

MA Arts & Society

Thesis

# Walking intently Experiencing mobile sound art in urban space

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#### Abstract

The auditory sound structure of the city has changed radically over the past century. Industrial and technological developments have not only increased the quantity of the urban sound elements but have also enhanced their volume. Simultaneously, since the introduction of the Sony Walkman in the 1970s, the phenomenon of mobile privatization through the widespread use of headphones can be observed. This practice may be seen as a way of escaping the complexity of the contemporary urban soundscape by focusing instead on the experience of different content through headphones. Artistic projects, so-called Mobile Sound Art, also use this tool, but seek to evoke a strong engagement with the surrounding environment. This thesis explores this phenomenon and questions how the emotional relationship to urban space is impacted by Mobile Sound Art smartphone applications. The descriptions are situated in a critical analysis informed by a range of urban and critical theorists, such as the Canadian composer R Murray Schafer, who has dealt intensively with contemporary urban soundscapes. Through the combination of two methods, namely the Walk-Through-Method to explore the functioning of the smartphone applications studied and the bodily exploration of urban space through the practice of Soundwalking, I experienced the different urban environments differently. Both methods are based on an introspective practice and on subjective experiences of the smartphone applications and the urban space. It is evident that these experiences are strongly influenced by situational factors such as mood and weather. At the same time, the selected smartphone applications, Soundtrackcity and VUSAA, significantly impact the emotional relationship to the urban space explored. Although this connection is characterized by a historical component, i.e. whether the individual already is familiar with the environment and connects experiences, the applications are able to shape these spaces anew.

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#### Introduction

Wearing headphones has become an integral part of today's urban environment. Even though the respective uses are manifold, there is hardly anyone who does not curate their acoustic environment with their own choice in sound while making journeys in their daily routine. Closely linked to the use of headphones is the device to which the headphones are connected. Historically, the possibility to move around with headphones without the need for stereo equipment was first introduced by the Sony Walkman in 1979. Years of technical development of playing formats and devices, led from the widespread use of the Apple iPods and subsequently to the development of the use of smartphones for mobile viewing and listening, which are able to play a variety of formats and content.

In recent years, the smartphone is no longer used solely to communicate through tele-communication with other individuals that are not present in the same location, but also to isolate oneself from the outside world by wearing headphones. In this personal acoustic world, sounds can be curated by the user, ranging from music, podcasts or audio books. Emerging technologies like noise cancelling headphones enable urban dwellers to completely exclude the outer sonic environment while moving through public space. This phenomenon of mobile privatization can be observed in any densely populated surroundings. The urban space, once characterized by various auditory elements, has changed significantly with these practices. City dwellers can now live in (partially) selfcurated and closed sound worlds.

Using headphones in public space thereby has two functions. On the one hand, the outer acoustic environment is muted, and on the other hand, the visual environment is given its own soundtrack. Thus, the public space can be experienced differently. One could argue that a distinct urban reality is generated, as media scholar Michel Bull argues in his article on the ability to "remake the urban" through headphones.<sup>1</sup>

Therefore, the use of headphones can also be a way for the individual to become aware of their own autonomy, control and of their ability to decide what they hear and where they hear it. In this sense, wearing headphones can be seen as somewhat defensive, the user constitutes and shields a private space within public space. The use of headphones can thus also be seen as an indication of an increasing social decline of individuals.

With the emergence of mobile devices and the ability to use headphones to move from the natural soundscape to a different, personalized world of sound, there are also technological attempts to create a closer relationship with the outside environment again. This ambition can be discerned in apps for tourism, with which tourists can experience certain neighborhoods or areas in cities in a different way by using location-based navigation information, much like listening to a tour guide in a museum. Additionally, an increasing number of

<sup>&</sup>lt;sup>1</sup> Michael Bull, "Remaking the Urban," *Oxford Handbooks Online*, 2013.

projects has been created that address the same phenomenon presented from an artistic perspective.

The *Soundtrack City* app is such an artistic project that offers various soundwalks in Amsterdam and Rotterdam. The app serves as a platform for various artists who provide their Soundwalks.<sup>2</sup> In this sense, *Soundtrack City* is itself a curated platform, combining various approaches to offer new experiences of the city. Another case is the *Virtual Urban Sonic Acupuncture* app (vusaa).<sup>3</sup> This app was presented at the Venice Biennale 2018 Research Pavilion. The developers of this app explicitly refer to the societal dimension of the so-called "headphone city":

Our cities are decaying. We circulate as fast as possible through public spaces or we inhabit them in a consumerist way. The urban dweller feels little engagement with its environment. Besides, the normalization of what we could call "the headphone city" in which people is creating their own soundtrack for the urban space is contributing to new forms of urban detachment and isolation. The Virtual Urban Sonic Acupuncture App (vusaa) is an artistic invitation to listen to the city with different ears and to feel how a subtle sonic intervention can drive our attention to urban areas and hidden corners fostering a more conscious urban dwelling and social dialogue.<sup>4</sup>

The app allows the user to experience the acoustic outside world through a sound filter and adjust the proportions of "Urban Sound" or "Sonic Acupuncture" with faders. Sonic Acupuncture filters the acoustic outside world through the microphone of the smartphone and produces its own soundscape.

While both apps that I have selected have different approaches in terms of how they deal with the phenomenon they both resemble each other in their attempts to create a new relationship of urban dwellers with their sonic and spatial environment of urban dwellers. We can see a wider range of mobile soundwalks, but a large proportion of these apps are located in the tourist sector. Most sound walking apps from this realm focus more on the verbal element and less on experimental sound concepts. Although these tourist apps indeed aim to establish a particular connection to the spatial environment, however, they do not pursue a more far-reaching artistic approach.

This artistic approach is characterized by the fact that the intention here is not only to convey mere information about the environment, but to change the spatial relationship through experimental narratives. Although simple facts about locations are occasionally conveyed, the way they are expressed deviates significantly from simple mediation. The form of expression ranges from abstract

 <sup>&</sup>lt;sup>2</sup> "Soundtrackcity," Soundtrackcity, last modified July 19, 2019, https://soundtrackcity.nl/soundtrackcity.
 <sup>3</sup> "Virtual Urban Sonic Acupuncture App." Josué Moreno, accessed January 20, 2020,

https://josuemoreno.eu/project/vusaa/.

<sup>&</sup>lt;sup>4</sup> Josué Moreno, "Virtual Urban Sonic Acupuncture App."

sound design to naturalistic soundscapes, each referring to the current location. The user is thus challenged to deal with the spatial environment in detail.

In this thesis, I examine the phenomenon and the two selected apps with the following research question: How does mobile sound art impact the emotional relationships we form with our urban environments?

I will approach this main research question with the help of related subquestions:

How do Soundwalking applications curate our experience of the urban space?

What are the specific characteristics of different types of Mobile Sound Art applications in urban space and what are the challenges connected to them?

In order to answer the central research question, my thesis engages with discourses on technology, visual culture, curation of one's own sonic environment, on modes of perception and debates about sound and the visual in cultural analysis.

The book *The Soundscape: Our Sonic Environment and the Tuning of the World* <sup>5</sup> by sound researcher and composer R Murray Schafer influences this research in different ways. The book describes the changed acoustic environment throughout history. Additionally, it explains the method of *Soundwalking*, which I will use for answering my research questions. Schafer recommends special soundwalks to regain a more conscious perception of the acoustic space. The book was published in 1977 and thus could not take the technological options into account yet. I aim to further develop this method in this research by applying it in connection with Mobile Soundwalking Apps. I want to actively explore the urban space through the so-called Soundwalking Method. This introspective method allows me to directly experience the apps in an urban environment.<sup>6</sup>

In addition to the *Soundwalking* method I will apply the "Walk-Through-Method" to get a detailed insight into the functionality and usability of the chosen apps. According to media scholars Ben Light, Jean Burgess and Stefanie Duguay<sup>7</sup>, the Walk-Through-Method involves meticulously examining an app on the basis of expected usage and conducting a critical analysis simultaneously. The method explains the use of the app step by step, from registration, through everyday usage to discontinuation of the app. With these methods, this research aims to rethink the technology-driven modification of the urban soundscape.

<sup>&</sup>lt;sup>5</sup> R. Murray Schafer, *The Soundscape: Our Sonic Environment and the Tuning of the World* (New York: Simon & Schuster, 1993)

<sup>&</sup>lt;sup>6</sup> Andrew Brown, "Soundwalking: Deep Listening and Spatio-Temporal Montage." *Humanities* 6, no. 3 (2017): 69.

<sup>&</sup>lt;sup>7</sup> Ben Light, Jean Burgess and Stefanie Duguay, "The Walkthrough Method: An Approach to the Study of Apps," *New Media and Society* 20, no. 3 (2018): 881-900.

In the following, I proceed as follows: My research starts with an introduction to the phenomenon of mobile privatization and the theoretical framework in which I place the phenomenon. I identified that the phenomenon of mobile privatization is closely related to specific activities such as listening, walking, self-curating, and the construction of one's own identity. I will then introduce the methods I have chosen to discuss my research questions followed by the application of the chosen methods in my case studies with the selected smartphone apps. Finally, I will discuss my findings in a conclusion and critically examine them from different points of view. At the same time, I will reflect on the research process, as well as on the methodology and discuss what future research in this area could further explore.

#### 2 Theoretical Framework

Above, I have indicated that there are various theories and approaches to research the phenomenon of experiencing various sound contents in urban space with headphones. At the same time, my research questions already highlight a focus on the specific aspects of this thesis. The relationship of the individual to the auditory world of the city, the topic of self-curation through the apparatus of headphones and the subject creation through this self-curation are three specific but related aspects that I focus on and which I examine in more detail in the following. Therefore, in the theoretical framework I discuss the central theories and concepts in more detail and connect them with my phenomenon in order to emphasize their relevance of the questions addressed in this thesis to thereby create the foundation for my analysis. In order to illustrate the theoretical context in a somewhat pertinent manner, I structure the theoretical framework with practical activities that I propose are characteristic features of the urban mobile privatisation. Listening, walking and self-curating are the central features I associate with the practice of the mobile experience of urban space through headphones. This part concludes with the subject construction through the presented practice.

#### 2.1 Listening to the Contemporary Urban Soundscape

The sonic world in which individuals dwell through urban spaces today has changed radically throughout the last two centuries. Not only have developments such as the industrialization or the urbanization of formerly rural areas led to significant changes in the auditory experience of the urban environment, but also technological developments, especially in the field of audio technology. In part, the technological development of the headphone, for example, can be seen as a reaction to this increasing sensory satiation in the urban environment. Philosopher Henri Lefebvre describes the urban experience as "[H]e who walks down the street ... is immersed in the multiplicity of noises, murmurs, rhythms."<sup>8</sup> Urban dwellers can thus be described as a listeners, whether they listen to urban sounds or to other sources through headphones.

Studying the emotional relationship with urban environments is, in this way, also about listening, both consciously and subconsciously. The historical development of the urban soundscape makes it increasingly difficult for individuals to navigate intently through urban environments. The emotional relationship between city dwellers and urban spaces can be closely linked to a *habitus of listening*, as music scholar Judith Becker describes it:

Our habitus of listening is tacit, unexamined, seemingly completely 'natural'. We listen in a *particular* way without thinking about it, and without realizing that it even is a particular way of listening. Most of

<sup>&</sup>lt;sup>8</sup> Henri Lefebvre, Rhythmanalysis: Space, Time and Everyday Life (London: A&C Black, 2004), 28

our styles of listening have been learned through unconscious imitation of those who surround us and with whom we continually interact.<sup>9</sup> (emphasis in original)

Thus, listening in the modern urban metropolis can be characterized as a habitus which is unconsciously cultivated. Whether this is produced by the actual urban soundscape or by the apparatus of an audio player with headphones. Becker uses the term habitus, coined primarily by sociologist Pierre Bourdieu, who used the term to describe the unconscious imitation of a person's entire appearance, e.g. lifestyle, language, clothing and taste.<sup>10</sup> In terms of listening, we imitate the behaviour and appearance of the individuals to whom we feel connected and we are constantly developing this habitus.<sup>11</sup>

The principle of listening is one of the main topics in the work of Canadian composer R Murray Schafer. He coined the term *soundscape* to describe the auditory environment of city dwellers in public space.<sup>12</sup> This includes not only machine-generated sounds, but everything that is audible to the human ear. Schafer deals with all kinds of sounds, whether it is human conversations or conversations between animals, as well as natural sounds such as wind or water. He visualizes the soundscape by comparing it to a landscape consisting of different elements and layers. The soundscape is similar, but, according to Schafer, much more complicated to describe because today's acoustic environment in urban spaces is so complex.<sup>13</sup>

Schafer uses the two terms hi-fi and lo-fi to designate the ongoing changes in the auditory urban environment. The two terms are defined as follows:

A hi-fi system is one possessing a favorable signal-to-noise ratio. The hi-fi soundscape is one in which 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. (...) In a lo-fi soundscape individual acoustic signals are obscured in an overdense population of sounds. The pellucid sound - a footstep in the snow, a church bell across the valley or an animal scurrying in the brush - is masked by broad-band noise. Perspective is lost. On a downtown street corner of the modern city there is no distance; there is only presence.<sup>14</sup>

In other words, the acoustic environment prior to pervasive impacts of industrialization can be described as a hi-fi soundscape, the period during and after the industrialization as a lo-fi soundscape. Schafer draws these

<sup>&</sup>lt;sup>9</sup> Judith Becker, "Exploring the Habitus of Listening." *Handbook of Music and Emotion: Theory, Research, Applications*, 1993: 130

<sup>&</sup>lt;sup>10</sup> Pierre Bourdieu, *The Logic of Practice* (Redwood City: Stanford University Press, 1990)

<sup>&</sup>lt;sup>11</sup> Becker, "Exploring the Habitus of Listening," 130.

<sup>&</sup>lt;sup>12</sup> Schafer, The Soundscape: Our Sonic Environment and the Tuning of the World

<sup>&</sup>lt;sup>13</sup> Schafer, The Soundscape: Our Sonic Environment and the Tuning of the World, 7

<sup>&</sup>lt;sup>14</sup> Schafer, The Soundscape: Our Sonic Environment and the Tuning of the World, 43

observations primarily on the analysis of novel literature from the end of the 19<sup>th</sup> century since this literature described the acoustic environment of that time with enormous precision. He challenges the contemporary soundscape by arguing that the lo-fi soundscape "creates a synthetic soundscape in which natural sounds are becoming increasingly unnatural while machine-made substitutes are providing the operative signals directing modern life."<sup>15</sup>

How, then, can we understand the contemporary urban soundscape, which is usually mediatized by smartphones and headphones, in this context? Schafer's research deals with the conditions in the 1970s, which are somewhat similar to the present day, but still feature some significant differences. In particular, the city and its strong link to a wide range of technological developments, which media theorist Scott Macquire refers to as the Media City.<sup>16</sup> Contemporary urban life involves above all the mentioned mediatization through different devices in order to deal with the lo-fi soundscape.

Is the modern mediatization through headphones then a recreation of the hi-fi soundscape? This seems to be the case in highly developed technical setups, yet the relationship to the external urban environment is different from the one described in Schafer's hi-fi soundscape. The hi-fi soundscape, described in the above definition, is characterized by a signal-to-ratio connection, which is not provided by headphones. A mediatization takes place, between the external urban environment and the individual, the headphones or the device connected to them intervene to change the experience of the city.

In order to impact the emotional relationship between the city dweller and the auditory environment, Schafer proposes the development of a so-called *sonological competence*. A term Schafer borrows from the social scientist Otto Laske.<sup>17</sup> Sonological competence is not only about the ability to form an impression, but also about the expression. Impression and expression combined result in a complete perception of the soundscape. Schafer suggests in his research various exercises under the generic term *ear cleaning* to recognize the soundscape in order to be able to change it. One measure of the so-called *ear cleaning* practices are soundwalks, which I will use as a tool in the case studies of this thesis to understand the different urban soundscapes.

The contemporary headphone culture might be seen as a reaction to the lo-fi Soundscape to create a simpler yet richer acoustic environment again. Schafer could not foresee the technological development in this area at the time of his research in the 1970s, yet he mentions the headphone innovations that were already emerging at that time:

(...) when sound is conducted directly through the skull of the headphone listener, he is no longer regarding events on the acoustic

<sup>&</sup>lt;sup>15</sup> Schafer, The Soundscape: Our Sonic Environment and The Tuning of the World, 91

<sup>&</sup>lt;sup>16</sup> Scott Macquire, *The Media City: Media, Architecture and Urban Space* (London: Sage Publications, 2008)

<sup>&</sup>lt;sup>17</sup> Schafer, *The Soundscape: Our Sonic Environment and The Tuning of the World*, 153

horizon; no longer is he surrounded by a sphere of moving elements. He is the sphere. He is the universe. Headphone listening directs the listener toward a new integrity with himself. But only when he releases the experience by pronouncing the sacred.<sup>18</sup>

It should be noted that the use of headphones in the 1970s was still largely tethered to one place and not, as is the case today, mostly on the move. Thus, the use of headphones is in this context much more focused on the present here and now, and not - as in modern times - on multiple actions (listening, navigating, making sense of the city, ...).

The contemporary use of headphones and therefore the devices to which the headphones are connected, are becoming a "mode of being in the world"<sup>19</sup>, in which the user finds oneself in a privatized 'perpetual sound matrix' through which one 'inhabits different sensory worlds' as one moves through the shared urban space.<sup>20</sup> Michael Bull has examined Apple's iPod users and their perception of public space in various studies. One interviewee, for example, describes her experiences of urban space as she moves through the city with headphones:

The world looks friendlier, happier, and sunnier when I walk down the street with my iPod on. It feels as if I'm in a movie at times. Like my life has a soundtrack now. It also takes away some of the noise of the streets, so that everything around me becomes calmer somewhat. It detaches me from my environment, like I'm an invisible, floating observer.<sup>21</sup>

What is striking in this statement is that the experience of sound in public space is not framed as an auditory experience, but above all an audio-visual experience. Users of headphones intend to give the city a personalized soundtrack and thus experience the visual through the auditory in a different way. In this way, the city becomes a cinematic setting for the user's own personal film. The aesthetics of the city are significantly influenced by this and by the subjective mood. This explains technical developments such as noise cancelling, which completely excludes the external auditory world. The visual environment is completely subjected to its own personal soundtrack through headphones.

It can thus be argued that contemporary headphone culture is not only about the habitus of listening, but also about a visual experience. The soundscape can be artificially altered by mediatization, meaning that the built environment is experienced differently. The emotional relationship to urban space has not only a factual aesthetic dimension, but also an audio-visual one, in this case

<sup>&</sup>lt;sup>18</sup> Schafer, *The Soundscape: Our Sonic Environment and the Tuning of the World*, 119.

<sup>&</sup>lt;sup>19</sup> Deborah Durham and Kathryn L. Geurts. "Culture and the Senses: Bodily Ways of Knowing in an African Community." *The International Journal of African Historical Studies* 37, no. 2 (2004): 380.

<sup>&</sup>lt;sup>20</sup> David Howes, *Empire of the Senses: The Sensual Culture Reader* (Oxford: Berg Publishers, 2005), 14.

<sup>&</sup>lt;sup>21</sup> Michael Bull, "iPod use: an urban aesthetics of sonic ubiquity." *Continuum* 27, no. 4 (2013): 500

significantly influenced by the content that is played back to the individual through the headphones.

Users are therefore attuned to the fact that the aesthetics of urban environments are shaped by auditory influences. Thereby they can choose certain specific sources for their journeys through the city. This depends perhaps mainly on subjective circumstances such as the individual's current mood but can also be influenced by the built environment.<sup>22</sup> In this way, the listener becomes an 'auditory spectator.'<sup>23</sup> In the following analysis, I intend to find out whether this spectatorship is also created through other contents (in this case, Mobile Sound Art Apps) and how the content influences the emotional relationship to the urban space.

However, it can also be argued that the location and the individual listening situation determine how one perceives one's surroundings. Music theorist Ola Stockfeldt argues that the daily use of headphones is influenced more by the listening situation than by the content of the source.<sup>24</sup> Experiencing a classical symphony live in a concert hall is perceived differently from experiencing the same content in a café via headphones. Stockfeldt claims that there is a fundamental difference between consciously experiencing the sound source and paying full attention to this source or understanding it as a soundtrack to perform other activities. This also influences the idea that using headphones affects the visual environment. One can assume that things are interrelated in this regard. On the one hand, the content that the user of headphones listens to influences the visual perception, on the other hand, the location where the headphone user is located influences the perception of the situation.

The auditory experience of a place thus relates to the place itself, how it is constituted and what associations are attached to it. Contemporary urban environments are often characterized by the creation of places that French anthropologist Marc Augé calls "non-spaces".<sup>25</sup> Non-Spaces are defined by the fact that they have been placed without connection to the rest of the urban environment and appear as if they have been dropped into the urban landscape. These include airports, motorways and shopping areas. Non-Spaces are characterized by the fact that they are interchangeable and not locally recognizable. These places are bland and usually endless transit zones that do not invite you to linger, places of modern mobility.

At the same time, these non-places are also a source of a lot of (different) noise, which the city dweller wishes to escape from. Thus, the Sony Walkman, the iPod and ultimately the smartphone are a way of escaping these auditory influences and entering a specifically curated sound world. However, this also leads to the users of headphones moving into further isolation. While they were previously

<sup>&</sup>lt;sup>22</sup> Bull, "iPod use: an urban aesthetics of sonic ubiquity," 498

<sup>&</sup>lt;sup>23</sup> Bull, "iPod use: an urban aesthetics of sonic ubiquity," 498

<sup>&</sup>lt;sup>24</sup> Ola Stockfeldt, "Adequate Modes of Listening," in *Audio Culture: Readings in Modern Music* (London: A&C Black, 2004), 89.

<sup>&</sup>lt;sup>25</sup> Marc Augé, *Non-places* (Brooklyn: Verso Books, 2008)

isolated by the external architecture of the built environment, they are now isolated in their own sound world through the self-chosen isolation. This makes it possible to perform various public activities with little or no interpersonal contact. All of this adds to an architecture of isolation as outlined in the work of urban sociologist Richard Sennett.<sup>26</sup>

In this context, the selected Mobile Sound Art Apps in this thesis provide a striking contrast to the classical self-curation in public space with, for example, music, because the use of these Mobile Sound Art Apps is based on the respective location of the user. Thus, it is not only about the emotional relationship to urban space in general, but also to the specific location where the user is navigating at that time. The soundscape is thereby artificially altered on the one hand, but at the same time the use also aims to intensify the connection to urban space.

#### 2.2 Walking Through the Urban

The descriptions about the Soundscape by R Murray Schafer, the use of headphones as a personalized sound experience, but also the use of Mobile Sound Art Apps I have selected for this research - they all work with principles of movement. Although the individual activities may be used at one location, the usage is usually associated with an active movement, walking in particular.

Whether on the way to work in the morning or during sports activities, this *techno-mobility* in contemporary cities is both real and symbolic.<sup>27</sup> On the one hand, the user moves through public space wearing headphones in a physical way, on the other hand, the headphones also function symbolically in the dimension that they stand as an accessory for the mobile person, who is above all multitasking capable and can solve several things at once. Psychologist Sherry Turkle refers to multitasking as "not just a skill but the crucial skill for successful work and learning in digital culture."<sup>28</sup>

The headphone, and with it usually connected the smartphone, fits into the idea of a highly flexible person with (supposedly) individual freedom of choice.<sup>29</sup> Listening has a function, namely to accompany movement through public space, to provide a mediated soundtrack for it. This involves not only the real and symbolic notion of it, but also the creative element (e.g. self-curation). At the same time, it occurs instinctively in the described habitus of listening and is therefore for those urban dwellers scarcely a particularly deliberate action.

<sup>&</sup>lt;sup>26</sup> Richard Sennett, *Flesh and Stone: The Body and the City in Western Civilization* (New York: W. W. Norton & Company, 1996)

<sup>&</sup>lt;sup>27</sup> Paul Du Gay, *Doing Cultural Studies: The Story of the Sony Walkman* (Thousand Oaks: SAGE, 1997), 24.

<sup>&</sup>lt;sup>28</sup> Sherry Turkle, *Alone Together: Why We Expect More from Technology and Less from Each Other* (New York: Basic Books, 2011), 162-163.

<sup>&</sup>lt;sup>29</sup> Du Gay, *Doing Cultural Studies: The Story of the Sony Walkman*, 24.

The personalized soundtrack through the headphones seems to enrich the urban experience in a certain way. There may be similarities to the practice of the Flâneur, walking around in cities like Paris in the 19<sup>th</sup> century. Flâneurs performed this practice on the streets of Paris in order to be seen, but at the same time not to interact with other individuals.<sup>30</sup>

Unlike the Flâneur, the headphone user today does not usually consciously move through urban space. Headphones, even if the external environment is consciously perceived, accompanies the urban resident on their everyday journeys as a wearable technology through public space. But these journeys through urban space are usually rather functional trips to travel from A to B. The use of headphones fulfils the function of carrying out these journeys in a more pleasant way whilst avoiding modern urban nuisances. Similarly, media scholar Nanna Verhoeff describes the interaction with screens as a way of escaping the density and vulnerability of public space.<sup>31</sup> The Mobile Sound Art apps that I analyse in this research also aim to achieve a closer relationship with the urban environment.

#### 2.3 Self-Curating the Contemporary Soundscape

Since the launch of the Sony Walkman in 1979, individuals have been able to move through public space in a self-curated sound universe. Technological developments such as the Apple iPod introduced in 2001 have resulted in an even higher degree of individual freedom to decide which acoustic influences the user can listen to. The listener is now no longer dependent on specific music tapes, as with the Sony Walkman, but is able to curate their auditory environment entirely and in the desired sequence. For example, the music streaming provider Spotify allows users to create their own personal playlists. With the smartphone, there are no longer any limits to the specific content that the user listens to.

Curation, in its classical function, takes on a different role. Whereas art exhibition is curated in a gallery and different artists present their work in one exhibition, the selection of the auditory content that the headphone user curates is a personal selection, intended for individual use only.<sup>32</sup> This selection is often shaped by moods and situations of daily life.<sup>33</sup> The content of the auditory source varies widely, ranging from different types of music, to podcasts, audio books or other sounds - there are no limits to self-curation. In relation to podcasts and radio, self-curation through various music sources, especially music playlists, is

<sup>&</sup>lt;sup>30</sup> David Harvey, "The Right to the City," in *The Emancipatory City?: Paradoxes and Possibilities*, ed. Loretta Lees (London: Sage Publications, 2004), 236-239.

<sup>&</sup>lt;sup>31</sup> Verhoeff, Mobile Screens: The Visual Regime of Navigation, 13

<sup>&</sup>lt;sup>32</sup> Anja N. Hagen and Marika Lüders, "Social streaming? Navigating music as personal and social." *Convergence: The International Journal of Research into New Media Technologies* 23, no. 6 (2016): 656

<sup>&</sup>lt;sup>33</sup> Hagen and Lüders, "Social streaming? Navigating music as personal and social," 643-659.

generally preferred by the headphone user.<sup>34</sup> The main factor is the users' agency, which is limited, for example, while listening to a radio station.

The agency and self-curation of Mobile Sound Art Apps is limited in comparison with individually arranged music content. The platforms I have chosen for this thesis usually offer different themed soundwalks. The user can choose among the prescribed soundwalks, but these are related to the physical environment and cannot be individually designed. The app *VUSAA* takes a different approach and offers the option to create an individual soundwalk by directly filtering urban sounds. In this case the soundwalk is characterized by a playful element.

The agency of self-curating sound sources is generally preferred, since it represents the highest possible degree of individual freedom and, as already mentioned, can also adjust to individual emotional conditions and exterior factors. In this way, the ability to curate one's own acoustic environment contributes to the shaping of identity.

#### 2.4 Construction of the Subject through Listening

The subject is the focus of the headphone culture, this has become clear so far. The immersive experience that the individual has while using headphones is an entirely personal one. At the same time, this also means a highly individual experience of the city through an individual curation of the auditory environment. Listeners navigate through the city with their personal source of auditory impressions that are usually not shared with other individuals. The user of headphones experiences the city in the here and now, while being able to process personal emotions without being disturbed by out-of-body noises and at the same time feel completely absorbed in their surroundings.<sup>35</sup>

Sociologist Erving Goffman's notion of the theatrical self-performance, which states that the self is created and shaped by contexts, is worth mentioning here.<sup>36</sup> Goffman argues that we constantly process the impressions we give of ourselves in order to control the expressions we express to others. Self-identity, which sociologists George H. Mead and Charles W. Morris in particular<sup>37</sup>, and Herbert Blumer as well<sup>38</sup>, have researched, is created through social interactions with other individuals. As a result of our own internal definitions, which we create from these interactions, but also through the interaction with the definitions other individuals view us.

<sup>&</sup>lt;sup>34</sup> Lars Nyre. "Urban Headphone Listening and the Situational Fit of Music, Radio and Podcasting." *Journal of Radio & Audio Media* 22, no. 2 (2015), 279-298.

<sup>&</sup>lt;sup>35</sup> Frances Dyson, *Sounding New Media: Immersion and Embodiment in the Arts and Culture* (Oakland: University of California Press, 2009), 4

<sup>&</sup>lt;sup>36</sup> Erving Goffman, The Presentation of Self in Everyday Life (London: Penguin Books, 1990)

<sup>&</sup>lt;sup>37</sup> George H. Mead and Charles W. Morris, *Mind, self & society from the standpoint of a social behaviorist* (Chicago: The University of Chicago Press, 1950)

<sup>&</sup>lt;sup>38</sup> Herbert Blumer, *Symbolic Interactionism: Perspective and Method* (Oakland: University of California Press, 1986)

The introspective practice of the use of headphones challenges this insight. Do we no longer need social interactions for our self-identity during daily journeys through urban spaces? Is the identity constructed through the self-curated auditory headphone content? Headphone culture, as well as the attentive listening to urban sounds, are cases of subjectivation in which the subject experiences the surroundings personally and often performs identity-forming processes.<sup>39</sup> This subjective process occurs especially in cases of self-curation described above. This applies in particular to content with which the headphone user associates a high level of identification, such as music. Music has a strong influence on mood and emotions, while soundtracking certain situations.<sup>40</sup> This is reflected, for example, in a statement made in a research by Michael Bull:

(it is) making the world look smaller - I am much bigger and powerful listening to music. The world is generally a better place, or at the very least it is sympathetic to my mood ... you become part of the music and can take on a different persona.<sup>41</sup>

This illustrates acutely how vital the use of headphones, in this case in connection with the iPod, is for the perception of the subject, but also for the experience of the external environment. Depending on how the content is chosen, in this case probably encouraging music, this can have a significant effect on the user.

In contemporary modern societies, identity is perceived as inevitable and reflexive. It is the basis for how we define ourselves or how we relate to the world.<sup>42</sup> British sociologist Anthony Giddens coined the idea of *ontological security*, which describes a psychological state that is composed on the one hand of the individual's trust in others and on the other hand of a low level of anxiety.<sup>43</sup> This ontological security is manifested in our daily lives, especially in the control we have over predictable situations and encounters. Similarly, the American philosopher Charles Taylor has looked at the modern creation of the subject, arguing that it is also related to a certain form of 'inwardness':

Our modern notion of the self is related to, one might say constituted by, a certain sense (or perhaps a family of senses) of inwardness ... The unconscious is for us within, and we think of the depths of the unsaid, the unsayable, the powerful inchoate feelings and affinities and fears which dispute with us the control of our lives, as inner ... But as strong as this partitioning of the world appears to us, as solid as this localization may seem, and anchored in the very nature of the human

<sup>&</sup>lt;sup>39</sup> Tia DeNora, *Music in Everyday Life* (Cambridge: Cambridge University Press, 2000)

<sup>&</sup>lt;sup>40</sup> KuanTing Liu and Roger A. Reimer. "Social playlist." *Proceedings of the 10th international conference on Human computer interaction with mobile devices and services - MobileHCI '08*, 2008.

<sup>&</sup>lt;sup>41</sup> Bull, "iPod use: an urban aesthetics of sonic ubiquity," 497

<sup>&</sup>lt;sup>42</sup> Anthony Giddens, *Modernity and Self-Identity: Self and Society in the Late Modern Age* (Hoboken: John Wiley & Sons, 2013)

<sup>&</sup>lt;sup>43</sup> Giddens, Modernity and Self-Identity: Self and Society in the Late Modern Age, 64

agent, it is in large part a feature of our world, the world of modern, Western people.  $^{44}$ 

This inwardness is particularly apparent in the use of headphones in urban space. The user navigates through urban environments in a mobile way and is busy following the individual route while listening to the personal sound source. At the same time, this also refers to agency, which reaches a high level when the user is able to self-curate the content of the auditory environment. In line with this, one participant in the above-mentioned research by Michael Bull describes the experience of the city while using her iPod:

It's as though I can part the seas like Moses. It gives me and what's around me a literal rhythm, I feel literally in my own world, as an observer. It helps to regulate my space so I can feel how I want to feel, without external causes changing that.<sup>45</sup>

We see clearly that this own world creation combined with the mentioned 'inwardness' and the agency through the curation of one's own acoustic factors is a strong enticement for urban dwellers to either celebrate or at least influence their own mood.

Through the retreat from urban reality, which the headphone user creates through the usage, a new self may be created, as described by the user above. The 'self' is distinguished from the 'other'. The 'urban retreat' was part of the work of German sociologist Georg Simmel, who observed that the individual in the city exudes a blasé attitude, mainly towards the physical environment, in order to achieve a form of self-balance.<sup>46</sup> Simmel was one of the first to identify the changes in urban life in this early era and argued that the dystopian image of the city leads to a retreat of individuals into cognitive and physical spaces.<sup>47</sup> At the same time the urban space is "neutralized". Individuals move through the city not as a collective but as individual subjects, trying to separate themselves from each other in order to escape the various visual and auditory influences. A new sense of self is created which is characterized by the separation from the other.<sup>48</sup>

In this context it will be important to analyse to what extent the chosen Mobile Sound Art applications deal with this urban retreat and whether they can intensify this process or create a different relationship to urban space. It is apparent that the practice of Mobile Sound Art Apps resembles the classical selfcuration of headphone culture, as it also represents an introspective form of movement through public space. There is little or no social interaction, the

<sup>&</sup>lt;sup>44</sup> Charles Taylor, *Sources of the Self: The Making of the Modern Identity* (Cambridge: Cambridge University Press, 1992), 111

<sup>&</sup>lt;sup>45</sup> Bull, "iPod use: an urban aesthetics of sonic ubiquity," 497

<sup>&</sup>lt;sup>46</sup> Mike Featherstone and David Frisby, Simmel on Culture: Selected Writings (Thousand Oaks: SAGE, 1997)

<sup>&</sup>lt;sup>47</sup> Featherstone and Frisby, Simmel on Culture: Selected Writings

<sup>&</sup>lt;sup>48</sup> Bull, "iPod use: an urban aesthetics of sonic ubiquity," 499

practice focuses on the relationship between the subject and the object, the urban space.

#### 3. Methodology

In the following, I present the two methods that I have selected to answer my research question. While the Walk-Through-Method deals with the study of smartphone applications and the experience of them, the Soundwalking method contains a much more comprehensive description of the user's own perception of the public space in which the user is dwelling and simultaneously using the smartphone application. The walk-through-method is therefore the basis for the implementation of the Soundwalking method in this research. It is necessary to understand the vision and the general functioning of the app in order to grasp the experience of the app in public space. Both methods are therefore experimentally combined in this research and further developed in a different context. This methodology offers therefore the possibility to optimize existing methods and to transfer them into a contemporary framework.

#### 3.1 Walk-Through-Method

In recent decades the so-called 'computational turn'<sup>49</sup> has affected almost all areas of society. Using digital tools to solve or discuss various questions and issues has become an integral part of everyday and professional life. This also has an impact on research in the humanities and social sciences. Computer processes, as well as technical devices and capabilities, have changed research methodologies. At the same time, digital tools are increasingly being used not only for studies but are themselves seen as socio-cultural artefacts.<sup>50</sup>

An outcome of this development is the Walk-Through-Method, which focuses on the research of smartphone applications. The method was developed by Ben Light, Jean Burgess and Stefanie Duguay<sup>51</sup> within the framework of a study, where the authors investigated the behaviour of users of an app for women's menstrual cycle behaviour.<sup>52</sup> Although the subject of this app differs from the apps selected for this research, this example is an illustration of how the method functions and how it is applied to this research. The approach is outlined by the researchers as such:

Our approach incorporates the methods of the medium by inviting the researcher to engage closely with the app, using a step-by-step walkthrough technique that involves progressing through the app's requirements, screens, and activities to understand how it guides users.<sup>53</sup>

The Walk-Through-Method is therefore concerned with the actual use of the app. Step by step, the individual functions of the app are used, simulating how users

<sup>&</sup>lt;sup>49</sup> David Berry, "The computational turn: thinking about the digital humanities," Culture Machine Vol.12 (2011)

<sup>&</sup>lt;sup>50</sup> Light, Burgess and Duguay, "The walkthrough method: An approach to the study of apps," 882.

<sup>&</sup>lt;sup>51</sup> Light, Burgess and Duguay, "The walkthrough method: An approach to the study of apps," 881-900.

<sup>&</sup>lt;sup>52</sup> Light, Burgess and Duguay, "The walkthrough method: An approach to the study of apps," 884

<sup>&</sup>lt;sup>53</sup> Light, Burgess and Duguay, "The walkthrough method: An approach to the study of apps," 885

experience the app through the researcher's lens. In the process, the way the app developers have designed the product is examined to identify how the functions of the application actually work. The application is thus critically examined and becomes an object of research as a cultural artefact in its own right.

Light, Burguess and Deguay further emphasize the similarity of smartphone applications with the analysis of infrastructure systems.<sup>54</sup> This method is similar to the analysis of apps in that infrastructure systems also have an 'invisible' layer that is not apparent to the app user. Susan L. Star illustrates this with an example.<sup>55</sup> An individual pours water into a glass without thinking about the complicated pipes that produced this water. Similarly, users of smartphone applications are not necessarily aware of the systemic dimension of apps while using them. Apps have a branched system of various functions and algorithms that run in the background. Of course, it should be mentioned here that the range of available apps nowadays is vast and exorbitant. Thus, the various systems behind the apps are sometimes more, sometimes less complex.

The Walk-Through-Method is based upon a traditional ethnographic technique. The participatory observation and generating field notes by actively participating in the use of the app explain this analogy. The sensitivity that is applied to ethnographic research is inherent in this method as well. In a different, more technical way, but still aware within the world of the app to be examined.

Accordingly, the Walk-Through-Method follows a specific procedure that begins with the presentation of the vision of the app. The vision provides information about what the app is supposed to do, how it works and by whom it is intended to be used.<sup>56</sup> The vision is usually communicated by the organization behind the app. At the same time, the vision is closely related to the general conception and structure of the app.

The Operating Model is the next step of the walk-through method. This primarily deals with the organization behind the app. It provides information about the potentially existing business model or the political interests of the app developers.<sup>57</sup> Many apps today have a business model, which is not necessarily visible at first glance. For example, many apps are free of charge, but are funded by selling customer data. In the case of the Soundwalking apps presented here, the motives are not of a commercial nature, but were initiated by non-profit organizations. However, these apps are also backed by funding models and strategies that need to be examined.

The next step of the Walk-Through-Method, "Governance", outlines how the app developer manages and regulates the activities of the users. This is linked to the

<sup>&</sup>lt;sup>54</sup> Light, Burgess and Duguay, "The walkthrough method: An approach to the study of apps," 887

<sup>&</sup>lt;sup>55</sup> Susan L. Star, "The Ethnography of Infrastructure," American Behavioral Scientist 43, no. 3 (1999), 377-391.

<sup>&</sup>lt;sup>56</sup> Light, Burgess and Duguay, "The walkthrough method: An approach to the study of apps," 889

<sup>&</sup>lt;sup>57</sup> Light, Burgess and Duguay, "The walkthrough method: An approach to the study of apps," 890

propagated vision and the operating model that is to be sustained and expanded through governance. The governance is usually visible in the Terms of Services (TOS). The TOS describes how the provider envisions the use of the app and which regulations apply to the users.<sup>58</sup>

The technical walkthrough is the next step in the Walk-Through-Method. This step includes collecting field notes and screen shots, as well as personal documentation of experiences while using or exploring the app.<sup>59</sup> It is the heart of the overall process, as it gathers the core data and reveals features of the app. In this step, the researcher is using the app by examining all potential steps and testing functions. In doing so, the researcher places themselves in the position of a typical user, without leaving the analytical position of the researcher. This is where one can identify the common ground with the participatory observation of ethnographic research. Light, Burguess and Deguay split the data collection into three different steps. These phases consist of "registration and entry"; "everyday use"; and "suspension, closure and leaving".

"Registration and entry" usually marks the beginning of the actual data collection in the Walk-Through-Method. The user has to create a profile in this step, in order to use the app in all its functions.<sup>60</sup> Both the *Soundtrackcity* app and the *VUSAA* app work without user profiles. In general, the "registration and entry" step describes the first active interaction with the app and its functions. However, there are entry points to all the selected apps for this study. The application has to be downloaded to the smartphone. This is where the first actual interaction between the app and the user begins. Usually, the goal and general direction of the app is communicated here, and the user is at times asked to agree to the terms of use. At the same time, the functions are explained to the user in different ways, often by providing assistance in the form of a 'how to' section.

The next step in the Walk-Through-Method, "everyday use", is concerned with the use of the functions with which the average user regularly interacts. This is where the functionality and the various options associated with it are documented. The researcher needs to focus not only on the individual features, but also on the activity within the app, basically everything that appears on the screen.<sup>61</sup>

The final part of the Walk-Trough-Method is the "app's suspension, closure and leaving". This part deals with the permanent or even temporary leaving of the app structure, i.e. deleting the app or the profile. This is sometimes a time-consuming process, especially for profile-based apps. This point provides information on how the use of the app is terminated and above all how the user is given the opportunity to leave the profile or app. The procedure also shows

<sup>&</sup>lt;sup>58</sup> Light, Burgess and Duguay, "The walkthrough method: An approach to the study of apps," 890

<sup>&</sup>lt;sup>59</sup> Light, Burgess and Duguay, "The walkthrough method: An approach to the study of apps," 891

<sup>&</sup>lt;sup>60</sup> Light, Burgess and Duguay, "The walkthrough method: An approach to the study of apps," 892

<sup>&</sup>lt;sup>61</sup> Light, Burgess and Duguay, "The walkthrough method: An approach to the study of apps," 894

how the app developers deal with the user leaving the app and try to encourage the user to continue using the app.<sup>62</sup> At the same time, there are also cases where apps continue to benefit from the former membership even after the app or profile has been deleted (user data) or continue to try to persuade the former user to return.

#### 3.2 Soundwalking Method

The walking practice of the Flâneur described in the chapter 'Walking through the urban' already showed that walking is a way of experiencing the city differently and, above all, more consciously, as well as a way of recognizing (social) changes and portraying them. The contrast to ordinary journeys while walking through the city is the focus on certain aspects in order to acknowledge the city differently.

The Soundwalking method is similar to the practice of the Flâneur but focuses specifically on the acoustic dimension of the urban experience. It is a technique that has a longer tradition compared to the Walk-Through-Method and was mainly developed by R Murray Schafer. As already mentioned in the explanation about the soundscape, the aim of this method is the recognition of this soundscape as an acoustic space and intends to recreate a link to the acoustic outside world of the individual.

Schafer distinguishes between a listening walk and a soundwalk. These are similar but need to be distinguished. With the listening walk the user focuses on a certain sound and as a result will perceive the whole soundscape more precisely again, with the soundwalk the soundscape is considered as a whole.<sup>63</sup> For this research I selected the Soundwalking method because it provides the researcher with a precise overview of the acoustic environment. This method was originally conceived as a simple practice to appreciate the described soundscape in a more immediate and detailed way. Over the years since its creation by R Murray Schafer, this practice has become a research method to identify and analyse the acoustic environment in different contexts.<sup>64</sup>

In addition, Soundwalking is increasingly being applied as an artistic practice. Janet Cardiff, for example, dedicates the main part of her work to the medium of sound and in particular to the practice of Soundwalking.<sup>65</sup> The performing art collective Rimini Protokoll employs the practice in their performative audio walk *Remote X.*<sup>66</sup> Both works aim to approach the spatial environment through the

<sup>&</sup>lt;sup>62</sup> Light, Burgess and Duguay, "The walkthrough method: An approach to the study of apps," 894

<sup>&</sup>lt;sup>63</sup> Schafer, The Soundscape: Our Sonic Environment and the Tuning of the World, Page 212-213

<sup>&</sup>lt;sup>64</sup> Joo Young Hong, Pyoung Jik Lee, and Jin Yong Jeon. "Evaluation of urban soundscape using Soundwalking." The Journal of the Acoustical Society of America 134:1: 803-812

<sup>&</sup>lt;sup>65</sup> Batista, Anamarija, and Carina Lesky. "Sidewalk stories: Janet Cardiff's audio-visual excursions." *Word & Image* 31, no. 4 (2015): 515-523.

<sup>&</sup>lt;sup>66</sup> Rimini Protokoll, "Remote X | Rimini Protokoll," *Vimeo*, February 8, 2017, accessed April 27, 2020, https://vimeo.com/203111473.

medium of sound. However, the social dimension has a stronger role to play in these projects, as the participants in the installations are constantly in a group experiencing the settings together. This is not primarily the intention behind the selected cases in this research, as each of them is used individually.

What most Soundwalking projects have in common, whether artistic or scientific, is the narrative guiding of the user through (mainly) urban environments. The users are usually sent on a defined route and thus experience the respective narrative through headphones. The sound source can vary here, from spoken text, musical content to experimental sound design. The aim is, like the original idea of R Murray Schafer, to create a different experience of the city through the bodily exploration of urban space.

Another common feature within most Soundwalking projects is the underlying prewritten script, which allows the participant little space for individual experiences. In this way the user has to follow the composed narrative. Schafer refers to this as a 'score', which corresponds to a plan that is set in advance.<sup>67</sup> The *Soundtrackcity* application selected for this research follows this approach and thereby limit itself spatially. The urban environment is walked through according to a pre-defined plan. There is no mapping strategy in the *VUSAA* application, thus the user can experience the urban soundscape on an individual pace. Through the different approaches of the selected applications, this research aims to investigate the spatial limitations and explore what consequences this may have for the user.

What is special about the adaptation of the method for this research is that it is not the original urban sounds that are listened attentively in the first place, but that this method is, so to speak, cast in a contemporary frame by connecting the apparatus of the headphones between the urban sounds and the urban dweller. Just like in the described modern self-curation process in the headphone culture. Unlike the classical self-curation through different contents, the selected smartphone applications seek to recreate the relationship to the exterior space through varying approaches. This is what makes this method particularly appealing to me, as it adds a new twist to a classical research method through a contemporary practice.

As Soundwalking describes an interactive, mobile practice, I refer in the following analysis to my own experiences while performing the individual apps and soundwalks. I consider this form of analysis to be the most appropriate, as it reports first-hand from my own bodily experiences of urban space. The objective of this thesis, to explore the emotional relationship to urban spaces, I consider to be particularly well represented by this tool.

As the practice of using headphones is already an introspective practice in itself, I believe that this method not only resembles this practice but is also an adequate form to describe urban experience and to gain insights about it.

<sup>&</sup>lt;sup>67</sup> Schafer, The Soundscape: Our Sonic Environment and the Tuning of the World, 213

The researcher thus takes the position of the spectator to experience the spatial dimensions of urban settings, at the same time the researcher leaves the role of the spectator and takes the researchers position to experience the cultural practice at hand. Therefore, I aim to get a close impression of how Mobile Sound Art application can impact the emotional relationships we form with our urban environments.

#### 4 Cases

In the following, I analyse the selected smartphone applications for this research. I follow the above descriptions of the two methods and apply them to my cases. The methods will be combined, I first apply the Walk-Through-Method to explain the general conception of the application and subsequently explore the app myself while applying the Soundwalking method. This part of the thesis is structured according to the different apps, i.e. each app is first subjected to the Walk-Through-Method and then actively used. According to the leading research question, I intend to focus particularly on the emotional relationship with the urban environment, which I try to portray by describing my experiences.

The individual soundwalks, which are analysed within the selected apps, again have different approaches, which I have classified exemplarily in three different categories, namely "Narrative Commentator Walks", "Naturalistic Sound Design Walks" and "Experimental Self-Exploration of the Outer Environment". In these categories within the execution of the Soundwalking Method, I will present and compare the individual Soundwalks to find out how the different approaches influence the urban experience.

This analysis was conducted using my own mobile phone, a model of the Apple iPhone 8 and its associated Apple Headphones.

#### 4.1 Soundtrackcity

The *Soundtrackcity* smartphone application is available to download from Apple's AppStore. To download the app, I select the App Store on my phone and search for the Soundtrack City App. I click on the Download button to download the app to my phone (Figure 1). The app is free of charge. After downloading the app, I get a message when I launch the application:

# *Welcome! Please choose your preferred language for the audiowalks:* (Figure 2)

Accordingly, the same message in Dutch. I choose the language English because I am not familiar with the Dutch language. Following, I am asked by my phone if I allow the app to access my location while I am using the app. I do so in order to experience the full functionality of the app as most soundwalks are related to the location of the user. Before I arrive at the start screen, I encounter a welcome message (Figure 3), which briefly explains how to use the application with an explanatory text.



The start screen is kept simple (Figure 4). The bottom bar shows a link to the home screen and the option to use the app in combination with Twitter. Clicking on the Twitter section will display tweets posted in relation to the *Soundtrackcity* app. In the upper right corner, the user has the chance to create personal content, post on Twitter or Facebook or send an email. This is more of a recommendation feature, just like other apps offer the option to recommend the app to other users. The e-mail function already creates a standard e-mail that only needs to include a recipient (Figure 6): *Hey! I've been having great fun with the Soundtrackcity App. Download via...* 



This is ultimately the only way to use the app in a truly social way, since the practice of Soundwalking is an introspective way of experiencing the city and all the soundwalks offered within the app imply individual use.

Back on the home screen is another icon on the bottom bar. The "More" section is divided into two categories. One is called "Settings" and the other "About this app" (Figure 7, 8). Under "Settings" I can first change the language. The app is available in English or Dutch. In the category "Restore Purchases" previous purchases can be restored. Under "Account Status" the status of the account is shown. This appears as follows the first time the app is used: "Logged Out. Soundtrackcity uses the Shoudio Platform to maintain your purchases" It is not clear which purchases are meant here, as it is not apparent where an account can be created and especially where Soundwalks can be purchased, as all Soundwalks visible in the app are free of charge.

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Language     >       Restore purchases     >       Account Status     >		About this app			<ul> <li>Soundtrackcity: Renate Zentschnig, Michiel Huijsman, Michiel Uilen, Floortje Schouten.</li> <li>Shoudio:Roeland Landegent (interface,</li> </ul>			
		Credits		>				
		About this app		Rights & Licences		>		
Explain >		Disclaimer		>				
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Figure 7	Twitter	More	Figure 8	Twitter	More	Figure	9	More

Figure 7

In the section "About this App" is the sub-section "Explain". This section explains the general functions of the app:

With the Soundtrackcity app you can easily download and walk all soundwalks of Soundtrackcity. Just browse to the tabs 'All Walks' or 'Walks on the map' to explore the available routes in English.

Via the tab 'Twitter' you can follow the latest news from @Soundtrackcity and send a tweet yourself.

All content (audio, images, routemaps, etcetera) are offline available, once you have downloaded them. You can safely switch off roaming, preventing mobiledata carrier costs and still use the app during your soundwalk!

If you decide to buy a soundwalk, your money will be used to develop new audiowalks. Once bought, the soundwalk will be attached to your Shoudio account. If you ever switch phones or want to try the audiowalks on another iOSdevice, you can simply login with your Shoudio account and download the item again without paying for it.

*Tip:* Do not use earphones but good headphones. They will reproduce the superb sound quality of these soundwalks at its best. Have fun exploring the city!

The sub-section "Credits" lists the developers of the app (Figure 9):

The Soundtrackcity app is realized thanks to the efforts of: Soundwalkcity: Renate Zentschnig, Michiel Huijsman, Michiel Uilen, Floortje Schouten. Shoudio: Roeland Landegent (interface, app, Shoudio Platform integration)

The sub-section "Rights & Licenses" contains the legal terms and conditions for the app. It is underlined, for example:

The soundwalks of Soundtrackcity are for personal use only. All rights reserved. ©2013 Soundtrackcities and the authors.

These rights and licenses are further elaborated in English and Dutch. The subsection "Disclaimer" is dedicated to the usage instructions of the app, in Dutch and English. This section highlights in particular:

You are responsible for your own safety on the streets. Use half open headphones, so you can hear ambient sounds! Never walk the soundwalks with close headphones. Soundtrackcities is not liable for any inconvenience or harm that may result from the participation in these soundwalks.

This means that there is a call to not listen to the Soundwalks with dedicated noise cancelling headphones in order to avoid possible accidents. This is not only of interest from a security point of view, but also in the sense that the developers do not want the user to be completely immersed in the sound experience, but rather still allow the user to perceive external (loud) acoustic factors.

The sub-section "Other Apps" recommends other smartphone applications that are using different ways to connect to the external environment. For example, the apps "Natuur in Nederland", "Tales & Tours" and "Natuur Routes". By clicking on the respective icon, the user is taken directly to the app's page in the AppStore, where the app is available to download.

In the sub-section "Rate Soundtrackcity!" the user can rate the app in the AppStore. With many (positive) ratings, the relevance of the app in the AppStore will increase and more other potential users will be able to find out about this app.



The start screen is dominated by two pictures showing young people wearing headphones (Figure 4). The sections "Walks on the map", "All walks" and "Downloaded Walks" are displayed on the screen simultaneously. The section "Walks on the map" features a map with all soundwalks offered in the app (Figure 10). This is solely in the Netherlands, respectively only in Amsterdam and Rotterdam. Back to the start screen, the next category "All Walks" displays all available Soundwalks, which are currently (April 2020) 12 walks (Figure 11). When clicking on a soundwalk, more information about the soundwalk is displayed (Figure 12). This information includes the name of the individual artist who created the soundwalk, a detailed description of what can be heard on the soundwalk and possible intentions of the creators. To get an insight into each Soundwalk I download all available Soundwalks.

Afterwards, in the section "All Walks", all downloaded Soundwalks will display pictures related to the Soundwalks. Back on the start screen, in the category "Downloaded walks" the downloaded Soundwalks are now displayed and may be played here. By clicking on the respective soundwalk, the information about the content and author is displayed again. When I click the play button again, a new page appears where a map is displayed, I am able to perform the Soundwalk now. On this map the starting point of the Soundwalk is shown and I can move to this location to complete the route of the Soundwalk in the way the artist planned the route.

Since the user of this app usually does not have a profile, leaving the app landscape runs without complications. The app can be easily removed from the user's mobile phone by simply deleting it.

Overall, the app is a rather simple app with few "twists and turns". This is probably also due to the fact that the developers focus less on the app design and more on the immersive experience of the user in the external environment.

#### 4.2 **VUSAA**

The VUSAA smartphone application may also be downloaded for free from the AppStore (Figure 23). After downloading the app to my mobile phone, I launch the app, followed by the request if the application is allowed to use my location (Figure 24). This application seems to be the simplest in terms of the general design of the interface compared to the other apps selected for this research. The start screen is just controlled by a "Start/Stop" button (Figure 25). In the top left corner of the home screen is the only section that differs from the home screen, explaining how to use the application and providing background information about the app.



Figure 13

Figure 14

Figure 15

The info area states:

*How to use the app:* 

Start or stop the Virtual Sonic Acupuncture by sliding the Start / Stop button

Set the balance between urban sound and the sonic acupuncture by controlling the slider in the main screen

Start an ambience recording and play it in loop by sliding the Ambience switch

We recommend to use the application with the phone in the hand and screen unlocked. Use headphones and be aware of your surroundings. After the introduction to the general indications of how the developers of the smartphone application imagine using the app, the background that led to the creation of the application is outlined in the same section:

Our cities are decaying. We circulate as fast as possible through public spaces or we inhabit them in a consumerist way. The urban dweller feels little engagement with its environment. Besides, the normalization of what we could call "the headphone city" in which people is creating their own soundtrack for the urban space is contributing to new forms of urban detachment and isolation. The Virtual Urban Sonic Acupuncture App (vusaa) is an artistic invitation to listen to the city with different ears and to feel how a subtle sonic intervention can drive our attention to urban areas and hidden corners fostering a more conscious urban dwelling and social dialogue.

It is particularly interesting in this context that this description clearly defines a societal dimension, as well as a problem that the use of this application is intended to counteract. The *Soundtrackcity* application do not address this issue.

The term Urban Sonic Acupuncture, which is used quite prominently within the app, is explained in detail in the info section of the app:

We can define acupuncture as a local action by means of a pressure point on a key spot with the power to change the situation globally, beyond the local area in which the pressure point is applied. Sonic acupuncture relies in applying sonic pressure points on key spots affecting the global sonic situation. Urban Sonic Acupuncture parallels the practice of Urban and Public Space Acupuncture in the Aural architecture field. Aural architecture deals with spatial and cultural acoustics, it also assigns four basic functions of sound in space: social, navigational, aesthetics and musical spatiality. Artistic sonic acupuncture interventions are places along this axis by starting a negotiation between artistic intentions and the local knowledge and practices. Vusaa creates a virtual urban sonic acupuncture intervention in the public space by sensing elements existing in the place the user is in. A generative system is set in motion generating sonic acupuncture specific to the given conditions the user is at every moment by using the microphone to listen to the environment, the camera for luminance sensing, the clock; and the GPS data. Besides the inspiration from the practice of Urban Acupuncture, vusaa refers to psychographic techniques that Guy Debord defined as "the study of the precise laws and specific effects of the geographical environment, consciously organized or not, on the emotions and behavior of individuals." And to the soundwalk practice that Hildegard Westerkamp called to "... any excursion whose main purpose is listening to the environment. It is exposing our ears to every sound around us no matter where we are."

This explanation addresses several dimensions in order to deal with the issue mentioned above and at the same time gives the user a tool to creatively shape his own external environment. This tool is much more complex than simply listening to pre-recorded soundwalks as in the other applications featured here. This provides the user with much more agency than simply listening to a recording.

Below the detailed description about the background and the use of the application, the credits are listed, which provide information about the developers:

Concept and algorithm design: Josué Moreno; Algorithm design and programming: Vesa Norilo; vusaa logo: Josué Moreno; vusaa has been developed with Kronos programming language developed by Vesa Norilo at Sibelius Academy; Background image: "The streets of Paris, seen from Montmatre" by Joshua Veitch-Michaelis

vusaa is made possible thanks to the support of Sibelius Academy's Music Technology Department and Sibelius Academy Development Centre. The research involved in the development of the Urban Sonic Acupuncture concepts is supported by Kone Foundation, University of the Arts Helsinki Mutri Doctoral School and Niilo Helander Foundation. The application will be presented at the Venice Research Pavilion, 16<sup>th</sup> of June 2017. For more info: http://josuemoreno.eu/projects/vusaa Contact. vusa.app@gmail.com

The user may now click on the badge "Thanks! Get me back to vusaa" to return to the start screen.

The execution of the *VUSAA* application is quite distinct from the *Soundtrackcity* application. The conception and structure of the app enables the user a high degree of flexibility regarding the spatial location. The user may use the apps in a playful way and associate them with various kind of sounds.

#### 5 Experiencing the Urban through Soundwalking

The following descriptions of experiencing urban space through the presented smartphone applications are based on soundwalks that were conducted in The Netherlands and Germany between February 2020 and April 2020. These soundwalks were performed by the author of this thesis and this report is based solely on the subjectively gained experiences. The following sections aim to differentiate between the soundwalks and to draw attention to the varying approaches that are offered within the presented smartphone applications.

#### 5.1 Narrative Commentator Walks

This form of soundwalk is certainly one of the most common forms of auditory guiding through spatial environments. This is due to its widespread use in museum and tourist contexts. Here, the purpose of the soundwalk is primarily to convey (historical) facts about certain objects. The different soundwalks that I identified during my research for this category work in a similar way but take a far more artistic approach that extends beyond the mere transfer of knowledge.

Within the *Soundtrackcity* application, for example, is the soundwalk "Secret of the Canals", which leads me through the urban space of Amsterdam along the canals and introduces me to different, vivid stories about specific areas and explicit locations. The female voice guides me on the outlined path and seems a bit like a physical companion, as I am directed by the voice along the route for the entire duration of the soundwalk. Moreover, it is not only the voice that talks to me, 'together' with her we mimic telephone calls to several people who in turn have a certain relationship to specific places on the route of the soundwalk. They tell their own personal story which are related to the very locations.

For example, a resident of the former squatted building "De Groote Keyser" recounts the historical change of her residential complex and the changing social structure of the current residents of the building. To stand in front of this house during this story creates a special relation, as I can directly relate to the historical, but also the present circumstances. In this particular soundwalk, various narratives are combined. Whether stories from local residents, an urban biologist or a historian, all of whom have an explicit relationship to the spatial surroundings. The narrated stories melt with the subjective imagination I create by listening to the stories.

However, it is not merely about the sheer plotting of a narrative, but the character actually feels close, both physical through the headphone and emotional through the conversational style of talking. In the beginning of the soundwalk the narrator carefully introduces the practice:

We're going to listen to stories and sounds that echo along the canals. Are your headphones okay? Is the sound too loud or too quiet? Take the time to adjust the volume, so you can understand me and still hear the sounds around you. On our walk we'll meet people who live and work along the canals. They'll tell their stories and reveal secrets hidden behind front doors, under bridges, under water or in the trees. Stories from the present and from the past. There is a lot to see in here. Are you ready? Let's go!<sup>68</sup>

Yet, during the soundwalk I not only hear the voices telling their respective tales, I also hear recorded urban sounds. When the historian, who recently wrote a book about the spatial history of Amsterdam, discusses the history of the canals and explains that this area was once shaped by nature, the steps that are imitated by sounds through my headphones are changing. Suddenly I have the feeling of trudging through thick grass. The narrator describes that I would probably have wet feet by now if I had been at this place thousand years ago. The sound of the steps is changing accordingly, and I am fantasizing about wading through deep water.

Between the individual places and conversations, there are often undefined noises that sound (and feel) as if I am directly next to or even in the water. As if the microphone was placed directly beside the water. I feel very close to the water, although I am physically distant from it. This opens up another dimension, which is not only the pure imagining through the story, but also the corresponding sounds that are supposed to stimulate the sensory imagination.

Undefined voices are audible frequently, as well as motor traffic, which is a little unsettling, as I have the feeling that the traffic is lower on the day of my soundwalk. This sensation occurred to me during all my Soundwalks, the sound source through the headphones blends with the actual urban soundscape, which together create an orchestra of artificial and real machine or physical sounds. The urban space is auscultated to in a dual way.

Another aspect that is characteristic of this type of soundwalk is the fact that these soundwalks are deliberate and are carried out outside of routine paths. Because of the guided narrative, it is not possible for me to navigate in individual routes and to thus shape the urban experience personally. Although the individual sounds refer to the current location, when the user strays off the soundwalk's route, I am not able to hear any content connected to the respective location through the Soundwalk. The spatial experience is determined by the narrative of the Soundwalk.

This impairs the freedom of the individual and possibly leads to the fact that the user does not choose a soundwalk on impulse but must consciously plan it in advance. Choosing to conduct a soundwalk may be very much dependent on mood, weather and other day-to-day circumstances. Nevertheless, the *Soundtrackcity* App offers the option to listen to the Soundwalk using different tracks. As a soundwalker, I have to listen to the next track after a few minutes (about 10 minutes) in order to continue following the course of the soundwalk.

<sup>&</sup>lt;sup>68</sup> Description of the soundwalk "Secrets of the Canals" within the *Soundtrackcity* application

The individual tracks are usually dedicated to certain sections of the Soundwalk's route. This allows the user to just perform a part of the Soundwalk and not necessarily sacrifice several hours of everyday life for this practice.

The soundwalk "Ticket to Istanbul (EN)" by Justin Bennett and Renate Zentschning within the *Soundtrackcity* application has again a more spatialhistorical approach. The female voice tells the story of the Turkish guest workers who first arrived in Amsterdam in the 1960s. The walk takes the user along the waterfront to various places that were and are significant for Turkish immigrants, such as former residential areas and factories. At the same time, the soundwalk tells how the area has changed over the decades. In addition to the stories about various places, sounds from factories and nature sounds are imitated. The main aspect of this soundwalk is that the spatial reference changes during the soundwalk. The narrator explains the spatial change within the Soundwalk in this way:

With a bit of imagination, you can envisage ships being built here. But can you picture being in a completely different city? In Istanbul. Just try it! Imagine: You are Istanbul, in the Kadıköy neighbourhood, in the Asian part of the city. You could compare Kadıköy with Amsterdam Noord.<sup>69</sup>

Suddenly the soundscape changes. This is not easy for me to recognize and is only revealed when I recognize sporadic conversations in Turkish. The narrator also refers to this and it then becomes clear to me. She now reports in detail about the physical surroundings of the waterfront area in Istanbul. It seems like a guided tour of the city without me being physically present. Similar to the "Secret of the Canals" soundwalk, the narrator enters into conversations with local residents and their relationship to the location where we are walking now.

The narrator further compares the stories and figures with the surroundings of Amsterdam. The different banks, between the European and Asian side in Istanbul and Amsterdam Central Station and Amsterdam Noord. The comparison of the soundscapes serves as the primary tool to highlight both the differences and the similarities between the ways of life of the residents of each city. The shared references to water, industry and different shores are addressed by the narrator and the people interviewed.

Even though I imagine the spatial world of Amsterdam in another way while performing the soundwalk, I still sense the physical surroundings of Amsterdam. In fact, I am particularly engaged with the surroundings. People living and working at the harbour of Istanbul, on the European or Asian side are being portrayed. In my imagination this has the effect that I also deal with the people passing by in my surroundings in Amsterdam and I wonder about the backgrounds of these people.

<sup>&</sup>lt;sup>69</sup> Quote from the Soundwalk "Ticket to Istanbul (EN)" within the *Soundtrackcity* application

The soundwalk "The Hive" by Jeroen Stout and Jan-Bas Bollen within the *Soundtrackcity* application also refers to a different spatial reality, though with a completely disparate subject. This soundwalk deals with the story of Korean actress Choi Jin-sil, who committed suicide in 2008 as a result of massive internet bullying. Similar to the soundwalk "Ticket to Istanbul (EN)", the approach of this soundwalk is to transport the spatial reality into another, imagined reality.

In "The Hive" various sound fragments are presented. In these fragments, the emails the actress had received, and which ultimately drove her to death, are being read out by various narrators. It is a tragic story. Whenever I look into windows during the soundwalk and notice people sitting in front of a laptop, I associate this with the bullies. In this sense, a completely different, almost threatening mood is produced.

The soundwalk has no predetermined route, which means that I explore the area "de Kop van Zuid " in Rotterdam myself without having a specific destination. But the atmosphere created by the soundwalk fits in with the area I navigate around. "De Kop van Zuid" represents an illustration of a global metropolis with skyscrapers that augur a degree of anonymity. Cold and hard, without much vitality. The dusk and a generally grey day add to the dark atmosphere.

The soundwalk "Do the Slow Down", again in the *Soundtrackcity* application, also has a narrator who chooses a strongly interactive style to lead the relatively short soundwalk. While she guides me through the streets of Rotterdam, the focus is on the surroundings as well, but this time more on the other individuals navigating in the same space:

Walking is good. Left, Right, Left, Right. By the way turn left here. And walk underneath this. Walking is good. It's important to keep fit at your age. Otherwise you might end like these people. Fat. Stressed. Unhappy. The first impression of a person counts. On the other hand, all these people you see right now, you'll never see again. So, who cares? The city is always full of people you will never know, and you will never care about. You don't care, whether this one is a lockpicker, or that one has rich parents, or whether this one will die of cancer.<sup>70</sup>

The focus here is now very much on the people I encounter during the soundwalk. The slightly negative connotation conveyed by the narrator creates an uneasy feeling, as the people are actually unknown to me and it is difficult for me to compare these people with myself or judge them as mentioned during the soundwalk. The soundwalk, however, has in the end the effect that I fantasize about individuals that I encounter on the street, similar to the feelings I had while listening to the "Ticket to Istanbul" soundwalk.

<sup>&</sup>lt;sup>70</sup> Quote from the Soundwalk "Do the slow down" within the *Soundtrackcity* application

Imagination is the basis for the Soundwalk "The Zone" within the *Soundtrackcity* application. It is a soundwalk that tells a solid story. The individual sound passages seem almost poetic. The Zone is created as an imaginary world. A reality in the year 2031, which is directed by various locations, where specific stories are being told. "Kinky Lily" is the name of the narrator who symbolically meets me at a designated place along the route and guides me through "The Zone". She takes me by the hand, so to speak, and takes me very closely along the route:

Very important is that you follow the rhythm of my footsteps. That is the speed of the zone, and we will not hurry. There is no time in the zone. So we have all the time to waste. All the time to waste and observe. Slow and easy does it. Come, follow me. Let's go slowly to the sound of the water. I said slowly, please! Just follow me footsteps. Hear them? Slowly.<sup>71</sup>

I subsequently follow the fixed route together with Lily. However, I do not need to look at the map on the screen for one moment, because I am fully guided by Lily through the surroundings. In this way, urban reality turns out to be minor and the narrative becomes the main event, even though Lily refers to actual sites in her story. Time is a main reference point in different ways. The story is meant to be set in the future, in the futuristic "zone". At the same time, Lily refers in her stories to a past that represents the current present.

#### 5.2 Naturalistic Sound Design Walks

This category within the examined Soundwalks might be regarded as a more abstract form. Within this category, Soundwalks are included that follow a more experimental approach. In contrast to the narrative concept in the previous section, the emphasis lies on the detailed study of various artificial and urban sounds, especially the local non-human soundscape.

In the soundwalk "Witte de With Kwartier" by Vincent Deniuel and Fiona Weir within the *Soundtrackcity* app a particular focus is on the element of water and its meaning for the inhabitants of this particular area in Rotterdam. The rise in sea level and its impact on the city is the main issue:

The city is growing high and the port is pushed to the seashore. The river remains the core of the activities and the inhabitants recharge by its banks. This is a soundwalk through a district where the Port has become abstract. During this walk the walker is experiencing three levels of water, from shallow water to deep water.<sup>72</sup>

<sup>&</sup>lt;sup>71</sup> Quote from the Soundwalk "The Zone" within the *Soundtrackcity* application

<sup>&</sup>lt;sup>72</sup> Description of the soundwalk "Witte de With Kwartier" within the *Soundtrackcity* App

Throughout the entire soundwalk I only hear sounds, so-called field recordings, but there is no voice accompanying me or guiding me along a certain route, only distant voices, birdsong, and a constant rushing of water. It seems to me as if the individual sounds were recorded differently from each other and merged into a soundscape of their own. Similar to the previous category, this creates a mixture of real soundscape and recorded artificial sound, which is sometimes slightly overwhelming or even confusing to me. Because of the constant water noise, I feel the need to go towards the water to establish a physical connection to it.

The track "Bar le Grotte" in the soundwalk starts with the omnipresent diffuse soundscape, which becomes deeper and more intense. Music and voices can now be heard. The music and voices are French and probably refer to the bar which is located directly at this location. It communicates a certain mood. I almost feel like in the bar and for some unknown reason I associate the soundscape to a historical context.

The honking of a car startles me, because I genuinely think that the car itself was honking at me though it was only through the headphones. The white noise becomes more intense and the voices become more and more indistinct until the end of the track. The next track is dominated by loud ship horns. They also seem almost threatening, because it seems to be a giant ship. Suddenly there is music playing again, it sounds like a gym class, with a teacher motivating the students. The white noise is getting stronger again and now I can only hear steps, more and more machine-made, produced sounds are added, as I know them from experimental music. Without melody, without structure.

The soundwalk has several tracks, each lasting about 5 minutes. The names of the individual tracks are the only indications of what my route might look like, as they describe the location where the soundwalk is supposed to be played. Thus, the route is a bit more individual and I can arrange it in a flexible way. This allows me to explore the soundscape step by step this way and not necessarily in a full session.

In general, this form is characterized by a special sound design. Often, as in the Soundwalk "Witte de With Kwartier", the soundscape that is immanent to the place aims to familiarize the user with a certain area. I can also compare the soundscapes during the Soundwalk. Does the soundscape I hear through the headphones match the real soundscape? The result of this process is an intensive engagement with the auditory environment. A process that rarely manifests itself in everyday trips through urban settings.

The Soundwalk "2.2 kilometers" within the *Soundtrackcity* application is all about naturalistic sound design as well. The soundscape that is transferred to the headphones consists only of the urban soundscape that is connected to the very location. The Soundwalk lasts 35 minutes and as I walk along the route it is in fact such that I perceive the physical environment more and it actually requires some effort to distinguish the Soundscape transferred to my headphones from the real Soundscape on the day of the Soundwalk. The urban soundscape consists of conversations, motorized sounds and natural sounds like wind or other weather conditions. In this case even a historical component is added to the Soundwalk, which I probably would not have noticed without the description in the app. The differences between today's and historical Soundscape within the soundwalk are not obvious to me.

The Soundwalk "untitled #290" within the *Soundtrackcity* application follows a similar concept. However, the individual sound patterns are briefly introduced, and the route outlined. The individual tracks are then dominated by mechanical and very abstract sound structures. The combination between the sounds sent over the headphones and the actual soundscape is also dealt with in the description of the soundwalk:

The sound materials collected in each location have been extensively processed, mutated, edited, mixed, and composed into non-representational virtual aural micro-worlds. During the listening experience these pieces will mix to different degrees with the surrounding environments, depending on outside street noise. At times it may become difficult or nearly impossible to discern between "inside or transformed" and "outside or real" sonic perception. This is indeed an intentional feature of this soundwalk.<sup>73</sup>

What this intended feature also causes is that I really do try to listen to the soundscape and identify the different aspects. Sometimes this is quite difficult, as the description already indicates. But sometimes the individual sound elements can be easily assigned to the specific factors of the environment. Metallic noises match the architectural factors of the environment, as well as naturalistic features elements like water.

The soundwalk "Of steel and water: the city tunes itself" by Lee Paterson within the *Soundtrackcity* application is partly guided by a narrator, but the narrator is only giving instructions where to proceed on my route. Again, the main reference point is naturalistic sounds, which, as the description introduces, are closely related to materials from the surrounding area:

The route you are about to walk has been especially chosen because of the sound recordings made along its way. These recordings have been used to create compositions that correspond with each location. Many of the sounds originate within the materials around you along the walk, for example, the underground sewers beneath your feet, sounds from within the nearby river and docks, or the vibrations generated by passing traffic upon the Erasmus and other bridges. They represent a unique opportunity to hear hidden sound that exists within the everyday environment of this area. These vibrations are usually inaudible and have been recorded using contact microphones, hydrophones and small microphones placed inside local objects.

<sup>&</sup>lt;sup>73</sup> Description of the Soundwalk "untitled #209" within the Soundtrackcity application

In addition, near field radio emissions from the metro station at Wilhelminaplein were recorded with pick-up microphones.<sup>74</sup>

This sound structure of this soundwalk is characterized by water on the one hand, but also by metallic noises, as the description implies. In this way, it almost seems as if I can almost feel the environment through the soundscape over my ears. On the one hand the hard, industrial sound structure of the harbour and the bridges, on the other hand the soft, almost meditative sounds of water and wind. In this way I not only perceive the environment more consciously, but also in an unusual and intriguing way, more sensually. In contrast to the narrative stories in the previous category, the sound characteristics of the environment create an atmosphere that again differs from the way I follow a narrative story and thus obtain information about the environment. The relationship is thus more immediate and not shaped by a narrator.

Overall, it may be concluded that within this category, naturalistic sound design, the focus is placed primarily on one's own imagination. The soundwalk provides the soundtrack for the spatial experience of the environment. The creative act to imagine a novel reality lies mainly at the individual's side. Without the visual component, the sound structures appear abstract, almost trivial. While walking through the urban space, and in this case through a certain district, I was able to connect the sounds to the individual materials. I could imagine that the mechanical noise I am hearing is part of the bridge I am walking over. Or that the water noise directly originated from the sounds of the water of the river I am passing. When I walked along the routes after the soundwalks, partly without soundwalk on the headphones, the auditory attention was significantly sharpened.

#### 5.3 Experimental Exploration of the Soundscape

The experimental self-exploration of the urban soundscape through tools within the presented Mobile Sound Art applications is in some ways similar to the previous point, in the sense that the sounds listened to also have a 'natural' genesis. The difference to naturalistic sound design seen in the previous category, however, is that here the existing sounds of the urban environment are utilized.

This category is primarily implemented in the *VUSAA* App. The user has the ability to change the urban soundscape by steering the sounds that are coming through the microphone of the smartphone. The fader ranges from "Urban Sound", in which the outside soundscape is audible, to "Sonic Acupuncture" on a strip. Sonic Acupuncture opens up a whole new acoustic dimension:

A generative system is set in motion generating a sonic acupuncture specific to the given conditions the user is at every moment by using

<sup>&</sup>lt;sup>74</sup> Description of the soundwalk "Of Steel and water: the city tunes itself" within the Soundtrackcity App

the microphone to listen to the environment, the camera for luminance sensing, the clock; and the GPS data.  $^{75}$ 

This dimension is therefore a blend of various sources, which incorporates a variety of factors into the sound generation process. I can therefore adjust the slider on the start screen of the *VUSAA* application to hear either the urban sound only or the Sonic Acupuncture alone. Or even a hybrid of both soundscapes.

As with the other forms of Soundwalks, the user walks through the public space with headphones. In contrast to the other categories, however, the existing soundscape is altered, and no additional sound is sent through the headphones. This is a playful tool that provides the user with a creative element to experience the Soundscape in a distinct way from the previous categories.

Applied in urban space, I perceive this tool at first as a stimulating alternative to the at times rigid soundwalks featured in the other categories. There is no mapping strategy in which I need to pursue a certain route or narrative to listen to sound content through my headphones. On the other hand, this tool calls for more interaction with the screen, which in turn complicates walking through urban space while at the same time sensing the environment. Instead of interacting with the urban space and experiencing the environment in a different way, the tendency here is to play with the app's faders.

It seems to me that the main focus of the app is the immediate soundscape, rather than perceiving the urban space as a whole. The individual sounds whether motor noises or naturalistic sounds - are filtered and the focus is placed mainly on the medium of sound. In this way I walk through the city and perceive the sounds clearly, as the individual noises also resonate and remain in the soundscape for a while. It slightly resembles the naturalistic sounds from the previous category, except that the sounds are generated live and not just replayed. Thus, the reference to the real Soundscape exists, which renders the creative playful element particularly appealing.

I repeatedly used this tool on the routes that I had walked for the other soundwalks to get a comparative perspective. I discovered that it is certainly more intriguing to "play" with the existing soundscape, instead of having to listen to a recorded soundscape, which might sound entirely different by now, due to external influences (more/less traffic, changed built environment). The relation to the current soundscape was highly relevant for me in urban space, because in this way I could also engage with present conditions.

However, this also means that in areas with a high volume of traffic, for example, I had to deal with a correspondingly high number of acoustic influences. Often, I had to escape to quieter areas in order to again be able to listen to the individual sound elements more closely. Partly, the weather condition was also significant.

<sup>&</sup>lt;sup>75</sup> Definition of "Sonic Acupuncture" within the VUSAA smartphone application

With very strong wind, I had a demanding soundscape where I quickly went to areas protected from the wind.

The faders also enabled me to respond to external influences. For example, if there is a lot of traffic at the location where I am, I can slide the faders towards "Sonic Acupuncture" so that I hear less of the urban noise and more of the mixture of the above factors. The sounds are often resembling the sounds I heard in the Soundwalks in the "Naturalistic Sound Design Walks" category.

It is intriguing to recognize the individual elements of the Sonic Acupuncture and to simultaneously blend them with the actual acoustic elements of urban space. This results in a very unique sound structure, which is influenced by my personal performance. This special sound structure is unique and unrepeatable, so the particular stimulus exists to construct your own sound structures in a creative way using existing elements.

However, the high level of screen interaction also results in a constant focus on the smartphone. Occasionally I try to identify the origin of individual sounds by looking at the environment, but the main use of the application consists of interacting with the screen by playfully moving the faders of the interface. The prolonged use of the app while walking through the urban space requires a high level of concentration because the gaze has to return to the path again and again. This tool is therefore a temporary spectacle and yet another way to establish a relationship to the perceived spatial experience.

#### 6 Conclusion

The practice of walking currently seems to be undergoing a renaissance, especially during the time of the writing this thesis, in which the COVID-19 crisis is holding the world in suspense and massively changing urban spaces around the world. These changes not only concern the spatial dimension, i.e. the absence of masses of people in the city as a result of curfews, but also and above all the changing urban soundscape caused by a lack of cars and less traffic in general.

This allows the urban dweller to consciously experience these effects and to establish a new and different emotional relationship with their immediate environment. First research already reveals that the urban soundscape has significantly changed throughout the time of the restrictions.<sup>76</sup> At the same time more and more individuals are taking conscious walks and combining this with various activities. Smartphone applications and projects such as those selected for this research are now becoming more widespread and platforms are emerging.<sup>77</sup> This raises prospects that even more people might get engaged with the soundscape of their surroundings in this way.

In this thesis, I analysed the experience of urban space through the use of mobile sound art in the form of smartphone applications. For this, I explored the selected apps and applied them in the urban environment. The subsequent analysis is the result of this individual experience. Before, I highlighted the ways in which the headphone became an integral part of our environment and also acquired meaning to the individual of today. The concept of the urban soundscape, coined by R Murray Schafer, functioned as a way to make sense of the auditory environment of the city. The historical dimension of *lo-fi* and *hi-fi* Soundscape was a way to provide me with an impression of how acoustic environments can be experienced and distinguished.

Moreover, following the theoretical considerations as well as in the ensuing analysis, I found that the perception of the city is not only characterized through auditory or visual impressions, but especially through a combination of the two sensory sensations. What we hear influences how and what we see, and what we see or where we are also influences the auditory experience. Since the practice of walking through the city with headphones is mainly an introspective one, this also has an impact on subjectivity. The tendency to develop a certain "inwardness" in the modern city, as Georg Simmel had already described it, thus centres on one's own feelings instead of interacting with other individuals or the city itself. Contemporary urban media consumption via headphones can be compared with this observation.

<sup>&</sup>lt;sup>76</sup> Shannon Mattern, "Urban Auscultation: Listening to the City," Places Journal, accessed May 5, 2020, https://placesjournal.org/article/urban-auscultation-or-perceiving-the-action-of-the-heart.

<sup>&</sup>lt;sup>77</sup> "Poligonal – Agentur Für Stadtvermittlung Office for Urban Communication Berlin," Poligonal – Agentur Für Stadtvermittlung Office for Urban Communication Berlin, accessed May 5, 2020, https://www.poligonal.de/en/.

In order to investigate the effects of the Mobile Sound Art applications that I have selected for this thesis, and especially to explore the emotional relation to the urban space, I have conducted the presented analysis. The emotional connection to the city, which I aimed to examine with this project, remains a rather individual experience for me. Therefore, I decided to pursue the methodical way of exploring the applications and experiencing the urban space through my own excursions with the apps at hand.

My analysis revealed that there are different ways to communicate certain spatial narratives through the selected Mobile Sound Art applications. I have classified these different ways into three categories: "Narrative Commentator Walks", "Naturalistic Sound Design" and "Experimental Exploration of the Soundscape".

The category "Narrative Commentator Walks" influenced my emotional connection to the respective urban environment mainly through narrative characters and stories, in which I could identify with the stories and places by listening to narrators. This also had a historical component, in that historical elements about the places I visited were introduced to me. In this category the selection of narrators, more precisely their expertise and ability to tell a story, played a significant role.

The category "Naturalistic Sound Design" uses a far more abstract sound narrative. Here the focus was primarily on the relationship to the non-human part of urban space. On the one hand animal sounds, such as the twittering of birds, on the other hand water, which plays a major role, especially in the Dutch environment. But then also architectural sounds from bridges or other objects contributed to the sound structure. In addition, of course, the omnipresent motorized traffic. In short, the whole diversity of the contemporary urban soundscape. This sound structure allowed me to compare the recorded sound elements through the headphones with the actual soundscape. I was therefore able to study the existing soundscape as well as the recorded soundscape in detail and in this way sharpen my auditory knowledge of the place I visited.

The features of the *VUSAA* application, which I employed in the category "Experimental Exploration of the Soundscape", were able to shape my auditory knowledge of the urban space I visited in a different way, even more intensively. Through the playful tool of the application I was able to deal with the existing soundscape in detail. At the same time though, there was a high level of interaction with the screen of the smartphone and thus less preoccupation with the visual element of urban space.

All categories are consistent in that they introduced me to the urban space in their own way and had a strong impact on the emotional relationship to the surrounding space. The different, mobile ways of experiencing the urban environment led to the fact that, after the practice, I walked through the explored urban space with a new perspective. Furthermore, a historical layer constantly shapes the experience of urban space. I walked through unfamiliar spaces, such as areas in Amsterdam and Rotterdam, which I learned about through the Soundwalks. Then again, I explored spaces in Hamburg that I have known for decades and that are already filled with personal associations and memories. In both spaces, however, I could either intensify my emotional connection, as in the case of the Soundwalks in Hamburg, or create them, as in the case with the Soundwalks in the Netherlands.

The impact that mobile sound art has on the emotional connection to urban space therefore depends partially on the preceding association. The potential experiences I may have already gathered at the locations affect this emotional relationship. Naturally, situational factors such as the subjective mood or the climate have a considerable impact on the experience of the environment. A soundwalk may evoke a completely different experience in a certain weather condition than in another one. The same applies to the subjective mood.

The results of my investigation of urban space using the selected Mobile Sound Art applications are the outcome of the combination of the two methods I have decided to use for this work. The Walk-Through-Method and bodily exploration of urban space by Soundwalking. Through my previous sociological background, I was familiar with both traditional qualitative research methods and especially with the conventional corset of academic research designs.

Considering these experiences, it was challenging yet exciting to enter into this kind of unfamiliar methodological framework. In retrospect, the combination of the two methods proved to be coherent for me, because only by using the Walk-Through-Method I was able to apply the Soundwalking method. On the other hand, I had to actively use the applications in their full functionality in order to experience the apps in their entirety.

Choosing to base my work exclusively on the subjective experience of urban space or the selected smartphone applications implies a lack of different subjective perspectives. Nevertheless, the choice of this method has proven to be a particularly effective one, as it exemplifies the introspective practice of the headphone culture. I was able to directly share my experiences as well as my reflections.

I believe that the practice of Soundwalking, especially in connection with the presented smartphone applications, is able to add meaning to the places we touch on our everyday journeys. It not only establishes an emotional relationship with the physical space. Moreover, the place itself is given a meaning and in my opinion, it makes life a little more worth living if we have more meaningful places in our everyday life.

Further research may continue the selected methodological approach in connection with Mobile Sound Art applications in a larger context to

consider other perspectives on the experience of urban space. This could provide an even more meaningful statement on how mobile generated soundscape experiences impact the emotional relationship to urban spaces.

#### 7 Bibliography

Augé, Marc. Non-places. Brooklyn: Verso Books, 2008.

- Batista, Anamarija, and Carina Lesky. "Sidewalk stories: Janet Cardiff's audiovisual excursions." *Word & Image* 31, no. 4 (2015), 515-523. doi:10.1080/02666286.2015.1053044.
- Berry, David. "The computational turn: thinking about the digital humanities." *Culture Machine* Vol. 12 (2011)
- Becker, Judith. "Exploring the Habitus of Listening." *Handbook of Music and Emotion: Theory, Research, Applications*, 1993, 127-157. doi:10.1093/acprof:oso/9780199230143.003.0006.
- Blumer, Herbert. Symbolic Interactionism: Perspective and Method. Oakland: University of California Press, 1986.
- Brown, Andrew. "Soundwalking: Deep Listening and Spatio-Temporal Montage." *Humanities* 6, no. 3 (2017), 69.
- Bull, Michael. "iPod use: an urban aesthetics of sonic ubiquity." *Continuum* 27, no. 4 (2013), 495-504. doi:10.1080/10304312.2013.803300.
- Bull, Michael. "Remaking the Urban." Oxford Handbooks Online, 2013. doi:10.1093/oxfordhb/9780199733866.013.0023.
- DeNora, Tia. *Music in Everyday Life*. Cambridge: Cambridge University Press, 2000.
- Durham, Deborah, and Kathryn L. Geurts. "Culture and the Senses: Bodily Ways of Knowing in an African Community." *The International Journal of African Historical Studies* 37, no. 2 (2004), 380. doi:10.2307/4129029.
- Dyson, Frances. Sounding New Media: Immersion and Embodiment in the Arts and Culture. Oakland: University of California Press, 2009.
- Featherstone, Mike, and David Frisby. Simmel on Culture: Selected Writings. Thousand Oaks: SAGE, 1997.
- Gay, Paul D. Doing Cultural Studies: The Story of the Sony Walkman. Thousand Oaks: SAGE, 1997.
- Giddens, Anthony. *Modernity and Self-Identity: Self and Society in the Late Modern Age*. Hoboken: John Wiley & Sons, 2013.
- Goffman, Erving. *The Presentation of Self in Everyday Life*. London: Penguin Books, (UK), 1990.

- Hagen, Anja N., and Marika Lüders. "Social streaming? Navigating music as personal and social." *Convergence: The International Journal of Research into New Media Technologies* 23, no. 6 (2016), 643-659. doi:10.1177/1354856516673298.
- Hall, Edward T. The Hidden Dimension. Garden City, N.Y: Doubleday, 1966.
- Harvey, David. "The Right to the City." In *The Emancipatory City?: Paradoxes and Possibilities*, edited by Loretta Lees, 236-239. London: Sage Publications, 2014.
- Howes, David. Empire of the Senses: The Sensual Culture Reader. Oxford: Berg Publishers, 2005.
- Lefebvre, Henri. *Rhythmanalysis: Space, Time and Everyday Life*. London: A&C Black, 2004
- Light, Ben, Burgess, Jean, and Duguay, Stefanie. "The Walkthrough Method: An Approach to the Study of Apps." *New Media and Society* 20, no. 3 (2018): 881-900.
- Liu, KuanTing, and Roger A. Reimer. "Social playlist." Proceedings of the 10th international conference on Human computer interaction with mobile devices and services MobileHCI '08, 2008. doi:10.1145/1409240.1409299.
- Hagen, Anja N., and Marika Lüders. "Social streaming? Navigating music as personal and social." *Convergence: The International Journal of Research into New Media Technologies* 23, no. 6 (2016), 643-659. doi:10.1177/1354856516673298.
- Hong, Joo Young; Lee, Pyoung Jik, and Jeon, Jin Yong. "Evaluation of urban soundscape using Soundwalking." *The Journal of the Acoustical Society of America* 134:1, 803-812
- Macquire, Scott. *The Media City: Media, Architecture and Urban Space*. London: Sage Publications, 2008.
- Mattern, Shannon. "Urban Auscultation: Listening to the City." Places Journal. Accessed May 5, 2020. https://placesjournal.org/article/urbanauscultation-or-perceiving-the-action-of-the-heart.
- Mead, George H., and Charles W. Morris. *Mind, self & society from the standpoint of a social behaviorist.* 1950.
- Moreno, Josué. "Virtual Urban Sonic Acupuncture App.". Accessed January 20, 2020. https://josuemoreno.eu/project/vusaa/.

- Nyre, Lars. "Urban Headphone Listening and the Situational Fit of Music, Radio and Podcasting." *Journal of Radio & Audio Media* 22, no. 2 (2015), 279-298.
- "Poligonal Agentur Für Stadtvermittlung Office for Urban Communication Berlin." Poligonal – Agentur Für Stadtvermittlung Office for Urban Communication Berlin. Accessed May 5, 2020. https://www.poligonal.de/en/.
- Rimini Protokoll. "Remote X | Rimini Protokoll." *Vimeo*. February 8, 2017. Accessed April 27, 2020. https://vimeo.com/203111473.
- Schafer, R. M. The Soundscape: Our Sonic Environment and the Tuning of the World. New York: Simon & Schuster, 1993.
- Sennett, Richard. Flesh and Stone: The Body and the City in Western Civilization. New York: W. W. Norton & Company, 1996.
- "Soundtrackcity," Soundtrackcity. Last modified July 19, 2019. https://soundtrackcity.nl/soundtrackcity.
- Star, Susan L. "The Ethnography of Infrastructure." *American Behavioral Scientist* 43, no. 3 (1999), 377-391. doi:10.1177/00027649921955326.
- Stockfeldt, Ola. "Adequate Modes of Listening." In Audio Culture: Readings in Modern Music. London: A&C Black, 2004.
- Taylor, Charles. Sources of the Self: The Making of the Modern Identity. Cambridge: Cambridge University Press, 1992.
- Turkle, Sherry. *Alone Together: Why We Expect More from Technology and Less from Each Other*. New York: Basic Books, 2011.
- Urry, John. Mobilities. Cambridge: Polity, 2007.
- Verhoeff, Nanna. *Mobile Screens: The Visual Regime of Navigation*. Amsterdam: Amsterdam University Press, 2012.

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