

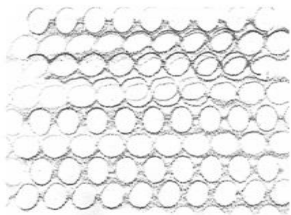


## 2. Exploring the field

6 at brown

## Dynamics of urban sound -about listening to the invisible

This text is written as an introduction to the urban sonic field. It is an attempt to give a broad spectrum of how one can understand to the current situation of urban sound as well as presenting my main topics for this research. When you find yourself in the writing process, the text becomes a living material in itself and starts growing and expanding from the source, from a headline or a question. The writing process can be compared to the careful handling of a piece of clay, waiting to be formed through the work of hands. Therefore this text should be read as a process of development from within, as a starting point for further investigations.



On one hand I have two roads with heavy traffic and beyond them the waterline of Stockholm is spreading out, towards the archipelago. On the other hand a seemingly dense wall of houses is stretching out alongside the road, turning their facades towards the sea. The wall is perforated with narrow passages leading up to the main street which is loaded with small shops and tourists.



Walking quite close to the wall the acoustic impression from that side is rather dull, almost soft in a sense. The sound waves from the traffic play together with the rhythmic sound of footsteps are reflected and radiated away. I perceive the wall as a solid object close to me. From this side the acoustic spectra of the sound imprint has no depth, it's character is reduced as if my ear was suddenly embedded in cotton.



The hardly perceivable sonic atmosphere is whispering to me about another urban situation, which is immediately registered by my hearing, without even looking up the alley.



## Blindness and deafness

If I was blind the two acoustic qualities that I have just perceived, would be more than clear to me and for sure a determinant sign of orientation in the city. In that case my ears would be trained in the hearing process. I would be aware of events that occur close or far away, and I would adjust my behavior in correspondence to the information given. We can hear actions that take place around corners and in this sense our hearing is covering up a greater extent of the surroundings than the sight has the capacity to do.

Though I am not blind, the change of sonic spectra was perceivable for me, even if I needed a certain amount of concentration to notice it.



Passing cars, trucks and buses

Passing car

Voices

Passing bicycle

Voices

Traffic

Voices

Traffic

Flow of traffic

Bus

Flow of traffic

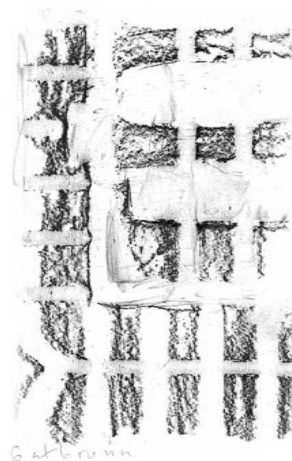
## Displacement of focus - an exercise

The scene takes place one grey morning in October while I walk along a street in the center of Stockholm. While walking I decide to perform a simple exercise which at first glance involves two of my senses, hearing and sight. The exercise concerns a displacement of focus.

Without thinking too much I try to decrease the input of my eyes by putting all my concentration on the hearing. I don't close my eyes but try to focus on what is heard. Immediately I notice how my left and right ear perceives different things, how they feed me with different information.

From a distance one perceives the wall as a homogenous body, but if one looks closer the openings of the alleys appears like cutting marks between the slender houses.

The overall impression of this place is mainly dominated by traffic. The sound imprint, which can be described as the condensed sonic character of this specific situation, is characterized by audible events that are expanding from their sources and either spreading out over the water surface or reinforced through the reflecting surface of the facades.



## Change of direction?

The opening in the wall leaves me with a choice, either I continue walking or I choose to change direction. At this point different aspects of my mind and perceptual senses are co-operating to make an adequate turn, or not.

Maybe it is now that something interesting takes place. It might not be interesting in the sense of being a breathtaking experience, but because it is showing how different factors, internal as well as external, are influencing our behavior of acting in the urban mesh.

But what are the factors affecting my half unconscious mind to act in such a trivial, but yet decisive decision?

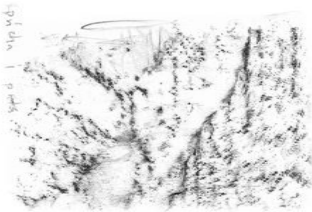


What if this enormous masse of unregistered acoustic impressions actually is of great importance to us for other things than just primitive survival? The field of urban sound might even be considered to be an unexplored guide to the extended understanding of how we perceive and perform within different contexts?

Unfortunately the individual reception of complexity and variation in the physical space is underestimated in many planning processes and their outcomes, which might lead to an unaware treatment of urban spaces and activities. Blindness and deafness of such important aspects of reality is not possible to defend.

### Mind and space

I have mentioned hearing and sight as two important senses. But there are also other active parameters in the decision making process. My memory of this specific urban situation as well as my state of mind for the moment, are affecting me to make a choice, or not. Where am I heading? Am I in a hurry? Do I even notice what is around me?



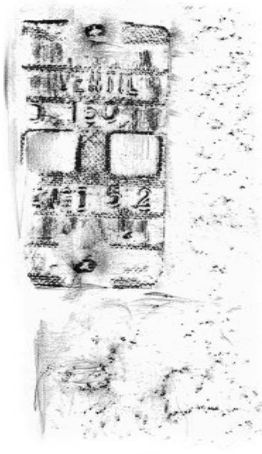
### Spatiality and time

Definition space: "The three dimensional region in which matter exist" (The dictionary of Urbanism)

Definition time: "The dimension of the physical universe which orders the sequence of events at a given place..." (Encyclopedia of science and technology)



To give a metaphoric description the first example can be compared to the creation of a piece of music where you yourself are the composer, creating and listening to your music simultaneously. The second example can be described as a listener standing still and absorbing a piece of music given to her by the city itself, without her participation other than being a receiver.



The emergence of sound is immediately connected to the action from which it was created and the surrounding acoustic conditions. Questions about dimensions, density of morphology, heights, textures and the existence of diverse urban actions, arises.

In short one of the main issues in understanding the urban sound environment is about high-lightening the actual contexts in its totality, where sound is one of the active agents. Therefore it is not fruitful to isolate the sonic event itself, but to study it from an interdisciplinary and holistic point of view.



Bicycle

Flow of traffic

Flow of traffic

Construction work

Flow of traffic

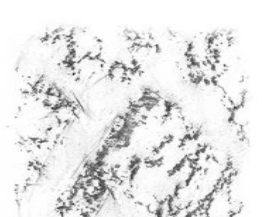
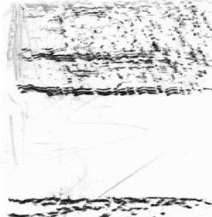
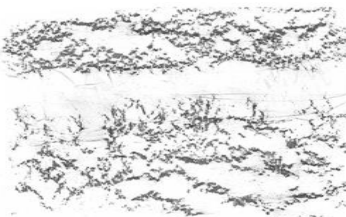
Car horn

Somebody is coughing

Passing footsteps

Flow of traffic

Cars driving over metalid



It is clear that whatever I am choosing to do, it is a subjective choice. Someone else would probably make another turn even though he or she would be exposed to the same exterior situation. The internal situation would still be subjective and ever changing. The sonic perception is one of the active agents here together with seeing, smelling, touching, feeling, thinking. And the result of them all together: reacting and acting.

Spatial experience is in one way or another related to time. Either we perceive the sonic atmosphere when we are moving or standing still. The two cases are slightly different. When you are moving the impressions from several sonic atmospheres strikes your ears one after another. But when you are standing still you absorb the succession of sound events at one single spot.

Urban acoustic quality is not only interesting for its own sake, as an isolated phenomenon, but obtains its importance from the information it carries, connected to time and space implications. An acoustic quality speaks not only about the sound event itself, like the traffic of cars or people, but also about the architectonic realities of the built environment.

### Variation and improvisation in space

The capability of choice is a qualitative element in urban space. A certain amount of disorder is an effective tool for the creation of choice. The notion of "choice" is here used as the ability to make unpredictable movements, like taking different directions on a stroll for example. Too rigid structures might hinder the quality of not knowing exactly where to go, to let the existence of improvisation be present. As the ear is a highly sensitive organ for perceiving things happening further away, behind a corner for example, the hearing process is directly obeying to the physical aspects of space. The hearing system is triggered when listening to the variation of sound.

## 2.1 Site-specific

How can we understand urban sonic space from an enhanced architectural perspective and how can we talk about, communicate and understand architecture from the perspective of sound, space and experience?

Could it be so that an inclusive and interdisciplinary knowledge development of this field of research and practice that merges architectural thinking with an understanding of the relations and interactions of space, sound and experience be a viable way forward?

Through the performance of three site-specific explorations at the very beginning of the method development process, the search for viable tools, techniques and strategies to represent and communicate the qualitative dimension of sound in space is begun.

### 2.1.1. First excursion

This site of investigation is a section of the Old Town in Stockholm known as Skeppsbron: once a harbor and marketplace, now a street for transportation as well as a public space for leisure. The reason for choosing this area is the winding medieval and morphologically dense structure of the Old Town that directly influences how we use and experience the site both spatially and sonically. Two sides of this triangular island are dominated by well-frequented roads connecting the island of Södermalm with the modern city center north of the Old Town. Today, the intense traffic at Skeppsbron separates the Old Town's narrow alleys leading to the inner parts of the medieval building structure from the waterfront. The spatial and infrastructural situation held a certain appeal, it was an interesting situation that potentially could provide a research project with valuable information that would propel the research quest further. More specifically, it was the distinct but clearly distinguishably differentiation between various sonic qualities in the area as the result of interactions between built structures, traffic, local activities and the possibility to move around on foot in the area, that singled out this particular site as the starting point of the project.

Over the course of a few days in October/November 2009, several excursions were accomplished on the outskirts of and on the interior parts of the Old Town, consisting of components such as recording, drawing, listening, looking, thinking and sketching. The tools I used were a binaural

recorder that enabled discreet stereo recordings of the environment since I could wear small microphones at ear level<sup>9</sup>, photographic documentation of each section of Skeppsbron and the alleys passed at a distance, using pen and paper to preserve certain features of the physical environment by cross-hatching some of the material structures along the path in detail, which more specifically involves preserving the contours of an object by placing a paper on it and then softly hatching over it with a smooth soft pencil on one side of the paper (see previous page).

After conducting the on-site excursions, I wrote a reflective text about my emerging thoughts and experiences. This documentation contained both the written text and the crosshatch images, intermingling the on- and off-site observations and reflections to create a coherent and understandable whole. The excursion was presented twice, via two different types of media; at a seminar using an interactive digital presentation and in a two-dimensional format; as a poster included in the thesis. At a closed research seminar at Konstfack (December 2009), the gathered and produced material was presented using interactive visual and sonic communications of written text read out loud, rows of crosshatch drawings showed on large-sized screens aurally accompanied by a recording of the walk along Skeppsbron. The intent was to create a sense of deeper understanding for the subject under study, specific as well as general, that could be helpful when discussing the project at the seminar. This presentation generated discussions that ultimately helped my study continue in the right direction. The other occasion generated a material outcome/product as a response to the necessity of visually transmitting the outcome of the excursion in a spatially limited two-dimensional context. The performed procedures of this first excursion were helpful when it came to sharpening the senses, in particular the hearing system. It was also a good way to practice being more focused on the qualitative dimension of a site-specific experience and to respond to it in an attentive and reflective way. These were important steps to take at the beginning of the challenge to help merge observations and explorations made on site and connect these to the broader urban context as well as bringing in a reflective and theoretical perspective.

---

<sup>9</sup> Technical device: M AUDIO Microtrack II.

### 2.1.2 Second excursion

One of Stockholm's most air and noise polluted streets, Hornsgatan, is also one of the more popular and lively streets. It is characterized by various spatial and sonic qualities along its 2.3 km extension. Being an important traffic and commercial artery through the borough of Södermalm, as well as being a dense residential area, the street presented a combination that I considered worth a close-up for a study on sound, space and experience. The spatial and sonic situation differs quite a lot from the one at Skeppsbron. Here, functional facilities are all gathered around the street in a linear fashion, not at all like the Old Town situation, where these features are more spatially condense. In addition to this, the Old Town caters to tourists while Hornsgatan has more of an everyday urban quality with the flow of traffic at its center core.

One afternoon in September, I took my camera and sound recorder and went down to the waterline at Hornstulls Strand at the point where Hornsgatan actually begins – or ends. Starting from there, I passed the busy junction of Hornstull and walked upwards towards the peak point of the street, which is an unusual place of immense perspectives and an almost equal amount of intense sound qualities (passing traffic) and relative silence depending on the recurrent absence of passing traffic, facilitating the perception of present low-intensity sounds. The late afternoon stroll finally ended at the Zinkensdamm sports arena where a team of junior bandy players were practicing on the ice, generating a dense and variegated sound environment.

The gathered material was later arranged and presented as a mixture of pictures and sound-excerpts tied to a map collage of the site of inquiry. I used the collected material as an educational and communicational tool at the start of the research project in order to show and explain to the audience at a public research seminar at Konstfack<sup>10</sup> the wide diversity of sound, architectural spaces and various activities/usages discernibly within this section of Hornsgatan experienced through the physical act of translocation. Of course, the main purpose of the exploration was the function of *doing* as an explorative means for attentive reflection and further reactions.

The walk took place during a weekday afternoon at the beginning of November, a time of the day and of the year that is both busy and often not too cold. This is essential as

these are temporal facts affecting the totality of impressions and overall experience of this specific urban situation.

Doing the same excursion in June would offer another experience in terms of sound qualities. However, the spatial and content-wise basics of the situation would remain more or less the same, i.e. the structure of the built environment, the flow of traffic at Hornsgatan as well as actions/sound generated by people in the area.



Hornsgatan's beginning/end; Bergsunds Strand and waveform from a binaural sound-recording of the sonic environment. 091116, 16:12.



Zinkensdamm sports arena, 091116, 17:12

<sup>10</sup> "Research as practice", Konstfack Research Seminars, Stockholm. Title of presentation: "Urban Sound Design – methods for spatial sound analysis. Inventory of language and place". November 2009.





(sound ex. 3)



(Sound ex. 2)



(Sound ex. 4)



(Sound ex. 6)



(Sound ex. 1)



(Sound ex. 5)

**The second excursion.** Sites of observation and documentation, November 16, 2009 between the hours of 15:52 and 17:08. Underlying map: Magdalena Korotynska (1992). Sound files at <https://www.researchcatalogue.net/view/264750/264751>.

### 2.1.3 Third excursion

In January 2010, I was invited by the researcher and artist Monica Sand to participate in her exhibition *Pendulum Experiments* at St. Jacob's church in Stockholm, an event organized in collaboration with the architect, researcher and sound-artist Ricardo Atienza. During their week-long exhibition, I was asked to participate in the event in whatever way I found rewarding in accordance with the research topic and possibly using the occasion for gathering material to my research. I decided to produce a mini-exhibition at the entrance of the church where I could show some aspects of my ongoing research work to visitors by creating a visual and textual presentation of brief poetic reflections and documentations of the sonic and physical environment inside and outside the church which at the time hosted Monica's installations. At the mini-exhibition, visitors were also encouraged to write down or draw their own impressions or reflections onto a copy of the old church plan and were asked to leave the result in a box next to the mini-exhibition. Unfortunately, few entries were made, indicating that the task was not sufficiently clear or possibly difficult to perform.

In the third excursion, presented on the next nine pages, I used a similar drawing technique as at Skeppsbron, crosshatch drawings superimposed on an old refurbishing-plan of the church. The old plan served as a document of orientation and as an underlying blueprint visually referring to the past. Onto the map, crosshatch drawings made on site and short text fragments canalizing thoughts of site-specific impressions on sound, space and experience, were superimposed. This time I decided to exclude the technicalities of recording devices and to focus entirely on my auditory system and the act of listening along with the parallel active attendance to other perceptive abilities such as vision and tactility. When walking around inside and outside the church, I focused on sharpening my senses, trying to be conscious and attentive to whatever impressions and thoughts that may come to me. Through the use of pen and pencil, the experience of space and sound were transformed into words and images later brought together in a two-dimensional A3 paper format.

In this case, the acts of grasping and making visible (which is also the case in the two former excursions) were crucial in order to display and communicate a complex phenomenon and its gathered information internally as well as externally. A minor open seminar/ presentation was held inside the church where questions and thoughts the exhibition evoked were possible to discuss on site.

Being merged in a spatial and sonic environment while simultaneously consciously oscillating between experience and reflection and also responding to that perceptive process by transforming impressions and observations into other media, other forms and formats, proved to be a useful approach to handle the combinatory act of investigation, reflection and communication.

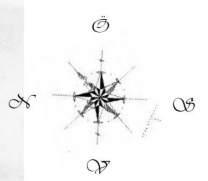
The production of a visual and textual material based on non-visual components like the impressions of different sound qualities in a room, for example, and then organizing that material into a communicable entity, is not as easy as you might think when confronted with questions like: What is essential to say? Why and for whom?

### 2.1.4 Concluding reflection

In conclusion, these three initial explorations were essential to the process of defining and shaping my thesis question and identifying meaningful strategies to work further with. Two insights in particular stood out as having a crucial effect on project:

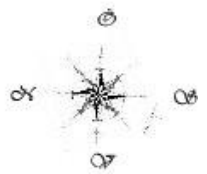
- 1) The gathered material from each exploration was collected, arranged and communicated differently depending on the circumstances of each occasion. The different outcomes raised questions such as: What focus do I consider the most important and why? And who is the receiver of this information, to whom am I speaking?
- 2) The act of transposing fragments of a complex real-life event into a reduced off-site situation is a crucial task that can be performed in a million ways, depending on the subject matter and the intended receiver. This awareness gave insight into how my behavior and choices at the early stages of the method development process would impact the continuation of the decision-making process as well as the final outcome. At this point, the project could take either a more operative and structurally grounded direction or continue towards a more artistic and poetically driven approach that obviously would generate a completely different outcome.

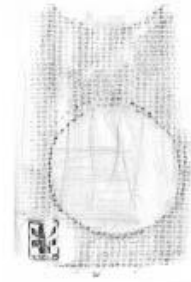
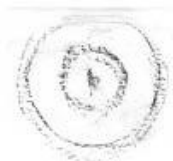
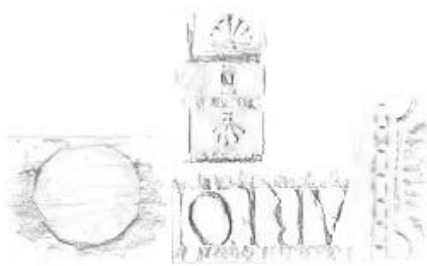
Sammanställd av Nina Hällgren, arkitekt och forskare i urban ljuddesign vid KTH / Konstfack  
Kartor: Stockholms stadsarkiv; J & C. G. Bolinder (1855), Sören Ekström: S:t Jakobs kyrka (2009)

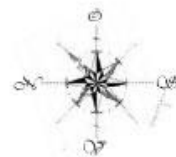
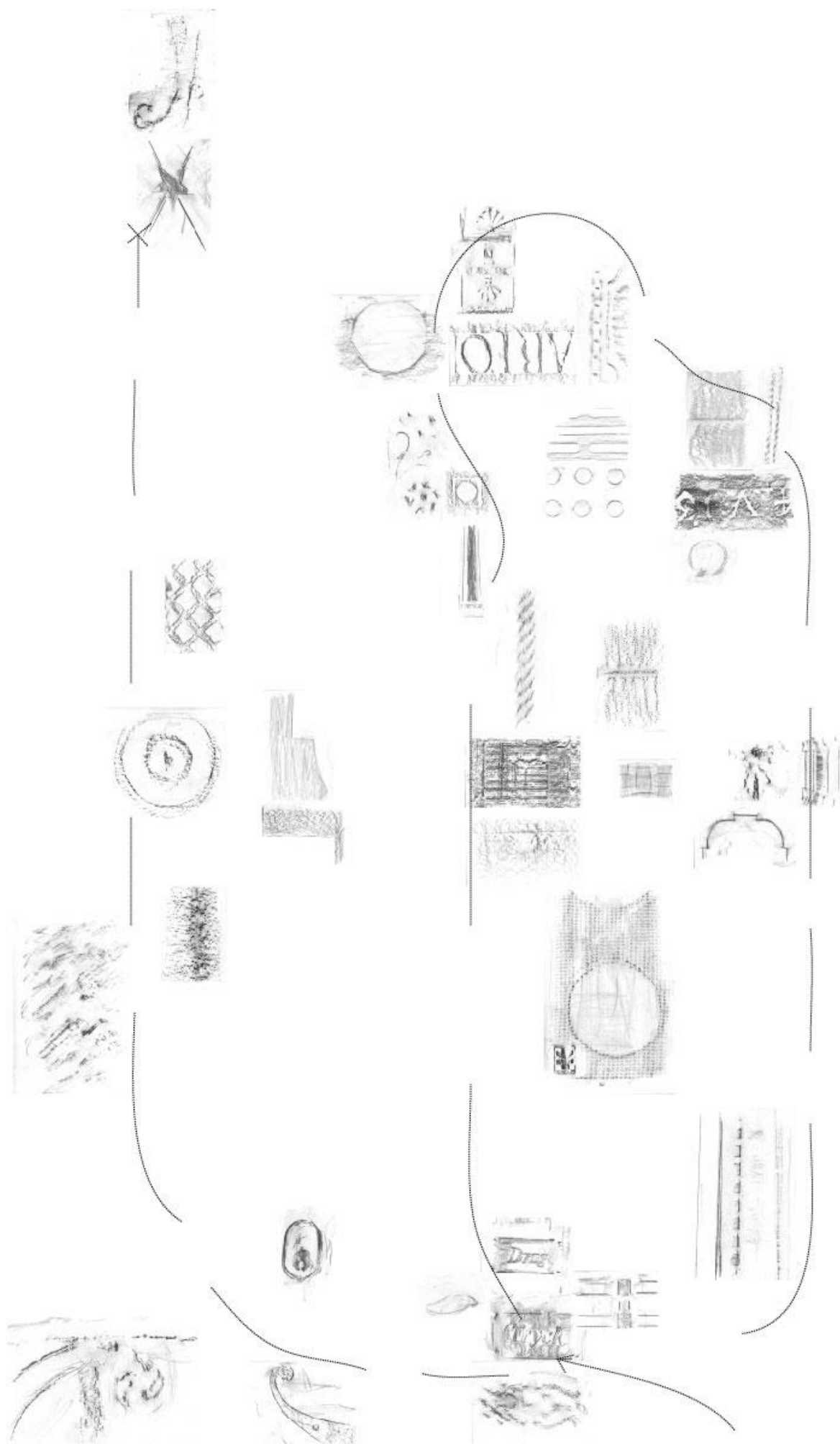


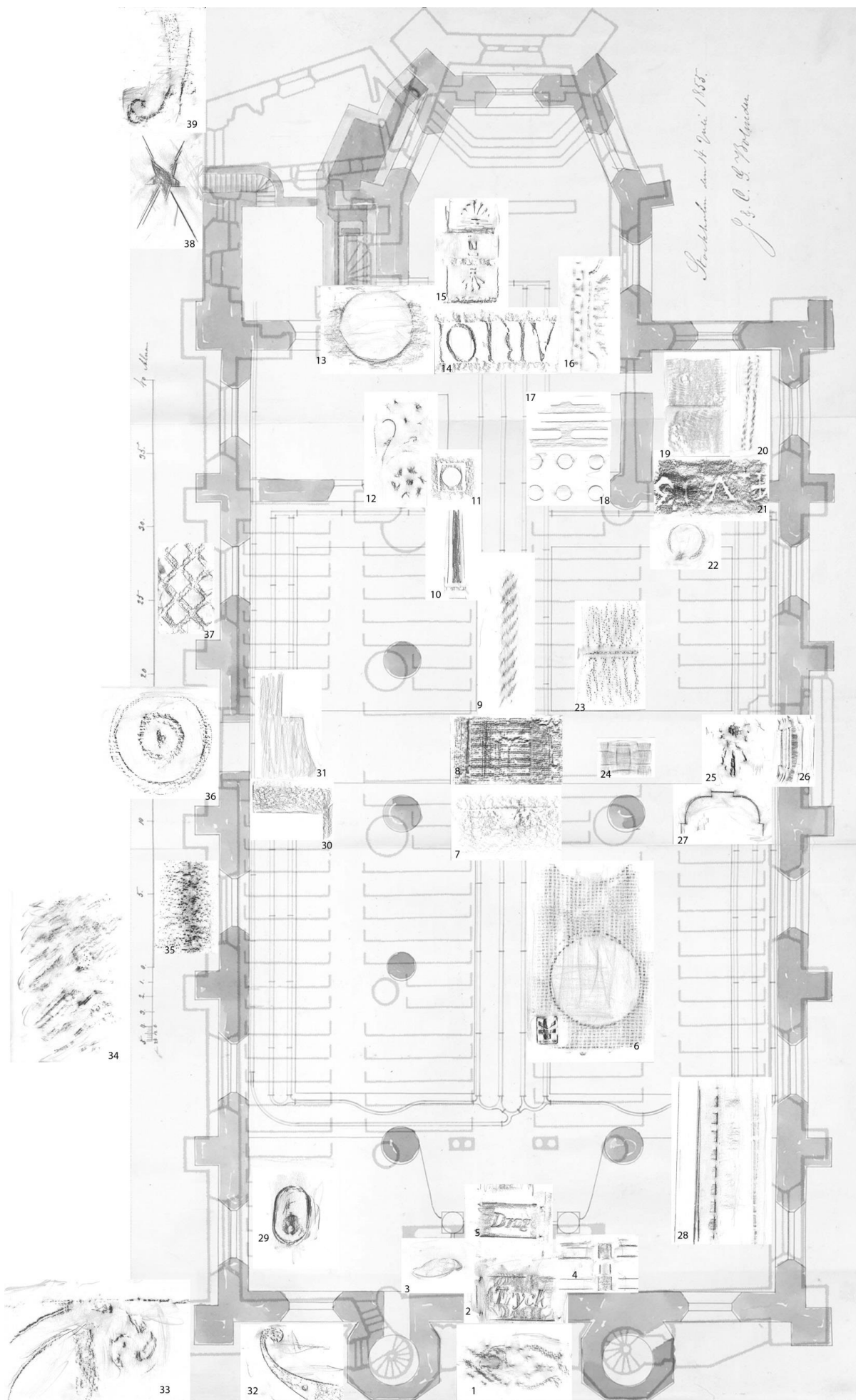
24



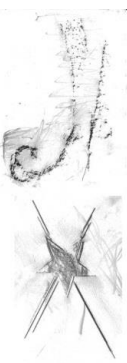








- 1 Handtag enté
- 2 Skylt
- 3 Handtag vestibul
- 4 Elementskydd
- 5 Skylt
- 6 Högtalare
- 7 Stengolv under gunga
- 8 Gungsits stor
- 9 Rep
- 10 Ljusstake
- 11 Ljustakshållare
- 12 Guldhänge
- 13 Moraklocksöppning
- 14 Inskription grav
- 15 Balustrad
- 16 Karmstolsits
- 17 Orgelhögtalare
- 18 Orgelknappar
- 19 Gungssits liten
- 20 Rep
- 21 Inskription grav
- 22 Järnkläpp
- 23 Pelare
- 24 Stolsits
- 25 Lås söderentré
- 26 Dörrspegel
- 27 --- // ---
- 28 Bänk
- 29 Lås
- 30 Bänkhörn
- 31 Norrenté
- 32 Handtag trapphus
- 33 Järngrind kyrkogård
- 34 Trädstam
- 35 Stensockel
- 36 Lås norrport
- 37 Luftgaller
- 38 Lykta
- 39 Grind



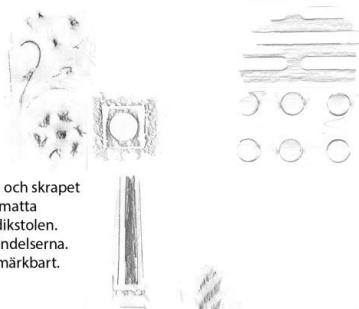
Som en tyst voyeur, blickar kyrkogården ut över Kungsans liv. Vår dolda bakom almar och staket.

Koncentration av ljudets spridning.  
Väggarna är nära.  
Taket är lågt.  
Stegen mot stengravarna ekar mjukt.

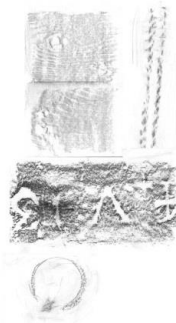
En moraklocka tickar, den andra är tyst. Tillsammans bildar de ett rum som egentligen är två; ett mellanrum mellan två ting och ett ljudrum som berättar sin egen historia i det tredje, kyrkorummet.



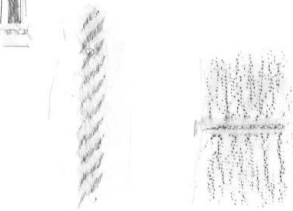
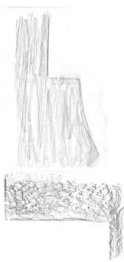
Knarret från bänken och skrapet av sko mot linoliummatta förstärks under predikstolen. Fokus på de nära händelserna. Avskärmar, knappt märkbart.



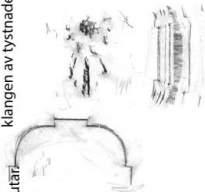
Två trappor upp  
Visuell och auditiv avskärmning



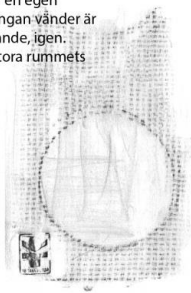
Gnissel.  
Snabba svängningar.  
Vinden kring öronen är tyst.  
Det fysiska rummet omsluter istället för det inre.



Under sidoskeppets valv, mellan pelarna, får klangen av tystnaden och ljuden fritt spelrum.



Vindsuset skapar en egen ljudvärld, där gungan vänder är kyrkan dominerande, igen. Privat sfär i det stora rummets tjocka ekomatta.



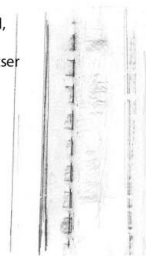
Amplifierat ljud i en gigantisk resonansbox. Inga gränser för var det ena böjlar och det andra slutar.

Överrumplande närvaro av små och stora ljud, nära och lång ifrån.  
Moraklockans tickande minner om andra platser

Kyrkorummets klang avstannar under orgeln.  
Visuell kontakt med rummet.  
Auditiv tydlighet från händelser nära.



Avskärmning  
Torrt och dämpat



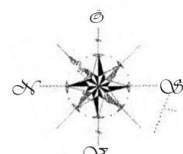
Innanför järngrindarna är lugnet av minnen och glömska sammanvävt med ekon från nuet.



Nischen vid trapphuset skapar ett tystare hörn.



Stadens ljud  
Brus från Västra trädgårdsgatan och Jakobsgatan  
Steg i snöslask





Koncentration av ljudets spridning.  
Väggarna är nära.  
Takets är lågt.  
Stegen mot stengravarna ekar mjukt.

En moraklocka tickar, den andra är tyst. Tillsammans bildar de ett rum som egentligen är två; ett mellanrum mellan två ting och ett ljudrum som berättar sin egen historia i det tredje, kyrkorummet.

Som en flytt voyeur blickar kyrkogården ut över Rungstens lila Val d'Isère bakom älmor och staket.

Knarret från bänken och skrapet av sko mot linoliummatta förstärks under predikstolen. Fokus på de nära händelserna. Avskärmar, knappt märkbart.

Två trappor upp  
Visuell och auditiv avskärmning

Gnissel.  
Snabba svängningar.  
Vinden kring örnen är tyst.  
Det fysiska rummet omsluter istället för det inre.

Under sidoskeppets valv, mellan pelarna, får klangen av tystnaden och ljuden fritt spelrum.

Vindsuset skapar en egen ljudvärld, där gungan vänder är kyrkan dominerande igen. Privat sfär i det stora rummets tjocka ekomatta.

Amplifierat ljud i en gigantisk resonansbox.  
Inga gränser för var det ena börjar och det andra slutar.

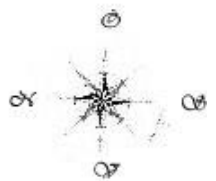
Överrumplande närvaro av små och stora ljud, nära och lång ifrån.  
Moraklockans tickande minner om andra platser.  
Kyrkorummets klang avstannar under orgeln.  
Visuell kontakt med rummet.  
Auditiv tydlighet från händelser nära.

Avskärmning  
Torrt och dämpat

Nischen vid trapphuset skapar ett tystare hörn.

Städens ljud  
Brus från Västtra trädgårdsgatan och Jakobsgatan  
Steg i snöslask

Innanför långfrindarna är lugnet av minnen och glömska sammanvävt med ekon från nuet.



Innanför järngrindarna är lugnet av minnen  
och glömska sammanvävt med ekon från nuet.

Nischen vid  
trapphuset skapar  
ett tystare hörn.

Som en tyst voyeur blickar kyrkogården ut  
över Kungsans liv. Väl dold bakom alnar och  
staket.

En moraklocka tickar, den andra är  
tyst. Tillsammans bildar de ett rum  
som egentligen är två; ett mellan-  
rum mellan två ting och ett ljudrum  
som berättar sin egen historia i det  
tredje, kyrkorummet.

Knarret från bänken och skrapet  
av sko mot linoliummatta  
förstärks under predikstolen.  
Fokus på de nära händelserna.  
Avskärmar, knappt märkbart.

Koncentration av ljudets spridning.  
Väggarna är nära.  
Taket är lågt.  
Stegen mot stengravarna ekar mjukt.

Vindsuset skapar en egen  
ljudvärld, där gungan vänder är  
kyrkan dominerande, igen.  
Privat sfär i det stora rummets  
tjocka ekomatta.

Överrumplande närvaro av små och stora ljud,  
nära och lång ifrån.  
Moraklockans tickande minner om andra platser

Kyrkorummets klang avstannar under orgeln.  
Visuell kontakt med rummet.  
Auditiv tydlighet från händelser nära.

Avskärmning  
Torrt och dämpat

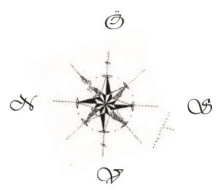
Stadens ljud  
Brus från Västra trädgårdsgatan och Jakobsgränd  
Steg i snöslask

Två trappor upp  
Visuell och auditiv avskärmning

Under sidoskeppets valv, mellan pelarna, får  
klangen av tystnaden och ljuden fritt spelrum.

Amplifierat ljud i en gigantisk resonansbox.  
Inga gränser för var det ena börjar och det andra slutar.

Gnissel.  
Snabba svängningar.  
Vinden kring öronen är tyst.  
Det fysiska rummet omsluter istället för det inre.



Stadens ljud  
Brus från Västra trädgårdsgatan och Jakobsgatan  
Steg i snöslask

Sounds of the city  
Murmurs from West Garden street and Jacob's street  
Steps in slushy snow

Avskärmning  
Torrt och dämpat

Shielding  
Dry and dull

Kyrkorummets klang avstannar under orgeln.  
Visuell kontakt med rummet.  
Auditiv tydlighet från händelser nära.

The twang of the vestry hesitates under the organ  
Visual contact with the room  
Auditive clearness from events nearby

Överrumplande närvaro av små och stora ljud,  
nära och lång ifrån.  
Moraklockans tickande minner om andra platser

Overwhelming presence of diminutive and strong sounds  
closeby and from far away  
A ticking Mora-clock reminds of other times and places

Vindsuset skapar en egen  
ljudvärld, där gungan vänder är  
kyrkan dominerande, igen.  
Privat sfär i det stora rummets  
tjocka ekomatta.

Whooshing wind creates a sound world  
of its own, where the swing turns t  
he church dominates again.  
Private sphere in the thick ecoing of the big space.

Knarret från bänken och skrapet  
av sko mot linoliummatta  
förstärks under predikstolen.  
Fokus på de nära händelserna.  
Avskärmar, knappt märkbart.

Creakings from the bench and  
scraping of shoes on the floor  
is increased under the pulpit.  
Focus on the small events.  
Separates barely noticeable.

En moraklocka tickar, den andra är  
tyst. Tillsammans bildar de ett rum  
som egentligen är två; ett mellan-  
rum mellan två ting och ett ljudrum  
som berättar sin egen historia i det  
tredje, kyrkorummet.

A Mora-clock is ticking, the other one is quiet.  
Together they create a space that is in fact two;  
one in-between space between two objects  
and a sound space which tells its own story  
in a third one; the space of the church.

Koncentration av ljudets spridning.  
Väggarna är nära.  
Takets är lågt.  
Stegen mot stengravarna ekar mjukt.

Concentration of the dissemination of sound.  
Walls are close.  
The ceiling is low.  
Steps against the stone graves eco softly.

Två trappor upp  
Visuell och auditiv avskärmning

Two stairs up.  
Visual and auditive shielding.

Gnissel.  
Snabba svängningar.  
Vinden kring öronen är tyst.  
Det fysiska rummet omsluter istället för det inre.

Squeek.  
Fast oscillations.  
The wind around the ears is quiet.  
The physical room embraces instead of the inner one.

Under sidoskeppets valv, mellan pelarna, får  
klangen av tystnaden och ljuden fritt spelrum.

Under the vaults of the aisle, between the columns,  
the twang of silence and sound moves around freely.

Amplifierat ljud i en gigantisk resonansbox.  
Inga gränser för var det ena börjar och det andra slutar.

Amplified sound in a huge resonance box.  
No limits of where one sound starts and the other stops.

Nischen vid  
trapphuset skapar  
ett tystare hörn.

The niche close to  
the stair  
creates a quieter corner.

Innanför järngrindarna är lugnet av minnen  
och glömska sammanvävt med ekon från nuet.

Inside the iron gates  
the calmness of memories and and forgetfulness  
is intertwined with ecoes of the present.

Som en tyst voyeur blickar kyrkogården ut  
över Kungsans liv. Väl dold bakom almar och  
staket.

Like a quiet voyeur the church yard  
looks out over the buzz at Kungsan.  
Well hidden behind elms and fences.

## 2.2 Sound

When conducting research on sound planning and the design of complex architectonic spaces by using a hands-on approach for qualitative analysis and strategic decision-making, it is absolutely necessary to understand the basics of sound. This goes beyond the physical and acoustical aspects of sonic propagation coming from a specific sound event or the question of whether that sound is intrusive or not, it encompasses the *totality* of these aspects, including the crucial active agents that affect its appearance and experiential quality, i.e. architecture/ the built structure, actions/ events and experience/ exposure. It is important to be aware of the whole process, from the very birth of sound, to how sound-waves spread and intermingle with other sounds, and how they are also affected by the physical structure of the environment before finally reaching our minds and bodies, how these factors affect the receivers/producers of sound in a variety of ways.

Emphasizing the understanding of a complete picture instead of only cut-out pieces of the complex phenomenon of sound and sonic experience, should, I claim, be mandatory for anyone working in this field. This may include the origins, effects and specifics of sonic production and propagation, may they be natural, human, animal or mechanically produced and how these are, or may be, experienced. This presupposes an acceptance of the relational behavior between the active agents affecting and conditioning the quality of urban sound space, which naturally include components contingent on time and space contingent.

### 2.2.1 The phenomenon

The phenomenon of sound can be described, explained and understood in a multitude of manners. The most common and basic description is the physical explanation, known as the *energy transfer model*:

*"Sound is the transmission of energy through solid, liquid or gaseous media in the form of vibrations. In a medium, each vibrating particle moves only an infinitesimal amount to either side of its normal position. (...) At standard (air) pressure and at 20 degrees the velocity of sound propagation is approximately 340 m/s."*<sup>11</sup>

The energy transfer model explains how sound waves are physically transferred in space or in a solid medium making calculations possible to obtain of for example the loss of energy when sound waves move over physical distances or bounce between obstacles and finally disappear. What the

energy transfer model does not say much about are the *qualities* contained in the sonic phenomena experienced in relation to context. Therefore, the energy transfer model is useful in many ways, but it needs complementary information to give us an accurate account of qualities existing and experienced in urban sonic space.

*"(...) In fact, neither open spaces nor small enclosed ones can yet be measured with sufficient precision. For this practical reason, and also because in inhabited space quantitative valuation cannot take into account the whole human dimension of acoustic phenomena, the use of qualitative tools is necessary."*<sup>12</sup>

The physical, neurological and perceptive process of listening is highly complex, and can be described roughly as follows:

*"Physical sound is a pressure wave that transports both sonic events and attributes of an acoustic space to the listener, thereby connecting the external world to the listener's ears. Because the physics of sound is complex, transmission includes such processes as reflection, dispersion, refraction, absorption, and so on, all of which depend on the acoustic properties of space. When arriving at the inner ear, sound waves are converted to neurological signals that are processed by the brain; the external world is connected to inner consciousness."*<sup>13</sup>

Another description and interpretation of the phenomena of sound that criticizes the energy transfer model as the major explanatory model, is from the point of view of *acoustic communication*, which is a way to study mainly electronically processed sound, but also environmental sound. The term was coined and developed by the composer and writer Barry Truax engaged in the World Soundscape Project.<sup>14</sup> His approach to acoustic communication extends the basic physical understanding of sound to include its informational and contextual dimension:

*"First of all, a communicational approach to acoustics deals with the exchange of **information**, rather than the transfer of energy. In other words, it does not deal with sound in insulation from the cognitive processes that understand it. (...) The communicational significance of any sound can only be judged within its complete context in the broadest environmental, social and cultural sense."*<sup>15</sup>

<sup>11</sup> Kang, J. (2007), *Urban Sound Environment*, p. 1

<sup>12</sup> Augoyard, J.F/Torgue, H. (2009), *Sonic Experience – A Guide to Everyday Sounds*, p. 5.

<sup>13</sup> Blesser, B., Salter, L.R. (2007), *Spaces speak are you listening?*, p. 12.

<sup>14</sup> More about WSP, see page 36.

<sup>15</sup> Truax, B. (2001), p.p. 11-12

The philosopher of communication theory, Marshall McLuhan, wrote *The Medium is the Message* in 1967, in which he questions the domination of the visual sense in Western society and pleads for an integration of all our sensory modalities to adapt to and keep up with the quick developments of media and communication industry at that time. McLuhan describes the *ear world* as a world of simultaneous relationships:

*"We hear sounds from everywhere, without ever having to focus. Sounds come from "above", from "below", from "in front", from "behind us", from our "right", to our "left". We can't shut out sounds automatically. We simply are not equipped with earlids. Where a visual space is an organized continuum of a uniformed connected kind, the ear world is a world of simultaneous relationships."*<sup>16</sup>

Centuries and even millennia of centration on the eye and our visual sense in the Western world is today a well-questioned and conceded fact.<sup>17</sup> An increased focus on our other senses has, however, gained a wider interest over the last few decades, along with modern and post-modern developments in western society. The medium of sound also gained increased interest within many scholarly fields due to these paradigmatic changes as the qualities inherent in sound - transparent, fluid, mobile, socially connected – fit it well with the new ideas belonging to post-modern philosophies and discourses.<sup>18</sup> So, the medium of our interest is an evasive and translocational one, always on the move to somewhere else and always generated by some sort of activity. *"Sound is activity, event, and communication"* as the Swedish architect, musicologist, researcher Catharina Dyrssen rightly points out.<sup>19</sup>

## 2.2.2 Moving through urban sonic space

An emerging sound signal follows certain physical rules of development, the *envelope*, known as *attack*, *body* and *decay* which evolves over time and is experienced differently depending on what kind of sounds are at stake in a particular spatial context and where the listening position is situated or translocated.<sup>20</sup> Sound is a phenomenon directly bound to time as well as to space and it is possible to claim that "(...) we hear aural architecture

by the way that the space changes a sound's spectrum, intensity and temporal sequence".<sup>21</sup>

In the current study, it became evident that it was crucial to pay close attention to the time aspect, as the act of site-specific location and translocation turned out to be an efficient strategy to distinguish and identify various sonic spaces and understand their differences in relation to one another as well as to the given context. This has required a comparative and relational approach when studying and reflecting upon the gathered qualitative research material of all the interconnected sites of the case study. Moving around in an urban environment generates a sense of variation through the very act of transition and bodily displacement in space. How this effect or consequence is created and shaped at every given moment depends on how urban sonic space is constituted and what kind of life (activities/events) it contains as well as how various urban sonic spaces are available and possible to access. Through the act of transition, one place distinguishes itself from another through major or minor changes and contrasts in the surrounding environment. Our eyes, ears and our entire bodies are experts at distinguishing and identifying these distinctions and changes, more or less consciously. Sounds emanating from activities that take place *around* us and are generated *by* us, and it is also crucial to take into account the plethora of changes in the urban sonic structure we experience while moving *between* locations when we wish to understand how sound and space interact and behave and how these factors are constantly being produced, i.e. when we want to understand the formation of what also can be called an *ambiance* or an *atmosphere*.<sup>22</sup>

*"...an atmosphere can be defined as a space-time qualified from a sensory point of view. It related to the sensing and feeling of a place. Each ambiance involves a specific mood expressed in the material presence of things and embodied in the way of being of city dwellers. Thus, ambiance is both subjective and objective: it involves the lived experience of people as well as the built environment of place."*<sup>23</sup>

According to the philosopher Gernot Böhme, an *ambiance* or *atmosphere* can be investigated by focusing on the

<sup>16</sup> McLuhan, M. (1967, 1996), *The Medium is the Message*, p.111

<sup>17</sup> Levin, D.M. (ed.), (1993), *"Modernity and the Hegemony of Vision"*.

<sup>18</sup> Hellström, B. (2003), *Noise Design*, p.12, Dyrssen, C. (2007), *Stadens rytmer: rummet och tiden*, in *Byggnadshistorisk tidskrift*, nr 57, p.p. 59-72.

<sup>19</sup> Ibid, p. 59.

<sup>20</sup> Schafer, M. (1994,1977), *The Soundscape – Our sonic environment and the tuning of the world*, p. 129.

<sup>21</sup> Blesser, B., Salter, L.R. (2007), *Spaces speak are you listening?*, p 17.

<sup>22</sup> Ambiance and atmosphere are more or less equivalent concepts often used interchangeably. The concept of atmosphere and ambiance is nowadays widely used within the commercial industry of sound design and the entertainment industry, such as in film production. Today, this is a growing knowledge field that can be studied at academic levels in a broad array of disciplines. The sonic dimension constitutes one important part of an *ambiance* and it is hence considered a scientific concept. (Hellström, B. (2011, p. 181).

<sup>23</sup> Thibaud, J.P. (2011), *A Sonic Paradigm of Urban Ambiances*, in *Journal of Sonic Studies*, nr 1.



qualities radiating from objects (light, sound for example) instead of merely the physical properties of an object:

*“...atmospheres are, as we said, examined by reference to what produces them, i.e. objects, their qualities, arrangements, light, sound, etc. The decisive factor, however, especially as regards the ontology of objects, is that the concern is not with the properties of the object, but rather with the qualities via which the object projects itself into a space.”*<sup>24</sup>

When we try to understand the way an atmosphere is generated, we have to consider the interaction between the built environment and the social practices it enables and relies on.<sup>25</sup> *“Sound and ambience enable us to emphasize the “in-between” and the “in the-middle”, and through them a relational thought can develop”.*<sup>26</sup>

### 2.2.3 Active conditional agents

The urban sonic space can be understood as a continuous entity containing numerous coexisting parts. This perceived and experienced reality is made up of uncountable interacting elements, which some of them are constantly changing while others remain stable. Changing elements in this context can be described as the activity or movement of, for example, humans, nature, animals, weather, time of day, seasons and other time-related cycles and events.

In this context, stable elements can be understood as our material surroundings, such as the planned, designed and built structures of architectonic space. By architectonic space, I mean the constructed environment as a whole, not solely the architectonic artifact as such.

Sound is both situated and dislocated. We are the producers/senders and the receivers of sound at the same time, and we are constantly connected to a situation, to an environment. A triangular relation is established between the producer/sender, receiver and the environment. As a receiver, you attend to what is happening around you with your whole body. Very low sounds are perceived as tactile sensations, as touch, as the waves from low frequency sounds are not discernible by the ear and are perceived through the haptic sensory system instead.

As a sender/producer, you generate sound through your internally and externally moving body, creating vibrations that are emitted by your bodily domains at the same time

as you constantly are bombarded by sounds from the outside that flood your perceptive systems non-stop.

Adding to this *temporality*, the dimension of *time*, as one of the basic conditions for the existence of sound, renders this subject even more complicated.

It is the symbiosis of these parameters – an experiencing subject, the surrounding environment and all the sounds that emanate from activities (human, natural, animal, technological) at specific locations that generate certain sound qualities in a specific spatio-temporal context.<sup>27</sup>

Talking about ambiances or atmospheres is one way to address the invisible qualities of sound in space, while emphasising the concept of sound quality is another way, where the aspect of sound is ultimately in focus at the expense of the other sensory modalities. Working with the concept of atmosphere or ambience would obviously also be an interesting path to follow in this research study, but as the aim of this case has a structural and pragmatic character that strives for the applicability and usage of the explored methods for qualitative sound analysis, the concept of ambience/atmosphere has been consciously avoided in the explorations and implementations for the sake of limiting the subject of inquiry and to maintain the focus on the sonic dimension.

At this point, it is necessary to introduce the concept of **spatio-sonic**, a notion that has emerged and proved useful during the production of the licentiate thesis. Its usefulness lies in the way it acts as a unifying concept for describing the idea of belonging to both *space* and *sound*, or *space/sound*. The concept also naturally includes the temporal dimension, as sound as physical phenomenon is always bound to time, which also is a phenomenon experienced through our sensing bodies in relation to time-contingent factors bound to matters of exposure. Henceforth, *spatio-sonic* will be utilized in the thesis as a unifying concept and communicational tool, addressing the simultaneous relationship between the existence of *contents*, the *spatial context* and *temporal features*. These parameters are regarded as the three basic pillars crucial to the creation of urban sonic space and its changing qualities and they are referred to as the **active conditional agents** in this thesis. The fourth parameter of this triangular relation is the *sonic experience* that connects the outcome of the active conditional agents into a coherent experiential entity. The fourth parameter relates to the *exposure to* and *participation in* urban sonic space by someone or something through the act of physical transition through, or immobility in, various architectural and natural spaces.

<sup>24</sup> Böhme, G. (2000), Acoustic Atmospheres – a Contribution to the Study of Ecological Aesthetics in *Soundscape - The Journal of Acoustic Ecology*, volume 1, nr 1, p. 14.

<sup>25</sup> Hellström, B. (2003), p. 146.

<sup>26</sup> Thibaud, J.P. (2011), *A Sonic Paradigm of Urban Ambiances*, in *Journal of Sonic Studies*, nr 1.

<sup>27</sup> The concept *spatio-temporal* can be defined as belonging to both space and time or space/time. Oxford Dictionary Online (accessed 141520).

## 2.3 The field

Today, sound studies are a scattered field heavily divided between many disciplines.<sup>28</sup> As the phenomenon of sound is complex and relates to a range of physical, cultural, social and biological aspects, it can also be studied from a plentitude of angles such as *acoustics, audiology, architecture, art, culture studies, landscape architecture, neuroscience, medical studies, musicology, philosophy, psycho-acoustics, social sciences, urban planning and design*, to name a few. Among these, applied acoustics is the far most extensive and widely spread disciplinary field within the genre today. As a scholarly subject, an interest in studying the sonic environment in more ways than from an acoustical perspective began to appear in academic contexts during the twentieth century, due to changes in the sonic environment, technical inventions and new modes of listening.<sup>29</sup>

I would like to return to the basic problems of this field of research and practice described at the beginning of the thesis. At present, the pertinent authorities and other involved stakeholders engaged in securing sustainable urban development that contains healthy and well-functioning life environments remain largely mired in the idea that architecture is equivalent to the physical structure of built artifacts, and they do not pay sufficient attention to the complexity of experiential phenomena that we encounter in all sorts of natural, planned and constructed environments. The sonic dimension of an architectural experience is one such phenomenon. As a consequence, these questions are unfortunately often omitted from the creative agenda of architectural, urban planning and design-oriented practices. Understanding and handling architecture from an expanded perspective at a political or legislative level as well as at a disciplinary practice-based level, by extending the definition of architectural quality to also include temporal aspects of the architectural experience, will be a challenge for future experts to solve and handle.

Today, organizations and affiliations involved in knowledge development or research on sound in space in relation to perceptual and sensory modalities can be found all over the world, but they are still limited in numbers and magnitude. Associations actively working with these questions are, for example, the World Forum for Acoustic

Ecology WFAE (Canada) and The International Ambience Network (France). Academic affiliations with researchers currently or formerly engaged in this subject can be found worldwide, in Finland, Denmark, Sweden, England, Germany, Italy, Portugal, France, Australia, USA, Canada, Japan, and South Korea, to name a few countries. Worthy of mention are educational facilities such as the University of Copenhagen (Denmark), Chalmers University of Technology (Sweden), Instituto Superior Técnico (Portugal), Konstfack University College of Arts, Crafts and Design (Sweden), Swedish University of Agriculture Sciences (Sweden), Royal Institute of Technology KTH (Sweden), University of Sheffield (England), Simon Fraser University (Canada), McGill University (Canada), and the CRESSON Centre for research on sonic space and urban environment (France).

Since the nineteen nineties, shifting attitudes towards this subject among concerned parties and stakeholders are discernible at a governmental and municipal level in, for example, Sweden and the EU.<sup>30</sup> As a result, ongoing and finished research projects in this subject area are increasing, and so is the possibility to obtain funding from well-respected organizations and trust funds to perform research and extend the current means and methods for working with sound in the environment.<sup>31</sup> One explanation for the current rise in interest is that we currently witnessing the augmenting of worldwide urbanization processes. This means that questions arise at an international level concerning how to work with sound quality in dense urban contexts and how to integrate these questions into the core of architecture and urban planning practices as well as other concerned municipal and environmental enterprises. An example hereof is the recently concluded joint project “*The Sound of the City – cooperation and methods for enhanced urban quality*”, an interdisciplinary pilot between several Swedish municipal enterprises, governmental authorities and private co-actors for developing alternative strategies for approaching the need for urban development in harbor areas characterized by high sound levels. In this pilot project, one of the proposed strategies was to use acoustic design and strategic planning to find viable solutions to a problematic urban situation.<sup>32</sup>

<sup>28</sup> Hellström, B. (2003), *Noise Design*, p.14

<sup>29</sup> See for example Emily Thompson's *The Soundscape of Modernity* (2002) and Karin Bijsterveld's *Mechanical Sound* (2011) for a more thorough account of the background and implications of historical paradigmatic changes of sound culture in western societies.

<sup>30</sup> Initiating guidelines, action plans, legislations and directives at international and national level to decrease and control noise emissions in human settlements is a clear indication of this shift, the launching of the European noise directive in 2002, is one such example.

<sup>31</sup> For example COST-action TD0804 on *Soundscape of European Cities and Landscapes* (EU), the MISTRA- research project of *Soundscape support to Health* (VINNOVA, Vägverket), *Acoustic Design Artifacts and Methods for Urban Soundscapes* (Swedish Research Council).

<sup>32</sup> <http://hplus.helsingborg.se/om-hplus/pagaende-projekt/samexistens/stadens-ljud> (accessed 160314).

An important and inspirational arena of explorative research and practice in this field is the artistic one. Currently, debates and innovative method developments of how to work in a proactive, creative and professional manner with the qualities of sound in complex architectural environments are taking place in research and pilot projects focusing on artistic means for extending this knowledge field. The Urban Sound Institute (USIT) is a Swedish interdisciplinary research group that works with sound art, sound design, and urban sound environments through explorative studies, exhibitions and collaborative workshops, operating from such varied perspectives as architecture, composition, musicology, city planning and technology, to name an example.<sup>33</sup>

In Stockholm, a research team from Stockholm University (Mats Nilsson, Östen Axelsson, Maria Rådsten) Konstfack (Björn Hellström) and Gösta Ekmans Laboratory (Peter Lundén) explored and investigated how the addition of site-specific sound art installations could affect the experience of the qualitative aspects of the city park of Mariatorget in Stockholm, where daytime sound intensities were far too loud.<sup>34</sup>

Gunnar Cerwén, landscape architect and researcher explored the possibilities to actively work with sound in urban public outdoor spaces from the perspective of landscape architecture in his doctoral thesis *Sound in Landscape Architecture – a Soundscape Approach to Noise*.<sup>35</sup>

Åsa Stierna is a Swedish sound artist who also pursues research on the implementation of sound installations in public urban space and how such additions can be used as a permanent and positive feature of public urban spaces. She is currently working on a doctoral thesis on the subject at Chalmers University of Technology.<sup>36</sup>

Another example of an explorative approach to working with the existence of urban sound was initiated by the Municipality of Dublin and led by the sound artist and researcher Sven Andersson, who engaged several artists in a cooperative project with people who lived in the city on the subject of ameliorating the quality of the outdoor sonic environment of central Dublin through artistic interventions on site.<sup>37</sup>

### 2.3.1 Two complementary approaches to urban sound research and practice

As discussed above, we are increasingly exposed to urban situations characterized by quick growth as well as a higher density in terms of buildings and activities deriving from as varied sources as people, technology, transport, advertising and trade, than ever before.<sup>38</sup>

Qualitative studies and research on sound in the architectural environment entered the scene during the late nineteen sixties and early seventies. Two assemblies in particular can be discerned that have closely related, yet diverging, ways of approaching urban sonic space. These two research perspectives were founded at around the same time, as a reaction to certain aspects and effects of modern society and also in criticism of the policies for urban planning strategies and ideals at the time. As the field of qualitative research on sound in architectural space is a limited and fairly young in academic circles, these two qualitative research perspectives need to be further explained.

In the late nineteen sixties, the Canadian composer Raymond Murray Schafer introduced the term “soundscape” in his work as lecturer at Canada’s Simon Fraser University; a term that would be widespread some forty years later. Functioning as a unifying concept for describing sound in environmental contexts by also taking into account perceptual, social and aesthetic aspects of sound as well, it has been adopted by the general public as well. Today, the term soundscape is a well-recognized and widely utilized concept when talking about the sonic environment. However, the term is not a neutral one with regard to the context in which it was coined. At the time, Schafer reacted strongly to the problem of noise pollution due to modern lifestyle.

*“The soundscape of the world is changing. Modern man is beginning to inhabit a world with an acoustic environment radically different from any he has hitherto known. These new sounds, which differ in quality and intensity from those of the past, have alerted many researchers to the dangers of an indiscriminate and imperialistic spread of more and larger sounds into every corner of man’s life. Noise pollution is now a world problem.”*<sup>39</sup>

He promoted an orchestration of the sonic environment, the soundscape, as one would do with a musical composition, with nature itself as the ideal role model. As Schafer put it

<sup>33</sup> Dyrssen, C. (ed.), *Ljud och andra rum/ Sound and other spaces* (2014), <http://usit.nu> (accessed 160518).

<sup>34</sup> “Akustiska designartefakter och metoder för urbana ljudlandskap” (research project funded by Vetenskaprådet 2008-2010).

<sup>35</sup> Cerwén, G. (2017), *Sound in Landscape Architecture – a Soundscape Approach to Noise* (doctoral thesis), Swedish University of Agriculture Science.

<sup>36</sup> <http://asastierna.se> (accessed 160314).

<sup>37</sup> <http://map.minorarchitecture.org> (accessed 160314).

<sup>38</sup> Dyrssen, C. (2007), *Stadens rytmer: rummet och ljuden, Byggnadshistorisk tidskrift nr. 54*, p. 60.

Stewart, J. (2011), *Why Noise Matters*, p.p. 11-14.

<sup>39</sup> Ibid. p.3.

himself: *"The world is a macromusic composition"*.<sup>40</sup> The most important aspect of all, he says, is that we start to listen and to open our ears for the surrounding and ever-existing soundscape and decide what we want to listen to.

*"Which sounds do we want to preserve, encourage and multiply? When we know this, the boring or destructive sounds will be conspicuous enough and we will know why we must eliminate them"*<sup>41</sup>

Along with Barry Truax, Hildegard Westerkamp and his fellow colleagues at the Simon Fraser University, Schafer initiated the **World Soundscape Project (WSP)**, that sought to describe and understand the changes that the modern sonic environment had undertaken through qualitative research methods.<sup>42</sup> Their main focus was put on sounds that in one way or another were becoming less frequent due to modern development and urban growth. In 1977, Schafer wrote *"The Soundscape – Our sonic environment and the tuning of the world"*, a key piece within the genre that heralded a growing interest for sound as an environmental quality. The book promotes the positive potential of an undervalued sonic environment (soundscape) and proposes strategies for establishing two new disciplines: *acoustic ecology* and *acoustic design*.<sup>43</sup> It also reflects the spirit of the time in which it was written, a time when an ecological and environmental consciousness began to grow strong, explaining why it had great impact on the knowledge development of the genre. The book communicates a value system that, to some extent, is still present among scholars and others involved in soundscape research and practice.<sup>44</sup>

Schafer's definition of *soundscape* is simple:

*"Soundscape: the sonic environment. Technically any portion of the sonic environment regarded as a field of study. The term may refer to actual environments, or to abstract constructions such as musical compositions and tape montages, particularly when considered as an environment."*<sup>45</sup>

<sup>40</sup> Ibid. p. 5.

<sup>41</sup> Ibid. p. 4.

<sup>42</sup> An example hereof is their qualitative research study of the soundscape of five European Villages accomplished in 1975 and revisited in 2009 by Helmi Järvioluoma and her soundscape research team. Järvioluoma, H. (2009), *Acoustic Environments in Change*.

<sup>43</sup> *"Ecology is the study of relationships between living organisms and their environment. Acoustic Ecology is therefore the study of sound in relationship to life and society. (...) Acoustic ecology (...) is the basic study which must precede acoustic design."* Schafer, (1994, 1977), p. 205.

<sup>44</sup> See for example the EU initiated research project COST action TD0804 on *Soundscape of European Cities and Landscapes*. [http://www.cost.eu/COST\\_Actions/tud/Actions/TD0804](http://www.cost.eu/COST_Actions/tud/Actions/TD0804)

<sup>45</sup> Schafer, R.M. (1994, 1977), p. 274

However, as a clear set of preferences for what can be considered a *good* or *bad* soundscape exists - implicitly, as well as explicitly – this means that the concept becomes ideologically charged, as it indicates aesthetic preferences for certain kind of environments.<sup>46</sup> As Jean- Francois Augoyard and Henry Torgue point out in their book *Sonic Experience – A Guide to Everyday Sounds*:

*"...the term soundscape does not simply refer to a sound environment"; more specifically, it refers to what is perceptible as an aesthetic unit in a sound milieu. Shapes that are thus perceived can be analyzed because they seem to be integrated in a composition with very selective criteria. One of the criteria – the selection of "hi-fi" soundscapes – is justified from both an aesthetic and an educational perspective. (...) However, the application of criteria of clarity and precision discredits a number of everyday urban situations impregnated with blurred and hazy (not to say uproarious) sound environments, which would belong to the "lo-fi" category. We must therefore question whether, other than for the fields of aesthetic analysis, creation and conservation, the use of the term soundscape remains useful and pertinent."*<sup>47</sup>

This is the reason why I chose *not* to use the concept of soundscape actively in my thesis. Instead, I use the notions of *sonic environment* or *sonic space* as they do not connote any specific aesthetic or value-oriented preference. Apart from the term soundscape, a wide range of other concepts have been developed within the WSP and some of them have relevancy in this project and have been integrated in the case study as one of the utilized tactics, along with relevant terminology developed at the Institute Cresson - Centre for Research on Sonic Space & Urban Environment, Grenoble.

The World Soundscape Project evolved over the years and grew into an international community that in 1993 resulted in the founding of an official soundscape network: the **World Forum for Acoustic Ecology (WFAE)**.<sup>48</sup> The association has its principle center in Canada, and is today represented at several other places around the world, such as Australia, Finland, Ireland, Japan, United Kingdom, and USA. Within the World Soundscape Project WSP and the

<sup>46</sup> Recently a new and more neutral definition of the concept was launched as part of the ISO 12913-1:2014 Acoustics - Soundscape Part I: Definition and Conceptual Framework: *"Soundscape: the acoustic environment as perceived or experienced and/or understood by a person or people, in context"*.

<sup>47</sup> Augoyard, J.F/Torgue, H. (2009), *Sonic Experience – A Guide to Everyday Sounds*, p. 6.

<sup>48</sup> <http://wfae.net> (accessed 160518).

network of World Forum for Acoustic Ecology, WFAE, one can notice a preference for sounds that are considered to be “authentic” and “natural”, as those sounds indicate the uniqueness of a particular place, a particular action or event appearing in a particular site-specific context.

Another kind of approach to environmental sound research and practice is applied at the **CRESSON (Centre for research on sonic space and urban environment)** in France, an independent faculty at the school of Architecture in Grenoble founded in 1979. Cresson is the largest research laboratory in the world (even though it is rather small) focusing on sound as *one* important parameter in the perception of urban space along with the other sensorial modalities, and where the notion of *ambience* has become a unifying concept. The research pursued at the Institute is multifarious and includes input from various knowledge disciplines, such as applied acoustics, architecture, culture studies, engineering, social sciences, and urban planning, to name a few.

The Swiss researcher and urban planner Pascal Amphoux, who is actively involved at Cresson, stresses in his treatise *L'identité sonore des villes Européennes*, written in 1993, that there are three different modes of listening to the sonic world, which are essential for understanding the sonic identity of a given place: listening, hearing and sensing. These correspond further to three identified orders of the sonic world; the sonic environment, the sonic milieu and the sonic landscape, which in turn are directly bound to certain spatial, social and perceptual criteria which have constituted the basic foundation for the classification system of sonic effects developed at the institute. A great deal of emphasis is put on the *constitution* of sound and its physical propagation and vibrational quality in space, connected to perceptual and social matters. Central to the research and tutorial work at Cresson is the question of what kinds of *effect* different urban sonic situations/spaces/propagations have on us. Through collective research endeavours conducted over several decades, a system of interdisciplinary concepts, or tools, has been developed that may fulfil three criteria: “interdisciplinary; suitability to the scale of the urban situations; and capacity to integrate dimensions beyond aesthetic design.”<sup>49</sup>

Striving to describe urban acoustic space from a perspective that does not pass judgement on the basics of an urban environment, its “life”, but instead embraces its various and sometimes contradictory constitutional parts, is an important feature of the theoretical and operative

knowledge-building going on at Cresson. A core feature is their aim to understand the inner structure of the physical behaviors and social dimensions of sound without having predetermined preferences for certain kinds of sonic environments.

Over the last 15 years, the Institute has broadened their field of interest and “sensitive approach of the built environment” to also include questions of light, odors, touch, and heat, through the establishment of the International Ambience Network:

*“The International Ambiances Network aims at structuring and developing the research field of architectural and urban ambiances. It wishes to promote the sensory domain in the questioning and design of lived space. (...) The International Ambiances Network favors multisensoriality and pluridisciplinarity (human and social sciences; architecture and urban planning; engineering and applied physics). It is open to a wide variety of profiles and includes research activities as well as design, teaching or artistic ones.”*<sup>50</sup>

One of the basic theoretical and practice-based foundations of Cresson has its source in the musical and theoretical works of the French composer Pierre Schaeffer (1910-1995). Schaeffer's complex systematization of sound phenomena along with his musical explorations and experimentations using new technology (the tape recorder) made the way for introducing the concept of “sound object” (“*objet sonore*”), the smallest constitutional part of a sound which may represent any sound in the environment.<sup>51</sup> Or as the French musicologist composer and theoretician Michel Chion describes its definition in *Guide des objets sonores*:

*“What one denotes a sound object is every phenomenon and sound event perceived as an entity, as a coherent whole, that is listened to and apprehended through reduced listening and independently of its origin of provenance or signification.”*<sup>52</sup>

Schaeffer was inspired by the Italian futurist and composer Luigi Russolo and his manifesto “The Art of Noises” from 1913. He considered the sounds of the environment, especially the everyday ones, from a composer's perspective – he saw them as musical material. Thanks to the development of new recording techniques, he immortalized sonic material from everyday situations all over Paris. Through electric recording devices and tape-

<sup>49</sup> Augoyard, J.F./Torgue, T. (2006), p.p. 6-9

<sup>50</sup> <http://www.ambiances.net/home.html> (accessed 150119).

<sup>51</sup> Augoyard, J.F./Torgue, T. (2006), p. 6.

<sup>52</sup> Chion, P. (1983), *Guide des objets sonores*, p. 34, (my translation).



montages it was possible for him to cut and paste, reconstruct and deconstruct, study and analyze the sonic material in an off-site situation, and listen to the gathered sounds separated from their original context. This was the starting point for the revolution of electronic music. Compositions based on real, concrete sound events were now being able to be translocated and replaced in time and space. Schaeffer called the compositions emerging from this method for *musique concrète* (concrete music) in which recorded *sound objects* constituted the basic musical material and where the focus was on sonic texture and sonic quality perceived through what Schaeffer calls *reduced listening* where the perception and understanding of the sound object is separated from its source of origin and is thereby dispossessed of its semantic meaning. It is possible to claim that Pierre Schaeffer had a somewhat clinical approach to sound and a laboratory way of treating the recorded sonic material. This approach was the starting point of his musicological elaborated classification system described in *Traité des objets musicaux*.<sup>53</sup> The naming of sound objects was for Schaeffer a prerequisite before placing them in a theoretical context.<sup>54</sup> This new theory of sound came to influence composers and sound/music theorists for a long time to come, particularly within the field of electroacoustic music and it also influenced the founder of Institute Cresson Pascal Amphoux and his fellow colleagues.

### 2.3.2 International guidelines and dominating concepts

The World Health Organization, WHO, has since 1980 dealt with the problem of *community noise*, which is another word for environmental noise, residential noise or domestic noise. In the preface to the Guidelines to Community Noise launched by WHO in 2000 and that still serves as an important document of guidance for policy-makers and other stakeholders at an international, regional and local level worldwide, the authors wrote:

*"Health-based guidelines on community noise can serve as the basis for deriving noise standards within a framework of noise management. Key issues of noise management include abatement options; models for forecasting and for assessing source control action; setting noise emission standards for existing and planned sources; noise exposure assessment; and testing the compliance of noise exposure with noise emission standards."*<sup>55</sup>

<sup>53</sup> Schaeffer, P. (1966), *Traité des objets musicaux*.

<sup>54</sup> Augoyard, J.F./Torgue, T. (2006), p. 6.

<sup>55</sup> Preface *Guidelines for Community Noise* (2000), World Health Organization, Geneva

This document focuses primarily on the negative effects of sound exposure on the human health and the question of how to develop and improve methods for taking control over noise emission as well as pointing out important directions for further research. It is interesting to notice the recurring use of the word *noise* in this official document. Only when the authors describe the existence of the phenomenon of sonic vibrations of our communities in a more general, descriptive, sense do they use the word *sound* instead of noise. As the document serves as guidance for describing strategies of how to manage an identified and growing adverse problem in society, it seems like a questionable choice to extensively use a word with negative connotations. It is also worth reflecting on the prominence a simple word may gain if it is present at the right place at the right time. Today, the WHO document is treated as a generic, international guideline addressing responsible authorities worldwide. As it is referred to in academic texts and used as basic data for legal action, it is easy to understand why we see so little conceptual variation in professional discourses and activities concerning the management of environmental sound. Alternative vocabularies of how to describe the complexity of urban sonic environments are not sufficiently represented in key documents, key strategies, etc. today and are therefore not spread to those environments where such knowledge potentially could, and should be, developed and integrated. When the focus is centered on measurements, calculations, standards and the problematic aspects of sound exposure and by seeing urban sounds as a negative bi-product of certain (often mechanical or technical) activities, it is possible to understand the constraints a creative development of offensive design-strategies for handling the sonic environment has to coop with. Though, it is interesting to notice a change of tone in the last paragraph of the document in which WHO points at future research topics. Under the heading of *"Research into positive acoustical needs of the general population and vulnerable groups"*, another perspective is presented:

- Development of techniques/protocols for the design of supportive acoustical environments for the general population and for vulnerable groups. The protocols should take into account time periods that are sensitive from physiological, psychological and socio-cultural perspectives.
- Studies to characterize good "restoration areas" which provide the possibility for rest without an adverse noise load.

- Studies to assess the effectiveness of noise policies in maintaining and improving soundscapes and reducing human exposures.

Here we can notice an integration of a more positive vocabulary when talking about “positive acoustic needs”, “supportive acoustical environments”, “good restoration areas” and “improving soundscapes” as important aspects to look into further and to deepen our knowledge about.

The document Guidelines for Community Noise leaves us with a quite open-ended reflection on the particularities of sound experience in complex architectural spaces, a reflection that resounds with the intentions of this thesis:

*“The human ear and lower auditory system continuously receive stimuli from the world around us. However, this does not mean that all the acoustical inputs are necessarily disturbing or have harmful effects. This is because the auditory nerve provides activating impulses to the brain that enable us to regulate the vigilance and wakefulness necessary for optimal performance. On the other hand, there are scientific reports that a completely silent world can have harmful effects, because of sensory deprivation.*

*Thus, both too little sound and too much sound can be harmful. For this reason, people should have the right to decide for themselves the quality of the acoustical environment they live in.”*<sup>56</sup>

WHO states in this paragraph that the possibility of *choosing* what kind of acoustical environment the individual wants to be part of is something that should be regarded as a *right*. As the quality of the sonic environment is directly connected to social and health related aspects which are of paramount importance for the wellbeing on an individual level, this is something the experts at the World Health Organization obviously are aware of.

However, this recommendation requires the existence of a possibility of choice; a choice that presupposes the ability to choose between different urban spaces characterized by various sonic qualities. Today we are far from such a reality.

### 2.3.3 Hegemony of measures and numbers

It is highly interesting that much of the basic, as well the advanced, knowledge of what we can do to achieve a certain sonic quality at a specific location, and why it is important to deal with these questions from a design

perspective already exists. So why don't we work more with this issue on a broad professional scale, spanning from acousticians and architects to urban planners and designers, neuroscientists and medical researchers to environmentalists, psycho-acousticians and sound artists to sociologists and sound-culture experts as well as policy makers and other authorities?

One of the explanations is that professional undertakings with sounds in urban environments mainly engages disciplines dealing with measurements, numbers and noise standards. It is not a subject of concern for the majority of design-oriented practitioners within architectural and urban planning contexts, apart from keeping projects within legal normative threshold values of accepted sound-pressure levels for indoor or outdoor environments.

The problem is not primarily about a lack of interest, it is due to ignorance of tools for description, communication and operation as well as the lack of outspoken strategies of what to do, how and why.

*“Sonic environment issues are in general a low priority in the design of products, dwellings and outdoor places. The dominant discipline today is without doubt physical acoustics, which in fact has a kind of monopoly as a discipline for sound consultants in the design of new buildings and outdoor environments.”*<sup>57</sup>

It is clear that subjects of concern embracing the unseen and subtle part of our existence have problems bridging the gap between real life, academic contexts and responsible, executive authorities. An extended, qualitative-oriented understanding of sound in architectural environments is a subject that still meets resistance in fixed, established professional structures, as hard and measurable values by tradition are easier to accept and handle than soft and more uncertain ones, like qualitatively based information.

However it may seem, the outlook is not merely dystopian. Alternative approaches to dominant reductionist views on urban sound slowly enter the arena thanks to enthusiastic practitioners, scholars and researchers in several adjacent and related knowledge fields such as music, art, architecture, urbanism, sociology, psychology, ecology, communication theory and philosophy. These explorative initiatives have resulted in several interdisciplinary and crossover treatises, discussions and practices on sound, space and experience.<sup>58</sup>

<sup>56</sup> Point 4.1 in the *Guidelines for Community Noise*, (2000). World Health Organization, Geneva.  
(<http://www.who.int/docstore/peh/noise/guidelines2.html>)

<sup>57</sup> Hellström, B. (2003), *Noise Design*, p. 14.

<sup>58</sup> See page 35 and bibliography for examples.

### 2.3.4 The noise map

The most commonly used definition of noise is “undesirable sound”. This is also the most widespread way of speaking and thinking about sound in the environment today, as something unwanted and problematic. When it comes to the prevailing knowledge exchange and action plans among executive professionals, discussions to a great extent revolve around sound pressure levels (dB levels). This is troubling, since it results in a one-dimensional understanding and handling of complex sonic realities among concerned key-groups, an understanding manifested and materialized in the construction and making use of noise maps.<sup>59</sup>

The aim of noise maps is to indicate measured and calculated sound pressure levels of outdoor spaces in order to enable comparisons and noise-abating strategies.<sup>60</sup> Analysed areas are coloured in bright colours using a spectra between green and purple that corresponds to certain intervals of the dB scale. Parameters that are taken into account include the estimated amount of road, train and airborne traffic at different times of the day, including the dimensions of, and distances between, built structures. The intensity of sound pressure is measured in decibel (dB) and it is evaluated through a logarithmic scale implying that a rise of 10 dB means that the pressure of energy is 10 times higher and is experienced as a doubling of loudness. The dB (A) scale is adjusted to the conditions of human hearing and therefore measures down to 20 Hz, the lowest perceivable frequency for the human ear as a way to imitate the human hearing system. The A curve does not take into account low-frequency sounds below 20 Hz, which are highly present in contemporary urban situations due to the widespread use of combustion engines, various forms of technical equipment, construction work etc. As a point of reference, 20 dB is what a whisper indicates on a decibel meter, compared to traffic at a busy city street which measures approx. 60 dB with peaks at 90 dB when a truck is passing at a close distance. 140 dB is the pain threshold level for the human ear.<sup>61</sup>

This strategy is efficient and rewarding in many ways; we can instantly localise problematic neighbourhoods, also known as “black spots”, in terms of a high magnitude of sound levels as well as potentially quiet areas. These maps

can be used for making noise-abating moves at certain areas and functions also, more and more often, as basic data affecting the real estate values in urban areas.<sup>62</sup> Studying colourful noise maps is not enough to produce satisfying answers, or even to generate the right kind of questions about how to understand and design urban sonic spaces. By using this data as descriptors of the complex qualities of urban sonic space, these ‘tools’ immediately prove to be too imprecise and too general in their performance to be able to function as the only basic data. This factuality has been criticized and confirmed by several researchers coming from other fields than physical acoustics, and is the underlying theme of this thesis.<sup>63</sup>



The 2004 noise map of Stockholm (Miljöförvaltningen, Stockholm Environment Department)

Obviously, urban spaces and their interrelations do not let themselves be that easily captured. We are in need of other, complementary tools to describe the gray areas of urban environments and their sonic qualities.

Above all, noise is a dualistic concept that fits well with the reduced acoustic comprehension in connection with noise maps. If we are interested in other and complementary definitions to the notions of *quiet* or *noisy*, we realise that these maps communicate a severe lack of important components. The components lacking, as mentioned above, are the ones describing *what kind* of acoustic space a certain place communicates to a visitor, an inhabitant, or someone working in an area, including *how* it feels, *how* different sonic effects affects us, and *how* we act and behave in an urban sonic space that constantly changes and recreates itself.

<sup>59</sup> See for example the EU-initiated Environmental Noise Directive that has been in use in Sweden since 2004 (Directive/2002/49/EG). The directive prescribes a compulsory mapping of measured and calculated sound-pressure levels for every European city and region with more than 250,000 inhabitants.

<sup>60</sup> See report: On the implementation of the Environmental Noise Directive 2002/49/EC from the European Commission (2012).

<sup>61</sup> More on how the noise map was used in this work, see p. 75.

<sup>62</sup> Stewart, J. (2011), Kreutzfeldt, J. (2011), p.p. 67-79.

<sup>63</sup> An example hereof is the Swedish interdisciplinary research program *MISTRA – Soundscape Support to Health*, ([www.mistra.org](http://www.mistra.org)) that worked with the psycho-acoustic perspective of sound exposure in urban environments. Another example is the research of sonic environments connected to Institute Cresson in Grenoble and WFAE and also the EU-financed COST action program: COST Action TD 0804, *Soundscape of European Cities and Landscapes* ([www.soundscape-cost.org](http://www.soundscape-cost.org)).

The Swedish urban sound researcher and acoustic-designer Björn Hellström reflects upon the conceptualization and understanding of noise in a different way:

*"When investigating the concept of noise not only as 'unwanted sound' (its most common meaning), one discovers that noise possesses qualitative information. This leads to a paradoxical situation since it suggests an opposite understanding of noise. It is thus a question of emphasis."*<sup>64</sup>

*He also stresses that: "...treating noise as unwanted implies the denial of all its immanent qualities."*<sup>65</sup>

A common view is that sound is something we need to handle with defensive strategies, a misunderstanding that implies defensive attitude towards urban sounds in general and restricted possibilities of urban design in particular.<sup>66</sup> One way to get away from this impasse is to pay attention to and understand the grayscale of the urban fabric and its qualitative and transient values, not only the extremes; loud or quiet, purple and green.

It is possible to regard the two contrasting concepts; *noise* and *sound quality* as two sides of the same coin, where the one side has received all attention and the other side still lingers in oblivion.

### 2.3.5 Urban sound quality?

As has been stated in the previous paragraphs, working with the concept of noise is not sufficient if we want to understand the qualities of urban spaces. Talking about qualitative aspects instead of problems opens up the field for new elaborative approaches. It is therefore necessary to look closer at the notion of **sound quality**.

According to Björn Hellström and Pascal Amphoux, we are today well-acquainted with the attitude of "*diagnosing problems* in order to protect citizens from annoying sounds e.g. to normalize, to regulate, to control, to build noise barriers, to reduce traffic, to double walls etc."<sup>67</sup> Hellström and Amphoux mean that we instead should adhere to the inverse attitude and *diagnose the benefits*, i.e. to make inquiries about situations of well-being and also to promote favorable conditions of specific sound qualities in urban space.<sup>68</sup> Hellström describes Amphoux' ideas on how the

sound quality in an urban context can be connected to the notions *sonic identity* and *sonic ambiance*:

*"A keyword is, thus, quality in that a certain urban place has a characteristic sonic identity and the city on the whole produces a specific sonic ambiance. To picture the identity one must, according to Amphoux, take the given acoustics, the action and perception into consideration, which means that one has to integrate different knowledge fields when decoding the quality of sound."*<sup>69</sup>

The notion of quality in this context has the potential of acting on a communicational level, unifying aspects of description and operation. It has the capability of focusing on different nuances of information that can be useful and relevant in the description of an urban environment, bringing forth aspects of tactility, spatiality, visuality, orientation or changes in the perception of sound and space for example.

When talking about acoustic or sonic quality, the emphasis is obviously on the resounding aspect of the reality experienced, and when talking about urban sound quality, we arrive at the integration of complex, spatial and structural aspects in correspondence with a perceiving subject. However, *urban sound quality* should not be regarded as a fixed term, but a flexible one, enabling discussions of how these three parameters interact and relate to one another at a specific place and at a specific time. Instead of describing the sonic character of a place as good/bad or preferable/less preferable, it should be possible to ask: What is the sound quality of this particular place like in relation to the functions and needs of that specific area and the broader urban context. It is essential here to take into account the description and analysis of several interacting factors in order to understand the greater picture and make adequate decisions based on interdisciplinary exchange of knowledge and not only upon measured or calculated sound pressure levels and the utopian idea of *quietness* as a solution to all problems regarding sound in the urban environment.

### 2.3.6 The need for communicative methods

It is evident that existing concepts for describing urban sonic space such as those developed by researchers connected to the World Forum for Acoustic Ecology and the International Ambiances Network have problems reaching out to professionals engaged in everyday practice. Here, I am not referring to the professionals engaged in advanced research networks or communities, but to the professionals working in the frontline of everyday

<sup>64</sup> Hellström, B. *Noise Design – Architectural Modelling and the Aesthetics of Urban Acoustic Space*, (2003), p. 204.

<sup>65</sup> Ibid. p.12

<sup>66</sup> Hellström, B. (2003), p.p. 11-12. See also Pascal Amphoux, *L'identité sonore des villes Européennes*, (1993), p.6.

<sup>67</sup> Hellström, B. (2003), p.146

<sup>68</sup> Ibid.

<sup>69</sup> Ibid.

practice at the innumerable architecture and planning offices all over the world. Currently, there seem to be some missing links between theoreticians and practitioners in the chain of knowledge transference, which indicates that the existing communicative tools need to be further developed into more operational ones in order to be increasingly implemented in the day-to-day routines of architectural and urban planning and design practices.

For understanding and handling the resonating subtleties of complex urban spaces, we need to extend and put into use *qualitative descriptive and operative tools* when working in this field.<sup>70</sup> In terms of terminology, the descriptive part of the toolkit already exists to a much larger extent than the operative one today.<sup>71</sup>

Another evident problem is that these two research and practice strains are each either ideologically colored, or structurally/theoretically focused, which makes them difficult to relate to and hard to easily implement in everyday practice. The major challenge is therefore to bring together qualitative and quantitative information for describing, understanding and operating in urban sonic space and to merge these into a coherent, relevant and practically usable whole. I believe that such scenario could bridge the gap between ideology and practice as well as theory and practice. It is important to reach those who are interested in these questions at all levels of the society. Apart from design-oriented disciplines it is important to reach those groups that have the power and authority to influence the physical development of our public urban spaces. Non-academics and non-researchers alike must also have the opportunity to discuss, understand and relate to these issues.

So then, what *will* do? No quick-fix exists, but one way of approaching this issue is by making it possible to understand everyday urban situations from an extended sonic perspective via the development of means and methods of *description, representation* and *communication*. Improved and user-friendly visual and verbal communicational tools could open up for broader knowledge transference between disciplinary fields, as well as enhance further research and practice within this emerging field.

---

<sup>70</sup> Augoyard, H., Torgue, H. (2005), *Sonic Experience - A guide to Everyday Sounds*, p. 5.

<sup>71</sup> Currently, The International Organization of Standardization ISO through COST Action TD 0804, are working on a document aiming to "provide a definition and a conceptual framework of *soundscape*. It explains factors relevant for measurements and reporting in soundscape studies, as well as for planning, design and management of soundscape" (ISO 12913-1:2014). This is a promising step forward in spreading a general acceptance of the qualitative dimension of sonic experience as well as an operative and practically oriented knowledge development possible to implement in urban practices.