Soundscape

Studies and

Methods

Edited by
Helmi Järviluoma
Gregg Wagstaff

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Detlev Ipsen was born in a remote village in the mountains of Tyrol, Austria, and grew up from his seventh year in the highly industrialized city of Dortmund in the Ruhrgebiet (Ruhrvalley) in Germany. This is important in understanding the focus of his later scientific work: the change of landscape, the urban/rural transition, the interconnection between nature and society and the importance of aesthetic *Gestalt* for the perception of these patterns. He is now Professor for Urban and Regional Sociology at the University of Kassel (D), and Guest Professor at the University of Porto Alegre (Brasil), and El Minia (Egypt).

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Albert Mayr was recruited to the team of The World Soundscape Project, when the Canadian research group was working on its Five Village Soundscapes project in Northern Italy in 1975. He is an Italian composer, soundscape researcher and activist, philosopher of time and Professor Emeritus at the Conservatory of Florence.

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Soundscape Studies and Methods – An Introduction

Helmi Järviluoma and Gregg Wagstaff

The first woman cosmonaut, Valentina Tereshkova, has given an interesting account of her perceptual experiences in space: looking out, deep space was incredibly dark and thousands of stars shone brightly; earthwards, Africa glowed yellow and green, and the continent of Australia was framed by a beautiful opal sea. Despite this fabulous visual landscape, it was the *sounds* of home that Tereshkova missed: the further she traveled from earth, the more she longed for the sounds of nature, especially those of rain. (Kinnunen 2002) She did not go as far as the space-station dweller in Tarkovski's movie *Solaris* who, similarly deprived of such sounds, put silk paper in front of the ventilator in order to imitate the wind (ibid.).

Such everyday sounds are clearly important. For Tereshkova, it was only when she was unable to experience the sounds of her home-place, that she came to appreciate their value and significance. Soundscapes are *meaningful*. Meanings are established and conditioned in the meetings between everyday sounds and their listeners. People (like many other species) use sound to communicate and orientate themselves and as they move through and inhabit various environments. Sounds inform our aesthetic sensibility and also our individual and cultural identities. The nature and quality of our sonic environment is crucial for the wellbeing of human (and other) beings. If we seek to positively affect our soundscapes – to encourage all of the above – then we must study and understand the manifold ways in which it behaves and how it is acted upon. Moreover, we must also understand how people relate to their sonic environment and what meanings and values they ascribe to it.

The majority of publications on sound have tended to focus on acoustics and noise, ignoring the ways in which sounds "function positively in the environment" (Truax 1984, xviii). The last few years, however, have witnessed some promising developments in soundscape studies, and this book is to our knowledge the first collection to focus on soundscape research *methods*. What is common (and perhaps implicit) amongst these contributions, is the aim to establish a foundation from which future changes to the soundscape can be positively effected. As editors we wanted to reflect and encourage the multiplicity of these approaches, without prescribing a single method of enquiry as being *the* model for 'soundscape studies' (or 'acoustic ecology' for that matter). Therefore, we have taken a very simple yet practical stance for this collection: the methods of 'soundscape studies' are those employed by people who consider themselves to be 'soundscape researchers'. Inevitably, those we have invited to contribute here are part of a wider-ranging group of environmental sound researchers and methodologies currently being undertaken. We have endeavored to make explicit the connections between the various authors of this volume.

It is true, that in a world of scholarly theories and methods, there are always more conceptual models available for the study and observation – the 'opening up' – of the material world than there is a demand for (Heiskala 2000, 11 & 1997). The models and methods selected at any particular moment in history, are often the ones that owe most to political acceptability, timeliness and the ability to produce interesting results. They are tied to time and place, and to some extent depend on the dominant values of the society. The sociologist Risto Heiskala calls this phenomenon the *Darwinism of ideas* (2000, 12). Heiskala also refers to an aphorism by Stanislaw Jerzy Lec in which he reminds us that many a person who has rushed ahead their time has had to wait for it in a very unpleasant place (ibid. 12, op.cit. Lec 1982, 17).

Could it have been that the concept of 'soundscape studies', as launched by the Canadian composer and writer R. Murray Schafer in the late 1960s and 70s, was ahead of its time? When we listen to terms like 'soundscape' and 'acoustic ecology' from the perspective of a 'Darwinism of ideas', they seem to be *timely* concepts: emerging out of a growing environmental awareness, and Schafer's contact with Deep Ecology, which was introduced into north America in the late 70s (See Harley

1998, 136). Indeed, interesting results were produced by the participants in the *World Soundscape Project* (WSP) which was launched in 1971 at the Sonic Research Studio of the Communications Department, Simon Fraser University, British Columbia. However, after this initial creative period in mid-70s, which included field trips to five European villages (see later), there followed a long period of relative inactivity in soundscape studies. It was not until the *World Forum for Acoustic Ecology* (WFAE) was founded in Canada in 1993, that the concept was internationally revitalised. The Forum got a very favorable reception amongst a broad pool of disciplines and individual scholars within architecture, audio art, communications, education, geography, music, physics, psychology, radio broadcasting, sociology and urban planning etc.

The long lull in the field has led the Italian researcher Alexander M. Lorenz (2000), amongst others, to draw pessimistic conclusions about the methodological development of acoustic ecology. In addition, some people are negative towards the concept of acoustic 'ecology' as they infer it advocates 'pristine', pre-industrial, and rather nostalgic view of the soundscape. It is true that there is a great need further self-reflection within the field of acoustic ecology, especially since the concepts of greater antiquity within the field have somewhat hidden ideologies and values, which need to be unraveled and deconstructed.

Soundscape researchers participating in the WFAE discussion attach many different meanings to the concept 'ecology'. Noora Vikman has claimed in an earlier study[1] (Vikman 1999), that this is not a suprise, as the term ecology has been problematic throughout its history. For example, some people think the concept of 'ecology' is political and provocative, and thus it must not be used. Some people think that this is the very reason why *it is* useful: it forces to clarify the preconceptions of what people study, and why. When the meanings of being 'ecological' for the representatives of acoustic ecology were studied by Vikman, it appeared that acoustic ecology is a meta-discourse which should be understood, not as a neutral field, but as ethically framed and intelligible only in relation to specific cultural and historical conditions. (Vikman ibid.)

Jean-François Augoyard (1999, 116) has noticed that the theory behind many scientific and technical studies on sound is almost always based on traditional behaviorism. Augoyard asks therefore: how can we study not only acoustics per se

(e.g. insulation techniques and reverberation) but also the *qualitative* properties of sound, their social and cultural values, and how can we intelligently organise sonic life within different places? One of the ways Augoyard himself has answered the call, has been to develop a comprehensive soundscape lexicon, clarifying concepts which can be then used in the analysis and future design of sonic environments (Augoyard and Torgue 1996).

This was also the aim of Barry Truax in producing the *Handbook for Acoustic Ecology* (1978). Truax's subsequent book, *Acoustic Communication* (1984/2000) actually does focus on the qualitative study of sounds that Augoyard is calling for. It was an important addition to the literature of acoustic ecology in the 'dry' period of the 1980s. For Truax, the wisdom of acoustic ecology lies exactly in its attempts to integrate the listener within the soundscapes (ibid. xv). As he says, "acoustic communication attempts to understand the interlocking behavior of sound, the listener, and the environment as a system of relationships, not as isolated entities" (ibid.).

About methods

When soundscape realities are transferred into research material they are always mediated in one way or another. Thus, it is not enough that soundscape researchers simply collect 'data' and then 'report' it. The fact is, that whether researchers want it or not, as soon as they have planned their study, they have the beginnings of a methodological framework. Therefore, the researcher needs to become conscious of her or his theoretical background and methods of analysis. Every choice made at each stage in the research process should be made transparent and open to critical scrutiny. (Järviluoma, Moisala & Vilkko, forthcoming.)

Soundscape researchers do not merely report 'facts' about sounds. They *interpret* signs and actively produce new *clues* that can, in turn, be used to draw further conclusions. These cannot be heard 'with the naked ear' or seen with 'the naked eye'. (Cf. Alasuutari 1999, 77) In research work, observations are always clues in the sense that they are always interpreted within a particular theoretical frame of reference. In this context, then, a method is constituted from (i) all of the practices

and operations through which the researcher produces his or her observations, and (ii) from the rules according to which these observations are modeled and interpreted, in such ways that their meaning as clues can be understood. (Ibid. 79–82)

A researcher's self-reflective work is a crucial part of the research process: a researcher is always a part of his or her study. Their academic and personal background, as well as the political and ethical choices they make both in and outside the field, determines how the study will be conducted. Thus, they also have a great impact upon the results. This is why, in the following, we have chosen to openly chart the various backgrounds and influences upon of our writers. In order to derive a preliminarily 'map' we drafted the following questionnaire and sent it to the contributors:

1) How did you first encounter the study of the sonic environment?
2) Where and when did you first come across the word soundscape?
3) Did the notion of a soundscape change your work? When and in what way?
4) Who would you say have been your main influences on your soundscape work?
   From which discipline(s) do they come from? How do you relate these to your current work?
5) What affect do you think your personal history or cultural background has had upon you becoming interested in soundscape?

Nine out of twelve writers, including ourselves, answered the questions. We refer to this query by the name of the person, whose words we are citing and by mentioning the year (2002) when the query was sent and answered. We will sometimes weave short introductions of the articles included in this compilation into the text.

Where do people fetch methods?

A seminal influence upon all of contributors has been the writings of R. Murray Schafer and the Canadian World Soundscape Project (WSP). It is necessary therefore to open out this part of the map, so that the reader can form a clearer picture of the connections and influences of Schafer and the WSP upon our editors and authors.

From the late 1960's, Schafer wrote a number of essential titles, from *Ear Clean-ing* (1967), culminating in *Tuning of the World* (1977). During the beginning of this period, Schafer also conceived of and directed the World Soundscape Project (WSP). Its aim was to "bring together research on the scientific, sociological and aesthetic aspects of the acoustic environment" (Schafer, R.Murray ed. 1977a). The first of these empirical field studies took place in Vancouver (1973), home to the Simon Fraser University. It was through Schafer's course in *Acoustic Communica-tion* at the SFU that the WSP was conceived and still continues today through the work of Barry Truax and Hildegard Westerkamp amongst others.

In 1975, along with researchers Jean Reed, Bruce Davies, Peter Huse & Howard Broomfield, Murray Schafer embarked on a series of European field studies – refer-red to as the *Five Village Soundscapes* (FVS). The group wanted to focus on sounds of villages in five different cultures, to study the quality, levels and rhythms of sounds and their relation to the life of people in each village. The FVS group visited Skruv (Sweden), Bissingen (Germany), Cembra (Italy), Lesconil (France) and Dollar (Scotland). The criteria for the choice of these villages included that it would be off a main road, self-contained and not contiguous with other settle-ments, that it would have a few unusual vernacular sounds, and a native speaker who knew both the regional dialect and spoke fluent English (Schafer ed. 1977a, 1–2). The Canadian group spent 7–10 days in each village aiming to, (i) study local archives for references to sound, (ii) record and measure the intensity of all village [sound] signals, (iii) make lists of sounds heard throughout the village at different times of day, (iv) run a Sound Preference Test in the village school(s) in which children's most liked and disliked sounds were asked, and to (iv) conduct interviews with elderly people concerning the past soundscape of the village. (Schafer ed. 1977a; Schafer ed. 1977b)

The results were later collated and published in *Five Village Soundscapes* (Schafer ed. 1977a). Schafer is first to acknowledge that, "the study which follows is cer-tainly open to criticism on grounds of accuracy and methodology. No doubt soundscape studies will have to undergo many refinements before it becomes a reliable discipline, but the discoveries leading to research techniques and method-ology will not be made in the laboratories, but only in field studies such as the one described here".

In the Spring of 2000, twenty five years after the WSP visited Europe, the *Acoustic Environments in Change* (AEC) project, directed by Dr. **Helmi Järviluoma** from the University of Turku, Finland, re-visited the five European villages (plus a sixth – Nauvo, situated on a small island in Finland's south-west archipelago). One of the aims of the AEC project has been to 'refine' the original methods and concepts employed by the FVS team. (Järviluoma 2002a) The AEC group consisted of an international and multidisciplinary team of researchers. All but two of the contributors to this book have in some capacity been involved in the AEC project.

Two articles in this collection are from Finnish soundscape researchers Noora Vikman and Heikki Uimonen, whose material refers explicitly to their AEC fieldtrips. **Noora Vikman's** starting point is inductive ethnography, which she describes as a two-way learning process. In her essay she explores the problematic issue of communicating the concept of soundscape. *What are good questions in interview situations?* Vikman has introduced something she calls 'visionary questions' as a way of encouraging people to express their outlooks on the qualities of the environment. Here she also deals with how these were developed during her research process. Along the ethnographic ideals of 'reflectiveness' and 'openness', Vikman is also arguing for a more detailed description of the individual choices made in the field, "the courage to reveal the practical realities". Vikman encourages soundscape researchers to pay more attention to the practical and contextual knowledge, which too often remains hidden and unconsidered in the field research reports.

Heikki Uimonen observes that so far, too little attention has been paid to the fact that the views and opinions of the local inhabitants differ from those of the 'outside' researchers. Interviewers attempt to capture local opinion but people find it difficult to talk about their everyday, contemporary sonic environment. The saying in Uimonen's title "You don't hear anything 'round here!" is often heard by frustrated researchers, who try to interview residents – so accustomed are they to the sounds in their surroundings that they no longer pay attention to them. Uimonen introduces two methods which have been used within Environmental Psychology: the *semantic differential* and *cognitive maps*, which in proposes could prove useful for soundscape studies.

Both Uimonen and Vikman encountered soundscape studies in connection with their ethnomusicology studies in the University of Tampere, Finland, were

they participated in the field research training and acoustic ecology courses led by Helmi Järviluoma. She, in turn, first learned about soundscape studies filtered through popular music studies in 1987, when the popular musicologist Philip Tagg (see for example Tagg 1994) visited Tampere ethnomusicologists and gave a lecture on soundscape and popular music (Järviluoma 2002). During that time she was also studying sociology, and was highly involved in ethnomethodology, musical ethnography and the study of people's everyday actions. This combination led to as small soundscape research project on the public spaces of the city of Tampere (see Järviluoma & Kurkela 1991; Junttila & Honkanen 1991). Before the AEC-project, Finnish ethnomusicologists had also studied, amongst other environments, soundscapes in cowsheds in a mid-Finnish village (Pöyskö 1994); Helsinki libraries (Peltonen/Pöyskö 1998); and the status of radio in an office soundscape (Uimonen 1999).

The sociologist **Detlev Ipsen** was born in Tirol, Austria, and as a young boy heard the sound of avalanches during the wintertime, but he very seldom saw them. This, he says, made him aware of the importance of sounds: in many other occasions, as well, the "sound comes before the [visual] sign". (Ipsen 2002) In this collection , Ipsen deals with the urban soundscape. His goal is to define the difference of sound and noise form a pragmatic point of view. The writer will, in the end, propose " how one could design an urban soundscape which is a little bit more comfortable than the existing one". Ipsen uses psychological concepts in discussing 'noise'. He is also discussing 'noise' as a cultural phenomenon, which is not the 'opposite' of sound – they form a continuum, and should be discussed within the frame of our whole perceptual field. He is using here a general theory of *motivation*, especially the theory of *complexity*, to analyse 'acoustic quality'. He argues that, "it is not the difference between countryside and urban places which produces hi- or low fidelity, but the level of acoustic complexity which influences the evaluation of the acoustic environment".

In the late 1970's **Keiko Torigoe** read an article in a Japanese contemporary music journal. The article was R. Murray Schafer's *Music of the Environment*, which had been translated by Yuji Takahoshi, a talented pianist and composer. Torigoe had studied western philosophy (aesthetics) and also ethnomusicology: her professor Fumio Koizumi combined discussions on sound environment and music in his

lectures in the university of Tokyo. She observes, "From my point of view as a Japanese, the walls were not strong [thin] in my home country, so it was easy to move from insect sounds to music and back" (Torigoe 2002). She started to wonder, who is this western composer "who is at the same time interested in *natural sounds* and other types of sounds, not just *music*" (ibid.). Finally, her curiosity took her to, York University in Canada, to study the World Soundscape Project (WSP). On her return from Canada, Torigoe wanted to begin using soundscape studies in a Japanese city, and whilst referring to the methods of the WSP, she also wanted to do things in her own way, that fitted her own sensibility and "which were better suited to a Japanese town". In 1986 Torigoe organised a research group to study the town of Kanda in the central quarters of Tokyo. The latter part of 1980's was a time of the 'bubble economy' in Japan, and the old townscapes of Kanda were rapidly disappearing to make way for the new. The research group studied the soundscape of Kanda both geographically and historically, and Torigoe gives a highly interesting account of their approach and the transitions between several sub-districts of Kanda's soundscape, each with their own distinct features.

For the composer and time theorist **Albert Mayr** , the strongest influences on his soundscape work have also come from R.Murray Schafer and the World Soundscape Project (WSP) group. He had met Schafer in Canada in 1970, and read *The Vancouver Soundscape*. In 1975 the WSP team came to Trento, in Northern Italy, where Mayr was living at the time. The research group was working on its *Five Village Soundscapes* project, and Mayr was recruited to the team: "Thus I had the opportunity of seeing Murray and his collaborators at work in the field and to become acquainted with their approach. In 1977, I organized the series *Suono Ambiente (Sound / Environment)* in Florence and Milan and thus took a more in-depth look at the issues of the sonic environment from the theoretical, social and artistic angle." (Mayr 2002) Within the field of experimental music and art, as well as human geography, he has been influenced by a long list of people (ibid.):

[L]et me just mention Christian Wolff, Alvin Lucier, David Toop and the other people at the *London Musicians Collective*, or Dan Graham and conceptual art in general. In more recent years the writings by and exchange of ideas with Justin Winkler were a stimulating influence.

As **Mayr** says in this article, *Soundscape Studies, Experimental music, and Time Geography*, "[i]n discussing appropriate methodologies for a discipline, it is useful to consider its history, the factors that shaped its initial undertakings, and the priorities that were pursued then". Mayr reminds us about the roots of the first systematic explorations of the acoustic environment within the experimental arts. The American avant-garde composer John Cage was cited as a major influence by at least three of our writers. For Hellström and Wagstaff, Cage's socio-philosophical writings on art and music have been a bridge towards R. Murray Schafer's writings on acoustic ecology. Mayr also quotes Cage, who not only found "environmental sounds and noises more useful aesthetically than the sounds produced by the world's musical cultures", but also wanted to change the practices of 'The Composer'. Mayr identifies with the experimental 'happenings' and 'environments' of the sixties and seventies which aimed at narrowing the gap between art life, at bringing art and society closer together. (See Kaprow 1993; Berleant 1992)

> I was always attracted by artistic theory and practice that would try to go beyond the traditional confines assigned to art, that would have a certain utopian slant. When compared to our ancient or to non-Western traditions, it appears that in our recent culture, music has been cultivating a rather narrow garden. I see soundscape studies as a way of bringing us in touch again with that extended concept of music which was aptly defined by Jacobus Leodiensis around 1320: "Musica enim generaliter sumpta obiective quasi ad omnia se extendit, ad Deum et creaturas, incorporeas et corporeas, celestes et humanas, ad scientias theoricas et practicas".[2] (Mayr 2002)

The other aim of Mayr's article is to outline some possible contributions of Time Geography within the field of soundscape studies. Before getting involved in soundscape activities, Mayr had been intrigued by the issue of time, of environmental and social rhythms (Mayr 2002). The fusion of time and sound is apparent here in Mayr's concepts of 'sonic biographies' and 'spatio-temporal paths' of the listener. These provide an essential addition to our collection of soundscape methods.

The geographer and ethnomusicologist **Justin Winkler** also makes an important contribution to the study of soundscape rhythms. In his essay *Rhythmicity*,

Winkler draws upon the "rhythmanalysis" as envisioned by the French philosopher and sociologist Henri Lefebvre and Catherine Régulier. According to Winkler, "the rhythmicity of soundscapes, irrespective of the so-called 'urban' or 'rural', is a phenomenon still to be fully documented and designed". Here, Winkler examines and compares the rhythmical patterns of four Swiss soundscapes by visually plotting their Sound Pressure Level measurements sampled over a 24-hour period. He then goes on to draw relationships between rhythmicity and fields of social power, focusing upon a particular project in the capital of Berne and the ways in which the local inhabitants of Kirchenfeldstrasse tried to cope with traffic noise. Winkler considers his personal history of being quite important. He undertook his "own soundscape research as an immediate result of having had a sudden hearing loss and lasting tinnitus". He met with the idea of soundscape "in a very general way… in an ethnomusicology course", when the limits of what is still 'music' and what are 'just sounds' were discussed. Winkler says that the concept of soundscape met well with his interdisciplinary interests and explorations in musicology and geography. (Winkler 2002)

Architectural methods

Many of our contributors also employ the *soundwalk* as a method for both studying the soundscape and teaching it. The French sociologist Jean-Paul Thibaud (2001) has recently taken this soundwalk format in another direction with his *commented* walk, which records the interrelationship between researcher, interviewee and the sounding spaces that they move though. Thibaud's ideas have in turn formed the basis for another CRESSON researcher **Nixolas Tixier**, who is one of our contributors. In his essay on *Street Listening* he describes a qualitative method for the dynamic characterisation of the urban sound environment called 'Qualified listening in motion'. This is a method first developed in collaboration with Nicolas Boyer under the direction of the head of laboratory CRESSON, the philosopher Jean-François Augoyard. The method aims at involving "an interdisciplinary process taking into account both the physical and the constructed dimensions of the space, as well as the social and perspective dimensions given to it by the

users". The concepts developed by Augoyard and his colleagues are invaluable in the study of the subjective and shared meanings of sounds – *in situ* and dynamically, as Nicolas Tixier describes in his article.

Such a understanding of listening helps us to consider sound as a *creative* resource, not simply an issue of noise limitation (cf. Hedfors 1995). Architects however seldom give attention to the design of the acoustic environment (Schafer 1977b). Town planners also often have visions of a 'good milieu' but their visions are often limited to questions of *visual* aesthetics or the practicalities of the milieu. Landscape architect **Per Hedfors** has, however, pointed out that it is possible that some architects do take sounds into account in a roundabout way, but without them being fully knowledgeable of soundscape principles and their associated planning practices, good sound design is rarely realised. Hedfors' interest in the study of the sonic environment started, as he says, as a "reaction to what I saw as a visual hegemony in landscape design and planning" (Hedfors 2002). Hedfors is writing herein together with the systems biologist Per Berg, who is studying inter-sensory perceptions in urban and rural environments. Their research aims at developing tools to facilitate the inclusion of environmental sounds in landscape architecture and planning. Here the writers supply readers with field observational methods, an interview manual and questionnaire. Their article provides an important addition to the terminology and practice of landscape planning and design.

In addition to Hedfors, we have a second Swedish architect writing in this volume: Before his architectural career **Björn Hellström** worked as a musician and a composer during 1980s–90s and when he was about twenty years old he composed music for vacuum cleaner, typewriter and saxophone. He reports to have been greatly influenced by John Cage and the French composer and pioneer of *musique concréte* Pierre Schaeffer.

> Later on I played music by John Cage, Karlheinz Stockhausen and Edgar Varése. The fact that these composers to some extent involved every day sounds in their musical work (– –) became my entrance ticket into the field of sonic environment research. During this study I started to read literature by Cage, who guided me through the vast field of sonic environmental research, and where, of course, I come across the soundscape movement.

Later, in the early 1990's, Hellström first studied the sonic environment in a unorthodox class within his architectural course in Stockholm University. The students were given an assignment to describe a place (Hellström 2002): "Instead of traditional lectures, experts from several disciplines where invited to discuss the notion of place from, for example, poetical, philosophical, sociological, musical and semantic points of view. I decided to investigate the possibility of describing a place from the viewpoint of its sonic environment. At that time I didn't know that such interdisciplinary research existed".

In the 1990s Hellström also spent time at CRESSON, where he met and took part of the work of Jean-Françoise Augoyard and Pascal Amphoux. CRESSON can be described as the most advanced centre for developing methods on the analysis and future design of the sonic environment. Unfortunately, only a small number of the concepts and methods developed in this "febrile nexus of intellectual energy" (see Schafer 1998) have made it out of the French language they were written in, and into the wider soundscape community. Little of Augouyard's, Amphoux's or Pierre Schaeffer's has been translated. Hellström sees it as his mission to spread their work into the non-francophone world. (Hellström 2002)

Therefore in this collection, Hellström takes on the mammoth task of condensing and translating Pascal Amphoux's book *L'identité sonore des villes Européennes*. Amphoux's original publication is a unique and extensive methodological guide for the to study the sonic environments of cities. Hellström's contribution is a crucial link in mediating the CRESSON approach to architecture, which not only refers to static, material artifacts: "Augoyard and Amphoux emphasise that architecture is just as much a question of immateriality as well as acquired experience. Such approach implies a dynamic understanding of architecture, i.e., as a reservoir that gives the shape of the activities within it." (Hellström 2002)

Our final contributor (and co-editor of this collection) **Gregg Wagstaff** previously studied Time-Based-Arts, in particular Sound and Installation Art. He also cites John Cage and Murray Schafer as primary influences. A third, and equally important, figure has been the social theorist and political philosopher Murray Bookchin:

I include Bookchin because the body of ideas – Social Ecology and Libertarian Municipalism – which he has developed, affected to a large degree the way in

which I interpreted and re-applied the work of Schafer and Soundscape Studies. I was never wholly comfortable with Schafer's notion of an 'Acoustic Ecology'. A soundscape and an 'ecology' which is understood in terms of social and political structures seemed to me to be more practical.

It was from out an inspiring mix of art, ecology, social and political philosophy that his current soundscape project emerged. In this collection, Wagstaff's *Towards a Social Ecological Soundscape* describes the philosophical and practical considerations behind his *Touring Exhibition of Sound Environments* (TESE) project. TESE, described as a 'community based and ecologically oriented' arts project, took place on the remote Isles of Harris & Lewis, in Scotland's Outer Hebrides. TESE's aim was to describe and document its people and places though the study and exhibition of the sounding environment. More importantly, Wagstaff included local people in this process, in a creative way, through the act of listening, recording and sound making. Here, Wagstaff describes this practical process, starting from funding such a project, and also goes on to examine some of the difficulties faced by the 'artist-ethnographer'. Arguing contrary to Schafer's position that 'we are all composers', Wagstaff observes that in fact, "the soundscape is in our ears but not in our hand". His proposal towards a more 'social ecological soundscape' is therefore one wherein, "we might consider a 'balanced' soundscape not exclusively in acoustic terms, but in terms of the political structures and processes which are responsible for it." Wagstaff makes a case for a more community centered and qualitative methodology: "I want to propose that the way in which we – in our various roles of 'soundscape researchers' – *relate to* and *interact with* a community is as equally (if not more) 'ecologically' significant as the study and awareness of the soundscape itself."

As can be seen from the above, it is clear that soundscape studies is a multidisciplinary field of research. The suffuse nature of sound necessitates it. In publishing this book we hope that it will encourage others to develop and share their methods and findings. We also hope that this collection of essays will provide practical applications amongst earminded professionals and students alike, whatever their field of study.

Endnotes

1. Through the WFAE mailing list, Noora Vikman studied (1998) the various meanings of 'being ecological' which were understood by its users. She differentiated four discourses in the discussion of 'acoustic ecologists' who were concerned with the ethics of playing loud music in natural settings: (1)the anti-hierarchic, 'anarchist' discourse; (2) the 'good shepherd' discourse, based on shared ecologicalvalues; (3) philosophical discourse, concerned with the relationship between human beings and nature, and (4) the 'techno-artistic' discourse,which was more focussed on nature itself, and on feelings towards it.

2. Which Mayr translates as, "Music indeed, taken objectively, extends practically to everything, to God and the creatures, both the material and the immaterial ones, the ones in the heavens and the human ones, and to theoretical and practical sciences."

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Soundscape Studies, Experimental Music, and Time Geography

Albert Mayr

Introduction

This paper examines Soundscape Studies in relation to two fields that apparently have little in common; Experimental Music and Time Geography. What are my reasons for doing so in this context of Soundscape Studies and Methods?

In discussing appropriate methodologies for a discipline, it is useful to consider its history, the factors that shaped its initial undertakings, and the priorities that were pursued then. The (not so long) history of Soundscape Studies is by now rather well known[1], but it seems that the overall cultural context in which it began to operate is less vividly remembered, probably also because since then that context has changed considerably.

The first section on Soundscape Studies and Experimental Music intends to re-capture the cultural and artistic climate in which the exploration of the acoustic environment began and further suggests that some of the aesthetic and social concerns of experimental music may still be an enriching factor when setting out in studying today's soundscape.

Likewise is it useful, especially in the case of a discipline whose boundaries and goals are not yet completely defined, to look out for those as yet untapped intellectual undertakings that may add a new line of thought and action. In the last section on Time Geography I will outline some possible contributions of that discipline to Soundscape Studies.

The exploration of acoustic environments and Experimental Music[2]

The first systematic explorations of the acoustic environment began in the seventies, a period in which the experimental arts – although certainly not being integrated into the mainstream cultural industry – were a lively and influential phenomenon. In the area of organized sound, for instance, John Cage's provocative statements triggered a substantive rethinking of the conventional notion of 'Music' and opened minds and ears to so far neglected sonic worlds.

> The reason I am less and less interested in music is not only that I find environmental sounds and noises more useful aesthetically than the sounds produced by the world's musical cultures, but that, when you get right down to it, a composer is simply someone who tells other people what to do. I find this an unattractive way of getting things done.[3]

One of the common aims of the artistic currents that defined themselves as ëexperimentalí was to take aesthetic theory and artistic practice out of the physical and intellectual spaces to which they had been so far confined and to bring art and society closer together again. In order to fulfill these ambitious goals, they took art out into the streets, explored so far unploughed fields for artistic activity and attempted to break down at least some of the barriers between art and science by making issues belonging to, e.g. social sciences or linguistics, the object of artistic undertakings.[4] By the same token, the experimental artists believed (or wanted to believe, as we may see it today from a more disillusioned viewpoint) that radical changes in artistic thought and practice would help in bringing about social change: "Private prospect of enlightenment's no longer sufficient. Not just self- but social-realization".[5]

It was thus in this kind of cultural climate that Soundscape Studies took its first decisive steps.The founder of the World Soundscape Project, R. M. Schafer himself could hardly be called an experimental composer and actually was never very keen on mixing with the avant-garde scene. Nevertheless that's where many of his initial followers were to be found, and he has also quoted Cage extensively and acknowledged the influence of Cage's thinking on his own work. This has contrib-

uted to the open and lively conceptual framework of the early adventures in the area of Soundscape Studies , in which – next to the systematic gathering and analyzing of data – the experiential aspects played a crucial role. This is shown, for instance, by Schafer's request to his collaborators to keep a 'Sound Diary'.[6] A similar practice – 'Listening Diaries' – fortunately has been continued by soundscapists, as is to be seen in The Soundscape Newsletter (old and new) and the journal Soundscape[7]. There the subjective response to particular, striking sounds, combination of sounds, or sonic atmospheres was and is the main concern.

I want to suggest to take this one step further, i.e. to develop the perceptual experience into a creative interaction with particular sonic situations that lend themselves to it. This is what, in one way or another, many experimental composers did. I believe that such a way of getting actively acquainted with some of the prominent acoustic features of a place would be a useful method for establishing a close perceptual and experiential relationship with it. Experimental Music is rich of examples of how the interaction with the acoustic environment can be at the core of the musical process. I will illustrate it through two pieces.

Michael Parsons' Echo Piece for two people with woodblocks[8]

Find a wide open space with an echo.

Start as near as possible to the place where the echo comes from.

A (first player) begins playing a regular beat (ca. 1 stroke per sec.) and walks away so that the echo gradually becomes audible. He[9] continues walking until he reaches a point at which the echo is heard exactly halfway between strokes (i.e. alternate stroke and echo make up an even half-second beat). B (second player) then starts playing a regular beat synchronized visually with A's, and walks to a place twice as far away – i.e. where each stroke coincides exactly with the echo from the previous stroke. Standing still at this place, B then changes his beat to half tempo, so that alternate stroke and echo make up an even beat of 1 per sec. A, still synchronizing visually with B (two strokes to every one of B's) moves out the same distance again, to a point the same distance as B from the point of echo. Standing still here, A also changes to half tempo. B, now doubles the tempo back to the original pulse of 1 per sec. and walks back to a point where the echo is heard after 1/2 sec. A then also doubles his tempo to

the original pulse, and walks back past B all the way to the starting point, and stops playing. B then also moves back to the starting point, and stops playing.

N.B.

The two players synchronise visually throughout, not aurally.

Thus phasing of the pulse will be audible to each player as the other moves toward and away from him, and towards and away from the place where the echo comes from.

Taking the speed of sound as approx. 1,120 ft. per sec., the distance at which the echo is heard after 1 second is ca. 560 ft.

I have performed this piece several times in various locations; I have also explored both mountainous and urban sites for their echo qualities. And I can say that there is a substantial difference between coming to a place, discovering its echo and simply making a note of it, and being an active part of an elaborate acoustic process that brings this echo alive. Finding a suitable location for Echo Piece can already be an interesting experience. You do not only need a clear and sufficiently loud echo, but if the place happens to be plagued, during certain hours, by too much noise drowning out the echo, you might have to choose a more appropriate time of day for the performance. You may play the score as it is, or make your own version.

The next example, Bird Proximity Piece, is by Paul Burwell[10].

The piece is to performed in a wide open space by any number of players larger than six, each using one very quiet and one loud instrument. They players may walk in any direction at any speed. The main instructions of the score read as follows:

> The musician responds to and enters into dialogue with the one or other two musicians that he can hear. He should move as much as he likes but never in such a way that he can hear more than (say) 1/3 of the total performers. This is first done with the quiet instruments and then repeated with the loud ones.

Simple as it may look at first sight, Bird Proximity Piece is actually not easy to perform. In fact, in order to follow the instructions, the players have to keep listening not only to each other but also pay attention to the environmental conditions (such as the intensity and direction of the wind, unpredictable traffic noises) that may affect the audibility of the sounds produced by the other players. The performers have to act within numerous feedback loops – placed in series, in parallel, and nested. For example this involves: the signal-to-noise ratio of the moment, loudness and density of the sounds produced by the other players, walking speed and direction, and the individual interpretation of the instruction to enter in dialogue with the other musicians. As we will see later, there are some parallels between Burwell's piece and some aspects of time geography that will be discussed below.

Over the past two decades the arts have withdrawn, with few exceptions, back into more comfortable and conventional confines. This is not to say that environmental and social themes are absent from contemporary artistic endeavors, but they are dealt with mainly as contents addressed through – again – more or less conventional practices, not in the sense of a direct interaction with and modification of the physical and social environment. As far as environmental sound is concerned, two trends seem to be prevailing. One appears to favor a rather uncritical full immersion in the contemporary 'ocean of sound'[11] just as it happens to be, and to do away with any pre-established criteria of quality.

On the other hand, within the committed environmental sound community, soundscape composition has become, so to speak, the main artistic branch. Certainly many outstanding works have been created in this field and the leading figures, such as Hildegard Westerkamp, Barry Truax, Claude Schryer, have on several occasions emphasized the role of soundscape composition as a tool for increasing the awareness for acoustic ecology in the listeners. But the 'field work' quality of the environmental works belonging to the area of experimental music is lost, as soundscape compositions are usually presented in normal concerts of electro-acoustic music or as sound installations, both of which are by now well established forms of presentation.

Schafer's invitation to explore the acoustic environment was never separate from the one to become its composers. From today's vantage point this may, to many,

appear a romantic and utopian request, but if we decided to take it seriously, the field of soundscape studies could become an example of how the barriers between artistic and scientific activities may be overcome in a creative way. For people who have chosen to devote their life to research, the request to become involved in compositional tasks may at first not be so appealing. Yet, I think that particularly in this field, the conventional division of labor or boundaries should be questioned.

Interdisciplinarity, then and now

From the beginning Schafer emphasized that soundscape studies were to be an interdisciplinary field in order to achieve significant results. This is as true today as it was in the seventies. It is encouraging to see that researchers and practitioners currently coming from an impressive variety of fields are actively involved in the study of the acoustic environment. But it appears that an authentic interdisciplinarity has not yet been achieved. This, in my opinion, has to do with the change in the cultural climate. In the seventies there were many signs indicating that a true effort was being made for overcoming – at least partially – traditional disciplinary barriers and for starting 'joint ventures' between the humanities, natural and social sciences. Furthermore, as has already been pointed out, there was more of an open dialogue between the advanced artistic and scientific communities.

In the meantime – celebrated examples to the contrary notwithstanding – the disciplinary fences in the academic world have been reinforced, both between the individual disciplines and toward the outside, the not yet established disciplines. This makes it more difficult for a relative newcomer, such as soundscape studies, to find an autonomous and formal academic home.[12]

We may, for the moment, only speculate where that home could be located; should it be somewhere between the extremes of the spectrum of sciences working on sound – musicology at one end and technical acoustics at the other? Or should it rather become a subsection of fields in the humanities and social sciences (e.g. Visual Anthropology), so that we may have also Acoustic Anthropology, Acoustic Human Geography, Acoustic Psychology (distinct from psycho-acoustics)? Any-

one of these options obviously will have repercussions on, among other things, the methodological strategies.

In the past two decades and a half different approaches have been adopted for developing a methodological system for the investigation of acoustic environments, each with specific results. At present, and as long as the goals of the field are not yet stringently defined, any attempt at determining the benefits of one approach over the others is probably speculative or premature.

Instead, as many approaches as possible should be tried and tested. It appears that, so far, there has been a lack in approaches which are distinctively oriented toward the spatio-temporal context of sounds. Such an approach would provide a stimulating and useful methodological framework, particularly for fieldwork design.

Soundscape studies and Time Geography

It is a difficult, if not impossible task to define the soundscape starting from its contents. The mobility of its 'objects', the plurality of significances, and the tendency towards the coincidence of opposites in the significance of sounds have so far hindered the construction of classification systems that are coherently objectivating.[13]

With these difficulties in mind, we may consider adding another perspective. Soundscape Studies so far has been strongly place-oriented, the term soundscape itself suggesting something that 'is there', a kind of immaterial furniture of the material landscape. Thus most of the fieldwork, stocktaking, recording and description of sonic configurations has been carried out on specific locations that were either at hand (as was the case with The Vancouver Soundscape) or were chosen because they were considered to provide appropriate parameters for comparative study (from the Five Village Soundscapes to the studies on European cities directed by Pascal Amphoux, to the investigation into 5 Swiss rural areas directed by Justin Winkler).[14] Certainly, time entered into these studies through the observation of characteristic sonic events that mark the daily, weekly, and annual cycles. But again, it is primarily the times of the chosen place, the variations of the soundscape over time in a chosen location that is examined.

This manner of proceeding has produced very remarkable results, although, from the angle of the everyday sonic experience of the inhabitants, it is somewhat artificial. Persons do not habitually stop to listen for an extended length of time to the sounds of the settlement they happen to live in. Undoubtedly they should be encouraged to do so – every place in the world deserves to be given aural attention – and probably the sight of a group of a intensely ear-minded soundscapists with Kunstkopf-microphones, sound level meters, and so on, will persuade them that there might be something to it.

But perhaps we should also develop a research strategy that is based on the habitual, everyday listening behaviour of our observed actors in the sonic situations they find themselves in during a day, or a week, or a year of their life in the various stations they spend time at.

Today, due to a changed, more erratic employment situation, increased mobility and other factors, most people's movements extend far beyond those more limited settlement units such as city quarters or villages that, were the boundaries for most movements in the past. These movements have increased not only in amplitude, but also in frequency. The area of residence thus often accounts only for a relatively small (and sometimes not so significant) amount of the sonic situations a persons may find him/herself in during a day (week, year).
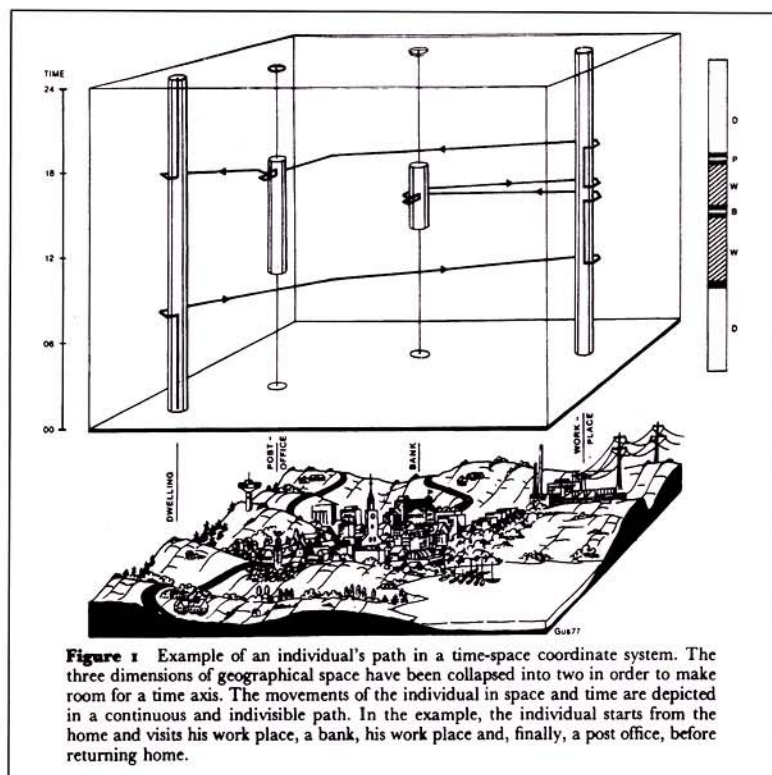
In other words, to the 'place orientation' we should add an 'actor orientation' by reconstructing sonic biographies and look at not only where, but also when, how often, and for how long the actors[15] are in contact with certain sounds.

The methodological grid for such studies can be derived from the writings of the time geographers of the so-called 'Lund School'. One major concern of that group was the study of the spatio-temporal patterns of the movements of persons and the resulting economic, social, administrative consequences;[16] in our case it would be the aural aspects.

By adopting such a strategy the spatio-temporal distribution of sounds in their relation to what Torsten Hägerstrand called the 'paths' or 'trajectories' of the persons involved would come to the foreground.[17]

Fig.1 shows, in a schematic way, such a trajectory.

Figure 1 Example of an individual's path in a time-space coordinate system. The three dimensions of geographical space have been collapsed into two in order to make room for a time axis. The movements of the individual in space and time are depicted in a continuous and indivisible path. In the example, the individual starts from the home and visits his work place, a bank, his work place and, finally, a post office, before returning home.

As is shown in the graphic representation, the population and its environment can be described in a three-dimensional kind of time-space 'map' in which paths always move upward along the time axis. The environment in the figure is simplified; it includes one individual only and is confined to those stations which he uses and comes in contact with during the twenty-four-hour period, together with the road network…

The individual's path is followed from the beginning of the twenty-four-hour period, starting from the home. The period just before seven o'clock is devoted to various activities within the station, so that the path moves on the time axis only. The journey from home to the work place begins before seven o'clock. In addition to moving on the time axis, the path now moves in space, and its projection in the spatial plane depicts the journey on the road network…

The primary purpose in presenting this picture is to impart physical realism to the structure of daily activity programmes.[18]

To the stations shown in the example others are to be added, such as shops, restaurants, venues for cultural, social, or religious activities.[19] Each station along such a trajectory and each type of transportation has its characteristic acoustic situation, or set of situations, that will vary with the time of day, within the week or seasonally. Depending on the particular parameters of his/her trajectory – i.e. the amount of time spent at each station, the temporal location, the sequential order and the frequency of the visits – each individual will have a specific 'sonic trajectory', different from that of other individuals, even if these regularly visit the same stations, but with a different temporal pattern.

Let us consider, as an example, the relatively quiet sonic situation of a bank. On a person going there for a short visit in the early afternoon – after eating lunch in a crowded, noisy restaurant – such a situation will have a different impact than on the employees who spend all their working hours there.

In the time-geographic representation the movements are considered only from the spatio-temporal side, i.e. their duration as the result of distance/speed. Obviously they too are each characterized by a particular sonic situation.[20]

Regarding the form of sonic documentation we can think of the by now widely used technique of the '24 hour recording', with appropriate modifications. In the case of the sonic trajectory we would follow a person's itinerary during a day and record samples of the sonic situation found in the stations visited and during the journeys. In the final editing the sequences of the visits and journeys would obviously be maintained and each sample given a duration proportionate to the time spent there by the actor.

Conclusions

The exploration of the acoustic environment – combined with the effort toward its improvement – is certainly one of the most stimulating intellectual, aesthetic and social adventures of our time. To be part of this adventure requires, I believe, a good deal of versatility. Thus, on the one hand, soundscapes studies needs to continue in its search for systematic coherence in its undertakings, on the other hand it has to remain open for new (or rediscovered) inputs and ready to rethink its philosophy and methods.

Endnotes

[1] See for example http://www.wfae.sfu.ca.

[2] The term experimental music perhaps needs some clarification. Although not very popular nowadays, it is sometimes used to denote forms of musical activity involving any kind of more or less innovative equipment, particularly sophisticated computerized devices. Here instead the term is used in the meaning it had in the period, approximately, from the late fifties to the mid-seventies, i.e. the music by composers who, under the strong influence of Cage, made extensive use of indeterminacy, new notational (graphic, verbal) techniques, and improvisational practice. Many, if not most of their scores were written for non-professional performers, since it was believed that real innovation could only happen outside the mainstream music system.

[3] John Cage, *A Year from Monday*. London: Marion Boyars, 1975 (repr.), p. ix.

[4] See Albert Mayr, "Social Time in Experimental Music and Art". In J. T. Fraser (ed.) *Time and Mind – The Study of Time VI*, Madison, CT: International Universities Press, 1989, pp. 217–228.

[5] John Cage, ibid., p. 53.

[6] See, for instance, R. Murray Schafer (ed.), *European Sound Diary. No. 3. The Music of the Environment Series*. Vancouver: World Soundscape Project / A.R.C. Publications 1977.

[7] See for example http://www.wfae.sfu.ca.

[8] Michael Parsons, Echo Piece. In *Visual Anthology*. London: Experimental Music Catalogue, n.d., p. 7.

[9] The score is copied here as written by Parsons.

[10] Paul Burwell, *Bird Proximity Piece*. Unpublished, 1976.

[11] David Toop, *Ocean of Sounds: Aether Talk, Ambient Sound and Imaginary World*. London: Serpent's Tail 1995. See also: Shushei Hosokawa, "L'ascolto debole". *Estetica news* nr. 2, 1988, p. 2.

[12] Both scientific and artistic work on environmental sounds have always met with remarkable conceptual difficulties in making its aims and specific nature understood and appreciated, not only by the general public, but also by scientists. If I may add a personal anecdote here: In 1979 I was doing a series of projects at an art gallery in downtown Vienna with the title KONTEXT <–> SIGNAL. One of the projects consisted in placing a sound source (that gave a very simple, medium/high pitched signal tone) in one of the gallery's windows. Loudness and timing of the signal was set to such values that a pedestrian passing by the gallery at average walking speed would hear it at least twice. While the signal was on I went into the streets and interviewed the passers-by, asking them whether they had noticed a sound they had not heard before in this area. (Most of them did not, by the way, and we had some very interesting discussions.) One night during my stay in Vienna I happened to go out with a group of sociologists I had not met before. During our conversation we talked about what we were doing and I mentioned that project, assuming that it would meet with

some interest on their part – it was still the seventies, after all. But they looked at me very suspiciously and made no comment. Finally one of them asked: "Is this kind of thing all you do in life?" I answered: "No, I also teach at the Conservatory". They seemed quite relieved. One said: "It's good to have such a nice hobby".

[13] Justin Winkler, "Beobachtungen zu den Horizonten der Klanglandschaft". In G. Böhme and G. Schiemann (eds.) *Phänomenologie der Natur*. Frankfurt: Suhrkamp 1997, p. 273 (tr. mine).

[14] R. Murray Schafer (ed.), *Five Village Soundscapes. No. 4, The Music of the Environment Series*. Vancouver: World Soundscape Project/A.R.C. Publications 1977. Pascal Amphoux, *Aux écoutes de la ville*. Lausanne: Institut de Recherche sur l'Environnement Construit 1991. Pascal Amphoux, *L'identité sonore des ville europeennes*. Grenoble/Lausanne: CRESSON/IREC 1993. Justin Winkler et al. *Klanglandschaften. Untersuchungen zur Konstitution der klanglichen Umwelt in der Wahrnehmungskultur ländlicher Orte*. Basel: MS 1995.

[15] Here the the word actor refers to the way it is used in social science for persons whose behaviour is observers.

[16] Here I will only focus on those theoretical and methodological aspects of time geography that I consider of more direct interest for our goals.

[17] Torsten Hägerstrand, *On Socio-technical Ecology and the Study of Innovations*. Lund: Lunds Universitet, Kulturgeografiska Institution 1974. Torsten Hägerstrand, "Time Geography: Focus on the Corporeality of Man, Society, and Environment". In *The Science and Praxis of Complexity*. The United Nations University 1985.

[18] Bo Lenntorp, "A Time-Geographic Simulation Model of Individual Activity Programs". In T. Carlstein, D. Parkes, N. Thrift (eds.) *Human Activity and Time Geography*. London: Edward Arnold 1978, p. 164.

[19] Furthermore, the spatial amplitudes of the trajectories of most persons have increased considerably since the time Lenntorp's graphic representation was realized.

[20] A line of investigation into the sonic aspects of journeys – which I will not pursue here – would specifically focus on the kind of soundscape that results for a listener moving amidst stationary or moving soundsources. Here a variety of parameters would come into play, such as the overall noise level of the area in which the listener moves, the audibility range of the sound sources, the perception range of the listeners (with the latter two parameters obviously depending on the hi-fi or lo-fi acoustic quality of the area), the speed of the moving listener, and, in the case of moving sound sources, their speed. Since today more and more persons spend more and more time moving around, the study of this kind of soundscape experience may prove relevant for the understanding of our relation to sound.

A City Traced by Soundscape*

Keiko Torigoe

For several years since 1986, I have organized a research group called the 'Kanda Soundscape Project'. Kanda is one of the oldest towns of Tokyo, located in the center of the metropolis. Our small research team was based near the *Misaki Shinto Shrine* at the Suidobashi railway station in the Chiyoda Ward of Tokyo. The members of the group, consisting of students, young researchers and local residents in the district, were anxious to know how Kanda would portray itself when examined and traced through the concept of a soundscape.

When we started our soundscape research, the Kanda district was faced with various problems resulting from the rise of land prices caused by the 'bubble economy.' The long-cherished townscapes rapidly disappeared as the landowners were forced to sell their lands to pay inheritance taxes, or they were encouraged to sell their land for a large-scale urban redevelopment project. As such, the decline of local residents' population was further accelerated. Neighborhood meetings were frequently held to discuss the issues of merging neighboring elementary schools due to the decline of child population, and urban redevelopment projects. Old buildings were rebuilt one after another, and the faces of commuters and visitors were changing.

As we took up 'transient' and 'elusive' sounds as our research theme, we were absorbed in listening for and recording the 'sounds of Kanda'. In hindsight, now that we are out of the 'whirl of the times,' we seem to be able to look back on our activities more calmly. In this paper therefore, I would like to explain, (i) How I started and developed soundscape studies in Tokyo, (ii) What we found out through the results of our soundscape research in the field of Kanda, and (iii) The significance of Soundscape Studies upon Urban Studies.

Pre-History

At university I majored in Musicology, while harboring an interest in the 'sound culture of a city.' It was there that I came across the term 'soundscape' through a Japanese translation of *The Music of the Environment* (published by the World Soundscape Project in 1973) which was later included in two continuous issues of a Japanese contemporary music magazine, *TRANSONIC*, in 1976. I wondered why this concept was advocated by Murray Schafer, a contemporary composer of North America? I believed that I was sensitive to the aesthetics of the sound environment because of being brought up in the Japanese or Asian culture (see the introduction of this book) . This prompted me to go to Canada in 1980 to do a kind of field research for two years on the social background behind the concept of 'soundscape'.

As I studied Schafer's activities, I came to understand that the concept of 'soundscape' was developed by Schafer and his colleagues whilst examining the sounds of society, in particular those sounds around the city of Vancouver. Later, the concept was further elaborated upon and transformed as the 'World Soundscape Project' (WSP) progressed and visited European villages.

The WSP survey was in a way experimental and original. Without previous case studies to refer to (or even if there were, there would have been no chance of learning about them, as they had been working as musicians), they had to begin with basic research on a village with only sound as its clue. I was deeply impressed with their critical mind and courage to initiate a new genre of study.

After returning home, I wanted to begin using soundscape studies in a Japanese city for my fieldwork. However, whilst referring to the methods of the WSP group, I intended to search for or devise a method of my own, one that fitted my own sensibility and which was better suited to a Japanese field. I wanted to select a case study which was closely related to my daily activities, so I chose an urban area in central Tokyo.

Around that time, I was teaching English at a professional school in a sector of Kanda. The 'bubble economy' was emerging. This was a period during which the price of land and other properties rose extremely high and the economy became extremely active. Along the street an old building, that exemplified the district in many ways, was being demolished. The streets were changing every day. One day after an evening class, when I was working on documents in the office, I heard the melancholic sound of a double reed bugle. It was that of a noodle vendor. I could not help admiring the profound power of sound culture that had survived the rapid and big changes in the townscape of Kanda. Such vendors' sounds could no longer be heard in suburban residential districts. I can recall that this was the moment that I decided to select Kanda as the base for my soundscape survey.

It was not long before I asked two of my friends from my university days to collaborate, and we three began calling other people into our group. Thus, the Kanda Soundscape Research Group was formed in 1986 and conducted a three-year long activity under the theme 'Looking into Kanda Town through Soundscape', with financial support of Toyota Foundation.

The Soundscape of Kanda

At the beginning, we had no clear idea about the entire soundscape of Kanda. The main members were not 'indigenous Kanda kids' and each had sporadic and fragmented knowledge of these sounds. Before conducting a full-scale survey, we decided to implement a preliminary survey by gathering information from the residents of the district regarding the present and past sounds of Kanda.

Some members were not fully trained in interviewing, therefore we prepared a manual in the form of a questionnaire. This list was used as a reference material

and members were encouraged to have informants talk freely. For an interview, two members attended in principle and they took notes and recorded the comments of the interviewee. Afterwards they transcribed the tape. Furthermore, we sorted their comments using cards and drew a basic sound map of Kanda.

At the beginning of the interview survey, many informants replied, "I don't think of sounds in my daily life, so I don't think of anything at this moment." We left the questionnaire with them, and promised to visit them again. A week or ten days afterwards many of them said "I recalled a sound all of a sudden while I was brushing my teeth," or "I talked with my husband about this, and I noticed and recalled various sounds." This is how we collected ample examples of sounds.

As an example, here is a part of the account by Mr. O who was born and brought up at Surugadai in Kanda in the early 1930s.

> Vendors of different products came with street cries and sounds, such as pepper vendor, medicine vendor, and so on. A medicine vendor shouldered a pole on both ends of which were small chests of drawers. The metallic handles fixed on each drawer would make sound 'katta, katta'"as the vendor walked. He would sometimes shout in low voice. There was also a candy vendor. He had a kind of pipe that turned into the shape of bird when he blew. There was a tobacco pipe cleaner with a steam sounding 'phii.' In summer, a goldfish vendor came crying 'Kingyoooe!' (Go – – ldfish), and a wind bell vendor ringing bells. I woke up every morning with the cry of a NATTO vendor (fermented soybeans) for breakfast, saying 'Natto, Natto, Mito Natto.' A TOFU vendor used to carry a wooden container and its lid was used as a cooking table. He took a piece of TOFU, and cut it into smaller pieces with a brass knife making sound like 'ton ton ton…' It was such a comfortable sound.

Four months later, when the number of informants reached nearly 60, the basic structure of Kanda soundscape gradually came into relief.

Geographical Structure and Historical Structure

As a geographical structure, it was understood (or it became clear) that the entire soundscape of the Kanda district was comprised of small areas, much like a mosaic, and each with its own specific sonic feature. Within Kanda itself for example, the soundscape of the Jimbocho sector – famous for second hand bookstores – was characterized by a unique tranquility and monotonous murmurs of printing and bookbinders shops. In contrast, the Akihabara sector – packed with electric appliances stores – is noisy and lively with crying voices of clerks, advertising messages and music amplified through loud speakers at the shop front.

At the same time, it was clear that the soundscape map based on these remarks tended to reflect our interviewees' past memories. At the time of this preliminary survey in 1986, the bustle of students around JR Ochanomizu train station was being replaced by the bustle of business people. Except for this, the soundscape drawn in the map was actually experienced in each sector.

Historic changes in the soundscape were also identified. Just as the town of Kanda has undergone changes from a town of students and bookstores to a business center with higher buildings, its soundscape has also gone through a dynamic transformation. The outcome of our survey was summarized in the Basic Chronological Structure of Kanda Soundscape as shown in Fig. 1. Furthermore, three factors were identified to have caused major changes in Kanda's soundscape; they are the Great Kanto Earthquake in 1923, World War II, and a rapid economic growth period (Fig. 1)

On the other hand, our research revealed that sounds coming from outside the Kanda district must also be considered as components of the soundscape of Kanda. As shown in (Fig. 2: Incoming Sounds), the bell of Kan'eiji Temple in Ueno, steam whistles from the Bay of Tokyo, the roaring of a gun fired at noon beside the moat of the Emperor's Palace, and many others enriched the soundscape of Kanda. Such sounds, whose sources are outside the district and invisible, can be said to constitute a certain kind of 'acoustic horizon' in that they aurally define the geographical positioning of Kanda in relation to peripheral districts, conveying various messages into the Kanda Soundscape.
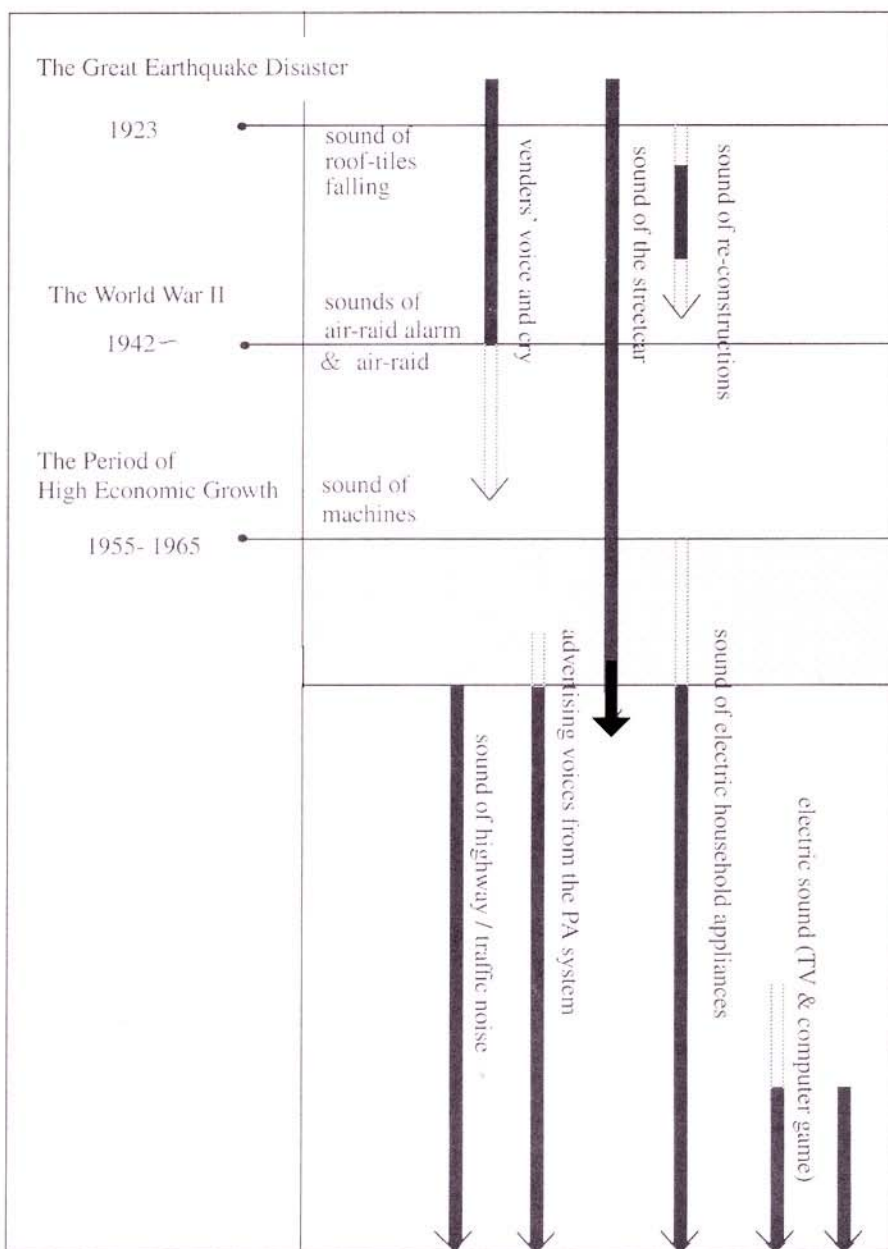
The Great Earthquake Disaster

1923

sound of
roof-tiles
falling

The World War II

1942 —

sounds of
air-raid alarm
& air-raid

The Period of
High Economic Growth

1955- 1965

sound of
machines

venders' voice and cry

sound of the streetcar

sound of re-constructions

sound of highway / traffic noise

advertising voices from the PA system

sound of electric household appliances

electric sound (TV & computer game)

Fig. 1: The
Basic Chrono-
logical Structure
of Kanda
Soundscape

This suggests that the 'acoustic horizon' acts as a communication system between a specific district and peripheral districts and brings information about surrounding districts in a much more elastic and dynamic manner than visual landscapes. Seen from an 'acoustic horizon' point of view, the 'Soundscape of Kanda' is not limited to the physical space called Kanda.

These sounds from outside the Kanda district (shown in Fig. 2) were heard everyday in almost all parts of Kanda, except for the sounds of fireworks in the River Sumida which were limited at the end of July. However, one by one, they have disappeared as time has passed. At present, only a few can be heard, as if having strayed away from the horizon of Kanda's soundscape. This is due to the increase in ambient noise level and construction of high-rise buildings. At any rate, along with the urban modernization, the "audible field" of Kanda soundscape has shrunk, and only sounds from small distances can be heard. This reduction in the area of the audible field was also confirmed by our interview survey.

Questions about 'the Soundscape of Kanda'

Through the preliminary survey, we came to have a clearer image of Kanda's soundscape both geographically and historically. In the process, we found that the soundscape of Kanda comprises several sub-districts, each with its own acoustic features. This suggested that there could be no generalised soundscape of Kanda.

Certainly, it is possible to consider that the soundscapes mosaic-like structure is a unique characteristic of Kanda. However, the same thing might be true with other districts and there was no confidence that such a structure was a special feature of Kanda. As such, we gradually came to wonder if the theme of our study 'the soundscape of Kanda' was too idealised.

On the other hand, we found that these sub-districts might have a history of their own. For example, the former Renjaku-cho area with long established shops, represents itself as a tranquil quarter with a soundscape that helps people feel a sense of relief in the hustle and bustle of Kanda. In the past, they say that the sound of *Shamisen*, a three-string Japanese instrument, played on the second floor of a house, could be heard on the street. It was only recently that the Ogawa-machi

Bell of Kan'eiji
Temple in Ueno
上野
寛永寺の鐘

Shout of Joy from Kohraknen Stadium
後楽園の喧声

上野駅の汽笛
Steam Whistles from
Ueno railway Station

Sound of
Steam Engine Locomotive
S L の音

Song of Candy Vender of Yudan
九段のアメ売りの歌

Music of the Bon Festival
Dance of Shinobazu Pond
不忍池の盆踊り

隅田川の花火
Sound of Fireworks
on Sumida River

靖国神社の花火
Sound of Freworks of
Yasukuni Shrine

おらぼの音
Roaring of Gun Fire of
the Meat at Noon

お堀の音

Sound of Tokyo Railway
東京駅の音

東京湾の汽笛
Steam Whistles from
Tokyo Bay

Fig. 2:
Incoming
sounds

area, once known as the 'suiting street' with a different type of bustle, was turned to the 'sports goods street.'

The memories of sounds by residents were based on smaller divisions of Kanda. Therefore, a question was raised as to whether these microscopic memories could constitute the entire history of the greater district of Kanda. The Soundscape Chronological Structure shown by Fig.1 appeared to be too rough and far from reality.

The previously mentioned situation of the 'elastic' soundscape of Kanda further complicated our question. Referring to Fig. 2, I wrote that, "sounds coming from outside the Kanda district must be considered as components of the soundscape of Kanda", which I felt complicated the entity of the soundscape of Kanda and confused the definition of 'Kanda' as a district name.

When we started our fieldwork, we first defined the 'soundscape of Kanda' to be "composed of sounds that people living in the Kanda district are conscious of in their daily life." From this definition, the soundscape of the past was more expansive, extending beyond the boundary of Kanda to include the bell of a temple in Ueno for example. In other words, when we say 'the soundscape of Kanda,' we actually mean the soundscape heard by residents in Kanda and not just the area named Kanda. By the time when we finished the preliminary survey, we were in a critical situation over the definition of 'Kanda.' The original purpose of our study – to identify the sonic characteristics of Kanda district through the acoustic lives of its residents – seemed to be vague and not to make any clear meanings. It seemed that the original purpose was limiting and had to be revised.

Therefore, for the following survey, we decided to choose specific sounds or places to gain a more concrete picture of the district. If there was something like 'the soundscape of Kanda', we thought it might be an aggregation of these more pointed surveys.

For these more specified surveys, our research group decided to take two approaches; the first was a 'one sound oriented' approach and the other was 'one place oriented.' The former looked into how people hear one specific sound, and the latter examined what sounds are heard in a particular place.

For the former survey, sounds symbolizing Kanda which were favored by residents were listed as 'Kanda Soundmarks', such as the Bell of Nicolai-do Cathedral,

Kanda Festival Music, Voices of Vegetable Auction at the Kanda Market, and a few others. For the latter survey, Suzuran-dori Shopping Lane, Chuo Street, and Myojin Staircase Road and other streets were listed.

Bell of Nicolai-do Cathedral

The Grand Resurrection Cathedral in Tokyo, commonly called Nicolao-do Cathedral is the head cathedral of the Russian Khristos Orthodox Church, established at Surugadai near Ochanomize train station in 1891. It has six large bells and six small bells in the bell tower. The unique sound has often appeared in literary works and is loved by many people.

The study group conducted various surveys about the bell sounds from the beginning of the project. The main subject was a survey asking, "Have you ever heard the bell ringing, and if so, how have you heard that?" Mrs. S, for example, replied, "I am not a follower of the church, but as I took my first bath hearing the bell ringing. I can boast that I am a Kanda-kid. It sounds like saying 'be happy, be happy.' " And Mr. O who grew up close by the cathedral recalls,

> As soon as I came home from school, I threw away my school bag and went out to play. Mother used to tell me, "Come home wherever you are, when the bell of Nicolai-do ringing." You know, the sphere of activities of children was quite wide, maybe as far as 2 to 3 kilometers in radius, or even longer distances. Wherever we were, the bell was audible, but we didn't notice it sometimes when we're absorbed in our play. Then, mother would scold me, "You didn't hear the bell ring!" It rang at 6 o'clock sharp. The time-telling bell was the signal for us to go home, as well as a reminder of my mother's voice and face.

As it is clear from this episode, the sound of the bell could be heard from quite far away. From many people's stories it could be summarized: "The bell rang three times a day, in the morning, noon and evening. But I don't remember when it ceased to ring." How can this be interpreted? Was it because noise and high buildings obscured the sound of the ringing? Or, has the cathedral ceased to ring the bell?

We inquired at the cathedral office and learned that the bell was rung everyday to tell the time, but due to manpower shortage and the deterioration of the bells, they stopped telling the time around 1965. Currently, they ring the bell in Sunday mornings before and after the worship service. How far then does the sound of the bell carry on Sunday mornings?

To clarify this, our members conducted some observational research. A few minutes before 10 a.m., members gathered around the cathedral and dispersed in many directions as soon as the bell began to ring. We noted the points that the bell sound was no longer audible. The audible sphere varied according to the climatic conditions, such as air temperature, wind strength and direction. However, after a few similar surveys, the audible border was defined as shown in the map (Fig.3). The dotted line in the map shows the audible border of the bell obtained from the interviews with long-time residents in Kanda. It clearly demonstrates that the audible area has been reduced along with the modernization process of Tokyo. In the soundscape survey, this audible area is called the 'acoustic space' of a specific sound. The reduced and weakened acoustic space typically shown by the sound of the cathedral bell is considered to have been caused by an increase in both the ambient noise level and by the amount of high buildings in the district. Consequently. this "shrinkage and weakening of the acoustic space", is a major feature of the soundscape of Kanda and that of any other modernized cities.

Diverse Ears Hearing the Cathedral Bell

The Study Group carried out an intensive interview survey with 83 respondents from May to September 1987, concerning the bell of Nicolai-do Cathedral. Unlike the preliminary survey which was mainly among long-time residents in Kanda, this intensive interview survey targeted people with various backgrounds.

The criterion for selecting our informants was people who had acoustic experiences of the bell, in other words, those who seemed to have actually heard the bell ringing. They included residents, people working in offices and passers-by in the area, as well as the followers of the church and people related with the cathedral.

Fathers of the cathedral commented about the religious meaning of the bell sound. "In Christianity, the teachings of Jesus Christ are called 'good news' and we
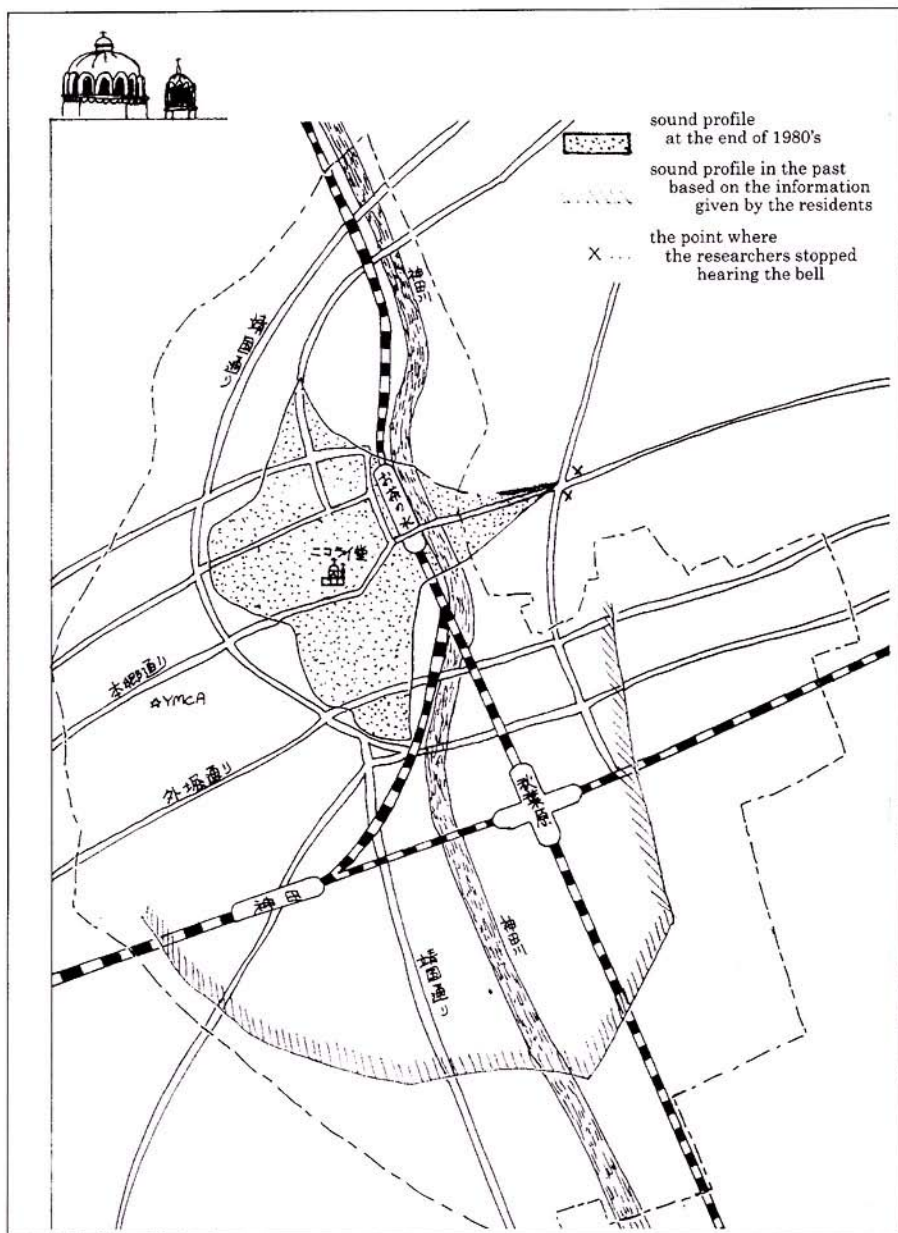
Fig. 3:Sound
Profile Map of the
Bell of Nicolai-do

ring the bell as one way of materializing the good news." "We ring the bell to encourage people to unite their hearts for prayer." Another said, "when an amateur rings the bell, I feel that my mind is disturbed. One must ring the bell with all your heart, otherwise, the sound comes out differently."

As a matter of course, the bell of the cathedral has a religious meaning. However, the same sound, as described by Kanda kids,"was an accent in our life. When it rings in the evening, we felt it's time to go home." For them, it had no religious implication, but was the "soundmark of their hometown" integral to their daily life.

A closer examination of the survey data showed that some of the residents had understood the religious nature of the bell. However, they were not aware of the cathedral being that of Russian Orthodox Christian. Some said, "in my neighborhood, the bell of New Year's eve is that of Nikolai-do. When we hear the bell at the end of a year around here, we feel that the year is really coming to the end". This suggests that the bell sound was firmly established in the soundscape of the Japanese people's calendar. There was even someone who remarked, "a shrine maiden is ringing the bell, so I was told". This statement implies and symbolizes the cultural transformation of the bell.

In regard to New Year's bell, it is a Japanese tradition that Buddhist temples ring their bells 108 times at the last moment of the year, that is at midnight on December 31st. It was confirmed that the cathedral would ring the bell 100 times starting just before midnight at the request of the neighborhood community, but it was not known when this custom started. One Father recalled, "this area was totally burnt by air raids during the war. Only this quarter remained undamaged because of this cathedral, as the residents of Kanda understood. Therefore, after the war, people of the shop association of Kanda started to come here and to attend the midnight worship. After the worship, they clapped their hands together in a specific way (which is a Japanese tradition) and then they proceeded to Kanda Myojin Shrine for New Year worshipping." This remark tells how deeply this cathedral has been tied with people's life in this area.

Although the night-time population is reduced, a great number of people visit Kanda in day-time, for work, study, shopping and other purposes. There are lots of large and tall office buildings around Nicolai-do cathedral. Even on Sundays, many people are walking in the streets and some are working in the offices. The ways

they hear the bell are so different from native residents. A young woman, a receptionist in a neighboring office building, for example, said, "It sounds like 'I want to get married as soon as possible.' It sounds somewhere between KARAN and KEEN, something cute."

Someone else replied, "I don't like it. It makes me sad, recalling my childhood. We were poor, Japan was poor then." A passer-by said, "It is like I am in Rome."

Among the 83 informants, there were theological students who were actually ringing the bell, and some followers visiting the cathedral for prayer on Sundays. Interviews with Cathedral people were held in a calm environment for a long time. A group interview was held with followers. Some interviews, however, were conducted outside on the street, speaking to passers-by, in an extremely short time. Therefore, the results may not be compared simply on equal standing.

Granting these conditions, it was confirmed that comments given by informants were so diverse even though they were listening to the same sound. The meaning and value given to the same bell sound were different from one person to another. Even so, they could be grouped as displayed in Fig. 4. Here, in Fig 4, it is clear that the same church bell could be heard in many ways.

More interestingly, we also found that there were two other groups which are not included in Fig.4, namely "people who do not hear the bell when it *is* ringing," and those "who do hear the bell when it is *not* ringing."

People who do not hear the bell when it is ringing

When we were asking passers-by near the cathedral, there were many people who replied "I didn't know that the bell rings." Hence, we predicted that there would be people who did not hear the bell actually ringing. This was later to prove the case.

The workers at Ochanomizu station at that time were working at the gate checking tickets. At least one gate is located close enough to hear the bell. One worker who also stood at the gate on Sundays said, "I don't know if the bell rings. I've never given attention to it." He might have been in a special condition such as he had weak hearing, but his reply suggested that "not all people are hearing the sound when they are within the audible sphere of a sound." To support this hypothesis, a group member asked a person who happened to be together when the

A. Fathers
- Message to/and from the Gods: "In Christianity, the teachings of Jesus Christ are called 'good news' and we ring the bell to materialize the good news."
- The problems they have in ringing the bell: man-power shortage / deterioration of the bells / complaints to the sound of bell.

B. Students of Nikolai-do Theological School (=Bell Ringers)
- Sound to Inherit the Tradition: "As we should't arrange the text of the Prayer Book, we should't arrange the tune of the bell." / "I want the passers-by to know that Nicolai-do Cathedral is.here."
- Struggle as a Ringer: "During my ringing the bells, sometimes my eyes meet the eyes of the patients in the adjacent hospital. This makes me feel worried that we might be causing some trouble. At the same time, I tell myself that this sound of bells are special, and keep ringing the bell."

C. Believers (of Nicolai-do Cathedral)
- Sound Signal for the start time of the service: "The sound of the bell I hear at Ochanomizu railway station means I am late. So I make haste to the cathedral."
- Sound Support for the Faith: "About three years after my going to the cathedral, I used to encourage myself by listening to the bell sound through a telephone service."

D. Local Residents
- Sound Symbol of the Local District:
"I am not a follower of the church, but as I took my first bath hearing the bell ringing, I can boast that I am a Kanda-kid."
- Sound of Home Town: "The time-telling bell was the signal for us to go home, as well as a reminder of my mother's voice and face."

E. Commuters, Passers-by
- Sound to Provoke Certain Images: "It sounds like 'I want to get married as soon as possible.'" / "I don't like it. It makes me sad, recalling my childhood. We were poor, Japan was poor then." / "It is like I am in Rome."

Fig. 4: Five groups of ears to the Nicolai-do Cathedral Bell

bell was actually ringing "Do you hear the bell ring?" And he did not notice the sound at all.

Whilst conducting the survey, some group members developed their own hearing abilities after listening to the interviews with neighboring people. Hitherto unnoticed sounds became noticeable to our ears. For example, although I regularly walked around Kanda before I began the study, I was not aware of the disaster prevention message which was broadcast at 5 o'clock every afternoon. One day, a woman in the neighborhood said, "A sound that I hear every day? It may be only Disaster Prevention Chiyoda. You know that strange announcement that we can hear at 5 in the afternoon." Several days later, whilst I was walking toward my school, a woman's voice, "Disaster Prevention Chiyoda…" came into my mind as I heard a gigantic column of sound emerging out of the surrounding city noises. I was walking the same route for years, but I had never heard it. From that day on, I heard the announcement on the same day of the week.

People who hear the bell which is not ringing

In contrast, there were respondents who said they could hear the sound of the bell even though they lived outside its audible sphere, or even after the bell ceased to ring. We conducted a survey in a small restaurant around Kanda Myojin Shrine and asked customers "When does the bell of Nicolai-do Cathedral ring?". One of them said," I gather it rings when I start the day's work. It always rings around five o'clock in the afternoon." We confirmed, "Some people say that the bell rings only on Sundays, do you think it rings every day?" The owner of the shop joined the customer saying, "It rings at 5 o'clock in the afternoon. It rings every day." These neighbours used to hear the time-telling bell in the past, which stopped ringing about 1965. After nearly two decades in 1987, they said they 'heard' the bell from Nicolai-do Cathedral, around the time their work began each day.

This example, which tends to be regarded as a 'misconception' in fact, implies an important problem. This person has an established a picture of their daily life which also draws on their knowledge and long-time experiences, into which the bell of Nicolai-do Cathedral is firmly built. Even after the bell ceased to ring, his or her perception or understanding was otherwise. Living near Kanda Myojin Shrine

for many years, the person considered that the sound of the bell was a permanent feature and indispensable to his or her life. This suggests that 'memory' and 'knowledge' play important roles in the perception of the sound environment for a particular person, and perhaps for a collective society.

The ears of those who do not hear the ringing bell and those who hear the not-ringing bell, are both examples of the many ears that exist around the Nicolai-do Cathedral. It can be said, as a result of the Interview Survey about the bell, that these two groups added to the 5 groups shown in Fig. 4, are all the variations of ears which were observed around the Bell of Nicolai-do Cathedral.

What do these varied types of the ears listening to the bell mean? The varied ways of hearing the bell equally implies the diversity of how people relate with this district, whether they live here, commute to this district or who happen to pass by. Certainly, this might be easily imagined even without conducting a survey on how people hear the bell. What is important is to clarify the contents of such diversity, and to demonstrate them as this paper has discussed above. Setting a question of how people hear a specific sound in a district, is an effective means of demonstrating how people with various backgrounds relate with the district in a concrete manner.

Significance of Soundscape Studies

Although the most of this paper has described the results of our interviews with the local residents and some others, it should be noted that we also conducted observational surveys using our ears as well as acoustic measurement devices, such as recording machines and sound level meters. Also, bibliographical research was conducted, such as picking up descriptions about the bell of Nicolai-do Cathedral in literary works. This means that a 'one sound oriented survey' comprises a variety of methods within soundscape studies. The same can be said of the 'one place oriented' survey, although no example is given in this paper.

Before concluding this paper, I would like to make several comments on the significance and characteristics of soundscape research as a part of Urban Studies.

A modern city is a complicated set of relationships. In order to analyze this complex structure, Urban Studies should be approached from a plurality of perspectives, requiring various methodologies, on more than one scale. In this situation, Soundscape Study explores a new dimension in Urban Studies by introducing the sense of hearing. In other words, the basic significance of soundscape studies as a part of Urban Studies is that it introduces an aural dimension clearly into the field of Urban Studies.

Regarding the point that a modern city is a complicated set of relationships, it is possible to say that our intensive survey on the bell of Nicolai-do Cathedral has shown that Soundscape Studies itself is an useful methodology to uncover the multi-faceted reality of a city. We have come to realize through the field surveys that there are many 'types' of ears within the same space in a city. At the same time, we have become clearly aware that our own ears are 'outsiders' ears' that can never present absolute or objective truths. In this sense, Soundscape Studies will enable one to obtain a multi-faceted understanding about urban spaces.

As shown in the case of Nicolai-do Cathedral, the soundscape of Kanda comprises multi-layered meanings and realities in the bell sound held by various individuals with different 'ears'. As has been discussed above, the bell is one of the soundmarks of Kanda district. In traditional communities, the members of a community share basically the same 'ear' toward a soundmark. However, our research has revealed that there are diverse 'ears' toward the bell of Nicolai-do Cahtedral in the Kanda district. If a community is to be defined such that its members share the same manner of perception and cognition of a particular soundmark, then Kanda would be far from a "community". In other words, one of the characteristics of city is that it consists of multi-layered communities or groups of individuals.

By *listening* from *within* Kanda, we have become able to better understand the complicated structure of our modern society and able to find an inner-reality. Like other big city areas in Japan, Kanda has a great gap between daytime population and nighttime population. Thus, the population living within the audible sphere of the bell of Nicolai-do Cathedral is extremely small compared to the body of commuters and passers-by in the area. Since workers and passers-by, as shown in the cluster **F** in Fig. 4, are dominant population in the district, their relationship with the bell sound can be considered to be a representative one. In other words,

'sounds of the district' heard by residents only constitutes a little part of the soundscape of Kanda, and their ears cannot always be justified.

We researchers have come to realize through this field survey that there are many ears around the same sound. At the same time, we have become clearly aware that our own ears are 'outsiders' ears' that can never present absolute or objective truths. However, we also recognise that our ears are not unique just because of being different from that of local residents. A metropolis such as Tokyo has a big capacity to integrate various 'outsiders' ears' as a part of its big internal ear. In this way, soundscape survey reveals a multi-layered and, in a way, ambiguous reality of a city.

Based on our soundscape survey, there is another point we can discuss. When a person says, "I recall the sounds I heard in my childhood," the sounds, and the events of the past, are still alive in the person. This is demonstrated by some individuals who 'hear the bell of Nicolai-do Cathedral which is no longer ringing'. The memory and senses are not 'lost' but still 'alive' as a part of their somatic senses. In this sense, our body itself is a memory device.

This is also a reason why, in such interviews, the 'memories of the sounds' are recalled as well as the 'sounds one can hear currently.' In regards to this, Soundscape Studies is sometimes criticized as being nostalgic. The memories of sounds, however, are accumulated and vividly alive within the bodies of people, and the senses stored with memories determine what sounds the persons hears and in what way – *even* those that they do not hear. Furthermore, one's memories of sounds can help provide the criteria for interpreting ones contemporary soundscape. As such, the perception of one's soundscape is comprised of past personal memories and current stimuli both acting upon one another.

The soundscape is not simply limited to reflecting 'the internal reality of a city'. It reflects the reality of the *whole* world in which we live. The world does not consist of physical objects only. In this respect, Soundscape Studies can be a viable method in Urban Studies and other various environmental studies, to cast a light on the profound relation between individuals and their world – a world that cannot be properly understood by modern rationalism alone.

The Sonic Identity of European Cities

A presentation of the work conducted by the Swiss-French researcher Pascal Amphoux

Björn Hellström

During 1998–1999 I had the opportunity to study at the French research institute CRESSON,[1] located in Grenoble, and it was during this period I first had contact with the work of Pascal Amphoux. However, it was not until I was back in Stockholm that I more thoroughly started to study his work *L'identité sonore des villes Européennes* (The Sonic Identity of European Cities). The more I read the more overwhelmed I was by its methodological approach, its epistemological width and its richness of detailed information on how to use the method in practice. It is in its way unique and I'm quite convinced that there is no equivalent work to be found elsewhere.

The *Sonic Identity of European Cities* is constructed as a manual – or a guide – strictly disposed in chronological order, and hence – to be as explicit as possible – I've chosen to follow the original disposition. This article is, thus, a *presentation* of the work and consequently I've excluded my own opinion in the text. This is a unique and a very important work and since it's the first time the work is published in English I hope it can reach out to 'non-francophone' readers.[2]

Introduction

The architect and geographer Pascal Amphoux lives in Lausanne in Switzerland and works as a researcher at IREC[3] in Lausanne and at CRESSON in Grenoble, France. His research activities concerning this methodological work started in the late 80's. In 1991 *Aux ècoutes de la ville*[4] was published, which is an exploration of three Swiss cities. *L'identitè sonore des villes Europèennes*,[5] which this article is focusing on, consists of two volumes and was published in 1993.

The work is indeed multi-modal in the sense that it embraces different methods such as interviews, questionnaires, instrumental and perceptual observations when collecting data. The uniting link, however, is the terminology, i.e., the work consists of a repertoire of concepts that have family resemblance and together these concepts frame a paradigmatic model.

The defined concepts can basically be viewed on two specific levels. First, on a *representational level* in the sense that the concepts together work as a manual with which it's possible to spot the sonic identity of a place. Second, from an *operational level*, i.e., as a potential of creation, in the sense that the user can apply the concepts as tools when designing a sonic environment.

According to Amphoux, one main issue has been to formulate the work to be usable both in theory and in practice. To achieve this, Amphoux has elaborated a multi-modal system that consists of three levels:

- *Technical description*, i.e., recommendations of how to use the methodology in practice;
- *Methodological description*, i.e., methodological clarifications;
- *Theoretical description*, i.e., theoretical references.

The three themes are put into three columns, which means that the layout is easy to survey since one can simultaneously follow the three different descriptive levels on each page.

The work addresses practitioners, elected representatives, researchers, teachers and other professionals who work with the sonic environment, and Amphoux has distinguished three main types of users that respectively refers to three scales of intervention:

- The local politicians, the town planner or the planning technician – on a local political level;
- Those responsible for the future sonic environment – on a regional and national political level;
- The researchers – within the comparative European analysis.

It's also important to bear in mind that the work is a methodological guide and doesn't give any explicit recipes or results, but, on the other hand, it offers the means and tools with which it's possible to approach the sonic identity of a city.

Notion of Urban Sonic Identity

According to Pascal Amphoux, the dominant attitude among politicians and specialists who work in the field of urban sonic environment nowadays can be denoted as defensive. Basically, this attitude consists of "diagnostiquer le mal" (diagnosing the bad) in order to protect citizens from annoying sounds, e.g., to normalise, to regulate, to control, to build noise barriers, to reduce the traffic, to double walls etc. The work of *The Sonic Identity of European Cities* however, is based on the inverse attitude aiming at "diagnostiquer le bien" (diagnosing the good), i.e., to make inquiries about the situations of well-being and also to promote the favourable conditions of an actual and specific sonic quality in urban space. A keyword is, thus, the signification of *quality* in the sense that each urban place has a certain characteristic sonic identity and that the city, within its diversity, produces various sonic ambiences. To picture the sonic identity one must, according to Amphoux, take the given acoustics, the sonic action and the phonic perception into consideration, which means that one has to integrate different disciplines when decoding the quality of sound. Moreover, Amphoux states that social and spatial characteristics today are interpreted solely from a visual point of view, but a further aspect is that the auditory space as well can contribute with valuable information.

Amphoux emphasises that the appreciation of the sonic identity is personal since it can be looked upon both from a subjective and objective viewpoint, but one can also apprehend the sonic identity from an inter-subjective perspective in the sense that the appreciation of sound gradually becomes conform among citi-

zens. In this sense a certain space that 'sounds good' mustn't necessarily be quiet, but Amphoux states that it's rather "a space where the sonic ambience seems to be adequate in relation to ones images".[6]

What about practical matters? Which concepts are suitable as tools when making investigations? How to select a limited number of situations and places that can be representative of the sonic identity of a city? These and other questions will be presented in this article, which are subdivided into the three approaches of:

- **First approach**: *Selection of representative examples – sonic memory*;
- **Second approach**: *Constitution of an analytical framework – sonic perception*;
- **Third approach**: *Characterisation of the sonic identity of a city – sonic interpretation.*

The article ends with an *epilogue* that deals with issues regarding how to handle the method in practice.

To avoid overloading the text with footnotes I've chosen to change the layout of the parts that – more or less – is a translation of Amphoux's work. Mainly, these parts concern the theoretical description, though it's important to bear in mind that it's rather my interpretation of the text than a word-by-word translation.

Some of the concepts that Amphoux uses do not exist and/or are not grammatically correct even in the French language. Instead, these concepts are a construction of Amphoux in order to fit into a linguistic context. It's also important to point out that the field of research is quite new and therefore a continuous development of a descriptive vocabulary is needed, and hence some of the concepts are not possible to find in a glossary.[*]

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[*] This article is not a complete description of the method since it doesn't serve the reader with a complete presentation and clarification of the concepts, which the investigator actually needs when making a survey. This article also lacks criticism of the sources, as well as a presentation of the different underlying theories. However, my intention has been to present the complete list with conceptual clarifications and theoretical explanations within my Ph.D. which I'm working on right now, and which, hopefully, will be examined in the spring 2003.

First Approach – Sonic Memory
Selection of Representative Examples

According to its title, the initial step deals with the selection of places that will serve as field examples, which are representative for the sonic identity of a city. The approach comprises of the two complementary techniques of *The sonic mind maps* and *The phono-reputable inquiry*,[7] and also a final step that concerns the selection of representative places according to the model of CVS (see below theoretical description of the CVS-model).

Sonic Mind Maps

The first technique – the sonic mind maps – aims at locating and making a first selection of representative places. To carry this technique out one needs 20-50 interlocutors who are as diverse as possible regarding age, social categories, education, knowledge of the city where they live and their geographical spread. In brief, each interlocutor has to draw a sonic map of the city and make short comments on the obtained map. The interlocutor is also asked to specify a certain number of places that he/she finds particularly rich in acoustic qualities. Amphoux emphasises that the inquirer must be attentive and helpful if the interlocutor has difficulties in understanding questions and making drawings since the task can be found very abstract. This procedure is quite fast and it takes just two days to produce about twenty maps.

Phono-Reputable Inquiry

The following technique, the phono-reputable inquiry, aims at collecting a number of comments from the obtained maps, from which it's possible to extrapolate pertinent criteria. The inquirer has to gather interlocutors who have a particular sensibility and knowledge of the sonic environment: On the one hand those who operate in the city such as the postman, the stroller, the street musician and the blind; And, on the other hand, those who represent the city such as a columnist, a historian of the city or architecture, an acoustician, a musicologist and a city planner.

In brief, the inquirer starts with a short survey of the framework and the objectives of the meeting. The inquirer also explains the idea of the notion of sonic quality.

Moreover, the interlocutors have to scrutinise questions regarding the sonic qualities of each present place that was selected in the first step, and likewise they'll be asked to propose and reflect upon what type of sonic criteria contribute to the situations of the experiences of well-being. The estimated time to make such an inquiry is three days, comprising four sessions with six or seven interlocutors in each.

Choice of Places – The CVS-model

The next step is to make the final selection of representative examples with the help of the two previous inquiries. To make this possible, Amphoux in a transferred sense relates the three polar model of CVS [*connu* – known, *vécu* – lived and *sensible* – sensed] to three different dimensions of urban sonic identity.[8]

Theoretical Description of the CVS-model

Connu (known) refers to a sonic dimension of *symbolic representation* that is discussed in terms of sonic *symbols* or sonic *emblems* of a city. The symbolic function of sound is much stronger than the conventional sonic code, and known by a great number of people. Thus, the sonic ambience of sonic places known by all, native-born or foreigner fulfils to a great extent a symbolic function – as an epithet – where it has an immediate representation (such as Big Ben in London).

Vécu (lived) refers to a sonic dimension of *indicative expression* that is discussed in terms of sonic *indicia* of a city in the sense that the sound through contiguity reveals, indicates or expresses a particular place. This dimension is, thus, not within the order of representation (it's not necessary to know a particular code to understand the signification), but within the experience that develops through contiguity and by people's practice. The choice of place is, thus, arbitrary and subjective since the sonic dimension of vécu deals with the individual experience. Such a place can be a certain district or a garden where one lives. The sonic indicia of a place or a district is uniform to the listener.

Sensible (sensed) refers to a sonic dimension of *iconic representation* that is discussed in terms of sonic *icons* of a city. This dimension is defined as the proper quality of sound in which one forgets its reference to a factual reality. It doesn't symbolise the epithet of the city or the practice in a district, but the essence of a place, which is totally identified. Thus, Amphoux talks about the 'sonic urbanity of icons'[9] in order to designate the sonic climate that gives the city its particular sonic atmosphere, or where it signifies a place independent of

the geographical situation. The sonic atmosphere of a café or a marketplace can represent such a place. It's the sound within itself that matters, beyond the immediate perception, not its spatial references.

When making the selection of representative places, Amphoux outlines four principle orders: 1. Creating a list of places and synthesising the commentaries and their orders in function of the level of redundancy. I.e., when analysing the results of the mind maps and the phono-reputable inquiries, it's important to dispose of irrelevant data; 2. Indicating the motive of the commentaries, and distinguishing the sonic identity in accordance with the CVS-model; 3. Setting up the quantitative limitations of places and the analysed situations in accordance with the means and the time that one disposes. I.e., a limited investigation may comprise of a smaller amount of places in comparison with an extensive investigation; 4. Distributing a reasonable amount of places according to the CVS-model, i.e., to choose about ten places of which a third conform respectively to either the polarity of 'connu', 'vécu' or 'sensible'.

Thus, the relation of CVS becomes the control instrument – from a sonic identification viewpoint – when balancing the analysed places. Finally, after the selection and balancing of about ten places which are representative for the sonic identity of a city, one has:

- [C] Three or four *representative places*, in the sense that they are well *known* to all the people in the survey (mentioned by most of the consulted interlocutors). The places that are taken under consideration are places such as "the main street" and "the town-hall".
- [V] Three or four *expressive places*, in the sense that they represent and give rise to certain personal *experiences* – a street, a place, a public garden. The choice of places is individual and arbitrary since it varies in accordance with the interviewee's personal behaviour and to the places he or she use frequently.
- [S] Three or four *sensed places*, in the sense they give rise to a specific 'sentiment of city'.[10] Most of such places express a 'sonic urbanity' within themselves, e.g., the marketplace, the station and the café.

Amphoux emphasises that the three criteria of known, lived and sensed (*CVS*) are

always present at the same time in this three polar model. Within a certain sonic space one of these three polarities can be dominating, but the two others are always present to some extent.

The Second Approach – Sonic Perception
Constitution of an Analytical Framework

The first approach dealt with citizens' memory and specialists within different disciplines, with the purpose to select representative places. This second approach, however, is focusing on the perception of sound. This doesn't concern people's knowledge, practice or sensed relation to the city, but it deals with people's perception of sound and how they react when listening to sonic fragments. Initially, this is realised through recordings of the places that were selected in the first phase. Amphoux states that it is possible – within a limited study – to skip this approach and pass directly to the third approach (i.e., *characterisation of the sonic identity of a city*).

The Synoptic Form Supporting the Sound Recordings

In order to be as precise as possible, Amphoux emphasises that it's of great importance to control the process when making a sound recording. Accordingly, he's outlined a synoptic form that comprises four main categories: *location, composition, intention* and *factual information* respectively that'll support the sound recording.

- *Location* concerns the name of the place, but it's also important to mark out exactly where the recording took place.
- *Composition* – this is doubtlessly the most extensive part of these four categories concerning the rendering of the sounds into a synthetic form that was earlier described by the interviewed people. Amphoux has outlined three categories: *sonic background, sonic ambience* and *sonic signals* in order to subdivide the sonic environment into manageable parts, which also help the investigator to store the information in an operative form. Another advantage when subdividing the sonic landscape is that it obliges the inves-

tigator to be extremely concrete when recording the sonic elements (see also
the theoretical description of sonic background, sonic ambience and sonic
signal in the next part).

— *Intention* is about giving the sound recordist as precise information as pos-
sible on the qualitative criteria that distinguishes a certain place.

— *Information* concerns the timetable, e.g., when the recordings took place
etc., but also a column that is reserved for different types of information.

Theoretical Description of Sonic Background,
Sonic Ambience and Sonic Signals

As was stated above, Amphoux has outlined three categories: *sonic background*,
sonic ambience and *sonic signals* – as a conceptual tool – in order to distinguish
certain sonic environmental characteristics. The three categories correlate to
aspects such as the listening behaviour, and also spatial and temporal aspects
within the environment.

The category *sonic background* refers to an order that one actually doesn't pay
any attention to. Yet, it's clearly audible from that moment when starting to
listen actively. Amphoux defines the sonic background with the sentence "one
must listen to it to 'attend' it",[11] which implies that it plays a silent role because
it reveals other sonic orders. In a transferred sense Amphoux applies Pierre
Schaeffer's model of ordinary listening that consists of the four listening cat-
egories *listening, hearing, attending* and *comprehending*.[12] The sonic background
corresponds to Schaeffer's listening perspective *hearing* (ouïr). When Amphoux
connects 'hearing' with sonic background, he unites the concept with a third
person in the sense of 'one hears', independently of what 'I' do or what 'you' do.
Moreover, he states that "one can neither attend it, nor listen to it, but it will
always be heard if one is not deaf".[13] From a time perspective view sonic back-
ground can be outlined in terms of *continuity* or *duration*, i.e., it's an ongoing
stream – a *continuum* – of sounds.

The category of *sonic ambience*, Amphoux defines as the composition of the
present sounds within a sonic environment, i.e., the sound that gives a distinc-
tive character – a sonic code – to a place. Moreover, Amphoux correlates 'sonic
ambience' to Schaeffer's listening perspective of *attending*. Briefly, Schaeffer's
definition of attending deals with a perceptual field when we don't etymologise
the sound, i.e., we don't search for the sound's derivation and origin. Instead

our perception operates on a selective level: we are searching for specific quali-
ties of a certain sound and/or a sonic ambience.

Thus, it is the sounds within themselves that are in focus and not their
physical context. Amphoux uses the term *écoute flottante* (floating listening) to
describe the process when we are confronted with this type of sonic order.
Moreover, he discusses 'sonic ambience' by correlating 'attending' to a second
person in the sense that one can put the question 'did you attend?' in order to
reassure what was perceived. Amphoux says that it's hardly necessary to listen
actively to perceive the 'sonic ambience'. Contrary to 'sonic background' he
states that: 'one can attend to the sound without listening'[14] – and he exempli-
fies this sentence with the French expression of: "Il y a de l'ambiance ici!" (It's a
nice atmosphere here!). On the other hand, however – regarding the above
sentence from a reverse angle – Amphoux states that: 'one can not listen to
other signals without attending to them',[15] which implicates that we will al-
ways be attentive to the characteristic sounds when listening. From a temporal
viewpoint Amphoux says that the sonic ambience can be characterised through
its *dynamics* in the sense that it's the mobility, the movement, the rhythm and
the alteration of the sonic units of a cohesive ensemble that constitutes the
sonic ambience of a place.

The third category, the *sonic signals*, concerns emitted sounds that one envis-
ages from an acoustical viewpoint (e.g., difference in intensity), a statistical
viewpoint (e.g., an aleatorical event), a psycho-sociological or a semantic view-
point (e.g., an uncommon noise). The 'sonic signal' correlates to Schaeffer's
perspective of *listening*, which deals with the intermediation of sound and the
event that caused the sound. Amphoux discusses 'sonic signals' by correlating
'listening' with the first person in the sense that 'I'm listening', which impli-
cates that one acts intentionally and with determination on the subject that
makes us start listening: "one cannot listen without hearing and attending".[16]

The sonic signal, literally speaking, grabs our attention: the signal will sud-
denly appear in our mind, unexpectedly, we don't have to listen but instead the
signal will always call for our attention; contrary to the sonic background "one
has to pay attention to it to listen to it".[17] From a temporal viewpoint, the
signal is always a *discontinuity*; it's an order of a *sonic event* that makes us listen.

Amphoux states that the dividing of the sonic environment into the three or-
ders *background*, *ambience* and *signal* also can be discussed in terms of the dual
relation of figure / ground that is a dominating theory within the field of ge-

stalt psychology. In brief, the duality of figure / ground in a transferred sense can be substituted by the above described trilogy *background / ambience / signal* which is reflected into the three temporalities *duration / dynamics / event*, and the three functions of ordinary listening which are *hearing / attending / listening*.

The Achievement of Sound Tracks and Interviews Concerning Listening Perception

The next two steps deal, firstly, with the sound recording of the chosen places, which Amphoux has outlined with very detailed instructions on how to carry this through. The second step is detailed and concerns the interviews and comprising different manuals and forms. However, regarding the limitation of this article it's not possible to go deeper into the conducting of the sound recording and the realisation of the interviews. Instead the article will continue with the third and last approach.

Nevertheless, the core of this second approach is Amphoux's framing of the three categories *sonic background*, *sonic ambience* and *sonic signals*.

The Third Approach – Sonic Interpretation
Characterisation of the Sonic Identity of a City

The third approach – *Characterisation of the sonic identity of a city* – is interpretative in the sense that it aims at making an assessment of the obtained results from the first and second approaches (i.e., *Selection of representative examples* and *Constitution of an analytical framework*). The tools for this assessment consist of a *Sonic Identity Chart* and a *Repertoire of Qualitative Criteria* that Amphoux has outlined. The main focus of both 'tools' embodies three radical different modalities: 1)E, *l'écoute environnementale* (the environmental listening); 2) M, *l'écoute médiale* (the milieu listening), and; 3) P, *l'écoute paysagère* (the landscape listening), also known as the *model of EMP*. These three modalities designate different types of relation to the 'sonic World',[18] each one denominating certain qualities: [E] denominates the *representation* of the sonic environment; [M] the *expression* of the sonic milieu; and [P] the *perception* of the sonic landscape. Thus, they concern different contexts of sounds.

This third approach – *Characterisation of the sonic identity of a city* – is the final part and the average number of places when making such an investigation is about ten.

The Sonic Identity Chart and the Repertoire of Qualitative Criteria

The Sonic Identity Chart has been outlined in tabular form where the investigator makes the notations of the obtained results. When making an investigation of a city, the investigator has to fill in one form of each explored place. The chart consists of four different categories: 1. *Specifications of sequences*; 2. *Synthesis of hypotheses and comments*; 3. *Semantic niche and remarkable expressions; and* 4. *Objectification of qualitative criteria*. The first three categories consist of compiling the results from the obtained maps, interviews, inquiries and recordings. The forth category, however, is doubtlessly the most extensive and consists of a description of the *qualitative criteria* – the sonic identity – of a certain place, expressed in terms of the three modalities of environmental listening (E), milieu listening (M) and landscape listening (P), i.e., the *model of EMP*. The tool for making such a description of the qualitative criteria is the previously mentioned *Repertoire of Qualitative Criteria* that consists of a repertoire of concepts.

The **Sonic Identity Chart** consists of four categories:
  1. Specifications of the sequences, that consist of:
  – A factual description of the sound levels (LEQ – maximal and minimal level);[19]
  – Recognition of the executed interviews (immediate, easy-going, difficult, impossible etc);
  – Short description of the sonic fragments (place, time, audible elements etc);
  – Reception of the sonic fragments (the auditor's relation to the audition and the sonic fragments);
  – A systematic list of the *sonic effects*[20] that were conceived from the interviews. (The use of the *sonic effects* is an important part of Amphoux's work, but due to the limitation of this article it's not possible to give a substantial explanation, see further explanation in previous footnote.)

2. Synthesis of the hypotheses and comments, which consists of an analysis of the content of the executed questionnaires and interviews, and scrutinised in terms of:
— Space (commentaries of the perception of spatial aspects);
— Time (commentaries of the perception of temporal aspects);
— Semantic and/or cultural aspects (commentaries in terms of anonymity, intimacy, nostalgia, ambiguity, tranquillity, integration and cosmopolitan etc);
— Sonic material (commentaries of the perceived sounds-sources of the place).

3. Semantic niche and remarkable expressions, consists of short quotations – in the original language – that have been stated by the interlocutors during the interviews and questionnaires.

4. Objectification of qualitative criteria (that also includes the *Repertoire of Qualitative Criteria*): This fourth category – doubtlessly the core of this work and the most extensive category as well – is the description of the qualitative criteria of the sonic identity, which Amphoux has distinguished into the three different EMP orders:
— [E] : The modality of environment concerns the *acoustic quality* of sound, denoted as the *criteria of quality*. i.e., a sonic order that is objective, assessable and controllable. Beside criteria such as reverberation, intensity, frequency and timbre it also embraces spatial criteria, e.g., in terms of localisation and delocalisation, but also temporal criteria discussed in terms of the rhythm of sound. Thus, the criteria of quality concerns an analytical discourse on the content of sound, denoted by Amphoux as a *sonic environment* (environnement sonore), i.e., an objective order that is outside of us but with which we support the *functional relations* concerning emission and reception, and which is symbolised by [E] (environnement).
— [M] :The modality of milieu concerns the *sonic comfort*, denoted as the *criteria of qualification*, i.e., a sonic order that is amalgamated, natural and vivid, and which arises from the social structure of a place and people's activity. This order is subjective in the sense that one evaluates the sounds in relation to people's practices and habits. Thus, the criteria of qualification concerns an analytical discourse on the form of sound. It is denoted as a *sonic milieu* (milieu sonore), which we are plunged into and with which we support the *united relations* right through our activities; symbolised by the [M] (milieu).
— [P] : The modality of landscape concerns the perceived *quality of sound*,

denoted as the *criteria of qualitativeness*,[21] i.e., a sonic dimension that evokes aesthetical and sensible sensations of sounds. One typical criterion within this order is the representation of sound in the sense that the sounds are e.g., rare, typical and/or authentic. It also deals with the expressiveness of sound, as well as the listener's reflection of sound that, among other things, concerns musical values. The criteria of qualitativeness concerns an analysis of the discourse of the form and the content of sound. It is an inter-subjective order denoted as a *sonic landscape (paysage sonore)*, simultaneously inside and outside of ourselves, with which we support the *perceptual relations* right through our aesthetical experiences; symbolised by [P] (paysage).

Theoretical Explanation of the Three Orders of Sonic Criteria and the Three Types of Listening of the City

As was mentioned above, the three orders of sonic qualitative criteria (quality, qualification and qualitativeness) and the three orders of listening criteria (environment, milieu and landscape) constitute the most extensive part of the Sonic Identity Chart. Together they serve as a tool in order to frame the sonic identity from different perspectives. Below, the theoretical ideas of the definition of the sonic environment, the sonic milieu and the sonic landscape will be outlined.

The sonic environment designates an objective, measurable and controllable whole of the sonic world. In other terms, it's the *representation* that shapes the sonic world when exercising an objective 'listening' (*ècoute*), which is analytical and manageable within a given culture (see also the theoretical description of 'sonic signal'). The object of such a listening concerns, thus, the *acoustic qualities* of the sonic environment. *The criteria of quality* is not only confined to acoustic values such as intensity, frequency and timbre, or to specialists knowledge. On the contrary, it also embraces the collected data from the interviews of "ordinary man" describing the users' space in terms of spatio-temporal criteria, as well as criteria that is linked to the sonic material. Consequently, the criterion of quality designates a quality in itself, which is objective.

The sonic milieu deals with people's acting in the sonic world. In other terms, it concerns the *expression* of the sonic world through the practices, uses or the custom of the inhabitants when exercising the *"hearing"* (*l'ouïe*), i.e., a listening perspective that lacks a particular intention: the listener doesn't search consciously for the sound (see also the theoretical description of "sonic background").

The object with such hearing concerns the *sonic comfort*, individual or collective. On this level, one doesn't talk about "acoustic qualities": the sonic milieu is either of good or bad quality, it's "comfortable" or "uncomfortable". Properly speaking, the sonic world doesn't concern the qualities, but the *qualifications* (of the comfortable and uncomfortable). The qualitative criteria of the sonic milieu concern thus the *criteria of qualification*, which are classified and defined in terms of evaluation, idealisation and imagination. Consequently, the criterion of qualification designates a quality 'through' itself, which is subjective.

The sonic landscape designates the collective field of phenomena that make possible a sensed appreciation of the sonic world. In other terms, it's *the seizure* that operates within the sonic world when reflecting 'attentive' *(entente)*, i.e., an emotive listening or simply the absorbed contemplation from an auditor (see also the theoretical description of 'sonic ambience'). The object with such attention concerns *the phonic beauty* of the sonic landscape. In this order one neither talks of acoustic quality on an objective environmental level, or of the subjective qualification of such a milieu: The sonic landscape concerns the *qualitativeness* – being inter-subjective – by nature subjective and yet universal. The *criteria of qualitativeness* are classified and defined in terms of 'representativeness', 'expressiveness' and 'reflexiveness'. Consequently, the criteria of qualitativeness designate a process that is inter-subjective: which 'by itself takes a value in itself',[22] i.e., the appreciation of certain subjective criteria are shared by a lot of people.

The relation between the modalities of EMP

When discussing the relation between the EMP modalities, it's important to bear in mind that it's not possible to oppose the environment to the landscape, the milieu to the environment etc. Each of the three modalities only make sense in relation to the others and one can only approach this course by successive homologies, i.e., the one of the known, the lived, the sensed / the listening, the hearing, the attending / the symbol, the indicia, the icon / the quality, the qualification, the qualitativeness / the diagnosis, the handling, the creation, etc. The environment is not more important than the milieu or the landscape. Hence, it's not possible to put them in a hierarchical system since these three dimensions are incommensurable. But they are always co-present in relation to the 'World' and it's, thus, a question of treating them jointly.

Summary

To sum up, when analysing and compiling the obtained results in order to describe the sonic identity of a city, the investigator uses a *Sonic Identity Chart* and a *Repertoire of Qualitative Criteria*. The Sonic Identity Chart has been outlined in tabular form where the investigator makes the notations of the obtained results. (See the below enclosed example of a Sonic Identity Chart.) The Repertoire of Qualitative Criteria – that is a part of the Sonic Identity Chart – consists of a vast number of concepts that functions as a tool in order to depict the context of sound, expressed in terms of *environmental quality, qualification of milieu* and *qualitativeness of landscape*: i.e., the criterion of environmental quality gives priority to a physical, spatial and semantic context; the criterion of the qualification of the milieu gives priority to a pragmatic context where the subject or the social group is committed; and the criterion of the qualitativeness of landscape gives priority to a cultural context where the perception is committed. (See the below enclosed 'Scheme: Repertoire of Qualitative Criteria'.)

Due to the limitation of this article it's not possible to present a precise definition of each of the concepts (about 80 in number) that constitutes the Repertoire of Qualitative Criteria. However, it's important to underline that, without knowing the definition of each concept it's in fact impossible to make a survey. Hence, this article is not a complete description of the method since it doesn't serve the reader with a complete list of concepts, as well as it lacks a description of the above-mentioned repertoire of sonic effects.

SONIC IDENTITY CHART (*example*)

1. SPECIFICATION OF THE SEQUENCES:

- *Sound level*: e.g., LEQ 70 max 89 – min 62 – 1.52 minutes.
- *Recognition of the executed interviews*: e.g., in terms of "immediate", "easy-going", "difficult", "impossible".
- *Short description of the sonic fragments*: about the name of place, when it was recorded, about the audible sounds at the place etc.
- *Reception of the sonic fragments*: about the auditor's relation to the audition and the sonic fragments.
- *Sonic Effects*: e.g., in terms of "masking", "reverberation", "cutting" or "cocktail" effect.

2. SYNTHESIS OF THE HYPOTHESES AND COMMENTS:

(Analysis of the content of the executed questionnaires and interviews, scrutinised in the four categories):

- *Space*: e.g., in terms of "reverberant", "diffuse", "unstable" or "omnidirectional" spatiality.
- *Time*: e.g., in terms of "continual", "non-rhythmical" or "non-linear".
- *Semantic/ cultural aspects*: e.g., in terms of "anonymity", "modernity" or "insecurity".
- *Sonic material*: a synthesised description about the commentaries of the perceived sounds-sources of the place.

3. SEMANTIC NICHE AND REMARKABLE EXPRESSIONS:

(Consists of short quotations that have been stated by the interlocutors during the interviews and questionnaires).

- E.g., "It's a mix between the traffic noise, the scattered voices and the kinetic sounds from the moving people."

4. OBJECTIFICATION OF QUALITATIVE CRITERIA: (which also embraces the *Repertoire of Qualitative Criteria*)

(About the qualitative criteria of the sonic identity, expressed in terms of the environmental orders EMP)

- *The criterion of quality* [E]: in terms of "space", "time" or "sonic material".
- *The criterion of qualification* [M]: in terms of "judgement", "ideals" or "images".
- *The criterion of qualitativeness* [P]: in terms of "representativeness", "expressiveness" or "reflexiveness".

SCHEME: REPERTOIRE OF QUALITATIVE CRITERIA

ENVIRONMENTAL LISTENING	**E**
THE ACOUSTIC CRITERIA OF QUALITY	
Spatio-Temporal Criteria	**ee**
- Scale	eee
- Orientation	em
- Atemporality	eep
Semantic-Cultural Criteria	**em**
- Publicity	eme
- Collective memory	emm
- Naturality / Insecurity	emp
Criteria Linked to the Sonic Material	**ep**
- Reverberation	epe
- Sonic signature	epm
- Sonic metabolism	epp
MILIEU LISTENING	**M**
THE SONIC CRITERIA OF QUALIFICATION	
Criteria of Evaluation	**me**
- Artificialisation	mee
- Trivialisation	mem
- Stigmatisation	mep
Criteria of Idealisation	**mm**
- Privatisation	mme
- Metropolisation	mmm
- Naturalisation	mmp
Criteria of Imagination	**mp**
- Visualisation	mpe
- Aesthetisation	mpm
- Fabrication	mpp
LANDSCAPE LISTENING	**P**
THE PHONIC CRITERIA OF QUALITATIVENESS	
Criteria of Representativeness	**pe**
- Typicity pee	
- Rarity	pem
- Authenticity	pep
Criteria of Expressiveness	**pm**
- A sense of internalisation	pme
- A sense of belonging	pmm
- A sense of immersion	pmp
Criteria of Reflexiveness	**pp**
- Schizophony	ppe
- Symphony	ppm
- Eidophony	ppp

Epilogue
Handling of the Urban Sonic Environment

Handling Instrument

Pascal Amphoux emphasises that the work of *The Sonic Identity of European Cities* first of all is a method of analysis of the sonic quality in urban space. The work is not limited to an evaluation of the correlation between sound-levels and the degree of discomfort, but it rather takes architectural, social and cultural dimensions into account. These aspects are usually ignored in the work of noise.

On a local level, Amphoux also points out that the work can support the different local studies that aim at conducting noise maps where specific problems – the 'points noirs' – are documented. In this sense this work can be complementary by spotting the 'unproblematic' – the 'points blancs'. Amphoux also says that the guide is to be used as an instrument for the handling of sounds in urban spaces. The Sonic Identity Chart constitutes not a goal in itself, but it supplies the support of information, which is updateable and complementary to a noise map. Since the method is applicable within different cultural contexts, it also can be regarded on a global level as a starting-point of a European comparative methodology.

The two homologous models of CVS (*connu* – known, *vécu* – lived and *sensible* – sensed) and EMP (*environnement* – environment, *milieu* – milieu and *paysage* – landscape) bring a pragmatic and theoretical support in order to develop and to control the different levels of intervention.

In the concluding part the three different operative attitudes of *handling of the environment, handling of the milieu* and *handling of the landscape* will be discussed. Amphoux denotes these 'operative attitudes' as three political poles in the sense that they outline three different *plans of action* concerning the handling of the urban sonic environment.

Handling of the Environment

The first attitude is *defensive* and consists of *protecting the sonic environment* from acoustic pollution, which firstly concerns the traditional institutions, e.g., to normalise, to regulate, to control, to build noise barriers, to double the walls, to thicken the interior partitions, to divert the stream of cars, to reduce the traffic etc. But

Amphoux also adds the importance of protecting the acoustic qualities such as the spatial and temporal configurations, and also the social and cultural signification that constitutes the objective conditions of the identity of the sonic environment.

Handling of the environment is, thus, operative within the frame of *national, regional* or *local observations of the sonic environment*. Such observations aim at – on the one hand – collecting statistics and quantifiable acoustic data, and – on the other hand – collecting data of the listed variables of the qualitative criteria in order to acquire a comparative analytical tool of the acoustic quality of the sonic environment.

Handling of the Milieu

The second, inverse, attitude Amphoux denotes as *offensive*, since it aims at *consolidating the sonic milieu*, i.e., to strengthen the amalgamated and vivid dimension of a certain place and also to bring out the sonic comfort to the inhabitants. Amphoux emphasises that such a program is evidently very large since it concerns the *handling of the declared micro-social conflicts and their prevention*. i.e., people's opinions about sounds and noises differs a lot. Some people find a certain sound-source disturbing, whereas other can handle it without any problem. This conflict between different opinions may cause problem when planning and regulating the sonic environment at a certain place. The comfort problematics shall, thus, be viewed in the frame of security and social communication.

The handling of the milieu is also directed to a political order that concerns *regulation of social interactions*, e.g., treatment of the complaints of noise in the neighbourhood. The question of the public awareness is another important political issue, which will stimulate and supply the inhabitants with instruments so they – as far as possible – can regulate and control their own sonic milieu.

Handling of the Landscape

Finally, the third attitude is *creative* in the sense that it consists of *composing the landscape*. Two types of actions are outlined. Firstly, Amphoux discusses the rather new profession of urban light design, which rapidly has won great success among politicians and habitants. On the analogy of light design, Amphoux discusses the need of an *urban sonic designer*, i.e., a new type of discipline that must be built up by

savoir-faire and experiences in order to find its public and its usefulness. Secondly, he discusses the promotion of operations in order to stimulate citizens' *consciousness of the sonic environment*, e.g., to develop a large public register of urban sonic recordings, to organise sonic exposition and manifestations that aims at stimulating and improving the citizens awareness of the richness of sonic qualities etc. This is, indeed, a new perspective that deeply acts on the cultural and esthetical moods of our hearing.

Summary of the Handling of the Urban Sonic Environment

Firstly, this guide is a *tool of representation* – i.e., a descriptive level – in the sense that it supplies instruments in order to spot and to describe the sonic identity of a place. Secondly, this guide is also a *potential of creation* – i.e., an operative level – in the sense that it can be used as a tool when designing a sonic environment, which operational model – divided into three forms of identity – is outlined as follows:

PROTECTION OF THE SONIC ENVIRONMENT	CONSOLIDATION OF THE SONIC MILIEU
Defensive attitude	Offensive attitude
Technician	User – habitant
Normative and evaluative control	Regulation of social interactions
'Acoustic correction'	'Sonic development'
Observation of the sonic environment	Treatment of plaint and social action

COMPOSITION OF THE SONIC LANDSCAPE

Creative attitude

Designer

Evolution of cultural and esthetical models

'Phonic creation

Urban sonic design

METHODOLOGICAL OVERVIEW

course of action: course of action:

First Approach	**Second Approach**
Sonic Memory	**Sonic Perception**
Selection of representative places	*Constitution of an analytical framework, which aims at analysing interviewees' perception of sound recordings of the representative places.*
sonic mind maps (*first selection*)	
phono-reputable inquiry (*second selection*)	synoptic form supporting the sound recordings
choice of places – the CVS-model (*third and final selection*)	

successive homologies: successive homologies:

known	lived	sensed		signal	background	ambience
symbol	index	icon		listening	hearing	attending

course of action: course of action:

Third Approach	**Handling of the**
Sonic Interpretation	**Urban Environment**
Analysis and compilation of the obtained results in order to characterise the sonic identity of a City	*Three plans of action concerning the handling of the sonic environment*
	diagnosis of the environment *protecting*
sonic identity chart, repertoire of qualitative criteria, the EMP-model	management of the milieu *consolidating*
	creation of the landscape *composing*

successive homologies: successive homologies:

environment	milieu	landscape		defensive	offensive	creative
quality	qualification	qualitativeness		technician	habitant	designer

Footnotes

[1] The French institute CRESSON (Centre de Recherche sur l'Espace Sonore et l'Environnement) is located in Grenoble and connected to the School of Architecture. See http://www.cresson.archi.fr/

[2] I'm also taking the opportunity to thank Nicolas Remy and Nicolas Tixier for being the link between Mr. Amphoux and myself, but also for all the support regarding valuable advice and helpful clarifications of the work.

[3] The Swiss institute IREC (Institut de Recherche sur l'Environnement Construit) is located in Lausanne and connected to the Department of Architecture, Federal School of Polytechnic.

[4] AMPHOUX Pascal, *Aux écoutes de la ville*, Rapport de recherche N°94, IREC, Lausanne 1991.

[5] AMPHOUX Pascal, *L'identité sonore des villes Européennes* – Guide méthodologique, à l'usage des gestionnaires de la ville, des techniciens du son et des chercheurs en sciences sociales. Tome 1: Techniques d'enquêtes, Tome 2: Répertoire de concepts. CRESSON / IREC, 1993:Rapport no 117.

[6] "un espace dont l'ambiance sonore semble adéquate par rapport à l'image que l'on s'en fait", Idem, p. 7.

[7] "l'enquête phonoréputationelle", Idem p. 13.

[8] The CVS-model is most common applied in the field of geography, communication theory and semiology, Idem, p. 15.

[9] "d'une urbanité l'icône sonore", Idem, p. 16.

[10] "sentiment de la ville" ("le Stadtgefühl"), Idem p. 16.

[11] "il faut l'écouter pour l'entendre", Idem, p. 21.

[12] In *Traité des Objets Musicaux*, Editions du Seuil, 1966, the French composer, engineer and author Pierre Schaeffer distinguish four different modes of listening: *écouter* (listening); *ouïr* (hearing); *entendre* (attending) and *comprendre* (comprehending). These four verbs are subordinated to the listening perspective that Schaeffer entitles *écoute ordinaire* (ordinary listening), which concerns an identification process in the sense that the sound is used as a medium: the surrounding sonic information is decoded with the four above listening modes. Briefly, the four verbs *listening, hearing, attending* and *comprehending* deals with:
    – *Listening*: deals with the attention to someone or something; the intermediation of sound and the event that caused the sound. The sound is treated as indicia of the source.
    – *Hearing*: concerns the most elementary rough order of listening perception. One listens passively without specifically searching for a certain sound and/or explicitly comprehending the sonic information.
    – *Attending*: deals with the perceptual stage when one doesn't etymologise the sound: the sounds' derivation and origin aren't searched for. Instead the perception operates on a selective level: one searches the specific qualities of a certain sound.
    – *Comprehending*: is a semantic mode of listening. The sound is treated as a sign or a code that consists of certain values.

[13] "il peut n'être ni entendu, ni écouté; mais il sera toujours ouï par qui n'est pas sourd", AMPHOUX P, *Aux ecoutes de la ville*, Ibid. p. 62.

[14] "on peut l'entendre sans l'écouter", AMPHOUX Pascal, *L'identité sonore des villes Européennes*, Ibid. p. 21.

[15] "on ne peut écouter d'autre signaux sans l'entendre", Idem, p. 21.

[16] "il ne peut écouter sans ouïr et entendre", AMPHOUX P, *Aux ecoutes de la ville*, Ibid p. 62.

[17] "il faut l'entendre pour l'écouter", Idem, AMPHOUX Pascal, *L'identité sonore des villes Européennes*, Ibid. p 21.

[18] When discussing the sound environment from an overall viewpoint Amphoux uses the denomination "*Monde* sonore" (sonic *World*).

[19] L_{EQ} concerns the equivalent level of sound pressure, expressed in dB.

[20] The notion of sonic effects is indeed a very extensive and important work developed at CRESSON and published in: *A l'Écoute de l'environnement* (Augoyard, Torgue and others, Editions Parenthèses, 1995) – and to do full justice to this work would demand a thorough survey.

When the book was published in 1995 the research and elaboration of the repertoire of sonic effects had been going on at Cresson for more than ten years. One can say that this work mirrors the dominating attitude at Cresson, i.e., to approach the urban environment from a multidisciplinary point of view, and through detailed investigations elaborate design tools that are suitable within the architectural sphere.

What is then a *sonic effect*? In brief, a sonic effect can not be described as a pure concept but is rather a generic concept since it functions as an intermediate link between different disciplines. The repertoire of sonic effects – which consists of sixteen major and about sixty minor effects – is to be used in order to identify and describe the vast amount of sonic configurations that arise in the built environment. Each of the major effects is systematically defined into acoustical, architectural, sociological, psychological, cultural, philosophical and musical contexts, and consequently the approach is multi-disciplinary. Moreover, one can say that the ensemble of sonic effects function as a guide that supports a general discourse of sound.

N.B. the French expression "sonic effects" is "*effets sonores*" and when translating it into English the Cresson-researchers prefer to use "*sound* effects". However, the reason why I've chosen "*sonic* effects" is not to mix the concept with the notion of "sound effects" which is commonly used within the terminology of electroacoustic music and popular music as well. Their context is by all means considerably narrow.

[21] Amphoux uses the concept of "qualitativité" which in fact is not grammatically correct. The concept is a construction in order to fit into a linguistic context, but later on in his work Amphoux uses the homologue noun of "rareté" (rarity) and "expressivité" (expressiveness). Hence, the concept/noun of qualitativité can be turned into the English noun *qualitativeness*.

[22] "de qui pour soi prend une valeur en soi", AMPHOUX Pascal, *L'identité sonore des villes Européennes*, Ibid p 38.

Street Listening

A Characterisation of the Sound Environment:
The «qualified listening in motion» method

Nicolas Tixier

Introduction

We have been developing an approach based on a more qualitative study of the sound environment which will complement in a preparatory fashion the usual metrological surveying techniques used in urban acoustics. It is directly based on the notion of atmosphere (called "ambiance" in French[1]) and the descriptive and interpretative tools: the sound effects[2]. This method was developed in collaboration with Nicolas Boyer under the direction of Jean-François Augoyard. It has been used in an exploratory fashion in several research projects[3–4] with the interdisciplinary collaboration of other laboratories [physical characterisation, numeric simulation]. Two sites were used for this study: the Vigny-Musset district in Grenoble (Isère), and the Port au Blé district in Rezé (Loire-Atlantique).

Methodology

Approaching a "sound atmosphere" ("ambiances sonores") involves an interdisciplinary process taking into account both the physical and the constructed dimensions of the space, as well as the social and perceptive dimensions of the users. We

will thus make the triple postulate of an approach which will be: urban, in situ and dynamic. Our qualified-listening (écoute qualifiée) method stems directly from the method of the commented city walks[5] by Jean-Paul Thibaud.

The commented city walks can be illustrated by the three verbs of action: "to walk, to perceive and to describe". Moreover, they are adapted to three main hypotheses in order to apprehend our sensible environment:

1. To reaffirm the importance of context in the survey's system. This concerns a reintroduction of a double contextual dimension that is often absent within sensible studies as well as urban and pragmatic dimensions: i.e. the way we act in a city. This is to be done in situation, in context and through the action of walking with the purpose of participating in the emergence of these sound phenomena.
2. A relationship between the order of description and the order of perception, which concerns the recognition of the habitants' competence in describing the environment where they live.
3. The order of perception concerns the habitants' mobility, therefore the choice of a dynamic situation for the approach.

Jean-Paul Thibaud states that it's more a question of avoiding a scholarly and disengaged description, than of aiming at an ordinary and participatory one.

This proposed method is an adaptation of the method of the commented city walks. This adaptation can be differentiated through three principal aspects :

1. the focusing on the description of the sonic environment ;
2. the demands of a technical system ;
3. a final form that articulates different types of materials.

The next step, after an architectural and urban survey, is to obtain the reports of what is perceived whilst moving, thanks to a recording device and acoustic amplification.

Fig. 1: Walking, listening and describing.

The *listening subject* is fitted out with two systems of synchronised recording equipment:

- The amplified listening apparatus: a directional microphone + a pole that the listener directs himself + D.A.T. recording of the sound environment + headphones (the band is adjusted to dB(A) level to enable a later metrological analysis).
- Comments: a small lapel mounted microphone + Dictaphone recording of the descriptions.

This technical apparatus, thanks to the emphasis it lays on the surrounding sounds, helps the participant to speak of what is usually taken for granted and is thus difficult to express, namely our everyday sound environment. This equipment generates a paradoxical situation, since one at the same time is outside the context (we are listening with headphones), but also within the context (one listening while walking in the city). The distance between these two ambivalent situations which take place simultaneously facilitates the verbalisation and the concentration of the entire process.

A researcher accompanies the participants in order to guide them and to encourage them to speak if necessary. His presence is sometimes necessary to put the comments into context and to note their relative importance. The participants are mainly selected on the basis of their connections – or lack of them – to the studied

space: lodgings, work, shops, school, walks, gardens… They go round the circuits at different times of the day, on different days, and even in different weather conditions. By the amount of the repetitions whithin the comments of fifteen candidates, it is soon clear that it's very possible to circumscribe the different phenomena. The instruction before starting the course is simple: i.e. to say what one hears and to comment on it. In order to help a person, if that is necessary, the researcher can specify that he/she can list the sound phenomena. When possible, try to qualify them and explain the relations they maintain with the city, the people or oneself. It's also necessary for the candidates, from time to time, to describe their location precisely in order to facilitate the phase of the analysis.

Methodology

☐ in situ research

☐ Analysis

▨ Results

Fig. 2: General
methodology
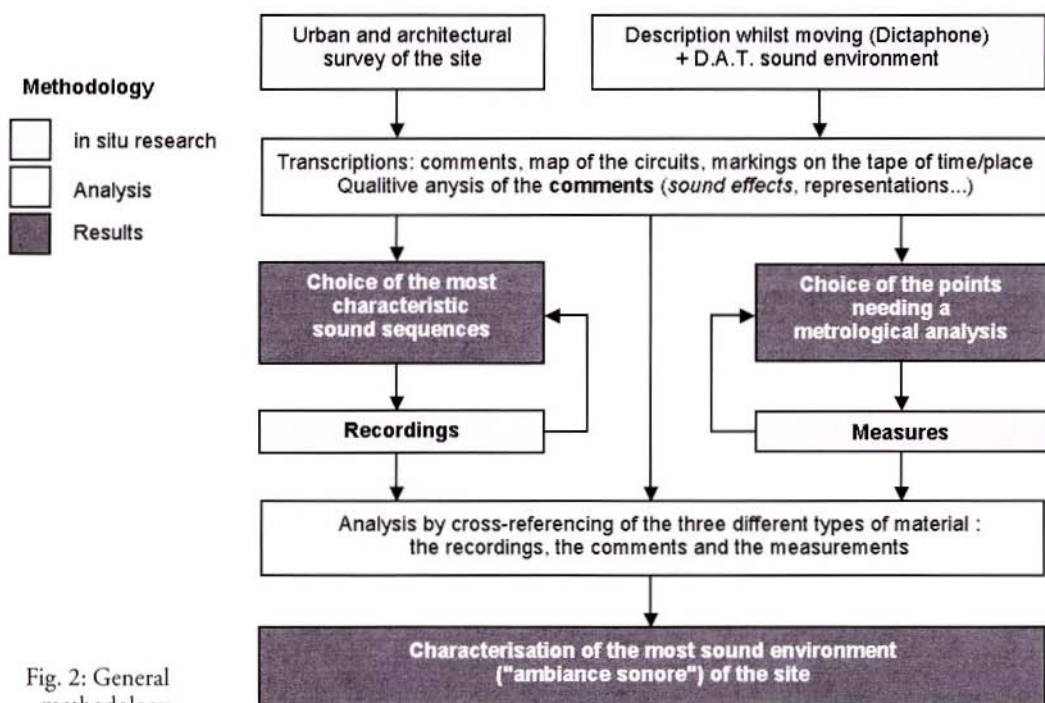
Analysis

The qualitative analysis of the participant's comments in response to the built environment is done by following a technique called "table and scissors" (la table et les ciseaux) (a phrase coined by Y. Chalas[6]). This technique is often used for the construction of typologies, and in figurative analysis (analyse figurative). The sequencing into meaningful entities is done by following five modes of apprehending sounds. The first three correspond to three of the four ways of listening listed by Pierre Schaeffer[7] namely: **hearing** (unprocessed sounds, "ouïr"), **attending** (qualitative perception or perceptions qualifiées, "entendre") and **listening** (indications, "écouter"). The fourth listening modality is the **comprehending** ("comprendre"): it corresponds to the researchers ability of listening. The analysis of the comments implies the adjunction of two more criteria: the sounds directly linked to the participant's statements which qualify the sound space in a more general way. This second stage enables us to list the qualities and the sound phenomena according to the different spaces and transitions studied. This enables us to select what is major and sufficiently recurrent within the sound environment to record and to measure the characteristics of these phenomena, in a third stage. Finally, an analysis combining these three types of data (comments, recordings and measurements) allows us to specify the more noteworthy sound atmospheres of the site.

It is important to pay attention to one certain point of the method. The process of walking engages a general articulation between different spaces. This change causes different events and facilitate the description of sound spaces by the appearance of contrast, i.e. effect of cut, continuity, ubiquity, etc. Thus the discourse carries alternative of what occurs, what occurred and what will occur (I will hear that…) and of what will not occur. In other words, the dynamics of the city walks which permit the mixing between the spatial and temporal sonic spaces, allows the development of the characteristics of the crossing places. This advantage implies also a disadvantage, since this methodology appears less adapted to describe homogeneous environments.

Example

To illustrate this method, here is a simplified example of two "mask" effects on a short sequence taken from the Nantes study (Rezé). The participant walks along a two lane road lined with low buildings, skirts a rather busy roundabout, walks away from it, then along a pavement, to finally enter an open-space where there is a tram stop.

Fig. 3: [Bus + Tram: levels dB(A)] Two "mask" effects/ two different perceptions

Fig. 4 : Cross-referencing of different types of material (extract)

Recording (D.A.T.)	Interesting expressions (extracts) (Dictaphone)	Description of the sound effect	Temporality Sequence	Indicative measurements	Synthesis Comments
...					
Flow of cars	–"... In fact, the cars make such a noise that any other sound is drowned out. I can see the tram, but I can't even hear it." –"a moped, but I did not really hear it. One can't hear any birds at all." –"And so this is ... well there I could not say a thing, it was impossible to hear anything."	"Mask" Continuum	Continuous	$L_{eq(10 s)}$ = 63 dB(A) (during traffic)	The participants even stop talking (the cars drown their voices) and wait until the noise has died down or until they have walked further. In general people walk faster when skirting the roundabout.
...					
The tram goes by (It's arrival, bell rings, it brakes, the doors open, passengers get on and off, the doors close, it drives away)	–" I can hear... yes, ... faintly hear the tram. " –"Now I can hear the tram going by. " –"The tram is pulling away, my ears are ringing slightly." –" The tram bells. " –"Whirrrrrrr, it is pulling away, I can hear it clearly. " –"And here comes a tram... now ... it is slowing down...whizzzz.... now, it is whistling again. It's stopping. "	Emergence Crescendo Signal "Mask"	Narrative Series of events	$L_{eq(10 s)}$ = 75 dB(A) (when the tram comes) L_{max} = 84 dB(A)	People note the tram's arrival far more than its departure. Narrative sequence.
...					

There are two occurrences of the masking effect within this short walk linked to the passage of cars. The first one is generated by the traffic at the roundabout. It is characterised by several factors. First of all, people express it in a direct manner: *"the cars make such a noise any other sound is drowned out"*. Secondly, they also express it in a more indirect way, through its impregnation on the general context: *"I can see the tram but I can't even hear it"*. Thirdly, it is noticeable when listening to the comments themselves that the subjects stop talking and only resume their commentary once they have left the roundabout. Fourthly it is recorded and fifthly it is characterised by a measurement. This effect is generally perceived as being a nuisance: people walk faster when they go past and this negative connotation is found in the different comments, going as far even as the obliteration of the identity of "the mask": *"it is impossible to hear anything"*, when in fact one can clearly hear it.

On the contrary, the "mask" effect created by the tram's arrival is never perceived as a nuisance whereas the noise level is clearly more important. The sound characteristics of the tramway and its use have the dual characteristic of forming a series of events limited in time (whereas car traffic partakes of a continuum) and part of a narrative (the series of events forming a meaningful sequence).

Conclusion

The localisation and the characterisation of the meaningful sound phenomena allow a metrological economy, by answering the classical questions on the acoustic evaluation of a large urban zone: what should one measure, where, when, and using what types of measures and analysis? This complementary approach to the more classical techniques enable us to widen the field of the observable in acoustic metrology thanks to an interdisciplinary combination of the sound phenomenon (characterisation of the built surroundings, of the activities, urban perceptions, measures and temporality …) Furthermore, the measurements and recordings only grasp certain dimensions of the perceived sound environment. Taking the walk-course as a basis, the urban speech and way of listening introduce fundamental parameters to the qualification of atmosphere, namely **the time dynamics and the interaction of the city dwellers to their surroundings**. This method can be easily adapted to the different places and purposes of the study.

But in conclusion, I'd like to point out one very important thing that appeared little by little during the studies : In classical surveys like questionnaires, it is the participants who give the informations that will be analysed. In this method, we have an exchange between the participant and the researcher : it is no ordinary action to listen and comment upon one's own everyday environment. For this reason, it is an "ecological" and "citizen" experience which transforms the participant's perception and social representations of their sound environment.

Endnotes

[1] Augoyard Jean-François, "L'environnement sensible et les ambiances architecturales", in *L'espace géographique*, n°4, pp. 302–318, 1995.

[2] Augoyard Jean-François, Torgue Henry, *A l'écoute de l'environnement sonore. Répertoire des effets sonores*, Éditions Parenthèses, Marseille, 1995.

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[4] Boyer Nicolas, Tixier Nicolas, *Enquête par immersion interactive sur les procédures de maîtrise des ambiances sonores dans le projet architectural*, sous la direction de Jean-François Augoyard, Cresson & Ministère de la culture et de la communication, subvention de recherche DGAD/SRAE/95288, 187 p. + Cd-Rom, juillet 1999 + Internet site: http://www.cresson.archi.fr/E2I/Site/Pages/home.htm.

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Site Interpretation by Skilled Listeners

Methods for Communicating Soundscapes in Landscape Architecture and Planning

Per Hedfors and Per G. Berg

The essence of the Landscape architect method is to weigh together a great number of variables relevant to the complex problems we need to solve (McHarg, 1992; Hall, 1995; Thompson, 2000). One typical feature is that theoretical approaches and practical solutions must often be used simultaneously (Roe, 2000). Another is that quantitative data must predominantly align with qualitative estimates (Benson & Roe, 2000). In our research field, *planning for sustainability in townscapes and infrastructures*, this multi-variable approach is crucial for understanding modern human habitats (Berg & Nycander, 1997; UNCED, 1992).

Like any other mammal, *Homo sapiens* is dependent on several senses for orientation, communication and general perception in any environment (Bell et al., 2000). Yet landscape architecture and planning are guided almost exclusively by visual thinking (Pallasmaa, 1996). The tools of architecture have traditionally been the pen and the drawing, both of which appeal to the sense of sight. But the human species -- like all other animals -- is a multiple-sensory organism. An appropriate step in creating sustainable human habitats is to investigate other senses that are complementary to sight.

The overall aim of this Research is to develop tools to facilitate the inclusion of environmental sounds in landscape architecture and planning. This paper presents suitable methods for field observation. An interview manual regarding sounds and their implications has been created. Interviews are supplemented with questionnaires dealing with both the influence of soundscapes, and sound sources contrib-

uting to the sonic environment. In combination, the comments and the sites visited constitute vital components in planning and design terminology.

Schön (1983) describes the architects as *reflective practitioners* who, through the daily practice of their profession, build up a repertoire of images, examples, and understanding. This repertoire accumulates through critical analysis of the effects of their own practical plans and solutions. Future results of the presented methods can broaden the repertoire of these reflecting practitioners. When outdoor environments are designed, the practitioners can make note of how the acoustic questions are addressed.

Architectural Research often involves retrieving data from physical locations. Individual cases are described, evaluated and serve as models (Yin, 1994). Since the cases are real, they can be visited and the results of the case studies can be viewed in their natural context, making them concrete to the viewer.

Research in landscape architecture focuses on the qualities of outdoor settings. The investigative methods we present here will allow a study of the soundscapes of the outdoor environments through careful auditory evaluations of the value of a park or landscape. The methods allow us to describe and evaluate soundscapes through the essential participation of interviewees. The evaluations are performed on site, where subjects are asked to describe their auditory experiences.

Methods for acoustic landscape studies include acoustic measurements and acoustic documentation or evaluation through the aid of listeners (Hedfors & Grahn, 1998). Acoustic measurements are usually performed with standardised equipment for measuring sound pressure and frequency. Acoustic documentation means sound recordings. Evaluations with the aid of listeners include psycho-acoustic evaluation and are used in product development (Fog, 2000). Our evaluation method involving listeners has both qualitative and quantitative aspects.

The methods presented here are intended to help develop thought tools in the form of terms describing sounds. Thought tools may be old or new terms in new contexts – made systematic in a new way – related to landscape architecture and planning. Truax (1978) produced a manual of *acoustic and musical terms*, many of which fit well into landscape architecture and planning. Others have contributed to developing terms in *acoustics and architecture* as related to outdoor environments (Augoyard & Torgue, 1995; Daumal i Domènech, 1998). Several of the

terms in these glossaries can be useful in landscape architecture and planning. Many terms first need to be translated into other languages. Other works relating to central terms in this study include Schafer (1977), Cremer & Müller (1982), Dawson (1988), Hedfors (1993), Thiel (1997), Hedfors & Grahn (1998), and Hellström (1998).

Problem presentation

Indoor and outdoor acoustic conditions are obviously very different. We can exemplify the differences by considering a concert hall. A concert hall is similar to a laboratory environment, in that most of the relevant parameters can be regulated through the construction of the space. Open spaces, on the other hand, lack a ceiling and enclosing walls. The degree of environmental control can never approach that of an enclosed room. Terrain and weather are also important, and activities can suddenly introduce apparently random elements into the acoustic space. Therefore, adequate conceptual tools to describe an outdoor environment must differ from those suitable for enclosed spaces (Cremer & Müller, 1982).

The major objective of the presented methods is to increase awareness and understanding of the role of sound in landscape architecture and planning, and to develop a facilitating terminology for this. The methods will refer to and highlight the auditory aspects that may arise in an outdoor environment and must do justice to the cases we study. They should allow us to show and clarify the soundscapes of the locations. The methods are expected to contribute two types of tools:

a) A verbal terminology
b) Prototypes in the form of site cases

The verbal terms are developed from interviewees' interpretations of sonic aspects of existing locations. The same locations can also serve as prototypes and reference objects.

Methodology-oriented queries concern what types of characteristics a specific place demonstrates. What comprises a soundscape? Moreover, how can one best describe and evaluate it? Terminology grows out of these analyses. We are studying

the link between sound and location, so the sounds are studied in the geographical context (site soundscape).

These methods are useful anywhere local terminology needs to be established to define sound in landscape architecture and planning. In our case, Swedish is the national language being developed. A practical planner needs a set of terms and concepts in the local or national language, in order to clarify the opportunity for considering acoustic aspects.

The methods are based on studies of two contrasting outdoor environments, both considered excellent recreational environments. The results, in the form of descriptions from these exemplary and contrasting environments, allow us to highlight different aspects to see if the environments have corresponding soundscapes.

The developed methods

We present the methods as a process in six steps. The first two steps involve selecting a location and people to interview; the next three are the actual procedure on site. The sixth step is processing the collected information.

Step 1: Site selection and situation

First, we meticulously described the physical environment. We included such information as topography, vegetation, and constructions (site situation). These descriptions are a basic element in clarifying the physical site and its soundscape properties.

We selected two outdoor environments in Uppsala, Sweden (Fig. 1). The following is a simple presentation of the locations and how they were selected. The first environment is an open landscape just outside a developed area. It is part of a recreation area close to the city, called *Hågahögen (H)*; see Fig. 2. The second is a central park called *Linnéträdgården (L)*; see Fig. 3. Sound recordings were made at both locations (Hedfors, 2000b).

Figure 1. The sites in relation to the city of Uppsala, Sweden. Excerpt from the General Map of Uppsala City, 3 January 2001. © City Planning Office, Municipality of Uppsala

Hågahögen (H)

H here designates the entire investigated area, but refers originally to a burial mound dated to 1100 BC – 900 BC, where the Håga River and Håga Valley change directions (Fig. 2). *H* is located in a valley with an open, somewhat cracked pastoral landscape, with the edge of a forested area in the distance. The area surrounding the burial mound has a long history as a settlement in an agricultural setting, with many archaeological finds (Göthberg & Holmström, 1997). The waterway and the valley allow a good overview of the site and in ancient times they provided a strategic position for transportion. As the heavy glaciers of the last ice age receded, the land has risen, causing the waterway to shrink and lose its function as a transport route for people. The terrain is typical of the Lake Mälaren valley, with small moraine hills covered with fir trees and the edge of a deciduous wood, surrounding stretches of open land. Today, *H* lies just outside the city limits in a popular recreational nature preserve. The city is visible about a kilometre away to the east. The developed region nearest *H* is Håga Village, which used to house a nursing home, but now consists of ecological housing.

Linnéträdgården (L)

L is a city park dating from the 18th century, when it was Carl von Linné's botanical garden (Fig. 3) (Broberg et al., 1983). von Linné was a professor of medicine and botany and became widely known for his classification system. The garden contains many perennial plants in a strict pattern. It has many layers of vegetation with several tall trees. The flower arrangements are set up as rectangular parterres around a main axis. Combined with an orangery at the end of the axis, the flower arrangements are a typical baroque setting. A sunken pond is inset where the main axis is crossed by a transverse axis. The garden paths are covered with fine gravel, and the entire garden is enclosed with wooden planking. This planking with its gate characterises the garden. This kind of design was rarely used in the past century. This is particularly true of the modernistic era. The development surrounding *L* consists of 2–4 storey buildings, mainly with plastered facades. The orangery is single storey. *L* is considered to have a wide range of species; see Fig. 5, and is a popular tourist site, but is only open in the summer.

Figure 2. Aerial photo of Håga Valley and Hågahögen. 13 May 1998. © City Planning Office, Municipality of Uppsala

Figure 3.
Layout of
Linné-
trädgården
with the
nearest
houses.
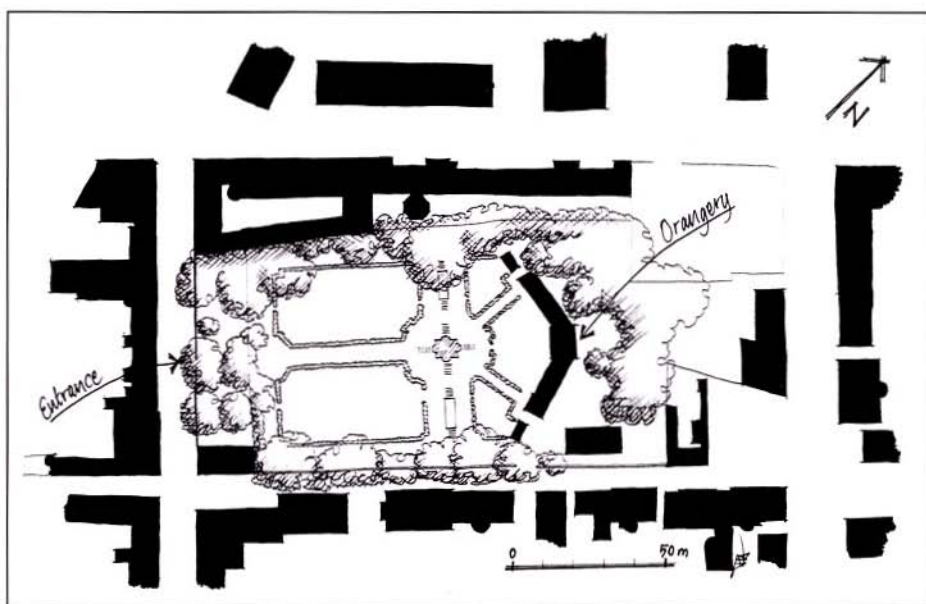
Types of outdoor settings

The selection of a site is a central part of the methods in order to cover a wide range of sound aspects. Swedish Research in landscape architecture and environmental psychology suggests eight dimensions for common parks: *wild, species-rich, spacious, peaceful, play, field, festive* and *culture* (Berggren-Bärring & Grahn, 1995). These dimensions are described in more detail in relation to auditory aspects in Hedfors & Grahn (1998). Berggren-Bärring & Grahn (1995) worked exclusively with environments that were open to the public in three medium sized Swedish cities: Lund, Uppsala and Västerås. The interviewees in that investigation were key people for outdoor activities in the areas of childcare, schools, health and geriatric care, and selected associations.

Using these eight dimensions, we selected two very popular places with contrasting characteristics; see Fig. 4 and 5. Both sites were selected in Uppsala for practical reasons. Both locations are very popular and have qualities that establish them as exemplary recreational environments. This does not mean that they contrast with one another in terms of being *pleasant* or *unpleasant*. However, the sites

do contrast in their quality patterns. The profiles in Fig. 4 and 5 show how people perceive the differences between the two places in terms of atmosphere or site quality characteristics.

According to Berggren-Bärring & Grahn's (1995) categories, *H* has a clear, typical profile of environments that we call countryside. The first reason for selecting *H* was the exclusively high rating for the property *wild*. The second reason was the exclusively high rating for any other property. The properties of *festive* and *culture* were very low for *H*. However, one should not interpret the designations of these properties too strictly. *H* is in a broad sense a highly cultural place in an agrarian setting with historic continuity. But this interpretation of *culture* is not what the property meant for the informants in Berggren-Bärring & Grahn's (1995) study.

The strongest quality of *L* is the one designated *culture*. The rating of the closely related property *festive* is also high. These two properties were decisive in our selection of a contrasting site to *H*. Significantly, the *play* property showed minimal numbers. Children do not go to the baroque park to play.

Berggren-Bärring & Grahn's (1995) interviewees perceive the characteristics *wild*, *spacious* and *peaceful* as stronger at *H* than *L*. However, *H* and *L* both have relatively high values for these properties as well as for *species-rich*. These similar values may reflect both environments' rich summer greenery with sturdy old trees. Both environments are also marked off from nearby activities. *H* is marked off by a wide stretch of open country, while *L* is marked off by the surrounding low buildings. Both *H* (*wild*) and *L* (*culture*) demonstrate top values for their strongest characteristics in comparison with hundreds of outdoor environments in the three middle-sized towns (Lund, Uppsala and Västerås, population 100'-200'). The combination of the sites' characteristics makes them interesting types of settings for further study.

Figure 4. Site qualities at Hågahögen according to Berggren-Bärring & Grahn (1995). The profile shows average values. The quality scale 1–7 (Osgood et al., 1971) corresponds to the scale that the informants used in the Berggren-Bärring & Grahn study.
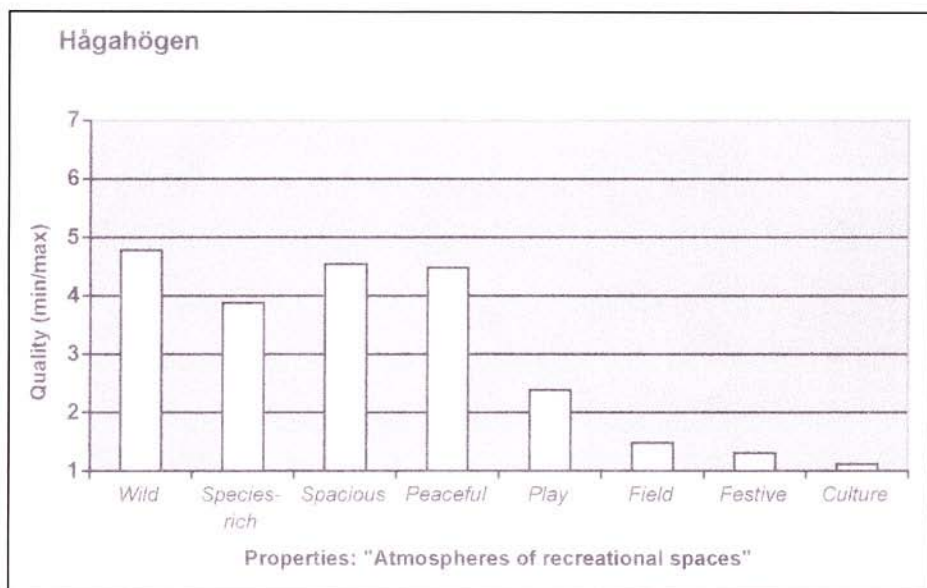
Figure 5. Site qualities at Linnéträdgården according to Berggren-Bärring & Grahn (1995). The profile shows average values. The quality scale 1–7 (Osgood et al., 1971) corresponds to the scale that the informants used in the Berggren-Bärring & Grahn study.
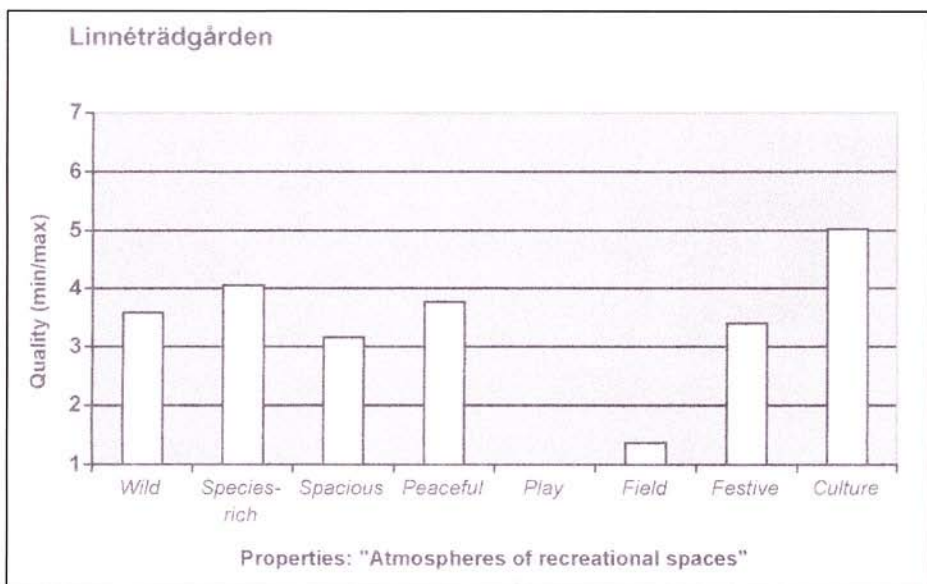
Step 2: Selection of informants

Primarily three groups of interviewees are of interest:

A experts in landscape architecture and planning
B experts in music and acoustics
C the general public

Groups A and B provide many specific terms to help us develop our concepts. Group A provides terminology for the physical environment, its use and design, as an important starting point for auditory analyses and provides terms that fit their activities. Group B, we assume, have highly attuned listening skills, but rarely knowledge of project planning. They can offer broad auditory analyses and provide terminology that is unfamiliar to the planning business and may therefore be less well received. Group C, which should be a representative selection of the population, can at its best express everyday impressions. In the field of phenomenological hermeneutics, expressions can be anything from extremely inexact terms with a broad range of meanings – hyperonyms – to extremely specialised terminology understood only by a handful of professionals. Everyday language, which falls between these two extremes, is considered precise because the majority of people understand it. However, the majority of people is not our target group, but practitioners in landscape architecture and planning. We assume that experts that we call skilled listeners will be able to contribute to a basic terminology useful for practitioners more effectively than the public. That's why we review group A and B here, and not group C. A review of the public may be of great interest in a follow-up study with the objective to complement the basic terminology.

Which informants can contribute to the broadest possible description of the properties of soundscapes? One important aspect is to strive for an even gender distribution. Another is to ask students from the professional categories. In groups A and B, a few subjects with specialised listening skills can be selected for repeated qualitative interviews on site. The listener perspective could be that of 1) acousticians, 2) architects, 3) audio engineers, 4) blind or visually impaired people, 5) composers, 6) dog handlers or hunters, 7) film music composers, 8) landscape architects, 9) municipal noise inspectors, 10) musicians, 11) ornithologists, 12) individuals who live on a specific test site, 13) individuals who make recordings,

14) individuals who meditate, 15) hearing-impaired people, 16) radio theatre actors, 17) sound producers, etc. Amphoux (1993) discusses the perspective of trained listeners to map out urban soundscapes in a method he calls *L'enquête phonoréputationnelle*.

Step 3: Interview on site

We use *observational field interviews* to help us understand the test locations. The interviews are intended to clarify the words each person uses to describe his/her auditory perceptions. In a traditional sociological study, the subjects are the stars. In this case, however, the subjects can be more accurately described as interpreters of the sound environments. The object of interest to the interviewers is the locations and their associated local sounds.

The interviewer and one subject at a time meet near the place and soundscape to be evaluated. After a brief introduction, with assurances of the informant's anonymity, the interviewer and the subject approach the entrance to the place. The interviewer leads each person through the same path, so that each interviewee experiences the same aspects of the environment. The interviewer asks the subject to find somewhere to sit down. The subject is asked to begin by describing spontaneous reactions in his/her own words. Next, the interviewer asks structured, qualitative interview questions, which are allowed to develop into a kind of conversation, where the subject describes and interprets impressions of the soundscape verbally. The conversation is recorded on a tape recorder with a wind-muffled microphone. Fig. 6 shows several of the interview questions from the interview guide and how these questions originate in the research questions in Kvale's (1996, p. 131) model.

Research questions	Interview questions
How is a comfortable interview situation in the field established?	Where would you choose to sit?
Which dimensions seem important before questioning begins to focus perception?	What do you hear?
How can one describe the elements in an acoustic space?	What directions do the sounds come from?
	Which tones are high-pitched or low? Etc.
What dimensions are necessary for characterisation?	How would you describe the sound environment in three words?
Are there measurable variables?	
	Did you have any expectations?
What implications can acoustic spaces have?	What elements are important for your perception of this sound environment?
Which judgements can be relevant for planning and design?	Is there anything you would like to modify?
	How would you equate the sound- to the overall-experience?
Are there appropriate sounds for certain places?	Is there something in the surroundings that is important for the acoustics?
	Can you think of another location with sound similarities?
What is the difference between a skilled and unskilled listener?	Do you feel that you listen differently now than during the first observation?

Figure 6. Some research and interview questions (Hedfors, 2000a).

It can be significant to know if the interviewee feels that the interview is taking place on a 'perfectly normal day'. If anything dramatic has happened to the subject earlier that day, it can affect the person's perception. In order to establish an easy rapport between the researcher and subject, all questions of a more personal nature are posed towards the end of the interview. These are questions regarding topics such as the interviewee's mood.

Finally, the interviewer notes weather conditions and activities occurring on site during the observation period.

After the interview, we tried to walk around the sites without talking, focusing instead on listening. After a short walk, the conversation was resumed. Since this procedure tended to make the interviews too long, without providing any significant new data, the walk was changed. The entrance to *L* is clearly defined and sudden. You walk through a gate in a tall wooden fence. Consequently, we tried a 200-metre walk to and through the entrance, during which the subjects were asked to concentrate on listening. Passing through the gate became a kind of listening exercise. The walk provided intensified listening (Winkler, 1996), and on the same time, the entrance, a key element of the park, could be studied.

Step 4: Questionnaires

After tackling the interview questions, subjects respond to two questionnaires concerning:

a) soundscape characteristics (Q1)
b) contributing sound sources (Q2)

In Q1, the interviewee is asked: What impression does the sonic environment give? This question is answered by an evaluation of 45 pairs of words (see Appendix). The instructions are: Please mark one number per line; 0=neutral, 3=total dominance (see example Fig. 7).

Figure 7. Example of a line with pairs of words and a modified rating scale (Osgood et al., 1971).

EXPECTED | 3 | 2 | 1 | 0 | 1 | 2 | 3 | **SURPRISING**

The word pairs reflect different sets of terms. Pairs 1–8 in the Appendix represent Küller's (1972) dimensions for environmental spaces: *well-being values, complexity, unity, spaciousness, social status, potency, affection values,* and *originality*. Pairs 9–17, excepting 14, reflect Gabrielsson & Sjögren's (1979) dimensions for sound-reproducing systems, *clarity, sharpness/hardness-softness, brightness-darkness, fullness-thinness, feeling of space, nearness, disturbing sounds,* and *loudness*. These are assumed to be basic terms for sound perceptions. Pairs 18–28 and number 13 cover Berggren-Bärring & Grahn's (1995) dimensions for *atmospheres of recreational spaces* (see

examples: Fig. 4 and 5). Additional dimensions are mainly from traditional music terminology (Smith, 1961) and architecture (Lynch, 1960; Thiis-Evensen & Nybø, 1989). We have striven to limit the number of pairs of terms so that they would fit on one A4 page, since interviewees seem unable to handle a broader scope of questions in a field study.

Q2 discusses the sources of sound in the landscape. The questionnaire contains several categories intended to cover all possible sources. The relationship between sources of sound in each category refers to the source, not the sound itself. The categories are both based on and a complement to Truax (1978) and Porteous & Mastin (1985). They are arranged to help provide a uniform understanding of Q2, though it is difficult to eliminate all ambiguity. The interviewee also has a space to clarify answers in his/her own words in each category.

1) Amplified sources, such as ambulance sirens (electrically amplified)
2) Stationary point sources, not including 1) Amplified sources – for example, a bell tower
3) Machines/motors from a) farming, b) forestry, c) gardening, d) housing, e) outdoor activities, f) roads, g) railways, h) aeroplanes, i) construction, k) industry, and others
4) Voices
5) Body motion and bicycling
6) Handicrafts
7) Domestic animals
8) Wild animals, such as birds
9) Wind a) in trees and shrubs, and b) other sounds caused by wind
10) Water

The subject is encouraged to think aloud while filling in Q1 and Q2, to allow the subject's answers and interpretation of the questions to be recorded. Sound recordings allow an after-the-fact check of the individual's use of terminology. This way, the questionnaire process produces both a quantitative and a qualitative value.

A third questionnaire is an ordinary form for the subjects' personal information. The individuals' socio-economic background is only specified in terms of profession. The subjects note their leisure activities and hobbies, which may affect their listening skills – for example, if the person plays an instrument or enjoys hiking.

Step 5: Comments on maps

Finally, the subject evaluates a geographical map of the site where the sound environment is depicted visually. The map is based on the statements of previous interviewees, and the subject can either agree with it or comment on differences between this attempt at visualising the soundscape and the subject's own perceptions.

A map emphasises the spatial expansion of the sound with *colours, characters* and *hatching*. Similar systems for notation have been developed by Thiel (1997) and others. The background is a traditional map with *visual* characteristics in black and white. This includes curves depicting heights, vegetation belts, waterways, roads etc. on a small-scale map. On a large-scale detailed map, the visual characteristics may include buildings, patches of trees, bushes, individual trees, streets, paths etc.

The *colour* scale of the map reflects the perceived sound properties as described by Mahnke (1996). The colours appeal to the feeling of the site's sonic atmosphere. The *characters* represent stationary sources, such as a church bell, signal horn or ventilator. Most sounds that are illustrated with characters symbolise *signals* or *soundmarks* (Schafer, 1977; Truax, 1984) and have qualities that attract attention. The *duration* and *rhythm* of the sounds are noted next to the characters or in a legend. The legend uses the categories: 1) stationary source, 2) mobile source, 3) background, and 4) wall; see Fig. 8. A wall can be an important barrier or reflector.

On a map, the *distance* between an observation point and the observation itself is significant. The distance between the listener and what he/she hears is made clearly visible. This shows the physical relationship of a listener, and of a space, to its surroundings.

Figure 8. Example of a preliminary legend. The colours refer to sonic atmospheres freely according to Mahnke (1996).

Stationary source

		(signalling device; auditory landmark)
Fountain (babbling) — Light blue (soft)	Wind exposed vegetation (soughing) — Green (moderate)	Ventilator — Grey-green (tiresome; saturated)
Church bell (1-12 beats/15 min.) — Gold (caring; varying)	Siren — Red (powerful; monotone)	

Mobile source

		Background	**Wall**
Gravel (e.g. footstep; occasional chatting) — Mauve (weak; moderate)	Birds using vegetation — Yellow (permeate; cheerful)	Detached moving vehicles — Orange (powerful; cheerful)	City murmur; distant traffic — Blue (distant; inferior)	Reflecting barrier — Black/Emerald-green (moderate; soft)

Step 6: Analyses

The interviews are analysed based on the transcriptions of recordings of the subjects' comments. During transcription, a selection is made (Kvale, 1996), which is then subjected to qualitative computer processing. In the qualitative processing, the material and concepts of soundscapes' make-up and people's values are noted. Interesting aspects include an individual's spontaneous and striking formulations. Recurring themes are significant in the analyses, but so are original phrases and reflections. The categories of the analyses are designed to match the questions in Fig. 6.

Q1 can be statistically processed to give a sound profile of the cases, to reduce and therefore purify the dimensions of sound perception in outdoor settings. This can serve as a complement to the interviews from the cases, while generalisations require statistically assured samples. Statistic processing can show the relationship between terms and pairs of terms, allowing us to map out these relationships.

The methods as a whole are explorative, extensive and inefficient at this time. To rationalise parts of data collection in the future, we must develop the quantitative phases. One way to collect larger amounts of data is to expand the questionnaires.

The maps are analysed from interview to interview and constantly adjusted so that each subject's comments are included in the summary. This means that completely new images may be generated along the way – like the creation of a musical score, an emerging image of perspectives through a sketching process etc.

Discussion

One fundamental problem in interview studies is the subject's unfamiliarity with the situation. For this reason, we recommend that the interviewer do the best to make the subject feel he/she can 'be himself/herself'. Initially, the person should be allowed to give as exhaustive answers as possible – free phenomenological descriptions. After this, the interviewer can direct the conversation towards planned themes, always making sure not to lose the subject's spontaneous perceptions. The interviewer and the subject work together to interpret the sound quality of the location; the subject should not be viewed as isolated from the interviewer (Kvale, 1996).

The interview questions and the words in the questionnaires are intended to help the interviewee listen more completely. Truax (1984) speaks of *listening-in-search* to describe the listening habit to which the subject is being led. *Ecoute environnementale* designates in much the same way the auditory mode when a person is asked to listen (Amphoux, 1993). Other listening habits cannot be studied with the type of methods described here. One example is *background listening*, which "...occurs when we are not listening for a particular sound, and when its occurrence has no special or immediate significance to us" (Truax, 1984, p. 21).

By having a large group of subjects evaluate pairs of antonyms (see Appendix), we can begin to see a relationship between the terms. This nuancing of the meaning of the terms, and a reduction of the number of dimensions, are some of the possible contributions Research can offer acoustic design. However, a plenitude of descriptive words is also desirable for the development of a planning and design language, particularly to inspire creative design processes.

Q2 is a logical step in the overall objective of this study: the integration of sonic properties with landscape architecture and planning. The practitioners are accustomed to the objects that generate sound in the landscape, even if they may not view them as sound sources. Sound aspects in planning and design can therefore be easier to understand by discussing sound sources, which are tangible and a more natural tool. The practitioners can thus learn to recognise those specific auditory characteristics for the type of land use they are planning, and subsequently be able to predict to a certain degree the consequences of various planning alternatives for the sound environment.

Complications with the methods

Since the methods facilitate the analysis of short sequences within a continuous sound environment, they can be compared to a photograph. A photograph is an optical representation, a segment of a never-ending film that we call reality. Interpretation depends in part upon what the photograph is intended to portray and what has been emphasised, intentionally or otherwise. Similarly, the site visit is a clip of auditory reality. We presume that the short duration will not influence the

effectiveness for terminology development. However, one disadvantage is the possibility of missing some highly characteristic sonic elements of the particular site cases, which may not present themselves during the short exposure periods.

It can be difficult to determine how much of the interview situation to reveal in advance, before the interview subject arrives at the site. The subjects' relationship to the interviewer, site and sounds can also bias their perception. Unfamiliarity with the artificiality of a staged visit with strange questions concerning apparently foreign events can overshadow the ability to interpret and describe spontaneous reactions in words. A certain degree of experience as interviewer and a familiarity with the location that is to be evaluated are prerequisites to overcome these difficulties. The interviewer should also observe how the subject is changed by the study. After the first interview, when the person evaluates another sound environment, he/she has a different preconception than at the first meeting.

Another critical argument may be that different elements are being evaluated when only one subject at a time is interviewed. Weather, time of day and activities at the site can drastically change the sonic environment between evaluations. Therefore, a complete description is practically impossible.

A possible strategy to avoid the above obstacles could also be to conduct group visits, so that a number of individuals can be simultaneously exposed to the same sound sequence, without the distraction of internal discussions. This procedure requires more sophisticated questionnaires. Another variant is to select focus groups where subjects with particular listener perspectives can inspire their group members to still deeper insights.

Winkel (1985) discussed general circumstances surrounding field research settings and questions of validity. Creating a comfortable interview situation strengthens validity. Questions are sorted so that the interview subject's own opinions are given priority. Leading check-questions in the latter part of the interview allow the subject to confirm or deny the interviewer's interpretations (Kvale, 1996). The validation procedure is also a component of the questionnaire. Questions are answered while the subject thinks aloud. Sound recordings allow an after-the-fact check of individuals' use of terminology. One can even attempt to obtain relatively constant weather and traffic conditions between interview episodes by visiting sites during similar wind conditions and at the same time of day and week.

Conclusions and future Research

The methods we have presented here correspond well to properties needed for modern landscape architecture tools. They deal with many variables and produce both quantitative and qualitative data of relevance to practitioners as well as to researchers in the soundscape field of landscape architecture and planning (Florgård & Berg, 1997; Roe, 2000). They also introduce a comparatively new dimension related to human perception – in this case sound and hearing (Hedfors & Grahn, 1998). Finally, they relate in a number of important ways to a general quest for increasing quality in human habitation and lifestyles (UNCED, 1992; Berg & Nycander, 1997).

By developing concepts, a *reflective practitioner* (Schön, 1983) can be offered a repertoire of examples of soundscapes, and usable thought tools in the form of terms that describe sounds in the landscape. These tools can fit into sketching and other planning processes. Using the interviewees' interpretations and expressions for what they hear, we can build up a bank of words and phrases for soundscapes. The methods described here are comparable to what was developed for fieldwork regarding olfactory phenomena concerning ventilation and indoor air. Several people are trained to participate in 'scent panels' for olfactory evaluations. These evaluations are related to standard measures of air circulation and size of the area (Fanger, 1988). The methods are also comparable to taste panels for foods or wines. Instead of laboratory situations, authentic restaurant environments are used increasingly often for sensory panels (Granqvist, 2001), and entire meals can be viewed as cases.

Finally, additional site cases need to be studied in order to broaden the practitioners' repertoire and strengthen the power of generalisation in the methods.

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Appendix

Word pairs in questionnaire Q1: Characteristics of soundscapes

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               PLEASANT  –  1 –  UNPLEASANT
                 VARIED  –  2 –  MONOTONOUS
                UNIFORM  –  3 –  CHAOTIC
                   RICH  –  4 –  POOR
               FEMININE  –  5 –  MASCULINE
                 MODERN  –  6 –  OLD-FASHIONED
                  USUAL  –  7 –  UNUSUAL
            HOMOGENEOUS  –  8 –  COMPLEX
                  CLEAR  –  9 –  DIFFUSE
                   SOFT  – 10 –  SHARP
                 BRIGHT  – 11 –  DARK
                   FULL  – 12 –  THIN
               SPACIOUS  – 13 –  NARROW
                   HIGH  – 14 –  WIDE
                  CLOSE  – 15 –  DISTANT
      NO INTRUDING SOUND – 16 –  INTRUDING SOUND
                   LOUD  – 17 –  WEAK
               PEACEFUL  – 18 –  FIERY
               EXPECTED  – 19 –  SURPRISING
            FASCINATING  – 20 –  DREARY
                TEMPTING  – 21 –  REPULSIVE
              LEISURELY  – 22 –  OBTRUSIVE
                   SAFE  – 23 –  FRIGHTENING
                   WILD  – 24 –  URBAN
   RICH IN ANIMALS/PLANTS – 25 –  SPECIES SCARCITY
       CENTRE OF ACTIVITY – 26 –  PERIPHERAL FROM ACTIVITY
                  VIVID  – 27 –  DESOLATE
             DEVOTIONAL  – 28 –  TRIVIAL
                NEUTRAL  – 29 –  PECULIAR
                FOCUSED  – 30 –  SCATTERED
               DIRECTED  – 31 –  WITHOUT DIRECTION
                 LINKED  – 32 –  DETACHED
                   DEEP  – 33 –  SHALLOW
                DYNAMIC  – 34 –  STATIC
               CHEERFUL  – 35 –  SAD
               RHYTHMIC  – 36 –  UNRHYTHMIC
                  LIGHT  – 37 –  HEAVY
                CALMING  – 38 –  RUSHING
               RELIABLE  – 39 –  CAPRICIOUS
               RESOLUTE  – 40 –  HESITATING
                 LOVING  – 41 –  SPITEFUL
                GENUINE  – 42 –  PRETENDED
               DELICATE  – 43 –  COARSE
             EXPRESSIVE  – 44 –  EXPRESSIONLESS
               ACCENTED  – 45 –  UNACCENTED
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Towards a Social Ecological Soundscape

Gregg Wagstaff

Abstract

This essay develops some of the philosophical and practical considerations that have informed my work with the Touring Exhibition of Sound Environments (TESE) and my engagement with Soundscape Studies in general. In the process, I attempt to chart a course *Towards a Social Ecological Soundscape* and describe what such a concept might be. After the foreword, the text splits into two concurrent passages, *Practice* on the left page and *Philosophy* on the right: two streams of research which are continuously crossing-over and fertilising each other. This parallel form is how I originally approached the writing of this essay. I think my methodology is to be found somewhere in between.

Foreword

One the 2 July 1999, I was making sound recordings at the home of Joan MacLennan in Drinishader, on the Isle of Harris[1]. She is in her late 70's and lives together with her brother and sister on their family croft. Joan still produces Harris Tweed in the traditional fashion by hand on a wooden loom (a machine at least twice her age) – *"click-de-clack-de-click-de-clack"*. Nowadays however, this action is primarily for the tourists. No weavers make a living from Tweed anymore. Crofting is a subsistence

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[1] The remote islands of Harris & Lewis lie off the northwest coast of Scotland, forming part of the 'Western Isles', on the same latitude as Canada's Hudson bay.

rather than an *existence*[2]. On this day, Joan was also dyeing a fleece. She was assisted by her neighbour, a German women, who along with her husband had bought a place on Harris several years ago and now spend their summers there.

I had already been (ear)witness to Joan collecting the '*crotal*' (the Gaelic for lichen) from off of the rocks on her croft. The crotal was traditionally used as a dye, in this case giving the wool a rusty brown colour. She scraped at the crotal with a metal desert spoon that spattered the dry plant into a metal bucket held in her other hand. A small peat fire was lit beneath a metal dustbin, which was then filled with water, into which the fleece and crotal was added. The whole process was left to boil away for around four hours – "the longer you leave it in there, the darker it gets". Only occasionally was the lid lifted, the fleece turned with a wooden stick and checked for colour.

I heard a bus at the top of the steep, single-track drive, which descends down to the house. Joan had been expecting visitors. Out of the bus filed about twenty Japanese tourists. Joan led them over to her shed and went through the motions at her loom – "*click-de-clack-de-click-de-clack*", accompanied by oriental voices of wonderment and Nikon motor-winds. The group bought some lengths of Tweed, a few knitted garments and then gathered around outside to watch the dyeing process. After several group photos with Joan, the visitors departed, their bus squeezing alongside the mobile shop, whose driver had been waiting patiently at the top of the drive[3]. He then descended in turn; a distinctive old diesel engine noise, signalling his arrival with a "peep" or two of the horn. Out of the house came Joan's sister and stepped up into the mobile with her shopping list. And so the scene continued. All the while, there was I, with the microphone, in the *mix*. "What are you doing?" the Japanese translator had asked me.

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[2] The Crofting tradition is particular to the communities of the Highlands and Islands of Scotland. A croft is a small piece of arable land between 5–10 acres including a dwelling. The arable land is cultivated by the 'Crofter', and may include potatoes, turnips, cereals, and grass for hay and silage, although these practices have declined significantly in recent years. Sheep farming and Tweed also continue to provide a part-time income for some crofters.

[3] Mobile shops – grocers, bakers, bank, and library – play an important role in providing for the more remote villages and households, especially the elderly and those without access to private or public transport. The arrival of large supermarkets in Stornoway means that the economic viability of these mobiles is slowly dying.

Practice

Since November 1998 the Isles of Harris and Lewis became the focus for a sound-scape oriented art project called the *Touring Exhibition of Sound Environments* (TESE – www.earminded.org.tese). At that time I was in my fourth year work-ing as a Research-Lecturer in Dundee University's College of Art. My previous study had been in the Time-Based-Arts, in particular Sound and Installation Art. I was primarily influenced by the ideas of John Cage (see Cage / Retallack1996), Murray Schafer (see Schafer 1994) and Murray Bookchin (see Biehl 1997), whose work and ideas changed my per-ceived notions of Art, Society, and my role as a 'practising artist'. This 'change' (or 'trajectory' as it is described later) moved my interests from *private, experi-mental* works to more *public* and *envi-ronmentally* based issues. It was from out of this inspiring mix of Art, Ecology, So-cial & Political Philosophy that the TESE project emerged.

The *Touring Exhibition of Sound En-vironments* was conceived as a "commu-nity based and ecologically oriented" project whose aim was to undertake a long term study of two Scottish regions and communities through their sound-scapes, and to exhibit and exchange these

Philosophy

Ever since 'flying the nest' (leaving the home of my parents), I have been fortunate enough to exercise some choice over where I have lived. The place where I am now – a farm cot-tage in rural Fife, Scotland – like the other places I have tended to make my home, is quiet. For me 'quiet' is a desirable quality. Indeed, this was one of the very reasons I chose to make it my home. It is quieter here than most other places I either spend my time *in*, or find myself moving *through*. I have grown to value the nature of these acoustic spaces and ultimately this extends to the various social, economic and environmental proc-esses that give rise to them. The current so called, 'ecological con-sciousness' could be said to extend such concerns beyond the individual, beyond *my* here and now, towards what has been referred to as an 'eco-logical self'; towards other people and places, towards *potential* societies and habitats.

Perhaps it is in this sense then, that Sound is a medium through which some of us perform this 'ex-tension of self'. Maybe we could think of sound like a mirror or, more

findings in a local exhibition space[4]. In the booklet which accompanied the final exhibition, I described TESE in the following way: "Over time, as changing social, political and economical factors – both locally and globally – affect our own communities and natural habitats, so we can hear a corresponding change in these soundscapes. TESE's aim then is to describe and document these changes though the study and exhibition of our sounding environment. More importantly, its aim has also been to include local people in this process, in a creative way, through the act of listening, recording and sound making."

This work was initially assisted by Kendall Wrightson and Helen Sloan. Our visits were made at irregular intervals to the isles between November 1998 and May 2002. Spending on average between one to three weeks on the islands and making around three or four trips per year (Harris & Lewis being perhaps the most remote parts of the British Isles). If I were to describe TESE's methodology in a word, it would be *adaptive*; growing out of a collaborative mix of those people involved

[4] The second place of study, the village of Dollar in central Scotland, was chosen to combine with the *Acoustic Environments in Change* Project – www.6villages.tpu.fi – The TESE project model was also used to apply for funding to study a third region, that of Dartmoor in Devon, England. This is now the Sounding Dartmoor Project – www.sounding.org.uk

precisely, an echoing (or *homing*) device. Not so much a *physical* extension of the self – through vocalisations and sound making (though this is also true) – but an *incorporeal* one: how we conceptualise and position our*selves* in relation to everyone and everything else. The study of the Soundscape, in this sense, is a way of furthering our understanding about the multiplicity of inter-relationships and processes within the biosphere. It is a means of finding *our place*, both as individuals and, more increasingly nowadays, as members of a 'global society'.

Listening to place

Maybe I could ask you to listen to *your* place for a few minutes. You may be in your home, workplace, or moving between places. As you are listening, ask yourself which of these sounds do I appreciate, which sounds do I tolerate, which do I have some control over or, conversely, do I have little or *no* control over. As I have chosen to write this text on a word processor, my immediate sound environment is dominated by the 'whirring' of a computer hard-drive. Around this room, there is also an

on *both* sides of the sound recorder. This approach was very much a learning process, which had to adapt to local funding issues, local politics, and personal issues.

Funding

The TESE proposal was initially funded by the Scottish Arts Council (April 1998), followed by Scottish Natural Heritage (SNH), Western Isles Enterprise and, eventually, the Western Isles Council (August 2001). These monies came at different intervals over a three-year period, which changed the scheduling, content and the actual production of the project. As the project progressed, whilst its core intentions remained fixed, its plans were revised on paper depending on the different remits of the funding bodies. For example, with the SNH an emphasis was placed on interpretation of the natural environment and education. With the WIE the emphasis was more on training and equipment. Other funding complications followed; the SNH funded up to 19% of 'eligible costs', WIE up to 36%; the SNH would fund the publication of a CD Booklet, whereas the WIE would not. Budgeting with these grants and claiming them became a complete minefield. As a consequence of funding, I found that the scope and focus of our method changed. It was necessary to break down the project into several 'stand-

omnipotent, yet low-level electrical 'hum', which I have eventually traced to the transformers in three electrical power supply units. From the kitchen, I hear the washing machine moving through its cycles. Circling the airspace above the house are the single-engine drones of one or more light aircraft from the nearby airfield in Erol. At a much lower altitude are the sweeping cries of swallows – last to flee the approaching autumn. Moving outside, I hear distant flocks of geese, and calls from the wood canopy opposite (noticeable are the wood pigeon and buzzard). Up close, bees move between the few remaining flowers in the garden.

But what of these sounds? These sounds and the *descriptions* of these sounds open up a plethora of problematic issues for the soundscape researcher and fieldworker: *Why did I choose to extract these sonic descriptions from the continual unfolding of events? What might I have consciously or unconsciously left out?* What I want to focus on however is the issue of *control,* or more precisely, what input we as citizens have in the decision making processes that affect our (acoustic) environment. My guess would be that a large majority of the

alone' parts or 'outputs'. These included class-room exercises, sound recording workshops, establishing 'soundmarks', 'listening walks', a soundscape library, producing community 'sound portraits', and local exhibitions. Some outputs were specific to the requirements of local groups, for example interpretation of the Machair[5], and digitising existing tape archives.

Each was separately described and budgeted so that the various funding bodies could choose elements of the project they were able to support. Each of these was designed so that it could take place independently of the others but also combine to be part of the larger project. Somewhat inevitably, limited funding and time did not allow each of them to take place as proposed. The project had to be scaled down and for me the core work were those elements which involved the local people and allowed for their input and *creation* of something permanent. These were the recording workshops towards the production of a local *Sound Portrait*, classroom exercises *and Sound Poetry* produced at a local primary school, and interpretative *Machair Soundwalks*. Here, I would like focus for the moment on the *Sound Portrait*. A descrip-

sounds that we hear are *bi-products* and that even within 'private' places, you and I have little or no *control* over the soundscapes we find ourselves in, or subjected to. By 'bi-product', I mean that the sound is the *extraneous* result of some other primary function (e.g. the engine drone of a light aircraft or the 'whirring' of a computer hard disk). You could say that such bi-products are a sonic effluent, the result of an *inefficient* process. Such inefficiencies are rarely reduced, primarily because sonic bi-products have no direct economic significance to its makers, and also because it is not a straightforward task to prove the various physiological, social and environmental effects that are attributed to noise.

Besides being 'unwanted sound' (which is a subjective category), we could term noise as *energy-loss* (a more objective category). Also noise could be termed something that we (the general public) have no direct *control* over. In doing so, I also want to make a differentiation. There are many sounds we have little or no control over, our soundscapes are suffuse with them. I am thinking now of those sounds such as the sea, wind and birdsong for example – a cat-

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[5] Machair is one of the rarest and fertile coastal habitats in Europe and is peculiar to the north-west coast of Britain, in particular the Western Isles. It is home to many rare plant and bird species including several orchids and the corncrake.

tion of the *Sound Poetry* and classroom exercises can be found in the *Soundscape, Journal of Acoustic Ecology* (Volume 2, Number 2 December 2001). The *Machair Soundwalks*, along with all aspects of the TESE project can be found in the 3CD and Booklet that accompanies the project[6].

Sound Portrait

"How would you represent yourself and your place through sound?"

This was a question posed to a group of locals from Ness who attended public meetings held at the *Comunn Eachdraidh, Nis* (Ness Historical Society). The aim was to try and raise local interest in the TESE project and begin a process of identifying what sounds might portray a sonic sense of identity. Through the support of its funding bodies, TESE was able to provide Ness (and Northton village in Harris) with portable sound recording equipment to use in the project and as permanent community resource. Workshops were then given showing how to use this equipment, allowing the local volunteers to go out and make their own sound recordings towards the portrait. Later, when these sounds had been gathered,

egory of sounds that we have no control over because they are *beyond our control* and cannot be said to be a bi-product as such.[a]

Compare this to those sounds such as traffic, air conditioning, and do-mestic appliances – sonic bi-products that we also have no control over, yet are potentially *within the realms of our control*. In other words they have the *potential to be changed*. Of course, in either example, any of these sounds could be considered a 'noise as unwanted sound'. There are perhaps three basic options to deal with such noise: (1) *tolerate* it, (2) *escape* it, (3) *control or change* it. For most people the only means available to them is to tolerate it.[b] A privileged few maybe able to escape the noise, to a quieter place, somewhere with *less* of those things which you *cannot* control. The reality is that although a large proportion of the 'noisy' elements our soundscapes have the

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[a] I acknowledge that one could argue that almost every sound is, either directly or indirectly, *affected* by human actions; from weather patterns to bird song.

[b] I would venture that it is easier to tolerate those noises that are *beyond* our control and governed by 'laws of nature', than to tolerate noise as a human bi-product.

further workshops demonstrated how these sounds could be edited, manipulated and combined together.

The group that emerged from this process to create the *Ness Sound Portrait* were Jayne MacLeod, Angus Morrison, Joan Morrison, Chris Barrowman and Kenny Don MacLean. They jointly recorded all the sounds heard on the portrait. They also undertook a large part of the sound editing and the creative decision making that was necessary to construct it. What makes this *Ness Sound Portrait* of particular significance is that is a *self*-portrait made collectively; sounds recorded *by* people of Ness *about* Ness. It is this local, subjective and more intimate *point of ear* that distinguishes these recordings over any of the others made during the TESE project. I invited those within the group to write something about their experiences for the exhibitions booklet. I have included a couple of excerpts below"

"The herring industry and Gaelic language once dominated our soundscape with their raucous presence. Their sounds of industry punctuated a lively scene, reflecting vitality and wealth. A hundred years ago, who would have thought these sounds would ever dry up? The very essence of a unique lifestyle is now so fragile it can barely whisper against the traffic of the twenty-first century. Rhythms of the sea give resonance to our Hebridean culture, affecting our landscape, influencing our economy and providing a never-ending source of pleasure and challenge." – Joan Morisson

potential to be changed, they are not. *Why?* Because, given the current political structure, it is not in the interest of those people who *can* effect change, *to* effect change. Unfortunately, this is a just a symptom of our global social and economic picture. The majority of the soundscape is a consequence of our current political structures and decision-making capacities. However, all of the world's populace (but for a small and powerful 'elite')[c] are politically disenfranchised from effecting any true democratic control over their lives or livelihood, let alone (sonic) environment. The sad scenario is even if they *are* aware and *did* care, who are they to be able to do anything about it?

Given that, so to speak, *the soundscape is in our ears but not in our hands,* what are the consequences of these ideas for Soundscape Studies? I think our philosophies and methodologies need to address more the processes and political apparatus which govern our

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[c] These are the Governments and Multinational corporations with their own agendas founded on sustaining power and increasing profit.

"The sounds I recorded relate to a range of experiences I had over the course of a few days during the summer of 2001. These experiences were not necessarily out of the ordinary – in fact the opposite is true: my sounds portrait personal everyday practice. The common actions which form the structure of a day; lighting a fire, making a cup of tea, opening a door, feeding the chickens, building a wall. Building a day in sound." – Chris Barrowman.

The production of the *Sound Portrait* involved several aspects which are crucial to a project of this nature. Firstly, it brought a local group together to discuss aspects of their soundscape. Secondly, it bought to the surface personal, local and cultural values – often talked of in terms of their relation to or association with the soundscape. And thirdly, implicit in it's making, were questions of around notions of place, identity and representation.

Another point that came out of these local meetings was the necessity to assist in *locally initiated* schemes. For example, by offering assistance to a voluntary group or an individual, in an attempt to augment their initiative from a sound perspective. In Harris and Lewis, local historical societies expressed their need to digitise existing sound recordings from analogue tapes. This process has now made possible through the provision of Mini-disc recorders, microphones and workshops on how to use them. Local funding bodies are keen to fund such projects if they are linked to educational workshops and

soundscape, rather than the sounds in themselves. I do not mean to belittle sound here. For many of us sound is a favoured medium, and the tool also by which one can engage others in these broader questions. For me it is not so much a question of an 'Acoustic' Ecology as a Political one. In this essay therefore, I would like to sketch out a political ecology with reference to the soundscape and the methods of research.

It is all too easy to recoil and shy away at the suggestion of 'Politics', or anything 'Political'. Politics is just for the Politicians (isn't it?). I feel, particularly here in the UK, that the population is becoming increasingly disenchanted with the whole 'political game', disenchanted with the Governments incompetence and inability to carry out its electoral promises. Each general election, a significant percentage of the 'electorate' will not vote, be they *disenfranchised, disenchanted* or *indifferent*. We are rendered passive by Digital TV, 'leisure time' and 'career ladders'. Such disenchantment is not surprising since the only contact or image we have of our (pseudo) 'democratic' system is the

the learning of new skills. This was the case in Harris and Lewis, with the Western Isles Enterprise scheme and the Western Isles Council who funded the purchase of equipment and project based workshops undertaken by TESE. The equipment now remains as a local resource, managed by the historical societies and open to the wider community, allowing public access to a growing library soundscape recordings and interviews. Local collaboration is the key to ensuring a shared sense of achievement. It also helps sustain the legacy and usefulness of such projects that inevitably have to end or move away sometime.

The Artist as Soundscape Researcher as Ethnographer

After initial research and development funding from the Scottish Arts Council, the Scottish Natural Heritage[7] was the second government body to give funding to the TESE project. The SNH were interested in aspects of the project which assisted in the interpretation of the natural environment. In the TESE grant application I began by quoting

party-political power play – the *'Statecraft'*[d] – we see through the media. Each political party is as unable as the other to effect change in the interests of the communities they pertain to represent, and *'speak' for.*

Janet Biehl (1997, p. 6) points out to us that, 'Politics' when salvaged from all of this Statecraft is about *democratic* decision making. Etymologically, 'Politics' is derived from the Greek 'Polis', meaning *the public, participatory dimension of a community*. She proposes a recreation or reconceptualisation the 'political' sphere, so that politics becomes about people, "taking responsibilities for their own lives and taking decisions in the full range of their activities." Much of current ecological politics looks towards community scaled economies, grass-root policies, towards a *direct* and *discursive* democracy as a way of recreating this political sphere, and as a way of

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[7] The Scottish Natural Heritage (SNH) is a government body that cares for Scotland's natural heritage. They "promote its improvement, its responsible enjoyment, its greater understanding and appreciation and its sustainable use now and for future generations."

[d] "Far from empowering people as citizens, Statecraft presupposes the general abdication of citizen power. It reduces citizens to "taxpayers" and "voters" and "constituents", as if they were too juvenile or too incompetent to manage public affairs themselves." Janet Biehl (1998), p. 9, *'Politics versus Statecraft'*.

from one of the SNH's own commissioned reports (J. Carter & D. Masters 1998, Arts and the Natural Heritage Review, No. 109)

"The role of the Arts in such events is not only to build links between a community and the heritage which is the subject of the event. It is also to develop individual skills and creativity, and community self-confidence and pride. Since these positive outcomes can be associated with a raised awareness of the natural heritage, community based work has an important role to play in this field…Using the Arts as a means of communicating with people about the environment also has a sound basis in the view that the value of the environment is not simply utilitarian, as in agriculture, or scientific, but cultural. It follows that debates and decisions about conservation and future use of the environment must be culturally as well as scientifically determined, and that it is difficult or impossible to separate these two approaches."

This was a valuable report and assisted the SNH in answering any questions they might have had about the validity of funding such a community arts project. It re-situates and validates the role of the artist, working on a small community scale in relation to social and ecological concerns. The above quote not only emphasises the role of awareness raising (which is the basis of much soundscape work) but, maybe more impor-

tackling our social and environmental problems. Tim Hayward describes the benefits of such a community scaled, decentralised approach to decision making:

"Among the reasons why decentralisation is so important is that it means hierarchies are broken down and people are empowered by being members of small political communities. The root ideas here are that people must feel part of their community in order to participate meaningfully; to do so they must be able to meet fact to face, confident that their participation might make some material difference; moreover, they must be able to comprehend what is actually going on in their community well enough to estimate how different policies might affect it." (Hayward 1995, p.202)

Kirkpatrick Sale (Sale 1985, p.62) underlines this emphasis on *community*: 'If one were to look for the single basic building block of the ecological world, it would be the community'. Communities are talked of in terms of politically empowered groups, bio-regions, natural resources, and local economies. Grant Copeland writes:

"Because most local residents care about the quality of life in their communities, long-term ecological sustainability, and long-term employment for their families, they are likely

tantly, the process of *decision making* and *community self-determination*. These are crucial points to bear in mind when devising Soundscape practice and methodology in the field. This emphasis moves us away from a *phonocentric*[8] approach (Wagstaff 1999) within soundscape studies, which gives us dubious terms such as an 'acoustically balanced soundscape'. It moves towards a more people centred and social–ecological oriented approach, where the soundscape is issue situated *within* the broader debate and perhaps more immediate concerns the community. In Harris & Lewis these concerns included; de-population, decline in employment, the cost of travel to and from the mainland, the cost and supply of fuel to the isles, the proposed creation of a 'super-quarry' and 'wind farm'. The depths and intricacies of such local concerns often remain outside of the researcher's understanding. Importantly however, the soundscape can and was used as a *tool* to initiate and explore discussions around such issues.

Returning to the 'role of the Arts' and the 'artist' in relation to the practical concerns of the soundscape researcher, Suzanne Lacy (Lacy 1995) has outlined a particular trajectory of the artists role. This moves from

to be better stewards of their environment than remote governments seeking maximum tax revenues or large corporations seeking maximum return on investment and continuous growth in profits…" (Copeland 1999, p.13)

There is a general ethos of working towards and fostering a community scaled political realm: a direct democracy that is participatory and discursive; a place where citizens are empowered to take an active role in the decisions which affect them. The criticism posed of such a system is; *Would it necessarily engender or guarantee a more 'ecological society'? Might a community decide, based quite rationally on their set of values, to downgrade environmental concerns in favour of social and economic growth?* The short response is there can of course be no *guarantee* that this process would lead to a more 'ecological society'. Hayward (1995, p. 208) points out however, that it is only through the *process* of a discursive democracy, through listening to each other, that humans will realise these ecological values and ethics. Within a discursive democracy, ecological values and agendas can be equally voiced, "if

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[8] Interpretation or reasoning which is solely centred upon or biased towards the sonic environment.

the Private to Public; from artist as *experiencer*, to artist as *reporter*, to artist as *analyst*, to artist as *activist*. "The last step along the proposed continuum," writes Lacy, "is from analysis to activism, where art making is contextualised within local, national, and global situations, and the audience becomes the participant." She goes on to say,

"To take a position with respect to the public agenda, the artist must act in collaboration with people, and with an understanding of social systems and institutions. Entirely new strategies must be learned: how to collaborate, how to develop multi-layered and specific audiences, how to cross over with other disciplines, how to choose sites that resonate with public meaning, and how to clarify visual and process symbolism for people who are not educated in art." (Lacy 1995, p. 177).

I think what Lacy describes is very pertinent to Soundscape practice, not least in respect to the artist / fieldworker having to learn new strategies. Speaking as a soundscape researcher from the 'Arts', 'Art' education *per se* does not educate or equip us to engage with public agendas, conduct fieldwork, or work *within* communities. We are left, more or less, to equip ourselves, to work and collaborate across disciplines into the realms of the Social and Natural Sciences. The Artist as Soundscape Researcher is having to learn and adopt a new set of skills *in* the field, to devise strategies and methodologies face to face, *with* and *within* those communities. At

ecological crises are as serious as expert opinions say they are, then in condition of a discursive democracy those expert voices will be given appropriate weight in deliberations, and therefore what they say will be acted upon."

In the same manner we could ask *would a discursive democracy encourage an improvement in the quality of the soundscape?* We can suppose that through such a discursive democracy, individuals or groups who are concerned for the state of the sonic environment will be able to present these concerns. We can also suppose that if aware communities value their soundscape then they would be able to employ the relative measures to manage it. It is important to realise that in this scenario, environmental issues such as the soundscape would be considered along with other community concerns, for example; energy production, transport, agriculture, industry, etc. The 'improvement' and the 'quality' of the soundscape would not only be determined with consideration to aesthetic or health matters but also in relation to a broader set of values and opinions expressed by the community via a discursive democracy.

any one time you might have to negotiate various roles, some that you expect of yourself and some that others expect of you. For example; the role of Artist as 'Specialist', as 'Sound Recordist', 'Musicologist', 'Anthropologist', 'Ecologist', 'Outsider' and so on.

I would suggest we add another category to Lacy's list – that of the *Artist-Ethnographer*. Hal Foster (1996) has suggested that the 'artist as ethnographer' is now the dominant model of the artist, describing a contemporary shift of focus towards racial and cultural differences or "otherness." But Soundscape Studies is more than just a fascination with sonic alterity and listening to the "other" – (isn't it?). It is our *means* of ethnographic engagement that is so important here. *How does the Artist-Ethnographer go about it?* Social and Cultural Studies have established general methodologies which set out ways of observing, collecting, questioning and analysing etc., but are these necessarily the models best suited to this artist's role? Furthermore, what about the inter-personal engagement – the physical and moral meeting places where the essential exchanges take place between community and this Artist-Ethnographer?

Marlene de Laine offers us some assistance:

"A significant moral issue at the heart of fieldwork practice in social science is the call for more participation and less observation, of

The social-ecological soundscape I am proposing we (as researchers, field-workers, musicologists and political individuals) move toward, is one that arises out of such a discursive democracy. A soundscape that is the consequence of local community values, needs and interests; a soundscape which is the collective responsibility *of* and managed *by* the community. This acknowledges the basic social-ecological stance – that all of our environmental and ecological problems are the result of an inequality in our *social* relations and interactions. Therefore, I would maintain that we should start to approach the soundscape not so much in terms of acoustics but in terms of social and political structures. Notions of what an appropriate soundscape should be need to evolve out of a grass-roots system which espouses community values, and not passed down from an outside 'elite' or a designers 'blueprint'.

Although a discursive democracy would not rule out an Acoustic Community (Schafer 1994) – if that is the their want – I think it would be highly implausible. This is not to say however that such ideas could not be *integrated* into the

being with and *for* the other, not looking at *[or listening to]*. The alternative to the traditional detached aloof observer, distanced from subjects to foster analysis and interpretation, is the researcher in the 'round'; is the thinking, feeling human being, who is caring, sharing and genuinely interested in friendship and the needs of others. The new form of field work being suggested not only puts people in contact with others in more sensitive ways than in past moments of social science, but also calls for more maturity, greater sensitivity, authenticity and integrity …What is assumed is essentially a personally involved, politically committed ethnographer, not the morally neutral observer of positivism…" (de Laine 2000, p. 16–28).

De Laine refers to a 'moral passage' faced by the ethnographic fieldworker . At an early stage in the field they encounter a fork in the road, a choice of two 'career paths'; (a) an impersonal, universalistic ethical model which maintains a separation between the observer and the observed, or (b) a 'moral passage' which wrestles with problems of self-identity and relationship, where "problems are not conceptualised as having solutions so much as being lived." We can find both approaches in the multi-disciplined approach to Soundscape Studies. However, I sense that there is a now a tendency, if not a *need* (certainly within Community & Environmentally oriented Arts, and Ethno-Musicology even) to move towards the second 'career path' – the "researcher in the round".

Soundscape Studies, and its (albeit rather loose) philosophy of 'Acoustic Ecology', has values of that community and reflected in its policy making. *Can we think of a social-ecological soundscape in terms of an 'acoustic balance' or even an 'ecological balance'?* [e] The terms 'acoustically balanced soundscape' and 'ecologically balanced soundscape' are frequently referred to in Acoustic Ecology but are more conceptual than pragmatic. They have also become dangerously blurred and require a more practical definition. I do not regard them as being mutually inclusive: neither one necessarily accommodates the other; one is *phonocentric*, the other is *ecocentric*. Whilst I find the notion of an 'acoustically balanced soundscape' *aesthetically* and *musicologically* interesting, I think it would prove socially and ecologically impractical, even detrimental. If we

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[e] Murray Schafer has proposed the idea of an 'acoutiscally balanced' soundscape. This seeks a balance based on the various properties of sound which are; sounding and not sounding (or silence) in relation to time (temporal the frequency related characteristics of sounds (*spectral*) and the relative level of sounds (*dynamics*). However, thinking of the soundscape in such a musical way tends to abstract it from the social, economic, political and cultural processes or *instruments* that are responsible for it.

always had a tributary of environmental activism. This underlying activism sets it apart from a simple observation and collection of sonic "otherness". Besides the observation, sound recordings and noise level measurements, there is a crucial driving force within such projects which seeks both practical and legislative means of change towards a healthier and better functioning sound environment; from raising individual awareness, to noise legislation, to acoustic design. These approaches are crucial to maintain, even in the face of the current economical and political milieu, which seems to drown out any possible progress.

There is another important means to consider when it comes to advocating changes in our soundscape. There is general consensus within Green and Ecological thought that changes (and I am talking now of the *root* political, economic and social changes), have to take place from the bottom up, at a grass-roots level, *humanly* scaled and based around the unit of a community (see opposite). If, as I do, we subscribe to this line of political and ecological thought, we ask ourselves, *"where in practice should the artist-ethnographer / soundscape researcher / fieldworker best situate themselves?"* and *"what role(s) should they undertake?"*. I would argue, what better a situation than *being with* and *for* a community? What better role than to help identify and galvanise community spirit and values, and the political structures to realise them? The soundscape, with its primary emphasis on *listening*, can be a way into this process and hopefully emerge better for it in the future.

talk of 'a balance', this should be a *dynamic* social and political balance grown out of the right of each individual to participate equally in the decisions which affect them and their futures. So, we might consider a 'balanced' soundscape not exclusively in acoustic terms but in terms of the political structures and processes which are responsible for it.

Finally, in light of such a discursive democracy and social-ecology, I would like to argue for a more community centred and qualitative methodology. I want to propose that the way in which we – in our various roles of 'soundscape researchers' – *relate to* and *interact with* a community is as equally (if not more) 'ecologically' significant as the actual study and awareness of the soundscape itself. In other words, though we may concern ourselves with desired results (i.e. a 'balanced' soundscape or otherwise) it is the *means* by which we arrive at them matters crucially.

Eoropie village, beach and Machair, Ness, Isle of Lewis.

All the while, there was I, with the microphone, in the *mix*. "What are you doing?" the Japanese translator had asked me. [*hmmm, the easy response?*] "I'm just recording the sounds."

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Rhythmicity

Justin Winkler

In an article from 1986, French philosopher and sociologist Henri Lefebvre and sociologist Catherine Régulier have been envisioning a "rhythmanalysis". Such is the title of Lefebvre's small book of 1992, *Eléments de rythmanalyse*. Here I want to reflect upon rhythmic phenomena outlined by these texts.[1]

In the very last lines of *Rythmanalyse,* Lefebvre is pleading for listening as the genuine approach to rhythmicity and summarises that rhythm analysis is a transdisciplinary field, not a separate discipline. He challenges the 'distancing effect' of scientific approaches and asks for practical participation. Lefebvre proposes that there should not be a dichotomy between time and place but a notion of localised time coinciding with the notion of temporalised place.

This is not the place to go into detail about Lefebvre's and Régulier's texts. I want to retain one essential issue however, which is of interest for soundscape studies: rhythm and the way they consider it as a field of social power. The question of the political power of the rhythms – environmental and social ones in their interplay – is an interesting one for all soundscape study approaches. Moreover, the idea of a radical transdisciplinarity is basically known to all soundscape researchers; it implies that there are no fundamental divisions between subjective and objective, the researcher and his/her subject of interest.[2]

Rhythm is defined by the approximate repetition of a cycle – thus standing out from *measure*, the precise, identical repetition of a cycle. I would like to make the point that although *rhythm* thus implies many kinds of elasticity and resilience it is actually a structure of extreme robustness. We can, together with Lefebvre, imagine that rhythmic systems develop a strength similar to those of well entwined paper fibres which serve as a bridge capable to support heavy weights. Rhythm is concrete, worldly time, *rhythmicity* its systematic aspect.

Lefebvre and Régulier write about the relationship between rhythm and social power, giving the example of Mediterranean city-states which throughout history have oscillated between tyranny and democracy. The most ancient is the city of Athens, followed by the great gravitational centres like Rome, Alexandria, Venice, and Marseille. The realm of the private gains strength and resistance through its rhythmicity: "What then is a [urban] centre, if not a producer of rhythm in the social time?" In these terms the harmony or *eurhythmy* of a place or a territory would be the result of a continuous struggle between the rhythms of the other and the rhythms of the self, "a struggle between a measured time, imposed and external, and a more endogenous time".

Time and space are essential dimensions in the sonic world. Oscillations of any scale are determined by a time-space ratio, by two quantities that condition each other mutually. Soundscapes are thus essentially manifestations of rhythmic systems, both in the sonic and subsonic realm, in their objective constitution and subjective evaluation. The time factor becomes crucial when active awareness – the shift from hearing to listening – is introduced. This awareness can be either unaided listening or recording. Both of these modes are inextricably limited by fatigue or sound support capacities, thereby creating an effect of framing. Every researcher attempting to document soundscape phenomena has to account for the time scales involved in their observations. Just as postcards represent "typical", atemporal scenes of a place, so should sound observations and documents be understood as embedded in the context of possible variations of a place.

Attention for objective environmental rhythmicities can be observed in J. G. Granö's cartographical mapping of a rural place in Southern Finland in 1923 (Granö 1997/1929). When showing the colour and sound phenomena he had to split the visual codes into temporal strata; "in spring", "on summer days", "often" and "oc-

casionally". In Schafer's "Tuning of the World" (1977) we find in the appendices the diagram of a 24 hour day cycle from the countryside. The empirical basis for this is a 24 hour recording in the early seventies near Westminster Abbey at Mission, British Columbia, which was also the object of a CBC radio program titled "Summer Solstice". A similar day-cycle has been recorded by the World Soundscape Project team in spring 1975 in Cembra, Northern Italy and recomposed into an "audio-cartography"[3]. Whereas Granö is metrically localising and qualitatively describing sounds, the WSP's diagram is based on a physical decibel y-axis with secondary qualitative features (Schafer 1977, 266).

These examples gave the Swiss research group[4] the idea to record different soundscapes in order to bring out their specific cyclical character. Recording the audio samples was accompanied by continuous presence of observer-recordists who also established a written protocol and simultaneously recorded sound pressure level measurements (SPL). Later we have submitted a web-micro project – in analogy to the web-cams – that would have us enabled to observe a given place for longer periods such as weeks or seasons; it has so far not become real.

Place-Time Profiles

The circadian ("quasi-daylong") cycle observations were made with the aim of describing in more detail the fluctuations that constitute the keynote sounds or "tonality" of a given place. The schematic re-composition of the audio samples allows the listener to follow a sonic day and to experience the character of the keynote sounds, representing the typical structuring signal sounds and soundmarks.

The by-product of the SPL samples allows us to plot the general outlines (or envelope) of the soundscapes and to compare them in visual abstraction. Bearing in mind that these figures are derived from complex qualitative phenomena, we can determine two basic rhythmical patterns in the observed Swiss landscapes. In the diagrams below, the rhythmicity is described using an L90 reading. L90 refers to the SPL level which is exceeded during 90 percent of the measurement duration (here 4 minutes). L90 is thus giving the "least noise" horizon, so to speak, the acoustic "ground" of a given sound surrounding.
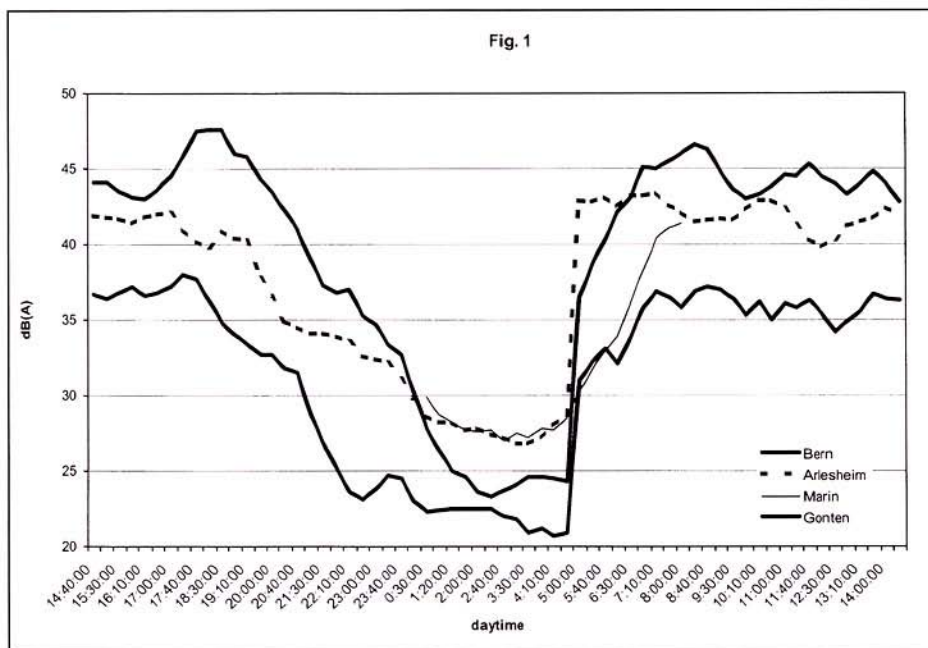
Fig. 1 represents the first group: active daytime versus silent night-time. It appears that the rhythmical division between urban and rural is futile. A busy street of the city of Berne exhibits a similar rhythmicity as the rural village of Gonten in Eastern Switzerland. In both cases the characteristic "attack" (steep rise) in the early morning this is produced by traffic *and* dawn bird chorus. These are spring and early summer situations. The autumn profile of suburban Marin (incomplete due to SPL meter failure) shows that traffic alone gives a slightly different morning pattern. The "attack" is followed by a fluctuating daytime "transient" and a slower "decay" in the evening, receding into silence in the middle of the night. Note that the official Noise Protection Act[5], which defines day and night as 06:00–22:00 hours and 22:00–06:00 hours respectively, cuts across the oscillation observed in the Fig. 1.
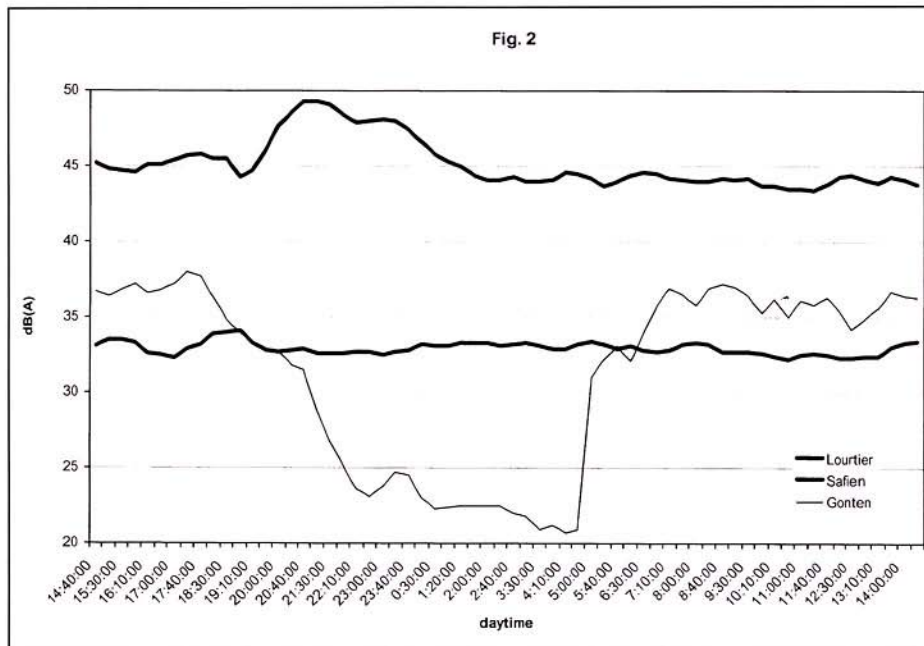
Fig. 2

Fig. 2 represents the second group: Two mountain soundscapes dominated by the running water of rivers; it is contrasted by the "silent" pre-alpine landscape of Gonten. The L90 is undulating at a specific level, determined by the distance to the river. It reflects the prevailing pink noise of the water which is absorbing all energetically small sounds; even if those can actually be heard through it thanks to specific frequencies, such as the melodies of the blackbird. Day and night are not evident in these environments marked by general noise, also if you consider lower percentiles such as L50, the median level: only single events without obvious rhythmic recurrence will stand out – thunder, low flying planes, farming vehicles. Consequently we become interested in the monthly to yearly cycles of L90, and its dependence upon e.g. weather, temperature and drainage patterns.But this still remains a future project.

Sensibility and frustration

The Kirchenfeldstrasse in the Swiss capital Berne was the subject of a project that looked at collective coping with unbearable traffic noise.[6] The result of the SPL survey, compared to rural sites, is given in Fig. 1. Here I want to consider in details some formal properties.

Within the scope of SPL values from the Berne example (Fig. 3a/b), we realise how the "least noise" level (L99, bottom) relates to the "activity noise" level (L01, top). Moreover, we compare the situation between the street front (Fig. 3a) and back-yard areas (Fig. 3b). The latter have not only an average of 10 dB less sound emission, but also a different morphology. Both activity noise and minimum noise levels show an attack-like acoustical dawn, and a slowly fading-off acoustical dusk. Activity noise has a more steady, less inflected presence around 70 dB. The night silence is remarkable: it indicates a sleeping town. Between 1am and 4 am spans of uninterrupted silence are realised, concretely: only every 8 to 10 minutes a passing car.

Fig. 3a: street side
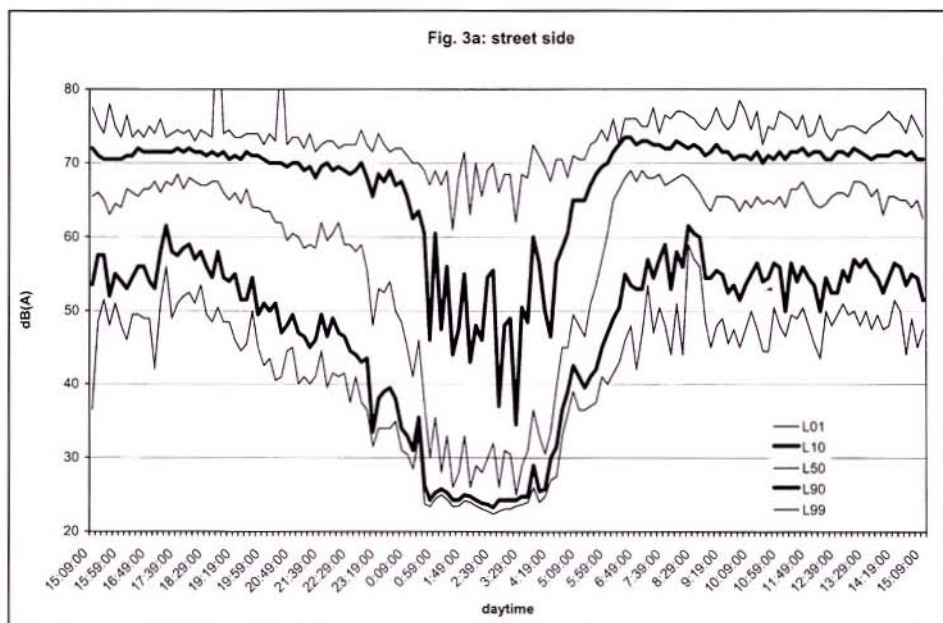
Fig. 3a/b: "noise-silence span"
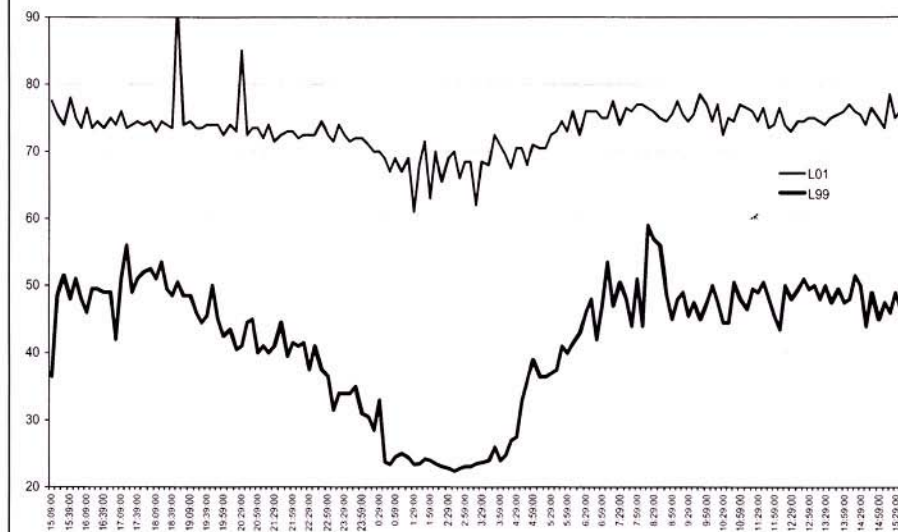
Fig. 3b: backyard
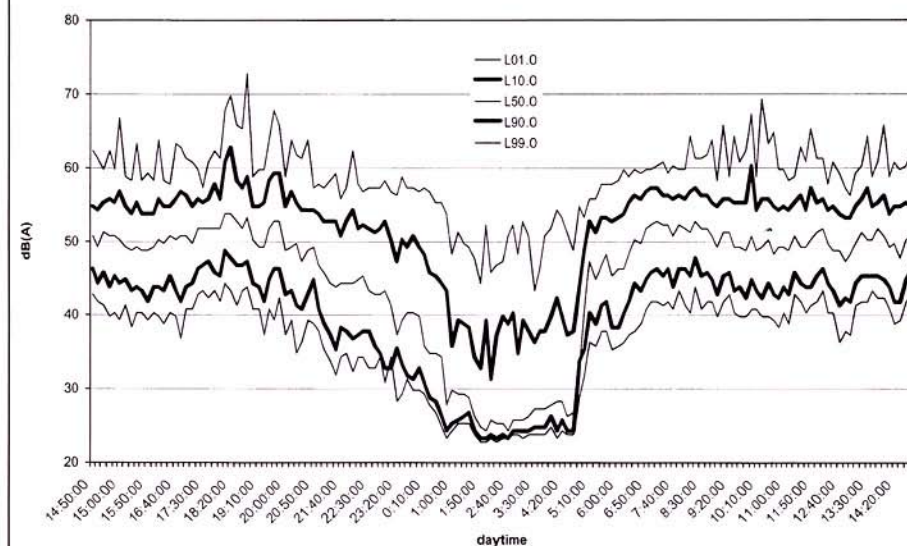
However – and this is the social truth corresponding to this metrical approach – the night does not count. In a public meeting towards the end of the project, aiming at an assessment of the traffic pressure situation as experienced by the residents of the neighbourhood, people found it hard to realise that the night was *so* quiet. A participant remarked that even when the night is silent he is never aware of it "because the windows are closed". And in the extremely silent parts of the night, every single car that passed was felt to be even more of a disturbance. The closed window was the leading topic of discussion; the desire for double-glazed windows financed by noise abating programmes; the necessity of keeping the windows closed in order to protect the apartment from noise and dirt; the window as an instrument for the resident to vary the relation between indoor to outdoor. The closed window was the neuralgic interface between the private space constantly bothered by the effects of the public space.

In order to reduce the noise level by 3 dB the traffic would have to be cut down by half and 10,000 cars a day redirected to some other bypasses city-wide. In the mentioned discussion there was a strong desire to close down all traffic during the night when, as the readings show, there was very little traffic anyway. So protecting this time-space could be interpreted as a realistic manoeuvre to avoid addressing the real problem of halving the amount of daytime traffic. The latter would be viewed as a kind of political *kamikaze* activism.

Traffic also has a certain speed, which here, compared to the urban setting, was mostly judged as being too high. Part of the discussion focused on lowering speed limits as a means of dissuading traffic, reducing noise and protecting pedestrians. Yet a laconic scepticism prevailed, formulated by a resident: "It is not decisive if the traffic circulates at 30 or 50, or 45, or 65 km per hour: three decibels less, as I understand it, in our subjective perception is nothing. This sounds cynical perhaps, but we think that if it was only a bit less loud, we would be much happier. Yet, two years later we will be back here saying it's still too loud…"

Empowerment

What about leaving the Kirchenfeldstrasse for a quieter neighbourhood? One socially active person in the neighbourhood has definitely got fed up with the noise situation and is about to sell his house and move away. Another person has already left the Kirchenfeldstrasse after twelve years in a rented apartment. She remembers: "Well, by then I did not discuss with the house owner about it [replacing the old windows by more noise insulating ones], because the rent was so low. I always think one cannot have everything in life. And I knew all the time that I won't be there forever. But now, living here, I cannot understand how I was able to bear it. Only now, in retrospect, my husband and I realise what a loss of living quality it is, to live in such a place."

Can you imagine she was talking about a road lined with mainly two-storey houses that have a narrow front garden and a larger back garden? A blessed neighbourhood, with a church in the middle, some well-guarded embassies around, a wood situated nearby and the river Aar running close by in its scenic canyon.

A rhythmic "system" like the one sadly experienced by the residents of the Kirchenfeld neighbourhood in Berne is a powerful, persistent structure. A tenor in the evaluation of the situation was that "this road is a fact", it will persist that way for several decades, yet the people are living there right *now*. There is no empowerment of the citizens to face a situation like this one – and there are abundant examples all over the world of people experiencing noise as power exerted upon them. The rhythmicity of soundscapes, irrespective of the so-called 'urban' or 'rural', is a phenomenon still to be fully documented and designed .

Endnotes

[1] The role of time in soundscape studies is dealt with in some depth by Albert Mayr in this volume.

[2] From a rich literature I refer here to two readings of different nature. Mikel Dufrenne, *L'oeil et l'oreille*, Place, Paris 1991; and the (transdisciplinary) method book edited by Michèle Grosjean and Jean-Paul Thibaud, *L'espace urbain en méthodes*, Parenthèses, Marseille 2001.

[3] Cembra, from R. Murray Schafer (ed) 1977. *Five Village Soundscapes.* The Music of the Environment Series 4, Burnaby (cassettes not easily available). Also, *Summer Solstice*, a day at Westminster Abbey (Mission B.C., Fraser Valley), part of the CBC Soundscapes of Canada Program from the mid-seventies.

[4] The research project *Profiles of Swiss soundscapes* (German/French), FNS 12-30981.91 et 12-36109.92, conducted 1991–1993, was a co-operation between the geography departments of the Universities of Basel and Neuchâtel and the Swiss National Sound Archives. The results (Winkler 1995) remained unpublished.

[5] Ordonnance sur la protection contre le bruit, 15 december 1986, into effect 1st April 1987.

[6] The project *Basisarbeit zur akustischen Umweltqualität. Aktionsstudie Kirchenfeldstrasse* of 1998 was possible thanks to the Fachverein Arbeit und Umwelt Bern. We have to express our gratitude for the measurements to acoustician Thomas Gisi of the Environmental Board of the City of Berne.

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Looking for a 'Right Method'
– Approaching Beyond

Noora Vikman

In May 2000, in the village of Dollar, Scotland, an elderly lady Nancy McNeal had politely agreed to fill in a sound diary. Some days later, when I returned to her house, she had not yet completed it. I tried to make it clear to her that she had time to consider if she still wanted to write her answers. After having originally agreed to cooperate, she finally found a proper way to decline this seemingly difficult task, saying, "to be honest, this is slightly beyond me." (NV/FD/D0500)

I was impressed by this answer. Her refusal was expressed with a tune of irresistible and 'original' British politeness. This incident became a small turning point in the way I conducted my soundscape studies. For a native English speaker, her response may not have expressed anything extraordinary, but to me it revealed the often very fragile constructions we make when trying to find ways to communicate. It concretely pointed out the difficulties people have determining their attitudes and roles when participating in the research process. When I returned from the field, this anecdote from Dollar made the 'failures' in communicating about sound issues more meaningful in other ways. It now seems a good case in point with which to approach the contents of this article.

The fieldwork was done as part of a soundscape study project *Acoustic Environments in Change* (AEC) which followed the route of World Soundscape Project's *Five Village Soundscapes* (FVS) conducted in 1975. After returning from the four month fieldtrip, I promised to describe the process of how the collected research material really materialized and I began to find a sensible way of analysing the

interview material. I had travelled with a wide range of questions with which to approach people's acoustic experiences in relation to their place. In this article I will consider 'what are good questions?' In addition, I will look at more general research questions concerning the objectives of my study, as well as questions to be asked in soundscape field interviews. In the end, I give examples of what I call 'visionary questions'. These were developed during the fieldwork as a way of encouraging people to express their outlooks on the qualities of the environment.

Methods Hiding in the Field

The first step of the creeping research process of inductive ethnography[1] is the search for relevant research questions. This 'struggle' can be likened to the tale of Don Quijote who struggled with the rotating sails of the windmills. He did not 'know' what he was fighting against and wrongly estimated the nature of his 'enemies'. He had read too much of the knights literature and thought in his affected mind that the windmills and sheep he was fighting were giants and dwarfs. Similarly, since various ways of knowing and not-knowing exist, I want to stress the ethnographic process as a multiple learning process. The often unexpressed aim of ethnographic field studies – which I now believe I was an agent for – is that the research strategy is flexible. Roughly, the ideal seems to be that even the most 'fundamental' questions set in the beginning of the process change. In that case the enemies of the researcher are not the people difficult to get into contact with but the various things unknown becoming known in a new way.

It is often said that Soundscape Studies is a new field and still searching for its objectives. After meetings with several soundscape scholars, this 'mantra' had started to sound a little false. Different methods in the study of our sound environments have already been actively 'tested' in practice since the end of the 1960's. Also, interestingly, many efforts have been made recently in a concrete direction; methodological models are borrowed from different fields and developed, as we can read in this book. Many soundscape manifestos, academic research reports, or environmental sound art ideologies exist. Actually, the world seems to be full of good intentions.

Despite these various approaches to Soundscape Studies, we are without detailed concrete descriptions about how to stop the reality we aim to describe. In spite of the fact that soundscape researchers and composers have been in the field listening to common spaces, the *practical, contextual knowledge* remains somewhat hidden or unconsidered. The seemingly 'banal', everyday experiences and sensations of the field worker are not to be read in many publications. Utilising the experiments with the senses may easily appear 'banal' if they are not connected to something 'generally interesting'. Of course it is fruitful that there are debates also on a theoretical level[2]. However, as Henrik Karlsson (2000, 12) suggests, the stagnant state of practical research may be created just because of this 'academic barrier', where 'soundscape methodology and theory are not compatible', discouraging the description of the practices and its evaluation.

In that sense, I am not arguing for a coherence in soundscape methodology. From the beginning, I have never believed in a 'right method', or in fieldwork as a strictly controlled performance with the aim of finding an all encompassing methodology. Along the ethnographic ideals of 'reflectiveness' and 'openness', I am arguing for a more detailed description of the individual choices made in field, the courage to reveal the practical realities, as my examples in the end of this article may represent. The challenge to produce 'new', cumulative information demands some space for experiments on the level of an individual study project. Thinking about sound phenomena in all of its multiple aspects, it is easy to believe that methodological pluralism rather than correctness would work when dealing with these issues. To create multiple acoustic images of one place[3] – as usually is the case in an individual soundscape study – different methods have been brought together and employed simultaneously (See Hedfors and Berg, in this collection; Tixier in this collection; Amphoux 2000). Also, the moral of the AEC-story is that, in general, the questions and themes around how and why to concretely approach soundscapes in the future would be best approached by testing different methods (See Uimonen in this collection).

Therefore, instead of speaking up for particular methods, what I think is more interesting is a description of how the qualitative tools are used as part of the ethnography. Every individual way of connecting the theoretical literature and practical experiences creates new types of knowledge, realities and stories. The main

concern in the field of ethnography, at least since the beginning of 1980's, has been how to tell this story[4]. My firm belief is that the representation still can be constructed without using 'too much' the force of subjective interpretation. At least the criteria for representation always demands proper argumentation. On an academic level it may seem as though new scholars are trying to re-invent the methodological wheel. Still, as well as all kind of 'everyday practicalities' as the decision making made by the field worker, and the personal interactions are varied and important to be aware of. In that sense, there's necessarily nothing negative in the fact that soundscape study descriptions may give an impression of that wheel made just rotate again and again[5].

Also in my practice this long ongoing 'crisis of representation' has appeared as a practical challenge. Certainly, it is a challenge to try to be continuously conscious of our possible preconceptions. As writers of their compact story the researchers may represent only what they 'know' and leave the questions and doubting outside the story. Our fictional Don Quijote as fictional – of course – did not write his story himself. He also did not know or care about what other characters and readers of the story 'knew' about his doings.

The quickening speed of idealised self-reflection kept me specially restless and impatient. I kept on wondering how literally I should have taken the good, old advice by Bronislaw Malinowski, the early pioneer of anthropological fieldwork, that the ethnographer shouldn't leave anything outside his or her interest (Alasuutari 1996). Even if Malinowski himself had his own ways to interpret and limit the 'anything' of this ideal the often heard question 'how do you get the information out of the people' started to sound more and more uncomfortably mechanical in this light.

In respect to my initial thrust in favour of ethnography as anthropological, the best way to approach any subject is time. Anthropologists argue that, if one is really to understand a group of people, as is the aim of an hermeneutic approach, one must engage in an extended period of observation. Non-anthropologists are more likely to study particular milieux or subcultures (Silverman 2000, 37). Anthropologist or non-anthropologist I was there listening. I felt good following given – even if very general and obscure – ethnographic ideals. Basically, the inductive ideal encouraged me to find the improvised guiding principles on my own. I tried to keep

in mind that all kind of grass grows from its roots. The purpose of giving time, the value of scientific work, the patience and concentration, appeared when spending time counting the cars, walking in the cold rain, sitting lazily in a bar drinking coffee in the middle of the Italian heavy users, and listening to a time designer's advice: 'never do things in a hurry'[6]. A big part of the preliminary practical field-work was distant, ethnographic observation and listening to the environment.

Looking inside my first-person fieldwork practices and ethnographic attitude[7] I also seemingly felt uncomfortable to identify with the objectifying act of 'observing'. The concept seemed to be coloured and the act 'contaminated' by the researcher's theoretical perspective whereas the opposing, striven and supposedly different way of perceiving the acoustic environment was that of the 'local people'. One method commonly used in methodologically multidisciplinary soundscape studies is interviewing the people. There is a current tendency to evaluate the interviews in the section headed 'problems' in the end of research reports, which wonders and explains why the answers didn't really answer the concrete questions asked of the interviewees. Technically, the former way is a valid way to practice self reflection and criticism. From the point of view of a humanist, ethnographic study, however, still seems like a starting point rather than result. That is why I chose the subject of this writing – interview questions as experiments and more deliberate methods – from the 'dumping ground' of other studies. Instead of having to choose between these two ways – 'my' and 'their', the people's way, observing and asking, the 'emic' and the 'etic'[8], the mutuality in the perceiving processes in which the knowledge is constructed are underlined. Nowadays in ethnography concepts like 'dialogue' and 'interaction' are used instead of 'interviews'[9].

Even if the chaotic and multiple real world never exactly fits into the frames derived from any of the scientific traditions, we still can and do act within it. Let's listen forward to hear the clashes of lonely knight Don Quijote's shiny swords. It was a somewhat naive idea to see the practical methods as bridges to cross the romantically challenging stormy rivers of reality. Anyhow, the process of becoming aware of the existing tools, of the theoretical and methodological gaps and dichotomies released other forces to do things. In most cases, though, the 'stormy soundscape' to be tamed 'behaved well' and its meanings were 'listenable'. It was not as stormy as I had imagined. However, I realised that what actually fascinated

me were the 'accidents' and surprises from which I learned. Reading the slippery sound phenomena in the field has a certain fascination and uneasiness, through all the different accidents and misunderstandings. I even gave this sound family a name and started to call the sounds that disturbed and stole my attention 'acoustic magnets'. They were sounds that I heard but didn't recognise, sounds that awoke my curiosity and whose meaning or source had to be found out. I also wanted to pass the address to the people and let them help in my approach of 'making a mess of the reality' with their interruptions that raised new questions. Personally, then, I seemed to be more familiar and interested in the questions than answers. But in the whirling process I certainly didn't like the one question, 'how many questions are enough?' Why was it so easy to ask but difficult to answer?

Questions Before the Answers

Any material keeps silent if you can't set questions to it. Pertti Töttö (2000) has been provoked by the overly inductive qualitative ethnographer's resistance towards (any kind of) hypothesis and presents advice how to focus on 'the right questions'. The basic moral of Töttö's statement is that the research problem determines the more concrete ways of approaching the research subject. Also, the ways we try to achieve information – the questions – reveal objectives of a particular study – what we are really after.

I empathised Töttö's approach to make some sense of the never ending tug-of-war between the 'opposite' qualitative and quantitative – often wrongly drawn a parallel to positivism[10] – approaches in the social sciences. For example, during the field work I tried to convince myself that I could use data collected with quantitative principles as the material for qualitative analysis by describing the wealth of contextual information. For example, the idea of the listening walks[11], was expanded to the description of the situations where the material was collected. Later, the categorative analysis can work vice versa if needed: to do quantitative analysis of qualitative material.

I also emphatized Töttö's way – as a former hermeneutic who seemed that way to have been liberated from the limits of the hermeneutic limitationlessness – of

trying to generalize and define the essential or unessential of any study. The basic lesson for me, however, was that the very simple questions and the basic distinction between questions characteristic to qualitative and quantitative research can be used to help to conceptualize more in detail the aims of my own study: how the meanings of the sounds were constructed. (Töttö 2000, 72, 75)

	Descriptive	Explanatory
Qualitative	What?	How?
Quantitative	How much?	Why?

Adapting Töttö, when studying the physical soundworld quantitatively and answering the 'how much?' questions, the organising elements are *time* and *space*. Easily, timetables, routines and differences between private and public spaces become interesting matters of qualitative description as well. Answering the 'why?' questions would explain the causalities between different quantitatively collected material of sound phenomena. For example, referring to the claims in Five Village Soundscape, the question why the soundscape of Cembra is referred to as a 'human soundscape', would demand exact research questions specially for that purpose.

By comparison, in qualitative research we would rather ask *what* concepts and categories are used in the description and *how*. The interest is in people's talk, what things that are talked about and sometimes even in *how much* those things are talked about. (Ragin 1994, xii, op.cit. Töttö 2000, 74) In many situations the simple questions about pleasant and unpleasant sounds, for example, proved to be genial starters[12]. 'What and how are the sound(scape)s of Cembra?' are for the preliminary description of the soundscape of the place but also call for more descriptive and contextual information[13]. In the end, I was interested in the different contexts the heard sounds were set in and possible references to categories considered 'social', 'political', and 'ecological' in people's soundtalk. The 'how?' questions in the case of my study, then, were intended to approach also the way by which people *express* their acoustic experiences referring to these possible categories. As hearing is believed to be one important way of engaging with the environment, the question is *what kind of ideas, attitudes and models are selected and used to express these acoustic experiences?*[14].

Throughout the history of Soundscape Studies, various concepts have been used as tools in an attempt to grasp and categorise the phenomena of the sound environment. This initiative was done in R. Murray Schafer's book the *Tuning of the World* (1977b). Also, Barry Truax has defined soundscape concepts further in his *Handbook of Acoustic Ecology* (1978/2000). It is easy to agree that a common and unproblematical way of using these concepts is important. However, even if commonly accepted lexicons of soundscape terminology do exist (Augoyard & Torgue 1995) these concepts are not consistently applied throughout separate research practices[15]. These concepts, then, should rather be considered both in relation to the subject itself and to the common academic language. The aim of the 're-search', then, is also to re-interpret meanings, to also be reflective in terms of the concepts and that way to look for new ways of expressing and understanding acoustic phenomena[16]. After the so called 'textual turn', explanation or expression of phenomena is studied as a 'construction'. If we recognise that all concepts reflect values, creating a new concept and thus emptying out the old meanings may be a better way to a more exact expression. Since we should no longer be 'innocent' in relation to the use of such concepts, it could be said that a major change in soundscape studies has also occurred in this field: 'the tuning of the world' has changed into 'the tuning of the soundscape concepts'[17].

About the Rules and Roles in Ethnography

When the used concepts can no more be taken for granted, we need to examine a variety of points of view. In the process of translating 'values into norms' it is possible to make a distinction between different approaches by determining *who* is interpreting the sound environment, who is speaking and defining it. The interview question written down on paper, is just the very beginning of the process of mutually conceptualising the experienced sound phenomena.

Sounds, and the issues surrounding them are not an everyday topic of discussion. Many soundscape researchers interviewing people have faced problems when basing their questions around sound experiences, and have themselves also admitted that even the simplest questions about sounds would be difficult for themselves

to answer. Even trained skills in conceptualizing do not guarantee that participation in a discussion about sounds would be easy. Of course, the best reward for a researcher would be quick, exact and well formulated questions and answers. Ideally, the ethnographic writer could just quote them and add as such to his or her narrative. But, usually, that is not the case. The clash of ideals and reality can be found in my fieldnotes: *When you have realised how you should have done something, you are already far away from the place you should have asked the questions.* (NV/FD/C170300). The immediate reaction of the interviewee may tell us more about their 'mental facility' than about sounds and actual experiences. In the interactive situations, some people get enthusiastic, some get embarrassed, some want to flee away.

It is true, that when asked about the sounds of their environment, we often heard people answering, 'It's only cars you can hear here'. Or, like the Miller in Bissingen said surrounded by the droning sound of old, 1945 grinding machines: 'It is the same thing everyday what you can hear' (FD/NV/0300). The process of looking for and testing different questions was itself about approaching this problem of how far should we as researchers assist people to talk about something they are not used to. There is also a danger that the question about the 'right method' may make the researcher define the answers as 'misunderstandings'. The intention of the study was not to test if the people have understood the questions and not to belittle their expressions. Otherwise, first, we should have taught the people the accepted soundscape terminology and train them as to how to answer or listen in a conceptually 'right' way. Therefore, my approach includes an epistemological claim about people as active constructors of their 'reality'[18]. At least, stubbornly enough, I wanted to think of another way between these presented extremes: What if you listen to the answers that the interviewees *have* thought about? If the interviewees can explain their presentation about the subject, is it not as such, simply, a valid and important answer – in spite of what particular context it was connected to? I believe that the researcher's questions should and can facilitate a way for each individual interviewee to examine and express their personal acoustic experiences[19].

Furthermore, studying people's acoustic experiences is not only documenting 'what is now', but also offering a place for contemplation and to reflect upon past sound memories. It is, possibly, a case of creating a new contemplative and imaginative sphere, regardless of whether these moments have 'really existed' or not.

More informal interviews – and *listening* – as a method, offers an opportunity for recollection and also to go deeper into the contextual information. Soundscape Studies in general could offer – if not an all-embracing model about the common ways we listen to the environment – a suggestion to appreciat these varied acoustic experiences. This research overlaps with the more general educational aim of Acoustic Ecology. As in former Soundscape Studies, becoming more conscious in listening has been seen as a form of 'empowerment' (See for example Westerkamp1991). Furthermore, the participatory purpose of this kind of soundscape study was to engage with the common, actual issues in the community[20]. Interesting question is if people share any of the aesthetic ideas about the 'quality' and 'beauty' of their ideal environment.

Since the primary aim of this type of ethnographic study is to act beyond the opposite roles of the researcher and the researched, it is important that the people in the interaction process more or less play with the same 'rules'. The somewhat vague roles of the participants become defined in the research process of improvising the rules. Naming them is not to deny these roles and their effects upon the mutual construction of meanings, but a try to make them transparent. As an 'animator' the researcher is widening his or her role out of a distant categoriser and definer of the concepts to a participator (See Kurki 2000). The feared 'contamination' of the field by the subjective researcher, then, would just be the 'raw material' for the final ethnography of the senses.

If researcher's role in the research process is to define loosely the subject of interaction, raise the main questions, and later organise and analyse the material. Following this order, my ideal was, then, to let the 'people themselves' do the rest of the job; play their part, answer the questions, memorize and use their imagination. Ironically, people did not always welcome this 'freedom'. People voluntarily participating in the 'game' were often eager to learn more precise rules. Some people almost embarrassed me by asking if he/she had been of any use (FD/ NV/ N0600, FD/NV/V0393). In Nagu, after turning off the microphone, one interviewee asked after the interview: 'Wasn't it what you wanted?' (FD/NV/N0600) Sometimes in the schools I felt that the children got anxious in front of our questions. I felt like running to collect the papers away from them and telling them 'you don't have to do this if you don't want to'. (FD/NV/S0200)

There are also many other examples of people's expectations about the research process and their role as an interviewee. During the first soundscape interviews in Virrat 1993, I realised that it was rather difficult for example for the farmers to understand that we were interested in sounds and personal experiences (NV/FD/ 0393). People wanted to find a connection between acoustic issues and things generally important for them. But it was difficult for them to understand what sounds had to do with the actual and important matters which for them were the new EU laws. I got interested in people's ways of contextualizing sounds explicitly and, latest then, the idea of sounds as a 'tool' of studying life styles and attitudes proved to be useful.

Also in one interview situation in a Cembra farm house, we researchers were almost kicked out from the place for the opposite reason. The farmer couple had their expectations about our aims and the effects of our work. In his case, we as researchers were seen as the henchmen of the EU bureaucrats who had prepared the new agricultural legislation[21].

Cembra, in particular, was a place where the local people seemed to have got used to be the researchers' objectives. Many researchers had come specially to document their material traditions. The older men of Cembra were used to researchers asking them about past times. Spontaneously, they presented their repertoire of old tools, instruments, demonstrating their use and – especially for us soundscape researchers – imitating their sounds. (FD/NV/0400) One meeting in Cembra took an interesting turn. Having heard about the visit of the ethnomusicologist Ignazio Macchiarella, the local women choir had organised a performance and built a stage for them to sing on with all possible decorations they considered essential for a 'traditional scene'. The people had presupposed the ethnomusicologist's aim to come and observe something authentic and spontaneous, the 'living tradition' in the village. (FD/NV/C1099)

Once in a while in the field, I got tired trying to play the role of an active and open minded 'midwife' giving birth to common constructions of meanings of the sound phenomena. In my diary I can find notes written in the middle of 'being aware and open': Yes, I reveal even the last secret, which is: I'm not going to tell them everything (FD/NV/C200300). If not giving up the principles the immediate feedback from the people forced me to look in the mirror. I was often asked

about my own opinions, interpretations and impressions about the village of Cembra. This often asked question bothered me. The interviewees were seemingly interested in my viewpoint as a representative of my own culture and opened a complicated field to be aware of. Also it was not always clear how to differentiate between the two different roles – that of a researcher and that of the 'private me': which of them were the people asking their questions to and which 'me' wanted to answer. In the midst of varying feelings, I sometimes used a short and easy answer, 'Cembra is Cembra'. Later on, when enquiring about the local brass orchestra, the lady I was talking with just answered banda e banda (the band is a band) – obviously as a sarcastic feedback to my earlier short and rather curt answer (FD/NV/ C281199).

Both ethically and technically, then, the task of talking about sounds can become rather laborious. As the researcher's aim and authoritative status always privileges asking the important questions, it is also necessary to ask oneself what is the adequately good reason to legitimise this curiosity – this act of interruption – not only in relation to the peoples and cultures studied, but also within the academic community[22]. When people suddenly find themselves in a social situation where they do not know how to act – as described in the beginning – the soundtalk has to be considered as any other intimate subject of talk. People have their private reasons for not answering, and these reasons may always remain private. It is important to recognize the warnings of violently crossing the border of people's private territories. Personally I expected the interviewee to be able to draw these borders themselves. Simply, if people wanted to share their experiences I was ready to listen. When feeling uneasy about writing publicly about the field experiences, the main rule was that the analysis could be shown to anyone[23].

A more fundamental, ethical question, then, is why should the supposedly intimate experiences of the interviewees be explicated and shared publicly? One research interest, of course, is that people's experiences as 'homes' of their feelings always remain important for them. The experiences considered emotional and private can also be shared as a sphere of 'something in common'.

When describing their experiences with sounds people also need time to find tools to tell their story. It is an interesting subject to categorise what kind of 'self-help methods' the interviewees created to present their acoustic experiences. For

example, a forester from Lisignaco, Marco Armani, told a story about a man who arrived in Cembra valley and stopped at the nearby forest. He began knocking the spruce trees to find out which one of them was suitable to be used in building the instruments for Stradivarius. Marco Armani said he had read the story 'from a book'. (NV/FD/C191199) I never checked if this story was 'true' or not, or thought that corroborating the story would have made it any more 'true'. The story itself is interesting but also the way it is linked to another context. This story just told me how he actively tried to find a way to talk about the sounds, to connect the sounding phenomena of the forest to written history with different references. Since people seemed to aim to connect their own stories with wider, commonly known 'stories', some interviewees started to look for videos and history book pictures about the area to jog their memories. In their answers they were colouring their stories with descriptions of how history could have sounded. (FD/NV/C1199) Since the interviews also produced information about the ways people connect sounds to different contexts, I became specially interested in the discourses people themselves create around their acoustic experiences memorized and how they talked about sound issues. How do they express them? How do the participants make these phenomena meaningful in the research situation? The answers to these questions consisted of loose details, individual notions, sounds connected to wider stories, clearly value-based categorisations, references to different historical contexts.

From Answers to Questions

If – roughly – all answers and first impressions are considered to be equally valid results anyway, why to bother to look for the even more right questions? In my search for adequacy for the qualitative work from the quantitative question 'how much is enough', I believed, the 'amount of quality' in the interview questions would fulfill the criteria of reliability of the research[24]. In Cembra I drafted a questionnaire and sent it to the whole project group to be commented. It was at first meant to serve as a common 'sound questionnaire' during the AEC-project's field work. Defining 'quality', thus, proved to be an interesting process. Comments

about the details of the questionnaire reflected commentators' beliefs that asking specific questions which kept to a certain theme would guarantee more control in the form of systemacy in the process. First, the list of questions was supposed to be a questionnaire including well planned, simple and general core points. However, during the fieldwork period, after conducting some interviews these questions provoked discussion about the purposefulness of the single questions[25].

What made forming the questions difficult was casting our nets so wide and balancing between generality and specificity. The common questions for the project's purposes had to be quite general to be able to be used in all of the AEC-villages[26]. How could we know in advance what 'the very general' and at the same time 'the core' acoustic experiences of the people would be? In practice, some of the core questions started to seem irrelevant because of the responses.

Anyhow, for example, the individual interest areas of each researcher could not be asked in detail since the aim was not to conduct marathon interviews. Also, very specific questions gave the impression that the research group had a fixed perspective. As Catharina Dyrssen commented: 'In these questions one senses that you have a very specific hypothesis about the correspondence between radio/television and soundscape. Is that so?'

Guiding the discussion towards stressing any more specific issues required preliminary knowledge and impressions about the actual place and people. Originating from the everyday field experiences, the use of the 'audiovisual prothesis' seemed to belong to a spatially *private* world. For the beginning, I thought, it would be sensible to approach the 'common' and 'general' by anchoring the concrete questions to the place, the village area, as a common space. In Cembra the sounds of cultivation were the link to the common use of public space since farming still was a lively activity regulating the everyday life. To approach people's relationship to their place, then, it would be relevant to also ask details about the advantages and disadvantages of living in the village linked to these common activities.

In the questionnaire I wanted to ask in what part of Cembra the interviewee lived and if (s)he had lived somewhere else. Henrik Karlsson asked: 'Is it important to know if the interviewed person lived somewhere else; if so – it would be important to add: when, for how long a time. And why knowing if the interviewed person has moved within Cembra?'

Since this question raised doubts, its purpose had to be considered again. The concept of 'place' was meant to be theoretically a flexible one. Thinking further about listening to the village as a place it was essential to know from which point or direction people mostly listen to the place – 'whereabouts do you live'? A detailed description produced from this supposedly important point might tell a lot about how the interviewee positioned him or herself in the village and so forth the interviewee's relationship to the place.

To be able to more easily form an acoustic image of the place, these conceptual tools also offered a flexible space to move in it, spatially as well as temporally. A good stimulant to awaken people's sound memories proved to be questions that connected to the rhythms of the village life and to acoustic memories. These told both about the village life and the sounds connected to it. We asked: *Describe the annual cycle of sounds in Cembra. How can you hear that it is Spring, Summer, Autumn or Winter? Describe the daily cycle of sounds in Cembra? How can you hear that it is morning, day, evening or night?*

The questions changed also languagewise because the translators also had their comments about how the questions should be expressed. During the journey they were translated first from Italian to Swedish, to German, French, English and – in the end – Finnish. The culturally distinctive tunes appeared in the ways to express the questions languagewise. For example, in Italy, we tried to find the borders between the 'sophisticated' and 'popular' language. In the end the demand for exactness made me give up the questionnaire and just concentrate on flexible but reasoned interview questions that were used in practice to support the dialogue in daily interactive situations.

As a Dessert – Visionary questions

The very concrete questions are the keys to communicativenes in the end. A fascinating way of approaching the soundscape in the research plan of the AEC-project (Järviluoma 1999, 8) by asking about *unknown sounds* – the sounds that remain unnoticed and unidentified in the village – made me suggest to widen the idea. The question about *absent sounds* – 'what is excluded from the soundscape?' was

rejected from the common list of questions as being too abstract. Even though I agreed with the rejection, this seemed to be another point for self-reflection. Why couldn't I leave these questions about unknown and absent sounds in peace? Why did I think that the subdued sounds had to do with 'the actual' and determinative soundscape?[27] Wasn't it that we were supposed to study the audible world? At least I had to go a long way to form this idea into a concrete and 'proper' question to come back from "beyond".

A good example of following and developing this obsessive clue is a small question that ended up on our list of interview questions: 'What sound would you take to a desert island?' At first this light-hearted question I presented at the breakfast table in Skruv caused some embarrassment among my colleagues and anxiousness about how it would 'work'. However, in the end, it became the amusing and favourite question in practice[28]. Responses to this question mostly related to loneliness; those of the private life – for example sounds of the family. Some of the ones who mentioned music cancelled the answer because they could not choose which music they could listen to all the time. Also, sounds of birds and wind were abandoned on second thought because they would already exist there. In addition, a 'self-playing accordion' was deemed as being accompaniment on the island. (FD/NV/S0200). It may have been even more fruitful to ask this kind of question right in the beginning of the interview rather than 'as a dessert'. This surprising question created a relaxing and playful atmosphere and, most importantly, made people understand that they are not expected to give 'right' definitions or answers to our questions but to talk about their own experiences. Talking about historical changes in the acoustic environment, for example, people wondered why we asked them about sound issues if the work was already done. That happened for example in Lesconil where we were advised to go to the local archives where they would 'know' the 'facts' (FD/NV/L0500).

Johan Huizinga brings forth the question of the ethical and technical again in his sentence: The one who denies the role of the objective value of ethical norms will never find the border of play and reality (Huizinga 1984). This description of a humanist 'homo ludens', a playing human being, encouraged my idea, that some conscious playfullness included in the process of interviewing would help to diminish the distance between the interviewee and interviewer. But as the playful

was set a more 'serious purpose' the desert island question kept teasing me during the fieldtrip journey. Later, in a bar in Segonzano village, on the opposite side of Cembra in the Cembra valley, a woman was explaining to me the rules of Italian ENA-lotto. This gave me another idea about how to approach the topic of sounds with the locals. Imagining oneself very rich usually starts with a series of mad dreams – what would I do if I won 12 000000 000 liras on the lotteria (NV/FD/C210300). Already the amount of zeros was too impressive to imagine such an amount of money. If money was no obstacle for the dreams of the locals, what would they be? I immediately wanted to test this 'visionary method'. I tested the question asking the bartender. He answered jokingly, knowing my home country, 'I would fly to Finland'. (NV/FD/C220300)

Serious and successful or not, this made me want to test more 'visionary questions'. In my diary I was imagining, with an amount of self irony, how the people would participate in the ideal soundscape construction game: 'What if the bartender would have known I was conducting soundscape research and I had asked about sounds? I could have asked, 'What would you change in the acoustic environment if you won 12 000 000 000 liras in lottery'. One might answer; 'I would build a 'ring-road' so that the noisy cars wouldn't pass my house or Cembra' or 'I would replace the material of the prophyr trucks with a soft one, so that the stone noise couldn't be heard up in the village', or 'I would buy a house for my noisy neighbour and send him to live there in the next village', or 'I would buy bus tickets for everybody who has to drive a car to Trento everyday'. Of course many of the acoustic environment's obliquities can't be handled financially, but how beautiful these clearly explicated answers would be for a soundscape researcher! (NV/FD/C210300)

Later I was commented why it was that my imagination in the diary only had produced these noise preventing suggestions: Would the answers have been beautiful whatever the response, whatever the 'reality' of their dreams? Would they be beautiful because they are free and playful or because, in my examples, they were acoustically 'ecological' ? Of course, I was not expecting 'correct' or agreeing answers. I was hoping clear and explicated answers to season my ethnography, that the auditive sensations would be considered tasty, even sensational. Would somebody want to build an airport just to be able to listen to the roaring of the airport?

If yes, that would certainly be an interesting answer. Rather there was some irony included towards the expectations and dreams about the logics of certain noises as problems all people would actively want to solve.

Put basically, how we view our 'quality of life' is determined by those things that we value the most. The common aim of these visionary questions was to stimulate people to access their otherwise private acoustic experiences. One way was to use the help of the research group's technical equipment that was available. For example, the question 'What would you like to be recorded in Cembra?' led me one morning to follow an invitation to a local bakery in Cembra. This was a quite a private place to listen to the fragile morning sound since nobody except the two workers in the bakery would normally hear it. When the white bread (baked everyday for the local breakfast and lunch tables) was just taken out of the oven, it made a tinkling and rustling sound. (NV/FD/C0400). In another case, the question revealed points people did not want to identify with the place. For example, I was clearly asked NOT to photograph the caved slopes of the mountains around Cembra or to record the tractor motor idling inside the stone house where I lived early in the morning – the things I myself had observed as interesting sounding details worth documenting in the village. (NV/FD/C0300).

During the fieldwork we were writing reports for the Internet, so I also asked people 'what sound story would you like to have been written in internet?' One suggestion led to a story of the glass acoustics of a wine cellar (*caneva*) in Cembra (See www.tpu.fi). The male choir singing was an important part of the village social life. We were invited to the forest mountain slopes, to *baitas* (stone huts) to listen to the Sunday singing gatherings lasting all day. Listening to the tuning of the choir with 700 Muller Thurgau wine bottles behind on the shelves was another unique acoustic experience. (NV/FD/C110400; NV/FD/180400)

Thinking more about the content of the questions, I wanted to get in touch with the lifeworlds[29] – the immediate experiences of the people. The idea of the visionary questions was also to encourage the people to be the 'theorists' of their own lives. On a manifest level, asking these visionary questions I believed, was also to try and get in touch with the 'not-yet-lived-worlds' and to map people's possible dreams. As nostalgia is an imaginative way of longing for somewhere, to a lost time

or to a future better place, sounds were also the carriages to travel to these nostalgic or utopian worlds.

Another visionary question was born in an electronic shop in Bissingen. We specifically asked the owners about the past sounds of the kitchens in the village. As the malfunction of memory in such a situation sometimes made people seemingly embarrassed, the situation had to be quietened somehow. In the end, I guess it is fair to say, we were partly after the exact dates and numbers of when the different domestic appliances or new electronic inventions arrived to the village. That is why I found it insufficient not to mention to the interviewees that we may be interested in more than just the specifics of our question. Alternatively, asking the people to, 'Imagine this village after 25 years' released many stories based on the past and present knowledge (FDNV0300) – exaggerating the present inventions and recalling the past ones.

With all these 'visionary questions' I keep on looking for a sensible space for 'something common' in the ways people think about their immediate environment. The imagined 'sounding island', the beyond, the soundscape of the future, is no more deserted if this empty place is inhabited with meanings, for example one's utopies accommodated there. We may all have had expectations, hopes and fears for our future environment. As people in the 1930's Finland were told to be afraid of drowning under the piles of horse manure on the streets, nowadays a commonly expressed environmental nightmare scenario, is 'What if all the Chinese had fridges?' The fact that dreams and fears have little to do with the 'hard reality' may cause their underestimation as meaningful subjects of study. The purpose of my study, then, is not to criticise the life styles of the villages nor idealise them as such but to give some space for the acoustic experiences to bind these possible worlds together. In practice, nowadays any place is only a 'part-time paradise' for many of us. For example, since prophyr mining in Cembra stops in Winter and agricultural activities get quieter, many locals travel away from the village. This annual movement – in Cembra caused mostly by livelihoods such as mining and tourism – could be heard and read in soundscape descriptions in all of the AEC villages.

Conclusion: Change – What if
'the future is not what it used to be'

The process of producing an ethnographic representation is an art of underlining. Researcher's role is to decide what to underline and with what colour. In this article I have tried to make a coloured mix using core concepts 'ideal', 'quality', 'beyond', 'future', 'absent', 'positive'. To conclude, in my research process, approaching the aim of 'something common' I ended up on the level of 'the ideal' and 'visionary'. The people in the village 'know' about its quality in other ways compared to an outside observer. My ideal, as a researcher and 'underliner', is to approach the ideals of those who live in the village.

Even if ethnography is understood as the study of the present, also, methodologically, following my questioning, turning towards beyond it can be seen as logical in the end. The reason for the difficulty of contemplating and talking about sounds heard around us may be that the world of sounds is too close, too 'present'. As one of social science's challenges is the self evident, talking about the 'absent' and the 'ideal' may create a comfortable distance to the subject studied. As well as sound memories turning towards the past, acoustic utopias referring to future, offer temporal distance. Memory brings up sonic nostalgia, which naturally affects the hopes set for the future. I wanted to ask what kind of sounds would be present in such a utopian 'island', the image of a place. These intimate and emotional expressions include valuations about the 'aesthetic', the positive and negative. In this article, then, instead of referring to the enchanting net of soundscapes of all possible kinds, I have preferred talking about sound as a tool for making sense of the meanings given to the environment. The direction of study presented in this particular article is to approach the lifestyle by listening and making people listen to the sounds their culture produce.

The 'cultural' in my study focuses on a construction called 'ecological culture'. Sometimes the basic distinctive factors between social and humanist approaches, are drawn leaning on a claim that the humanist approach lacks a clear 'problem'. In terms of the ecological, then, one could ask: shouldn't we really be studying the biggest noise problems? Talking about human life, thus, any stricter setting of the several questions concerning the various relationships with the environment would

be artificial. What is considered 'ecological' does not necessarily connect to any special eco-culture as a subculture or include an expectation of the people of the group having *similar* aims concerning ecological acts or attitudes. Still, 'ecological' pretty much has to do with the 'sustainable' – things believed to be the common future good. In the analytical categorization I rather try to separate the different 'ecological' attitudes, still understanding them as integral and concrete constituents affecting the local lifestyle. For example, in the answers to the sound preference tests and the ideals expressed, mentioning the most pleasant and unpleasant sounds may seem 'ecological'.

The fact that people are actively constructing their ways of thinking does not mean that they would be actively realising their constructed ideals. Still both reasons to act based on categories like 'knowledge' and 'beliefs', or 'rational' and 'ideal' form our ideas about the future. Neither way of knowing, however, reveals much about the certainly more complicated process to understand why people's ideals and actions do not meet. The 'possible worlds' to be described include people's fears and wishes, dystopias and utopias. In my study, also the explicit denial of these ideals is considered one form of what I have called 'adaptation stories', strategies to deal with the nature-culture paradoxes in people's relationship to their environment.

An illustrative way to describe this type of cultural analysis may be to compare the point of views of history and future studies. Since there's no guarantee that the future ideals would ever become 'true', the epistemology of the study is different. The visions of the future, can't 'lie' in the same sense as memories from the past 'lie'. However, we think and act using the storage of different meanings without recognizing how it is organised temporally. The synchronic cultural research concentrates on studying the present, not looking for the roots of people's present acts and thoughts from the fixed meanings given to the common historical past. As well as the idea of past, the idea of future is constructed by the people living in the present. I leave the speculation of the value of the synchronic – diacronic dichothomy a question for the future.

With my questions about the future I wanted to approach the appearing nostalgia for something 'beyond' – to a lost time or forwards towards a future ideal place. I wanted to ask more about people's expectations about their future through its 'visionary soundscape'.[30] Asking these questions, then, I have understood the

AEC project's idea about 'change' timewise another way. Instead of comparing the empirically documented past and present, I draw out the time continuum to the 'future'. Because the present still matters I could rather ask the same questions: 'When does the future begin?' Or 'How do images of the future affect the present?'[31]. This suggestion of 'grass roots future studies' is set aside from the future studies based mostly on large scale socio-economic statistics, its models of good life and society and scenarios about economical and technological trends. As fast as every tiny moment is becoming history, 'the future is not what is used to be' (as a well-known saying goes). For that reason, at least, the ideas of the future are worth being ethnographically documented.

Endnotes

[1] See, for example, the editorial introduction of the Handbook of Ethnography (#Atkinson & al. 2001, 2–5). Ethnography has always been marked with diversity, it overlaps with traditions that share many common features, uses and considers multiple methods: participant observation, interviews, conversations, interaction, dialogue in contrast to only textual materials and Moreover, it always includes a variety of perspectives.

The writers of the book want to be aware that typologies and developmental schemas for ethnography can ultimately do violence to the complexities of research and its historical development. For this reason, the listing of the core elements of this book is quite general: They even talk about the 'ethnographic spirit'. Basically, the aim of the ethnographic research is to understand cultural difference. It remains firmly rooted in the first-hand exploration of research settings. In my study, still, methods as practical tools are to be tested. Here, then, – in addition to general definitions of ethnography – I will present 'preliminary results' since inventing and 'manufacturing' the tools also is an important part of the ethnographic process.

[2] See for example, Soundscape 2000 and 2001. Henrik Karlsson (2000, 13) is suggesting an encouraging anthropocentric model for studying sound environments suggesting that human being is not a rational but a corporeal being. Ruebsaat (2001, 8) adds an interesting point of view to the philosophical discussion about the borders of public and private spaces where different ideas about power and its 'location' concretely overlap. In this short 'debate', as I interpret it, the distinction is made between studying the people's actual ways of perception (Karlsson ibid.) and suggesting listening philosophy as 'the deepest form of thinking' (Ruebsaat ibid.) and as such an empowering tool. The question who listens to who also points out researcher's duty to make clear his/her starting points and preconceptions for thinking and acting and how – depending on the previous fact – he/she is using the power of rhetorics. This should not be an example of saying no and yes at the same

time. Since we always need a perspective I'm asking why we should let these preconceptions hinder our action.

[3] Here instead of the acoustic image the general term 'soundscape' could be used just as well. However, some studies want to point out the problems inherent in the descriptions of those who define the place acoustically. I also want to make a similar distinction by using the concept of 'acoustic image', which hopefully identifies with the *active process of constructing* this image.

[4] Clifford (1990) has pointed out that ethnography of today is less concerned to separate itself from subjective travel-writing. See more detailed description about the ethnographic process (Sanjek 1990). Ethnographic validity may be assessed according to three canons: theoretical candor, the ethnographer's path, and fieldnote evidence. Reliability refers to the repeatability, including interpersonal replicability, of scientific interpretations. (Sanjek 1990, 394–395)

[5] Here I want to reflect upon a comment made during my presentation in Dartington, England at the Sound Practice Conference in February 2001. Somebody from the audience reminded that these fieldwork problems have been solved already. He was referring to the classic 'Writing Cultures' by Marcus and Clifford (1986), the first book dealing with the questions of representation in writing ethnography. He was right to remind us not to answer the same questions again and again. However, the actual 'face-to-face' realities and situations are always new and unique. Field practices are not simply dealt with just by reading The Book.

[6] Albert Mayr offered guidance during my stay in Cembra.

[7] As a distinction, an ethnographic inquiry still typically studies a particular person or group in a particular place in time (Seamon 2000, 159) without having to fix its perspective anymore to ethnic absolutisms (Clifford 1997, 3).

[8] *Emic* and *etic* analysis refers to a distinction borrowed by anthropologists from linguistics. Emicists concentrate on describing the indigenous values of a particular society while eticists apply broader theoretical models across a number of societies. In practice, anthropological research has always entailed mixture of emic and etic approaches. (Marshall 1998, 190, See also Moisala 1991, 127)

[9] Defining the 'ethnographic interview' it is not only distinguished from survey type interviews but the respectful, on-going relationships with the interviewees is stressed. Both the time factor – duration and frequency of contact – and the quality of the emerging relationship help distinguish ethnographic interviewing from other types of interview projects by empowering interviews to shape, according to their world-views, the questions being asked and possibly even the focus of the research study. (Sherman Heyl 2001, 369)

[10] Positivism is, above all, a philosophy of science. As such it stands squarely within the empirist tradition. Metaphysical speculation is rejected in favour of 'positive' knowledge based on systematic observation and experiment. (Marshall 1998, 510)

[11] Listening walk was a method used during the Acoustic Environments in Change – project's

fieldwork. Every possible sound heard was listed during walks in different parts of the village.

[12] Sound Preference test was introduced already in Five Village Soundscapes (1977a) asking people to list five most pleasant and five most unpleasant sounds.

[13] In ethnomusicology there seems to be discussion about the relationship between what we call 'text' – the actual sounds – and what we may call 'context' – the 'environment' – however defined – that helps us make sense of our audible experiences. Along ethnographic ideals, we can expect answers to questions like 'what is the relationship of those two', 'what is the context', 'how is it constructed'. Context is not necessarily an escape from the actual subject, the text, as warned, but defines the meaningful hermeneutic hole and may fruitfully position the text, in a particular study or research tradition (See for example Rautiainen 1999 and 2001).

[14] A distinction must be drawn between this kind of study and a more precise and systematic way of setting the how-question. 'How do people listen' can refer to studies of mental processes in more detail, which would be a matter of more specific perception study.

[15] In different qualitative studies, the description of how the definitions are formed in the analysis in cooperation with the interviewees are very vague. For example, naming a 'soundmark' of a certain place may be done by the observing researcher only. The authority of the definer is enough to legitimize this definition. The definition 'soundmark', thus, already includes a valuation. Soundmark is a term derived from landmark to refer to a community sound which is unique, or possess qualities which make it specially regarded or noticed in that community. (Truax 1978, 111)

[16] In phenomenological research, 'phenomena' refers generally to things as human beings experience them, and which define meaning in a broader way including to also include bodily, visceral, intuitive, emotional, and transpersonal dimensions. (Seamon 2000, 158–160). Concepts, then, are tools to be able to communicate between these different subjectivities.

[17] A good example is Justin Winkler's (2001) deliberation with the concept of 'acoustic horizon'.

[18] Social life, and the apparently stable phenomena and relationships in which it exists, are seen by ethnomethodologists as a constant achievement through the use of language. It is something that together we create and recreate continuosly. This is indeed the rationale behind the name: ology (the study of) ethno (people's) 'method' (methods) of creating social order. The emphasis is on doing things: we 'do' friendship, being a sociologist, walking on the street, and everything else. (Marshall 1998, 203–204; See more Heritage 1984 and Emerson and Pollner 2001, 118–135)

[19] An encouraging example about a fruitful interaction was an experience from my first soundscape interviews in one village of Virrat, in Finland. Without greater hesitation I intruded people's houses to ask a rather abstract question about 'the border of music and sounds' and for my own surprise we drifted into interesting discussions about the subject. (Vikman 1994)

[20] Mapping different images of 'quietness' of the village as a 'common corporation' I have been following the theme of tourism in Cembra (Vikman 2002)

[21] Interview with Eriberto Eulisse, Lisignaco (FD/NV/C1199)

[22] The literary turn has has encouraged (or insisted) on the revisiting, or reopening, of ethnographer's accounts and analyses of their fieldwork[...]and the representational crisis (of this period) has jeopardised not only the products of the ethnographer's work, but the moral and intellectual authority of ethnographers themselves (Atkinson et. al 2001, 3).

[23] A suitable guideline was expressed in The Handbook of Ethnography: Research should be judged in terms of it effects, particularly on the collectivity, rather than in relation to issues of power and control. (Dingwall and Murphy 2001, 343)

[24] Ethnographic validity may be assessed according to three canons: theoretical candor, the ethnographer's path, and fieldnote evidence. Reliability refers to the repeatability, including interpersonal replicability, of scientific interpretations (Sanjek 1990, 394–395)

[25] The suggestions for the list of questions were commented upon by Catharina Dyrssen, Helmi Järviluoma, Henrik Karlsson, Albert Mayr and Heikki Uimonen.

[26] The keywords in the project resarch plan were locality, place, quality of the environment and sound. The rest of the selected themes and headlines tried to follow the project research plan (Järviluoma 1999). They were General (personal information), Sound Preference, Sounds and rhythms, About the village, Time, Place/places, Acoustic interaction, 'Schizophonia', Listening to Music, Traffic. As a joker, there was a question: Have you heard that there has been soundscape researchers in this village before? Even if we met some veterans mentioned in Five Village Soundscapes study like David Graham in Dollar and Yngve Wirkander in Skruv.

[27] As interpreted in some soundscape analysis, we can lean on the assumption that the biggest power has traditionally produced the most determinative sounds: church bells and traffic can be seen and heard as sign of power, wealth or status symbols (Schafer 1977b, Corbin 1998).

[28] Later, I heard this question was widely used, for example, in radio programs and interview articles as a popular way to ask about people's special preferences.

[29] The definition of the concept 'lifeworld' already refers to the tacit context tenor, and pace of daily life to which normally people give no reflective attention and human beings do not make their experiences in the lifeworld an object of conscious awareness (Seamon 2000, 161).

[30] I owe it to mention an inspiring soundscape seminar I attended in Paris 1999 organized by Bernard Delage with this same fascinating idea. He had developed questions to the participants concerning future soundscape. Unfortunately, no document of the answers of this event is available.

[31] As asked in a book called 'Contemporary futures' (Wallman 1992).

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You don't hear anything 'round here!

Cognitive Maps and Auditory Perception

Heikki Uimonen

In the late 1960's Canadian researchers began to create alternative and multi-disciplinary methods to study our sonic environment. In addition to the quantitative and measurable features, the subjective and shared meanings of sounds and voices were taken into consideration. One of the fundamental goals was to raise awareness and advance local action for a better sonic environment instead of relying upon quantitative measurements made by authorities or specialists.

There is a slight contradiction between the rather grandiose hope for a better public awareness of the everyday soundscape, and the fact that so far the sonic environment has been mainly the interest of outsiders to the community or the area that is being surveyed. This is not to say that residents have been completely excluded by these ardent academics: 'Sound Preference Tests', questionnaires and interviews have been conducted with local inhabitants. In particular, the discussions dealing with the sounds of days gone by have provided useful information and have been seemingly enjoyable for the interviewees as well. However, in general the interview seems to lack one quality: people find it difficult to talk about issues that concern their everyday, contemporary sonic environment. The phrase mentioned in the title is heard relatively often among residents who are so accus-

tomed to the sounds in their surroundings that they no longer pay attention to them and thus find such sounds hard to verbalise. The main problem here is not necessarily the validity of the questions but the lack of integrating new methods with the ones that have, thus far, proved useful.

The views and the opinions of local inhabitants and the 'outside' researchers obviously differ. These two groups of people are affected by their different social backgrounds and their past experiences in varying ways. Each individual therefore pays a different degree of attention to sounds and the sonic environment. Despite the fact that their attitudes towards the shared soundscape may be quite dissimilar, it can be a starting point for a comprehensive analysis of the soundscape. Both groups produce valuable information separately and these views can be combined not just in interviews but also in other fields of research that can be applied to Soundscape Studies.

Two alternative ways to approach the sonic environment come from architecture and environmental psychology. Within these two branches of science the studies concerning the environment have dealt mainly with the visual aspects of perception (see. e.g. Lynch 1960, Allas 1993) though it must be remembered that some of the methods have also been applied to auditory perception (see Dyrssen 1998, Hellström 1998, Hedfors & Grahn, 1998). This paper is based mainly on literature that deals with soundscape issues and environmental psychology. It must be noted though that the new methods which are introduced here – *semantic differential* and *cognitive maps* – are presented only on a theoretical level, since they have not so far been tested in the field. In addition to this I will take into consideration field notes that were written on a three-month field trip to six European villages in spring 2000 with the Acoustic Environments in Change research project. The actual analysis tools that have been developed for the soundscape are excluded from this presentation. Instead, I will first comment on some methods – *interviews*, *Sound Diaries* and *Sound Preference Tests* – that can be and have been used to involve the local inhabitants when surveying their sonic environment.

Interviews

The environment can be observed both subjectively and objectively. At the level of *denotations* we are able for instance to recognize buildings in accordance with the established ways of thinking that are common in our culture (Prak 1977, op.cit. Aura 1982, 64–65). For example different kinds of activities are thus connected to the Church and to Industrial premises. In addition to this there exist *connotations* that are considered as secondary meanings that can be attached to different kinds of objects on a personal level (ibid.). Consequently, environmental sounds can be said to have both denotations and connotations at the same time – they can carry both general and personal meanings.

It has been assumed that the *place* is constructed by the meanings that are attached to a space (Stenros 1993, 313, op.cit. Järviluoma 1997, 40) and that sounds contribute to this process (Järviluoma 1997, 40). On the other hand the meanings are prone to change, especially with the auditory perception. The sounds that once were the subject of active listening gradually fade away into the background: shopping mall background music or the hum of the traffic are not listened to actively – if they ever were. Listening habits change or people just seem to grow numb. The attitude of a listener plays an important role in this matter: even the familiar place can reveal itself in a completely new way when listened to carefully (Uimonen 1999, 23). If the listener pays attention to the everyday environment actively, he or she is attaching new meanings to it and therefore constructing an environment in a different way.

Oddly enough, this also holds true when the interviewer wants someone to represent his or her everyday sonic environment in a not-so-familiar situation like the interview. The researcher is thus provoking the person who is being interviewed to think in a way that he or she seldom – if ever – thinks (Pool 1989, 22. op.cit. Vasenkari 1996, 95). It can be argued that this pitfall of manipulating is even more present when sounds are the topic of a discussion. Because familiar sounds and voices are known to be difficult to verbalise, the interviewer must be very cautious not to elicit desired and suitable answers by for instance presenting fixed questions instead of open-ended ones. At least this interaction should be taken into consideration when the material is being analysed. What we are facing

here is one of the paradoxes of Soundscape Studies and Social and Cultural Studies in general: how to inquire about matters that are not being actively observed?

One solution to the said paradox is to take the interviewees to the places that activate their memories. The researchers in the Five Villages Soundscapes study did this successfully in Dollar, Scotland (Schafer 1977, 71). They learned valuable information about present sounds and sounds which have already disappeared by walking around the district with its former town clerk (ibid.). In June 2000 a similar incident took place in Nauvo, Finland. During the Acoustic Environment in Change study the verger of the local church was being interviewed at his workplace. The soundscape of the church was quite original because of a grandfather clock that was placed close to the altar. The ticking of the clock brought back the verger's childhood memories and sound events that possibly could not have been recollected anywhere else (Uimonen, 2000a).

Sound Diaries and Sound Preference Tests

Sound diaries are notes on the sounds that are heard during the day including the feelings and thoughts that are related to these sonic phenomena. Originally these notes were only written down by the researchers but lately the sound diaries have been applied to the study of *sound preferences* of local inhabitants. One of the advantages of this method is that a person who writes the sound diary inevitably pays more attention to his or her everyday soundscape. For a non-resident, like the researcher this method is recommended especially when noting your first impressions since some of these perceived sounds tend to grow familiar in a short time and may therefore go unnoticed.

Sound diaries are quite practical when used in conjunction with interviews. It is possible for researchers to get better acquainted with the interviewee who keeps a sound diary. Adequate guidance is needed, however, because in the worst case the result is a list of different sounds without any information concerning their effect on daily life. The other alternative is to hand out the questions in advance. Diaries are desirable because of their time-saving nature especially when the sound preferences of a larger group are the target of a study.

The sound diaries can also be used to give support to *Sound Preference Tests* which have been used to survey sonic likes and dislikes. The test simply asks informants to list the sounds that they do or do not like. According to the Five Village Soundscapes study the most liked and disliked sounds were, in general, the natural sounds and technological sounds respectively. The effect of mass media was also noted during the preference tests with school children. When pupils were asked to focus on their local environment, sounds like "lion roaring" and "elephant trumpeting" were included in the answers. (Schafer 1977, 68), not to mention the little Swedish fellow who twenty five years later in Skruv's Björkskolan started his "Rock and roll, rock and roll" chant immediately when the question of the sounds that you like the most was presented (Uimonen 2000b).

Semantic differential

One of the other methods to study the relationship between the environment and an individual is the *semantic differential.* This method has been successfully applied in assessing the built environment. People have been asked to evaluate pictures of landscapes with the help of the adjective list of opposing adjectives e.g. beautiful-ugly, active-passive etc. The adjectives are arranged across a numerical range of seven points (1 to 7) and the purpose of a the test is to find out how well these adjectives describe the landscapes portrayed. (Osgood et. al. 1975, op. cit. Aura 1982, 66) Soundscape scholars could apply this method by recording the local environmental sounds and play them to people who take part in a test.

One of the advantages of the semantic differential is that it enables the researcher to become aware of the connotations and emotional meanings which are attached to the sounds by the inhabitants of a certain district. The sound preferences can thus be studied systematically with the polar oppositions instead of the personal likes and dislikes, which may differ considerably from each other. According to Acking & Keller there seem to be eight kinds of emotional secondary meanings that are connected to perception of the environment (1972, op.cit. Aura 1982, 66). These meanings are related to cosiness, diversity and spatial issues (ibid.).

As such, these subjective opinions are valuable pieces of information. Therefore the semantic differential should not be considered as a substitute or a separate method, especially when sounds and their meanings are in focus. The semantic differential and subjective opinions shed light onto the matter from diverse angles: the former can raise connotations which would otherwise be difficult to recall from memory and thus hard to verbalise. Polar oppositions can also serve as a catalyst capable of evoking emotions and memories when connected to the sounds of the environment. Furthermore the semantic differential can also be applied to a sound preference test when a large number of people is being surveyed. To map out the subjective opinions of an extensive group and to go over and scrutinize them in detail would demand more time-consuming methods.

Cognitive Maps

Cognition and schema

According to Ulric Neisser *cognition* is the activity of knowing: the acquisition, organization and use of knowledge (1976, 1). Knowledge must be obtained before it can be used and this acquisition is made by perceiving e.g. by listening, feeling and looking. All of them depend upon structures called *schemata* which direct perceptual activity. Perceiving does not require remembering in the ordinary sense, but it is an activity in which both the immediate past and the remote past are present. (ibid., 13–14)

The perceiver is continuously constructing anticipations of certain kinds of information that enable he or she to accept it as it becomes available. Therefore "he must actively explore the optic array to make it available, by moving his eyes or his head or his body". These explorations are directed by the anticipatory schemata and the result of the explorations – the information picked up – changes the original schema. Because of this "it directs further exploration and becomes ready for more information". (ibid., 20–21)
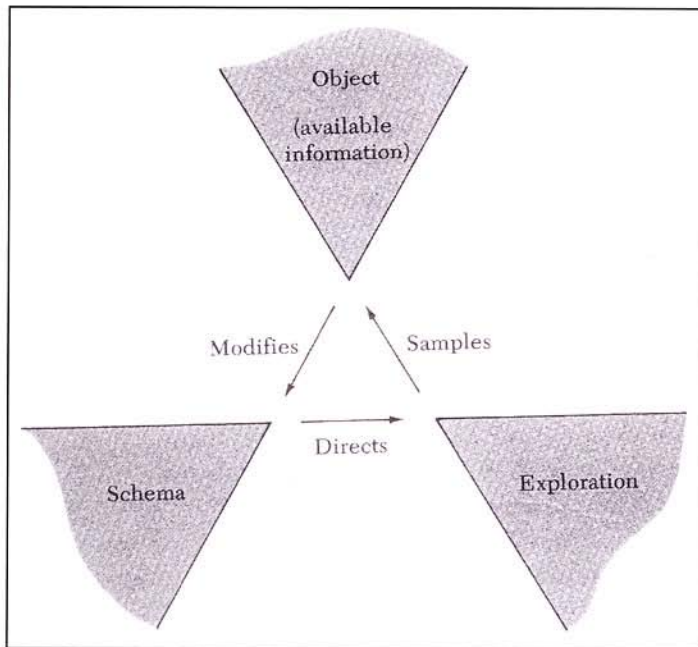
When Neisser writes about auditory perception he does not make any distinction between hearing and listening, although they differ from each other at least in that sense that the former can be considered as passive and latter as an active way of receiving auditory information. Thus hearing may be defined as a physiological function whereas listening is more or less cognitive. According to John Palmer, if hearing may be defined as the physiological function of our auditory sense, e.g. that we all have the possibility of physically detecting the sounds of our environment, listening may be depicted as the psychological attribute which is in action when we want to discern the sounds heard. Listening is, therefore, hearing the sounds of our environment and *responding* to them *actively* (105, 1998). This kind of perception usually excludes the effects of the hums and continuous sounds on information pickup although these sounds can be listened to actively. On the other hand the sounds in the foreground are perceived in relation to background sounds so the two processes mentioned can not be separated.

In terms of Neisser's perceptual cycle, hearing is basically the same sort of cyclic activity as looking, although it requires no exploratory movements like those of the eyes. The listener continuously develops readiness or anticipations for what will come next, based on information he or she has already picked up. These anticipations – which themselves must be formulated in terms of temporal patterns, not of isolated moments – govern what he will pick up next, and in turn are modified by it. (Neisser, 1976, 27)

Cognitive maps

A schema is part of the entire perceptual cycle which changes by experience. The information that has been accepted by a schema after it has become available at the sensory surfaces changes the schema itself. This directs movements that make more information available. (Neisser 1976, 54) The nature of perception cannot be understood without taking the mobility of people into account and the information
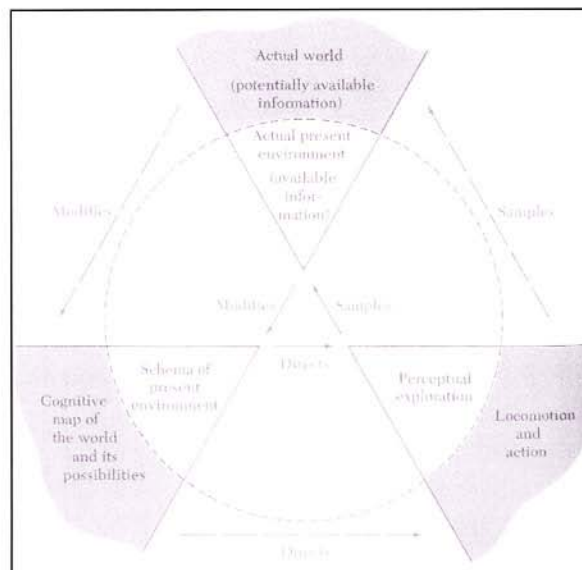
Figure 2. Schemata as embedded in cognitive maps (Neisser 1976, 112)

produced by movement is fundamental to spatial orientation in the wider sense. Information picked up as a result of motion is related to existing schemata and to a *cognitive map* or *orienting schema* of the nearby environment. (ibid. 108–110)

The example of schema and a cognitive maps suggest a rather different model of the relation between activities of different orders. They are embedded rather than successive. All information can only be picked up by an appropriately tuned schema. On the other hand all the information which is picked up modifies a schema. When we are moving through the environment, this can be called orienting schema or a cognitive map. This means that the perceiver and the environment are always included in the cognitive map. (Neisser 1976, 113–118)

Representations

Environmental psychologists have used cognitive maps to study the relationship of the environment and the individual. A cognitive map refers to an inner model that a person has created from his or her physical environment. This *internal representation* is constructed of visual, auditory, tactile and emotional information with the environment in addition to sensations that are connected to smell and temperature. A cognitive map is not therefore a map-like picture but a simplified representation with different kinds of information (Aura, Horelli, Korpela 1997, 105–106).

External representation refers to verbal or illustrated representations of the environment. Even though the concept of *image* can be used with both representations mentioned above it must be remembered that part of the internal representation is subconscious. External and internal representations can thus also be referred to as *environmental descriptions* and *environmental images*. On the whole, one can use the term cognitive map to describe various processes connected to spatial thinking or perception in a physical environment. (Allas 1993, 28–29)

Cognitive maps not only help in orientating, they also have social significance. The group images of residents or different groups of people may consist of common symbols or fixed points that can be a subject of a discussion or a point of reference. Thus, the images are able to strengthen the feeling of togetherness and

local identity. In addition to that, the images affect personal identity, since the cognitive map is constructed from the places that are significant to a person. If the environment is quickly changing the cognitive maps may become old and inadequate. As a result of this the activities become difficult for those groups of people that are not able to use their environment easily to get acquainted to changes in it, and thus cannot update their cognitive maps. (Aura, Horelli, Korpela 1997, 107)

Unlike in foreign places, the cognitive processes of orientating becomes a routine in a familiar environment (ibid., 120). Kevin Lynch has studied this construction of cognitive maps. In accordance with his method the research can be performed with interviews, drawings, by recognizing the objects from the photographs and with walks in an environment that is being studied (ibid., 108). On the basis of these answers, and of rough sketch-maps, Lynch says that cognitive maps typically include certain characteristic features like landmarks (e.g. towers) or paths (e.g. routes) etc. A cognitive map is therefore a perceptual schema, though on a larger scale; it accepts information and guides exploration. In addition to that such a schema can be used as an independent source of information at interviews. (Neisser 1976, 123–125)

Cognition and soundscape

According to David Canter "a place is the result of relationships between actions, conceptions and physical attributes". Because of this the place cannot be fully identified before we know the physical parameters, a behaviour that is associated with it and the conceptions "which people hold of that behaviour in that physical environment". (1977, 158–159) Therefore, it is quite understandable that the place also manifests itself via sounds and voices and with the meanings that the inhabitants attach to these sonic phenomena. Physical and sonological attributes must thus be taken into consideration and then compared to the cognitive representations that the residents have concerning their environment.

In the normal environment most of the objects are *meaningful*: they afford possibilities and carry implications. It is these meanings that are perceived, not just lights or sounds. According to Neisser the meaning must be supplied by the perceiver

after he has registered the stimuli. (ibid. 70–71) In this sense Neisser concurs with the soundscape researchers very clearly because the focus of the study is neither on the stimuli nor on quantitative factors of the soundscape but in the meanings that are attached to sounds and voices. Quite understandably we do not hear vibrations but meanings, and meanings are not measurable (Stockfelt 1995, 59). Nevertheless they can be studied and analysed qualitatively.

Apparently, quiet soundscapes and their meanings can be interpreted in many alternative ways. As stated above the observer coming form outside of the community uses his or her sonological competence to value different aspect of his or her current sonic whereabouts – so to speak. Despite the valuable first impressions, the local soundscape may sound somewhat alienating since the meanings and cultural values attached to different sounds and voices are not familiar to a newcomer.

Unlike outsiders the local inhabitants are in different position to, "understand environmental sounds as meaningful" (Truax 1994, 50). This *soundscape competence* is quite close to concepts of the skilled and unskilled perceiver: the former is able to gain more meaning from the stimulus because, "he detects features and higher-order structures to which the naive viewer is not sensitive" (Gibson, op.cit. Neisser 1976, 20). It goes without saying that competent locals are more aware of subtle differences of their soundscape than people from outside of their community and are able to find meanings that remain unclear to an outsider. On the other hand the outsider may find everyday sounds more interesting and intriguing.

Nevertheless, cognitive maps and their representations can provide valuable information for soundscape studies. They already have in practice, since a certain kind of external representation has been applied to the analysis of the sonic environment. Different kinds of sounds and voices have been marked on a map during so-called *listening walks* though one has to keep in mind that in this case it is not a matter of reminiscing about the sonic environment but the active listening that takes place *in situ*. Also, it must be noted that the soundscape is not documented by the residents but by the outsiders of the community.

Cognitive maps could be used to support the interview or vice versa because the verbalisation usually also brings out other aspects, more than just the physical ones. The physical elements are usually the first to be presented when a person is asked to represent cognitive maps in a drawing. (Aura 1982, 58). The semantic

differential would bring additional perspective to the case in hand because the carefully considered polar oppositions would also function as a tool when the significance and the meanings of the environmental sounds are being studied.

In a study of the Finnish town Oulu there were 121 informants who drew pictures of the town and answered questions presented in writing. (Allas 1993) To interview such a vast number of people would be onerous for a researcher unless a smaller group of people were selected to answer more detailed questions. Another possible way to combine the methods introduced above would be to record environmental sounds and to play them to inhabitants. During the test they would be asked to mark the sounds on the map that they have drawn themselves.

Conclusion

Cognitive maps have been adapted mainly to visual perception, so the challenges of applying them to auditory perception are still ahead of us. It is debatable whether the methods developed for visual perception are adequate for the perception of sonic events or soundscape in general. On the whole it might be reasonable to ask if the study of the sonic environment and how it is perceived is possible without taking the visual or other senses into consideration. Or to quote Ulric Neisser (1976, 29):

> "The schemata that accept information and direct the search for more of it are not visual or auditory or tactile, but perceptual. To attend to an event means to seek and accept every sort of information about it, regardless of modality, and to integrate all the information as it becomes available. Having heard something, we look to see it, and what we see then determines how we locate and interpret what we hear."

On the other hand sonic phenomena have an effect on our everyday life whether we perceive them consciously or not. The point is to find suitable methods of charting these effects and especially how we react to them. Hearing or listening should not be considered as – or in the worst case reduced to – just another way of receiving information which works in collaboration with other senses, but as an independent sense as well.

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The Urban Nightingale

– or some theoretical considerations about sound and noise

Detlev Ipsen

T he Zeit, one of the important weekly journals in Germany, recently published a number of articles about noise (Die Zeit, august 9th 2001). They relate a lot of interesting information. For example, it is mentioned that the volume of a police car's siren has risen forty decibels since the beginning of the last century (this single fact can tell us a lot about the volume of other sounds in German cities). We are also told that during the last twenty years the average level of the urban acoustic volume has doubled and there is no indicator that this tendency will decrease. More than 65% of the people feel disturbed by traffic noise. More than 25% of the male population between the age of 14 and 25 years suffer from ear diseases.

But at the end of all these articles, there is no proposal that tells us what should be done, either by the people or their politicians, to reduce such noise. Henrik Karlsson has given us some important ideas about the political, economic and scientific barriers, which inhibit positive changes (Karlsson 2000, p.10). Karlsson proposes that a healthy acoustic environment should become a common right.

To realise this political aim it is necessary to find a clear definition of noise and sound. On the one hand this may seem simple. We know that a physiological limit for acoustic volume exists which is harmful for an average person. But this is not out normal experience. In everyday life the quality of the acoustic environment is commonly differentiated into what is comfortable and what is uncomfortable to the listener. But to find out which acoustic environment is comfortable or not, is even more difficult task.

This paper will discuss a proposal to define the difference of sound and noise which will hopefully become a pragmatic orientation: I will try to develop a theoretical idea about a given acoustic environment, one which people find more attractive than another. On the basis of these theoretical considerations, this paper will then propose how one could design an urban soundscape which is a little bit more comfortable than the existing one.

Definitions of Sound and Noise

R. Murray Schafer proposed four types of noise definitions, which vary from subjective to objective (Schafer, 1977, p.182):

1. Unwanted noise
2. Unmusical sound (defined as non-periodic vibration)
3. Any loud sound
4. Disturbance in any signal system

From my point of view, three of them (unwanted, loud, disturbance) belong to the same psychological concept: frustration. In the field of psychology, frustration is a key concept. Frustration means the interruption of behaviour at an individual level. The unwanted sound, the loud sound and the disturbance of any signal system are independent factors, which have a high probability to interrupt an ongoing process of action. Frustration is the emotional response to an interruption of a process, an action or behaviour, which would satisfy a person. Sometimes frustration is followed by aggression. To give an example: if a student concentrates on the solution of a mathematical problem and in the same moment a baby starts to cry this will interrupt their concentration. If the student is stressed this acoustic stimulus will frustrate them further. He or she will interpret the baby's cry as noise. On the other hand, parents might perceive the same cry as a lovely signal.

Both the quantitative and qualitative indicators of noise can only be understood within a cultural frame of reference. Generally speaking, culture defines the signal and decoding system in which all forms of communication take place and culture also defines the acceptable volume of acoustic environments. In the Greek

culture for example, in the mornings and at night, a rather high volume is accepted, but in the afternoons it is not. In the German culture high levels are accepted throughout the day but not during the night. Also the exceptions of this rule are culturally defined: popular festivals in Germany are, so to speak, the 'permission' or licence for a rather high volume, whereas between Sunday morning and afternoon the level has to be low.

In each culture again, one can identify various sub-cultures, group values and individual preferences referring to noise and sound in different ways. Which means for a definition of sound and noise, one can look at their level of social acceptance. In special places and defined areas these sub-cultural differences or individual preferences take place. The fans of car racing like the sound of racing cars but in every culture this sound is restricted in time and space. The sound of car racing in Monte Carlo is accepted and even loved in some parts of the city but restricted to a certain period of time. If some young drivers race cars in other parts of the city or outside the racing season in the same part of town, people will become angry and even the police may intervene.

Both culturally and individually, we can define the difference between sound and noise by our 'likes' and 'dislikes', by the sonic environments that we seek or avoid, by what arouses or frustrates us. This is very similar to the notion of noise as unwanted sound given by Schafer cited above.But we have to make clear that sound and noise should not be understood as a dualism but as a continuum. For this reason, one has a very broad and complex range within which the 'optimum' acoustic environment is identified.

Schafer pointed out, that it would be necessary to analyse the whole acoustic environment because it is not just one sound signal that may be disliked but a complex structure of various sounds. I would like to emphasize that it is necessary to analyse the whole perceptive field because there is a high interrelation between our visual, acoustic, olfactory and tactile perception of the environment. One can define an 'ecology of perception' as a balance of these different sensual modes. That way each sense is able to develop its optimal potential within the integrated or synaesthetic level of perception. This leads us to the concept of the perceptive situation. It includes all stimuli, which affect the individual mode of evaluating the quality of the acoustic environment of a person. To understand why sometimes a

specific acoustic stimulus frustrates a person and sometimes not, we have to ana-
lyse the whole perceptive situation.

Someone may argue that it is simply an overload of acoustic stimuli which
leads to evaluate a situation as frustrating but, we hypothesise, that to analyse the
perceptive situation will be more successful in understanding the difference be-
tween sound and noise.

Avoiding a conservative bias

Since the very beginning of the World Soundscape Project, the quality of the acoustic
environment was its main issue. Murray Schafer formulated a rather clear and
simple hypothesis concerning the quality of a soundscape – "The transition from
rural to urban life can be characterised generally as a passage from the hi-fi to the
lo-fi soundscape." (Schafer 1976, p 6) The reason for this, Schafer argues, is the
loss of daily and seasonal rhythms, of "synchronised beauty", which can be found
in natural environments. In this sense, the European villages, which have been
studied by Schafer's research group, seem to belong to a similar natural environ-
ment, or their soundscape can be described by similar rhythms.

Just the opposite is argued to be typical for urban settlements. "An (urban) lo-
fi soundscape is one in which trivial or conflicting acoustic information masks the
sounds we want or need to hear. Everything operates simultaneously with much
wasted acoustic energy and attendant destruction of nerves and eardrums" (Schafer,
1976, p 6). Besides the fact that this formulation has a clear anti-modern and anti-
urban connotation (which is mainly motivated by the feeling of being separated
from 'natural' and familiar patterns by the process of industrialization and mod-
ernisation), it can also be understood within the frame of a general theory of moti-
vation, especially the theory of complexity, which I would like to use here to ana-
lyse 'acoustic quality'.

This paper proposes a different theory to that of Schafer; it is not the difference
between countryside and urban places which produces hi or low fidelity, but the
level of acoustic complexity which influences the evaluation of the acoustic envi-
ronment.

The Theory of Complexity

Let us start with a short story. Once a friend of mine told me to go to a certain place in the city to listen to the beautiful sound of a nightingale, singing in the middle of an urban industrial landscape. That same night I searched and found the described place. It was a triangular area between two rail tracks and a highway. A narrow path for railway workers passed some bushes and a number of small trees. At night I could hear the sound of the city; running trains, the voices of some men cleaning the wagons of a train, the rhythmic sound of cars leaving a tunnel and the song of one or two nightingales.

Like my friend, I felt this place was fascinating because the acoustic experience seemed to be contradictory. I am used to hear the song of nightingales in the countryside. I connect it to memories of a farmhouse holiday and not in the least – like here – with the context of my everyday urban life. This 'contradiction' or abnormality could be the reason for the song of the urban nightingale being more attractive to me than a rural one.

This story leads us to some theoretical considerations. An acoustic situation may be attractive because it does not fit into our normal experiences, such as the nightingale's song. But without doubt this does not apply to all persons. The urban nightingale will be attractive for a person who seeks new, unexpected, bizarre and complex information. But another person may define the situation as an unattractive one for the same reason. For he or she it is too unexpected, too new, too bizarre, and too complex. And a third person may feel that the situation is not attractive because he or she had bad experiences in cities at night. This person may feel anxiety in this dark and strange locality in between railways and an urban highway. If one is timid, he or she is stressed and not open to new information.

That means we need some more theoretical knowledge to come to clarify the different reactions to identical acoustic situations. To understand how people judge their acoustic environment, the stimulation theory seems to be useful. Berlyne, who did a lot of work in this field, stated a hypothesis and tested it with a lot of experiments (Berlyne 1974). The hypothesis follows the idea that the motivational value of a situation may depend on the information, which belongs to it. The relation between the motivational quality of a situation and the complexity of its

information is a non-linear regression.

Let me explain: if the complexity of the information is rather low we find a situation less attractive. The same is the case if the complexity is very high and therefore not 'readable'. Between these two extremes, there is a level of complexity, which generates the highest possible motivation of an individual. This applies to any form of information including acoustic information.
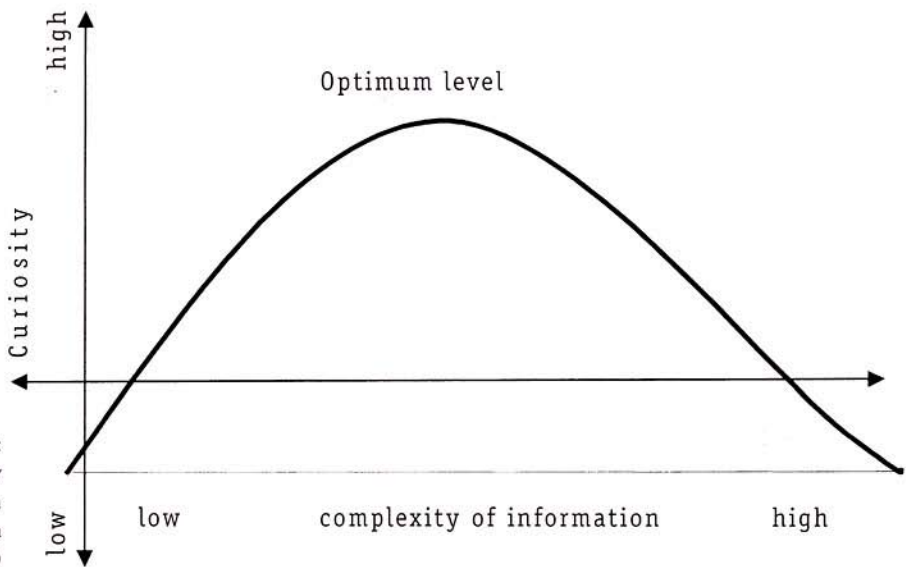
Figure 1:
Complexity
of Information
and Motivation
(curiosity)

We know this from our everyday life. If a situation does not have any new aspects for us, we feel bored. We will not be motivated to look for this kind of situation. On the other hand if we feel that a situation is overloaded, we try to escape. So the complexity of a situation basically determines the quality of a situation.

We also know from our daily experiences, that the way in which people define a situation varies. For different individuals the same level of complexity may be attractive or unattractive. This shows, that the way the complexity of a situation is judged depends on the individual adaptability and the features of the situation. The more one knows a situation the less complex the information input gets for

this person. A person with a high level of adaptability needs more complexity to find a situation attractive than another person with a low adaptive level.

But even for one individual the level of adaptability is not stable but dynamic. A person may perceive a situation to be too complex one moment, tomorrow it is judged to be at the optimum point, and the day after it is too simple. All this fits into our everyday experiences: We know a friend who is bored in a city which we think is very attractive, and we find ourselves becoming tired, if we hear the same story several times.

At this point one can conclude that the definition of the quality of a soundscape is partly a function of its complexity. The complexity itself is the outcome of a dynamic relationship between one individual's level of adaptability on the one hand and the informational properties of the situation on the other. This relationship varies between different individuals and also between different cultural groups. It also varies with time as a function of collective experiences and knowledge that individuals or groups gain throughout their lives.

Let us go back to the question for whom the song of the urban nightingale is attractive and for whom not. For myself the quality of the urban nightingale can simply be explained through the innovative character of the situation. This raises the complexity to a level, which makes this urban-industrial visual and acoustic landscape attractive to me.

This theory, as far as it is has been developed up to now, may explain the hypothesis of Murray Schafer as well: The perception of nature or a village from an urban perspective includes a lot of innovative elements. In this sense it may be the difference, which causes the beauty. In the unattractive urban soundscape, the feeling of conflicting information may be due to a lack of structure, which can be used to understand this soundscape as a melody or to speak in terms of psychology: to understand the soundscape as a gestalt (shape/figure), which makes sense to us.

An example may be useful: The one who likes the urban nightingale might be a student in urban aesthetics. He knows a lot of cities and different urban soundscapes. Because of his experiences with this issue he achieved a high level of adaptability. To be satisfied he needs unexpected and complex situations. Another person studies the song of birds in a purist way. Each acoustic or other stimulus frustrates him

because it disturbs the pure song of a bird. This person has a high level of adaptability as well, but the focus of his interest leads him to another interpretation of the situation. He may perceive the urban context of the nightingale's song as noise. A third person visits the city after a long stay in a very quiet mountain area. His level of adaptability is rather low. Therefore he will interpret the perceptive situation of the urban nightingale as overloaded and defines the acoustic environment there in general as noise.

The perceptive situation

In the next step we have to define the meaning of the perceptive situation. A perceptive situation has three components. The first one is the focus. In our story the song of the nightingale is the focus. It is the reason why my friend advised me to visit that place and it has been the motivation for me to stay there for an hour or even more. The second component is the context. The contextual qualities of this triangular area were the sound of cars and of railway traffic, the voices of the workers and the murmur of the city. Besides the acoustic elements, the shadows drawn by some lights and the darkness of the trees and bushes are part of the contextual component. The third component of the perceptive situation is the knowledge. Knowledge, which was gained from past experiences in similar circumstances and the stories, associated with them.

These residual elements are of great importance. They are not only the bridge between the different time intervals of our biography but they also connect our personal experiences with the collective knowledge of our culture. In our story, I remembered the songs of nightingales I had heard earlier in my life and associated these events with the countryside and my holidays. The particular attention I gave to the nightingale was caused by the exception of a bird singing during the night and the importance this bird had for the atmosphere of a summer night in the middle of Europe. In this way my former knowledge of a nightingale singing at the countryside has been placed in an urban context. This relation creates a rather high level of complexity and leads to a positive evaluation of the urban nightingales song.

To understand complexity one has to analyse the whole situation created by the focus, the context, and the residual. Sometimes we do not like a soundscape because the context is overwhelming, but the focus we would like to hear. I guess this is what Schafer is referring to when he describes the urban soundscape as 'trivial'. Sometimes the quality of a situation is due to the fact that the context and the focus are changing all the time. This is very often the case if we describe an urban situation in a positive sense.

In any sound portrait of Manhattan one can find the voices of people from different ethnic cultures and the sound of fire sirens. The most important factor for rating a soundscape is the residual element. The individual and the collective memory draw the frame of reference for our evaluation of the situation. If someone has an anti-modern, anti-urban or anti-technical attitude he or she will not try to find interesting sounds in such parts of our world. He or she will not understand people spending their weekend to listen to the sound of a car-race. The mixture of rap and the acoustic rhythm of skateboarding will be understood as noise. And if one has an urban and modern attitude that person will never understand the farmer listening to the cows mumbling in the stable.

These attitudes are the more fixed parts of memories but millions of associations are a rich pool to create new melodies and form a new shape. I know that these arguments simplify the real world, which is not as dual. Postmodernism has been helpful to open the mind and escape the dual frame in which the world was seen before. Our experiences provide the possibility to combine contradictions with new images. But still it is true that our experiences of yesterday structure the perception of today.

To change the scope of our perception is not easy because we need a stable frame to keep our system of orientation working. In search of some strategies to create more awareness of environmental issues we developed, together with a group of artists, a sound installation in the centre of Frankfurt. People shopping in a market hall were able to hear different sounds of water where normally no water can be heard. The theory behind this installation was to change the normal acoustic shape of this place and open the mind to associate the urban daily routine with feelings or reflections on the use of water in the city. The experiment did not have impact on all the people crossing the square on their way to shop. But at least 30%

spent significant longer time than the control group on the square and most of the people who were interviewed gave statements about the relationship between the urban and natural environment.

We can conclude that, if the success and chance to change peoples perceptive frame is measured by the number of persons who spent more time than usual in the new soundscape context, we can be optimistic.

Pluralistic soundscapes

This gives us the chance to switch from the theoretical remarks about complexity and the value of soundscapes to the question how acoustic environments using the stimulation theory and the idea of complexity as guidelines can be designed. We live in a pluralistic world and sociology tells us that in most western countries the trend of living in individual concepts will grow (Beck 1996). This leads us to some ideas how one could design the urban soundscape in a way, where different people, groups and cultures will find their own and appropriate level of complexity in their everyday life. Four types of soundscape patterns may help us to develop such a design.

The most traditional one is the dual soundscape. We know this as a general structure of historic European cities. The crowded marketplace and the busy main street is one image of the city. The quiet church or monastery, the semi-private square in a neighbourhood, the garden of a family home is the other side. The dual soundscape correlates with a dual organisation of space and time in general.

So we perceive the space as urban or rural, the time as day or night, the life as public or private, the social structure as rich or poor, the demographic situation as young or old. All these dual patterns are associated with specific, mostly traditional, sound cultures and soundscapes. The soundscape of a village has been associated with traditional songs, the chime of the church's bell and the rhythm of work in a shop for handicrafts. The city is associated with traffic noise, the sound of running people and big factories. In a dual soundscape one pattern can easily switch from one level of complexity to another and even change the type of gestalt.

But in fact this traditional dual pattern is more and more mixed and differentiated. The quiet parts of the city are often colonized by tourism; the private space is penetrated with the sound of radios, televisions and telephones. On the other hand the sphere of the public becomes more private with mobile phones and highly fragmented social organisation. And this is also true for most of the other dual pairs especially for the difference between the urban and the rural.

Even in this situation, we can analyse any space – a city, a village, a suburb, or a whole region – and try to identify the potential of dual soundscapes. Sometimes only small interventions are needed to transform a square into a place of contemplation or to organise a dialogue between a private pocket garden and a highly frequented street. A good example is the inner square of the Louvre. The sound of constant running water makes this square quiet though thousands of visitors are waiting there. One can try to develop parts of the city for different cultures and help in this way to differentiate the soundscape and lower the level of complexity. To differentiate the sound with time and space patterns will equip the cities with a more pluralistic soundscape.

The second pattern I would like to propose is the conversational soundscape. So one can define a soundscape, which is based on dialogues. To perceive a soundscape as conversational, the acoustic environment has to be understood as a process. A very well known example of this pattern is the horns and sirens of ships and trains in the Vancouver region.

Sometimes this dialogue starts self-organised. You still find this phenomenon when the cocks in Athens or Cairo start their day. As soon as one of them starts crowing the next one will answer and after some minutes a conversational soundscape has been created. The modern equivalent of these cities is the dialogue of taxi drivers sounding their horns. A dialogue can also be designed. The city of HannMUnden has realized a sound performance, which is constructed as a dialogue between the designed sound and the self organized or auto poetic soundscape of the city. The sound installation reacts to the acoustic situation of the city.

The third soundscape pattern is synthetic. Synthetic means the combination of different images and sounds, which normally do not go together. With their gathering a new soundscape is created. We know this very well in the field of music. The mix of Andalusian and Maghrebean music is a successful example. The com-

ing together of railway sounds and the song of a nightingale is another. The more our world becomes intercultural the greater is the chance to create synthetic soundscapes. As far as I can judge, the synthetic soundscapes will be more experimental and may fit better into a sub-cultural milieu.

The three different types of soundscape patterns correlate with different levels of complexity. The dual pattern is the least complex one; the synthetic patterns possess the highest complexity. We have argued that the perceptive situation nowadays is very differentiated as well. Different individuals and different subcultures need different levels of complexity. If the urban area is designed in a way that people can find the different patterns of soundscapes in different parts of the city then you will get a situation where people can choose their optimum sound place. In this way a pluralistic soundscape design may be appropriate for a society, which differentiates more and more.

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Name and subject index

Soundscape

Studies and

Methods

This collection of essays, edited by Helmi Järviluoma and Gregg Wagstaff, will be essential to anyone interested in the sonic environment. A growing ecological awareness in the later half of the 20th century has given rise to a widening concern for the state of our soundscapes.

The last few years have witnessed promising developments in soundscape studies, and this book is the first collection to focus upon soundscape research methods. The contributers to this volume form an international and multidisciplinary team of researchers, from Architecture, Ethnomusicology, Sonic Art, (Time) Geography, Biology, Sociology and Urban planning.

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"These studies of the acoustic order provide models of a rich cultural phenomenology which promises to renovate the stale hermeneutics of much recent cultural theory."

— Bruce Johnson, Associate Professor, University of New South Wales