspects of the Romanesque cathedral of Santiago de Compostela [5] or ethnic music, chants, ceremonial, and so on [6]. This research project highlights the sounds of everyday life in the city of Istanbul, but excludes music because it already represents a heavily researched field.

The soundscape, a term first coined by the Canadian composer R. Murray Schafer, is a sonic landscape, in other words, the total acoustic values related to a certain place. Having conducted detailed research in Canada and across Europe, Schafer published the compiled results in Our Sonic Environment and the Tuning of the World - The Soundscape. Among his classification of sounds, exists the category "Sounds and Society," with sub-categories such as "Domestic soundscapes/Kitchen" or "Parks and Gardens/Fountains." There exist also sub-categories such as rural [7]. These categories are very broad; yet, they include extremely rich and varied sonic values. Furthermore, both rural and urban soundscapes deserve to be studied. In this paper, I discuss urban soundscape from the vantage point of intangible cultural heritage, by exploring the cultural sounds of the city of Istanbul.

Departing from Schafer's statement that *"every natural soundscape has its own unique tones and often these are so original as to constitute soundmarks"* [7], cities can also be considered to have their own unique soundscapes due to their distinct urban culture. Kumi Kato, a Japanese scholar of environmental studies, posits that the soundscape forms an interactive human-urban relationship which produces cultural connectivity [8]. Because cities may host societies inclusive of various ethnicities, religions, political views, languages and so on, urban traditions are formed based on the city residents' lives, and not only the cities' geographical parameters. Thus, we can speak of a cultural soundscape as a very crucial part of urban culture, which can also be referred to as sound heritage. The notion of cultural soundscape has been used while defining the content of a planned Sound Museum of Istanbul [9], whose collection will consist of the sounds and melodies of everyday routines that constitute intangible culture. It is indeed difficult to draw any strict boundaries around what constitutes a cultural soundscape since it may consist of any sound related to urban culture. In the case of Istanbul, these sounds and melodies include the ferries on the Bosphorus, seagulls near the sea shores, the call to prayer, the signature cries of street vendors, pigeons on almost every public square and traffic noises on most of the main streets which can be reached at The Soundscape of Istanbul project website

Manuscript received October 11, 2016; revised March 12, 2017. The Soundscape of Istanbul project was realized by the financial support of Koç University.

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https://soundscapeofistanbul.ku.edu.tr/archive. These daily sounds of Istanbul deserve to be protected as intangible heritage, as they contribute to the city's unique character.

II. Methodology: Exploring Culturally Significant Urban Sounds of Istanbul by Means of an Online Survey

Urban sounds form a significant part of intangible cultural heritage; thus they deserve to be protected for a sustainable urban culture. In this context, we initiated The Soundscape of Istanbul project which aims to explore, collect and archive urban and cultural sounds as ICH elements [10].

Urban and cultural values leave a unique mark in both common social memory and in cultural identity. For this reason, we believe that asking society's opinion is crucial while determining the most significant urban and cultural sounds that need to be protected. Following primary source research, we conducted an online survey and interviews in order to specify the urban sounds to be collected by public contribution. For the interviews, we chose locals randomly within the city. We observed that perception of sounds have a great tendency to change according to location of the survey. Being subjected directly to the city itself, the answers given to the same questions may differ. For example, we interviewed with a Turkish bagel vendor just next to the ferries in Karaköy which is one of the central and historical districts of Istanbul. His answer to the question asking the daily sounds of the neighborhood that he works was only the sounds of waiters which are calling customers "*buyrun, buyrun*" and he insisted on not hearing any sounds related to ferries, sea or anything else during the day. Considering his location and his position, he faces with the waiters all day long and the ferries and the sea are behind him. Thus, he hears only what he sees. Therefore, here I focus only on the results of online survey, and the evaluation of interviews is beyond the aim of this paper since the conditions of the surveys are different.

We conducted the online survey in December 2014, by posting it on an online platform hosted by Koç University, by sending it to such mailing lists as PhD Design List and ETMK (Industrial Designers' Society of Turkey), and by distributing it with the snowball method. With this survey, we wanted to learn not only Turkish people's or Istanbulites' opinions, but also foreigners' and tourists' even if they haven't visited the city before. Therefore, the online survey was open to both locals and foreigners with access to internet and the survey questions were bilingual (Turkish and English) [10].

As shown in Fig. 1, we assumed that there are eight categories of participants regarding their familiarity with the culture and with the city: Turkish people who currently live in Istanbul, Turkish people who used to live in Istanbul, Turkish people who have visited Istanbul, Turkish people who have never been to Istanbul, foreigners who currently live in Istanbul, foreigners who used to live in Istanbul, foreigners who have visited Istanbul, and foreigners who have never been to Istanbul.

The criterion for familiarity with the culture is basically set according to cultural background; i.e. whether one is from Turkey or not. Cultural background is a key factor in perceiving other cultures. Coming from outside of any culture may result in realizing different urban or cultural values than those who are already in the culture. The perception may even differ depending on which cultural background one belongs. On the other hand, the criterion for familiarity with the city is set according to location of residency; i.e. whether one currently lives/have lived before in Istanbul or not. When setting this criterion, it is assumed that it is quite difficult to know a city deeply without actually living there. Even if you live there, it may be hard to know well but at least more information can be gained while living. There might have been some exceptions among the survey respondents; however we believe that these criteria are fair enough for our research purposes.

The categories of participants are very important as the perception of culture may alter accordingly. In the online survey, we asked questions about the familiarity with the culture, further information on cultural origin, demographic information, questions about familiarity with the city, thought-provoking questions about urban and cultural sounds, symbolic sounds of Istanbul, and a question for further exploration on identifying symbolic sounds. The flow of survey questions was structured according to respondents' knowledge of Istanbul and its culture (see App.1).

"Where are you from?", which is a bilingual question, is the first main question of the survey for determining the familiarity with culture. There are two options; respondents can select either "Turkey" or "Other". The respondents who select "Turkey" come across only Turkish questions and those who select "Other" come across only English questions from this point on. With this question, we can determine the main two groups: familiar with the culture and unfamiliar with the culture.

	Familiar with the culture	**Unfamiliar with the culture**
Familiar with the city	1. Turkish people who currently live in Istanbul	5- Foreigners who currently live in Istanbul
	2. Turkish people who used to live in Istanbul	6- Foreigners who used to live in Istanbul
Unfamiliar with the city	3. Turkish people who have visited Istanbul	7- Foreigners who have visited Istanbul
	4. Turkish people who have never been to Istanbul	8- Foreigners who have never been to Istanbul

Fig. 1. Categories of participants.

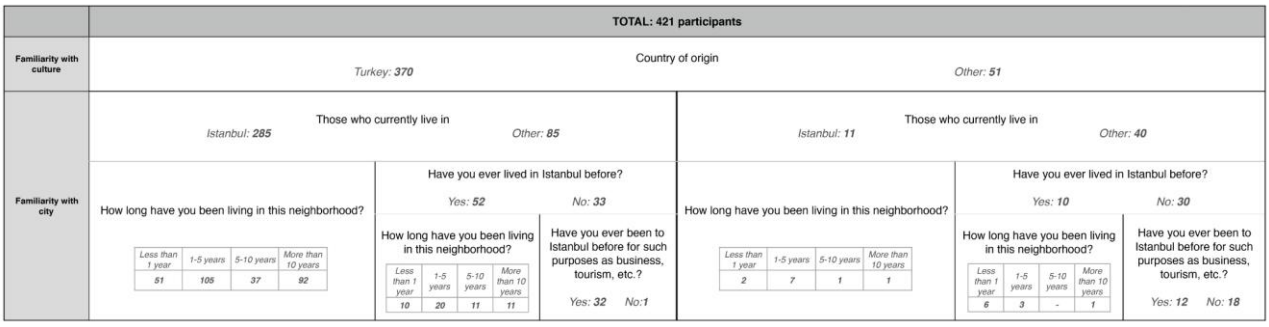


Fig. 2. Survey results.

If "Other" is selected, country of origin is asked for further exploration of cultural background as there may be a relation with cultural background and identified sounds.

Then, gender and age are asked to both main groups in order to gather demographic information about the survey participants. Both of the questions have options, for gender there are three options namely, "female", "male", "other" and for age there are six options namely, "under 17", "18-25", "26-34", "35-54", "55-64", "65 or over". Thus, we have an idea about participants' genders and age periods.

Demographic exploration is followed by a set of questions for understanding the familiarity with the city. First question of the set is "In which city do you live in right now?". There are two options: "Istanbul" and "Other". If "Istanbul" is selected, the neighborhood that they currently live in and how long they have been living there are asked. If "Other" is selected, they are asked if they have lived in Istanbul before. There are again two options: "Yes" and "No". If "Yes" is selected, the neighborhood that they have lived in before and how long they have lived there are asked. If "No" is selected, they are asked if they have ever been to Istanbul before for any reason. This set of questions is asked to both main groups with the intention of determining sub-groups according to familiarity with the city. Therefore, both Turkish people and foreigners who currently live or have lived before in Istanbul are considered familiar with the city, and those who have visited Istanbul or have never been there before are considered unfamiliar with the city.

To those who are familiar with the city, i.e. those who currently live or have lived in Istanbul before, two thought-provoking questions are asked: "Could you please write down the sounds that you hear in open spaces when you consider your daily life in your neighborhood?" and "Could you please write down the sounds that you hear in open spaces according to categories below, when you consider your daily life?" Furthermore, we provide extra sections for both questions in order to make survey participants think about sounds that they hear every day from different aspects. For the first question, we provide seven sections exploring sounds that are heard frequently, rarely, sounds that are liked, sounds that are found annoying, relaxing, unique sounds of neighborhoods and other. On the other hand, for the second question, we provide six sections exploring sounds related to food and drink, transportation, entertainment and activities, religion, special days (festival, etc.) and other. With the help of these extra sections, we may have the chance to gather a great variety of responses for urban and cultural sounds. The reason of asking these questions to both groups that currently live and have lived before is to have an idea about the changes in urban spaces and urban culture over time.

Final question is the common question that is asked to all categories of participants with the purpose of exploring symbolic sounds of Istanbul: "Which sounds, do you think, define the city of Istanbul best? Could you please give at least 3 examples?" With this question, we can determine the most symbolic sounds of Istanbul to be collected and archived. Moreover, we can compare the responses given by each category of participants which may result in exploring how perception and awareness of urban and cultural sounds differ according to familiarity with the culture and with the city as predicted at the beginning of the survey.

Finally, there is a very last question which is asked to only those who have never been to Istanbul before and give an answer for the symbolic sounds of the city: "What is the reason of writing these sounds despite not being in Istanbul before?" This question investigates how the city of Istanbul is recognized with its sounds by the people who have not been before. Thus, answers given to this question may provide clues about catchy and prominent urban values.

III. Results

This research aims to determine the city's soundmarks, defined as *"by analogy to landmarks, are highly unique sounds specific to a certain locale and often affectionately regarded by the public"* by Barry Truax [11], which deserve to be protected as ICH elements for a sustainable cultural development. We conducted an online survey and distributed it to a great variety of people to gather opinions of different profiles such as locals, foreigners, those who currently live in Istanbul, who used to live in Istanbul, who have visited the city, or who may not yet have been to Istanbul as different backgrounds may result in diverse responses. Exploring the most characteristic urban sounds with this method, we also came across a pattern which demonstrates how perception and awareness of urban culture changes among different groups.

This research was conducted according to responses of 421 online survey participants, 370 of which are from Turkey and the rest are from Algeria (1), Australia (2), Austria (1), Belgium (2), Bulgaria (1), Canada (2), Colombia (3), Czech Republic (1), Finland (2), Germany (3), Greece (3), India (2), Iran (1), Italy (3), Mexico (1), The Netherlands

(1), New Zealand (1), Norway (2), Portugal (3), Spain (2), Sweden (1), Tunisia (1), United Kingdom (4), and United States of America (8). Among the respondents, there are 244 women, 172 men and the rest select the "Other" option for gender. As for the age, 4 participants select "under 17", 126 select "18-25", 198 select "26-34", 59 select "35-54", 13 select "55-64" and 21 select "65 and over" age groups [10]. The results of the questions for determining familiarity with the culture and with the city are demonstrated in Fig. 2.

With thought-provoking questions asked to only those who considered as familiar with the city and with the common question asked to all categories on symbolic sounds of Istanbul, we had a very detailed data on sounds that are heard in neighborhoods and a list of characteristic sounds of the city. The answers given to these questions were very beneficial for us to determine urban and cultural sounds that need to be recorded and archived. We also obtained information on the locations of the sounds which was very useful in planning field recordings. According to the sound list that we gathered from survey results, we conducted field recordings throughout the year 2015 and recorded more than 200 sounds. All recorded sounds are now protected in a publicly accessible archive in Koç University Suna Kıraç Library Digital Collections (http://digitalcollections.library.ku.edu.tr/cdm/landingpage/collection/SOI).

There is only one Turkish respondent who has never been to Istanbul before and his answer is invalid for the question exploring the symbolic sounds. So we also do not evaluate his answer to the very last question asking the reasons of writing symbolic sounds of Istanbul despite not having been there. Whereas, there are 18 foreigner participants who have never been to Istanbul before and wrote several symbolic sounds. The reasons why they wrote those sounds include hearing from friends, relatives, family members who have been to Istanbul before, from commercials and tourism agencies, from movies, internet, books, and without any concrete basis.

Here, I focus on the common question on defining the symbolic sounds, "Which sounds, do you think, define the city of Istanbul best? Could you please give at least 3 examples?", and leave further data to future studies. Among the answers to this question, 16 specific sounds and sonic events constituted the most common, as shown in Fig. 3. The percentages, on the other hand, reveal the fact that which of these soundmarks are more commonly known and which of them are less recognized.

%18	Traffic and car horns
%13	Ferries
%12	Crowds
%11	Seagulls
%9	Street vendors (turkish bagel vendors, vendors of roasted chestnuts, *boza* sellers and other sellers)
%8	Call to prayer
%5	Sea and waves
%5	Animals (cats, dogs, birds)
%3	Music from shops
%3	Sirens and announcements
%3	Nostalgic tram
%2	Markets and Bazaars
%2	Cultural activities (tea, narghile, backgammon, *kokoreç* and others)
%2	Street musicians
%2	Construction
%1	Church bells
%1	Others (horse-drawn carriages and others)

Fig. 3. Symbolic sounds of Istanbul according to the common question.

Therefore, besides playing an important role in determining the archive content, the online survey also helped us in exploring answers to following questions: "In how far are people aware of culturally significant urban sounds?", "What are the sounds of which they are aware the most?" and "What are the possible reasons of perceiving different sounds among different groups?".

IV. Discussion: Awareness of Urban Sounds

As mentioned above, we have also the chance to observe and compare how familiarity with the culture and with the city may alter the awareness and perception of urban sounds by means of the common question as it is asked to all categories of participants. The answers of all categories of participants are indicated as tables (see App.2). However, the fourth group (Turkish citizens who have never been to Istanbul) contained only one respondent, and his answer was invalid; thus we do not have data for this group.

As it can be seen from the tables above, traffic noise, car horns and the hubbub of crowds are the most determinative sounds, in almost every group, even among foreigners who had never been to Istanbul. Some respondents complain about the noise of traffic, of the crowds and of the construction sites by using such phrases as "disturbing traffic noises" and "unfortunately lots of construction noise". Therefore, it can be inferred that these sounds are the loudest, most frequent and least liked sounds.

Fig. 4. Simit çi (Turkish bagel vendor).

Turkish citizens who currently live in Istanbul and those who have lived in Istanbul before mostly identify sounds such as ferries and seagulls in the second place. However, foreigners who currently live or have previously lived in Istanbul mostly mention the sounds of street vendors and the call to prayer in the second place. Although there is a slight difference, this result demonstrates that foreigners' attention is mostly attracted by unfamiliar sound events that are not necessarily part of their original cultural frame of reference. Volume/loudness and frequency are other main factors. For example, street vendors and the call to prayer are the loudest among the sound events generated in everyday practice. Being one of the most significant symbols of Islam, the call

to prayer is broadcast five times a day from hundreds of Istanbul's mosques. Street vendors hawk their goods with distinctive cries and melodies to attract potential buyers' attention. In less developed and developing countries, street peddling is a common occupation for those who cannot find employment in the formal sector [12]; in Turkey, it is very common to see street peddlers everywhere [13], selling food such as: *boza* (a traditional Turkish winter drink, made from yeast and lactic acid bacteria fermentation of millet, cooked maize, wheat, or rice semolina/flour [14]), *simit* (a bagel-shaped bread with sesame [15]) (Fig. 4)[1], roasted chestnuts, corn, and so on. What the call to prayer and street vendors have in common is that they both become foreground sounds at the time of action. We include Turkish bagel vendors, vendors of roasted chestnuts, *boza* sellers, and all the other vendors in a one category, which is street vendors. Although this category is mentioned rather commonly as a whole (by %9 of all participants), it is seen that the percentages are very low when the items are analyzed one by one (Turkish bagel vendors %2, vendors of roasted chestnuts %0.3, *boza* sellers %0.7, and all the other sellers %6). Particularly these three vendors are considered significant cultural heritage according to our primary source research conducted before the online survey. According to results, awareness of these sounds is very low despite being culturally significant.

Fig. 5. Kokoreç

In the category of cultural activities, neither Turkish nor foreign participants mention many relevant sounds, such as those related to *kokoreç*, tea, *narghile* (hubly bubbly), backgammon and so on. *Kokoreç* (Fig. 5) is a street food of grilled intestine and served chopped and with red pepper, salt and oregano. It goes well with beer and is usually eaten at night [16]. The sonic value of *kokoreç* comes from its preparation process -- a musical symphony for the stomach, played by the street peddler while chopping it with a semi-circular knife on a thick wooden cutting board [17]. Tea has been a very important element in Turkish cuisine since the 19th century; almost everyone starts the day with a glass of tea and drinks it throughout the day, and it is also commonly offered to guests [18]. Tea is drunk with sugar cubes added. Particularly in tea houses, the stirring of sugar in the thin-walled glasses results in a musical harmony of clinking spoons. *Narghile*, *tavla* (backgammon), and playing cards are traditional elements of *kahvehane* (coffee house) visits.

[1] Fig. 4, 5, 6, and 7 are photographs from the archive of The Soundscape of Istanbul project.

With the introduction of coffee to the Ottoman Empire in the 16th century, the first coffee houses were opened in the Tahtakale district of Istanbul [19]. Coffee houses have never functioned for coffee consumption alone, but always as a meeting point where people share knowledge and find inspiration for art and literature production. Since the 19th century, however, coffee house clients have more commonly turned to entertainment and games such as okey (tile-based game similar to mah jong), backgammon, brigde, *bezik* (card game) and so on, while drinking *çay* (tea) (Fig. 6) or *türk kahvesi* (Turkish Coffee) and smoking cigarettes or *narghile* (water pipe). Therefore, the soundscapes of coffee houses include the sounds of playing tiles, dice and cards, accompanied by the musical harmony of tea spoons hitting tea glasses and bubbling water in *narghile* bottles. These sounds are relatively quieter than those of street vendors and the call to prayer, but the frequency with which they occur in the respective locations is much higher. Being audible almost any time, they are considered keynote sounds [7] that form a sonic background. For example, clinking spoons are heard very intensely in tea gardens, and because it is a relatively quiet sound, it is perceived as background, even though it is one the most significant cultural values of Turkish culture [20]. Therefore, sounds related to tea, backgammon, *narghile* and *kokoreç* are mentioned by %2 of the participants in total, which is again very low despite being culturally significant.

Fig. 6. Çay (Turkish tea).

The bells of the so-called "nostalgic tramway" can be considered as a significant sonic dimension of Istanbul's cultural heritage. There are only two nostalgic tramways left in Istanbul: the Taksim-Tünel line and the Kadıköy-Moda line. The Kadıköy-Moda line is immersed in dense traffic, so this may be a reason why the respondents mentioned only the Taksim-Tünel line. Another reason may be its history. The Taksim-Tünel line has been working since 1914 and is one of the oldest tramways in Turkey [21]. Therefore, the acoustic dimension of this nostalgic tramway (Fig. 7) is a very significant cultural heritage. However, very few respondents mention (%3 of all participants) the nostalgic tramway bells, which means that there is little concrete awareness of it, although it is one of the soundmarks of the central entertainment district of Taksim.

Fig. 7. Nostalgic tramway.

The categories of sea and waves, church bells, markets and bazaars, sirens and announcements, animals (cats, dogs, birds), construction, street musicians, and music from shops are distributed in various orders in each group's answers. This order is likely to change according to the respondent's personal interests and the locations to which they have been exposed. Sounds to which we listen carefully depend both on our state at that moment and our own cognitions, such as memories, ideas, feelings, attitudes, values, preferences, and the like [22]. Or we pay attention to sounds that give us important information at the moment, such as the sound of cars when crossing the street, but we do not pay attention to the same sounds when chatting with a friend on a street corner [23]. Among these categories, market and bazaars carry great importance in terms of cultural heritage which still continue in contemporary urban life. However, %2 of the participants mention the sonic values of markets and bazaar, which are indeed very rich in variety and unique.

In the last category, others, there are several sonic values mentioned by a very few people so that we did not include them in the tables prepared separately for each group. For example, horse-drawn carriages, which are soundmarks of Prince's Islands in Istanbul [10], are mentioned by only two participants. Despite being a very rooted tradition and having such a determinative sonic value, it is not realized by so many people.

Overall, it is also possible to put forward some differences between the groups who are familiar with the culture and who are not, and who are familiar with the city and who are not. Considering familiarity with the culture, it can be said that coming from a different cultural background may result in observing and in perceiving the urban fabric with diverse aspects. On the other hand, those who are unfamiliar with the city (both Turkish and foreign participants who have only visited Istanbul or have never been before) mention cultural sounds more than those who are familiar with the city (both Turkish and foreign participants who currently live or have lived in Istanbul before). This result indicates that city residents are so much immersed in the lifestyle that they are no longer aware of its sonic dimensions. This situation can be explained by the Habituation Theory: *"Habituation involves our becoming accustomed to a stimulus so we gradually pay less and less attention to it"* [24]. Therefore, it can be inferred that compared to locals, tourists are somewhat more aware of sounds as they observe the unfamiliar city with open senses.

To sum up, although sounds are ubiquitous that are encountered every day, several sounds are generally perceived unconsciously and do not attract much attention, even though they constitute very significant values in terms of intangible cultural heritage, such as Turkish bagel vendors, vendors of roasted chestnuts, *boza* sellers, tea, *kokoreç*, *narghile*, backgammon, the nostalgic tramway, markets and bazaars and horse-drawn carriages. Indeed, they are valuable components of intangible culture which deserve to be protected. The preservation of these cultural values is only possible by increasing public awareness as intangible culture lives within the society. Therefore, these ten culturally significant sounds need to receive more public awareness for a sustainable cultural memory and cultural identity.

V. Conclusion

Sounds are integral parts of urban spaces, cultures, traditions, history, and memories. Sounds promote connectivity not only with culture, but also with location. Once sounds disappear, the connectivity may be lost. This emotional and conceptual link only continues to exist as long as the cultural sounds are maintained. The sustainability of these sounds can be achieved by increasing public awareness and consciousness.

This paper discusses the results of an online survey that we conducted concerning the urban and cultural sounds of Istanbul. The online survey aimed to determine the sonic values of the city of Istanbul which needs to be protected. Addressing the responses of online survey participants, public awareness of culturally significant sounds can also be evaluated. According to the results, not many people are conscious of the culturally important sounds, such as several street vendors (Turkish bagel vendors, vendors of roasted chestnuts, *boza* sellers), tea, *narghile*, *kokoreç*, backgammon, the nostalgic tramway, markets and bazaars, and horse-drawn carriages. In order to protect these sonic values for a sustainable cultural memory, the ways of raising awareness for urban and cultural sounds need to be explored. The more people are reached, the more awareness is increased of these sounds. Considering these, I suggest holding an exhibition on sounds. Since one of the most effective ways of creating awareness of something is experiencing it personally, an experiential exhibition can be designed in which visitors will focus on the sounds. Thus, they will have the opportunity to think about cultural sounds and understand their significance. The survey, hopefully, will lay the groundwork for further research on exploring ways of increasing public awareness on cultural sounds.

Appendix

Appendix.1 - Survey structure

Appendix.2 - Tables of results according to all categories of participants

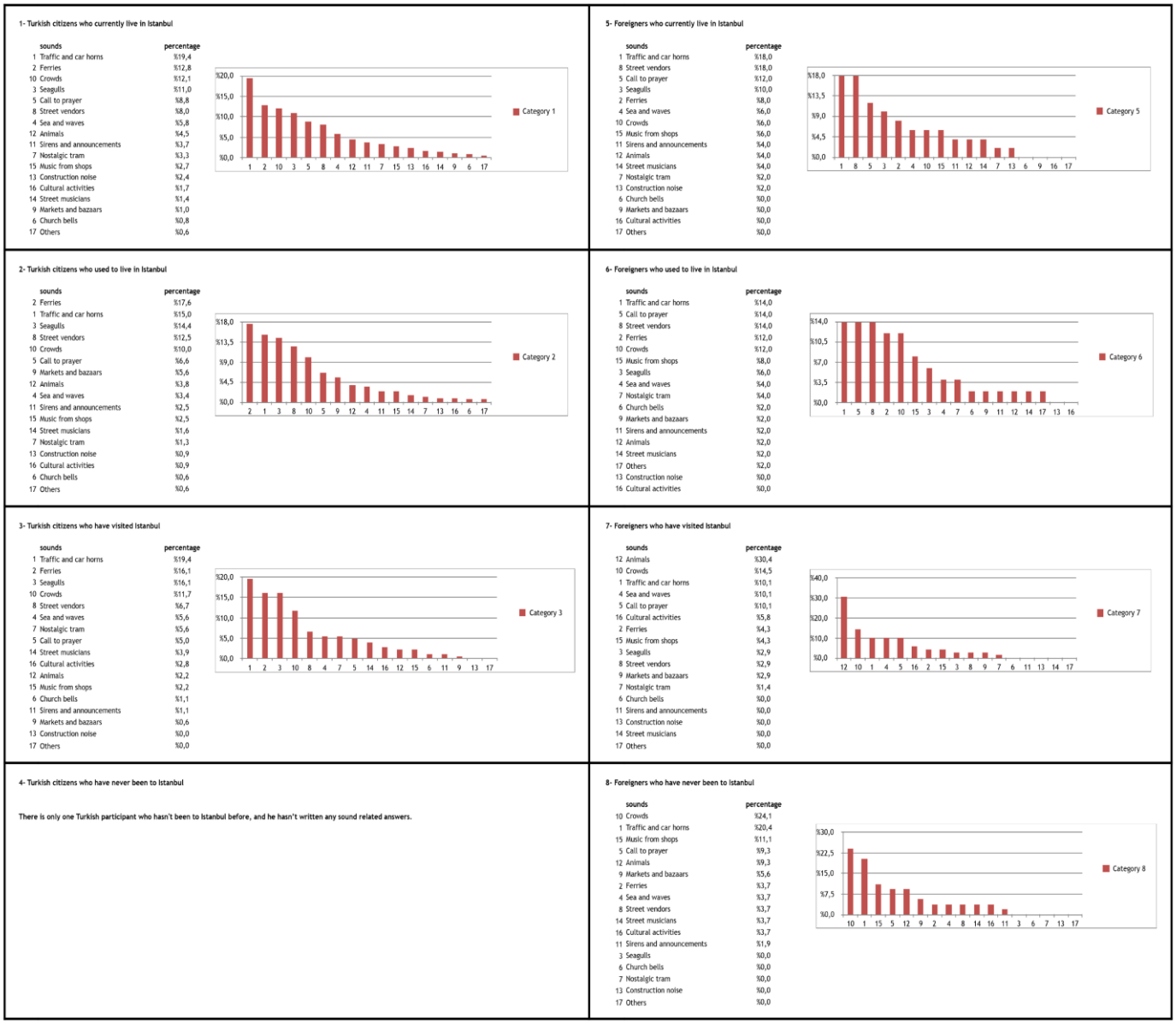
ACKNOWLEDGMENT

I would like to thank to Assoc. Prof. Nina Ergin, Assoc. Prof. Serta ç Kakı and Assoc. Prof. Asım Evren Yanta ç for their valuable contributions and comments.

APPENDIX 1 - SURVEY STRUCTURE

RESEARCH AIMS	QUESTIONS								
Familiarity with culture	1- Neredensiniz? / Where are you from? *Türkiye / Turkey (If "Turkey" is selected, rest of the questions are in Turkish)*					*Diğer / Other (If "Other" is selected, rest of the questions are in English)*			
Further exploration on cultural origin						2- Select your country of origin *(dropdown menu - all countries)*			
Demographic information	2- Cinsiyetiniz (What is your gender?) *(Female, Male, Other)*					3- What is your gender? *(Female, Male, Other)*			
	3- Kaç yaşındasınız? (How old are you?) *(Under 13, 13-17, 18-25, 26-34, 35-54, 55-64, 65 or over)*					4- How old are you? *(Under 13, 13-17, 18-25, 26-34, 35-54, 55-64, 65 or over)*			
Familiarity with city	4- Şu anda hangi şehirde ikamet ediyorsunuz? (In which city do you live in right now?) *İstanbul*			*Other*		5- In which city do you live in right now? *İstanbul*		*Other*	
	5- Şu anda ikamet ettiğiniz semti seçiniz. (Select the neighborhood that you currently live in) *(dropdown menu - all neighborhoods in İstanbul)*	5- Daha önce hiç İstanbul'da yaşadınız mı? (Have you ever lived in Istanbul before?) *Yes*		*No*		6- Select the neighborhood that you currently live in *(dropdown menu - all neighborhoods in İstanbul)*	6- Have you ever lived in Istanbul before? *Yes*		*No*
		6- İstanbul'da daha önce ikamet ettiğiniz ilçeyi seçiniz. (Select the neighborhood that you lived in before) *(dropdown menu - all neighborhoods in İstanbul)*	6- Daha önce hiç iş, gezi vb. amaçlarla İstanbul'da bulundunuz mu? (Have you ever been to Istanbul before for such purposes as business, tourism, etc.?) *Yes*	*No*			7- Select the neighborhood that you lived in before *(dropdown menu - all neighborhoods in İstanbul)*	7- Have you ever been to Istanbul before for such purposes as business, tourism, etc.? *Yes*	*No*
	6- Kaç yıldır belirttiğiniz ilçede yaşıyorsunuz? (How long have you been living in this neighborhood?) *(Less than 1 year, 1-5 years, 5-10 years, More than 10 years)*	7- Kaç yıl belirttiğiniz ilçede ikamet ettiniz? (How long have you lived in this neighborhood?) *(Less than 1 year, 1-5 years, 5-10 years, More than 10 years)*				7- How long have you been living in this neighborhood? *(Less than 1 year, 1-5 years, 5-10 years, More than 10 years)*	8- How long have you lived in this neighborhood? *(Less than 1 year, 1-5 years, 5-10 years, More than 10 years)*		
Thought-provoking questions for urban and cultural sounds to those who are already familiar with the city	7- Yukarıda belirttiğiniz bu ilçedeki günlük yaşantınızı düşündüğünüzde aklınıza gelen, açık alanda duyduğunuz **sesleri** yazar mısınız? (Could you please write down the **sounds** that you hear in open spaces when you consider your daily life in this neighborhood?) *(Text entry question: Sounds that you hear frequently, Sounds that you hear rarely, Sounds that you like, Sounds that you find annoying, Sounds that you find relaxing, Unique sounds for the neighborhood, Other)*	8- Yukarıda belirttiğiniz bu ilçedeki günlük yaşantınızı düşündüğünüzde aklınıza gelen, açık alanda duyduğunuz **sesleri** yazar mısınız? (Could you please write down the **sounds** that you hear in open spaces when you consider your daily life in this neighborhood?) *(Text entry question: Sounds that you hear frequently, Sounds that you hear rarely, Sounds that you like, Sounds that you find annoying, Sounds that you find relaxing, Unique sounds for the neighborhood, Other)*				8- Could you please write down the **sounds** that you hear in open spaces when you consider your daily life in this neighborhood? *(Text entry question: Sounds that you hear frequently, Sounds that you hear rarely, Sounds that you like, Sounds that you find annoying, Sounds that you find relaxing, Unique sounds for the neighborhood, Other)*	9- Could you please write down the **sounds** that you hear in open spaces when you consider your daily life in this neighborhood? *(Text entry question: Sounds that you hear frequently, Sounds that you hear rarely, Sounds that you like, Sounds that you find annoying, Sounds that you find relaxing, Unique sounds for the neighborhood, Other)*		
	8- İstanbul'daki günlük hayatınızı (iş, alışveriş, haftasonu vb.) düşündüğünüzde aklınıza gelen, açık alanda duyduğunuz **sesleri** aşağıdaki kategorilere göre ayırır mısınız? Lütfen nerede duyduğunuzu belirtiniz. (Could you please write down the **sounds** that you hear in open spaces according to categories below, when you consider your daily life (business, shopping, leisure etc.) in Istanbul? Please specify the locations where you hear them.) *(Text entry question: Food & drink, Transportation, Entertainment & activities, Religious, Special days (festivals, etc.), Other)*	9- İstanbul'daki günlük hayatınızı (iş, alışveriş, haftasonu vb.) düşündüğünüzde aklınıza gelen, açık alanda duyduğunuz **sesleri** aşağıdaki kategorilere göre ayırır mısınız? Lütfen nerede duyduğunuzu belirtiniz. (Could you please write down the **sounds** that you hear in open spaces according to categories below, when you consider your daily life (business, shopping, leisure etc.) in Istanbul? Please specify the locations where you hear them.) *(Text entry question: Food & drink, Transportation, Entertainment & activities, Religious, Special days (festivals, etc.), Other)*				9- Could you please write down the **sounds** that you hear in open spaces according to categories below, when you consider your daily life (business, shopping, leisure etc.) in Istanbul? Please specify the locations where you hear them. *(Text entry question: Food & drink, Transportation, Entertainment & activities, Religious, Special days (festivals, etc.), Other)*	10- Could you please write down the **sounds** that you hear in open spaces according to categories below, when you consider your daily life (business, shopping, leisure etc.) in Istanbul? Please specify the locations where you hear them. *(Text entry question: Food & drink, Transportation, Entertainment & activities, Religious, Special days (festivals, etc.), Other)*		
Exploration of symbolic sounds of Istanbul	9- Sizce İstanbul'u en iyi tarif eden **sesler** nelerdir? En az 3 tane örnek yazar mısınız? (Which **sounds**, do you think, defines the city of Istanbul best? Could you please give at least 3 examples?) *(Text entry question)*	10- Sizce İstanbul'u en iyi tarif eden **sesler** nelerdir? En az 3 tane örnek yazar mısınız? (Which **sounds**, do you think, defines the city of Istanbul best? Could you please give at least 3 examples?) *(Text entry question)*	7- Sizce İstanbul'u en iyi tarif eden **sesler** nelerdir? En az 3 tane örnek yazar mısınız? (Which **sounds**, do you think, defines the city of Istanbul best? Could you please give at least 3 examples?) *(Text entry question)*			10- Which **sounds**, do you think, defines the city of Istanbul best? Could you please give at least 3 examples? *(Text entry question)*	11- Which **sounds**, do you think, defines the city of Istanbul best? Could you please give at least 3 examples? *(Text entry question)*	8- Which **sounds**, do you think, defines the city of Istanbul best? Could you please give at least 3 examples? *(Text entry question)*	
Further exploration on symbolic sounds from those who are not familiar with the city				8- Hiç İstanbul'da bulunmamış olmanıza rağmen bu sesleri yazmanızın nedeni nedir? (What is the reason of writing these sounds despite not being in Istanbul before?) *(Text entry question)*					9- What is the reason of writing these sounds despite not being in Istanbul before? *(Text entry question)*

APPENDIX 2 - TABLES OF RESULTS ACCORDING TO ALL CATEGORIES OF PARTICIPANTS



1- Turkish citizens who currently live in Istanbul

	sounds	percentage
1	Traffic and car horns	%19,4
2	Ferries	%12,8
10	Crowds	%12,1
3	Seagulls	%11,0
5	Call to prayer	%8,8
8	Street vendors	%8,0
4	Sea and waves	%5,8
12	Animals	%4,5
11	Sirens and announcements	%3,7
7	Nostalgic tram	%3,3
15	Music from shops	%2,7
13	Construction noise	%2,4
16	Cultural activities	%1,7
14	Street musicians	%1,4
9	Markets and bazaars	%1,0
6	Church bells	%0,8
17	Others	%0,6

5- Foreigners who currently live in Istanbul

	sounds	percentage
1	Traffic and car horns	%18,0
8	Street vendors	%18,0
5	Call to prayer	%12,0
3	Seagulls	%10,0
2	Ferries	%8,0
4	Sea and waves	%6,0
10	Crowds	%6,0
15	Music from shops	%6,0
11	Sirens and announcements	%4,0
12	Animals	%4,0
14	Street musicians	%4,0
7	Nostalgic tram	%2,0
13	Construction noise	%2,0
6	Church bells	%0,0
9	Markets and bazaars	%0,0
16	Cultural activities	%0,0
17	Others	%0,0

2- Turkish citizens who used to live in Istanbul

	sounds	percentage
2	Ferries	%17,6
1	Traffic and car horns	%15,0
3	Seagulls	%14,4
8	Street vendors	%12,5
10	Crowds	%10,0
5	Call to prayer	%6,6
9	Markets and bazaars	%5,6
12	Animals	%3,8
4	Sea and waves	%3,4
11	Sirens and announcements	%2,5
15	Music from shops	%2,5
14	Street musicians	%1,6
7	Nostalgic tram	%1,3
13	Construction noise	%0,9
16	Cultural activities	%0,9
6	Church bells	%0,6
17	Others	%0,6

6- Foreigners who used to live in Istanbul

	sounds	percentage
1	Traffic and car horns	%14,0
5	Call to prayer	%14,0
8	Street vendors	%14,0
2	Ferries	%12,0
10	Crowds	%12,0
15	Music from shops	%8,0
3	Seagulls	%6,0
4	Sea and waves	%4,0
7	Nostalgic tram	%4,0
6	Church bells	%2,0
9	Markets and bazaars	%2,0
11	Sirens and announcements	%2,0
12	Animals	%2,0
14	Street musicians	%2,0
17	Others	%2,0
13	Construction noise	%0,0
16	Cultural activities	%0,0

3- Turkish citizens who have visited Istanbul

	sounds	percentage
1	Traffic and car horns	%19,4
2	Ferries	%16,1
3	Seagulls	%16,1
10	Crowds	%11,7
8	Street vendors	%6,7
4	Sea and waves	%5,6
7	Nostalgic tram	%5,6
5	Call to prayer	%5,0
14	Street musicians	%3,9
16	Cultural activities	%2,8
12	Animals	%2,2
15	Music from shops	%2,2
6	Church bells	%1,1
11	Sirens and announcements	%1,1
9	Markets and bazaars	%0,6
13	Construction noise	%0,0
17	Others	%0,0

7- Foreigners who have visited Istanbul

	sounds	percentage
12	Animals	%30,4
10	Crowds	%14,5
1	Traffic and car horns	%10,1
4	Sea and waves	%10,1
5	Call to prayer	%10,1
16	Cultural activities	%5,8
2	Ferries	%4,3
15	Music from shops	%4,3
3	Seagulls	%2,9
8	Street vendors	%2,9
9	Markets and bazaars	%2,9
7	Nostalgic tram	%1,4
6	Church bells	%0,0
11	Sirens and announcements	%0,0
13	Construction noise	%0,0
14	Street musicians	%0,0
17	Others	%0,0

4- Turkish citizens who have never been to Istanbul

There is only one Turkish participant who hasn't been to Istanbul before, and he hasn't written any sound related answers.

8- Foreigners who have never been to Istanbul

	sounds	percentage
10	Crowds	%24,1
1	Traffic and car horns	%20,4
15	Music from shops	%11,1
5	Call to prayer	%9,3
12	Animals	%9,3
9	Markets and bazaars	%5,6
2	Ferries	%3,7
4	Sea and waves	%3,7
8	Street vendors	%3,7
14	Street musicians	%3,7
16	Cultural activities	%3,7
11	Sirens and announcements	%1,9
3	Seagulls	%0,0
6	Church bells	%0,0
7	Nostalgic tram	%0,0
13	Construction noise	%0,0
17	Others	%0,0

REFERENCES

[1] M. Ö. Oğuz, *Turkey's Intangible Cultural Heritage*, Ministry of Culture and Tourism, Ankara, 2010.

[2] UNESCO. (2011). What is intangible cultural heritage? [Online] Available: http://www.unesco.org/culture/ich/doc/src/01851-EN.pdf,

[3] UNESCO. (2003). Convention for the safeguarding of the intangible cultural heritage. [Online]. Available: http://unesdoc.unesco.org/images/0013/001325/132540e.pdf

[4] B. Truax, *Sound in Context: Acoustic Communication and Soundscape Research*, Simon Fraser University, Vancuver, Canada, 2007.

[5] R. Suárez, A. Alonso, and J. J. Sendra, "Intangible cultural heritage: The sound of the romanesque cathedral of santiago de compostela," *Journal of Cultural Heritage*, 2014.

[6] D. Bendrups, "Sound recordings and cultural heritage: The fonck museum, the felbermayer collection, and its relevance contemporary easter Island culture," *International Journal of Heritage Studies*, vol. 21, no. 2, pp.166-176, 2015.

[7] R. M. Schafer, *Our Sonic Environment and the Tuning of the World – The Soundscape*, Vermont: Destiny Books Rochester, U.S., 1977.

[8] K. Kato, "Soundscape, cultural landscape and connectivity," *Sites: A Journal of Social Anthropology and Cultural Studies*, vol. 6, no. 2, pp. 80-91, 2009.

[9] P. Yelmi, "Sound museum of Istanbul," *International Journal of Her itage and Sustainable Development*, vol. 4, no. 1, forthcoming.

[10] P. Yelmi, "Preserving contemporary cultural soundscapes as intangible cultural heritage: Sounds of Istanbul," *International Journal of Her itage Studies*, vol. 22, no. 4, pp. 302-311, 2016.

[11] B. Truax, "Soundscape studies: An introduction to the world sound scape project," *Numus West* 5, pp. 36- 39, 1974.

[12] M. Yağbasan and A. Canpolat, "İşportacılıkta Bağırmanın Tüketiciye Ulaşmadaki İletişimsel Rolü (Elazığ İli Örnegi)," *Journal of Graduate School of Social Sciences*, vol. 8, no. 2, pp. 377-392, 2006.

[13] A. E. Uysal, "Street cries in Turkey," *Journal of American Folklore* 81, pp.193-215, 1968.

[14] M. Arıcı and O. Dağlıoğlu, "Boza: A lactic acid fermented cereal beverage as a traditional turkish food," *Food Reviews International* 18, vol. 1, pp. 39-48, 2002.

[15] F. Dikkaya, "Simit and Simit Sellers in the Book of Travels of Evliya Çelebi." *Milli Folklor*, vol. 23, no. 92, pp. 72-76, 2011.

[16] F. Öncü, K. Ögel and D. Çakmak, "Alcohol and Culture: 2 - Culture of Drink and Drink in the Literature," *Bağımlılık Dergisi*, vol. 3, no. 1, pp. 31-36, 2002.

[17] P. Çevikayak (Yelmi), "Soundtourist: An unconventional guide for the sonic discovery of Istanbul," *Stony Brook University Philosophy and the Arts Conference Proceedings*, New York, 2013.

[18] F. Özdemir and H. Şahin, "Importance of tea in daily life of Turkish people," in *Proc. the 3rd International Conference on O-CHA (tea) Culture and Science*, Japan, 2007.

[19] A. Duvarcı, "Istanbul's cafés in our culture and their contribution to folk literature," *Batman Üniversitesi Yaşam Bilimleri Dergisi*, vol. 1, no. 1, pp. 75-86, 2012.

[20] S. Güneş, "Turkish Tea culture and its products," *Milli Folklor*, vol. 2, no. 93, pp. 234-251, 2012.
[21] IETT. (October 10, 2016). [Online] Available: http://www.iett.gov.tr/tr/main/pages/ kronolojik-tarihce/32.
[22] R. Cain, P. Jennings, M. Adams, N. Bruce, A. Carlyle, P. Cusack, W. Davies, K. Hume, and C. J. Plack. "Soundscape: A framework for characterizing positive urban soundscapes," in *Proc. Acoustics 08*, pp. 3261-3264, 2008.
[23] J. Redström, "Is acoustic ecology about ecology?" *Reflections on the International Conference on Acoustic Ecology "Stockholm, Hey Listen!"* 1998.
[24] R. J. Sternberg and K. Sternberg, *Cognitive Psychology*, Cengage Learning, 6th Edition, U.S., 2011.

Pınar Yelmi was born in Istanbul in 1985. Yelmi received her bachelor's degree from industrial design at Middle East Technical University (Ankara, Turkey, 2008) and her master's degree from Visual Communication Design at Politecnico di Milano (Milano, Italy, 2012). Yelmi is currently PhD Candidate at Design, Technology and Society program in Koç University (Istanbul, Turkey).

She worked as industrial designer and graphical designer before her academic career. Her studies on the sounds of Istanbul have started during her Master's education. Having discovered the richness of cultural sounds in Istanbul, she decided to conduct further research under a PhD program. She conducted "The Soundscape of Istanbul" project (https://soundscapeofistanbul.ku.edu.tr) which is located at the intersection of soundscape studies, intangible cultural heritage, museum studies, sensory studies, interaction design, experience design, exhibition design and participatory design. Her project, being first of its kind in Turkey, is also shared with Europeana Sounds which makes efforts towards protecting Europe's sound heritage. Finally, she initiated a crowdsourced project (http://soundsslike.com) to turn her research project into a global action. She also designs exhibitions to display her projects in various cities.

PhD Candidate Yelmi has two awards: one from industrial design area and the other from graphical design.

13. PAPER F:

Designing an experiential exhibition for raising public awareness of cultural sounds to safeguard the sonic intangible cultural heritage values

This paper outlines an experiential exhibition which intends to increase public awareness of cultural sounds of Istanbul. Since intangible cultural heritage (ICH) elements can only be safeguarded within society, it is necessary that the society is aware of cultural values and conscious about their protection. For this, we designed an exhibition to emphasize the cultural significance of urban sounds through sonic experiences. According to the analysis of the online survey that was conducted at the beginning of *The Soundscape of Istanbul* project, we aimed to increase public awareness of barely realized culturally significant urban sounds. We used experience design in the exhibition, as experience is one of the most powerful ways of conveying a message. This experiential exhibition may lead to a raise in public awareness of urban sounds which will hopefully triggers protecting cultural values voluntarily and help turning the action of collecting and archiving urban sounds into a collaborative work.

Designing an experiential exhibition for raising public awareness of cultural sounds to safeguard the sonic intangible cultural heritage values

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Abstract

This paper outlines an experiential exhibition which intends to increase public awareness of cultural sounds of Istanbul. Since intangible cultural heritage (ICH) elements can only be safeguarded within society, it is necessary that the society is aware of cultural values and conscious about their protection. For this, we designed an exhibition to emphasize the cultural significance of urban sounds via sonic experiences. We used experience design in the exhibition, as experience is one of the most powerful ways of conveying a message. This experiential exhibition may lead to a raise in public awareness of urban sounds which will hopefully triggers protecting cultural values voluntarily and help turning the action of collecting and archiving urban sounds into a collaborative work.

Keywords: experience design; intangible cultural heritage; design process; user behaviour; built environment

The sonic environment, which is the totality of sounds that we hear in everyday life, constitutes the soundscape of a certain urban fabric. Urban fabric, however, includes traditions, daily life routines and cultural activities of a society. The sounds related to traditions and culture are considered intangible cultural heritage elements, thus they deserve to be protected. *The Soundscape of Istanbul* project was realized departing from R. Murray Schafer's research on soundscape studies and the project was located between multi disciplines such as soundscape studies, intangible cultural heritage, museum studies,

sensory studies, experience design and interaction design. In this paper, we mainly talk about cultural heritage, sensory studies and experience design.

We initiated *The Soundscape of Istanbul* project (soundscapeofistanbul.ku.edu.tr) to determine, collect and archive the sonic values of Istanbul; thus to protect the sound heritage of the city (Yelmi, 2016). In the project, we conducted field recordings throughout the year 2015 and archived the recorded sounds in Koç University Suna Kıraç Library Digital Collections (http://digitalcollections.library.ku.edu.tr/cdm/landingpage/collection/SOI) which is publicly accessible. Moreover, the collection is also shared with Europeana Sounds portal which is a European organization that aims to protect the sound heritage of Europe (http://www.europeanasounds.eu/news/get-ready-to-discover-sounds-of-turkish-culture-and-daily-life-in-istanbul). However, the sound heritage of Istanbul is not limited to sounds that we recorded. It can be enriched by the sounds recorded in different locations and in different time periods. This is only possible with public contribution. For this, we developed an interactive web-based platform (soundsslike.com) which enables users to upload sounds to the archive (Yelmi, Kuşcu and Yantaç, 2016). Thus, the *Soundsslike* archive intends to collect sonic values by crowdsourcing method and to safeguard the sound heritage of the city.

In order for the public to contribute with their own recordings to the *Soundsslike* archive, the project needs to be introduced and awareness needs to be increased. For this, we decided to display sounds in an exhibition, inspired by Schafer's quotation *"Where are the museums for disappearing sounds?"* (Schafer, 1977). Instead of a permanent exhibition, we designed a travelling exhibition to reach as many people as possible. With this travelling exhibition (*Duyduk Duymadık DeNeyiM!*) which was firstly displayed in Studio-X Istanbul, we aim to raise public awareness, and thus; to make people protect their own heritage voluntarily. In this paper, we discuss if sound heritage can be safeguarded by means of an exhibition, we explain the pre-exhibition research that we conducted to explore the cultural sounds that need attention, and to explore the most effective ways of designing such an exhibition, the installation design process and design decisions, and the post-exhibition research which evaluates the exhibition.

1. Increasing public awareness of cultural sounds by means of an experiential exhibition

It is almost impossible to protect intangible cultural heritage (ICH) in museums, but can it be exhibited in museums or in galleries? Or is it something to exhibit at all? Ruhi Ersoy discusses the types of cultural heritage that can and cannot be exhibited in museums, in order to understand if exhibiting culture in glass cases can really protect it or just display a frozen version of it. According to Ersoy, exhibiting ICH in a museum means pulling ICH out of its context. Instead of putting ICH in a museum, transforming ICH's place of origin into a museum would be a more appropriate approach in the sense that visitors can experience it in its own context (Ersoy, 2004). Baghli also advocates the idea of rethinking

the definition of museums when it comes to the safeguarding of ICH (Baghli, 2004). Ekici, however, summarizes the outcome of the Symposium on Exhibiting the Intangible Cultural Heritage in a Museum in 2004 as follows: there is a consensus on the safeguarding of ICH, and one of the most effective ways of doing so is its musealization, by using recent technology and improving education in museums (Ekici, 2004). He also adds that musealization would not be enough unless ICH elements are sustained or unless the museum has visitors. Tongyun Yin has analyzed the challenges for museums to safeguard ICH in his research sponsored by the Smithsonian Institution and has found several contradictions between the nature of museums and ICH: museums are static, but ICH is dynamic; museums deal with materials from the past, but ICH is about the past, present and even the future; museums are categorized according to their collections (history, anthropology, fine art), but ICH consists of social, natural, cultural, and spiritual values; and lastly museums are places of judgments and decision at each step (such as what to include in a collection, what to exclude, how to interpret or present it), but ICH is completely neutral and directly reflects life itself (Yin, 2006).

Museums, in Turkey, were first established in order for the public to adopt national values in the early Republican Period (Altunbaş & Özdemir, 2012). Then, the aim shifted to increasing educational level and contributing to art genres from the perspective of Turkish culture. Therefore, museums have always been closely related to the nation, culture and society, just as what Southern has declared: "Museums are central to our culture, to our sense of ourselves, and to the future of our country" (Southern,1989). Thus, collections that museums display are crucial for their institutional stand. For this reason, collection pieces need to be chosen by applying significance assessment tests which are mainly used to evaluate the importance and relevance of the objects to the entire collection and to the institution itself (Russel & Winkworth, 2009). In addition to the process of determination, conservation and restoration processes are also the main responsibilities of museums. Therefore, museums play a great role in preserving national values and making public conscious of their uniqueness. However, when considered ICH, museums or galleries are not the most suitable places for the safeguarding of dynamic heritage, as it is also argued by Ersoy, Baghli and Yin. ICH elements need to be maintained in their own context within the society to which they belong.

Cultural sounds also need to be experienced in their own contexts. At this point, it would be even harder to experience cultural sonic values as a whole since there is not only one certain place or only one specific time period to listen to them. For this reason, we designed an experiential exhibition with the intention of highlighting the significance of sonic urban values and raising awareness of cultural sounds instead of direct safeguarding of sonic heritage. Once public awareness is increased, it will eventually lead to safeguarding of cultural values. Thus, we focused on two points when designing the exhibition which helped realizing our intention: First, links were forged between the (static) exhibition space and the (dynamic) urban space of Istanbul through sonic memories awaken by the urban sounds

heard in the installation as well as the exhibition programming (for example, by means of sound-walks). Second, the exhibition had the strong potential to make visitors aware of the uniqueness of their sonic culture, which may, then, lead them to safeguard this very culture and heritage within their daily life voluntarily. Therefore, raising visitors' awareness of sounds, especially of urban and cultural ones, is the major aim of the exhibition.

Sounds do not receive much attention, despite being very important in everyday life. They are mostly ignored in contemporary Istanbul, as in other visual dominant cultures. However, this may have been different in another time period; with the invention of print, the importance of auditory and olfactory communication decreased (Classen, 1993) or in different cultures; societies may have different ways of understanding the external world. For example, most indigenous cultures of Latin America are based on the thermal dynamics of lands and bodies (Classen, 1993), the Ongee of the Andaman Islands communicate and cure with smells and control their cosmos with odors (Classen, 1993), and for the Suya of the Brazilian Mato Grosso, hearing is a symbol of social individuals. The reflection of the significance of hearing can be observed also in their language, as they use the verb "to hear" in order to mean "to understand" (Classen, 1993). In western cultures, however, visual elements are more dominant and visual terms are more common, such as "I see", "point of view", "enlighten", and so on (Classen, 1993). Contemporary Turkish culture is also mainly based on visuality, although its roots are to be found in the Ottoman Empire's culture, where sound, such as Qur'an recitals and the call to prayers (Ergin, 2008), were vital elements of daily life. Such sounds play significant roles not only in terms of religion, but also for temporally organizing everyday life. For example, shopkeepers use to open and close their shops according to the call to prayers as they are heard five times at certain intervals.

Due to the dominance of visual elements over sonic values in everyday life, we aimed to draw attention especially on sounds rather than visual or any other elements in the exhibition area. Experience is a powerful communication tool. Therefore, increasing the awareness of cultural sounds may be achieved by means of an experiential exhibition. Moreover, an exhibition can reach at a large population, especially if it is designed as a travelling exhibition. Any moment of our lives can be taken as an example of experience; they are important for shaping our successive behaviors, feelings or thoughts. Henry James summarizes this idea: "The quality and content of a person's life is the sum total of what they've paid attention to over time" (Shedroff, 2009). Experiences may come in a great variety, from analog to digital, cultural to technological, and individual to interactive. All these experiences interpenetrate into each other in real life. There are mainly six key dimensions that characterize experiences: significance, breadth, intensity, duration, triggers and interaction (Shedroff, 2009). In a potential experiential exhibition, all the principles of experience should be considered, particularly sensorial triggers (taste, sight, sound, smell, touch) and cognitive elements (concepts and symbols) (Shedroff,

2009). Hearing is one of the most important sensual perceptions, and auditory elements not only convey information, but also stimulate emotions and bring back memories. Therefore, the intention of the exhibition is to communicate with the public through sonic experiences and make them realize the uniqueness of cultural sounds.

2. Pre-exhibition research

2.1 Exploring cultural sounds that need attention

In *The Soundscape of Istanbul* project, we conducted an online survey to determine the content of the sound archive. While analyzing the results of the survey, we came across a pattern which puts forward the fact that several cultural sounds are ignored in daily life despite their significance. Therefore, we decided to emphasize especially ignored sounds as the others are already noticed in daily life (Yelmi, forthcoming). The survey and its results are discussed very widely by Yelmi in another paper, and they are beyond the aim of this paper.

To explain very briefly, traffic and car horns, ferries, crowds, seagulls, street vendors, call to prayer, sea and waves, animals, music from shops, sirens and announcements, nostalgic tram, markets and bazaars, tea, narghile, backgammon, *kokoreç* etc., street musicians, construction, and church bells were identified as the characteristic sounds of Istanbul, according to the survey results. The cultural sounds which need more attention, however, include street vendors (turkish bagel vendors, vendors of roasted chestnuts, *boza* sellers), tea, narghile, *kokoreç*, backgammon, the nostalgic tramway, markets and bazaars, and horse-drawn carriages (Yelmi, forthcoming). Therefore, we aimed to increase public awareness of these cultural sounds in the exhibition by emphasizing their cultural significance.

2.2 Exploring the most effective ways of designing an installation to emphasize the cultural significance of urban sounds: research on the usage of audio vs. visual

2.2.1 Audio vs. visual

People tend to recognize and identify their surroundings by seeing rather than listening as Posner's theory explains the visual dominance over other senses (Posner, 1976). Another reason may be that visuals carry more accurate information and prevent the unpredictability and uncertainty, thus make people safe when perceiving. Jian Kang's quote "compared to vision, sound perception is usually information-poor but emotion-rich" (Kang, 2007) also verifies this situation. In this research, we aim to understand the effects of audios and visuals on perception and on experience, and analyze people's reactions to different combinations of these two.

Audio-visual studies generally cover enriched experiences which come out as a result of combination of sound and image or the studies on how audio affects visual perception when they are used together. This literature goes mainly over films, sound design and sound editing. When sound and image is used

together, they create an augmented experience in terms of sensory perception levels. Since sound evokes emotions, it directly changes the value of a simple scene or a picture. This can be described as added value which Chion explains as *" .. the expressive and informative value with which a sound enriches a given image so as to create the definite impression, in the immediate or remembered experience one has of it, that this information or expression 'naturally' comes from what is seen, and is already contained in the image itself"* (Chion, 1990). Gary Rydstrom, who has won best sound and best sound editing academy awards with the films Saving Private Ryan, Titanic, Jurassic Park, and Terminator 2, supports this idea by stating *"..there is a magical level reached when picture and sound work together. When approached creatively, the combination of sound and image can bring something to vivid life, clarify the intent of work, and make the whole experience more memorable"* (Rydstrom, 1994).

Besides contributing to the value of visuals, sound changes their perception as well. Especially music makes people think with their emotions. Muzaffer Çorlu, an award-winning classical guitarist, has conducted a research on how music affects the visual perception and gave a talk called "Do we 'see' with our ears too?" (Corlu, 2013) which is mainly about his research results. In his research, he showed to first group of people a scene with the red dressed girl from Schindler's List without music and asked about their opinion. They all gave responses on the quality of the film and scenario. Then, he showed the same scene with the soundtrack of the film to second group of people and asked the same question. They all commented on that scene declaring pity about the savagery. As we can obviously infer from this example, with the presence of music people leave rational thinking and respond with their emotions. This is a very strong evidence that audio carry great importance in presenting and perceiving visuals. However, our focus is on searching the reverse relation between audio and visual. For this, we conducted a research on how visuals affect auditory perception and whether people tend to listen when there is an informative visual.

2.2.2 Method

In order to investigate what kind of effects visuals have on auditory perception, we conducted a study to understand how people react when they only listen to a sound, when they listen to a sound and then view a related photo, when they view a photo and then listen to a related sound, and when they view a photo while listening to a sound at the same time. We conducted this study with random people of different backgrounds and education levels and also with both locals and foreigners as there may be a difference in perception due to familiarity or unfamiliarity with culture. In total, there were 12 participants, 8 of which are Turkish and the rest are foreigners. All of them have been living in Istanbul for at least 8 years. We also observed how they searched answers for the questions; for example, if they looked for clues only in the visuals or if they directed their attention to listening to background sounds

when they could not find any clues in visuals.

We prepared a set of four items including a sound file, a file containing sound in the first place followed by a visual, a file containing visual in the first place followed by a sound and a file containing both visual and sound at the same time. Together with these items, we asked questions about what the sounds could be, if the visuals and sounds were compatible with each other or if they could be anything else.

Before conducting the research, we have foreseen that there may be a difference in recognizing the cultural sounds among locals and non-locals. For this, we asked the locals of Istanbul to understand if several cultural sounds (for example, narghile or *kokoreç)* become a habit or already lost in daily life; thus, they do not hear them anymore or if they are aware of the importance of urban sounds and approach them consciously. For the non-locals of the city, we explored if it is easy to understand what the origins of sounds were and if they awaken their curiosity for listening and for figuring out the relation between sounds and a totally foreign culture.

2.2.3 Results

First, we only played the sound file and asked what it could be and what they would need to know to be sure. None of the participants could not guess the right answer for what the sound belongs to. 6 out of 8 Turkish people need to see a visual to be sure about the origin of sound. One said that it is enough for him and the last one said another sound which describes it better. 2 out of 4 foreigners need a photo to be sure, one needs to know where it is heard and the other does not need anything.

Secondly, we played the sound file and then showed the visual, and asked if the visual belongs to that sound. All of them except one foreigner confirm that the visual belongs to that sound. They also added that even if they said something else just after listening to the sound, they changed their minds after seeing the visual. Only one foreigner insists that visual does not belong to the sound.

Thirdly, we showed the visual and then played the sound, and asked if the sound belongs to that visual. 4 out of 8 Turkish people said that it could belong to the visual and two of them are absolutely sure that the sound belongs to the visual. Last two of them are certainly sure that the sound does not belong to the visual, and one of which declared that even if he is sure, the visual creates confusion. All the foreigners confirm that the sound belongs to the visual.

And finally, we showed the photo and played the sound at the same time, and then asked where the place in the photo could be. 3 out of 8 Turkish people answered this question only by looking at the photo, two of them did not comment at all and the others declared that since they did not recognize the

place from the visual, they focused on background sounds. 2 out of 4 foreigners commented according to the photo, one of them tried to understand the background sound and one of them answered directly without taking the photo or the sound into consideration because that specific place makes her remind of a particular location.

2.2.4 Discussion

The overall result that we gained from this research is, visuals are more dominant in making people believe just like the phrase *"seeing is believing"* and they carry more information than sounds. When a photo was shown, most of them accept it as the right answer without questioning. There may also be several reasons which affect people's answers such as education level, age/experience, and familiarity with the city or with the culture. According to our observations and analyses, people generally tend to perceive things by seeing rather than by listening since visual communication is generally more dominant than acoustic communication.

When participants are given the photo and the sound together, they usually try to understand the visual. If they cannot, they search for clues in sounds as a second step and some of them do not even think about listening. Whereas some of them make directly their guesses according to what they remember of. Those who have focused directly on the sounds asked for even more informative sounds. When visual is given first and then followed by sound, participants tend to perceive the sound as if it belongs to the visual. Even if they do not think that they are compatible, they cannot think independently from the visual and they make their guesses highly related to the visual. Moreover, they add that if they have not seen the photo first, they could most probably have thought something else. When sound is given first and then followed by visual, participants tend to object more that visual does not belong to sound because they already have an idea about the sound before the visual. But still they cannot be so sure and respond as *"it may be"*. When only a sound is given, everyone thinks of anything in their lives. It all depends on their imagination, world view, knowledge, origin, and own traditions. Sound itself, solely, evoke emotions and imagination and does not always carry accurate information. According to Kang, "there are two types of sounds related to the different ways of processing in terms of the users' listening; holistic hearing and descriptive listening. The former takes soundscape as a whole without making any meaning and the latter focuses on identifying the psychological and social dimensions of a sound source" (Kang, 2007). When people try to recognize origins of sounds, psychological, linguistic and social factors interfere with this process and there comes out different results. For example, it is very difficult to link a sound to a certain place because sounds are located differently in everyone's memory.

In the beginning of the research, we have foreseen that familiarity and unfamiliarity with the city or with the culture may create differences in perception and understanding of sounds. However, this re-

search have appealed that it has nothing to do with it. What is taken from a sound depends on the individual, and nothing else. Therefore, an exhibition designed only with sounds is experienced differently by everybody since there is not only one single meaning to infer and each visitor lives a unique experience. However, if there is a message to convey together with sounds, it is better to give it directly as sounds carry emotions rather than accurate information. Since visuals dominate the attention and leave the sounds at background, we offer to use texts instead of visuals in the exhibition to give the message.

3. Installation design

According to pre-exhibition research, we determined the sounds to be used in the exhibition, and came up with a design decision. Since we eliminate using visuals, we designed the installation only with sounds and texts as a result of the step of comparing audio and visual in terms of perception in pre-exhibition research. Therefore, we intended to emphasize the significance of cultural sounds through sonic experiences; thus, we didn't use any visuals in the exhibition. Without providing visual clues, we aimed to make visitors guess the sonic values from the sound itself and from the text related to that specific sound. The texts do not say which sounds they are, but only give information highlighting the cultural importance of those sonic values. Ten sonic values that are heard in the exhibition include street vendors (turkish bagel vendors, vendors of roasted chestnuts, *boza* sellers), tea, narghile, *kokoreç*, backgammon, the nostalgic tramway, markets and bazaars, and horse-drawn carriages as mentioned in the step of identifying cultural sounds that need attention in pre-exhibition research (Yelmi, forthcoming).

The idea for the sound installation was using a 5.1 surround system, which enabled using a 360-degree sound environment, a realistic feel and blend of the recorded sounds. We located five speakers as a circle shape which enabled visitors navigate in this circle (Fig.2). The preparation of the sound installation was mixing ten recorded audio files in five main surround channels by using two sounds in each channel. So, every single surround channel fed by two chosen sounds except the sub-bass channel. By this way, we tried to give a conceptual feeling in every different channel by choosing relevant sounds for the listeners. For this, we created concepts on channels which were; "Beyoğlu street" using nostalgic tramway and *kokoreç* sellers' sounds, "Nostalgia" using *boza* sellers and horse-drawn carriages' sounds, "Bazaar" using bazaar/market and vendors of roasted chestnut sounds, "Turkish coffee house" using narghile and backgammon sounds and "Traditional ferry breakfast" using tea and Turkish bagel vendors' sounds.

After this process, we decided the placement of the texts as they would be on both left and right side of each surround speaker so when the listeners approach to read the texts they also could hear the relevant sound more obvious than others. This helped the listeners to correlate more between texts and sounds. The installation was in dark and only the texts were lighted as to put emphasize on sounds and

texts. The whole idea behind this installation is to make visitors experience the chaotic sonic environment of Istanbul and realize that each single urban sound is, infact, of great significance in terms of cultural heritage. When visitors stand in the center of the installation, they hear all ten sounds at the same time and it is difficult to distinguish them from each other. However, when they approach to a speaker which has two texts by its sides related to two sounds, it becomes clear to distinguish two sounds with the help of textual clues. Thus, the visitor leaves the chaotic sonic environment behind himself/herself and focus on only these two sounds by bridging sonic values with the textual clues. Making visitors thinking on cultural sounds not only strengthens the bond between the visitor and the installation but also revives visitors' sonic memories related to the city.

Figure.1 - Exhibition

Figure.2 - Exhibition

Furthermore, we took the advantage of the centrally located exhibition gallery (Studio-X Istanbul) and we organized soundwalks during the exhibition in order to enhance the sonic experience. Therefore, visitors could bridge the exhibition space with the daily life of the city and have more time to internalise the significance of urban sounds.

4. Post-exhibition research

We wanted to learn more from the visitors if we could reach our aims during the exhibition. For this reason, we conducted a visitor research preparing a short questionnaire that measures (1) if the exhibition played role in increasing public awareness of cultural sounds, (2) if using only sounds and texts enhanced experience, and (3) if the visitors could bridge their daily lives and memories with the sounds used in the exhibition.

For visitor research, we prepared a very short computer-based questionnaire with seven questions and a likert scale not to overwhelm the visitors. We located the computer on the way out of the exhibition (Fig.1) so that visitors can fill in after visiting the exhibition. We may classify the questions in three categories according to the aims of the exhibition; (1) "increasing awareness", (2) "effects of an entire

sonic experience" and (3) "the relationship between the visitors and the sounds". The questions are as follows; for the first category, *"I didn't realize the cultural value and importance of these sounds before, although I hear them almost everyday."* and *"My awareness of these sounds increased thanks to this exhibition."*; for the second category, *"If visuals were used, I could have imagined the sounds more easily.", "Sounds and texts are adequate to understand what the sounds belong to."* and *"If there were no texts, I could have understand what the sounds belong to."*; and for the third category, *"The sounds remind me of the places that I hear these sounds in the city."* and *"The sounds remind me of my own memories."*

	1 Kesinlikle Katılmıyorum / Definitely Disagree	2 Katılmıyorum / Disagree	3 Kararsızım / Neutral	4 Katılıyorum / Agree	5 Kesinlikle Katılıyorum / Definitely Agree	Total
1- Bu sesleri hemen hergün duymama rağmen kültürel değerini ve önemini daha önce pek farketmemiştim. / I didn't realize the cultural value and importance of these sounds before, although I hear them almost everyday.	4.21% 4	28.42% 27	12.63% 12	37.89% 36	16.84% 16	95
2- Sergi sayesinde bu seslere olan farkındalığımın arttığını düşünüyorum. / My awareness of these sounds increased thanks to this exhibition.	2.11% 2	4.21% 4	15.79% 15	41.05% 39	36.84% 35	95
3- Sergide görsel kullanılsaydı dinlediğim sesler kafamda daha iyi canlanırdı. / If visuals were used, I could have imagined the sounds more easily.	21.05% 20	28.42% 27	18.95% 18	24.21% 23	7.37% 7	95
4- Seslerin ait olduğu öğeleri anlamamda sesler ve yazılar yeterliydi. / Sounds and texts are adequate to understand what the sounds belong to.	1.05% 1	8.42% 8	12.63% 12	36.84% 35	41.05% 39	95
5- Yazılar olmasa da seslerin nelere ait olduğunu anlardım. / If there were no texts, I could have understand what the sounds belong to.	3.16% 3	15.79% 15	38.95% 37	29.47% 28	12.63% 12	95
6- Sergiyi dolaşırken, şehirde bu sesleri duyduğum yerleri düşündüm. / The sounds remind me of the places that I hear these sounds in the city.	1.05% 1	2.11% 2	5.26% 5	45.26% 43	46.32% 44	95
7- Dinlediğim sesler bana kendi anılarımı hatırlattı. / The sounds remind me of my own memories.	0.00% 0	4.21% 4	15.79% 15	42.11% 40	37.89% 36	95

Figure.3 - Survey results

In total, 95 visitors completed the questionnaire and the results are shown in the table above (Fig.3). With this experiential exhibition, we aimed to increase public awareness of cultural sounds, we set an hypothesis that an exhibition designed without any visuals would enhance the sonic experience and we intended to prove that there is an emotional link between people and urban sounds. In this paper, we discuss the results regarding these three scopes of the exhibition.

Concerning the first two questions, it can be inferred that the exhibition played a role in raising public awareness of cultural sounds. Around 55% of the participants declared that they did not realize the cultural value and the importance of sounds until they visit the exhibition and around 78% of the participants stated that their awareness of the urban sounds increased thanks to this exhibition. Therefore, it is obvious that the exhibition was effective in terms of raising awareness of urban sounds.

Regarding the questions querying the design choices, the overall outcome fits what we expected. As mentioned before, we decided to design an exhibition without using any visuals according to the pre-exhibition research. Visuals dominate the space and draw more attention compared to sounds. They are easy to comprehend as they carry more accurate information. However, we wanted visitors listen to the sounds, pay attention only to the sounds and try to guess them as they are part of their daily lives and all the sounds are commonly found in urban space. Around 50% of the participants could have imagined the sounds without visuals and the other had difficulty in understanding. According to (around) 78% of the participants, sound and texts were adequate to guess what the sounds actually belong to, although they had some difficulty. Around 42% of the participants, however, stated that they could guess the sounds without texts and the rest may not be able to guess without clues. Thus, we can verify that sounds carry less information and people pay less attention to sounds so that recognizing sounds without clues becomes difficult even if they are heard several times in daily urban lives. However, providing textual clues makes guessing the sounds easier. It also helps reviving personal memories for each visitor; thus, the experience becomes unique as well although there is a single message and the visitors connect with the exhibition via a strong emotional bond. If there were visuals related to sounds, it was more likely that visitors would have an objective attitude to urban sounds. Therefore, designing a sound exhibition by using sounds and texts is a successful combination in terms of reflecting personal experiences within daily urban life, and in making visitors embrace cultural sounds and comprehend the significance of urban sonic values.

The results of the last two questions, however, proved that there is a strong bond between citizens and urban sounds. Around 92% of the participants declared that the sounds reminded them of the places that they hear in the city and 80% of the participants stated that the sounds reminded them of their own memories. Although less attention is paid to sounds, there occurs an emotional bond unconsciously with sounds which takes you a sonic journey to your memories even in a different context.

5. Conclusion

In order to safeguard sonic ICH in a way that is dynamic rather static, as it would be in a museum context, we argued in this paper that the most effective strategy is to (1) design an experiential exhibition that connects the exhibition space with the urban space within which the sonic ICH is found and (2) through the exhibition and the auditory experiences it offers to increase the public awareness of the

significance and uniqueness of cultural sounds, so that present-day visitors and future generations will make efforts towards safeguarding sonic ICH. Therefore, we suggested how the exhibition may be designed taking into consideration of visitors' background and previous experiences.

Our research into collecting of cultural sounds leads to a detailed archive of the sonic environment of Istanbul upon which the exhibition is to be based. Although the exhibition plays with various sensory experiences and points to connections between the visuality, aurality and even olfactory aspects of everyday practices, as a result of our preliminary research and observations, we assume that the sonic experiences will be the most powerful ones. This is because both sound itself and experiencing an environment evoke emotions and awaken imagination. The exhibition highlights the most characteristic sounds of the city, such as street vendors (turkish bagel vendors, vendors of roasted chestnuts, *boza* sellers), tea, narghile, *kokoreç*, backgammon, the nostalgic tramway, markets and bazaars, and horse-drawn carriages by displaying them as exhibition experiences. Sonic experiences may also remind local visitors of their memories related to Istanbul if they are already familiar with the sounds displayed, and notice that these sounds are part of their past, background, identity or family memories. Foreign visitors may establish connections between the exhibited sonic environment and their own hometowns, and draw comparisons or realize similarities, which also results in reconsidering urban sounds. Thus, experiences make the exhibition message more memorable and impressive, which is cultural significance of urban sounds and the need of the protection of cultural sounds. Therefore, designing effective sonic experiences will contribute towards the safeguarding of the sonic cultural heritage of the city by increasing public awareness.

References

Altunbaş, A. & Özdemir, Ç. (2012). *Çağdaş Müzecilik Anlayışı ve Ülkemizde Müzeler, Kültür ve Turizm Bakanlığı.* Ankara.

Baghli, S. A. (2004). The Convention for the Safeguarding of the Intangible Cultural Heritage and New Perspectives for the Museum. *ICOM News* 4, 15-17.

Chion, M. (1990). *Audio-Vision: Sound on Screen.* Colombia University Press: New York.

Classen, C. (1993). *Worlds of Sense: Exploring the Senses in History and Across Cultures.* London: Routledge.

Çorlu, M. (2013). "Do we 'see' with our ears too?". Retrieved from http://www.youtube.com/watch?v=ZN5TvoB-LtA on 03.01.14.

Ekici, M. (2004). Bir Sempozyumun Ardından: Somut Olmayan Kültürel Mirasın Müzelenmesi (4-6 Mart 2004, Ankara). *Milli Folklor* 61, 5-12.

Ergin, N. (2008). The Soundscape of Sixteenth-Century Istanbul Mosques: Architecture and Qur'an Recital. *Journal of the Society of Architectural Historians* 67(2), 204-21.

Ersoy, R. (2004). "Performans Teori" Bağlamında Sözlü Kültür Ürünleri'nin Müzelenmesi

Sorunu Üzerine Bazı Görüş ve Düşünceler. In *Somut Olmayan Kültürel Mirasın Müzelenmesi Sempozyum Bildirileri* (M. Öcal Oğuz et al.), 57-67. Ankara: Gazi Üniversitesi THBMER.

Kang, J. (2007). *Urban Sound Environment*. Taylor&Francis: New York & Canada.

Posner, M.I., Nissen, M.J. & Klein, R.M. (1976). Visual Dominance: An Information-Processing Account of Its Origins and Significance. *Psychological Review* 83 (2), 157-171.

Russel, R. & Winkworth, K. (2009). *Significance2.0: A Guide to Assessing the Significance Collections.* Collections Council of Australia.

Rydstrom, G. (1994). Film Sound: How It's Done in the Real World, Course No:12. *Sound Synchronization and Sytnthesis for Computer Animation SIGGRAPH '94 and VR*, Orlando, Florida.

Schafer, R. M. (1977). *Our Sonic Environment and the Tuning of the World - The Soundscape*, Vermont: Destiny Books Rochester.

Shedroff, N. (2009). *Experience Design: A Manifesto for Design of Experiences.* Experience Design Books.

Southern, K. (1989). Exhibitions are Our Forum for Debating Change. *Museum News* 68 (8), 104.

Yelmi, P. (2016). Protecting contemporary cultural soundscapes as intangible cultural heritage: sounds of Istanbul, *International Journal of Heritage Studies* 22 (4), 302-311.

Yelmi, P. (forthcoming). The soundscape of Istanbul: Exploring the public awareness of urban sounds. *International Journal of Humanity and Social Science.*

Yelmi, P., Kuşcu, H. and Yantaç, A.E. (2016). Towards a sustainable crowdsourced sound heritage archive by public participation: The Soundsslike Project. *NordiCHI'16, October 23-27, 2016, Gothenburg, Sweden.*

Yin, T. (2006). Museum and the Safeguarding of Intangible Cultural Heritage. *The Ethic Arts 6* (in Chinese).