

**ISTANBUL TECHNICAL UNIVERSITY ★ INSTITUTE OF SOCIAL SCIENCES**

**SOUNDSCAPE COMPOSITION  
ANALYSIS OF CURRENT AESTHETICS**

**Ph.D. Thesis by  
Erdem HELVACIOĞLU**

**Department : Social Sciences**

**Programme : Music**

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Erdem HELVACIOGLU  
(409032004)**

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**Supervisor(Chairman) : Prof. Ş. Şehvar BEŞİROĞLU (ITU)  
Members of the Examining Committee : Prof. Cihat AŞKIN (ITU)  
Prof. Dr. Metin ÜLKÜ (MSFAU)  
Doç. Dr. Kıvılcım Yıldız ŞENÜRKMEZ (MSFAU)  
Yrd. Doç. Ayşegül Kostak TOKSOY (ITU)**

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**MEKAN SESİ BESTECİLİĞİ  
ÇAĞDAŞ ESTETİKLERİN ANALİZİ**

**DOKTORA TEZİ  
Erdem HELVACIOĞLU  
(409032004)**

**Tezin Enstitüye Verildiği Tarih : 23 Aralık 2010**

**Tezin Savunulduğu Tarih : 12 Ekim 2011**

**Tez Danışmanı : Prof. Ş. Şehvar BEŞİROĞLU (İTÜ)  
Diğer Jüri Üyeleri : Prof. Cihat AŞKIN (İTÜ)  
Prof. Dr. Metin ÜLKÜ (MSGSÜ)  
Doç. Dr. Kıvılcım Yıldız ŞENÜRKMEZ (MSGSÜ)  
Yrd. Doç. Ayşegül Kostak TOKSOY (İTÜ)**

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## **ABBREVIATIONS**

<b>AT</b>	: Audio Technica
<b>BBC</b>	: British Broadcasting Corporation
<b>CD</b>	: Compact Disk
<b>CF</b>	: Compact Flash
<b>DAT</b>	: Digital Audio Tape
<b>DAW</b>	: Digital Audio Workstation
<b>EQ</b>	: Equalizer
<b>HiMD</b>	: High Definition MiniDisc
<b>MAC</b>	: Macintosh
<b>MC</b>	: Musique Concrete
<b>NY</b>	: New York
<b>NZ</b>	: New Zealand
<b>PC</b>	: Personal Computer
<b>UK</b>	: United Kingdom
<b>USA</b>	: United States of America
<b>WDR</b>	: Westdeutscher Rundfunk
<b>WFAE</b>	: World Federation of Acoustic Ecology



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## **SOUNDSCAPE COMPOSITION, ANALYSIS OF CURRENT AESTHETICS**

### **SUMMARY**

The soundscape composition is a form of electroacoustic music, developed at Simon Fraser University and elsewhere, characterized by the presence of recognizable environmental sounds and contexts, the purpose being to invoke the listener's associations, memories, and imagination related to the soundscape. It grew naturally out of the pedagogical intent of the World Soundscape Project to foster soundscape awareness. At first, the simple exercise of 'framing' environmental sound by taking it out of context, where often it is ignored, and directing the listener's attention to it in a publication or public presentation, meant that the compositional technique involved was minimal, involving only selection, transparent editing, and unobtrusive cross-fading. The first composers who have started developing this aesthetic and genre are R Murray Schafer, Barry Truax, Hildegard Westerkamp, Claude Schryer and Bruce Davis. In the years to come, this genre has been influential on many different electronic music composers on different levels. Soundscape composition, aesthetics and techniques associated with it are also being implemented on a few compositions by Turkish composers.

Within the first chapter of the thesis, the aim and the methodology of the dissertation has been discussed. Because the aim is to find similarities, differences between different composers all around the world, five composers from five different continents have been chosen. These composers are Hildegard Westerkamp, Ros Bandt, Rajivan Ayyappan, Thomas Gerwin and Damian Keller.

Within the second chapter of the thesis, the history, aesthetics and techniques of soundscape composition have been discussed.

For the third chapter, interviews with forty three composers all around the world have been done. These questions for these interviews included both general and personal questions. Comparative analysis of these interviews have been done within this chapter too.

Within the fourth chapter, the techniques for the analysis of electroacoustic music have been discussed. These techniques include listening analysis, genetic analysis and computational analysis.

Within the fifth chapter, the analysis of the five compositions have been made. Besides the technical and aesthetic analysis, program notes, personal ideas, notes written by the composers about their own pieces have been used.

Within the sixth chapter, the detailed analysis of the soundscape work "Aeterna Pulchritudo" composed by the writer of this dissertation has been made.

Within the seventh chapter, a conclusion based on the analysis and interviews has been written.



## MEKAN SESİ BESTECİLİĞİ, ÇAĞDAŞ ESTETİKLERİN ANALİZİ

### ÖZET

Soundscape (mekan sesi) besteciliği Simon Fraser Üniversitesi'nde ve başka çeşitli yerlerde geliştirilen bir elektroakustik müzik formudur. Karakteristik özelliği tanımlanabilir ve algılanabilir mekan seslerinin olmasıdır. Bu formun amacı dinleyicinin o mekan ile ilgili hatıralarını ve hayalgücünü harekete geçirmektir. Dünya Mekan sesi Projesi'nin mekanların tınıları ile ilgili farkındalık yaratma fikri ile doğal olarak oluşmuştur. İlk olarak kullanılan besteleme teknikleri minimal idi. Böylelikle dinleyicinin seçilen mekan ile olan işitsel bağı daha rahat kurulabiliyordu. Bu formu başlatan ilk besteciler R Murray Schafer, Hildegard Westerkamp, Barry Truax, Claude Schryer ve Bruce Davis idi. İlerleyen senelerde, bu müzik türü birçok farklı besteci üzerinde çeşitli seviyelerde etkili oldu. Soundscape besteciliği ve onunla birlikte anılan estetik anlayışlar ve teknik özellikler Türk besteciler tarafından da birkaç eserde kullanılmıştır.

Bu tezin ilk bölümünde tezin amacı ve metodolojisi tanımlanmaktadır. Tezin amacı farklı estetik anlayış ve felsefeleri ortaya çıkarmak olduğu için, dünyanın beş farklı kıtasından beş farklı besteci seçilmiştir. Bu besteciler Hildegard Westerkamp, Ros Bandt, Rajivan Ayyappan, Thomas Gerwin ve Damian Keller idir.

Tezin ikinci bölümünde soundscape besteciliğinin tarihi, estetik anlayışı ve bestecilikte kullanılan çeşitli teknikler anlatılmıştır.

Tezin üçüncü bölümünde dünyanın çeşitli yerlerinden kırküç besteci ile yapılan röportajlar yer almaktadır. Bu bestecilere hem genel, hem de kişisel sorular sorulmuştur. Cevapların karşılaştırmalı analizi de bu bölümde yer almaktadır.

Dördüncü bölümde elektroakustik müzikte kullanılan çeşitli analiz yöntemleri tanıtılmıştır. Bu yöntemler dinleme, genetik ve hesaplama adları ile genel olarak üçe ayrılmıştır.

Beşinci bölümde beş eserin analizi yapılmıştır. Teknik ve estetik analizler dışında, bestecilerin eserler hakkında yazdığı notlar, eskizler ve fikirler de kullanılmıştır.

Tezin altıncı bölümünde bu tezin yazarı tarafından bestelenen "Aeterna Pulchritudo" eserinin detaylı analizi yapılmıştır.

Tezin yedinci bölümünde ise, analiz ve röportajlara dayanan bir sonuç yazılmıştır.



## 1. INTRODUCTION

As a contemporary music composer, I have always been interested in creating new timbres. Besides trying to find new sounds with various extended techniques and use of various objects on instruments, I have also been interested in creating sounds based on closeup miked sound objects and field recordings. A recording studio with its sound isolation from the outside world is like sound object on its own. Working with various objects and various mics of different sonic characters is a real joy, but for me the real wild, interesting recording session comes with field recording in the outside world. The unpredictability and randomness of the sound world outside makes everything for the field recordist much more difficult but also much more interesting.

Although I have been doing location recordings and compositions for sometime, my first real understanding of the whole movement came with the realization of the album “A Walk Through The Bazaar”. This album has been released by Locustmusic in USA in 2003. For this work, I have done a long field recording at the bazaar in Istanbul and created a 14 minute piece based on this 17 minute actual location recording. This was the first time that I realized how important it is to be able to work with the mic in your hand going through a crowded space. The mic not just becomes a tool for capturing sounds but an actual device for the composition right at the moment. Without a good, interesting recording, one will not be able to create an interesting piece.

After this work, I have started to focus more on soundscape composition. During this study, I have come upon the works of many composers dealing with different aesthetics but all working with field recordings. Through the works of Hildegard Westerkamp, Ros Bandt, Thomas Gerwin, Rajivan Ayyappan and Damien Keller, I have come upon some new discoveries in the soundscape composition field. Through the use of ideas such as minimal processing, sonic archeology, soundscape collage, looping, drone and eco composition I have started to create my personal soundscape composition aesthetic. This dissertation is about this compositional journey through

the analysis of five different composers (Hildegard Westerkamp, Ros Bandt, thomas Gerwin, Rajivan Ayyappan and Damien Keller) from five different continents, the analysis of personal compositions and the historical and aesthetic writing about soundscape composition.

### **1.1 Purpose of the Thesis**

The goal of the dissertation is to analyze the aesthetic differences and similarities between soundscape compositions produced in different parts of the world in the last 30 years and present personal compositions based on the analysis. This analysis is based on 5 different works composed by composers from North America, South America, Australia, Europe and Asia. For this analysis, the African continent had to be excluded because of the fact that there are no soundscape composers actually producing works there at this moment in time. These composers have been chosen based both on their aesthetic choice and the place that they live in and find inspiration from.

The chosen composers and the titles of their works are:

Hildegard Westerkamp “Beneath the Forest Floor”

Ros Bandt “Thrausmata”

Rajivan Ayyappan “Subsequent Hearing”

Thomas Gerwin “Kurzgeschichten”

Damian Keller “touch n go”

### **1.2 Method**

The method of the dissertation is divided into two parts. Firstly, basic and personal questions have been asked to various contemporary soundscape composers about their works and about the aesthetic of soundscape composition in general. The analysis of these answers has been divided into two sections, “the comparative analysis of basic questions” and the “comparative analysis of personal questions”. In section four, various techniques for the analysis of electroacoustic music have been described. In section five, analysis of five different compositions by Hildegard Westerkamp, Ros Bandt, Rajivan Ayyappan, Thomas Gerwin and Damian Keller

have been made. For the analysis, spectral analysis, multimedia representation has been used with the help of the software Acousmographie designed by GRM.

First, the historical part of the soundscape composition has been discussed. Along with the historical side, I have also made studies on the aesthetics and the techniques used. Since the technology used in electronic music changes very rapidly, the techniques and the aesthetics alongwith it changes too. To be able to understand the aesthetic differences between composers, countries, I have decided to make interviews with fortythree international composers. The answers they have provided me with have been very helpful in understanding the changes the soundscape composition goes through and in understanding what can be done to create new genres and aesthetics in the Turkish electronic music. I have then studied various electroacoustic music analysis techniques. I have applied some of these techniques to the five compositions chosen. Spectral analysis and multimedia representation helped me to understand the similarities and differences between the aesthetics of composers from different continents.

The dissertation has been divided into 6 sections. These sections are:

#### Aesthetics and techniques of soundscape composition

In this section, firstly the history of the soundscape composition has been written out. This writing includes the beginning of this aesthetic from its start at the Simon Fraser University to current times. In the aesthetic part of this section, ideas about the difference and similarities of soundscape composition with other electroacoustic music genres have been written. The principals (listener recognizability of the sound material maintained, listener's knowledge of the environmental and psychological context invoked, composer's knowledge of the environmental and psychological context influences the shape of the composition at every level) and forms (text based, single take, unaltered/edited, processed, processed with synthesis, environmental performance) of soundscape composition have been discussed. At the last part of this section the techniques (fixed perspective, moving perspective, variable perspective) of soundscape composition have been written out.

## Comparative analysis of interviews with various soundscape composers and location recordists

In this section, interviews with soundscape composers and location recordists like Hildegard Westerkamp, Claude Schryer, Bruce Davis, Chris de Laurenti, Ros Bandt, Thomas Gerwin, Rajivan Ayyappan, Damian Keller, Bob Gluck, Andra McCartney, Alessandro Bosetti, Michael Rutenberg, Darren Copeland, Douglas Quin, Sascha Karminski, Neil Bruce, Peter Cusack, Steve Feld, Michael Noble, Jeff Gburek, Katharine Norman, Thor Magnusson, James A Wyness, Bernie Krause, Annea Lockwood, David Rothenberg, Jack Body, Rinus van Alebeek, Kjell Samkopf, Bruce Odland, Stephen Vitiello, Jacob Kirkegaard, Duncan Whitley, Lasse Marc Riek, Philip Samartzis, Petri Kuljuntausta, Brandon Labelle, Dallas Simpson, Aaron Ximm, Francisco Lopez, Pete Stollery, Kim Cascone, Yannick Dauby and Gilles Aubry have been made. Six basic questions have been asked to all of the composers and location recordists. These six basic questions are :

- There are some composers and colleagues who see soundscape composition as subgenre of musique concrete. What is your opinion on this matter?
- What are the technical tools that you use these days for composition?
- What has changed in the soundscape composition genre during its 30 years? Do think it is still a vital way of composing and raising awareness to acoustic ecology?
- Do you think that soundscape composition could be the base of new electronic music composed outside of Europe and North America?
- In the last 10 years, there has been a growing interest towards field recording. New terms like phonograph, aural safari is being mentioned at mailing groups. Do you think that this interest towards will affect soundscape composition aesthetics today?
- Do you think that soundscape composition can raise awareness towards environmental issues?
- Who are the soundscape composers you enjoy the most?

Besides these six basic questions personal questions to each composer and location recordist have been asked. Based on the answers given, a comparative analysis of

basic questions and a comparative analysis of personal questions have been written out.

For this section, I especially chose composers with different approaches, technique and aesthetics. Because of this difference, I have come upon interesting answers and results. For instance, while Hildegard Westerkamp uses minimal processing in her works, Francisco Lopez creates dense and abstract pieces based on field recordings. While Thomas Gerwin uses a montage technique while editing and finalizing the piece, Ros Bandt uses the concept of sonic archeology in her works and plays traditional and historical instruments in her works. While Darren Copeland works with the techniques and aesthetics of electroacoustic composition, Damian Keller bases his works on the concept of ecomposition. Besides composers who use various techniques and aesthetics to create pieces, I have also interviewed location recordists like Peter Cusack and Chris de Laurenti who only use basic editing technique without any processing to create edited – or composed – location recordings.

#### Techniques for the analysis of electroacoustic music

In this section, various methods for the analysis of electroacoustic music have been discussed. The analysis methods have been divided into three parts : The listening, genetic and computational analysis.

The listening analysis has been divided into seven parts : Pierre Schaeffer and typomorphology, Francois Delalande and typomorphology, Denis Smalley and spectramorphology, Simon Emmerson and syntax-discourse, Stephen Roy and listening analysis, spectrograms and multimedia representations. The computational analysis has been divided into two parts : Music information retrieval and electroacoustic music, description-segmentation-classification.

#### Analysis of five different soundscape works from five different continents

In this section, five works of five different composers from five different continents of the world have been analyzed. These composers and their works are :

Hildegard Westerkamp “Beneath the Forest Floor”

Ros Bandt “Thrausmata”

Rajivan Ayyappan “Subsequent Hearing”

Thomas Gerwin “Kurzgeschichten”

Damian Keller “touch n go”

Hildegard Westerkamp’s work “Beneath the Forest Floor” is a composition based on the sounds of frogs, bird calls, bird wings flapping across a body of water in British Columbia, Canada. It is a piece that both evokes the atmosphere, soundscape of the forest and invites the listener to think about the acoustic ecology. Throughout the piece, there is minimal electroacoustic processing involved.

Ros Bandt’s piece “Thrausmata” is an example of sonic archeology with its newly created sound worlds and ancient texts based on writings about that era. Soundscape recordings for this work were made over a 5 year period at the Mediterranean sites where the texts were first uttered, Olympia, the shores of the Aegean Sea, Delphi, Santorini, Mycenae, Eressos. Thrausmata is seven different renderings of six fragments of ancient Greek texts chosen by the composer for their enduring subjects of love, hospitality, war, sport, sexuality, philosophy and atomic theory. The Sappho text has two different renderings, one in female voice and the other in male. The language is alive in the readings, a rare concurrence in the twenty-first century. Much of the meaning would not be apparent if it weren’t sounded in the authentic voice. Each fragment is interpreted from the actual utterance of the ancient Greek text itself. Key words and phrases were treated by a variety of new and old technologies including the Fairlight, the vocoder, the ring modulator, the sampler, the computer and the mixing desk. New and virtual instruments were made to simulate the ancient extinct instruments of the period; the seven-string lyre and the water organ, and to make new relationships, the text driving the instrument and the sampler redistributing the text. The Ancient Greek text reading was done by Arthur McDevitt while Ros Bandt played the renaissance recorder, slide whistle, medieval psaltery, sampler, vocoder and Fairlight on the work.

“Subsequent Hearing” by Rajivan Ayyappan is a piece based on Mumbai residential soundscapes; the field recordings were generated from /through tape to tape to trace the noise as the resulting soundscape. On this work, Ayyappan uses loops of various parts of the field recordings and also created processed and synthesized drones.

Thomas Gerwin's work "Kurzgeschichten" (Short Stories) is a soundscape work that combines environmental, rural, urban soundscapes and traditional music in a collage-like aesthetic. The piece presents exclusively concrete sounds, which are cut, arranged and processed.

Damian Keller's piece "touch'n'go" is based on ecological sound models. The piece is divided into 14 movements. These movements are :

1. Pandemonium 2
2. Realpolitik
3. Action to be taken in the event of a fire
4. Farewell, welfare
5. let me see...how can I word it?
6. least, but not last
7. let me see...how can I word it? 2
8. Pandemonium 1
9. A waltz in a ball
10. sCRATch
11. Coin a name
12. spill, spiel, spoil
13. Vox Populi
14. Pandemonium 3

Damian Keller's piece "touch'n'go" is a modular work. The idea of a modular, open work was first put forth by the Argentinean writer Julio Cortázar and later reproduced by other theorists such as Umberto Eco (Italy) and Arlindo Machado (Brazil). In "touch'n'go", the sections of the piece can be heard from beginning to end, from end to beginning, or in any order that the listener desires. The work is just a field of possibilities that take shape at the moment of its performance. Therefore, the listener has an active role in the realization of the piece. touch'n'go also provides a rich field for the integration of extra-musical elements, such as acting, text and

images. This move toward multimedia formats was further developed by other ecocomposers, such as Matthew Burtner (USA) and Ana Lúcia Fontenele (Brazil).

All of these composers' works are based on different aesthetics and techniques. Hildegard Westerkamp uses minimal processing in her work and the idea of acoustic ecology is always present. Ros Bandt's work is based on the concept of sonic archeology and for that purpose she uses historical texts and instruments. Thomas Gerwin's work is based on collage-like aesthetic with processed and unprocessed sounding at the same time. Rajivan Ayyappan's work includes techniques such as looping and drones. Damian Keller's work is based on the concept of ecocomposition. The analysis of all these different works have been helpful for the understanding of similarities and differences between these aesthetics. The analysis of all of the ideas, techniques used in these compositions have been the starting point for the creation of my personal approach and aesthetic towards soundscape composition which is discussed in section six.

#### Analysis of personal compositions

In this section, five different compositions of mine (A Walk Through The Bazaar, Wandering Around the City, Untitled Conversation, Aeterna Pulchritudo and Into the Future) have been discussed. The detailed analysis has been made for the piece titled "Aeterna Pulchritudo". The minimal processing – acoustic ecology of Hildegard Westerkamp, the sonic archeology concept of Ros Bandt, the collage-like technique of Thomas Gerwin, the looping - drones use by Rajivan Ayyappan and the ecocomposition concept of Damian Keller have all been used for the creation of a personal, new aesthetic within these five works.

#### Conclusion and suggestions

In this section, a conclusion based on the analysis of the five works and the analysis of interviews has been written. Suggestions for the creation of new soundscape works and aesthetics have also been discussed within this final section.

## **2. AESTHETICS AND TECHNIQUES OF SOUNDSCAPE COMPOSITION**

### **2.1 The History of Soundscape Composition**

The soundscape composition is a form of electroacoustic music, developed at Simon Fraser University and elsewhere, characterized by the presence of recognizable environmental sounds and contexts, the purpose being to invoke the listener's associations, memories, and imagination related to the soundscape. It grew naturally out of the pedagogical intent of the World Soundscape Project to foster soundscape awareness. At first, the simple exercise of 'framing' environmental sound by taking it out of context, where often it is ignored, and directing the listener's attention to it in a publication or public presentation, meant that the compositional technique involved was minimal, involving only selection, transparent editing, and unobtrusive cross-fading. This 'neutral' use of the material established one end of the continuum occupied by soundscape compositions, namely those that are the closest to the original environment, or what might be called 'found compositions.' Other works use transformations of environmental sounds and here the full range of studio techniques comes into play, with an inevitable increase in the level of abstraction. However, the intent is always to reveal a deeper level of signification inherent within the sound and to invoke the listener's semantic associations without obliterating the sound's recognizability.

The concept of an environment of sound is the basis of the word "soundscape," a term credited to composer R. Murray Schafer. He defines it as:

“The sonic environment. Technically, any portion of the sonic environment regarded as a field for study. The term may refer to actual environments, or to abstract constructions such as musical compositions and tape montages, particularly when considered as an environment.” (1977. 275).

By sonic environment, Schafer is referring to "the ever-present array of noises, pleasant and unpleasant, loud and soft, heard or ignored, that we all live with". This acceptance of all sounds is similar to that of John Cage, who said that the use of

electrical instruments "will make available for musical purposes any and all sounds that can be heard" (1961. 4). Recording equipment makes any sound in the world available: it can be isolated from its context and treated as a sound object, or the interplay of sounds within a specific environmental context can be the focus of attention. Schafer's statement in his definition that abstract constructions such as musical compositions are soundscapes particularly when considered as an environment refers to the importance of context in soundscape composition.

Barry Truax clarifies what the importance of context means:

“In the soundscape composition... it is precisely the environmental context that is preserved, enhanced and exploited by the composer. The listener's past experience, associations, and patterns of soundscape perception are called upon by the composer and thereby integrated within the compositional strategy. Part of the composer's intent may also be to enhance the listener's awareness of environmental sound.” (1984. 207).

Truax concentrates on the importance to the composer of the experiences, awareness and perceptions of listeners, and their relationships to the sound environment. These become an integral part of the compositional strategy. Hildegard Westerkamp also defines soundscape composition as a form that insists on contact between the composer, listener and sound environment: "The word soundscape always implies interaction between environment and individual, and between environment and community" (1988. 3). Thus the serious use of environmental sound, according to these composers, is to work with the environment of the sounds, their context and interrelationships with listeners and with the composer.

This focus on relationships between composer, listener, and sound environment grew naturally out of these composers' soundscape research. Truax, Westerkamp and Schafer first worked together in the context of the World Soundscape Project at Simon Fraser University in the early 1970s. This project, founded and directed by Schafer, began with his concerns about noise pollution, and received funding to undertake major research projects of soundscapes in cities and villages of Canada and Europe. This work resulted in several research and educational publications about soundscapes by members of the research team.

These composers continue to be involved in the research and education started through the World Soundscape Project (WSP). The Tuning of the World Conference in Banff in 1993 led to the founding of the World Forum for Acoustic Ecology, with its head office at Simon Fraser University. The aims of acoustic ecology are often implicated in soundscape composition. Westerkamp, for instance, says that she likes "to position the microphone very close to the tiny, quiet and complex sounds of nature, then amplify and highlight them...[so that] they can be understood as occupying an important place in the soundscape and warrant respect" (1996. 19). Although Keiko Torigoe (1982) focuses mainly on the research and education components of the WSP, mentioning soundscape compositions only in passing, several such compositions were made by project members, many of whom were composers. These compositions were assembled into ten one-hour radio programs for the CBC, entitled Soundscapes of Canada. In his 1996 article entitled "Soundscape, Acoustic Communication and Environmental Sound Composition", Truax discusses the range of compositional approaches in this radio series (1996. 54-58). The collectively authored Summer Solstice documents two minutes of each hour of a summer day and night, recorded beside a pond near Vancouver, giving a representation of condensed time. Soundmarks of Canada, by Peter Huse, features the juxtaposition of significant sounds associated with particular places in Canada, condensing space. Several pieces included electronic transformations of sounds using a range of classic analog studio techniques. Truax notes that sounds still remained recognizable and within context in these pieces, such as Bruce Davis' "Bells of Perce" and Barry Truax's "Soundscape Study". Because of the WSP commitment to bring together research, education, and composition, these soundscape compositions are presented by the composers in the context of discussions on research and education within the radio programs, which also include a range of listening exercises and lectures by R Murray Schafer. Schafer, Truax, and Westerkamp all continue to compose with environmental sound in context. Schafer's environmental work, such as "Music for Wilderness Lake" (1981) tends to be site-specific and acoustic, rather than electroacoustic. This piece uses traditional instruments and voices within a wilderness setting. Truax works mainly with granular synthesis. Since 1990, he has used environmental sound increasingly with this process, in works such as "Pacific" (1990), "Dominion" (1991), "Basilica" (1992), "Song of Songs" (1992), "Sequence of Later Heaven" (1993) and "Powers of Two" (1995).

Westerkamp has done the most extensive work in electroacoustic soundscape composition of the three. In fact, all of her work is with environmental sound in context, usually recorded by her in specific locations. Many of her earlier pieces, such as “Walk Through the City” (1981), and “StreetMusic” (1982) were originally written for and broadcast on Vancouver Cooperative Radio. Her “Harbour Symphony” (1986), commissioned by the Canada Pavilion for Expo '86, was probably the largest environmental music event ever to be mounted in Vancouver. Some of her more recent works, such as “Cool Drool” (1983) and “India Sound Journal” (1993) also include live performance. Westerkamp (1994) notes that soundscape composition involves a balance of work in the studio with work on location. Techniques of field recording, such as learning how to listen to sound environments, close-miking, protecting equipment from difficult weather conditions, learning how to move through a space with the microphone, and soundmaking in response to environmental sounds, are as important as studio work with the sound.

The composers at the World Soundscape Project had an excellent climate for thinking about and working with environmental sound in context. Several other composers around the world were also working with soundscapes, although they may not have used that name. Many were inspired by the early works of John Cage to pay attention to all kinds of sound within specific environments. In 1954, Luciano Berio and Bruno Maderna composed a piece specifically for radio broadcast, “Ritratto di Città”, a sound portrait of Milan, Italy, during the course of a day. In France, Luc Ferrari's “Presque Rien No. 1” (1970) condensed the sounds of daybreak on a beach. The liner notes for this piece describe a similar focus on the experience and memory of the listener as that espoused by the Vancouver composers: “Instead of forcibly eliminating every trace of the origins of the material which has been taken from reality, Ferrari uses its reference to reality in order to appeal to the hearer's experience and imagination...an undistorted portrayal, although in fast motion, of daybreak on the beach, it is electroacoustic natural photography, in which Cage's respect for reality is crossed with the dream of a sounding 'minimal art.’” In Barry Schrader's discussion of the piece, he notes Ferrari's use of cutting and splicing to reduce the time of the original recording, and also says that “he has made the insect-like sounds that enter during the middle of the piece slowly increase in volume” (1982. 55), a manipulation that Ferrari does not record in his liner notes for the piece

(he says that he only decreased the length of the recording). When Schrader refers to these sounds as "insect-like," it is clear that he is unaware that they are recordings of actual insects, rather than simulations. An increase in volume of certain insect sounds would naturally occur after daybreak. Is it possible that Schrader speaks of this as a manipulation in his desire to make sense of the piece? Since Schrader categorizes his text in terms of the techniques used (in this case cutting and splicing), he seems to think in terms of technique more than intent or aesthetics. It is not only Schrader who focuses on technique: within the field of electroacoustic music, technical knowledge is valued highly.

Still, Schrader's description is much more accurate than that of Manning, who states in his book "Electronic and Computer Music": "Presque Rien No. 1 is an excursion into the sphere of organized collage using a wide variety of natural environmental sources such as birds, footsteps, seaside sounds, and children's voices. As the work progresses, the source elements, which remain largely untreated in themselves, become submerged under a growing stream of noise components which grow in density, eventually masking the environmental elements completely." (1985. 161). In this description it sounds as though the composer has juxtaposed a number of disparate environmental elements and constructed noise components in a manner which pays no attention whatever to context. Again, this misinterpretation seems to be based in accepted knowledge about what constitutes electroacoustic music. Since the norm in both *musique concrete* and *elektronische Musik* is that sounds are to be treated as sound objects, discrete entities, then it would make more sense to hear a tape piece as using source elements and noise components that are selected and collaged together, rather than hearing it as an approach to framing and condensing a particular sound environment. These discussions of Ferrari's work misinterpret his compositional intent, technique and aesthetic because his approach does not fit within the accepted norms of the field. A more plausible description of Ferrari's work can be found in a discussion of electroacoustic music by Simon Emmerson. In his book "The Language of Electroacoustic Music" (1986. 17-40). Emmerson understands Ferrari's compositional intent to make listeners more aware of their acoustic environment through framing it. But his categorization of Ferrari's work makes it seem less musical than other styles. He categorizes electroacoustic works along two axes: from aural discourse to mimetic discourse, and from abstract syntax

to abstracted syntax. Emerson defines aural discourse as “abstract musical” substance...our perception remains relatively free of any directly evoked image” (1986. 19). He defines mimesis as “the imitation not only of nature but also of aspects of human culture not usually associated directly with musical material” (1986. 17), noting that mimesis has previously been known as programme music, in distinction from absolute music, which could be associated with his term, “aural discourse.” The use of the word aural as an opposite of the word mimetic implies that mimetic discourse is not aural, that the imitation of nature is less aural, less musical than aural or abstract musical discourse. The imitation of nature is also discussed together with ‘unmusical’ aspects of human culture such as religious symbolism.

His second axis is abstract and abstracted syntax. Emerson defines abstract syntax as: “The creation and manipulation of a priori shapes and structures by the composer. Serial composition is an important part of, but by no means alone in, this field. From the use of star maps to mystical number grids and formulas the use of principles not derived from the sound materials themselves all fall into this category.” (1986. 22). Abstracted syntax derives from the ordering of the sound materials used by the composer: “Schaeffer's *Traité des objets musicaux* is an attempt to establish rules for the combination of sounds, abstracted from an analysis of their perceived properties. This interdisciplinary approach is essentially empirical” (1986. 21). Here, abstract syntax is associated with a priori structures, and abstracted syntax with the sound materials themselves. However, Emerson does not point out that syntax derived from the sound materials is more concerned with auditory perception (and therefore more aural) than abstract syntax based on numbers or charts. So neither of these poles is associated with musicality in his discussion, unlike in the first axis.

In his final section, on music in which mimetic discourse is dominant, Emerson states that:

“Stockhausen's *Telemusik*, Trevor Wishart's *Red Bird* and Luc Ferrari's *Presque Rien* no. 1...have much in common. All have aims apparently outside those traditionally accepted as ‘music’: the Wishart and Ferrari, overtly in terms of political or social issues, the Stockhausen in terms of an attempt to integrate many disparate musics of the world.” (1986. 34).

Emmerson does not explain how Ferrari's *Presque Rien* no. 1 is explicitly social or political, unless he means that to encourage the audience to listen to the sound environment is more social-political than musical: "This focusing and framing process using narrative natural sound sources, while respecting the autonomy of the original sounds, may be used therefore not to obscure but to heighten our awareness of the environment" (1986. 38). There is nothing in Ferrari's liner notes that indicates a narrative in this specific piece. Although Ferrari has described his approach elsewhere as an anecdotal style (Emmerson 1986. 43), he does not suggest a particular narrative for this piece, except to note that the recording was made at daybreak.

Emmerson says at the end of his article that his discussion refers primarily to those works in which timbre is more important than pitch relationships. He has not discussed works which retain an 'instrumental' emphasis on pitch relationships. Almost all pitch-oriented electroacoustic music belongs in the first area we examined: the discourse is exclusively aural ('abstract musical'), the syntax almost always entirely abstract (often serial at root) not based on intrinsic sound- object relations. (1986. 39).

If we accept this statement, and note the larger number of examples in Emmerson's discussion of the aural-abstract area than in the other categories, it would seem that the norms of electroacoustic music emphasize abstract musical vocabulary and abstract syntax, which would make soundscape music abnormal in this genre, and thus less likely to be recognized and valued, to be explored deeply in electroacoustic courses, or to be readily accessible to emerging composers as a model.

Marcia J. Citron points out in her book "Gender and the Musical Canon" that norms are not only inscribed through definitions, but also through frequency of appearance as examples of the category. The traits considered basic to the genre those that define the particular genre and distinguish it from others, and those that populate many examples of the category will become norms, whether stylistic, performative, or social, that provide the guiding framework for future forays into the category. (Citron, 1993. 124).

Soundscape compositions do not figure prominently in most of the Electroacoustic Music anthologies, although they are more prevalent in Canadian anthologies than elsewhere, perhaps because of the important work in this area of the World Soundscape Project and the association of national identity with a connection to the environment. In the field as a whole, though, soundscape composition is not included in many examples of the category, so is unlikely to provide a guiding framework for electroacoustic music on an international basis.

Because soundscape composition is ignored or misunderstood as a genre within electroacoustic music, soundscape composers tend to receive less notice than other composers. For instance, Barry Truax's work is discussed in texts largely in terms of the computer processes that he employs rather than his approach to soundscapes. Although Ferrari's work is mentioned briefly in some texts, and discussed in a few, it is often misunderstood with reference to his intent as well as the processes used. It is also quite amazing that UQAM, which has graduate programs in electroacoustic music with professors who studied at the GRM studio in France where Ferrari worked, has only one reference to Ferrari's work. Soundscape composers' emphasis on listening to everyday sounds in context is still not really understood within a genre in which new technical processes and abstract discourse predominate in most examples of the category. The central question embedded within the genre of soundscape composition is the idea that sounds should convey meaning. This idea points to an important paradox implicit within the genre. Sound has at least a dual nature. On one hand, unlike the visual environment, sound is inherently abstract. At the same time, our minds constantly attempt to identify a sound's source and the meaning that it might convey. The tension between these opposing tendencies led musique concrete pioneer Pierre Schaeffer to instruct his listeners to practice 'ecoute reduite' (focused, or reduced listening) where one listens exclusively to the sounds in themselves, perceiving them as 'object sonores' (sound objects). The "object" of listening is to listen to an "object", a thing that conveys no particular meaning outside of its acoustical qualities. The soundscape composer walks a fine line between the dual - abstract and communicative - nature of sound, erring on the side of meaningful association.

Additional challenges are presented by the subjective nature of listening. A sound may mean something quite distinct to two different people, even within the context of a sound environment. A person with many experiences of bodies of water has substantial, relevant memories and emotional associations to draw upon. These may suggest meanings quite different from those intended by the composer. The freedom of the human imagination allows the listener of a highly representational soundscape composition, to become no less a collaborator with the composer than is the listener of more abstract music. Composer David Dunn refers to hearing as a "perceptual instrument." The application of technology to a musical form that seeks to observe and critique the effects of technology adds additional complexities to these questions. Does not the introduction of tape recorders and microphones to a natural environment at very least subtly change that environment and how it can be perceived? David Dunn distinguishes between recordings of environmental sounds from which any signs of technology (over-flying airplanes) have been removed, from soundscape compositions that represent the presence of technology, including that of the composer / recorder within that environment. Dunn observes: "Some of this work seems to exploit the need for people to believe in a romantic description of the natural world and does so by commoditizing it".

A related genre called a "soundwalk", pioneered by Hildegard Westerkamp and Andra McCartney, developed to address the subjective nature of the technological intervention itself. These composers walk through a soundscape, microphone visibly in hand, recording the sounds they encounter, along with their verbal commentary. One example, by Andra McCartney, is "Soundwalking in Queen Elizabeth Park".

The serious use of environmental sound, then, means to attend to the context and the integrity of sounds, to be aware of the relationships between sounds and their contexts, and to work with a listener's associations and memories of sound environments. An attention to context means that composers often choose to work with the sounds of particular places, listening intently to the sources, relationships, reverberations, and movements of sounds within those places, in order to understand them sonically, then to express that understanding.

Although L.Ferrari and L.Berio have created pieces based only on the location recordings without any processing before the term soundscape composition has been invented, it is the Vancouver based composers who defined a very specific approach and techniques associated with soundscape composition. They have embraced both the use and nonuse of processing in their works and have created a very specific way of processing the actual recorded material. Because of these reasons, they are regarded as the pioneers of the term soundscape composition.

## **2.2 The Aesthetics of Soundscape Composition**

Traditionally, the aesthetics of music or musical aesthetics concentrated on the quality and study of the beauty and enjoyment of music. Aesthetics is a sub-discipline of philosophy, but in recent decades, philosophers have tended to emphasize issues besides beauty and enjoyment. It is often thought that music has the ability to affect our emotions, intellect and our psychology. As such, music's aesthetic appeal is highly dependent upon the culture in which it is practised. Some of the aesthetic elements expressed in music include lyricism, harmony, hypnotism, emotiveness, temporal dynamics, resonance, playfulness, and color.

The philosophy of music is the oldest branch of aesthetics, and also the most influential, being responsible for the cosmology that came down from the Pythagoreans, via Plato, Ptolemy, St Augustine, Plotinus, and Boethius, to the poets and philosophers of the Middle Ages. It deals with the study of fundamental questions regarding music and it has many connections with philosophical questions in metaphysics and aesthetics. Some of the basic questions in the philosophy of music are:

What is the definition of music?

What is the relationship between music and mind?

What does musical history reveal to us about the world?

What is the connection between music and emotions?

How much of music's meaning is intrinsic and how much is cultural?

The study of the aesthetics of music revolves around the question "what makes music pleasurable to listen to?". Views on what is "good music" have changed dramatically

over the centuries as new musical forms have arisen and others have fallen out of favor. This fact shows the cultural dependence of a person's ability to interpret and enjoy music. Of importance is the difference between art music and popular music. Popular music is music that mass audiences find accessible and is thus heavily dependent on culture and time period. Art music is music that is cultivated by relatively small groups and must be practiced and studied in order to be fully appreciated.

Soundscape composer Claude Schryer (1998) says: "Electroacoustic soundscape composition is most closely related to the visual field of photography. It is a technique that treats the acoustic environment as both the subject and the content of a composition, teetering ambiguously on the border between representation and abstraction."

Some composers categorize soundscape composition as a subcategory of *musique concrete*, but the compositional process of *musique concrete* entails the abstracting of a sound from its original context and sound environment, and its use as a sound object, *objet sonore*. Simon Emmerson (1998) states, "One of the ideals of *musique concrete* composers was to strip down the sound to its intrinsic components and to appreciate its musical potential independent of its origin or cause." This is a rather different approach from the soundscape composers who do not change the original soundscape's context and meaning but rather, they want to emphasize it even more.

Soundscape compositions represent a diverse set of approaches to its aesthetic. These range from field recordings created as completed works to through-composed works whose materials consist of highly processed sounds deriving from field recordings.

Claude Schryer (1998) identifies several approaches that he has taken in his work, all of them identified as varying forms of soundscapes. These are:

- Text based...draws on a counterpoint and rhythm of the timbre of human voices, of the content of the voices, and the soundscapes in and around the voices.
- Single-take...field recording that can stand along as a composition.
- Unaltered/edited...use of simple editing and mixing techniques, letting the process be guided by the musical gestures of the recorded soundscapes.

- Processed...including unaltered edited soundscapes and additional electronically processed sequences.
- Processed with synthesis...processed soundscapes with additional synthesized sequences.
- Environmental performance...using a recorded environmental performance and/or an instrumental improvisation as a point of departure for an electroacoustic composition realized in studio.

The principles of soundscape composition can be categorized as:

- Listener recognizability of the source material is maintained.
- Listener's knowledge of the environmental and psychological context is invoked.
- Composer's knowledge of the environmental and psychological context influences the shape of the composition at every level. The work enhances our understanding of the world and its influences carry over into everyday perceptual habits.

An example of a text-based work is Hildegard Westerkamp's "A Walk Through the City" (1981), which integrates poetry by Norbert Ruebsaat within a sonic tour of Vancouver, British Columbia's skid row. Single-take recordings include Annea Lockwood's "A Soundmap of the Hudson River" (1989), which captures sonic snapshots of the length and breadth of a major river in New York State and Douglas Quin's "Antarctic Soundscapes", (Musicworks #69 CD, December 1997), which includes field recordings of sea mammals, birds and an underwater glacier. Other examples: an unaltered / edited work is David Dunn's "The Lion In Which The Spirits Of The Royal Ancestors Make Their Home" (1995), in which the composer / sound recorder documents the people and environment of Zimbabwe, East Africa, describing in sound the many components of a complex, changing society. In "Rainforest Soundwalks" (2001), Steven Feld presents a sonic portrait of the Bosavi rainforest in Papua New Guinea. "Mutawinji" and "Lake Emu" are among David Lumsdaine's soundscapes of Australia. Thomas Gerwin's "Fluss Durchs Ohr: Klangbilder Vom Neckar" (1998) documents the Neckar River in Germany and its natural surroundings and peoples; his "Wattenmeer-Suite" (1996) traces the experience of a national park in Germany. For an example of a soundscape in a

human populated area, Barry Truax's "La Sera Di Benevento" (1999) reflects upon life in an Italian town.

Some works that mix unaltered and electronically processed site recordings is Hildegard Westerkamp's "Beneath the Forest Floor" (1996), discussed above; Claude Schryer's "Vancouver Soundscape Revisited" (1996) is an impressionist portrait of past and present Vancouver. His "El Medio Ambiente Acustico de Mexico"(1996) is a collection of audio snapshots from Mexico (both are from his CD "Autour"). "Le Triangle d'Incertitude" (1996) is a series of soundscapes by Cecile le Prado evoking the French coastline, interweaving sounds of sea, boats, sailors and life on the coast. Le Prado combines highly processed sounds of ship bells and horns, voices and many others, along with untreated field recordings, to craft a surreal and evocative sonic picture of maritime life.

An interesting avenue of musical composition has been electroacoustic composition that stretches the boundaries of soundscape composition, injecting a greater degree of abstraction into with the works. One example is Darren Copeland's "Rendu Visible" (Rendered Visible, 1998), in which a massive yet sound that the listener cannot clearly identify emerges within a sonic environment filled with sounds of water and birds.

Copeland describes his work in a manner that keenly articulates the aesthetic of soundscape composition: "a composition using real world sounds is able to re-awaken latent visual imagery in the mind of the listener, as if this disc was really an empty canvas or a fresh stock of film." Like more conventional soundscape composers, Copeland invites the listener to use her / his imagination to engage visual and other perceptions, evoking a panoply of mental associations, bringing us into closer relationship with the world around us, helping us appreciate the musical qualities of the sounds of the natural and human environment.

## The Range of Approaches for Soundscape Composition

found sound <-----> abstracted

**FIXED PERSPECTIVE:** emphasizing the flow of time; or a discrete series of fixed perspectives

Variants: time compression; narrative; oral history

Techniques: layering in stereo layering in octophonic

- found sound (with or without time compression)
- narrative ; poetry ; oral history
- transitions between fixed perspectives

**MOVING PERSPECTIVE:** smoothly connected space/time flow; a journey

Variants: simulated motion; real <-----> imaginary / remembered

Techniques: - classical cross-fade and reverb

- parallel circuit cross-fade
- layering part and whole
- layering untransformed and transformed

**VARIABLE PERSPECTIVE:** discontinuous space/time flow

Variants: multiple or embedded perspectives; abstracted / symbolic

Techniques: - multi-track editing - "schizophonic" embedding

- abstracted perspective

**Figure 2.2 :** Approaches for Soundscape Composition.

## 2.3 The Techniques of Soundscape Composition

### 2.3.1 Fixed perspective

In the fixed perspective approach, it is the flow of sound events in time that determines the structure of the piece. Although there is an obvious sense in which this is true of all music, the importance of the time flow in this case is that the listener experience this flow as created by the relationships between the sounds that are heard, as distinct from it being created by the apparent movement of the listener. In short, time is created by the movement of the sound, not that of the listener. The flow of time may be "densified" by layering various segments from the same environment, either in stereo or in multi-channel reproduction. In Barry Truax's work, "Pendlerdrøm" (1997), all of the realistic sections in the octophonic version are created with four untransformed stereo recordings in Copenhagen train station taken from nearby points in the original recording, but layered as apparently simultaneous in four pairs of adjacent channels in the octophonic space. They portray the station as somewhat busier than it actually was at the time, but not to such a degree that the activity level seems implausible. In fact, such a densification of a recording may even seem more realistic to the listener since memory is known to shorten the experience of time when we are not paying particular attention to specific events. When recordings with a well-defined stereophonic perspective are placed in separate loudspeakers surrounding the listener, a highly realistic impression of being inside that space is experienced (Truax, 1998). The fixed perspective approach can be greatly enhanced by the inclusion of a narrative, poetic or oral history component. The narrative component anchors the piece to an implicitly fixed location whether it is accompanied by a fixed ambience (such as the train in Glenn Gould's "Idea of North") or multiple layers of other sounds. In Sabine Breitsameter's "The Hidden Tune", on the "Soundscape Vancouver" 1996 CD, the female voice and the West Coast Indian voice provide separate but complementary commentaries on the pre-industrial soundscape of the city. Darren Copeland's "Recharting The Senses" from the same CD uses the voices of blind people to convey the sense of aural orientation (and disorientation) they experience in society. The poetry of Norbert Ruebsaat similarly anchors Hildegard Westerkamp's "A Walk Through the City" (1981), despite the innovative use of different aural perspectives with the writer's voice,

ranging from close-miked whispering to distantly miked shouting. In Andra McCartney's short work, "Arcade '94", the vulnerable sounding teenagers' voices mixed with the heavy video arcade ambience establishes a clear commentary on the social situation. The fixed perspective approach may include a series of such perspectives in succession where the transitions between them are too rapid or ill defined to create a sense of travel. The film cut may well be a reference here, and sound editing can be equally abrupt, but in practice most soundscape composers seem to prefer less drastic transitions, perhaps because they have no counterpart in the acoustic world. Acousmatic composers are well known to favor doors and their associated sounds as transitional cues, probably because they create the aural experience of a quickly changing acoustic perspective. Given listeners' familiarity with the technique of the cross-fade between sounds and images in audio-visual media, transitions do not seem to pose a problem for most listeners, even though there may be no apparent rational explanation for them. In Hildegard Westerkamp's "Talking Rain" (1997), the transitions between the opening rain forest scenes are accomplished with the passing of a car on a wet pavement sweeping across the stereo field. This might seem incongruous at first, but later in the work, the aural scene changes equally abruptly to a rain-soaked city street with a predictably dramatic shift of character that has been presaged by these earlier cues. Barry Truax's extended work, "Island" (2000), is constructed entirely around a series of six scenes, with approximately 30" transitions between them. The overall premise is a visit to a magical island of the mind where highly realistic sounds are combined with digital transformations of one or more elements of each environment in order to create a sense of mystery and symbolism. The six scenes centre around delicate waves on a shoreline, a rapidly moving stream (the only section where the listener may appear to be actively in motion), a resonant cistern or cave, a windy mountain lake, a cricket-filled nighttime forest, and finally a windy shoreline with a strong wave surge.

### **2.3.2 The moving perspective**

The narrative, the epic, the myth, and the novel have always entranced people with the experience of a journey, whether literal in the sense of an adventure, psychological in the sense of the developmental stages of life, or symbolic in the sense of conflict and resolution. Soundscape compositions that propose the illusion of a moving perspective may function at any or all of these levels. Motion is the very

basis of sound, first at the level of vibration, then at the level of gesture or pattern, and finally at the macro level of longer term change, whether cyclic or otherwise. The auditory system is well equipped to deal with the detection of both motion in the environment and the dynamic motion of the listener relative to the environment. Philosophers have argued that the auditory sense is largely responsible for our experience of both time and space in ways that are unique (and complementary) to that created with our visual faculty. Therefore, the composer who creates the illusion of relative motion between the listener and the auditory space has a rich palette of meaning from which to draw. Erererere The techniques for simulating motion are not limited to those imitating the real world, such as the cross-fade for motion away from one source toward another (with a change of the ratio of direct to reverberated sound as an added clue if appropriate), or stereo panning for lateral motion. The apparent motion may be from a realistic sound towards an abstracted version of it, or vice versa. Here the classical studio technique called the parallel circuit and its variants are useful. In studio practice, the parallel circuit involves splitting the original signal into identical copies, each of which could be processed separately. Normally, an unprocessed copy is preserved and each of the transformed versions are brought back into a mixer on separate channels so that any combination of all the independent versions could be mixed, usually dynamically. The technique provides an efficient way to suggest "motion" between an original sound and a potentially complex, abstracted extension. The opening sequence of Barry Truax's piece, "The Blind Man" transforms the bells of Salzburg Cathedral as recorded by the WSP into a complex filtered version that emphasizes their sustained partials while eliminating most of their attack character, hence suggesting a parallel to a line of Norbert Ruebsaat's title poem, "already it has come / and is leaving again". The work was realized in the electroacoustic music studio in Bourges, France, where separate banks of filters could be assigned to both the left and right channel signals independently, thereby allowing a large number of bell partials to be isolated and mixed on each channel, blurring the original sound but somehow recalling it. A variation on the parallel circuit approach is to layer a part of a sound with the whole. One of the most difficult challenges in soundscape composition arises with recordings of complex soundscapes that contain many simultaneous sources. With good reason, the acousmatic approach avoided this problem by using closely miked "sound objects" which were acoustically isolated in the recording studio. The soundscape recordist

can also choose to mike certain sources more closely and hence be able to work with a specific sound independently of others in the environment. The individual processed sound can even be re-mixed with an ambient recording where with careful equalization and mixing levels it can become integrated within a coherent soundscape, yet be individually controllable. Jack Body's early work, "Musik Dari Jalan" (1974), based on the cries and sound signals of Indonesian street vendors, cleverly alternates between treating these sounds as isolated sound objects subject to studio manipulation, and embedding them within a characteristic street ambience, the transitions between these two treatments being perhaps the most fascinating moments of the piece.

Traditional signal processing techniques can only isolate a component sound from a complex whole when the desired and undesired components occupy different frequency ranges (i.e. through filtering) or signal level ranges (i.e. through an expander or gate where low level background sounds may be eliminated, for instance). However, when a particular sound event in a soundscape is loud enough, even if momentarily, it will mask the surrounding ambience and therefore can be extracted by editing. When this is done at the micro level of granular synthesis, the brief sound sample is enveloped to prevent a transient click from being introduced, thereby allowing arbitrary re-combination of grains for purposes of time stretching, for instance. At the macro level, careful editing allows a longer segment of a sound to be looped without a noticeable transient. These two techniques suggest two possible approaches to creating a smooth transition between an original sound and its transformed extension. The first is to layer the original with a granulated layer that is synchronized but unstretched, then subsequently stretched, for instance during the steady state and/or decay of the sound. The second approach is to layer the original sound with a loop of the "part" which is subsequently processed.

### **2.3.3 Variable perspective**

Not surprisingly, soundscape composers often depart from the fixed or moving perspectives that have clear analogues in the real world, and invent new ways of organizing and presenting their material. Sometimes the perspective changes too rapidly to suggest plausible actual movement, or else multiple "scenes" are presented simultaneously. The fact that the latter approach can work within the genre of the soundscape composition is probably due in part to listeners being familiar with

"schizophonic" listening situations, that is, where one or more sounds are embedded within an arbitrary soundscape via loudspeakers (Truax, 1992b, 2000). Although such disembodiment once seemed to prove "the magic of technology", and R. Murray Schafer pointed to the "nervousness" of this experience (Schafer, 1969, 1977), its familiarity, even banality in daily life, has progressed to the point where the consumer expects to be able to choose an audio environment in which to be embedded via such "accompaniment media" as the radio, CD player, Discman or ipod. Moreover, listeners are competent to decode multiple such embeddings of sounds that originated at widely varying times and places as long as there appears to be a logical order to their combination. Even conflicting and overlapping occurrences can be tolerated, even if attention on any one element is difficult. In short, there seems to be no inherent limit to the degree of complication of contemporary audio environments. The problem they present to the composer is how to avoid the inevitable "tuning out" response by the listener, assuming that the opposite listening stance is desired.

Today's standard multi-track editing approach facilitates the creation of simultaneous layers of arbitrary sound events and ambiances. The fact that they do not create a coherent single image of a soundscape, but rather a complex imaginary one, does not prevent the technique from producing work that has similar aims to those of other, more realistic forms of soundscape composition. An extended case in point is Claude Schryer's "Vancouver Soundscape Revisited" (1996) that is comprised of nine sections, each with its own title and theme. The overall organizational scheme is that there are two groups of four sections, all produced with multiple sound sources, separated by a short sequence described as "quiet footsteps in the forest", presumably to contrast with the heavily layered sections before and after.

Schryer's compositional style is poised between the acousmatic and the soundscape approaches. He describes his process with this piece as starting with editing and cataloguing various sequences from the WSP library according to "spectrum, category, function, pitch and context." He then experimented with various combinations and modifications of the material until, as he puts it in the published program notes, "an interesting 'sonic alchemy' was found." By this we can assume that some perceptual, conceptual, or perhaps just intuitive, connection was used to link the wide variety of sounds found in each section. For instance, in the second and

longest section called "Fire", just under 4 minutes in duration, we hear Chinese firecrackers, folkdancing, Krishna musicians, a baseball game, tennis, church bells, a mechanical piano, gulls in the harbour, the 9 o'clock gun, electronic telephone, main street bus, and a large number of natural and processed boat horns and sirens. How are we to make sense of such a diverse repertoire? If we take the title as a clue, only the first sound, the firecrackers, is a literal referent, and so we might hear the sequence as a stream of associations with somewhat tenuous links - celebration to dancing, music, sports, a detour via the harbour, and back to various transportation sounds, all of which are pitched and have characteristic rhythmic patterns. The matching of pitches takes a humorous turn in the next section, "Dronesong", where boat horns complete the song of a drunken singer whose final note is well known from its appearance on the earlier "Vancouver Soundscape" recordings. A similarly humorous juxtaposition occurs in "Beans" where the commentator on the Grouse Mountain gondola refers to the spectacular view of Vancouver, and the listener is treated instead to a barrage of city noise. Other sections, such as "Noise", "Industry", and "Horn" follow the aural theme of their title, but in every mix there is an intricate interplay between sound and image where musical juxtapositions combine with soundscape associations.

### **3. COMPARATIVE ANALYSIS OF INTERVIEWS DONE WITH VARIOUS SOUNDSCAPE COMPOSERS AND LOCATION RECORDISTS**

Interviews have been done with soundscape composers and location recordists such as : Hildegard Westerkamp, Claude Schryer, Bruce Davis, Christopher DeLaurenti, Ros Bandt, Thomas Gerwin, Rajivan Ayyappan, Damian Keller, Bob Gluck, Andra McCartney, Alessandro Bosetti, Michael Rutenberg, Darren Copeland, Douglas Quin, Sascha Karminski, Neil Bruce, Peter Cusack, Steve Feld, Michael Noble, Jeff Gburek, Katharine Norman, Thor Magnusson, James A Wyness, Bernie Krause, Annea Lockwood, David Rothenberg, Jack Body, Rinus van Alebeek, Kjell Samkopf, Bruce Odland, Stephen Vitiello, Jacob Kirkegaard, Duncan Whitley, Lasse Marc Riek, Philip Samartzis, Petri Kuljuntausta, Brandon Labelle, Dallas Simpson, Aaron Ximm, Francisco Lopez, Pete Stollery, Kim Cascone, Yannick Dauby and Gilles Aubry.

Hildegard Westerkamp, Claude Schryer and Bruce Davis are one of the pioneers of soundscape composition.

Christopher DeLaurenti is composer and location recordist who has contributed the term aural safari.

Ros Bandt is one of the most important Australian sound artists and who is the first colleague to use the term sonic archeology.

Thomas Gerwin is an electroacoustic composer who has composed many soundscape works most of which are based on the soundscape of Germany.

Rajivan Ayyappan is an Indian composer, sound designer who has studied the soundscape of India.

Damian Keller is an Argentinian composer who has studied the ecological systems and used that data for his own compositions.

Bob Gluck is an American composer, colleague who has composed numerous soundscape compositions.

Andra McCartney is a Canadian soundscape composer who has come up with the term soundwalk.

Alessandro Bosetti is an Italian composer who combines field recordings with acoustic instruments.

Michael Rusenberg is a German composer who is a specialist on German soundscape.

Darren Copeland is a Canadian electroacoustic composer who has composed many important soundscape works for multichannel diffusion.

Douglas Quin is one of the most important nature recordists in the world.

Sascha Karminski is a German composer who combines field recordings with traditional instruments.

Neil Bruce is a composer and sound designer from UK.

Peter Cusack is one of the greatest nature recordists living in UK.

Steve Feld is a sound anthropologist whose book “Sound and Sentiment” is a milestone.

Michael Noble is a colleague from Murdoch University who examines the connections between acoustic ecology and soundscape.

Jeff Gburek is a composer who combines field recordings with the sounds of acoustic guitar.

Katharine Norman is an academician and composer who use field recordings from UK in her compositions.

Thor Magnusson is a composer, programmer from Iceland.

James A Wyness is a sound artist living in Scotland.

Bernie Krause is an American nature recordist and bioacoustician.

Annea Lockwood is a composer whose work “A Sound Map of the Hudson River” is a milestone in this genre.

David Rothenberg is a composer, philosopher who plays instruments with birds in wild soundscape environments.

Jack Body is a composer who has used the soundscape of Indonesia in his works.

Rinus van Alebeek is a composer who creates lo-fi sound collages based on field recordings.

Kjell Samkopf is a composer interested in sonographical portraits of people.

Bruce Odland is a sound artist, sonic thinker who is known for his public space sound installations which transform city noise into harmony in real-time.

Stephen Vitiello is a sound artist who transforms incidental atmospheric noises into mesmerizing soundscapes.

Jacob Kirkegaard is a Danish sound artist who explores sound with a scientific approach. His works focus on investigations into the potential musicality in hidden sound layers in the environment.

Duncan Whitley is a sound recordist and archivist. His work appropriates forms and conventions of sound installation, field recording, oral history, and sonic archive.

Lasse Marc Riek is a sound artist whose works is interdisciplinary and can be conceived as groups of works of both visual art and sound art. His art of sound can be described in terms such as acoustic ecology, bioacoustics and public recording.

Philip Samartzis is a sound artist and academic based in Melbourne with a particular interest in field recording, musique concrete and surround sound spatialisation

Petri Kuljuntausta is a composer, performer and sound artist. He is famous for music composed of sounds both natural and extraordinary.

Brandon Labelle is an artist and writer working with sound and the specifics of location.

Dallas Simpson is a professional CD Mastering Engineer trading under the name dallas MASTERS and a sound artist who has spent over 10 years involved with recording and performing binaural soundworks.

Aaron Ximm is a San Francisco based field recordist and sound artist, best known for his composition, installation and performance work as Quiet American.

Francisco Lopez is internationally recognized as one of the major figures of the experimental music scene. Over the last twenty five years he has developed an

astounding sonic universe, absolutely personal and iconoclastic, based on a profound listening of the world.

Pete Stollery is an electroacoustic composer who juxtapose real (familiar) and unreal (unfamiliar) sounds to create surreal landscapes.

Kim Cascone is an American composer of electronic music, who is best known for his releases in the ambient genre on his own record company, Silent Records.

Yannick Dauby is a French field recordist located in Taiwan.

Gilles Aubry is a sound artist who used field recordings, computer programming, surround sound and improvisation to create live performances, sound installations, CD and radio pieces.

### **3.1 Questionnaire for the Interviews**

#### **3.1.1 Basic questions**

- There are some composers and colleagues who see soundscape composition as subgenre of musique concrete. What is your opinion on this matter?
- What are the technical tools that you use these days for composition?
- What has changed in the soundscape composition genre during its 30 years? Do think it is still a vital way of composing and raising awareness to acoustic ecology?
- Do you think that soundscape composition could be the base of new electronic music composed outside of Europe and North America?
- In the last 10 years, there has been a growing interest towards field recording. New terms like phonograph, aural safari is being mentioned at mailing groups. Do you think that this interest towards will affect soundscape composition aesthetics today?
- Do you think that soundscape composition can raise awareness towards environmental issues?
- Who are the soundscape composers you enjoy the most?

### **3.1.2 Personal questions**

#### **Hildegard Westerkamp**

- On some of your compositions, you also include your own voice describing the scene to yourself and to the audience? What is the significance of this?

#### **Hildegard Westerkamp, Darren Copeland, Francisco Lopez**

- On all your pieces, there is a great attention to detail, clarity and form. It seems that you work for long hours on your compositions. How do you start a composition? How much do you prepare for your recording process? Do you allow any elements of chance and randomness in your recording process and your final compositions?

#### **Hildegard Westerkamp, Darren Copeland**

- The textures that you have created by processing are mostly not found in the electroacoustic, computer music world. In those genres, we mostly hear textures that have been processed to an extent where we as listeners can distinguish the origin of the sound at all, whereas on your pieces, we can hear an ambiguity. We can never be sure about the processing, the origin of the sound but still we think we are very familiar with the environment that you have created. Do you have a specific strategy for this compositional technique?

#### **Claude Schryer, Darren Copeland**

- How does the Canadian soundscape influence your compositions?

#### **Claude Schryer, Darren Copeland**

- What are the differences between Canadian soundscape composition and soundscape composition in other countries?

#### **Chris DeLaurenti**

- On your album “N30: Live at the WTO double edition” you have taken an aural safari as you describe it. What is the distinction for you between aural safari, location/field recording/phonography? Would you consider the album as a soundscape work?
- On this same album, you have only used simple editing tools and no processed and synthesized sounds. Why did you take this approach? Some people

consider this approach as documentary work, not musical composition. What is your opinion on this matter?

### **Ros Bandt**

- You are very interested in the idea of sonic archeology. I think this is a very important and effective compositional idea. How did you come up with this idea? Have you been influenced by the history of the Aborigines?

- You have been working with the soundscape of Australia for a long time. Do you think that the Australian soundscape has a specific and unique character?

### **Thomas Gerwin**

- How does the German soundscape influence your compositions?

### **Thomas Gerwin, Sascha Karminski, Rinus van Alebeek, Lasse Marc Riek**

- What are the differences between German soundscape composition and soundscape composition in other European countries?

### **Thomas Gerwin, Andra McCartney, Alessandro Bosetti**

- What are the similarities and differences between soundscape composition and site-specific sound installation which both deal with the sound of the environment?

### **Rajivan Ayyappan**

- How did your sound design work for the Bollywood scene influence your own compositions?

- Do you think that there is a unique content of the Bombay soundscape compared to other places that you have traveled?

- You also do sound installations. What are the similarities and differences between a soundscape installation and soundscape composition for you?

### **Damian Keller**

- You were born in Argentina, studied in Argentina, Brazil, Canada and USA, and now live in Brazil, for you as a composer, what are the aesthetic differences between electronic works composed in USA, Argentina and Brazil? And how were you influenced by the soundscape of Buenos Aires?

- Your work is based on ecological systems. How do you analyze these systems and how do you build your compositional structures from this analysis?
- Which processing methods are used in ecocomposition?
- How does the use of Csound affect your compositional style?
- You state that in your ecologically based compositions, the soundscape provides you the context and the material. Does this result in static pieces where every element has its own fixed space that does not change throughout the course of the work?

**Andra McCartney, Alessandro Bosetti**

- Do you view soundscape composition as the “real world music”?

**Sascha Karminski, Rinus van Alebeek**

- How does the Berlin soundscape influence your compositions?

**Neil Bruce**

- How does the Manchester soundscape influence your compositions?

**Neil Bruce, Peter Cusack**

- What are the differences between British soundscape composition and soundscape composition in other countries?

**Peter Cusack, Katharine Norman**

- How does the London soundscape influence your compositions?

**Michael Noble**

- How does the Australian soundscape influence your work?
- What are the differences between Australian soundscape composition and soundscape composition in other countries?

**Jeff Gburek**

- How does the NY (and/or Berlin, Liege) soundscape influence your compositions?

### **Annea Lockwood**

- How do the New Zealand and American soundscape influence your compositions?

### **Jack Body**

- How does the New Zealand and Indonesian soundscape influence your compositions?
- What are the differences between New Zealand soundscape composition and soundscape composition in other countries?

### **Kjell Samkopf**

- How does the Norwegian soundscape influence your compositions?
- What are the differences between Norwegian soundscape composition and soundscape composition in other countries?

### **Bruce Odland**

- How does the NY soundscape influence your compositions?
- What are the differences between American soundscape composition and soundscape composition in other parts of the world?

### **Jacob Kirkegaard**

- How does the Danish soundscape influence your compositions?
- What are the differences between Danish soundscape composition and soundscape composition in other parts of the world?

### **Lasse Marc Riek**

- How does the Frankfurt soundscape influence your compositions?

### **Petri Kuljuntausta**

- How does the Finnish soundscape influence your compositions?
- What are the differences between Finnish soundscape composition and soundscape composition in other parts of the world?

### **Pete Stollery**

- How does the Scottish soundscape influence your compositions?

- What are the differences between Scottish soundscape composition and soundscape composition in other parts of the world?

### **Yannick Dauby**

- How does the French soundscape influence your compositions? What are the things that are unique to French soundscape?

## **3.2 Comparative Analysis of Interviews**

### **3.2.1 Analysis of basic questions**

- Who are the soundscape composers you enjoy the most?

Within the interviews one composer who is mentioned the most is the Canadian composer Hildegard Westerkamp. This is not a surprise because of the fact that Hildegard Westerkamp, along with other composers such as R Murray Schafer, Barry Truax, Bruce Davis and Claude Schryer were the first pioneers in the study of soundscape and soundscape composition. On the other hand, it is interesting to note that the works of Barry Truax and Claude Schryer have not been mentioned by many of artists interviewed. The cause of this could be several. Hildegard Westerkamp's works have been released by the prestigious label empreintales DIGITALEs that has a much wider distribution than the record label that Barry Truax is associated with. Westerkamp has composed many works and performed them all around the world, whereas Claude Schryer has not been composing for 10 years. The basic sonic elements and the soundscape recordings of Westerkamp's works are also more intriguing for the listener. For her piece "Cricket Voice", she recorded the song of a cricket in the stillness of a Mexican desert region called the Zone of Silence. She notes "the quiet of the desert allowed for such clarity that this cricket's night song – sung coincidentally very near my microphone – became the ideas sound object for this tape composition. Slowed down, it sounds like the heartbeat of the desert, in its original speed it sings of the stars." Other Canadian composers such as Darren Copeland, Francis Dhomont, Gilles Gobeil, Ian Chuprun, Jean Francois Laporte, and Eldad Tsabary have also been mentioned by the artists' interviews. Of these composers, Francis Dhomont, Gilles Gobeil, Ian Chuprun and Eldad Tsabary are mainly electroacoustic composers who also use sources for their works other than soundscapes. The interesting thing to note here is that Jean Francois Laporte is an

artist who transforms sound at the location of the recording and not in the process of post-production. In that regard, he seems to be the only artist who works this way.

French composers Luc Ferrari, Eric Lacasa, Yannick Dauby, Jean Claude Risset, Bernard Fort, and Marc Namblard have been mentioned. Especially Luc Ferrari's series of works titled "Presque Rien" have been praised by many of the artists interviewed. German composers Michael Rusenberg, Hanna Hartman, Christina Kubisch, Lasse Marc Riek, Stefan Funck, Helmut Lemke, and Asmus Tietchens have also been mentioned. Especially the works of Christina Kubisch, which combine field recording, soundart, light, and installation disciplines, have been praised. Spanish composer Francisco Lopez has been praised for his drone aesthetic based on field recordings. The other European composers mentioned are British composers Jonty Harrison, John Leveck Drever, Chris Watson, Peter Cusack, Andrew Liles, Brian Eno, Trevor Wishart, Max Eastley, Rob Mullender, Katharine Norman, Scottish composers Pete Stollery, James Wyness, Czech composer Slavek Kwi, Norwegian composer Bj Nilsen, Swedish composer Gilles Aubry and Portuguese composer Paulo Raposo.

There are a few composers, sound artists who have not been mentioned within the interviews. One of them is the American sound artist Bill Fontana. He is known internationally as a respected sound artist. He works with contact microphones, piezoelectric accelerometers to create sound installations. His most famous works are Harmonic Bridge, Falling Echoes and Sound Sculpture with a Sequence of Level Crossings. The other artists that have not been mentioned within the interviews are Maryanne Amacher, Ryoji Ikeda and Alvin Lucier. Although these composers do not work directly within the soundscape composition genre, their works are all concerned with the limitations of human hearing, resonances of spaces and psychoacoustic phenomena which would all occur in a soundscape recording in extreme conditions.

It is interesting to note that only two composers from the East and Far East parts of the world have been mentioned within these interviews. These composers are Budhaditya Chattopadhyay (India) and Toshiya Tsunoda (Japan). Although there are many electroacoustic composers in Australia and New Zealand, only three composers Murray Schaffer, John Cousins and Chris Brown (New Zealand) have been referred to. On the other hand nearly twenty American composers have been

mentioned within these interviews. This shows that although musique concrete has been developed in France and soundscape composition in Canada, American composers have also been working on this aesthetic and genre hardly. No African or Latin American soundscape composers have been talked about. This is an interesting thing to note because it is known that there are many electroacoustic composers working in the genre of soundscape composition especially from Chile, Mexico, and Argentina in the Latin America. Every year many electroacoustic festivals, which also feature soundscape works, are being organized at these countries. The final thing to note that is that only Turkish composer Erdem Helvacioğlu who is also the writer of this dissertation has been referred to from the Middle East.

- What are the technical tools that you use these days for composition?

All of the interviewees answered the question about the technical tools they use for composition. Most of the answers have had detailed descriptions. The technical tools can be divided into three categories.

1. Microphones
2. Portable recording devices
3. Platform for editing, mixing material

The microphones that have been used can be divided into 4 categories:

1. Stereo microphones
2. Omni directional microphones
3. Binaural microphones
4. Hydrophones
5. Shotgun microphones
6. Surround microphones

Within the first category, the brands Sony, Sennheiser, Audio Technica, Schoeps, Telinga dat science have been mentioned. It can be noticed that Schoeps and Telinga Dat Science microphones are used very rarely, mostly due to their cost. Within the second category, the brand Bruel & Kjaer has been mentioned. Within the third category, four composers have mentioned the brand Soundman. It is interesting to note that no other specific brand within the binarual microphone category has been

mentioned. This may be due to the fact that this brand can be bought all around the world and it is comparatively cheap. With the fourth category, Offshore Acoustics and DPA have been mentioned. Only two of the composers said that they use hydrophones regularly. Within the fifth category, only Sennheiser MKH-416 has been mentioned. Within the sixth category only Soundfield microphones have been mentioned. It is easily noticeable that most of the composers use either stereo or binaural microphones for their work.

The interesting thing to notice that none of the interviews have mentioned the use of parabolic reflector or contact microphone. Parabolic reflector is a reflective device used to collect or project energy such as light, sound, or radio waves. Its shape is that of a circular paraboloid, that is, the surface generated by a parabola revolving around its axis. Parabolic reflectors are used to collect energy from a distant source (for example sound waves or incoming star light) and bring it to a common focal point. Parabolic reflector is the perfect device for recording the soundscape that is very far away from the observer. Contact microphone is a form of microphone designed to sense audio vibrations through solid objects. Unlike normal air microphones, contact mics act as transducers which pick up vibrations and convert them into a voltage which can then be made audible. Although a regular contact microphone would not be the right choice for recording a rural or an urban soundscape, it would be a good choice for recording the vibrations of certain structures. Another device that is not used widely but very important for sound installation is the piezoelectric accelerometer. Piezoelectric accelerometer is a piezoelectric accelerometer that utilizes the piezoelectric effect of certain materials to measure dynamic changes in mechanical variables such as acceleration, vibration, and mechanical shock. This has been used by sound artists such as Bill Fontana and Jacob Kirkegaard to record the sounds of big constructions such as bridges.

Portable recording devices that have been used by the composers maybe divided further into four categories:

1. DAT recorders
2. Card recorders
3. Mini disk recorders
4. Hard disk recorders

Within the first category only the brand Sony has been mentioned. Within the second category, the brands such as Tascam, Zoom, Marantz, Maudio, Nagra have been mentioned. Most of these recorders use compact flash as their medium, whereas only a small portion of them uses smart media cards. Within the third category, the brands Sony and Sharp have been mentioned. Within the fourth category, the brands such as Sound Devices, Tascam and iriver have been mentioned. The Tascam and Sound Devices are dedicated hard disk recorder systems for field recording whereas the iriver is more of a jukebox, mp3 player, and recorder. It is quite easy to notice that the technology has changed the recorders used by the composers. Ten years ago, we would mostly see a list full of dat and md recorders whereas today, their use has become minimal. Most of the composers prefer using either card recorders or hard disk recorders. Also quite a number of composers gave answers such as “a digital recorder, portable recorder, and good recording device.” This shows that the quality difference between affordable recorders and very pristine, expensive recorders has become minimal.

The editing, mixing platform, programs can be divided into two main categories:

1. Digital only systems
2. Hybrid system of digital and analog

Nearly all of the composers prefer to use the digital only systems. The programs used are mostly Protools, Max-msp, Logic, Cubase and Ableton Live. Besides these programs, also programs such as Wavelab, Soundforge, Amadeus, Samplitude, Digital Performer, Audition, SADiE, Peak, Soundtrack Pro and Audiosculpt are used. Some of these programs are used only for preparation, sound design and editing, whereas the others are used for mixing.

The hybrid systems used mostly consist of a software-mixing environment and analog, modular synthesizers, various instruments, analog mixers. It is interesting to note that only a very small portion of the composers interviewed use a hybrid system. Nearly all of the pieces are edited, composed, mixed within a software-mixing environment. The use of various instruments, synthesizers, drum machines, analog effect processors is very limited.

- What has changed in the soundscape composition genre during its 30 years? Do you think it is still a vital way of composing and raising awareness to acoustic ecology?

All of the composers interviewed agree that the technology has changed a lot during the last thirty years and this change has made an enormous impact on the soundscape composition. This change has increased the number of people interested in this genre and made access to various recording gear easier. These days, composers use computer for editing and mixing, whereas thirty years ago, that would be a tape machine. These days we see that people use card or hddisk recorders for capturing sound where as thirty years ago, the machines used would be the tape recorders. Also there is a tendency to present unprocessed field recordings as compositions. There is an interest to present works in different multispeaker setups. There has been a growing interest in the use of Ambisonics and surround microphones. There has been growing interest in recording not just soundscape nature or urban recordings but also microscopic events or dangerous places. Besides being a musical genre in itself, soundscape composition has also found its place as a performance art too. Although there has been an enormous change in the technology used by composers and the presentation, it is mentioned by a good number of composers that the aesthetics that have been defined by Hildegard Westerkamp, Barry Truax have not changed much during the last thirty years. Most of the composers agree that soundscape composition remains an effective way to raise consciousness about acoustic ecology. While the remaining number of composers regard the compositions as pure works of music and argue that they will not have an effect on raising awareness about acoustic ecology, they also state that the objective is better fulfilled at a political and social level. Although these composers do not regard soundscape composition as an important element in raising awareness towards acoustic ecology, they say that strong compositions can encourage the listener to listen to their environment more openly, carefully and can encourage people to engage in a deep and meaningful way with their immediate sonic environments.

- In the last 10 years, there has been a growing interest towards field recording. New terms like phonograph, aural safari is being mentioned at mailing groups. Do you think that this interest towards will affect soundscape composition aesthetics today?

All of the composers agree that this interest towards field recording will affect soundscape composition aesthetics. Most of them mention that this affect is already happening in the global sense. There are two separate points that have been mentioned. The first is that there are quite a number of visual artists who record and use the soundscape recordings within their works, not as pure compositions but an element of the art work. Also it has been mentioned that the aesthetics of soundscape composition, field recording are being heard within the popular music as our times. Another interesting point that has been talked about is that the new generation of recordists do not know much about the history of electroacoustic, acousmatic, soundscape music. Rather than sticking with the aesthetics of these genres, they try to create something inspirational, new for them. This braveness cause to create new hybrid compositions where we can hear different aesthetics side by side. As with all other electronic music genres, it has been said and agreed upon that the technical possibilities of audio editing, sequencing programs will shape the aesthetics of the soundscape composition. There seems to be two specific aesthetic approaches that have been mentioned by the composers interviewed. The first one is the aesthetic of drones, long sustaining textures created by the processing of various field recordings, and the other aesthetic approach is the use of lofi equipment.

- Do you think that soundscape composition could be the base of new electronic music composed outside of Europe and North America?

The conclusions by the composers interviewed about whether soundscape composition could be the base of new electronic music composed outside of Europe and North America are mixed. Some of these composers think that soundscape composition is a great idea, tool for finding new inspirations for new work based on the environmental sounds of these composers living outside Europe and North America. On the other hand, some of the composers argue that traditional musics of those regions will dominate the music scene and maybe only a very small number of composers will be interested in this aesthetic. But it is also has been stated that there is a growing interest towards field recording in Australia, New Zealand, China, Japan, Argentina. It is interesting to note that African and Middle Eastern composers have not been mentioned during the interviews. This may be due to the fact that either there are no composers of soundscape composition at these places or the works of these composers have not been released, distributed, heard within Europe and

North America. This question has also encouraged some of the composers such as Bruce Odland to talk about the environmental music that is played in places such as Africa, India, and Guatemala. It is very obvious that environmental music, deep listening have been going on for centuries in places outside of Europe, but the clearly defined terms such as soundscape music, electroacoustic music have been created by academicians, musicians living in Europe or North America.

- Do you think that soundscape composition can raise awareness towards environmental issues?

Nearly all of the composers agree that soundscape composition can raise awareness towards environmental issues. Some of these composers say that this affect will be very obvious while some think that the affect will be very marginal. The example of Ear to the Earth has been given to demonstrate how soundscape composition can affect people's awareness towards sound, environmental issues. Although the audience may be influenced by the compositions themselves, this does not prove that this enjoyment and awareness will translate into everyday life habits. It has also been said that there is more benefit to educating the architects, engineers and urban planners of tomorrow since they are the ones who make the decisions that directly impact the quality of our soundscape. It has been noted that there is more interest towards environmental issues all around the world, one of the reasons being the global warming. So in that respect, it is easier for the artists to connect with the audience today compared to the 80's for example. But still the audience interest towards soundscape music is marginal although growing slowly. Besides the Ear to the Earth festival example, another example showing that there is hope in this issue has been stated, that is the Soundscape Composers as Sonic Conservationists in Scotland. It has been stated that some city councils in Scotland employ acoustic specialists (often soundscape composers) as part of the wider team.

- There are some composers and colleagues who see soundscape composition as subgenre of musique concrete. What is your opinion on this matter?

All of the composers agree that soundscape composition emerged after musique concrete chronologically and both share common techniques in composition. It is agreed upon that the basic difference is the connection to the real sound and its contextual meaning. In that sense, soundscape composition is quite the contrary of musique concrete which is abstract in its nature. It has also been noted that

soundscape composition did evolve as its own practice independent of musique concrete and its philosophy is the exact opposite. It has also been said that both musique concrete and soundscape composition are all subgenres of sound art. An interesting point was made by Neil Bruce who said that musique concrete should be a subgenre of soundscape composition, because musique concrete is about using sonic objects to create what is inherently music, while on the otherhand soundscape composition is more about the aural experience. Michael Noble has also made a similar statement. He pointed out that the situation should be reversed, with musique concrete being a meta-data stripped version or sub-genre of soundscape composition. Soundscape composition is inherently about place, community, relations between objects, whereas musique concrete has always been about arbitrary connections between basic acoustic building blocks. The relationships are not so important in musique concrete - just the objects and the methods of representing or defining them. It has also been noted that soundscape composition has a much greater scope to break out of the traditional recorded medium and it can emphasize spatial rather than temporal relationships. Quite a number of the composers stated their dislike towards categorization, naming of genres. In that respect, they said that especially today the lines between predefined genres are very blurry and they regarded the theme "soundscape" as a wide, blurred field of interdisciplinary work, research, thinking and art practice. Although the idea of not clearly defined, blurry theme of soundscape might seem contradictory to the actual definition of soundscape composition, it actually shows how varied the whole genre has become and how the music has evolved in the last forty years. For the new generation of composers, soundscape has a different and wider meaning. For these composers and field recordists, soundscape is way of expression and a way of resistance, sometimes like in the works of Christophe DeLaurenti or in the works of Francisco Lopez. With the advance of technology, "soundscape" has gotten into all corners of the sound production ranging from sound installation to popular music productions. In that sense the Vancouver based composers' definition of soundscape composition has not changed over the years, but the definition of "soundscape" did.

The interesting thing to add to this topic is the remark of Gilles Aubry that states "there are soundscape composition pieces made out of entirely synthetic sounds". Although this idea seems contradictory at first to the definition of soundscape

composition done by the Vancouver based composers, it is partly true within the ecocomposition genre where ecological models can be used even for acoustic compositions or ecological sounds can be created synthetically with a reference to its original content.

### **3.2.2 Analysis of personal questions**

#### **Hildegard Westerkamp**

- On some of your compositions, you also include your own voice describing the scene to yourself and to the audience. What is the significance of this?

This is connected to the Soundwalking radio programme that Hildegard Westerkamp did on the Vancouver radio. It clearly demonstrates the aesthetic link between soundscape composition, radioart and poem.

#### **Hildegard Westerkamp, Darren Copeland, Francisco Lopez**

- On all your pieces, there is a great attention to detail, clarity and form. It seems that you work for long hours on your compositions. How do you start a composition? How much do you prepare for your recording process? Do you allow any elements of chance and randomness in your recording process and your final compositions?

The chance element used by Hildegard Westerkamp demonstrates another characteristic of soundscape composition that is opposite to musique concrete. The form, textural quality, gestures are much more predefined in the musique concrete compositions whereas on the other hand, the compositional process in soundscape composition as Westerkamp points out involves more chance techniques and the special sonic characteristics of the space. The randomness plays a lesser role in Darren Copeland's compositions. The intent of the piece informs him which sound to use, process in the piece. But still the form of the whole piece is based on the sounds that are created and not predefined. So the piece takes shape along the process. Like Hildegard Westerkamp and Darren Copeland, Francisco Lopez also does not work with predefined strategies or ideas. He lets himself guided by the sounds.

#### **Hildegard Westerkamp, Darren Copeland**

- The textures that you have created by processing are mostly not found in the electroacoustic, computer music world. In those genres, we mostly hear textures that

have been processed to an extent where we as listeners can not distinguish the origin of the sound at all, whereas on your pieces, we can hear an ambiguity. We can never be sure about the processing, the origin of the sound but still we think we are very familiar with the environment that you have created. Do you have a specific strategy for this compositional technique?

Neither of them have a predefined strategy for composition but rather work based on the sonic quality of the actual soundscape. Hildegard Westerkamp does not work with a predefined method but rather composes by making instinctive decisions along the process. Darren Copeland likes to retain the environmental-like character in all his processed sounds.

### **Claude Schryer, Darren Copeland**

- How does the Canadian soundscape influence your compositions?

It might be said that wildlife in the country, ice, snow banks have been very influential for the Canadian soundscape composers. For Claude Schryer, Quebec City has also been inspirational, whereas for Copeland the urban and suburban soundscape of Canada has been influential.

- What are the differences between Canadian soundscape composition and soundscape composition in other countries?

It may be said that R Murray Schafer's work on acoustic ecology has shaped the aesthetics of a generation of composers in Canada. Schryer states that even though a soundscape composer from that generation in Canada composes a work about a place unrelated to Canada, a Canadian sensitivity might be noticed and heard. This also demonstrates that the Canadian soundscape composition has a very distinct, sensitive aesthetic, sonic character. On the other hand, Copeland argues that there is not a lot of difference since Murray Schafer's Tuning of the World and research by the World Soundscape Project are now all widely known in major cities around the world.

### **Chris DeLaurenti**

- On your album "N30: Live at the WTO double edition" you have taken an aural safari as you describe it. What is the distinction for you between aural safari, location/field recording/phonography? Would you consider the album as a soundscape work?

DeLaurenti states that aural safaris seek to convey the audible drama of hunting sound in an unstable, perhaps dangerous environment and this encourages him to venture into unplanned territory and sonically new terrain. Field recording is a part of well intentioned form of colonialism for him, on the other hand, aural safari is mainly an approach and awareness of the limitation that lie ahead of the recording. He considers himself a part of a new generation of field recordists who use smaller, inexpensive, high fidelity equipment to capture moments in very different situations. N30 is not a soundscape composition at all for him although he has been influenced by the works of Hildegard Westerkamp, Annea Lockwood, Bernie Krause, Michael Ruesenberg and others to a certain degree. N30 directly challenges the well known practices of soundscape composition. As a phonographer, DeLaurenti seems to take an experimental approach to field recordings and seeks to liberate the forbidden elements of field recording - mic handling noise, hiss, narrow frequency response, distorted proximity effect, haphazard directionality, drop-outs, device self-noise, glitchy edits. His movement while recording is also different from the widely accepted norms of the trade. Rather than standing still and capture the moment as invisibly as possible, he moves, runs, carries various mics with different fidelity on himself. In a way he becomes an orchestra of field recording himself. This is a totally unique approach to field recording and with his use of aggressive editing (abrupt stops, dead silence, frenetic intercutting, obviously artificial polyphony, antiphonal spatialization, the traditional transparent cross-fade) during the post production stage, DeLaurenti comes up with a unique voice in phonography.

- On this same album, you have only used simple editing tools and no processed and synthesized sounds. Why did you take this approach? Some people consider this approach as documentary work, not musical composition. What is your opinion on this matter?

He states that he deliberately did not want the presence of processed sounds to imply that the material was overdubbed. The fact of the matter is all the sounds that have that sense of overdubbing did actually happen at that recording moment. DeLaurenti states that he would be proud if someone would consider the work as documentary of its time. The music of N30 lies in the work's structure for him and he would like to consider the work as prophecy of resistance.

## **Ros Bandt**

- You are very interested in the idea of sonic archeology. I think this is a very important and effective compositional idea. How did you come up with this idea? Have you been influenced by the history of the Aborigines?

The 40 000 year Aboriginal history and the Australia's complexity of geomorphology have been the driving forces for the idea of sonic archeology in Ros Bandt's work. This idea has been documented in pieces such as Lake Mungo and Hania.

- You have been working with the soundscape of Australia for a long time. Do you think that the Australian soundscape has a specific and unique character?

Even though she has not pointed out the details, she has agreed that the Australian soundscape has a unique character.

## **Thomas Gerwin**

- How does the German soundscape influence your compositions?

Thomas Gerwin has pointed out that the soundscape that a composer lives in makes a great impact on his/her work. In that sense, he is influenced by the German soundscape, although unconsciously.

## **Thomas Gerwin, Sascha Karminski, Rinus van Alebeek, Lasse Marc Riek**

- What are the differences between German soundscape composition and soundscape composition in other European countries?

Thomas Gerwin has pointed out that the German soundscape composition has aesthetic similarities with the Canadian soundscape composition approach. It is interesting to see the documentary, lyrical character of the Canadian music in Germany. This influence may come from the radioart pieces produced by the WDR as well as the soundwalk, radio drama, soundscape pieces of the Canadian composers. Sascha Karminski uses mostly sounds of India in the compositions, so she does not have a first hand experience about this. Rinus van Alebeek and Lasse Marc Riek have also pointed out that the scene has become very international and it is not easy to write, think about a very clear, distinct line about this. They also state that the difference in sound, aesthetic depend on the artist himself more than his nationality.

### **Thomas Gerwin, Andra McCartney, Alessandro Bosetti**

- What are the similarities and differences between soundscape composition and site-specific sound installation which both deal with the sound of the environment?

Andra McCartney has pointed out that it is hard to give a specific answer to this question because the boundaries are not defined. Alessandro Bosetti made a clear definition that soundscape composition projects away from the contexts while site-specific sound installation dives into it. Gerwin has also pointed out a similar idea where the site-specific sound installations refer and belong to the soundscape of a specific real place and do shape and comment it. Radiophonic or acousmatic Soundscape Compositions (diffused by loud speakers) refer to real soundscapes very freely and/or mix, create or form or bring to to remembrance them without the steady control and influence of a specific soundscape. The site-specific sound installations are much more located or based then the other.

### **Rajivan Ayyappan**

- How did your sound design work for the Bollywood scene influence your own compositions?

Rajivan Ayyappan says that Bollywood is not an influential force in his compositions. Like other commercial driven markets, Bollywood is another business oriented media place. The business pattern keeps many great traditional musicians out of work, because their sounds have been substituted to a certain extent by sampling and programming. Although this commerciality takes away uniqueness from many productions, there are still a few film makers in India that do independant work and they do not consider themselves a part of the Bollywood scene. As a conclusion he says that the Bollywood sound productions also have not been influential on his own soundscape work. On the otherhand, certain qualities of the traditional Indian music such as micro-tonality, temporal framework, even the modes of listening a composition has been very influential.

- Do you think that there is a unique content of the Bombay soundscape compared to other places that you have traveled?

Rajivan Ayyappan definitely believes that there is a unique content of the Indian soundscape. That soundscape is partly shaped by the people living in the cities. The

human interaction, the vehicles used in the traffic etc are all different from the cities in Europe and these are some of the reasons for this uniqueness. The loudness of midfield textures in city soundscapes also creates a difference as far as he is concerned. These midfield textures are mostly absent in European cities and that makes much easier to distinguish sounds from each other. The weather conditions, architecture and human behaviour are the other reasons for the uniqueness in soundscape. It is interesting to note that all of the points he has made are true for the soundscape of Istanbul and some of the other crowded cities in Turkey.

- You also do sound installations. What are the similarities and differences between a soundscape installation and soundscape composition for you?

For Rajivan Ayyappan, composition is a fixed architectural structure in a way whereas soundscape installation is like a free improvisation. It is interesting to note that many composers of non-European origins think similarly about the rigidity of a fixed composition. Since improvisational music is a very important part of their musical culture, most of these composers feel the urge to try somethings freer in form and installation is a perfect way to try this.

### **Damian Keller**

- You were born in Argentina, studied in Argentina, Brazil, Canada and USA, and now live in Brazil, for you as a composer, what are the aesthetic differences between electronic works composed in USA, Argentina and Brazil? And how were you influenced by the soundscape of Buenos Aires?

Keller states that Buenos Aires is a true melting pot and has influences of many cultures such as indigenous, African and European. The city's cultural diversity and the fusion of all incoming sources are its unique points. Porteño refers to the actual port in Buenos Aires. Porteños are the citizens of the city and they have a corrosive sense of humour. Keller states that this humour has filtered into music which can be witnessed by the works of his own and the works of Pablo Cetta, Fernando Lopez-Lezcano and Mauricio Kagel. The two main characteristics of the Argentinean music are sadness and humour which can also be heard in the works of Keller.

- Your work is based on ecological systems. How do you analyze these systems and how do you build your compositional structures from this analysis?

Kellers states that he has moved away from the control-based, very formalized aesthetic and moved towards a more open and interactive structure. He compares the role of the composer in musique concrete and soundscape composition as a reference. In musique concrete the composer is the sole master of his sonic universe, on the other hand in soundscape composition the context of the sound is very important and this inverted the power relationship between materials and techniques. Composer intervention was cut down to a minimum and the recorded sound has become the sole master of the sonic universe in a way. Keller states that this idea has limitations since composition inherently includes decisions taken at every stage of the work including the choice of recording locations, equipment used, microphone positioning, editing methods, to the venue, presentation format, support media, targeted public and so on. In ecomposition, materials, methods, format and audience, all are integral part of the process and while acousmatic music has the composer as the key figure, and soundscape has the sound environment as the most important element of the work, ecomposition places the emphasis on the creative process itself. For the ecompositional process, first a historically and geographically located concept is defined, and then this is put into practice. Since the compositional method is an open system which is modified by the environment and the interactions among agents and objects in it, the final composition may have surprising results at the end. The ecompositions are usually modular, open-ended works, which depend on the audience to give them their final shape. This concept is unique when compared to the aesthetics of musique concrete and soundscape composition. In a way, ecomposition takes ideas from both genres, but ends up in a totally unique approach to environment and sound.

- Which processing methods are used in ecomposition?

Kellers gives a summary of the methods he has used during the 90's and afterwards. In 1996, he started to work at Simon Fraser University, and there he used the programs Max and Csound. Between 1996 and 1998, real-time synthesis was a hard task to accomplish on a desktop computer. He was using Barry Truax's POD system for real-time granular synthesis, but this system was not portable unfortunately. Therefore he felt the need to build a portable system and he came up with the MACPOD, the first real-time granular system for desktop. He used this system for all asynchronous granular synthesis sounds in his pieces, but through time he became

aware of the limitations of the technique. Although this technique worked fine on sustained sounds, it was not appropriate for dealing with complex fine temporal patterns such as those of iterated environmental sounds (rain, fire, etc.). This limitation encouraged him to work on fine-grained methods for modeling environmental sounds.

- How does the use of Csound affect your compositional style?

Keller states that Csound is probably the synthesis language with the widest user base in the computer music community. The program's syntax and implementation do not take advantage of recent developments in the computer music field which is a limitation for the users. He states that because of its user base and support for a variety of platforms, Csound was the language of choice for the first developments in ecological modeling, though he would be using different programs and algorithms now. His piece "soretes de punta. . ." was wholly implemented in Csound. Since the piece is equivalent to the software, this allowed him to produce about a dozen different versions of the work. Structurally the piece is the same, but each version has its own sonic content. This is a new approach to sound modeling and composition. The interesting thing he points out is that the environmental sounds are never identical, but they can be perceived as belonging to specific classes. This idea then turned into the development of ecological modeling. It is interesting to see that this new concept has its roots also in cognitive science besides composition. Like all other eco-composition composers, Keller is also interested in how the sounds are perceived by the listener. He presented the first examples of synthetic rain, water streams, bouncing and breaking glass at ICMC in 1998. After this presentation, he finalized the large scale piece "touch'n'go" which was analyzed within this dissertation. Within this piece he combined several concepts such as open work, the integration of extra-musical elements, such as acting, text and images.

- You state that in your ecologically based compositions, the soundscape provides you the context and the material. Does this result in static pieces where every element has its own fixed space that does not change throughout the course of the work?

Keller points out the example set forth by the J. J. Gibson who is one of the initiators of Ecological Psychology who defined two types of environmental invariances such as structural invariances and transformational invariants. Structural invariances are

determined by characteristics that are fixed for a given agent-object relationship. Typical examples would be the material, size and shape of an object. These invariants limit the types of sounds that can be produced by – let's say – tapping the object. Transformational invariants depend on processes that change at a relatively fast pace. A good example of this would be a bouncing object. As time passes, collisions become softer and the temporal interval between impacts becomes smaller. So in this case the characteristics of the interactions change over time. As Keller points out Gibson's insight was to point to the existence of patterns of change in nature which shape how we perceive the environment. Ecomcomposition takes advantage of these general perceptual mechanisms. Environmental sound does not depend on local, culturally specific idioms unlike traditional music. This in a way of course limits the compositional choices an ecomcomposition composer takes. The interesting thing is that even though this is a limitation, at the same time it is liberating to see that all the ecological elements for the composition will be perceived in a similar manner.

#### **Andra McCartney, Alessandro Bosetti**

- Do you view soundscape composition as the “real world music”?

Neither of the composers think of soundscape composition as the “real world music”.

#### **Sascha Karminski, Rinus van Alebeek**

- How does the Berlin soundscape influence your compositions?

Neither of them believe that their works are influenced by the Berlin soundscape, but Rinus van Alebeek mentions the composer Gilles Aubry who got inspired by the Berlin courtyards.

#### **Neil Bruce**

- How does the Manchester soundscape influence your compositions?

Neil Bruce points out that like other cities in Europe, Manchester does not have a unique soundscape character of its own. So he tries to find other approaches to recording and seek out interesting sounds that are not Manchester like.

### **Neil Bruce, Peter Cusack**

- What are the differences between British soundscape composition and soundscape composition in other countries?

Neither of the composers could give a definite answer to this question, but Peter Cusack pointed out that the UK based compositions may be influenced by electroacoustic music more.

### **Peter Cusack, Katharine Norman**

- How does the London soundscape influence your compositions?

Both of the composers say that they have been influenced by the London soundscape to a certain extent. Especially Peter Cusack knows London sounds very well and is aware of the changes that have taken place in the last 50 years. It is interesting to point out that these two composers have been the only ones that have openly agreed that they have been very much influenced by the soundscape they were born into and live in.

### **Michael Noble**

- How does the Australian soundscape influence your work?

He has been living in Korea for a few years and there are very basic differences he experiences in the sense of space, especially the sense of space in Perth compared to Seoul. Other Australian composers also have mentioned this too. The sense of space seems to be influential for many Australian composers.

- What are the differences between Australian soundscape composition and soundscape composition in other countries?

Although he believes that there must be a difference, he does not have a very clear answer about it. He thinks that maybe the characteristics of Australian soundscape composition could be similar to Canadian soundscape works, since both countries' soundscapes have a feel of big spaces.

### **Jeff Gburek**

- How does the NY (and/or Berlin, Liege) soundscape influence your compositions?

He believes that location definitely has an effect on every form of art, but the urban centres' soundscapes that he works in are not influential for him.

### **Annea Lockwood**

- How do the New Zealand and American soundscape influence your compositions?

The New Zealand soundscape has had a very important effect on Annea Lockwood's works. Her interest in the sounds of rivers, bush birds, rock falls has manifested itself in works such as "A Soundmap of the Danube". On the otherhand, she points out that the American soundscape is less pervasive.

### **Jack Body**

- How does the New Zealand and Indonesian soundscape influence your compositions?

Unlike Annea Lockwood, Jack Body has not been influenced by the New Zealand soundscape. His main influence was the Indonesian soundscape especially during the 1966-67 when he lived there.

- What are the differences between New Zealand soundscape composition and soundscape composition in other countries?

Jack Body points out that the main sounds used in compositions by New Zealand composers have been the sounds of water and birdsong.

### **Kjell Samkopf**

- How does the Norwegian soundscape influence your compositions?

The natural soundscape of Norwegian mountains has been influential in his compositions.

- What are the differences between Norwegian soundscape composition and soundscape composition in other countries?

He does not think that there is a major difference between the two.

### **Bruce Odland**

- How does the NY soundscape influence your compositions?

The NY soundscape is very influential in his work and has been the basic raw material for his artistic output.

- What are the differences between American soundscape composition and soundscape composition in other parts of the world?

He points out there are some important differences in general between the American soundscape and the soundscape of European cities. American cities' architecture and plan are based on cars, there is more wild nature compared to Europe, the electric grid based on 60 cycles. These differences and more create a sonic difference and this definitely affects the compositional output.

### **Jacob Kirkegaard**

- How does the Danish soundscape influence your compositions?

He thinks that his work is influenced by the sounds of particular places he has been to rather than the soundscape of Denmark.

- What are the differences between Danish soundscape composition and soundscape composition in other parts of the world?

Because of the globalization, he thinks that it is getting harder to find places with their unique sonic character. Since the soundart scene is very internationalized, he does not think in terms of nationalized sonic characteristics.

### **Lasse Marc Riek**

- How does the Frankfurt soundscape influence your compositions?

He states that the soundscape around the city influences him deeply. This includes the soundscape of the hills, mountains in the North, the river Main and the forests in the south. This influences and interest has made him more interested in the idea of "acoustic ecology".

### **Petri Kuljuntausta**

- How does Finnish soundscape influence your compositions?

The Finnish soundscape is very influential for Petri Kuljuntausta. He regularly records the soundscape of Helsinki and other cities in Finland and he has definitely noticed major changes within the soundscape. This change also shapes his compositions in a meaningful way.

- What are the differences between Finnish soundscape composition and soundscape composition in other parts of the world?

The nature sounds are important for Finnish composers and this is very well represented in the electroacoustic music, soundart, noise musics as well as the soundscape compositions. He believes that there is definitely a uniqueness of Finnish soundscape composition.

### **Pete Stollery**

- How does the Scottish soundscape influence your compositions?

He believes that the Scottish soundscape has a big influence on his compositions. The vast open spaces around him effects the timbral and structural quality in his works. He has also pointed out that other Scottish composers also acknowledge this influence even though some of them could be unaware of it.

- What are the differences between Scottish soundscape composition and soundscape composition in other parts of the world?

He does not think that there are obvious stylistic and technical differences. The only difference he can point out is the sonic differences recorded by the composers themselves.

### **Yannick Dauby**

- How does the French soundscape influence your compositions? What are the things that are unique to French soundscape?

He points out that he has been influenced by the soundscape he has been living in.

## **3.3 List of Interviews**

### **Hildegard Westerkamp (Canada)**

- There are some composers and colleagues who see soundscape composition as subgenre of musique concrete. What is your opinion on this matter?

It's not important, as far as I am concerned. Chronologically speaking, soundscape composition emerged after musique concrete and certainly in my work I have benefited from this tradition and was influenced by the techniques used. By now, soundscape composition has become its own genre in the last 10 years or so. The

name soundscape composition did not exist when I first started composing in the mid-seventies; I think it only came about in the nineties.

- On some of your compositions, you also include your own voice describing the scene to yourself and to the audience? What is the significance of this?

This is connected to my radio programmes Soundwalking, that I broadcast in 1978/79 here in Vancouver on Vancouver Co-operative Radio, where the voice was the mediator between the recorded environments and the listening radio audience. On another level it is also a story telling, poetic voice, an inner voice.

- On all your pieces, there is a great attention to detail, clarity and form. It seems that you work for long hours on your compositions. How do you start a composition? How much do you prepare for your recording process? Do you allow any elements of chance and randomness in your recording process and your final compositions?

There is much chance involved. My compositions start with an idea, a concept usually, or interest in a place or situation and its special sonic characteristics and/or political issues. Preparations for a recording process are minimal---just making sure I have all the equipment and it is in good order. The listening back to the materials and the processing of some of the sounds is the most time consuming part. The experiences that I have while recording (or while just listening and getting to know a place) often have a large influence in my compositional process.

- The textures that you have created by processing are mostly not found in the electroacoustic, computer music world. In those genres, we mostly hear textures that have been processed to an extent where we as listeners can distinguish the origin of the sound at all, whereas on your pieces, we can hear an ambiguity. We can never be sure about the processing, the origin of the sound but still we think we are very familiar with the environment that you have created. Do you have a specific strategy for this compositional technique?

My recordings and sounds, including the processed sounds that emerge determine my compositional strategies. Decisions emerge out of what I hear at every stage of the process.

- What are the technical tools that you use these days for composition?

Simple ones. I use Pro Tools for mixing and editing, eq, filtering, pitch shifting, delays, reverb and some of the GRM Tools.

- What has changed in the soundscape composition genre during its 30 years? Do think it is still a vital way of composing and raising awareness to acoustic ecology?

Yes it is vital, especially if it really does deal with ecological issues in a profound way. We can't do enough awareness raising in that context!

### **Claude Schryer (Canada)**

- There are some composers and colleagues who see soundscape composition as subgenre of musique concrete. What is your opinion on this matter?

Soundscape composition is quite diversified as a genre, ranging from unaltered recordings to extensive processing. I think the through line is a connection to real sound and it's contextual meaning. In this sense it is quite the contrary of musique concrete, which is generally abstract, but both genres share common techniques and are related historically.

- What has changed in the soundscape composition genre during its 30 years? Do think it is still a vital way of composing and raising awareness to acoustic ecology?

A lot. The means of production, training, dissemination and artistic discourse have evolved leaps and bounds in the last 30 years. I think soundscape composition continues to be a viable form of composition however many artists are also working in video and multi-media and incorporate their soundscape work in a larger context. I think soundscape composition remains an effective way to raise consciousness about acoustic ecology, in particular through radio. Sometimes when people connect to a good soundscape composition they are able to hear the world differently afterwards.

- How does the Canadian soundscape influence your compositions?

Canadian soundscapes are my compositions for the most part. I am strongly influenced by the musicality of nature and of the environment in Canada, from the ice and snow banks to the wildlife in the country. Most of my work is taken from field recordings and re-contextualised into soundscapes narratives. An example is

Odysée sonore from my CD Autour, which calls upon the musicality of soundscapes from Québec City as the source of the work. I wrote an article with some thoughts on this and related issues at ([Url – 1](#)).

- What are the differences between Canadian soundscape composition and soundscape composition in other countries?

I'm not sure. Canada is a very large country that has multiple time zones, large open spaces and two official languages. I've heard great work from many countries and many share compositional sensitivities with Canadian composers. Someone like Hildegard Westerkamp in Vancouver has a very distinctive west coast sound in most of her works but she has also composed work about India that has no sounds from Canada but one can still hear a Canadian sensitivity. We also enjoy the legacy of the World Soundcape Project and R. Murray Schafer's work on acoustic ecology that has helped shaped our thinking.

- What are the technical tools that you use these days for composition? (or what were the tools.. )

I don't compose anymore, but back when I was active I used a SONY D-10 DAT and a SONY MS-5 microphone. I then edited using Protools and the work was disseminated on CD and on radio. I kept the technology as high quality as possible. I wanted my recording equipment to be available wherever I went and for the editing equipment to allow me to edit and mix delicate soundscapes.

- Do you think that soundscape composition could be the base of new electronic music composed outside of Europe and North America?

I don't know. I expect that it is a genre that will have appeal anywhere in the world, as long as composers can have access to the tools and the means to disseminate their work. It is a fascinating medium with a history of practice that is similar in many ways to documentary film, whereas stories can be told that have both artistic and social interest.

- In the last 10 years, there has been a growing interest towards field recording. New terms like phonograph, aural safari is being mentioned at mailing groups. Do you think that this interest towards will affect soundscape composition aesthetics today?

It is easy however to throw together a few sounds and create a collage. Field recording can be an art in itself but there is a difference between a composer who conceives of a work of audio art and someone who records sounds as a hobby. The craft of soundscape composition is difficult to master in terms of creating works that will have appeal on the long term. I'm open to any form of expression that sound artists want to explore. My own pleasure comes from artists who are able to create a poetic narrative that uses minimal materials to maximum effect.

- Do you think that soundscape composition can raise awareness towards environmental issues?

Yes it definitively raises awareness and also allows the listener a space in which to enjoy sound experience without a direct message. The responsibility of the artist is to make this experience transform or enhance the awareness of the listener and take her or him into a heightened state of perception as a result of the artistry of the composition. Then the listener can choose to make a connection between the work and a given political or social issue.

- Who are the soundscape composers you enjoy the most?

Eric Lacasa (France) is one of my favorites. He has a great ear and always has something to say in his work. I also appreciate the works of Hildegard Westerkamp (Vancouver), Darren Copeland (Toronto) and the late and great Luc Ferrari (France). There are many others. I worked on a piece with R. Murray Schafer in 1998 called Winter Diary that is probably my favorite soundscape experience. I now work for the Canada Council and do not compose much anymore. I however did a little piece with my son Riel a few years ago for CBC called "Riel's Fishing Stories" (Url – 2).

### **Bruce Davis (Canada)**

- There are some composers and colleagues who see soundscape composition as subgenre of musique concrete. What is your opinion on this matter?

This is a little too academic for me; it really depends I guess on the piece itself... some are complex manipulations of raw sound, others feature the raw sound itself – for example, listening to a quiet stream with no manipulation for 20 minutes or so would not be in the musique concrete category, but it is still a conscious choice of the composer, and draws out different responses, or appeals to a different part of the mind. One part of the Australian material I referred to above was just 20 minutes of

baking hot desert silence, with the occasional fly zooming around. Probably the most boring stretch of soundscape ever recorded. But if you really listened, you were (or I was) actually transported there for a few moments.

- What has changed in the soundscape composition genre during its 30 years? Do think it is still a vital way of composing and raising awareness to acoustic ecology?

Sorry, can't comment here. As to the second question, you have to be careful about proselytizing; soundscape mavens raising the banner for 'increasing awareness' all sound too self-righteous to me. Whether it's a fugue or a soundscape piece doesn't matter; if it's good it's good, if it's bad, it's bad.

- Do you think that soundscape composition could be the base of new electronic music composed outside of Europe and North America?

If you mean do non-western artists have something to say, of course they do, and probably more interesting things as well...but my first thought is that they might not find such an observational form of music making of much interest...but that's only a first thought.

- In the last 10 years, there has been a growing interest towards field recording. New terms like phonography, aural safari is being mentioned at mailing groups. Do you think that this interest towards will affect soundscape composition aesthetics today?

No idea...but I am a fan of doing your own field recording – i.e. getting your hands dirty. Glad to hear there's a move back to basics.

- Do you think that soundscape composition can raise awareness towards environmental issues?

Give anyone a sound recorder and his or her awareness will be raised.

### **Chris DeLaurenti (USA)**

- On your album "N30: Live at the WTO double edition" you have taken an aural safari as you describe it. What is the distinction for you between aural safari, location/field recording/phonography? Would you consider the album as a soundscape work?

I consider going on aural safari a sonically concentrated *dérive* - which the Situationist Guy Debord posited as a kind of psychoanalysis of the city. As I have written, "aural safaris seek to convey the audible drama of hunting sound in an unstable, perhaps dangerous environment." It also entails confronting one's own limitations as a phonographer, listener, and explorer. It encourages venturing into unplanned territory and traversing - sonically - new (to you and perhaps others) terrain. What you record might not be 'new' or 'undiscovered country.' Many others have recorded the city streets; yet being in known though unfamiliar terrain can have a transformative power on the recording and the recordist. I should add that I chose the term 'safari' deliberately: Historically, field recording has been part, albeit well intentioned, of colonialism. Those of us who record need to grapple with what is an act of love as well as appropriation. The aural safari is mainly an approach, an awe-struck awareness of the limitations that lie ahead and, crucially, the tension you feel from knowing that you can create a piece just by pressing Play, listening, then hitting Stop. Not all field/location recordists or phonographers feel that way, but I often do when out in the field. I use phonography instead of "post-soundscape composition." Although artists have been composing with field recordings at least since Respighi's "Pines of Rome" (1924), soundscape composers aim to preserve a sense of place, and if you don't mind, I would like to quote Hildegard Westerkamp's "Soundscape Composition: Linking Inner and Outer Worlds" : "It is a forum for us as composers to 'speak back' to problematic 'voices' in the soundscape, to deepen our relationship to positive forces in our surroundings or to comment on many other aspects of a society. Rather than disorienting us, such work potentially creates a clearer sense of place and belonging for both composer and listener, since the essence of soundscape composition is the artistic, sonic transmission of meanings about place, time, environment and listening perception. A soundscape composition is always rooted in themes of the sound environment. It is never abstract. Recorded environmental sounds are its 'instruments', and they may be heard both unprocessed and processed." The term phonography has been around in form or another for at least a century, however I remain inspired by the word's revival, reappearance, and re-use in the late 1990s by a group of field recordists (of which I am one) making field recordings with smaller, inexpensive, high fidelity equipment. Phonography describes a new historical condition. Phonography differs from soundscape composition in several respects: subject matter (which might be deeply reductive or topical), the acceptance

of the glitch, the use of multiple fidelities, and the connection phonographers have to a community of knowledge and expertise made possible by the internet.

N30 is not a soundscape composition, despite my great debt to (and love of) the work of Hildegard Westerkamp, Annea Lockwood, Bernie Krause, Michael Ruesenberg, and many, many others. I wrote a response to a review of "N30" written by Michael Ruesenberg. Both Ruesenberg's review and my response appeared in *Soundscape*. Here is part of it below: "N30" directly, not "inadvertently," challenges prevailing practices of soundscape composition. A closer listen to "N30" reveals that the graduated improvement of audio fidelity during the course of the composition - from clumsy lo-fi struggling at the beginning to high-fidelity captures - is a substantial structural element of the work. Although Ruesenberg does not admit me into his confraternity of "soundscape colleagues," I would like to invite him and anyone else with open ears to consider phonography. Field recording is over a century old, however phonography does not conform to established, commercially driven ideas of "quality," technique, "fidelity," and subject matter. As a phonographer, I seek to liberate the forbidden elements of field recording - mic handling noise, hiss, narrow frequency response, distorted proximity effect, haphazard directionality, drop-outs, device self-noise, glitchy edits - and not only erode the erroneous idea that recordings objectively represent one "reality" but admit those overt flaws as music. Today's glitch is tomorrow's melody. Such verboten elements can serve as a framing device, enabling transitions from transparent sequences to obviously recorded ones or may amplify, subvert or dispel the sense of place so fundamental to soundscape composition.

As a phonographer, I take a risky and experimental approach to field recording. Doubt damns my every step. For both "N30" pieces and "Live in New York at the Republican National Convention Protest September 2 - August 28, 2004," I aggressively plunged into a violent soundscape, risking my gear and personal safety. I live in an unjust world and therefore must act, rebelling when and where I can. Nonetheless, results, not willful sacrifice or "noble" intentions, make a work succeed. Phonographers do not always uphold the long-standing ideal of recording invisibly, standing still or moving very slowly to document nature, scientific phenomena, or folk music with high-fidelity equipment. My body moves. Sometimes I run multiple microphone set-ups concurrently, corporeally improvising in the moment with body-

mounted mics to shape the stereo image, azimuth, and the depth of field while swooping an additional microphone boom for a contrasting aural perspective. As a phonographer, I know that the use of various and varying recording fidelities won't demolish the ideal embodied by documentary nature recording, but instead expands the palette of procedures and techniques. Some artists recording in the field deploy a variety of microphones and recording equipment - including the tiny on-board mic in cassette players, MiniDisc recorders, DAT, etc. - orchestrally, just as a composer of symphonic music weighs balances among woodwinds, brass, percussion, and strings. As a phonographer, I affirm the inevitable influence (and presence!) of the recordist and recording gear both in the field and back in the studio. Sometimes it is enough to press play, wait, listen, press stop, and then cull an unedited, unprocessed segment as a complete piece. Yet usually listeners hear my struggle, my "incompetence," my fortuitous discoveries, my frustrated objectives, and me. Some phonographers radically transform their material; I do not, instead relying on aggressive editing (abrupt stops, dead silence, frenetic intercutting, obviously artificial polyphony, antiphonal spatialization, the traditional transparent cross-fade) to explore the intersection of speech and music, to preserve oral history made in the moment, and to convey the truth spoken by voices in crisis. To my ears, phonography has a different subject matter: waterworks and plumbing, close-up recordings that transcend human hearing, and other ordinary (and extraordinary) sounds of daily life (a popping toaster, creaking bus flaps, etc.) that often remain ignored, processed into protoplasm by the latest plug-in, or merely consigned to the margins within soundscape compositions. The essence of phonography entails capturing and transforming field recordings into a listening experience athwart the boundary of music and everyday sounds. Music, after all, is not notes and tones, but the deceptively difficult act of listening. Ultimately, phonographers and soundscape composers - the distinction may soon disappear - want everyone to hear the music the world makes.

- On this same album, you have only used simple editing tools and no processed and synthesized sounds. Why did you take this approach? Some people consider this approach as documentary work, not musical composition. What is your opinion on this matter?

I believe that music is not a noun but a verb - an act, specifically the act of listening. Of course discerning what is processed is futile. Is it the mic pre-amp? The microphone? The sample rate? Edits now can be utterly invisible which makes the bad edit a potentially musical act, though one I didn't use (I hope!) in N30. I didn't do any overt processing in N30 because I felt the material didn't need it: I didn't want the mere presence of processed sounds to imply that the material was rigorously overdubbed, which it wasn't. Moments such as someone crying, "Delegates! Delegates!" between drumbeats did happen with no edits or overdubs and I wanted to preserve that. I accept the criticism that N30 is merely a documentary work as a compliment. To many listeners it feels real. But please note: All recordings are documents; human physiology, culture, social awareness, and listening determine what might be music, and, I should add, what music might be. Do we listen to field recordings of gamelan and kecak (also known as "monkey chant") made in Bali by David Lewiston and declare it to be not music due to the lack of processed and synthesized sounds? No. Remember, the definition of music has changed and will continue to change, not only across cultures, but across historical time and among species. As a phonographer, my role is to abet listening and hasten the cultural transformation of sound into music. The music of N30, if one hears it, rests in the work's structure, the composing of cells, moments, and motifs of speech as well as concerted accumulation of human soundscapes, action, and resistance. Even if N30 is not music - which I believe it to be - I hope it is more than a document, but a prophecy of resistance, a blueprint that might prove useful again all too soon.

**Ros Bandt (Australia)**

- You are very interested in the idea of sonic archeology. I think this is a very important and effective compositional idea. How did you come up with this idea? Have you been influenced by the history of the Aborigines?

I studied Classics and played early music with La Romanesa reconstructing music of past European cultures with for thirty years all over the world. Working from incomplete manuscripts influenced my thinking but the ancient land of Australia with its 40 000 year aboriginal history was an even more profound influence, especially the attitude to land and our connection to it. When one studies the complexity of the geomorphology of our ancient country one realizes the density of the layer of history that can be imagined to unpeel, an acoustic palimpsest is the idea which stuck in my

head from this work at Lake Mungo. I am continuing this now with Hania, the ancient Minoan settlement.

- You have been working with the soundscape of Australia for a long time. Do you think that the Australian soundscape has a specific and unique character?

Yes.

- What are the technical tools that you use these days for composition?

Computer, harddisc player, studio engineers, multiple speakers, original instruments and sculptures, poems I've written.

- There are some composers and colleagues who see soundscape composition as sub-genre of musique concrete. What is your opinion on this matter?

Yes, but I use it as only one component in a vast array of synthesis. I have performance, interactive systems, performance art, video or what ever the piece demands as a work. Case in point, BlueGold...

- Do you think that soundscape composition could be the base of new electronic music composed outside of Europe and North America?

Not really, as every artist has the choice to do whatever he/she wants and it is too variable and hard to generalise.

- In the last 10 years, there has been a growing interest towards field recording. New terms like phonography, aural safari is being mentioned at mailing groups. Do you think that this interest towards will affect soundscape composition aesthetics today?

Yes and the power to engage with multiple locations.

- Do you think that soundscape composition can raise awareness towards environmental issues?

Definitely.

- Who are the soundscape composers you enjoy the most?

Murray Schaffer and Chris Brown from New Zealand.

## **Thomas Gerwin (Germany)**

- How does the German soundscape influence your compositions?

I think that there is always a strong but mostly unknown influence of the soundscape you are in. This way, the German soundscape influences my compositions when I work in Germany and when I work in other places their soundscapes' influence me. Of course the German soundscape is the one that is most familiar to me. So there may be some structures or pattern in my head which are always present but which I did not analyze yet.

- What are the differences between German soundscape composition and soundscape composition in other European countries?

I do not discover very significant differences. Maybe a "German approach" (if there is one at all...) is a bit more documentary-like focused then others in Europe (France, especially Italy) or definitely in the US. The "German one" is in a way more similar to the Canadian approach.

- What are the technical tools that you use these days for composition?

My studio is built in a hybrid way. Analog and digital tools work together very well. The most important point to me is that I am able to work very intuitively. So each sound goes directly through my fingers several times before it is fixed and appears in a composition. I like to use Wavelab for editing and also for processing. I like to use Cubase for MIDI things. The computer is linked with two keyboards as well as with a YAMAHA drumpad set as well as with different steering tools like breath control. So everything is mostly treated live and then recorded and then the result is treated live again and recorded, etc. Also I do mix recordings from outside and inside my studio.

- What has changed in the soundscape composition genre during its 30 years? Do think it is still a vital way of composing and raising awareness to acoustic ecology?

Yes, I think it is still vital – although the very first enthusiasm is gone. Now I think it is no more the time to discover new areas (like in contemporary music in the fifties and sixties) but to work and to development and to make things perfect.

- There are some composers and colleagues who see soundscape composition as subgenre of musique concrete. What is your opinion on this matter?

I think that soundscape composition is a further development of Musique concrète. Schaeffer wanted to discover and use concrete sounds without thinking about its origin. Sounds in a soundscape composition are always meant and treated in certain knowledge and honoring of the place and situation they come from.

- Do you think that soundscape composition could be the base of new electronic music composed outside of Europe and North America?

Yes, of course. It would be wonderful if emerging people or regions would first discover the value of environmental sounds and then treat them electronically.

- In the last 10 years, there has been a growing interest towards field recording. New terms like phonography, aural safari is being mentioned at mailing groups. Do you think that this interest towards will affect soundscape composition aesthetics today?

Let's see, I am not sure about that. What I discover is that terms like soundscape are very trendy today – and that a lot of people who are dealing with that do not know very much about the history of the soundscape movement. So the wheel is very often invented for the second, third, fourth time... On the other hand: It is generally great when people talk and think about soundscape, and possibilities to make it better, this was and is one of the major tasks, which is far from fulfillment today.

- Do you think that soundscape composition can raise awareness towards environmental issues?

Yes, this is one of the major aims of soundscape composition: To raise and and widen awareness and (acoustic) sensibility. Action only comes from inner movements.

- What are the similarities and differences between soundscape composition and site-specific sound installation which both deal with the sound of the environment?

I would define the difference that way: Site-specific sound installations refer and belong to the soundscape of a specific real place and do shape and comment it. Radiophonic or acousmatic Soundscape Compositions (diffused by loud speakers)

refer to real soundscapes very freely and/or mix, create or form or bring to remembrance them without the steady control and influence of a specific soundscape. The first things are much more located or based than the other.

- Who are the soundscape composers you enjoy the most?

Claude Schryer is one of my favourites, then Francis Dhomont, Gilles Gobeil, Ian Chuprun, and Hildegard Westerkamp, also some works of Jonty Harrison, Michael Rusenberg and John Levack Drever. I also like some of your pieces a lot.

### **Rajivan Ayyappan (India)**

- How did your sound design work for the Bollywood scene influence your own compositions?

I would like to say; right in the beginning that Bollywood is not an influential energy for me. I do not know if someone could see anything in my work that is Bollywood influenced, personally I don't think I have any. I worked from Bombay only for a year (2005-06). Yes, there are influences in such a way that it makes me think more to move towards the opposite... Since you asked the question I would love to talk a bit about it.

Perhaps what Bollywood is for a lot of sound/image professionals in India is absolutely different from what it is for an outsider. Some people outside India might look at it as if Bollywood represents the whole Indian sound culture which is not at all true. The professionals working in Bollywood go through all sort of political, economical troubles and stress working over there, they just fight, fight and finally fall into a mediocre process since that defines sustenance for them. Bollywood like any other business oriented media place, has a pattern of work that depends completely on money and time. This is fairly explicit from the way they use certain marketable plots or stories, musical contents and of course music making procedure. Today one would see a lot of well skilled acoustic musicians in India, sitting at home having no work. The reasons are simple, that's to say, contemporary musicians with their electronic interfaces help the productions save money and time. Even some of the traditional musicians started working with such interfaces having no idea about the real/ significant use of these interfaces. For example many midi based software. For them, these interfaces only meant, substituting traditional timbres, patterns etc., with samples. How differently each hand/mind plays the traditional instruments and

brings fresh musical thoughts are not even considered. Further more, since Bollywood dealt with taste that could be standardized through out the country, they side tracked all the regional filmmaking and perceptions. Perhaps, the only challenger is the Tamil film industry, but over there too, a different set of dynamics overrules artistic concerns. But I must say that, there are a lot of filmmakers from India who are coming up with brilliant work these days, but they can not be called Bollywood and they refuse to be called Bollywood. They are Indian film if we want to classify them. My past work, except one mega production (The rising) were all linked to such lovely people. I began professionally working in sound around 1994 just after my academic time. And with a some sort of contempt, I stayed away from Bombay, except an occasional visit to see my friends as well as to know what's going on there. Feature film was never my concern. Although, I respect many filmmakers, I still don't like much film as a media to tell fictional, narrative ideas. This is mainly the reason until 2005 why I was stubborn to do only documentary film sound (which directed me to Sounscape concepts/thinking). During that period I worked on my own projects. In 2005, a close friend of mine who is, perhaps responsible for location sound work ever started in Indian films, asked me if I want to collaborate with him to do the post sound + sound design for a film (The rising). Since the film was about the first Indian revolution set in 1835, I got interested and decided to work on it. Location sound was impossible at many sequences so we began creating soundscapes, especially with dislocated locations. For instance, landscape details, interfaces that were used at that time or birds and animal presence that are unable to hear today, were fascinating dimensions to add. We studied the 1885 landscape with a British researcher and found a lot of birds that are extinct today, were a part of the 1885 Indian landscapes. We managed to get samples from the British sound library. In fact I even decided to do the folly recording in London since I did not like the folly artists' work as well as the folly sound recording techniques in Bombay. Anyhow, to make this talk shorter, I would say that I couldn't see any influence of Bollywood sound culture in my work. But if you are asking about Indian sound cultural influences in my work I would say, yes, a lot in fact, since Indian street culture as well as traditional musical ideas such as micro-tonality, temporal framework, even the modes of listening a composition etc., I deliberately apply a lot in work. I did three features (from Bollywood) in 2005-06 and also did a short animation that won more than 6 awards at the Cannes Film Festival in 2006.

According to me that sort of work inspires me. The short film was conceived and drawn by the animator; I did the sound design and composed the music. The film was primarily made at her home studio and for the sound a professional set up was used. The final mix format was Dolby 5.1 and Dolby offered the registration (dolby encoding) as a free offer to us since they found the work brilliant. Basically I am saying that it is difficult for me to give any answers about the Bollywood influence on me. If you ask me about my work in relation to Indian sound culture, I will be able to say a lot more, even more precisely from musical/theoretical perspective. But in relation to Bollywood, I can't find any. I dislike most of the Bollywood sound work as well as films. Bollywood is a pejorative term for a lot of us.

- Do you think that there is a unique content of the Bombay soundscape compared to other places that you have traveled?

I traveled quite a lot in India; almost all the cities, townships, countrysides. My first experience outside India was in 1996 - London. The places that I have traveled in the past are mainly a few cities in Europe, England and some of the Middle Eastern cities, and of course my favorite place is Egypt as of now. I also enjoyed Rome and the fictional city--Venice recently as part of a soundscape project. I lived in Paris for 4 years and now I live in Luxembourg. Soundscapes from Indian cities have an iconic pattern. Its texture and temporality directly reflects what happens over there, what people do and how many people do things together. I started believing that in India as well as in Middle East and Far East perception of time is totally different. Not everything is timed; a train or bus never comes in time. There are a lot of hybrid objects making hybrid or morphed sounds (Noise). Transport system for instance... People themselves assemble their own vehicles... Objects are not thrown away when they show a slight damage... They are repaired. Even the dead ones come alive...The rules are not so heavy.... And if they are, there are many ways to manage [with money]. Traffic system language is wonderful. Honkings are heard as breathing sound of the traffic even at night. Pedestrians can cross the road anytime/ anywhere. Basically, the dynamics of human interaction is at a very, very high level.

I think the most noticeable difference between Indian and European cities could be described like this: The texture of midfield sound layers are almost absent, or it is almost unheard in European cities; one hears the faraway invisible traffic rumble as an orbit limit to the nearest objects and people in contact. In India, one is surrounded

by a myriad and wide spectral cluster of midfield sounds that makes the far field sounds impenetrable, perchance only imagined. In fact, it could also be true to say that in Europe mostly all sound [scape] are predictable [designed to build a world by rules or behavioural matrix]. As a result, all such anticipated or regularly heard sounds either make the objects and their sounds disappear, or create tiresome behaviours on the inhabitant who experience these sounds as a routine, as if they are hooked on to it having no options. Every Friday between 5:30-5:40, i hear a cluster of sounds for sometime [garbage clearance, bottles especially] near my house. Most of my chance for waiting to hear hardly happened. Lack of/reduced form of chance occurrences. Everyday at 12 noon, a church bell followed by two busses passing each other, sometimes almost synchronized along with an architect who works next door getting off his office on an electric wheel chair and the lift opening its door... I can go on this way... Sometimes I even wonder the source needs for free improvisation discipline or even noisy work...[I guess they will be dammed by the neighbors, if they free improvise at home everyday] anyway... Let me get on to the next. I think weather conditions influence the soundscape a lot, also the music in some context. People who spend a great amount of time inside the architected spaces (interior) due to cold climate have a tendency to speak soft, almost whispering like. A lot of behaviour inside houses is sound-concerned. Mediterranean culture is pretty loud and joyous. I think they use the outside space a lot and movements are not so much under a Cartesian grid.

- You also do sound installations. What are similarities and differences between a soundscape installation and soundscape composition for you?

For the last few years, I began having this less need to build or even prepare compositions. Perhaps that was one among many reasons why I took back my guitar that I have not played for nearly 13 years. Since I have this odd belief that a real soundscape happened only when the listeners moved, sensing that they could tranverse through the sound-field, or the sounds physically moved around the listeners making them feel what are the space around them. Such experiences offers the listener a great feel and hope that they could go closer, run (across) away, even get fused, to the sounding sources (sounds). I have felt such experiences from master singers, musicians as well as from extreme noise conditions. We could go and hug them, be a part of their soul or stop them. I think European harmonic system had to

invent composing methods, then stereo and surround sound systems since everything talked about 'frames,' perceptual contexts and to certain extent, in a visual form. Sometimes I am even convinced that the orchestral architecture is an installation, a physical form. It's just that the listeners could not move around or go in to. It was a controlled composite space...access denied in order to standardise the aesthetic norms. Of course it changed a lot through today. In fact that was the reason for me to stop playing guitar years ago. I wanted to get out of the harmonic thinking system. I also began believing that, the sense of tonic centre in a lot of other systems was just perception driven feel; meaning that, if a listener is skilled enough, he or she could dislocate the tonic. I love improvisation; I come from a strong tradition of improvised music as well as the oral history of it. I love the way musical memory takes place in each improviser. My role in the band, Luma luma is many things; I build or renovate guitars, even install them in such a way that they suggest compositions. Since the physical components of the installations are transitory as they sound, nothing ever composes perhaps. They just remain as experiences never repeated. Most of my installations as well, they change their visible identity, dusting—off project for instance; towards the end of it, the bottles were shining in lights, through sounding after years, dusting—off. And the air around, speakers were getting damaged (overloads and feedbacks)... My skype software too got deadly fragmented and computer hung.... May be there is no such art in all these, just some playfulness and naughty tricks to have some laughs. Some people like to be a part some really hate...

- Do you think that soundscape composition could be the basis of creating a new electronic music sound in countries outside North America and Europe?

I would like to see if there are other ways... i am sure we all can search for those.... some different methods... I am sure you have read some of the soundscape orthodox writings... some people practice it like an ideology from mono cultural contexts... Anyhow music will be always a great resource for never-dreamt realities....I am sure.

**Damian Keller (Argentina/USA)**

- You were born in Argentina, studied in Argentina, Brazil, Canada and USA, and now live in Brazil, for you as a composer, what are the aesthetic differences

between electronic works composed in USA, Argentina and Brazil? And how were you influenced by the soundscape of Buenos Aires?

Buenos Aires is a marvelous city. The best word I could find to describe my feelings toward it is the Brazilian term 'saudade' (homesickness, longing, nostalgia). Buenos Aires is a true melting pot. Porteño (literally from the port, born in Buenos Aires) culture is the product of indigenous, African, and European influences. By no means it is a European product. But it is also far removed from the strong indigenous culture present in cities such as Potosi (Bolivia) or Quito (Ecuador). Definitely its highlight is its cultural diversity and the fusion of all incoming sources to compose a local, very characteristic idiosyncrasy. Porteños have a corrosive, acid humor which they apply to everything, even themselves. This humor has filtered into music, and you can see several examples in works such as "Que me hiciste mal..." (by Pablo Cetta), "IsCrEamCREAM" (by Fernando Lopez-Lezcano), most of Mauricio Kagel's works and my own "... soretas de punta." and "toco y me voy". Of course, I don't mean to say there are no 'serious', i.e. boring, composers from Argentina. But if we are allowed to make generalizations about Argentinean music, I would say that the two common traits are sadness and humor.

- Your work is based on ecological systems. How do you analyze these systems and how do you build your compositional structures from this analysis?

What?! You want me to give away all my compositional tricks! Forget it! ;-) Well, talking seriously, this is in fact a two-way path. As ecomposer, I have moved away from the top-down, control-based aesthetic that permeates mainstream European and North American compositional approaches to more open, participatory works.

Just to give us a point of reference to start the discussion, let us consider the acousmatic approach. Acousmatic music, as practiced by the English and French schools, is heavily influenced by Pierre Schaeffer's *Musique Concrète*. A key concept here is the sound object. Sounds are taken as independent entities which can be abstracted from context and manipulated at will. Any transformational operation is valid. Any conceptual relationship among sound objects is possible. Thus, the composer is the sole master of his musical universe, and sound becomes the slave of his mighty will. We could describe this process as the 'objectification' of sound. The first critics of this composer-centric - and we could add anthropocentric - method of dealing with musical material were the Soundscape composers.

Soundscape Composition brought context into play and inverted the power relationship between materials and techniques. Composer intervention was cut down to a minimum and, in the most pure forms of soundscape composition, the relationships between sound sources were kept almost untouched. At least, this was the idea. In practice, this approach suffers from some limitations. Whether we like it or not, compositional choices are made throughout the whole creative process. From the choice of recording locations, equipment used, microphone positioning, editing methods, to the venue, presentation format, support media and targeted public, the composer makes decisions which have aesthetic and political consequences. This is where ecomposition comes into play.

Materials, methods, format and audience, all are integral part of the ecompositional process. While acousmatic music has the composer as the key figure, and soundscape has the sound environment as the most important element of the work, ecomposition places the emphasis on the creative process itself. The key concept here is reenaction. First, a geographically and historically located concept is defined. Then we proceed to put this concept into practice, in other words, to relive or reenact the concept. While we live the compositional process we reshape and possibly change several of the initial axioms of the compositional proposal. Actually, a better term than “axioms” would be initial “conditions”. Thus, the compositional method becomes an open system that is modified by the environment and the interactions among agents and objects in it. This openness permeates the whole compositional process: from the collection of the sources to the final format of the piece. Thus ecompositions are usually modular, open-ended works, which depend on the audience to give them their final shape. Taken to its ultimate consequences, an ecomposition should not only be shaped by this process. It should also change the way I, as a composer, perceive the conceptual focus of the piece. And hopefully, it should create new bridges between the audience and the reality mediated by the work.

- Which processing methods are used in ecomposition?

In 1996, when I started my work at Simon Fraser University, the two most popular languages were Max (no MSP, yet) and Csound. At that moment (1996-1998), real-time synthesis on a desktop computer was still tricky business. Chris Rolfe and I were using Barry’s (Truax) POD system for real-time granular synthesis. The system

was great, but hard to take home. To give you an idea, a single floppy disk had the diameter of a tree trunk. Granted, not an Amazonian tree, but still big enough. So we felt the need to build a portable version that would run on a Macintosh (PowerPC) desktop computer. That's how the first real-time granular system for desktop was born: MacPOD. MacPOD managed to output 32 granular streams on the early PowerPCs, and over 64 streams when Macintosh G3s hit the market. After "To Lions Gate", all asynchronous granular synthesis sounds in my pieces were made with MacPOD. By using asynchronous granular methods I became aware of some limitations of this technique. Time-stretching worked fine on sustained sounds, but attacks with rapid transients became blurred. Definitely this technique was not appropriate for dealing with complex fine temporal patterns such as those of iterated environmental sounds (rain, fire, etc.). So I started to work on more fine-grained methods for modeling environmental sounds.

- How does the use of Csound affect your compositional style?

Csound is probably the synthesis language with the widest user base in the computer music community. On the other hand, it is one of the oldest that's still in use. So while it provides a great variety of ready-to-use techniques, its syntax and implementation do not take advantage of recent developments in the computer music field. Of course, it is possible to extend the language and develop algorithms in C. But in this case it makes more sense to use one of the C/C++ programming libraries available. Anyhow, because of its user base and support for a variety of platforms, Csound was the language of choice for the first developments in ecological modeling.

"soretos de punta. . ." was wholly implemented in Csound. The fact that the piece is equivalent to the software allowed me to produce about a dozen different versions. Although here, 'different' takes a special meaning. Structurally, the piece remains the same. But given the inherent random quality of the ecological models, each version is unique in its sonic content. This concept, applied to the world of environmental sounds implied a completely new approach to sound modeling and composition. You see, although environmental sounds are never identical to each other, they can be easily perceived as belonging to specific classes. This was the main concept underlying the development of ecological modeling. What we needed were tools that reproduce the perceptual cues that allow us to recognize a sound as

belonging to a specific class. Thus, we move away from Fourier-based analysis/synthesis methods.

In 1998, Barry Truax and I presented at ICMC our first examples of synthetic rain, water streams, bouncing and breaking glass. I immediately set myself to work on a large-scale piece that made use of the ecological models we had developed. “touch’n’go” for actor and eight-channel tape was finished in 1999. This piece gave me a chance to consolidate and expand several concepts in ecocomposition.

“touch’n’go” is a modular work. The idea of a modular, open work was first put forth by the Argentinean writer Julio Cortázar and later reproduced by other theorists such as Umberto Eco (Italy) and Arlindo Machado (Brazil). In “touch'n'go”, the sections of the piece can be heard from beginning to end, from end to beginning, or in any order that the listener desires. The work is just a field of possibilities that take shape at the moment of its performance. Therefore, the listener has an active role in the realization of the piece. “touch’n’go” also provided a rich field for the integration of extra-musical elements, such as acting, text and images. This move toward multimedia formats was further developed by other ecocomposers, such as Matthew Burtner (USA) and Ana Lúcia Fontenele (Brazil).

- You state that in your ecologically based compositions, the soundscape provides you the context and the material. Does this result in static pieces where every element has its own fixed space that does not change throughout the course of the work?

No. J. J. Gibson - one of the initiators of Ecological Psychology – proposed two types of environmental invariances. Structural invariances are determined by characteristics that are fixed for a given agent-object relationship. Typical examples would be the material, size and shape of an object. These invariants limit the types of sounds that can be produced by – let's say – tapping the object. So if we consider a small temporal window (a few events), they are perceived as fixed. On the other hand, transformational invariants depend on processes that change at a relatively fast pace. A simple example is a bouncing object. Bouncing can be described as an exponential energy decay. As time passes, collisions become softer and the temporal interval between impacts becomes smaller. So in this case the characteristics of the interactions change over time. Gibson's insight was to point to the existence of patterns of change in nature which shape how we perceive the environment.

Ecocomposition takes advantage of these general perceptual mechanisms to give the listener an opportunity to reinterpret his experiences from new perspectives. Because environmental sound does not demand knowledge of musical syntax, it does not depend on local, culturally specific idioms. The common ground is the geo-historical context where the sonic material comes from. This context limits my compositional choices – all the way from the synthesis algorithms – to the extra-musical elements of the piece. But this is a small price to pay if we want to tap into perceptual processes shared by most humans.

**Bob Gluck (USA)**

- Do you think that soundscape composition could be the basis of creating a new electronic music sound in countries outside North America and Europe?

Maybe. At this point, I am aware only of soundscape composition traditions in Canada, Australia and New Zealand and the United States. Your own piece was the first that I'm aware of in Turkey or surrounding countries. There is a recently stated genre in China (documented by on a 2-CD set curated by Dajuin Yao) that might be best described as cultural documentary recording. It is certainly related to soundscape composition. It is possible that as electronic musicians in other parts of Asia begin to further explore their own cultures, they might turn to soundscape composition. But it seems more typical that people turn to more abstract European models for sound and structure, or to digitally processing traditional instruments from within their own culture.

- In the last 10 years, there has been a growing interest towards field recording. New terms like phonography, aural safari is being mentioned at mailing groups. Do you think that this interest towards will affect soundscape composition aesthetics today?

Certainly I see this in the United States and Canada. There are a growing number of chapters of the World Foundation for Acoustic Ecology, including one in New York City. There are more younger musicians and sound artists who are exploring sounds of the world around them. Part of the motivation comes from ecology and concerns about global warming and the environment.

- Do you think that this interest towards will affect soundscape composition aesthetics today and it what way?

Do you mean towards field recording? It is hard to say. There are certainly more composers who include recorded sounds from natural or human environments in their work, but this doesn't necessarily translate into soundscape composition and its aesthetics. This brings to mind David Dunn's distinction between an environmental recording, which sometimes removes all sounds of technology to offer a pristine view of something that no longer exists and a more honest documentation of reality. The first is really about one of two (or more) things: collecting sounds and using them however one wishes, independent of their source (and that use can include a philosophy that is about re-creation of something that is idealized) or commercial use - creating relaxation tapes, evocations of a mythical wilderness, but neither is about the aesthetics of soundscape composition, which is really about creating a composer-mediated experience of the sense of a particular place.

- Do you think that soundscape composition can raise awareness towards environmental issues?

I do not have personal experience that can verify that. But Joel Chadabe, who has run two Ear to the Earth festivals believes that it can. What he experienced was that many people who had no prior experience of electroacoustic music attended festival events, out of curiosity and because of a concern about the environment, and it is his view that this experience increases that environmental awareness. It makes sense to me, although I am the eternal skeptic about people's motivations and how they translate into on-going commitments beyond entertainment or momentary interest. At least in the United States, the pull of the commercial world is so strong as to overpower many other motivations.

- What are the similarities and differences between soundscape composition and site-specific sound installation which both deal with the sound of the environment?

I think of soundscape composition as through-composed, as opposed to sound installation, which often creates a process or, at other times, something fixed that can be experienced in different ways for different visitors. And then, of course, interactive installations allow the visitor to have an experience in which the people and the technology can be mutual influential and thus even more distinct to each individual. The nature of the composer mediation thus varies - with the composer allowed a heavier hand in determining the listener's experience in a fixed

composition and the composer having control more of the process and, in some cases, the quality of the experience, in an installation.

### **Andra McCartney (Canada)**

- What are the differences in techniques and aesthetics towards soundscape composition now and 30 years ago?

I think that now there is more interest in the relationship of soundscape composition to different approaches to acoustic ecology, such as social ecology (Gregg Wagstaff). There is more interest now in soundwalks, rather than more fixed approaches to composition.

- Still, there are some composers who regard soundscape composition as a subgenre of musique concrete. What are your opinions about this?

I think that might be true of soundscape composition, since composition is specifically a musical term. But what about soundscape art, or soundwalk art, which might be more associated with radio art or installation art.

- Do you view soundscape composition as the “real world music”?

You mean as Katharine Norman uses the term? I think that my approach to soundscape is more as a kind of sound production or sound work more generally, rather than music specifically. It can also include documentary work, interviewing, and political agitation.

- Do you think that soundscape composition could be the base of new electronic music composed outside of Europe and North America?

Yes, definitely, as well as other kinds of art and production. There is a great deal of interest in other places, for instance China.

- In the last 10 years, there has been a growing interest towards field recording. New terms like phonography, aural safari is being mentioned at mailing groups. Do you think that this interest towards will affect soundscape composition aesthetics today?

I really don't like the term aural safari. Sounds like it has to do with capture, which is so brutal. Or tourism. I prefer approaches that have more long-term engagement and a more intimate approach.

- Do you think that soundscape composition can raise awareness towards environmental issues?

It really depends on the composer or artist and their ability to articulate associations with environmental issues.

- What are the similarities and differences between soundscape composition and site-specific sound installation which both deal with the sound of the environment?

It is hard to answer.

### **Alessandro Bosetti (Italy/USA)**

- There are some composers and colleagues who see soundscape composition as subgenre of musique concrete. What is your opinion on this matter?

I am myself not very much interested in dividing music in "genres" therefore thinking of sub-genres makes even less sense to me. I am glad that sound-scape has gained such blurry, wide and transversal meaning. It is an ambiguous definition and it has become available to everybody, as it was cheap photography once cheap cameras appeared on the market. Although some French colleagues may not be happy hearing me say that I think that musique concrete has already melted into a much more vast universe of practices long ago since creative approaches to recording devices had been developing everywhere those machine had become available. It is a pretty global affair these days.

- Do you think that soundscape composition could be the basis of creating a new electronic music sound in countries outside North America and Europe?

I think that soundscape composition is contributing among many other practices and influences (digital manipulation, relational aesthetics, appreciation of errors, analog revivalism, availability of cheap gear) in creating new paths for the electronic musician. Whether this it is north, south, east, or west it is of scarce relevance for me since communication is so fast that if something of value will happen right now in, let's say, Turkey, it will influence something else in many other parts of the world very rapidly. Therefore is getting for me less and less interesting to speak about "regional" or "national" electronic sounds rather than identifying different types of demographics associated to a certain sound. For example: certain experimental

practice appear among pretty homogeneous middle-upper class male populations, no matter if in Japan, Italy, Mexico, Indonesia or Finland. Would soundscape composition be the basis of creating a new electronic music sound in other demographics than those?

- In the last 10 years, there has been a growing interest towards field recording. New terms like phonography, aural safari is being mentioned at mailing groups. Do you think that this interest towards will affect soundscape composition aesthetics today?

For sure, it already affected it, and it also affected the way we listen to our sound environment. The question to me is whether our awareness of the sound-scape will be able to keep the pace with the rapid change of soundscapes in hypermodern cities and societies.

- Do you think that soundscape composition can raise awareness towards environmental issues?

To a certain extent, yes I think that soundscape composition can raise awareness towards environmental issues. Vision can do incomparably more though. I may seem overly conservative by saying that music creates a bridge between soundscape and descriptive / logical language in order to bypass certain of the hearing vs. vision handicaps. I always like to go back the the wonderful ethnologies of Steven Feld with the kaluli in Papua New Guinea to get a feeling of how soundscape and music could in fact be two sides of the very same thing. (Sound and Sentiment, Birds, Weeping, Poetics, and Song in Kaluli Expression).

- What are the similarities and differences between soundscape composition and site-specific sound installation which both deal with the sound of the environment?

Once again I don't believe that those differences should be written into the stone for the generations to come. Even though, it seems to me that those two practices could be the seculars opposites one of the other. Soundscape composition projects away from the contexts while site-specific sound installation dives into it. Like one of those objects that may seems concave or convex depending on how do you look at them (again a visual metaphor, sorry about that).

- Do you view soundscape composition as the “real world music”?

No. I don't believe in authenticity. I would never say of anything "it is not "real", so I don't.

- What are the technical tools that you use these days for composition?

A computer, sound editing software (Logic, Digital Performer, Pro Tools), Max-msp, a sound interface, a number of different microphones (often borrowed), a portable Tascam flash card recorder, a number of instruments I can or can not play, rooms, booths, boxes or open spaces as resonators, my voice, my face, my passport, planes, trains, cars, my bike, pen, pencils, paper, books.

**Michael Rösenberg (Germany)**

- There are some composers and colleagues who see soundscape composition as subgenre of musique concrete. What is your opinion on this matter?

I don't think it is. However, the difference is marginal in my opinion and perhaps may be of "academic" interest only – because tools and aesthetic aims in both genres seem to be very much alike. It is even possible to listen to the same piece under those two different assumptions. And that's what they are, they are intentional notifications, expressing the desire of their composers which genre they would like to belong to. I consider my own works to be a mixture of both: to stick to the location of recording and somehow musicalise it. The only reason not to call it musique concrete is that I don't mix sound sources of various locations and that I mostly give reference to the sources of recording by the titles of my compositions.

- What has changed in the soundscape composition genre during its 30 years? Do think it is still a vital way of composing and raising awareness to acoustic ecology?

There are two questions in the last sentence. Yes, I think it is still a vital way of composing, but I don't think raises awareness to acoustic ecology. It might do to some listeners, but only with regards to other media, like photographs and texts. The number 1 acoustic ecology composer, Hildegard Westerkamp, can be fully appreciated without and even "against" her known involvement into acoustic ecology. Her works are strong enough.

- Do you think that soundscape composition could be the base of new electronic music composed outside of Europe and North America?

If I think of Australia, the answer would be “yes”. If I think of the so-called “third world”, I am not sure.

- In the last 10 years, there has been a growing interest towards field recording. New terms like phonography, aural safari is being mentioned at mailing groups. Do you think that this interest towards will affect soundscape composition aesthetics today?

Not to forget the ever-increasing term “field recordings” - yes, I am sure all these will affect soundscape composition aesthetics. As a journalist I notice a declining use of the term “soundscape” and an overwhelming appearance of drone aesthetics. The latter being a huge influence on my own work recently; I try to melt my “narrative” style with drone aesthetics.

- Do you think that soundscape composition can raise awareness towards environmental issues?

I don't think so, but would not rule it out principally. Following environmental issues and searching for sounds can be two very different activities. As an environmental activist I would welcome the disappearance of the mechanical world, as a soundscape artist I regret that it slowly fades out, because the digital world sounds the same everywhere.

- Who are the soundscape composers you enjoy the most?

Still Hildegard Westerkamp, Eric La Casa and Hanna Hartman. But I, like I said, I am more and more attracted to drone-based artists like Francisco Lopez (of course and for years), Jim Haynes, Tarap, murmer, Matt Shoemaker, Bj Nilsen a.o. Not to forget all those, who don't fit in any category but “soundart” in general, like Jean-Francois Laporte, who is just about the only sound artist I know of, who transforms sound at the location of recording and not in the process of post-production.

### **Darren Copeland (Canada)**

- There are some composers and colleagues who see soundscape composition as subgenre of musique concrete. What is your opinion on this matter?

Soundscape composition did evolve as its own practice independent of musique concrete. Although it borrowed techniques from musique concrete its philosophy was

the exact opposite. Nowadays, acousmatic art (post-musique concrete you might say) and soundscape composition are all sub-genres of sound art.

- How does the Canadian soundscape influence your compositions?

The urban and suburban soundscape of Canada determines how I perceive the environment. This soundscape is not the "postcard" soundscape of Canada.

- What are the differences between Canadian soundscape composition and soundscape composition in other countries?

Nowadays there is not a lot of difference since Murray Schafer's Tuning of the World and research by the World Soundscape Project are now all widely known in major cities around the world.

- On all your pieces, there is a great attention to detail, clarity and form. It seems that you work for long hours on your compositions. How do you start a composition? How much do you prepare for your recording process? Do you allow any elements of chance and randomness in your recording process and your final compositions?

The intent of the piece informs what sounds I use in a piece. The sounds I then use determine the structure of the piece. Randomness plays a part in that there will be aspects of the sound that I could never predict but that I elect to use or remove (depending on taste and intention).

- The textures that you have created by processing are mostly not found in the electroacoustic, computer music world. In those genres, we mostly hear textures that have been processed to an extent where we as listeners can distinguish the origin of the sound at all, whereas on your pieces, we can hear this ambiguity. We can never be sure about the processing, the origin of the sound but still we think we are very familiar with the environment that you have created. Do you have a specific strategy for this compositional technique?

I still like the sounds to contain an element of the environment in them. Although after processing they may no longer be environmental sounds or be recognized as such, they should still retain an environmental-like character.

- What are the technical tools that you use these days for composition?

I use Amadeus software for sound preparation along with various audio plugins, Logic or Max/MSP for composing and mixing depending on whether the work is fixed or for installation.

- What has changed in the soundscape composition genre during its 30 years? Do think it is still a vital way of composing and raising awareness to acoustic ecology?

I don't think it is the only way to raise awareness to acoustic ecology. That objective is better fulfilled raising awareness at a more political and social level. The practice has certainly diversified over the past 30 years and has also developed a very eclectic international base.

- Do you think that soundscape composition could be the base of new electronic music composed outside of Europe and North America?

It will evolve and mutate like any other practice or field of art.

- In the last 10 years, there has been a growing interest towards field recording. New terms like phonography, aural safari is being mentioned at mailing groups. Do you think that this interest towards will affect soundscape composition aesthetics today?

New generations will always find new reasons and new directions for things.

- Do you think that soundscape composition can raise awareness towards environmental issues?

As I said above, soundscape composition is limited in what it can do to raise awareness, because it is often limited in its public appeal that is extremely marginal. There is more benefit to educating the architects, engineers and urban planners of tomorrow, because they are the ones making the decisions that most directly impact the quality of our soundscape.

- Who are the soundscape composers you enjoy the most?

My favourite soundscape composers are not part of the human species.

### **Douglas Quin (USA)**

- There are some composers and colleagues who see soundscape composition as subgenre of musique concrete. What is your opinion on this matter?

This is certainly true in my own work, at least where I started. As an art and music student in the 1970s, I feel that being exposed to the work of Pierre Schaeffer, Karlheinz Stockhausen, Edgar Varese and John Cage as well as more popular music, like Pink Floyd and the Beatles, opened my ears to a broader compositional and musical realm of possibility. However, over time, and through the work of R. Murray Schaefer, the loosely knit organizations like the World Forum for Acoustic Ecology and the World Soundscape Project, I think that the field has broadened beyond musical composition to encompass documentary studies and increasingly rich avenues of sonic inquiry and exploration. My own journey has been informed by a great deal by work in field biology and natural sciences, as well as museum exhibit design and the process and problems of translating the experiences of complex acoustic environments into different spaces and places, i.e., natural history exhibits.

- What has changed in the soundscape composition genre during its 30 years? Do think it is still a vital way of composing and raising awareness to acoustic ecology?

See my last observation about what has changed (above). In my experience, I feel that acoustic ecology remains a somewhat obscure field and discipline--vibrant and vital in many ways. The key for me has been to try to undertake work--from acoustic studies to radio programs and other publicly oriented media--that reaches people engaged in other fields (i.e., science and the humanities) and the general public, in addition to and apart from one's peers.

- Do you think that soundscape composition could be the base of new electronic music composed outside of Europe and North America?

I think that there is already a vibrant community in Japan with an interest in soundscape and electronic music composition and, as China grows and Chinese artists are increasingly exposed to the world's cultures, that we will hear more from Asian communities in this broad area of artistic endeavor.

- In the last 10 years, there has been a growing interest towards field recording. New terms like phonography, aural safari is being mentioned at mailing groups. Do you think that this interest towards will affect soundscape composition aesthetics today?

Definitely! I think that one of the most interesting aspects of working in this area is that technology is becoming affordable to more and more people. I also think that, since the 1980s and the advent of digital audio and sampling, elements of soundscape aesthetics and techniques are finding their way into popular music and culture--not just the more rarified world of avant-garde music. I wrote this article many years ago for the Journal for the Society for Electroacoustic Music in the US about digital sampling and mimesis. While it is outdated, it does encapsulate some ideas that I think were of their time and that continue to inform (Url -3).

With greater access to affordable means of production, i.e., microphones and recording devices as well as computer-based recording and mixing tools, like Garage Band and Audacity, there is more and more exciting work being created outside of the more tradition arenas of conservatories, art schools and the academy. There are an increasing number of people who are finding their own way in this time of digital convergence!

- Do you think that soundscape composition can raise awareness towards environmental issues?

For me, raising awareness of broader environmental issues is one of the most important responsibilities I have as a sound artist and designer. It is a matter of personal passion and commitment. I don't feel that anyone/everyone working in soundscape composition is necessarily concerned about this--nor should they be. But, for those of us who feel that this is important to our work, we must continue to remain engaged in the public conversations that raise awareness--by distributing our work widely, through radio, the internet, museum exhibit design, performance, etc. This means creating listening experiences that reach people--especially the general public in addition to the rather small world of like-minded artists.

- Who are the soundscape composers you enjoy the most?

I welcome and enjoy anyone and everyone who works in this field! A few people whose work I have always enjoyed in particular include Chris Watson, Peter Cusak, Francisco Lopez, Steve Feld, Annea Lockwood, and Hildegard Westerkamp, among others.

**Sascha Karminski (Germany)**

- There are some composers and colleagues who see soundscape composition as subgenre of musique concrete. What is your opinion on this matter?

I think that the early musique concrete-pioneers like Pierre Schaeffer, Pierre Henry, Stockhausen and many others have raised an awareness of sound as music - not just as played by instruments, but everyday sounds. So yes, I think soundscapes have evolved from MC.

- What has changed in the soundscape composition genre during its 30 years? Do think it is still a vital way of composing and raising awareness to acoustic ecology?

The main difference is the technical possibilities. The PC as a medium has definitely changed the possibilities for many people to experiment with sounds. So, we have a growing number of musicians in this field, of course not all are of a high quality, but they can influence each other. As our world is still dominated by visual concepts, I still regard this kind of music as a way of offering a different approach "for those who have ears".

- How does the Berlin soundscape influence your compositions? What are the differences between German soundscape composition and soundscape composition in other countries?

Most of the sounds I use I record when I travel - most of them are from India. Thus, there is not so much of a Berlin connection. Of course there are venues here and people meet and exchange ideas, but this happens with people in Hamburg and Bremen, where I used to live, as well. Then there are good contacts to Oslo via Origami Galaktika. And with the internet and newsgroups such as phonography, all of this has become international, anyway.

- What are the technical tools that you use these days for composition? I use a quite old, but still good Sony stereo microphone, an iriver h300 with rockbox software so I can record directly in wav-format. On my pc, I use Soundforge 7.0 to manipulate the sounds and Samplitude as a virtual studio. I still have an 8track-recording machine, but I rarely use it.

- Do you think that soundscape composition could be the base of new electronic music composed outside of Europe and North America?

I'm not so sure it's a new music as such. It explores new territories, yes (for example Michael Prime with his recordings of plants and bats) and it can be incorporated in other forms of electronic music, of course.

- In the last 10 years, there has been a growing interest towards field recording. New terms like phonography, aural safari is being mentioned at mailing groups. Do you think that this interest towards will affect soundscape composition aesthetics today?

As said before, the more people are into it, the more networking will be done. There are already more opportunities out there (links to recordings from underwater sources or from space that can be used in live performances, for example).

- Do you think that soundscape composition can raise awareness towards environmental issues?

To some extent, yes the soundscape composition can raise awareness towards environmental issues. Listening consciously makes you aware of your environment in a new, different way.

- Who are the soundscape composers you enjoy the most?

Apart from the pioneers mentioned earlier, I like much that comes from the Canadian label empreintes digitales, above all Francis Dhomont and his "acousmatic" approach. Andrew Liles has done some very good recordings. Scott Taylor as well, beautiful little gems. And then all those who try to integrate these sounds into more conventional forms of music.

### **Neil Bruce (UK)**

- There are some composers and colleagues who see soundscape composition as subgenre of musique concrete. What is your opinion on this matter?

I believe that soundscape composition is not a subgenre of musique concrete, if anything musique concrete is a subset of soundscape composition. The notion being that concrete is about using sonic objects to create what is inherently music, whilst soundscape composition is more about the aural experience.

- What has changed in the soundscape composition genre during its 30 years? Do think it is still a vital way of composing and raising awareness to acoustic ecology?

I personally don't think much has changed in soundscape composition, aside from the inclusion of more technology, I still believe we are looking for a break through in terms of really defining the genre. I believe that many composers now (thanks to media awareness) are jumping on the soundscape bandwagon as a way of producing lazy compositions. That is to say traditional (non academic) musicians who are struggling to write 'pop' music are now branching into field recording and presenting it as soundscapes. A cynical view perhaps, but one that seems to be true in the UK. I do believe it is an interesting way of composing but is still lacking in definition, on the flip side I believe that it is crucial in raising awareness of the Acoustic Ecology movement and that this should be focused on more.

- How does the Manchester soundscape influence your compositions?

I find Manchester to be very cliched in terms of the sounds which can be incorporated into compositions, this though means that I have to take a different view and try to seek out interesting and different sounds which may or may not be 'Manchester' sounds, but happen to be recorded in Manchester!

- What are the differences between British soundscape composition and soundscape composition in other countries?

To some extent I feel there is currently an inherent laziness in UK soundscape composition, but on the flip side there are a number of artists who are trying to genuinely break the mould.

- What are the technical tools that you use these days for composition?

I use quite a combination of gear ranging from a fully-fledged Soundfield recording system to a simple hand-held CF recorder for recording sounds. Manipulation is all done on either a PC or a Mac, using plugins such as Reaktor (if you want more information, please let me know!)

- Do you think that soundscape composition could be the base of new electronic music composed outside of Europe and North America?

No, I think traditional musics will dominate outside the west.

- In the last 10 years, there has been a growing interest towards field recording. New terms like phonography, aural safari is being mentioned at mailing groups. Do you think that this interest towards will affect soundscape composition aesthetics today?

Hopefully the take up of field recording will perhaps provide the incentive for 'ear cleaning', which Schafer described.

- Do you think that soundscape composition can raise awareness towards environmental issues?

Yes I do believe this and I think this is a key issue.

- Who are the soundscape composers you enjoy the most?

Peter Cusack.

### **Peter Cusack (UK)**

- There are some composers and colleagues who see soundscape composition as subgenre of musique concrete. What is your opinion on this matter?

Difficult to generalize as 'soundscape composition' is not a fixed category and it means different to different people. But in my opinion although the two genres might sound similar there is a fundamental distinction. Musique concrete originally (according to Schaeffer) attempted to remove the everyday meaning from recorded sounds and then add a quite different musical meaning back through composition. Soundscape composition often intends to enhance, or draw attention to hidden aspects of, the original meaning of the sounds used and does not seek to hide them at all. In practice neither often succeed in these intentions.

- What has changed in the soundscape composition genre during its 30 years? Do think it is still a vital way of composing and raising awareness to acoustic ecology?

I'm not sure that soundscape composition as practiced following the ideas of people like Hildegard Westercamp and Barry Truax has changed in the last 30 years. This is one of my problems with it. At first works by Hildegard ("Kits Beach Soundwalk") etc were important in drawing attention to the ideas of acoustic ecology. Now the initiative has moved to phonography, field recording and sociological and scientific research.

- How does the London soundscape influence your compositions?

It influences my compositions very much. I was born in London and have lived here most of my life. I know London sounds and soundscapes and have been aware of all the changes over 50 years. It has been extremely influential in how I listen which is, of course, central to everything I do.

- What are the differences between British soundscape composition and soundscape composition in other countries?

Don't really know. Maybe UK work is slightly more influenced by electroacoustic music.

- What are the technical tools that you use these days for composition?

Sennheisser microphones, Nagra Ares P recorder, Logic is my editing program.

- Do you think that soundscape composition could be the base of new electronic music composed outside of Europe and North America?

I would hope that people would from those regions would find their own way that is different to Europe and North America and draw upon their own cultures, traditions and soundscapes. Indeed if 'soundscape composition' is not sensitive to its locality then I question its value. The homogeneity of globalised culture is something that should be resisted.

- In the last 10 years, there has been a growing interest towards field recording. New terms like phonography, aural safari is being mentioned at mailing groups. Do you think that this interest towards will affect soundscape composition aesthetics today?

Hopefully yes.

- Do you think that soundscape composition can raise awareness towards environmental issues?

Environmental issues are often extremely complex and understanding can only come from a truly multidiscipline approach. Sound definitely plays a role and soundscape composition could be part of this but it has to be carefully considered. One problem is that composition is often to do with one persons' expression and maybe too

personal to connect with the multidimensional issues that are the environment. It depends on exactly what is done.

- Who are the soundscape composers you enjoy the most?

Hildegard Westercamp. But there are many field recordists, phonographers, audio artists and non-artistic recordists who I listen to - Chris DeLaurenti, Chris Watson, Aaron Ximm, Christina Kubisch, Walter Knapp, Bernie Krause, Lee Paterson, Toshiya Tsunoda, Francisco Lopez, Andrea Polli, David Dunn.

### **Steve Feld (USA)**

- There are some composers and colleagues who see soundscape composition as subgenre of musique concrete. What is your opinion on this matter?

I don't really have an opinion on this. But personally, I was very influenced by musique concrete because I learned my basic compositional skills in the late 1960s with analog equipment. The work of physical splicing of tape, with razor and stop watch, and 1/4" recorders, and all the other hands-on physical work made very clear to me the way musique concrete had a great deal to do with environmental sound art as well as environmental anthropological research with a tape recorder.

- What has changed in the soundscape composition genre during its 30 years? Do you think it is still a vital way of composing and raising awareness to acoustic ecology?

I am not really a "soundscape composer" -- I am an anthropologist who is also a composer, and I use composition to express the discovery process and the results of certain aspects of my research, which has to do with aesthetics, ecology, and senses of place. So for me this is not at all about genre, it is about a kind of research and a way of doing it and a way of publishing it and I don't really relate this process to the genre of soundscape composition.

- Do you think that soundscape composition could be the base of new electronic music composed outside of Europe and North America?

Why not?

- In the last 10 years, there has been a growing interest towards field recording. New terms like phonography, aural safari is being mentioned at mailing groups. Do

you think that this interest towards will affect soundscape composition aesthetics today?

Of course! If field recording becomes more sophisticated then there are possibilities for many developments in the whole communication process about acoustic ecology.

- Do you think that soundscape composition can raise awareness towards environmental issues?

Of course! It can teach people vital skills for listening to the world in motion.

**Michael Noble (Australia)**

- There are some composers and colleagues who see soundscape composition as subgenre of musique concrete. What is your opinion on this matter?

My primary response would be that this is an opinion that fails to take into account the complexity of soundscapes and the issues involved in soundscape composition. If anything, the situation should be reversed, with musique concrete being a meta-data stripped version or sub-genre of soundscape composition. But even that is too simplistic. I think soundscape composition must inherently be about place, community, relations between objects, whereas musique concrete has always been about arbitrary connections between basic acoustic building blocks. The relationships are not so important in musique concrete - just the objects and the methods of representing or defining them. Another distinction I think one needs to make is that soundscape composition has a much greater scope to break out of the traditional recorded medium – for one, it can emphasize spatial rather than temporal relationships. It can be embodied in community action and not just traditional composer - blackbox - listener models as critiqued by Truax. For me, I would like to move towards 'composition as system' and away from 'composition as object', and soundscape composition offers much more opportunity in this direction.

- What has changed in the soundscape composition genre during its 30 years? Do think it is still a vital way of composing and raising awareness to acoustic ecology?

I'm far too young to make an informed comment about this, though I think it's obvious that one of the greatest changes to the field has to be the use of new metadata manipulation, generation, organization possibilities of personal computers.

By this, I mean that as we start collecting these vast repositories of digitized soundscape data, we can now start using computers as a kind of association engine. Or at least, that is my speculative hope.

- How does the Australian soundscape influence your work?

Presently, I'm in a strange position. Whilst I'm Australian, I've been in Korea for the past three years so I find myself somewhat liminal in terms of nationality. In a sense, the Australian soundscape influences me as an internal echo, as a memory of certain events that I can no longer experience. I live in Seoul, which is a 24hr city, and compared to my home city of Perth, that's a huge contrast. I lived in the city center back home and it would literally go to sleep on most weeknights. I think the sense of space that it provided is something that I would like to re-create in future soundscape composition, as a tensioner to the very intense and closed-in experience of Seoul. The soundscape here is constantly shrouded in echoes of the concrete environment. I love the vitality and sense of being that it gives me, but I do think there is something to be lost when the acoustic horizon is restricted in such a way.

- What are the differences between Australian soundscape composition and soundscape composition in other countries?

In terms of Korean soundscape composition, I've found very little. I was hoping that Korea would be better presented at the most recent WFAE in Japan. Soundscapes are still a very new idea here, with Schafer's book only recently receiving a translation. In terms of Australia, I don't see a great differentiation between Australian output and Canadian, for example. I think that as soundscape compositions deal with cultural representations then the differences are to be found in the soundscape material, and perhaps not the technique in question. To be honest, I've not considered this question in detail previously and it is as such one that I will give more thought to.

- What are the technical tools that you use these days for composition?

I primarily use Linux as my platform, and compose in a multi-channel system built from other people's software! I use the excellent Acousmodules for spatialisation, and a number of hosts. I also use looping tools extensively. The system is very much a work in progress and at times I spend more time composing the system than producing sound. I just finished building a table based on the Reactivision software

and am really enjoying the tangible interface possibilities it presents. Ironically, this project has taken me away from composing so I am looking forward to actually getting back into the process of constructing some soundscape material again.

- In the last 10 years, there has been a growing interest towards field recording. New terms like phonography, aural safari is being mentioned at mailing groups. Do you think that this interest towards will affect soundscape composition aesthetics today?

I think it does bring up some issues. The nature recordists' list for one seems to have strong emphasis on fidelity of recording, and a keen distaste for the intrusion of the sounds of human activity. This list is also one of the most active and robust sites of discussion for field-recording related activity on the web. I see this as problematic for many reasons, but firstly because, if soundscape composition becomes associated too heavily with field-recording, the nature purist position does little to solve the difficult nature – vs – culture binary that pervades Acoustic Ecology literature. The literature informs the aesthetics, and by virtue of popular opinion, I think there is the danger of soundscape composition settling on the nature side of the argument. Similarly, if a beginner in the field goes to this to harvest some of the excellent advice on field recording techniques in order to advance their composition material collation skills, they are immediately presented with a heavily biased view of the soundscape. Returning to the issue of fidelity, this is problematic as it reinforces what could be seen as aesthetics of technological fetishism – where the objects created by the technology are given primacy over the relationships emerging from the juxtaposition and association in the act of composing. Thankfully, the phonography list seems much more open to these issues and active in tackling the bias therein. I've read many discussions on the very issue of fidelity, and a preference seems to exist for framing over fidelity – lo-tech is perfectly acceptable so long as the piece being presented contains adequate contextualization. On the other hand I would return to my point before, and that is that I don't see soundscape composition as limited to phonographic composition, an issue which neither of these lists by merit of there focus will be able to tackle without problematising their own frame of being.

- Do you think that soundscape composition can raise awareness towards environmental issues?

Soundscape composition can affect awareness as much as it can. This issue was talked about at the WFAE in Melbourne; where the tension between product and process was discussed – a CD about nature allows one an insight into nature but ignores the fact the CD's are the product of an industrial process and can thus create environmental issues in themselves. Any technological mediation mirrors this.

- Who are the soundscape composers you enjoy the most?

I'd like to intervene and say that soundscape are being composed constantly around us consciously and unconsciously through everyday action. Of course, I'm aware you are probably not referring to this and instead thinking of cultural products. I'd like to talk of both if I can. In the former, I most enjoy the synchronicities encountered at times when walking down the street. For this I can only thank strangers, chance or chaos. In the latter, of course Hildegard Westerkamp remains central, and from there on in it becomes complicated. I love the approach of Giant Ear in NY, but is that a composition, and if so, who is the composer? Similarly, I was recently inspired by the concept of Christian Marclay in taking random scores written on posters he distributed around Berlin and producing a composition. To me this composition reflected the internal soundscape of the Berliners – but as the instigator of this project himself stated – who is the composer here? I would also add that whilst the process was for me inspirational, I found listening to a performance of the score to be quite the opposite. More abstract still are the feelings I have towards the installation work of someone like Bernhard Leitner, whose work I have never listened to but remains inspirational in reading about it all the same. I doubt that one could say for certain if this work is composition or not, but to me the end result is that he composed soundscapes and not so much compositions about soundscapes.

**Jeff Gburek (USA)**

- There are some composers and colleagues who see soundscape composition as subgenre of musique concrete. What is your opinion on this matter?

I make a distinction between soundscape music and sound-scaping where we work with the sonic possibilities and properties of particular space and re-shape or expose this. Phonography as a way of reflecting on the sound environment through careful recording of a location is yet another practice and is not reducible to any one musical intention. Soundscape composition's limitations depend on the composers' definition

of this re-deployment of sound as music. Sound-scaping, as I have practiced it, is more akin to architecture in sound. It has form but it is not determined by musical phrasing of instruments that you will find a lot of the work people will call "soundscape" (synthesizers or samplers for instance, sometimes as a kind of "bedding" of concrete materials that makes them more palatable). Soundscape music, in this sense, however shares genetic features with musique concrete and acousmatic music. It's perhaps only Pierre Schaefer's declaration of failure that stands between sound-scape composition and musique concrete but it is an important declaration he made in that one can then redefine musique concrete as an assertion of the will (failed or not but to be willed again) to escape the western orchestral history of music and its overdeterminations. I think it is difficult to see clearly yet the theoretical displacement implicit in this. The poetics of working with sound materials also includes the machines for the reproduction of sounds being used as instruments.

- What has changed in the soundscape composition genre during its 30 years? Do think it is still a vital way of composing and raising awareness to acoustic ecology?

My comments above indicate that maybe I would not choose to see soundscape composition as a genre or at least it is not a term I am comfortable with. My tendency is to think more about the tools one is using and the materials. The tools available to musique concrete were magnetic tape but now we have digital sampling that would also involve us in describing the history of computer music. I do not think that practicing, as a sound artist requires the definition of a genre. The practices I have mentioned above may say something about acoustic ecology, for sure. But not necessarily nor always.

- How does the NY (and/or Berlin, Liege) soundscape influence your compositions?

Location must have an effect on every form of art practice or life-style. But the urban centers I work or live in do not influence the compositions unless I choose to be working with sounds from those environments. How the cities differ sonically is another question, one that I am interested in, not only as a sound artist but also as a citizen.

**Katharine Norman (UK)**

- There are some composers and colleagues who see soundscape composition as subgenre of musique concrete. What is your opinion on this matter?

To me all art is perhaps best placed as a sub-genre of whatever field the person trying to understand it is familiar with - well, at least to some extent. Some people find it helpful to think of 'soundscape composition' or 'musique concrete', but I find neither term useful when trying to explain different kinds of music or sound art to people who might want to listen to it but don't necessarily work in the field. I try not to think in "sub-genres".

- What has changed in the soundscape composition genre during its 30 years? Do think it is still a vital way of composing and raising awareness to acoustic ecology?

Music or sound art made using documentary environmental recordings certainly can be a way of raising awareness of acoustic ecology matters. So can other art that draws on materials "from life", of course. I think of 'soundscape composition' as a genre with a linear history, as you do.

- How does the London soundscape influence your compositions?

I haven't lived in London since 2003, but it certainly influenced me when I lived there. I find generally that the sounds and situations I encounter in daily life can be a big influence on my creative work, though not always - and not exclusively.

- What are the technical tools that you use these days for composition?

For my last piece I used a PC (XP), Audition, a bit of MaxMSP. I might use entirely different tools for another piece - I just use what's appropriate or what I know (which is limited!).

- Do you think that soundscape composition could be the base of new electronic music composed outside of Europe and North America?

No. Why would you think that, especially?

- In the last 10 years, there has been a growing interest towards field recording. New terms like phonography, aural safari is being mentioned at mailing groups. Do

you think that this interest towards will affect soundscape composition aesthetics today?

I presume you mean Aaron Ximm and others like Lopez - certainly the availability of good technology (pricewise and portability) for more people has lead, I suspect, to more interest in collecting sounds and materials, from a wider range of people. I think that's all good. I have no idea about the latter part of the question since I don't really subscribe to a soundscape composition aesthetic, sorry. I think every individual who makes creative work produces it under a different aesthetic mix of personal motivation/intent, influences and limitations. And every piece is different.

- Do you think that soundscape composition can raise awareness towards environmental issues?

Sound works made using documentary sounds taken from the natural environment (be it birds or buildings) can certainly introduce people to a greater awareness of their aural environment. Whether that leads to a greater awareness of environmental issues - do you mean in aural terms, noise etc or generally? - I can't say. It would be interesting to know.

- Who are the soundscape composers you enjoy the most?

Of composers who use recorded documentary sounds, I enjoy Lopez, Westerkamp and also have enjoyed Aaron Ximm and Peter Cusack's work with environmental sound. But there are loads of others.... you're doing some interesting stuff for a start!

### **Thor Magnusson (Iceland)**

- There are some composers and colleagues who see soundscape composition as subgenre of musique concrete. What is your opinion on this matter?

No, I don't like to think about music in terms of genres or classification. Musique Concrete is but one instance of musical ideology and a very historical and geographical one. They don't have any patent on how people use recorded sound in today's musical landscape. I think what they did was great and really inspiring, but we could also see them as passive actors of technological change who performed the inevitable. I don't think soundscape composition is a genre. I could picture various musicians using it in their work, from Jennifer Lopez to Francisco Lopez.

- What has changed in the soundscape composition genre during its 30 years? Do think it is still a vital way of composing and raising awareness to acoustic ecology?

Technology has improved, become cheaper and more ubiquitous. This has its good and bad sides. Now everybody can record sounds and manipulate them in their computers. 30 years ago only the privileged people had access to this technology. And yes, I think it can be educational (ear opening) to frame recordings in an aesthetic setting.

- Do you think that soundscape composition could be the base of new electronic music composed outside of Europe and North America?

Interesting question. As I said, I don't think soundscape composition is a genre but a technique. As such, anyone can use this technique in their work. But as a "base" for music composed outside the West... I wouldn't know. You are referring to countries with different social and artistic histories and it is very contingent how a new technique like soundscape composition would be received in different cultures. Ideas such as authorship, randomness, intention, soul, meaning, art, listener, etc. are different in each culture and sub-culture. The only way to go is to try!

- In the last 10 years, there has been a growing interest towards field recording. New terms like phonography, aural safari is being mentioned at mailing groups. Do you think that this interest towards will affect soundscape composition aesthetics today?

As I said, when the technology is so available, people start to record, because it's fascinating. They don't give a damn about "soundscape composition aesthetics" and will start to release work that is not related to soundscape composition (if it is a genre as you are proposing) at all. A bit like how the street culture made electronic music popular totally independent of the electro-acoustic composers who just stood by the autobahn and watched the whole herd drive by.

- Do you think that soundscape composition can raise awareness towards environmental issues?

Yes, definitively. But it depends on the individual artist how he/she presents the work.

- Who are the soundscape composers you enjoy the most?

Francisco Lopez, Barry Truax, Hildegard Westercamp, John Cage, my street, the Icelandic heath, London tube in a timewarp.

**James A Wyness (Scotland)**

- There are some composers and colleagues who see soundscape composition as subgenre of musique concrete. What is your opinion on this matter?

The term soundscape, like the term avant-garde, is unstable. It means many things to many people and nobody has yet arrived at a satisfactory definition. I prefer to look at soundscape as a discursive practice within the overall field of phonographic practice. I also like for my own purposes to draw a clear distinction between musical and non-musical intention (forgive me if I don't go into a long discussion about the meaning of 'musical') in soundscape composition. There is certainly a strong argument for considering musical soundscape composition (the processing and organization of mainly mimetic material; field, close-miked and other recordings, according to musical parameters) as a subgenre of music concrete. There is on the other hand a large body of non-musical phonographic work that I would consider as soundscape composition and which has very little, if anything to do with musique concrete.

- What has changed in the soundscape composition genre during its 30 years? Do think it is still a vital way of composing and raising awareness to acoustic ecology?

There has been a remarkable increase in the number of artists who consider themselves to be soundscape composers, both musical and non-musical. Above and beyond new techniques and methods, the most notable trend has been an exploration of a variety of x-scapes; urban, rural, natural, human, machine made, macro, micro, extra-terrestrial to name a few. Secondly there has been a positioning of some forms of soundscape practice within the visual arts rather than as a musical genre, for example, soundscape as performance art. Finally, it is taught, studied and researched in higher education institutions. All forms of soundscape composition are vital in raising awareness of acoustic ecology and of drawing attention to related matters of communication. This is the meeting point where soundscape in general and acusmatic music, for example, present an opportunity to encourage us to listen more

deeply and to take that listening experience back to our environment and become aware of the unmediated soundscapes around us.

- Do you think that soundscape composition could be the base of new electronic music composed outside of Europe and North America?

If you mean by this the “Majority World” (sometimes called “developing world”) this would depend on the availability of technology and on the existence of a leisure and professional culture which allows time and allocates resources towards the exploration of soundscape as a field of artistic practice. My own viewpoint is that the vast majority of electronic music is commercially and market driven and finds its way into all reaches of the planet whereas new or ‘art’ electronic music requires particular sets of circumstances to come into being.

- In the last 10 years, there has been a growing interest towards field recording. New terms like phonography, aural safari is being mentioned at mailing groups. Do you think that this interest towards will affect soundscape composition aesthetics today?

It already has. Many artists are coming to soundscape practice from visual arts and other non-musical backgrounds and are taking with them new aesthetic outlooks. There are for example conceptual artists, artists working within archive and documentary and artists who see themselves as ethnographers all using field recordings as raw material.

- Do you think that soundscape composition can raise awareness towards environmental issues?

If more people study and practice soundscape composition in its widest sense, then there is a good chance that more people will become better listeners. This in itself is a valuable contribution to raising awareness of the problems relating to unwanted noise affecting our environment.

- Who are the soundscape composers you enjoy the most?

For craftsmanship in a musical context, I enjoy the works of Hildegard Westerkamp and Pete Stollery. The works of Duncan Whitley, non-musical in intention, are thoroughly researched and detailed and shows remarkable awareness of features of

sonic interest in an unmediated soundscape. Eldad Tsabary, David Dunn, Annea Lockwood, Phil Harding, Barry Truax.

**Bernie Krause (USA)**

- There are some composers and colleagues who see soundscape composition as subgenre of musique concrete. What is your opinion on this matter?

Musique concrete is a very specific genre of music that began in the analog period (1948 - early 1960s) to my mind. And it involved the manipulation of pre-recorded audio from whatever source on tape that was then manipulated in various ways. This certainly included audio recordings of urban soundscapes and no doubt some natural ones, as well. But because most of these fellas (and an occasional gal) were working in a very academically ritualized way, very few, if any, gave much thought to the specifics and wonders of the sounds coming from the natural world although they were probably used in some manner.

- What has changed in the soundscape composition genre during its 30 years? Do think it is still a vital way of composing and raising awareness to acoustic ecology?

See my article on Western music and natural sound that was published in an MIT volume called Terra Nova (Url-4).

- Do you think that soundscape composition could be the base of new electronic music composed outside of Europe and North America?

Sure, from anywhere in the world. But the success of the compositions will depend entirely on the sensibilities of the composer and his/her connection to the natural world. It most certainly does not have to be electronic. One of the most successful compositions in that realm is one by R. Murray Schafer, the Canadian composer and founder of the word, "soundscape," who wrote and recorded an a capella choral piece based on the effects of wind titled "Once on a Windy Night" that can be found on Grouse Records in Vancouver, BC, Canada.

- In the last 10 years, there has been a growing interest towards field recording. New terms like phonography, aural safari is being mentioned at mailing groups. Do you think that this interest towards will affect soundscape composition aesthetics today?

Not specifically. But biophony certainly will.

- Do you think that soundscape composition can raise awareness towards environmental issues?

Certainly. But, again, it depends entirely on the sensibilities of the composers and their direct connection to the natural world.

**Annea Lockwood (New Zealand/USA)**

- There are some composers and colleagues who see soundscape composition as subgenre of musique concrete. What is your opinion on this matter?

I feel that soundscape composition grew out of musique concrete, in part, that musique concrete is an 'ancestor' and that the concept of ambient/acoustic but non-'musical' sound sources was powerful and crucial. However by now, this genre incorporates approaches which are much more diverse than musique concrete.

- What has changed in the soundscape composition genre during its 30 years? Do think it is still a vital way of composing and raising awareness to acoustic ecology?

This is a very broad question that needs a whole dissertation on its own. Let me respond to your follow-up question instead please. Yes, I think it is indeed very much alive as a medium for composition. Many composers incorporate it, as I do, not as the whole output but as one of a number of types of composition we are interested in exploring. Moreover, as flash card and hard disc portable recorders, such as the Zoom, proliferate (very handy field recorders), and as more and more young visual/media artists also make their own sound works, music based on people's environments is also proliferating. And yes, I do feel such work raises awareness of acoustic ecology issues, at least in the artists themselves, and that there's an audience open to the concerns of acoustic ecology, as to other expressions of ecological concern.

- How do the New Zealand and American soundscape influence your compositions?

The New Zealand soundscape has had a profound effect on my work. I grew up there, spending a lot of time in the Alps of the South Island, listening closely to those soundscapes - rivers, bush birds (which have particularly beautiful songs), rock falls

etc. I also grew up with a sharpened awareness of the negative effects of human activity on the landscape - erosion, in particular. I now see that this is the source of my fascination with water in particular; my attempt, with my recent installation, 'A Sound Map of the Danube', to sense and hear the nature of that river, its being, is a longing to feel at one with other phenomena. That in turn is a sort of corrective to the dominant-human assumptions that governed the way farming etc had been conducted in NZ previously. The American soundscape is a less pervasive presence in my work, though I'm about to start an electro-acoustic piece about New York, and the great railway station in the centre of the city, Grand Central Station is a prominent 'player' in a recent electro-acoustic piece titled 'Thirst'.

- What are the technical tools that you use these days for composition?

Very simple: Pro Tools for editing and assembling pieces; lately Live as a program for running my installations in; Altiverb's convolution reverb; Digidesign's DINR for cleaning noise out of field recordings. I've been recording to a SONY DAT (small, portable), using primarily an AT 822 stereo mic (with a Rycote wind-shield), and a friend's Offshore Acoustics hydrophone.

- Do you think that soundscape composition could be the base of new electronic music composed outside of Europe and North America?

I really don't think there's a need to separate soundscape composition from other forms of electronic music - that seems a touch artificial to me, given that soundscape work exists only electronically, using electronic tools. Are you wondering about the possibilities for distinguishing, say, Turkish electronic music from other area's styles, and thinking that it might be rooted in distinctively different sound-environments? Your question interests me on various levels, one of which is the implication I'm taking from it concerning regional identity, because that has been a major concern of many New Zealand composers for years. I've always felt that subtle distinctions of style rooted in cultural specifics, are a given; that it's more important for a country's composers to be well supported, facilitated, with a strong regional audience, as well as international exposure - than it is to try to establish a definable national stylistic identity. But that may well be because I left NZ at 21, and have been peripatetic since then, living in England, then in the States, but without a distinct sense of nationality.

- Do you think that soundscape composition can raise awareness towards environmental issues?

Yes. I certainly hope so; I hope, for example, that my river installations can remind people of how much they love rivers, and suggest to them that water protection is vital. But I don't like to say so directly, feeling that something felt below the verbal level can be stronger than direct verbal instigations to action. I believe that Westerkamp's wonderful Sound Walks probably do a lot to raise environmental sensitivity, for example, and David Dunn's remarkable recordings, also the Italian composer, David Monacchi's recent work in the Amazon.

- Who are the soundscape composers you enjoy the most?

In no particular order, Hildegard Westerkamp, Maggi Payne, David Dunn, John Cousins (New Zealand), Sam Auinger and Bruce Odland (O + A), Steve Peters, Bill Fontana, some of Liz Phillips' work falls into this category and is very fine.

### **David Rothenberg (USA)**

- There are some composers and colleagues who see soundscape composition as subgenre of musique concrete. What is your opinion on this matter?

If musique concrete is music constructed out of found sounds, then sure, soundscape composition is part of it. The difference today is, with new technology, we can play live along with all kinds of sounds, and this alleviates the boredom some people feel listening to concerts where only a few knobs and dials are tweaked. And for me at least, there is a sense of wanting to learn from nature when I play live with birds and whales, or remix the rhythms of frogs and bugs into loops that I find interesting or, as philosopher Dave Abram puts it, “more-than-human.”

- What has changed in the soundscape composition genre during its 30 years? Do think it is still a vital way of composing and raising awareness to acoustic ecology?

We have better, more interactive technology. We have a world that is starting to take environmental issues more seriously. And we have varieties of soundscape composition that fit different ideologies: some say natural sounds are better than human sounds, while others make music happily out of industrial noises!

- Do you think that soundscape composition could be the base of new electronic music composed outside of Europe and North America?

That's certainly happening. There's plenty of soundscape music in Japan, Australia, and Latin America. In Africa music for thousands of years has flowed out of the soundscape, with worlds of polyrhythms.

- In the last 10 years, there has been a growing interest towards field recording. New terms like phonography, aural safari is being mentioned at mailing groups. Do you think that this interest towards will affect soundscape composition aesthetics today?

Yes, the music will seem more accessible to many more kinds of people.

- Do you think that soundscape composition can raise awareness towards environmental issues?

Yes, that is an underlying purpose in all of my work, though I try not to push the agenda too obviously. Birds, whales: if you listen to their songs you will take their survival much more seriously.

- Who are the soundscape composers you enjoy the most? Brian Eno, Steven Feld, The Books, Stephen Vitiello, Chris Watson, Amon Tobin, Mungolian Jet Set (aka DJ Strangefruit).

### **Jack Body (New Zealand)**

- There are some composers and colleagues who see soundscape composition as subgenre of musique concrete. What is your opinion on this matter?

Absolutely. Though the borders between genres is never clear-cut.

- What has changed in the soundscape composition genre during its 30 years? Do think it is still a vital way of composing and raising awareness to acoustic ecology?

Absolutely. The problem though is presentation - where and when and how the work is presented, and for whom.

- How does the New Zealand and Indonesian soundscape influence your compositions?

NZ landscape very little, at least on a conscious level. But Indonesia at the time of my life when I lived there (1966-67) was a very profound experience. It was such a contrast of culture and environment to where I have come from; I had a new consciousness about these things. The danger is that I perceive Indonesia as 'exotic', but I still think that these environments do have special qualities that are lacking in most parts of the world.

- What are the differences between New Zealand soundscape composition and soundscape composition in other countries?

Many composers in NZ have used the sound of water in the compositions, and also birdsong. These are the obvious things that characterize our soundscape - as an island nation and a place with an abundance of native birdlife, and almost no native animals.

- What are the technical tools that you use these days for composition?

I am currently working in a studio in Sweden, struggling with Protools. Technology has left me far behind and it is a problem for me. My early work was with tape recorders and tape.

- Do you think that soundscape composition could be the base of new electronic music composed outside of Europe and North America?

Indeed this is the reason that electronic composition became important in NZ in the 1960s and 70s - it was a perfect genre for forging a sense of place and identity.

- Do you think that soundscape composition can raise awareness towards environmental issues?

This is obvious.

### **Rinus van Alebeek (Germany)**

- There are some composers and colleagues who see soundscape composition as subgenre of musique concrete. What is your opinion on this matter?

I know that Pierre Schaeffer who started the musique concrete, kicked Luc Ferrari out of his movement because the latter used field recordings in his compositions. So best is to respect Pierre Schaeffer, and leave musique concrete to tape-cutters. Musique concrete can be regarded as a subgenre to experimental music.

It is overcomplicating to create a subgenre to a subgenre. I would rather see that soundscaping is a crossover genre between music and literature.

- What has changed in the soundscape composition genre during its 30 years?

The technique and the use of field recordings. But do you mean to say that soundscape exists for 30 years only? I can advise you to try to get hold of the radiophonic productions. The BBC and the WDR have broadcast them since the fifties. Here we see compositions using other audio elements than the orchestral ones.

- Do think it is still a vital way of composing and raising awareness to acoustic ecology?

I give you one example, because this is an insight that came to me with great force. In the neighborhood where I grew up in the early 1960es, now a new road is built. I have seen its mud pattern in a landscape which transformations I had seen over the last forty years. All this time this landscape was a walking landscape. The perception of time and distance was related to going there by foot. I furthermore realized that it directly related to my sense of time and distance from the time I was a young kid, moving through this landscape. You can imagine that walking out from the protected zone into a wide open where other lives and professions were encountered, was quite an adventurous enterprise. From that time on the landscape had maintained its somehow mysterious multilayered character. To see the road pattern laid out in the mud came as a culture shock: suddenly all that time and space was reduced to a 30 seconds car ride. This is nihilism. I realized that a sound artist has an extra ear and sensibility to a landscape, and should be involved in the political discourse that leads up to any interference in an existing landscape.

- How does the Berlin soundscape influence German composers?

This I don't know, haven't heard the German composers. I know Gilles Aubry got inspired by the Berlin courtyards and used field recordings from it for a composition.

- What are the differences between German soundscape composition and soundscape composition in other countries?

I don't know having heard too little of it. My experience is that a knowledge of the artist's hometown/region helps to create an image/sense/feeling/emotion through the composition they bring with them.

- Do you think that soundscape composition could be the base of new electronic music composed outside of Europe and North America?

I hope so, especially if they could involve field recordings, because my opinion is that, field recordings stand in the tradition of oral history.

- In the last 10 years, there has been a growing interest towards field recording. New terms like phonography, aural safari is being mentioned at mailing groups. Do you think that this interest towards will affect soundscape composition aesthetics today?

It already does.

- Do you think that soundscape composition can raise awareness towards environmental issues?

See my extended answer above. But it needs good mediators. And it needs willing ears and persons on the political side of life.

- Who are the soundscape composers you enjoy the most?

Recently I enjoy Perri Lynch and Kim Cascone / Leif Boman collaboration. Lasse Marc Riek, Gilles Aubry and Paulo Raposo are giants. I need to hear more. Because I am sure there are braver men/women out there.

### **Kjell Samkopf (Norway)**

- There are some composers and colleagues who see soundscape composition as subgenre of musique concrete. What is your opinion on this matter?

Musique Concrete was in the beginning used for tape compositions where the sound material was recorded, not synthesized by oscillators. Soundscape compositions are also based on recorded material, and can thus be seen as something similar to musique concrete. I find the term “musique concrete” a historic term. The term “soundscape” is used by many and has many different meanings. I don’t use the term “soundscape”.

- What has changed in the soundscape composition genre during its 30 years? Do think it is still a vital way of composing and raising awareness to acoustic ecology?

Technology has changed dramatically over the last 30 years, and it will continue to change. Composing and art forms will change with it.

- How does the Norwegian soundscape influence your compositions?

I have done most of my works in the Norwegian mountains. The sounds are quite limited there, but at the same time very rich. I prefer nature sounds to “cultural” (man made) sounds. The sounds of nature are old sounds.

- What are the differences between Norwegian soundscape composition and soundscape composition in other countries?

To be honest, I don’t know. I don’t listen much to “soundscape” compositions.

- What are the technical tools that you use these days for composition?

For my recordings I use two Brüel & Kjær omni directional microphones, often together with a Jecklin disk. I use a high quality mic amp, and have used DAT-tapes. My last investment is the Zoom Handy Recorder H2. I usually work outdoor, far from people. My equipment needs to be lightweight and compact. I prefer the CD as a medium to present my work. It is cheap, available to everyone; the only thing you need is a CD-player and a headset. The only thing you have to do is to pay attention.

- Do you think that soundscape composition could be the base of new electronic music composed outside of Europe and North America?

I don’t see why there should be geographical limitations. In the beginning electronic music needed expensive studios and equipment. Today most of the work can be done with a laptop in your own living room.

- In the last 10 years, there has been a growing interest towards field recording. New terms like phonography, aural safari is being mentioned at mailing groups. Do you think that this interest towards will affect soundscape composition aesthetics today?

I use the term “sonography” on my works. This term was first used by the Dutch sonographer Floris van Manen. I like the term and its link to photography. Photography is a visual representation of our visual environment; sonography is an audio representation of our auditive environment. I don’t see my sonographic works as music or as compositions. It is sound art, but I have not composed the sound picture, I have selected and framed it. It is a different process.

- Do you think that soundscape composition can raise awareness towards environmental issues?

It might. Approximately 80% of the sounds in our environment are not made with the intention to be listened to. Yet we do, or have to, listen to them every day. Art can point to this fact.

**Bruce Odland (USA)**

- There are some composers and colleagues who see soundscape composition as subgenre of musique concrete. What is your opinion on this matter?

Since I often work in real time transforming ideas of time and resonance as site specific installation I am more interested in how our brains process and use sound, and in re-learning how to use our ears to listen to the environment and get information out of it that allow us to know who we are as a culture. How did we become this nation of people who deafen ourselves, and have to shout? Musique concrete, tends to cherry pick interesting sound bits using the world as our filing system, and dislocates these sound elements musically. That makes it a form of composition that divorces sounds from their meanings and treats them musically, I am interested in maintaining the cultural meanings of the sounds I use. Check out the following project for detail (Url-5).

- What has changed in the soundscape composition genre during its 30 years? Do think it is still a vital way of composing and raising awareness to acoustic ecology?

The ability of miniature digital recorders and digital programs to manipulate sounds has brought the medium to the masses who now have the easy availability of everything they need to work with sounds, and given the interest; and an idea of how to proceed, this should produce interesting results.

- Do you think that soundscape composition could be the base of new electronic music composed outside of Europe and North America?

Once again the discussion sounds academic, as if our sense of hearing also began in Europe and is waiting to spread across the globe, which is I think off base. We can probably find if we listen, that people in the world are already engaged in hearing based works, but with materials unfamiliar to us, and with names that do not fit the

electroacoustic categories. Such as the Balinese playing music with frogs on bamboo mouth organs, the African drivers making spatial pieces with their truck horns, the blind boy who uses echolocation to skate round cars. Look outside the box, soundscape composition under other names has been going on for centuries, millenia, we who have drowned ourselves in industrial noise are just rediscovering it through technology, but almost all ancient cultures modified their sound environments with architectural sonic details. Many examples exist. It did not start with Cage and Schaeffer. It started with the ears. Check out the whole aspect surrounding quan yin, bodhisatva of compassion and mercy, she who listens and achieves enlightenment through hearing. Check out the Mayan pyramid of the eagle at Chichen Itza. This phenomenon is not modern.

- In the last 10 years, there has been a growing interest towards field recording. New terms like phonography, aural safari is being mentioned at mailing groups. Do you think that this interest towards will affect soundscape composition aesthetics today?

Yes I hope so otherwise its is a short road to the dead end, and all these things need to be enlivened by the sense of possibility and sense of perception. The missing step is in understanding the sounds we make as a culture.

- Do you think that soundscape composition can raise awareness towards environmental issues?

Yes indeed, it is the eyes that acquire and exploit, it is the ears that connect and understand. A climate of visual observation serves to exploit nature, a climate of aural observation serves to connect to and protect nature.

- Who are the soundscape composers you enjoy the most?

Nature itself.

- How does the NY soundscape influence your compositions?

It is the basic raw material of my work, the blank canvass is not blank, it is 75 dB of raw unfiltered cultural data Check out "Requiem for Fossil Fuels" on youtube to understand (Url-6).

- What are the differences between American soundscape composition and soundscape composition in other parts of the world?

We have more wild nature here than in Europe. Unbiased listening will reveal internal rhythms and melodies that are different than European soundscapes. We have architectural and urban built entirely around the car that shape our spaces differently and leave use different resonating spaces that reinforce our industrial noise in other ways. We have an electrical grid based on 60 cycles that gives us a different tonality. We have fewer diesel cars, and we have less architectural details (cherubs etc) making our noise diffuse, therefore slightly less intelligibility in our cities than in Europe. Therefore the basic raw materials for our spaces sound different than the European.

- What are the technical tools that you use these days for composition?

Advanced set of listening ears

Tuning tubes (Url-7)

Digital flash recorder

Ableton Live

Soundman okmII binaural mics

**Stephen Vitiello (USA)**

- There are some composers and colleagues who see soundscape composition as subgenre of musique concrete. What is your opinion on this matter?

I think it can be a form of musique concrete for some (Francisco Lopez) but it depends on how strict you are to the original definition of musique concrete. With Pierre Schaeffer, I've always understood there to be the importance of obscuring the source of the sampled sound but there are certainly a significant percentage of musicians, composers, etc. who retain a connection to where (often when) recordings were made and want to retain a recognizable quality to the sound as it was recorded. There are pieces where the composer may edit and/or process sounds that's just one possible approach among many. I think it could be easy to fall into generalizations as a means to 'define' a movement or moment but we would do better to look at all of the ways that field recordings have infiltrated composition, sound art, science and cinema but also popular music rather than trying to pair it down.

- What has changed in the soundscape composition genre during its 30 years? Do think it is still a vital way of composing and raising awareness to acoustic ecology?

My sense is that there is a strong focus on acoustic ecology by some but also many people interested in soundscape-related work who may not be as motivated by the issues that R. Murray Schafer discusses in his books. There are certainly those who are interested in retaining a pure sense of sounds in a pristine environment but there are just as many or more who have come to accept the intrusion of industry, machines, cars, as content.

- Do you think that soundscape composition could be the basis of new electronic music composed outside of Europe and North America?

I don't see any reason to even expect boundaries anymore. To me, working with environmental sounds is a natural path that I can imagine someone would consider if they were working with electronic music, or just experimenting with portable recorders. You often hear electronic musicians and inventors talk about a synthesizer or an effects processor that can "produce sounds we've never even thought of". I see (hear) that as a sellable line but really I think if there are sounds we've never imagined, they're a lot more likely to exist in nature than in some invention of technology. I'd love to imagine soundscape recordings coming out of parts of the world that are not so noisy as almost every spot of Europe and North America are likely to be.

- In the last 10 years, there has been a growing interest towards field recording. New terms like phonography, aural safari is being mentioned at mailing groups. Do you think that this interest towards will affect soundscape composition aesthetics today?

I think it means more people are experimenting and perhaps listening in a different way. I don't know what far-reaching effects it will have. In the long run, most people will turn to something else next but certainly, some people will continue and some of those will make interesting works and works which might influence future generations of composers and listeners.

- Do you think that soundscape composition can raise awareness towards environmental issues?

I think it can on a small level, mostly for those involved in making the work. I don't know that our voices are really that far reaching or influential to have the power to change the way a larger population thinks or acts.

- Who are the soundscape composers you enjoy the most?

I'm not sure how strictly I'm thinking of a definition of soundscape composers but I like anything that Chris Watson does. There are some beautiful pieces Pauline Oliveros did in the 60s incorporating the sounds of a bog (frogs). There's a really nice CD by Yannick Dauby called "Fevrier" that has amazing dynamics. There are some beautiful unprocessed recordings by Bernie Krause that he has released as CDs. There are pieces by David Tudor that are purely electronic but evoke an organic sound world that I think of as soundscape even if they may not be by others' definition. I also like the way Michael J. Schumacher integrates field recordings with electronics and instrument recordings. There's also that recent CD from David Dunn, "The Sound of Light in Trees" that I really enjoy. These are just pieces that immediately come to mind but the list could be endless and probably a lot more diverse.

- How does the NY soundscape influence your compositions?

I haven't lived in NY in 4 years but I grew up there so it is engrained in my hearing and memory. For sure, the drone of traffic, of people, of machines is something I came away with. In High School I worked at the South Street Seaport Museum on the lower East Side of NY. It was before the big market/mall was there and it seemed quieter and you could hear the ships creaking and birds and I think hearing a bit of NY that was outside of the straight middle of the city, dense sound affected me and was something I absolutely appreciated.

- What are the technical tools that you use these days for composition?

I have my better recording setup and then a simpler one. The better one is an Schoeps CMXY stereo microphone and Sound Devices hard disc recorder. The simpler one is just a Sony HiMD mini disc recorder and a pair of binaural microphones. For software, I use Pro Tools and Logic and Ableton Live but also hardware, including a Doepfer modular synthesizer with additional modules from all sorts of companies. I have a 5.1 mixing setup at work with Blue Sky speakers and an older Pro Tools HD interface.

**Jacob Kirkegaard (Denmark/Germany)**

- There are some composers and colleagues who see soundscape composition as subgenre of musique concrete. What is your opinion on this matter?

My opinion is that Musique Concrete is as well is a sub genre of movements happening before that: I think that Pierre Schaeffer was inspired by for example Russolo's noise machines and Walter Ruttmann's Weekend "film". In a similar way, I believe that what "soundscape composers" are doing today is of course inspired by musique concrete. But we are also inspired by loads of other things! The term "Musique Concrete" was just concretizing the fact that somebody started picking up the sounds from our surroundings and mixing them. The tradition began long before the term was invented in the 50's.

- Do you think that soundscape composition could be the base of new electronic music composed outside of Europe and North America?

Sure, it is already happening. For example in China, Argentina, Australia...

- Do you think that soundscape composition can raise awareness towards environmental issues?

Yes. It is already happening.

- Who are the soundscape composers you enjoy the most?

I am not so interested in genres actually, it doesn't interest me much whether it is called soundscape, phonography etc. I prefer to keep free from these boxes as I see them more as limitations. As soon as you have a term for something, it dies. I am just creating stuff and of course acknowledging the past composers and artists, but I couldn't say "oh i like him or her the most", because that would mean that i would also place the term on them as being "soundscape composer".

- How does the Danish soundscape influence your compositions?

I don't know what is particular Danish soundscape. I don't think it influences me much; Denmark is a very "normal" country with very normal sounds. And I live in Berlin. And for me it more depends on sound from particular places, not so much a country as such. But in the end, of course, we are all influenced by everything in some way.

- What are the differences between Danish soundscape composition and soundscape composition in other parts of the world?

I don't know if there is a specific "Danish" sound. I think that, with globalization, it is not possible anymore to speak about it in such a particular way like, this sounds Danish or this sounds Turkish. Europe is becoming super streamlined and sounding very similar. Or, as I see it we are a group of people, "a scene" spread around the globe and not so connected anymore to the particular country we live in. I never know what to answer when people ask me how is the scene in Berlin, where I live. I have no clue. Or what sounds I am inspired of in Denmark. Inspiration can be many things apart from sound - love, food, friends etc. The scene for me is my colleagues, organizers and my record label. They are spread over the world. My colleagues/friends are the scene. And as you might know, I don't record fields like Chris Watson etc. but more find specific spaces or places with a certain characteristics - Chernobyl, inner volcanic earth, a TV tower, the hair cells in my ear...

- What are the technical tools that you use these days for composition?

I don't see myself as a composer as such. I am rather somebody who mixes what I record or present a sonic environment in an unconventional way. So, for recording I use hi-fi tools such as accelerometers and good acoustical microphones. For mixing and editing I use Pro Tools, an equalizer, a mixer and sometimes many speakers.

### **Duncan Whitley (UK)**

- There are some composers and colleagues who see soundscape composition as subgenre of musique concrete. What is your opinion on this matter?

Soundscape composition, to me, is an unclear term. It may be that there is more consensus on this term within a musical context than I am aware of, but I work predominantly in a visual arts context and as such my frames of reference don't point to 'musical' soundscape. I work with multi-channel sound recording, or 'field recording', designed for playback as spatial sound installation. The compositional elements in work are to do with the placement of microphones in a space and, subsequently, the placement of speakers in a playback environment. I enjoy a certain 'musicality' to my work, but I don't by any means consider myself a composer or musician. If soundscape composition can be seen to include site-specific sound

installation work in a visual arts context, then I'm not sure that I would see it as a subgenre of musique concrete, but rather as a closely related and intersecting genre. Both terms allow an open, creative space for experimentation with sound and music.

- What has changed in the soundscape composition genre during its 30 years? Do think it is still a vital way of composing and raising awareness to acoustic ecology?

I'm sure that soundscape work has played a role in sensitising listeners to environmental sound and, in placing an emphasis on the act of listening itself. I particularly value this pure or focussed engagement in listening that recorded sound (scape) can provoke or facilitate. But we still are talking about relatively small audiences here. Whether soundscape composition, in raising awareness of acoustic ecology, has actually had any effectual, political impact in terms of placing acoustic ecology as a genuine concern in the development of our living environments, I'm not so sure.

- Do you think that soundscape composition could be the base of new electronic music composed outside of Europe and North America?

Why not? I'm sure that experimental electronic music based on field recordings must be common now pretty much anywhere where there is ubiquitous access to home computers. I'm not particularly active in following trends in electronic music, so I couldn't comment specifically.

- In the last 10 years, there has been a growing interest towards field recording. New terms like phonography, aural safari is being mentioned at mailing groups. Do you think that this interest towards will affect soundscape composition aesthetics today?

Certainly the increasing accessibility of home computers and audio editing software, and affordable, easy-to-use digital recorders must have extended the base of practioners experimenting with phonography and soundscape composition. The ways of working with today's popular audio editing and sequencing software facilitates, inevitably shapes aesthetics.

- Do you think that soundscape composition can raise awareness towards environmental issues?

The scope of possibilities raised by art is broad, to say the least. Certainly art can 'raise awareness' and question just about anything, but the question is how? Who are the audiences?

- Who are the soundscape composers you enjoy the most?

Max Neuhaus's "Times Square" was a piece that stuck in my mind for years after discovering the work while I was studying fine art at college. I've never actually experienced the work first-hand, like many of the works which I've found most influential – such as Charles Simmons' works and those of James Turrell also. I've enjoyed their works as ideas. I think that Luc Ferrari's "Presque Rien" series is amazing, and I've not yet tired of listening to those pieces. I think he is a great artist.

**Lasse Marc Riek (Germany)**

- There are some composers and colleagues who see soundscape composition as subgenre of musique concrete. What is your opinion on this matter?

Pierre Schaeffer had found a good expression: Concrete sounds = musique concrète. Eventually soundscape could be something like the re-interpretation of "concrete" aesthetics or its next generation. It seems important to me to leave the name or title of a specific genre to the listener. (What's in a name?)

- What has changed in the soundscape composition genre during its 30 years? Do think it is still a vital way of composing and raising awareness to acoustic ecology?

I think, the fast development of technical supply, mobility and the growing pollution with sound as result has had a great impact on soundscape composition during the last 20 years. It remains the impression, the various ideas of treating sounds and noise with digital technique lead back to narration and the "concrete". This might be an expected reaction to the oversupply of possibilities; restriction to the essential.

- Do you think that soundscape composition could be the base of new electronic music composed outside of Europe and North America?

Europe and the United States mainly can be named economic and industrial nations. Many countries outside the EU or the U.S.A. are facing very different decisions and phases of production. The artists in these countries therefore are integrated at the same level and they confronted with different obstacles and discussions. Listening to e.g. soundscape compositions from India, Afghanistan or Mongolia, these most often

are produced by artists who come from Europe or the U.S.A. or live and work there. I think before we begin to discuss a common base for electronic music, the EU or the U.S.A should provide a base for cooperation and financial support.

- In the last 10 years, there has been a growing interest towards field recording. New terms like phonography, aural safari is being mentioned at mailing groups. Do you think that this interest towards will affect soundscape composition aesthetics today?

By the fast growing mobility in the field of recording possibilities and technique, we already have reached a new state of composition. Good quality can be produced with little effort; I will only mention memory-card-recorders, recording options for mobile phones and many more. The hardware is compatible and the transfer is made possible without loss of quality and in very little time by USB and others. New media gives artists the possibility of information, research and communication via radio, TV and internet. I see that many fellow artists are working under a kind of "political aesthetics". The fast life we are leading is producing great problems or those already existing have not been solved or altered in any way.

- Do you think that soundscape composition can raise awareness towards environmental issues?

To me, the effort of inviting public to listening and to explain the backgrounds of soundscapes is very important because maybe realisation leads to more sensitivity. In the field of conserving nature and human rights movements there is the possibility of interaction. For some years, I am working with ultrasonic sounds produced by bats some species of which are endangered. To draw attention to this specific animal and its special sounds and noises we have organized concerts, events and lectures combining the areas of conservation and sound art. The idea is to reach new listeners and to arouse their interest. Escaping the small circle of art and to find a bigger audience is of great importance to us.

- Who are the soundscape composers you enjoy the most?

"Vox-5" Trevor Wishart

"Shared Worlds" Christina Kubisch

"Tau" Stefan Funck

"Sud" Jean-Claude Risset

“8Ways/32Weels” Mathieu Delvaux

“Landscape in Metamorphoses” Budhaditya Chattopadhyay

- How does the Frankfurt soundscape influence your compositions?

The area around Frankfurt is of greater influence to me than the city itself e.g. the hills and mountains in the north, the river Main, the forests in the south or southwest are of great importance to me because of the problems connected to heavy air traffic and the related noise. This fact developed my interest in "acoustic ecology" which is represented in my compositions. Recordings are mostly made out of town and retransferred to the city to be refined and presented. The City of Frankfurt itself is a good place to get in touch with institutions and fellow artists but an actual "scene" does not yet exist here. That is the reason to start the specified label "Gruenrekorder" and to initiate the "Association to Promote Phonography".

- What are the differences between German soundscape composition and soundscape composition in other parts of the world?

It is not easy to find an answer to this question. Until now it was not possible for me to make comparisons and though cultural or geographic influences might be found, I personally believe in individual form of expression.

- What are the technical tools that you use these days for composition?

For recording, I use Marantz PMD-660 recorder, Sennheiser MKH-416 shotgun microphone, Sennheiser HD 590 headphones, Sharp MiniDisc Recorder, OKM II binaural microphone, Ultrasonic detector and selfmade microphones. For editing, I use Apple Macbook, various audio softwares and Sennheiser HD 600 headphones. For mixing I use Behringer MX 1602 12-channel mixer.

**Philip Samartzis (Australia)**

- There are some composers and colleagues who see soundscape composition as subgenre of musique concrete. What is your opinion on this matter?

I think that it is a matter of definition and perception. Soundscape is a term that reflects a very specific type of composing and listening with a political and social dimension advocated by R Murray Schaefer to draw attention to the role of sound in natural and built environments. Musique Concrete on the other hand was less interested in the social and political aspects of environmental sound, instead placing

an emphasis on the inner mechanics of a sound event and how each component could be manipulated to suggest new aural experiences without referring to origin or context. Although there are some superficial similarities, I think that each approach is very different in their formal, conceptual and philosophical interests.

- What has changed in the soundscape composition genre during its 30 years? Do think it is still a vital way of composing and raising awareness to acoustic ecology?

I think that there is a broader awareness of soundscape practices but I believe that there is a lack of appreciation of the differences occurring in the field. Soundscape in its purist definition has an acoustic ecology dimension that defines how composers work with environmental sound. There are other composers who are not so interested in acoustic ecology but rather only the material properties that field recordings provide. Others are interested in documenting particular locations without any political or social motive in order to highlight their musical or atmospheric qualities. There are many different methods and ideologies around field recording that does not necessarily have any interest in raising awareness of ecological issues. On a personal level I think that it is important that fragile environments are preserved through documentation, but I am not sure whether the audience for acoustic ecology extends beyond other artists or researchers working in the field.

- Do you think that soundscape composition could be the base of new electronic music composed outside of Europe and North America?

Once again I think it is a matter of definition and perception. For people of my generation electronic music has a very specific history positioned around the experimental practices that came out of the WDR studios in the 50s, as well as advances in electronic instrument design and production. In more recent times, the term electronic music has been appropriated to define more contemporary music that loosely operates around techno and electronica. Generally speaking I do not see an analogy between electronic music and soundscape composition as the concepts and practices informing both are quite divergent historically, politically and materially. I also think that due to the global nature of culture that there is very little difference between practices based in Europe and the USA and those of other regions. Most people interested in soundscape already know the works of R Murray Schaefer, Hildegard Westerkamp, Douglas Quin and Chris Watson, so the references are

universal.

- In the last 10 years, there has been a growing interest towards field recording. New terms like phonography, aural safari is being mentioned at mailing groups. Do you think that this interest towards will affect soundscape composition aesthetics today?

There seems to be more awareness and activity around field recording some of which is due to the new range of portable technology that facilitates a more sophisticated approach to sound documentation. In the same way that photography and video was revitalized by low cost digital technology, good quality sound recording is now the province of anyone who can afford a Zoom, M-Audio, or Sony digital recorder. This will naturally change the way people work with environmental sound and the types of ideas that they explore.

- Do you think that soundscape composition can raise awareness towards environmental issues?

I think that there already is a great awareness of environmental issues therefore the role of soundscape composition in raising awareness of the issues may actually have become redundant.

- Who are the soundscape composers you enjoy the most?

The soundscape composers who are working within the historical ideology of R Murray Schaefer that I enjoy are Yannick Dauby, Hildegard Westerkamp, Bernard Fort, Douglas Quin, and Marc Namblard. Composers working with field recording who are not necessarily aligned with the soundscape movement that I enjoy are Chris Watson, Luc Ferrari, Alan Lamb, Stephen McGreevy, Eric La Casa, Michael Northam, Jean-Francois Laporte, Francisco Lopez, Toshiya Tsunoda, Viktor Knuuk and Cecile La Prado.

- What are the technical tools that you use these days for composition? In terms of field recording I use the following items of equipment. Nagra Ares BB+ Digital Stereo Recorder, Telinga Dat Science stereo microphone, Bruel & Kjaer 4006 omni microphone and DPA hydrophone. For composition and mixing I use Pro Tools Mbox and Focusrite 430MKII Channel Strip.

### **Petri Kuljuntausta (Finland)**

- There are some composers and colleagues who see soundscape composition as subgenre of musique concrete. What is your opinion on this matter?

I don't see it as a subgenre of musique concrete. Soundscape composition could be understood as part of the continuum, which started from musique concrete and other early art forms, which were based on recorded sound. The importance of context in soundscape composition, and the connection between the sounds and the environment (that particular place and its habitants in particular time) from where the sound textures of the work are taken from, is so important, that I can't put it too closely to the genre of musique concrete.

Soundscape composition could be linked to the tradition of musique concrete, radio art, documentary, sound art, and performance art, at least. And what is special in soundscape music is that it could be analyzed from so many perspectives, this is because of its close relation to culture, social relations, and environmental matters and to the actual sounds of time that the work presents. Soundscape music is a form of art, but at the same time it offers us something true from the real world, by referring to the (sound) components of our culture.

- What has changed in the soundscape composition genre during its 30 years? Do think it is still a vital way of composing and raising awareness to acoustic ecology?

It is absolutely a vital art form. In fact, now it has reached the point, where the people really could understand the artistic meaning of environmental sounds. The interest among young generation of composers and artists is growing and we could hear more and more works that are based on environmental recordings. Environmental music is slightly different thing than soundscape music, but anyway, it is very much question on the same interest, but slightly from different angle.

- How does the Finish soundscape influence your compositions?

I record my living environment often, so I have close relation to my own surrounding sound environment. It is trivial environment to me, as I live here and have used to hear these familiar sounds, but despite of that, I could always find new perspectives to my sound environment. It is also important to continue the activity (to listen to your environment), as only then you could notice and understand the changes that

happen in your environment. If you record the sounds of Helsinki city during one summer, and continue this some 10 years, then you'll notice how the sound environment will change. I have recorded Helsinki so many years that I can tell you that it changes. In 1990's you heard archaic sinewave sounds of mobile phones in every place at the downtown, but this disappeared in few years when the advanced mobile phone technology allowed using your own music samples.

- What are the differences between Finnish soundscape composition and soundscape composition in other parts of the world?

It is difficult to say, and it depends on the case. We have our own fauna here, so the animal sounds affect to the soundscape recordings naturally. We don't have big city metropolitans or their sound textures here. Helsinki is the capital, and that's where I live, but the population of some 0,5 million people in Helsinki is not much. It is active city, but not a metropolitan. Finnish have close relation to nature, that is cliché, but it is true. And we could hear nature recordings in many classic Finnish electroacoustic music compositions created since 1960s. But, the use of nature sounds doesn't give the whole picture in the matter; nowadays we have here a really active noise music scene. The noise musicians might use environmental sounds (like soundscape composers do) in their music, but they'll do that totally different way. Basically all international trends (from noise to soundscape activity) can be found here.

- What are the technical tools that you use these days for composition?

For composing I use portable recorder, mics, computer and different audio softwares, nothing special. But when I am performing live, I have a slightly different view to the music, as I don't want to just sit down and play files from the laptop. So, I want to really play live and I have built my own electronic instrument set-up, which contains possibility to sample and recycle (live process) the sounds that I play in real-time. The material that I sample could be soundscapes or anything else I like. Also, important part in my set-up is my feedback system, which I have developed for years. In my sound chain, I could generate feedback sounds, control their pitches, textures, densities and so on. So with feedback sounds my sound palette is from tiny bird chirps (like thin sinewave sound gestures controlled with KaossPad) to massive, heavy-metal-guitar-kind of sound-walls. The textures that I generate depend on the context of the piece. I always use my feedback sounds as my "solo sound" -- it is my

solistic instrument (You'll get a better idea if you listen to my concert recording "Live in Berlin").

- Do you think that soundscape composition could be the base of new electronic music composed outside of Europe and North America?

Absolutely! It is not a question about technology, or tools, but willing to notice the environment. The sounds are around us; we just have to find them!

- In the last 10 years, there has been a growing interest towards field recording. New terms like phonography, aural safari is being mentioned at mailing groups. Do you think that this interest towards will affect soundscape composition aesthetics today?

We could use the environmental sounds in many ways in music; Soundscape composition offers us one possible aesthetic, one possible way to go. I believe there are many possible ways to use the ideas of soundscape music in other music forms. By that I mean, it is always possible to make a fusion of aesthetics and styles (or genres). You don't have to be a real 'soundscape composer' to use the basic ideas of soundscape music in your music.

- Do you think that soundscape composition can raise awareness towards environmental issues?

Absolutely! That's one of the main things with this music style; raise the listener's awareness towards the environment around you.

- Who are the soundscape composers you enjoy the most?

Uhhh, this is a difficult question. Hildegard Westerkamp of course. She has composed really nice works, which I have used as an example of soundscape music many times at my lectures. The way in which she use rhythm of water-drops, for example, has motivated me especially. I have said this many times to my composer students: "you don't have to use drums or drum samples to create rhythmic music"... and as an example I have played Hildegard Westerkamp's "Talking Rain".

### **Brandon Labelle (USA)**

- There are some composers and colleagues who see soundscape composition as subgenre of musique concrete. What is your opinion on this matter?

I wouldn't really argue one way or the other. Certainly the form of soundscape composition often adopts an acousmatic presentation or method. Yet I think they also differ significantly on certain levels and according to specific artists or composers. For instance, it strikes me that the work of musique concrete is often focused on levels of abstraction and decontextualizing the sound sources, whereas soundscape composition tends toward retaining a definite reference to the origin of the sounds used. In this way, you might see them as forming a polarity between reference and non-reference.

- What has changed in the soundscape composition genre during its 30 years? Do think it is still a vital way of composing and raising awareness to acoustic ecology?

I think it still very much provides a rich and important platform for composing as well as thinking about sound and related cultural issues. Of course, much has changed over the years, from electronic tools to the larger cultural frame of sound making and theory, yet I think soundscape composition remains an arena for raising questions and stimulating people's sonic imagination.

- Do you think that soundscape composition could be the base of new electronic music composed outside of Europe and North America?

Maybe it already is. There are certainly groups throughout South America working in this field – for instance, Federico Miyara in Argentina – and certain radio groups in Brasil discussed by Janete El Haouli in Curitiba influenced by soundscape work. And this is only my loose sense of things; no doubt there exists definite communities outside the Western arena.

- In the last 10 years, there has been a growing interest towards field recording. New terms like phonography, aural safari is being mentioned at mailing groups. Do you think that this interest towards will affect soundscape composition aesthetics today?

I think soundscape work has probably aided significantly in turning people's ears towards the larger environment, as a source of sound or as a means for sonic production, and inevitably with the expansion of work being done, the entire territory of soundscape work will change. This also of course has a lot to do with the accessibility and mobility of digital recording devices and home studios. I think one

of the issues that has effected ideas of soundscape work is the relation to technology – whereas in the past much soundscape work tended to avoid technology or rather to denigrate its presence, today I find there is a much more rich engagement with the issues of technology (put forth with much consideration by Sabine Breitsameter in Germany for instance).

- Do you think that soundscape composition can raise awareness towards environmental issues?

Yes.

- Who are the soundscape composers you enjoy the most?

No comment.

- What are the technical tools that you use these days for composition?

I've been using simple field recording devices, Pro Tools, and ready-made sound effects.

### **Dallas Simpson (USA)**

- There are some composers and colleagues who see soundscape composition as subgenre of musique concrete. What is your opinion on this matter?

I don't really have an opinion. As I am not concerned with categorization, but rather with the creation of works, with performance, concept, process, metaphor, narrative, choreography and related issues in soundscape composition, for me it is not a relevant question.

- What has changed in the soundscape composition genre during its 30 years? Do think it is still a vital way of composing and raising awareness to acoustic ecology?

Again a slight problem in that I pay little attention to trends and practice outside my own field of work, in general, though, I think there has been a growing trend to explore pure recordings untreated – a growth in the area of Phonography, for instance, where soundscapes are recorded over an extended time and simply presented – that is raw or simply mixed, rather than recording for the acquisition of samples to be manipulated and processed post record, as the main focus of soundscape composition. In the electronic realm, the evolution of surround sound

and multispeaker arrays (including a growing interest in Ambisonic B Format) has facilitated a greater attention to spatial choreography in general, and also in spatiality in acousmatic diffusion practice.

- What are the technical tools that you use these days for composition?

My ears, my head, a digital recorder, DAW (SADiE, Wavelab, Adobe Audition 2.0) I am not really concerned with electronic composition but acoustic composition using man-made, or natural objects, geological formations, elements of nature and architecture as real time sound sources and for the processing of sound, which is perceived live on location by the human ear and sampled binaurally to a recorder. I have also worked with prepared locations and constructed sound sculptures.

- Do you think that soundscape composition could be the base of new electronic music composed outside of Europe and North America?

I don't feel I am in a position to comment on this.

- In the last 10 years, there has been a growing interest towards field recording. New terms like phonography, aural safari is being mentioned at mailing groups. Do you think that this interest towards will affect soundscape composition aesthetics today?

This is an area of vital importance because the acquisition of environmental sound is behavioural. To engage with a location, to hear and create sound with full physical and sensory involvement changes the relationship we have with place and space. We enter into an ongoing process of growth and discovery with our environment.

- Do you think that soundscape composition can raise awareness towards environmental issues?

Absolutely. It can raise awareness, but only if it is performed with that intention. Abstract composition that offers a pure aesthetic, highly processed sounds, or composition that is based on more conventional musical structure severs the environmental link, in the sense that the actual origins of sounds – the sound objects (those physical elements that emitted the original sounds) and the sense of actual place (the nature of the location) are obscured or lost. The sounds have context within musical structure rather than the original environment and location. In my personal work there is an attempt to record a one to one engagement with

environments and locations, compositional language in my work mainly centres around the incarnation of the soundbody of silent objects or surfaces in the context of a natural acoustic or soundscape. In such ways the artist becomes the transforming agent of the language of matter—instrumental in the incarnation of sonic potentiality from the uncreated realm of silence, hence the location is enabled, through performance, to "speak for itself."

As I said on my website:

“Binaural sound art is both a particular style of recording and a particular approach. By inserting very high quality sub-miniature microphones into his ears, Dallas is able to sample his own human hearing and record what is known as "binaural sound" to conventional 2-channel stereo, with all the potency of a three dimensional surround sound experience when replayed on headphones.

The approach is to engage the listener, through his own ears, in a guided experience of soundscape awareness and intuitive interaction with found and introduced objects. Movement through a location allows creative spatial choreography - the compositional arrangement of moving sounds in three-dimensional space - with additional opportunities to create an unfolding narrative in time.

These binaural soundworks are not always "quiet", some works contain periods of natural silence but there are also a few surprises and in some cases the sound is quite intense, but all the sounds are "real", not the product of electronic synthesis, sampling or manipulation. I often refer to them as "meditations" and my meaning is that we should think and listen, for in thinking we may pause to reflect on both what we may be missing in terms of an enriched aural experiencing our continual daily lives, and how, in the attainment of this richness, we may have to modify our own behaviour to access it. Consequently, these works are not an end in themselves that glorify the artist, but are an open invitation for each of us to establish a new and sensitive relationship with our environment, for it is only when we fully appreciate its worth that we will strive at all costs to preserve it.”

- Who are the soundscape composers you enjoy the most?

Peter Cusack, Quiet American (Aaron Ximm), Murmer, Max Eastley, Helmut Lemke. Rob Mullender, to name but a few.

**Aaron Ximm (USA)**

- There are some composers and colleagues who see soundscape composition as subgenre of musique concrete. What is your opinion on this matter?

I think it is true to say that some soundscape composition -- by which I take it you mean, composition using field recordings as primary or sole source material; particularly, with the sensibility and concerns that come from what could be called 'the acoustic ecology community' -- is a subgenre of musique concrete, but certainly not all. Instead, I think it is more useful to consider that:

(a) there is a broad, diffusely-bounded collection of sound art being made using field recordings; and that

(b) while some of that work is made (consciously and un-consciously) with the concerns, techniques, and influence of musique concrete behind it; and

(c) while some of that work is being made with the concerns, techniques, and influence of acoustic ecology, and hence as what I would call 'soundscape composition';

in fact, the work in the categories implied by (b) and (c) are both \*subsets\* of the work collected in (a).

In other words, I would say that some field recording based sound art -- let's call it FRBSA -- is (or is descended from) musique concrete; some FRBSA is (or is descended from) soundscape composition in the acoustic ecology sense; some FRBSA is (or is descended from) both of these things... and at least as much is neither of these things, neither concerned with or obviously influenced by/descended from either musique concrete or 'soundscape composition' in the acoustic ecology sense.

I can see that there is the possibility of debating this as a semantic or rather philosophical problem, about the nature of influence in a shared cultural/historical milieu...But personally, I think it's pretty clear that there is a lot of work being done in FRBSA that is predicated on very different concerns. To treat your question narrowly, I would go further and say that much of what I have clarified as 'acoustic ecology'-contextualized 'soundscape composition' -- which I myself consider a specific genre, and not a very contemporary one anymore, really -- was not really

strongly influenced by musique concrete; they just happened to use superficially similar tools and techniques.

By analogy, the guitar is used in both Fado and Death Metal, but these two are only remotely related by the fact that they share a broad historical network. If I were to put it in the most basic terms, I would say that musique concrete was strongly predicated on an academic (I do not mean that as a pejorative) relationship to music making, an approach that is rooted in formalism and bled into an exploration of perceptual psychology... while there is a lot of 'soundscape composition' that I would say is first and foremost intended to be lyrical, subjective, and often is quite formless (from the perspective of a formal-ist).

Neither perspective is more "correct" but I do think they came from different directions, progressed in different directions, and arrived at different conclusions!

- What has changed in the soundscape composition genre during its 30 years? Do think it is still a vital way of composing and raising awareness to acoustic ecology?

In this case I take you as meaning, soundscape composition as it was constructed as an acoustic ecology practice. I'm sad to say I'm not a good enough student of contemporary soundscape composition, in the acoustic ecology practice sense, to say whether it's still alive and evolving; almost all of the field recording-based work that I listen to is composed \*outside\* that sensibility -- even when it addresses the same or overlapping concerns.

E.g. when I encounter contemporary recordings done of singing sand dunes, or ice cracking on Lake Baikal, or say Chris Watson's compositions, I don't get the sense that this work is done self-consciously as AE. I am suspicious that even though I am distracted by too many things, and hence can't keep up -- witness the years it's taking to get you CDs -- there is some significance to the fact that I haven't heard or encountered much soundscape composition done in the AE context. Even at my most passive I do see reviews of, and read discussion of, and buy from stores or online, sound art using field recordings that is related externally (if not by design) to AE. The fact that it is not put forth or discussed in the context of AE makes me think that the answer to your question might well be no. What consciousness is being raised, if there is no large discourse happening about it? But then, this could just be a

reflection of the small corner I live in -- I know things are happening elsewhere. I guess I don't know!

- Do you think that soundscape composition could be the base of new electronic music composed outside of Europe and North America?

I think it already has been. When i started working with field recordings in the mid/late-90s I knew of almost no one who used them as a primary source material. Nowadays, it seems that is commonplace to hear them -- there is just a lot of work being done incorporating them or based on them. Whether or not it is 'electronic music' might be debatable -- some of it certainly is, and the tools are technological, but it's certainly been a 'growth area' in experimental work.

- In the last 10 years, there has been a growing interest towards field recording. New terms like phonography, aural safari is being mentioned at mailing groups. Do you think that this interest towards will affect soundscape composition aesthetics today?

I think there is a much broader range of compositional techniques (and tools) being used, many introduced by people who don't come to field recording-based composition from AE. This is a wonderful thing, in my opinion; lots of fresh ideas are and have spread and there are lively conceptual and philosophical debates always going on. One consequence is that I don't think there is any longer, in the broad (not limited to AE) sense, a soundscape composition aesthetic -- there are many. Again, I'm not myself aware of what's going with self-conscious AE practitioners, as I don't encounter that work regularly.

- Do you think that soundscape composition can raise awareness towards environmental issues?

Absolutely, and in fact that is one of my own interests. Ecology itself is much more in the public consciousness, and I think it is much easier to cue people to consider ecological concerns today than it was say in the early 80's. Every educated person is now reasonably fluent in (if not on the same political/philosophical side) issues of conservation, climate change, resource depletion, water use, environmental degradation, species loss, etc., etc., etc. So much so that maybe it's fairer to say that it's not so much raising awareness, as directing or re-surfacing it...

- Who are the soundscape composers you enjoy the most?

Lately I've been listening to more pure recordings than composition, actually.

**Francisco Lopez (Spain)**

- There are some composers and colleagues who see soundscape composition as subgenre of musique concrete. What is your opinion on this matter?

The different between these two approaches is essentially a contrast between Schferian (Murray Schafer's) and Schaefferian (Pierre Schaeffer's) views of the extractions from reality (sound recordings).

- On all your pieces, there is a great attention to detail, clarity and form. It seems that you work for long hours on your compositions. How do you start a composition? How much do you prepare for your recording process? Do you allow any elements of chance and randomness in your recording process and your final compositions?

My "composition" process starts when I have left enough time in between the personal experience of the "captured" reality (field recordings) and the moment to face that different world made only of sounds. I don't follow pre-defined strategies or ideas; I always let the sounds, and all their mutations, to lead me. Whatever they require and demand I try to accomplish. Chance and randomness are everywhere in our lives, including composition. This, however, has nothing to do with Cagean recipes to proceed. In that sense, there's no music in the world until someone decides it, and some people have better ways of taking these kind of decision than others, it's clear in the resulting work.

- What are the technical tools that you use these days for composition?

The digital version of the same tools I've always been using: a portable recording device and a processing/editing system (Pro Tools, for example). Nonetheless, I always considered technical tools quite irrelevant. Spiritual tools are much more important, but these can be hardly described.

- What has changed in the soundscape composition genre during its 30 years? Do think it is still a vital way of composing and raising awareness to acoustic ecology?

I see no essential change in the so-called "soundscape composition". Personally I have no interest in raising awareness to acoustic ecology, but I respect others' will to do it.

- Do you think that soundscape composition could be the base of new electronic music composed outside of Europe and North America?

It's not. Most artists outside the so-called "Western" world basically imitate what they hear coming from there, in the hopes of being accepted by it somehow or, alternatively, playing "one-eyed among the blind" in their own countries.

- In the last 10 years, there has been a growing interest towards field recording. New terms like phonography, aural safari is being mentioned at mailing groups. Do you think that this interest towards will affect soundscape composition aesthetics today?

More than "soundscape composition" I believe it's affecting the possibilities of something interesting to come out of that exploration. More people giving it a try to field recordings means less classical "electronic" music and more chances of someone coming up with new interesting ideas.

- Who are the soundscape composers you enjoy the most?

Strictly speaking, as "soundscape composition", some pieces by Hildegard Westerkamp and Barry Truax are indeed powerful. If we speak of people working with field recordings or equivalent sound materials, both Slavek Kwi and Asmus Tietchens are masters of the trade.

### **Pete Stollery (Scotland)**

- There are some composers and colleagues who see soundscape composition as subgenre of musique concrete. What is your opinion on this matter?

I have big problems with all types of categorisation, as there is rarely ever a clean, neat fit. It is easy to think that because both genres rely heavily on real-world recordings that they are directly related, but in my opinion this is a simplification. Musique Concrete and Acousmatic Music are more about methods of working with sounds than merely working with real-world sounds. Soundscape Composition to me still maintains a certain amount of needing to know about the source of the sound, so the connections are not as easy as they might at first seem.

- What has changed in the soundscape composition genre during its 30 years? Do think it is still a vital way of composing and raising awareness to acoustic ecology?

I'm not sure a great deal other than sound quality has changed over the last 30 years. I think Soundscape Composition is crucial in raising the awareness of Acoustic Ecology and, more importantly, encouraging people to engage in a deep and meaningful way with their immediate sonic environments.

- Do you think that soundscape composition could be the basis of new electronic music composed outside of Europe and North America?

Not fully certain what you mean by this one. If by this, you mean that Soundscape Composition might be a more accessible entry point for working with technology I'm not entirely convinced. I think that it is a good way into listening more deeply to sound in general, but as far as getting people into synthesis or Max/MSP or other aspects of electroacoustic music is concerned, I don't think this is a way in necessarily.

- In the last 10 years, there has been a growing interest towards field recording. New terms like phonography, aural safari is being mentioned at mailing groups. Do you think that this interest towards will affect soundscape composition aesthetics today?

Not at all, if anything, it will add much needed diversification. I think Phonography particularly has a great deal to offer as far as deep listening is concerned. The detailed listening of pure unaltered field recordings is very much part of the appreciation of Soundscape Composition as far as I'm concerned.

- Do you think that soundscape composition can raise awareness towards environmental issues?

I think the preservation of the aural landscape is very important and engaging with Soundscape Composition can raise a great deal of awareness. I am currently researching into the area of Soundscape Composers as Sonic Conservationists or Preservers of Sound. It's a precious commodity and more and more people are noticing this. One major step forward would be, however, for those involved in the changing environments (new buildings, new roads, etc.) to understand that the changes in the aural landscape can be just as disturbing as the visual changes. Things are improving and some architects and city councils employ acoustic specialists (often soundscape composers) as part of the wider team. But there is still a great deal of work to be done.

- Who are the soundscape composers you enjoy the most?

Apart from your pieces made in Istanbul particularly, Katharine Norman, Hildegard Westerkamp, Claude Schryer, James Wyness, Bill Thompson and many others.

- How does the Scottish soundscape influence your compositions?

It influences me because I live here and I am immersed in it all the time. I would be just as immersed wherever I lived I imagine, but having said that, there is a particularly freshness to the quality of the sound around where I live as it is protected largely from traffic sounds and there are vast open spaces of farmland around. Several members of invisibleEARts have noticed recently how much the Scottish soundscape features in their work – for some this is deliberate (me, Robert Dow) but others have found this has crept in without them being fully aware of it.

- What are the differences between Scottish soundscape composition and soundscape composition in other parts of the world?

There is no difference as far as I know. Other than the sounds used are indigenous, but I don't perceive too many stylistic differences.

- What are the technical tools that you use these days for composition?

For recording these days I use Sennheiser MK44P stereo microphone, or OKM binaural mics. I record onto Tascam HD-P2 hard disk recorder or onto MAudio Microtracker 24/96. All editing and processing is done in Pro Tools environment.

### **Kim Cascone (USA)**

- There are some composers and colleagues who see soundscape composition as subgenre of musique concrete. What is your opinion on this matter?

These two fields might vaguely share some properties but musique concrete is a very different approach to working with natural or concrete sounds. Schaeffer formalized many of his compositional theories regarding working with concrete sounds. In comparison soundscape composition seems to have less of a framework - more composed from an intuitive sense of sound.

- What has changed in the soundscape composition genre during its 30 years?

There is not much unfortunately that has changed in the past 30 years. Other than new technologies that became affordable and accessible to more people working with

sound there is not much compositionally that has changed. Part of this is due to the fact that not many working with soundscape know much about the history of electro-acoustic music and hence end up unknowingly repeating and recycling old ideas thinking they are new.

- What are the tools you use for your works?

I use a portable recorder and stereo microphone for recording sounds and then a laptop running Max/MSP, Peak and Soundtrack Pro for structuring, manipulating and arranging the sounds.

- Is there a specific strategy when starting a new work?

I wouldn't call it a strategy per se - more of a reaction to a book or a film I've read/watched.

- Could you tell about the use of randomness in your compositional output and in your live performances?

I use randomness in my live performances in order to keep me interested and allow me to be surprised by new combinations of sound files I might not have chosen myself. The randomness is built into my Max/MSP performance patch. I don't use much randomness in my composed recorded works.

- In the last 10 years, there has been a growing interest towards field recording. New terms like phonograph, aural safari is being mentioned at mailing groups. Do you think that this interest towards will affect soundscape composition aesthetics today and in which way?

A ghetto has been forming of netlabels releasing anything it can label as "phonography". Much of the work is not interesting or innovative and could be compared to looking at someone's holiday snapshots. That being said the various communities of nature recordists, phonography and live music taping have helped innovate certain approaches to field recording as well as become great resources for technical information.

### **Yannick Dauby (France)**

- There are some composers and colleagues who see soundscape composition as subgenre of musique concrete. What is your opinion on this matter? I completely disagree. I see the theme "soundscape" as a wide and blurred field of

interdisciplinary work, research, thinking and art practice. To reduce it to a musical genre is really disappointing. "Soundscape" is a concept that can be used from sociology to environment protection to psychology to ethology or ethnology. Just adding the idea of composing music with it seems very odd to me.

- What has changed in the soundscape composition during its 30 years?

Especially drone aesthetic based on field recordings has become popular within the genre. For you, what are the similarities and differences between this drone aesthetic and the aesthetic that has been started with Barry Truax and Hildegard Westerkamp? I don't know what you mean by "drone aesthetic based on field recordings". I don't think such aesthetic exists. Of course there are some similarities amongst sound art works, but it is not enough to build an aesthetic. I don't even think that Truax and Westerkamp started an aesthetic. There are others pioneers and musicians from their generation which are much more important to me and to other people. The composers and sound artists who inspired me are numerous (from Eliane Radigue to Knud Viktor to Zoviet France to Toshiya Tsunoda) with a lot of people in between) and can't be gathered into only one "genre" or aesthetic.

- What are the tools you use for your works? Is there a specific strategy when starting a new work?

Tools: microphones, recorders and headphones. Then processing, mixing and editing on computer systems. Strategy: just listening what's around me.

- New terms like phonograph, aural safari is being mentioned at mailing groups. Do you think that this interest towards will affect soundscape composition aesthetics today and in which way?

I'll recommend you to read my text for my personal opinion about that (Url-8).

- How does the French soundscape influence your compositions? What are the things that are unique to French soundscape?

I think that there is no "French" soundscape. It doesn't mean anything: do you think the soundscape of Paris suburbs, of the Mediterranean coast or the Alps, or the mass-agriculture fields have any similarity? I have lived near the Mediterranean Alps. During 10 years I was going weekly to a place called Col de Vence. This place is a plateau, with oak forests, very dry, covered with rocks. Planes from the international airport were flying above constantly. The sounds of this places, birds, insects,

planes, stags, and so on, with all these sounds, a listener would create a specific soundscape. Because of this soundscape, which is of low intensity, but with a tension, I was very inspired to make "Low Valley". So yes, this soundscape influenced me. Now that I am living in Taiwan, for sure there are some soundscapes that will influence my work.

### **Gilles Aubry (Switzerland)**

- There are some composers and colleagues who see soundscape composition as subgenre of musique concrete. What is your opinion on this matter?

I'd rather consider music concrete as a period of time corresponding to the pioneer years of (French) electroacoustic music, between the 40's and the 60's, with people like Pierre Schaeffer and Pierre Henry. This period seems to be over and I don't know if composers like Michel Chion, Jean-Michel Jarre(!) or Luc Ferrari – followers of Henry & Schaeffer – would still consider themselves as music concrète composers. I'm not a musicologist, so I can't give precise facts and dates about when exactly the term has appeared and when it ceased to be used officially. I know that people in the US were making more or less similar experiences under the name of 'tape music' at the same time. So I'd rather say that soundscape composition could honestly be called a sub-genre of electro-acoustic music, a term that is still valid today in its technological sense. An essential aspect of soundscape composition, as I understand it, is the reference to an existing... soundscape, or at least a specific context. That aspect could be identified as a major difference to concrète music that I believe was rather trying to liberate the sound from its original context, so that it become an independant object. Now I know that there are soundscape composition made out of entirely synthetic sounds, with no other referential context possible in terms of sound source, other than the machine that produced it. So it depends if the word soundscape refers to a sound source or to a formal organisation of sounds. Personally, I don't use the term soundscape composition much (neither musique concrète), except maybe in installative contexts. I recently made a sound installation in a museum and described it as a 'soundscape composition'. This is because there's a strong analogy to the term 'landscape' and this suggesting that one just have to sit down and listen, a kind of 'cinema for the ears'. The installation was visually very simple: 2 loudspeakers, 1 small spotlight and a few seats, the rest being just sound.

- What has changed in the soundscape composition during its 30 years?

This is again a musicologist question. To answer it would require analysing precisely a great deal of such works during that period of time. (also how to define them?) In any case, the evolution of technology during the last 30 years has influenced the composition of electro-acoustic works a lot: from tape machines & analog synthesizers to computer music, samplers, granular synthesis, audio editors, spectral processing, spatialization... On the esthetic level, my impression is that generally the compositions have become more abstract, maybe under the influence of the artifacts of computer music (clicks & digital noise).

- What are the tools you use for your works? Is there a specific strategy when starting a new work?

I use mainly Max/msp on my computer, but also good recording devices, Cubase and Audiosculpt. Since I've composed my piece Berlin Backyards, I've established for myself a working principle that emphasizes strongly the relationship between the sound recording and existing locations, places where people live and work. I've developed an empirical and subjective method of spatial investigation which is based on exploration, duration and concentrated listening in chosen places, but also on discussions and interviews with people who are using them. I still use this method for my newer projects, while adapting it when needed. I edit, loop, layer and filter the recordings extensively. However I try to avoid technical artifacts as they refer only to the technology they come from. I like to play at the border of abstraction and representation in order to challenge the listener and stimulate her/his imagination.

- In the last 10 years, there has been a growing interest towards field recording. New terms like phonograph, aural safari is being mentioned at mailing groups. Do you think that this interest towards will affect soundscape composition aesthetics today and in which way?

I guess there are some interaction between phonography and composition, yes. Francisco Lopez is one of the major figures illustrating this exchange process. I hope that phonography will contribute to raise interest for environmental and social issues by composers, as they experience the real world outside of the studio while recording.

- What are the similarities and differences between soundscape composition and site-specific sound/multimedia installation/sound sculpture?

To me the major difference between a composition and an installation has to do with the spatial organisation of sound. A composition happens in the neutral space of the studio, or in the virtual space of headphones. In this case, physical space and its acoustic specific qualities is not a parameter of the composition, with a very few exceptions.

A sound installation uses a specific physical space as a parameter to play with. Reflections, absorption, standing waves, room modes are empirically investigated and can be taken into account while making decisions during composing. Of course, additional visual elements may play an important role for an installation.



## **4. TECHNIQUES FOR THE ANALYSIS OF ELECTROACOUSTIC MUSIC**

According to New Grove Dictionary of Music and Musicians, musical analysis is the resolution of musical structure into relatively simpler constituent elements, and the investigation of the functions of those elements within that structure. Analysis is the means of answering directly the question “How does it work?”. Its central activity is comparison. By comparison it determines the structural elements and discovers the functions of those elements.

There are a few analysis methods for electroacoustic music such as the listening (favored by musicologists), genetic and computational.

### **4.1 Listening Analysis**

#### **4.1.1 Pierre Schaeffer and Typo-morphology**

The attention for the inner structure of sound finds its realization in the concept of sound object. In his research for a generalized solfege, Pierre Schaeffer defined the sound object as the element of study. The sound object is the correlate of a reduced listening, during which sounds are listened to for their intrinsic perceptual qualities, independently from their meaning or their origin. In a sound stream, any entity perceived as having its own internal properties and rules is considered as a sound object. In order to describe and classify sound objects, Schaeffer had to find criteria for comparing them in the context of reduced listening. Starting from rough classification and description, he built a sound typomorphology, in which sound objects are classified according to their morphological attributes into types. In his book “*Traite des objets musicaux*”, Schaeffer makes a catalog of sound objects through 5 operations: typology, morphology, characterology, analysis, and synthesis. Typology and morphology are complementary: morphology indicates the quality of sound (description: mass, harmonic timbre, grain, dynamics, allure, melodic profile, mass profile), typology classify it (according to some criteria: mass / facture,

duration / variation, equilibrium / originality). The building of this typomorphology is based on the pair of criteria shape/matter. Schaeffer defines the sound matter as what we would hear if we could freeze the sound, while the shape is related to the time evolution of this matter. These criteria were studied by listening to sounds with fixed matter, allowing studying the form, and sounds with fixed form. Varying sounds, in which both the form and the matter vary, are also studied through the variation criteria.

By refining the rough sound description and classification obtained through these two criteria, Schaeffer defined seven morphological criteria related to different perceptual dimensions emerging from reduced listening:

Matter criteria:

- Mass: related to the perception of the ‘pitchness’ of a sound, and then to its spectral distribution. Schaeffer defines four types of mass: pitched (fixed mass and identifiable pitch), complex (fixed mass and non-identifiable pitch), varying (pitched-varying or complex-varying, for small or organized variation) and nondescript (excessive and unpredictable variation).
- Harmonic timbre: the definition as a finer characterisation of the mass, often described by analogy to vision: bright/mat, round/sharp etc.
- Grain: defined as the microstructure of sound matter, such as the rubbing of a bow. Even though it has a temporal dimension, is a matter criterion. It is divided into three types: resonance grain, for non-sustained sounds (e.g. cymbal resonance), rubbing grain, for sustained sounds (e.g. bow or breath sounds) and iteration grain, for iterative sounds (e.g. drum roll).

Shape criteria:

- Dynamics: Schaeffer distinguished seven types of energy temporal evolution (none, low, shaped, impulse, cyclic, iterated and accumulated).
- Allure: amplitude or frequency modulation. Three types: mechanical (very regular), lively (flexible periodicity, revealing a living being) and natural (unpredictable).

Variation criteria:

- Melodic profile: variation of the whole mass (fixed mass, typically a melody played by a traditional instrument). There are nine types, according to the variation type

(“imperfect stability”, continuous or discontinuous variation) and speed (slow, medium or fast) and four classes, according to the profile shape (crescendo, delta, inverse delta, decrescendo).

- Mass profile: variation within the mass. There are three types of typical mass, according to the variation types described above, and four classes representing typical thickness evolution (from thin to thick, from thick to thin, thickening followed by thinning and thinning followed by thickening).

In Schaefferian theory, typo-morphology is the initial phase of the programme of musical research, which regroups as complementary the two procedures of typology and morphology: these actually constitute a stage of exploring, assessing and describing sound; whereas the two procedures of analysis and synthesis arise from an analysis and an exploitation of the musical capacities of the sound object. Thus, typo-morphology is a descriptive inventory that precedes musical activity.

The three tasks of typo-morphology are: identification, classification, and description.

- \* Identifying sound objects, that is, isolating them, cutting them into sound units.
- \* Then, classifying them into basic characteristic types.
- \* Finally, describing their characteristics in detail.

Typology takes care of the first two; morphology the third. (Paraphrase of Michel Chion (1983). *Guide des Objets Sonores*. Eds. Buchet/Chastel, Paris. 1995 translation by John Dack/Christine North.)

#### **4.1.2 Francois Delalande and Typomorphology**

From the 70's Francois Delalande deepens Schaeffer's approach. He makes auditory tests for analyzing perception of music. After testing the listeners, he analyzes data collected. Based on analysis of interviews with listeners, Francois Delalande, researcher at INA/GRM, has come up with suggestions for a number of listener behaviours, each of which is representative of different musical listening intentions that constitute widely different musical objects and interpretations. The present project can be seen as a specialized development of one of these listener behaviours,

that which has been termed “taxonomic listening”. Francois Delalande (1998, pp. 26-27) defines this listening behaviour in the following way:

Taxonomic listening is manifest through the listener’s tendency:

- To distinguish sufficiently large morphological units such as sections or chains and to make a mental list of them;
- To qualify these, but just enough to distinguish them from each other,
- To notice how these units are arranged in relation to one another,
- To try and memorize all this data.

This is a listening behaviour that leads to the most neutral perceptual image possible in the sense that the subjects who practice it aim: (1) to give a complete picture with little detail, a map on a large enough scale without distorting the design; (2) to parenthesize subjective characteristics which might affect the true image of the object... For these subjects... it is a canvas on which one will subsequently be able to plot more personal observations. It is conceived as a practical reference ... It is possible that these ideas of pictures, maps and score – graphic representations on paper – correspond to what happens in listening. Paper as a medium is associated with a double function: (1) a memory aid; (2) an analytical tool for laying out the relative nature of units. (Delalande, 1998, pp. 26-27).

Expanding upon Francois Delalande’s observation, it could be said that such a listening attitude would favour the observation of forms, e.g. the study of how identifiable smaller parts would integrate into greater wholes. In Aural Sonology we develop this listening intention in a systematic fashion. The musical phenomenon, and the aural investigation of it are generally divided into three levels:

- Level 1: sound objects i.e. single sound objects, analyzed in spectromorphologic terms.
- Level 2: elementary gestalts i.e. combinations of sound objects into small patterns.
- Level 3: form gestalts i.e. patterns of elementary gestalts.

Traditionally, music theory and analysis has taken for granted the nature of the sound objects being dealt with. However, it is clear that the pitched, stable sounds on which

traditional music theory are built is a special case in the larger world of sounds. The main focus of traditional theory has been a discussion of how pitched sound objects can be combined in scales, and chords and into larger compounds such as harmony progressions, etc., all of which are clearly level 2 phenomena. Studies of contemporary music are also largely concentrated on this level.

The focus of the Aural Sonology Project is on levels 1 and 3, with a clear emphasis on level 3. Thus the analysis of musical forms as heard, level 3, is the focus of the present article. This means that e.g. the harmonic structure of a piece will not be analyzed on its own terms, and will only be significant to the extent its effect is deemed relevant for the conception of an abstract formal model on level 3.

#### **4.1.3 Denis Smalley and Spectramorphology**

Spectromorphology is an approach to sound material and musical structures that concentrates on the spectrum of available pitches and their shaping in time. Spectromorphology is a descriptive tool based on aural perception. The term was coined by Denis Smalley in 1986. The two parts of the term refers to sound spectra and shaping through time. The spectra can not exist without the morphology: something has to be shaped and that something must have sonic content.

Denis Smalley states that analysis of electroacoustic music “has to start with the perceptual choices of the listener-analyst who selects pertinent criteria. I must acknowledge that each listener, including the analyst, will make an individual, maybe unique reading of a work, but I must also acknowledge that individual readings are variations springing from shared, acculturated, human perceptions and needs.”

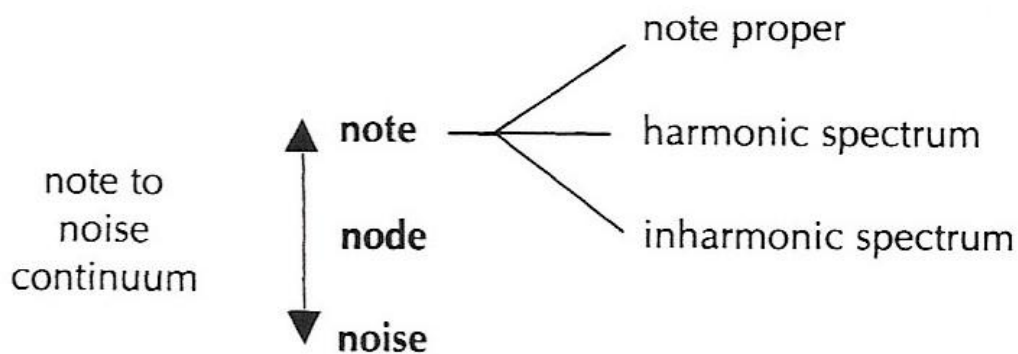
The theoretical framework of spectro-morphology is articulated mainly in four parts:

- 1- the typology of the spectra
- 2- morphology
- 3- motion
- 4- structuring processes

Spectral typologies

Smalley defines three different spectral typologies that exist in what he calls the noise-note continuum. This continuum is subdivided into three principal elements:

- 1- the noise.
- 2- the node (an event having a more complex texture than a single pitch).
- 3- the note, which is in turn subdivided into note, harmonic spectrum and inharmonic spectrum.

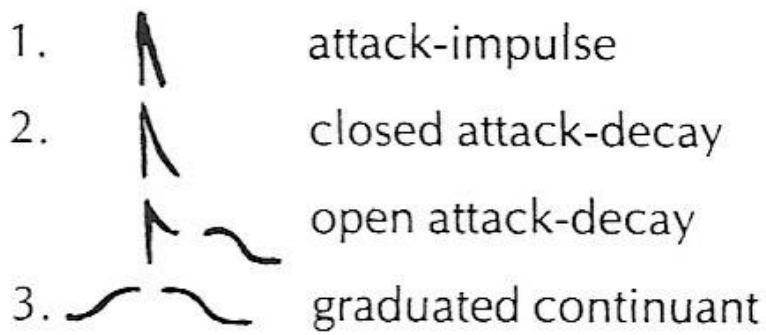


**Figure 4.1.3a** : Spectral typologies.

#### Morphological archetypes

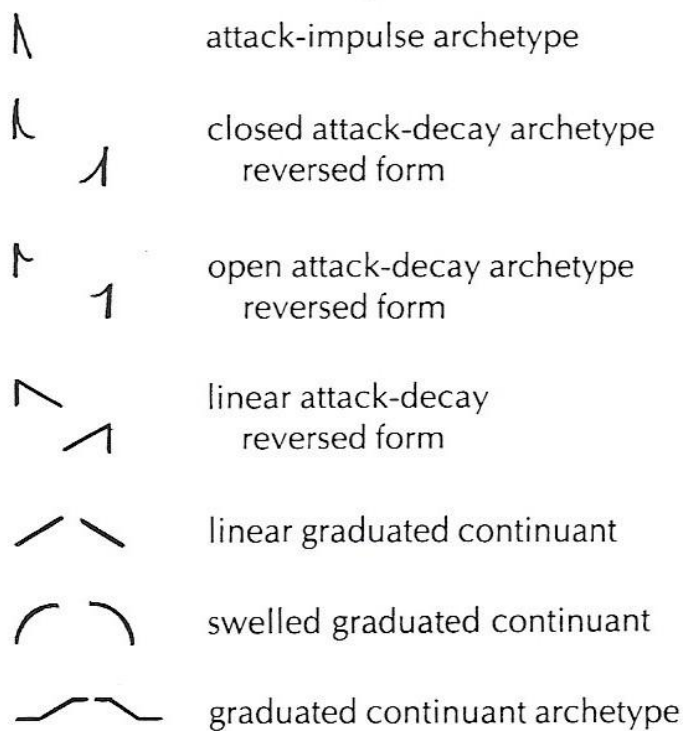
Smalley also designates different morphological archetypes:

- 1- attack-impulse - Modeled on the single detached note: a sudden onset which is immediately terminated. In this instance the attack-onset is also the termination.
- 2- attack-decay (closed and open) - Modeled on sounds in which the attack onset is extended by a resonance that quickly or gradually decays towards termination. The closed form represents a quick decay which is strongly attack-determined. The open form reflects a more gradual decay where the ear is drawn away from the formative influence of the attack into the continuing behaviour of the sound on its way to termination.
- 3- graduated continuant - Modeled on sustained sounds. The onset is graduated, settling into a continuant phase which eventually closes in a graduated termination. The onset is perceived as a much less formative influence than in the other two archetypes. Attention is drawn to the way in which the sound is maintained rather than to its initiation.



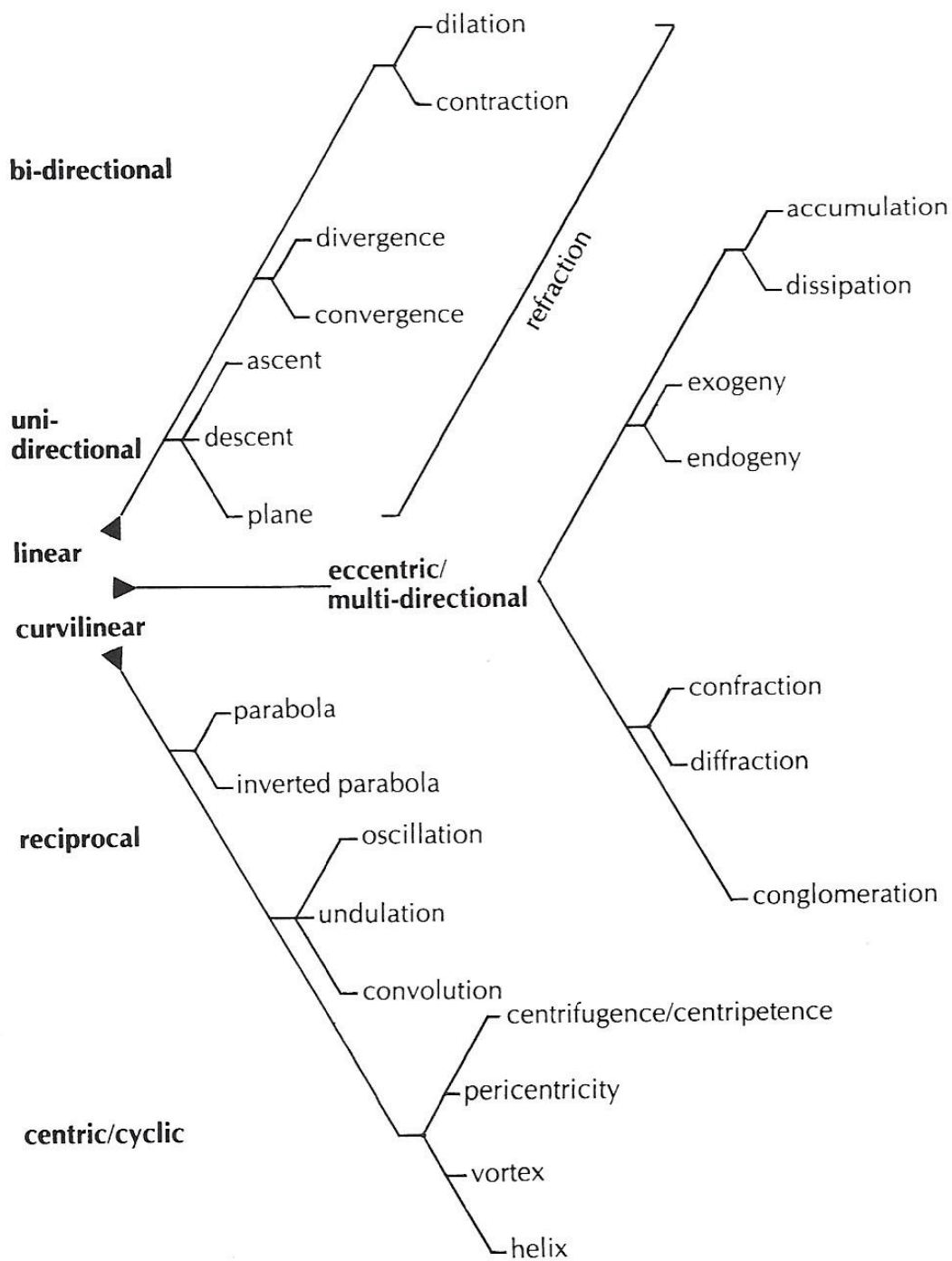
**Figure 4.1.3b** : Morphological archetypes.

Combination of the morphological archetypes can be extended into morphological models.



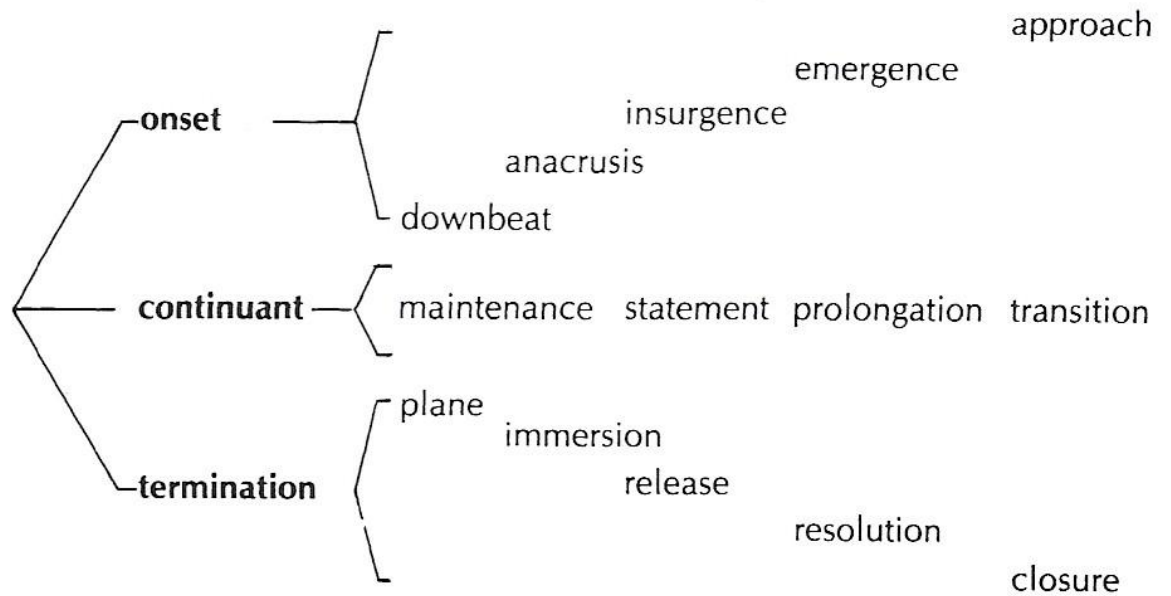
**Figure 4.1.3c** : Morphological models.

Motion typology is laid out in the Figure below. Five basic motion analogies represent the range of possibilities : unidirectional, bi-directional, reciprocal, centric/cyclic, and eccentric/multi-directional.



**Figure 4.1.3d : Motion typology.**

The three linked temporal phases of morphological design (onset, continuant and termination) can be linked as for structural functions.

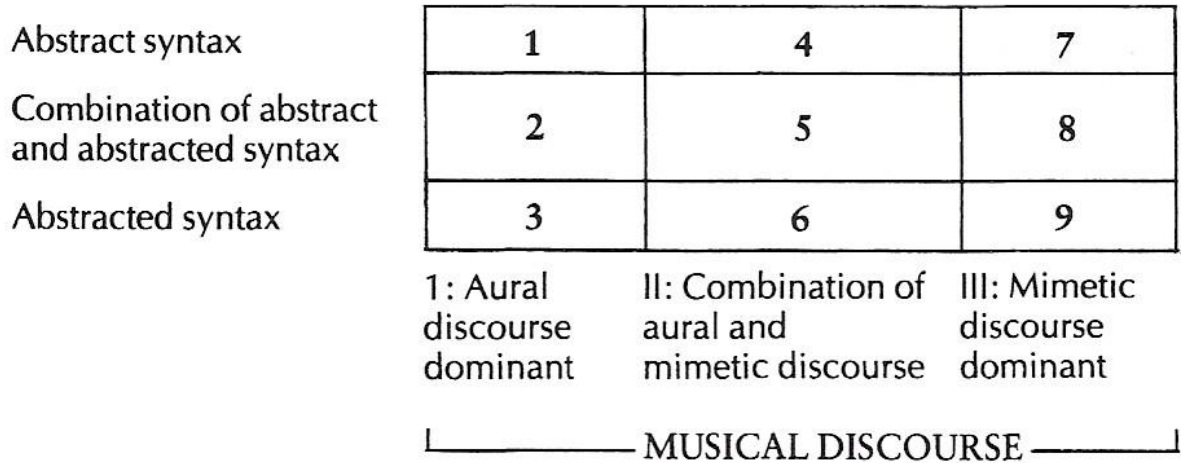


**Figure 4.1.3e** : Structural functions.

#### 4.1.4 Simon Emmerson and Syntax-discourse

Aural Discourse refers to conventional and familiar structuring and discursive musical attributes such as relationships and patterns of pitches and rhythms. Mimetic Discourse refers to the signifying potential of referential or extrinsic attributes of sound, being particularly pertinent to electroacoustic music that uses recorded sound as material. The pairing was proposed by Simon Emmerson, in 'The Relation of Language to Materials', Emmerson Simon, ed. (1986). *The Language of Electroacoustic Music* (Basingstoke: Macmillan Press), in which he proposes a continuum between the two.

Abstract Syntax refers to the manner in which compositional material may be organised according to formal principles, extrinsic to the sonic nature and characteristics of the material itself. Abstracted Syntax refers to the extraction of structuring principles according to what is perceptually perceived as of pertinence within the material itself.



**Figure 4.1.4 :** Syntax – discourse.

#### 4.1.5 Stephan Roy and Listening Analysis

In 2003 Stéphane Roy published a book devoted to Listening Analysis. The book is divided in two parts:

- 1) The first part presents various methods applied to electroacoustic music (Schaeffer, Jean-Jacques Nattiez, Christiane Ten Hoopen, Delalande, GRM works, Henri Chiarucci, Robert Cogan, Wayne Slawson, Francesco Giomi and Marco Ligabue, John Dack, Denis Smalley and Andrew Lewis);
- 2) The second part shows 5 paradigmatic analyses by Nicolas Ruwet, the generative analysis by Lerdahl & Jackendoff, the implicative methodology by L.B. Meyer, and Roy functional own analysis.

Roy’s approach is based on “l’analyse du niveau neutre” (abbreviated ANN – analysis of the neutral level, considering Nattiez’s definition). All analyses in the second part are applications of different methods to the same piece (“Points de fuite” by Francis Dhomont), and follow a description of their context, commencing with the creation of a score identified with the neutral level. Roy identifies some sound ‘unities’ of the piece. Its representation is bi-dimensional and corresponds to 2 main typologies of sound (the third is a sub-genre of the second). Internal morphology of sounds can be periodic, sound-noise, and complex (noise).



**Figure 4.1.5** : Stephan Roy's typology of sounds for the ANN (Roy, 2003).

With his analysis, Roy shows the so-called Functional Grid with symbols of 45 functions classified in 4 main categories (orientation, stratification, process, rhetoric). The goal is to comprehend the musical unities pertinent for the ANN analysis of a musical work.

#### **4.1.6 Spectograms**

With their book "New images of musical sound" (1984) Robert Cogan and Pozzi Escot used spectrograms for analysis, as a description of the realization process rather than perceptual.

#### **4.1.7 Multimedia Representations**

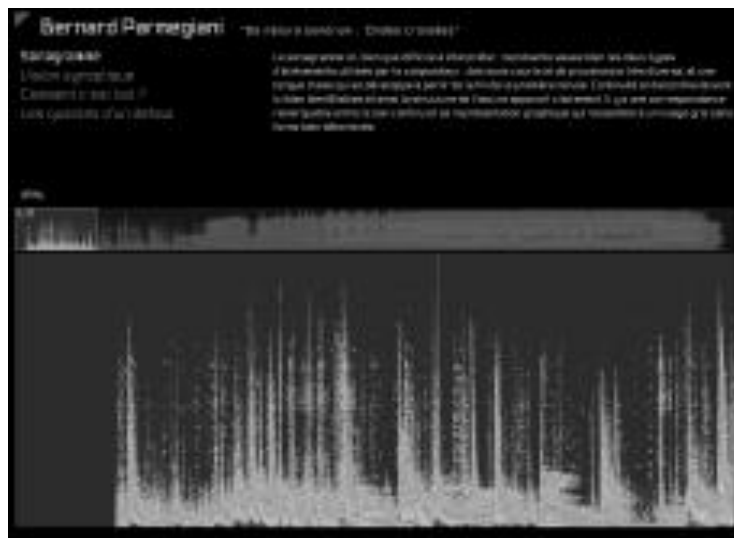
From the 1950's programs such as "Acousmographe" (designed by GRM), "Écoutes signées" (developed by IRCAM), "Portraits Polychromes" (developed by INA-GRM) have been used for the multimedia representation of electroacoustic music analysis.

Acousmographe is a program for the annotation of electronic music designed by the 'Groupe de Recherche Musicale' in Paris. This program displays the waveform and a sonogram that can be indexed and annotated by the user. The main feature is the possibility to manually add a graphical symbolic representation to represent a segment selected by the user. Recently, an algorithm that retrieves segments perceptually similar, to speed up the annotation, has also been integrated.

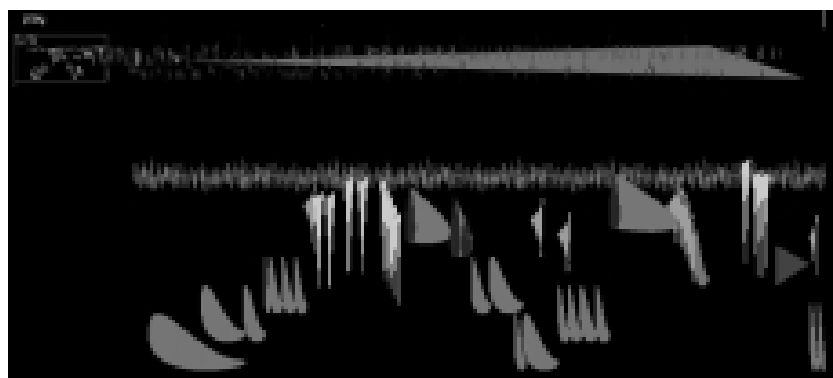
"Écoutes signées" is a project developed at Ircam in Paris since 2003. It aims at formalizing listening praxis and develops general computer tools for helping musical listening; it is thought in particular for electroacoustic music. A "signed listening" is a hypermedia product which aims at making a personal and original way of listening transmissible by suggesting types of graphic and acoustic representations and manipulations of music based on a preexisting listening practice. The ultimate goal

of the project is to develop a generalized tool of computeraided auditory exploration that will facilitate and deepen an organized listening of sound in all its diversity.

INA-GRM is still developing the project “Portraits Polychromes”, with on-line materials and edited books devoted to avant-garde composers, their musical role and works. Between them there are electroacoustic composers such as: François Bayle, Ivo Malec, Bernard Parmegiani, Gilles Racot, Jean-Claude Risset, Luc Ferrari and John Chowning. Recently GRM published the interactive CD-ROM “La musique électroacoustique”, presenting the analysis of 6 works by composers themselves and 11 examples of qualified listeners. The CD-Rom shows different approaches from the aesthetic approach (listening) to the poietic approach (genetic).



**Figure 4.1.7a** : The opening of Bernard Parmegiani’s “De natura sonorum”.



**Figure 4.1.7b** : Bernard Parmegiani’s “De natura sonorum” analysis.

## **4.2 Genetic Analysis**

This type of analysis studies the compositional process, or uses computer data as objective material to be analyzed. One of the first studies was Lorrain's analysis of "Inharmonique" by Jean Claude Risset.

## **4.3 Computational Analysis**

Computational analysis exploits the ability of a computer to analyze sounds and recognize patterns within a musical piece in a perceptually and musically meaningful manner. This discipline dates back to the 1970's. From the 1990's, research has been done more on Music Information Retrieval Studies, whose goal is to extract characteristics of sound and to discard irrelevant aspects of it. (different steps of analysis consist in pre-elaborating the sound with noise reduction, equalization, etc.; selecting frames, extracting characteristics, post-elaborating). The main problem computational analysis encounters, is the fact that electronic sounds have heterogeneous properties that are very different to regular instrumental harmonic sounds. Electronic sounds are not coded (they depend from the system), they have not a natural perceptive characteristic (except for sampled sounds) their behaviour is not regular and sometimes they rather seem (according to analytical community) to be objects to be consider in their unity rather than in their internal spectral change.

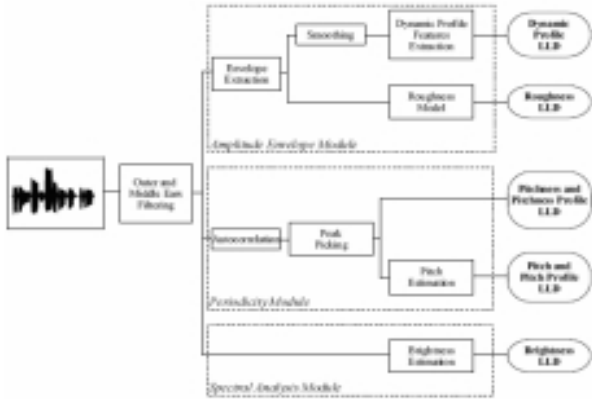
### **4.3.1 Music information retrieval and electroacoustic music**

Music Information Retrieval (MIR) is an interdisciplinary research area which has grown out of the need to manage various digital collections of music and to develop rational methods for managing, preserving, accessing, researching this type of musical material. Stephen Downie identifies seven facets of music and notes having a significant effect on how systems can retrieve music. These are pitch, temporal, harmonic, timbral, editorial, textual and bibliographic.

### **4.3.2 Description, segmentation, classification**

Julien Ricard's description of sounds is similar to the concept of typo-morphology by Pierre Schaeffer. Each sound is given a numerical value or a category: subjective duration, loudness, pitch, roughness, dynamic profile, attack, brightness and other (metallicness, richness etc). From this classification, the characteristics of each sound

are extracted and a complex scheme for the morphological description of sound objects is traced.



**Figure 4.3.2 :** Diagram of the morphological description system(Ricard 2004).

## **5. ANALYSIS OF FIVE DIFFERENT WORKS FROM FIVE DIFFERENT CONTINENTS**

### **5.1 Hildegard Westerkamp “Beneath the Forest Floor” – 1992 ( Canada, North America) for two digital soundtracks, length: 17’ 23”**

Hildegard Westerkamp’s work “Beneath the Forest Floor” is a composition based on the sounds of frogs, bird calls, bird wings flapping across a body of water in British Columbia, Canada. It is a piece that both evokes the atmosphere, soundscape of the forest and invites the listener to think about the acoustic ecology.

This work was used as a part of the soundtrack for the movie “Elephant” by Gus Van Sant.

The program note for the piece is as follows:

“Beneath the Forest Floor” is composed from sounds recorded in old-growth forests on British Columbia's westcoast. It moves us through the visible forest, into its' shadow world, its' spirit; into that which effects our body, heart and mind when we experience forest.

Most of the sounds for this composition were recorded in one specific location, the Carmanah Valley on Vancouver Island. This old-growth rainforest contains some of the tallest known Sitka spruce in the world and cedar trees that are well over one thousand years old. Its' stillness is enormous, punctuated only occasionally by the sounds of small songbirds, ravens and jays, squirrels, flies and mosquitoes. Although the Carmanah Creek is a constant acoustic presence it never disturbs the peace. Its' sound moves in and out of the forest silence as the trail meanders in and out of clearings near the creek. A few days in the Carmanah creates deep inner peace - transmitted, surely, by the trees who have been standing in the same place for hundreds of years.

“Beneath the Forest Floor” is attempting to provide a space in time for the experience of such peace. Better still, it hopes to encourage listeners to visit a place

like the Carmanah, half of which has already been destroyed by clear-cut logging. Aside from experiencing its huge stillness a visit will also transmit a very real knowledge of what is lost if these forests disappear: not only the trees but also an inner space that they transmit to us: a sense of balance and focus, of new energy and life. The inner forest, the forest in us.

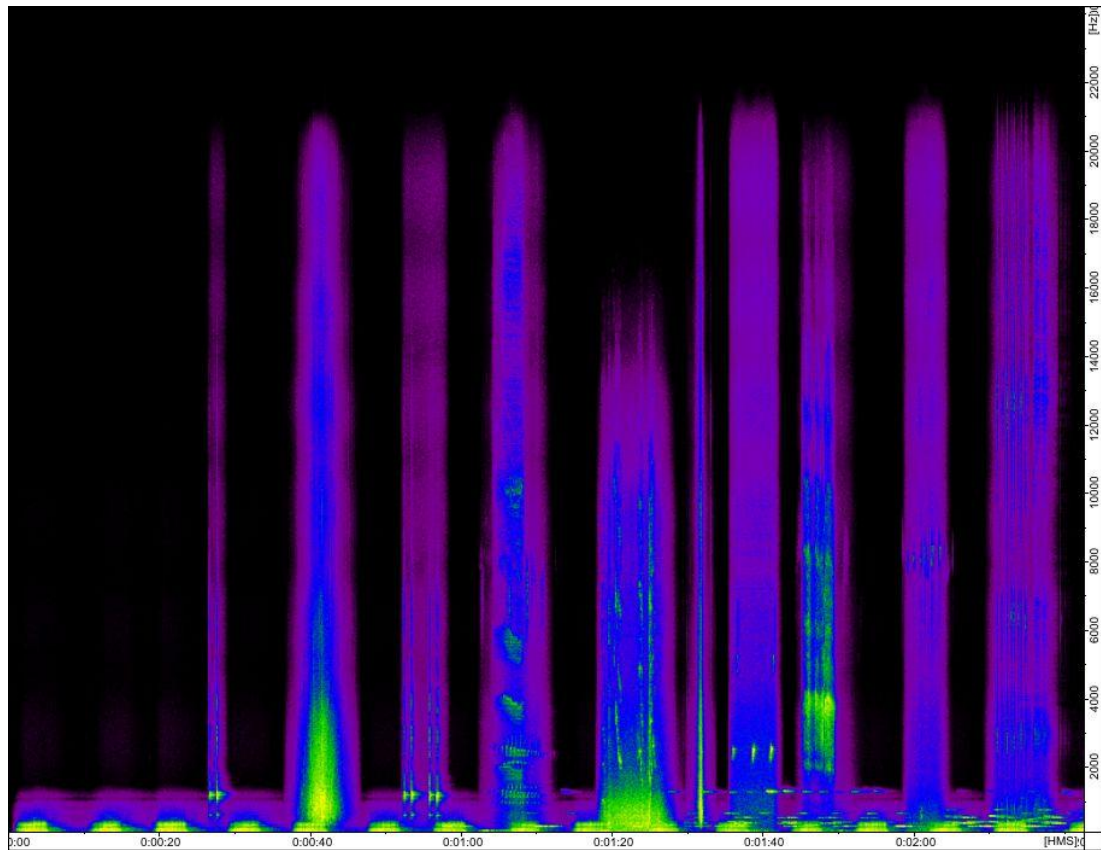
“Beneath the Forest Floor” was commissioned by CBC Radio for Two New Hours and was produced in CBC's Advanced Audio Production Facility in Toronto with the technical assistance of Joanne Anka and Rod Crocker. Thanks to Norbert Ruebsaat for providing his recordings of an adult raven and a young raven from Haida Gwaii. All other recordings were made by myself mostly in the Carmanah Valley on Vancouver Island, as well as in forests near Cowichan Lake on Vancouver Island, on Galiano Island and in Lighthouse Park near Vancouver. All sounds were recorded throughout the summer of 1991. Thanks to Peter Grant for assisting in much of the recording process. Special thanks go to David Jaeger, producer of Two New Hours for making this possible and for giving me the opportunity to work in the above-mentioned all-digital facility at CBC Radio, Toronto.

“Beneath the Forest Floor” received a mention at Prix Italia 1994 and was recommended for broadcast by the International Music Council's Rostrum of Electroacoustic Music in 1992.”

Besides this program note, Westerkamp also talked about the approaches, techniques she used for the recording and composition phase of the piece. Here is what she said about the recording process for an interview done by Katharine Norman: “When I was doing “Beneath the Forest Floor” I went to Lighthouse Park to see whether I could get some supplementary recordings. I already had all these things from the Westcoast, from the real rainforest. And one day I thought I would go to Lighthouse Park and just see what's there, maybe some squirrels. But the Westcoast forests are so quiet that you actually don't get that many sounds. But they're there - the squirrels are definitely there. And sure enough there was a squirrel. But I what I also found was a group of small, sort of wren-like birds feeding on these roots here and I was probably only a foot away from the microphone, and from them. They were fluttering about and while they were doing that, they were also peeping. I used those sounds, of the peeping, in what was at that time the quietest spot in the park that I

knew. (There were no seaplanes) When I slowed those down, they became part of a sort of very beautiful pitched environment at the end of “Beneath the Forest Floor”.

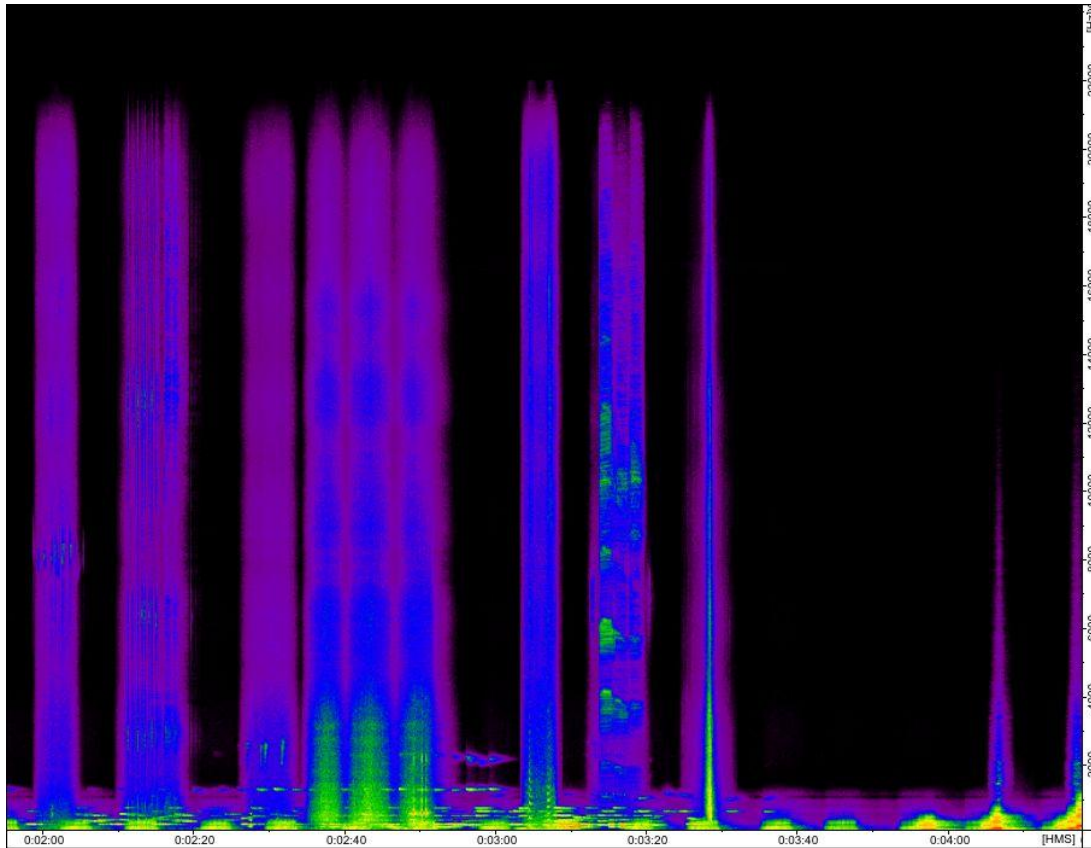
The whole piece was analyzed by using the program Acousmographie 3.4. The piece was divided into 2 minute excerpts and then spectral analysis was done on these specific excerpts.



**Figure 5.1a :** Spectral analysis “Beneath the Forest Floor” 0’00’’- 2’00’’.

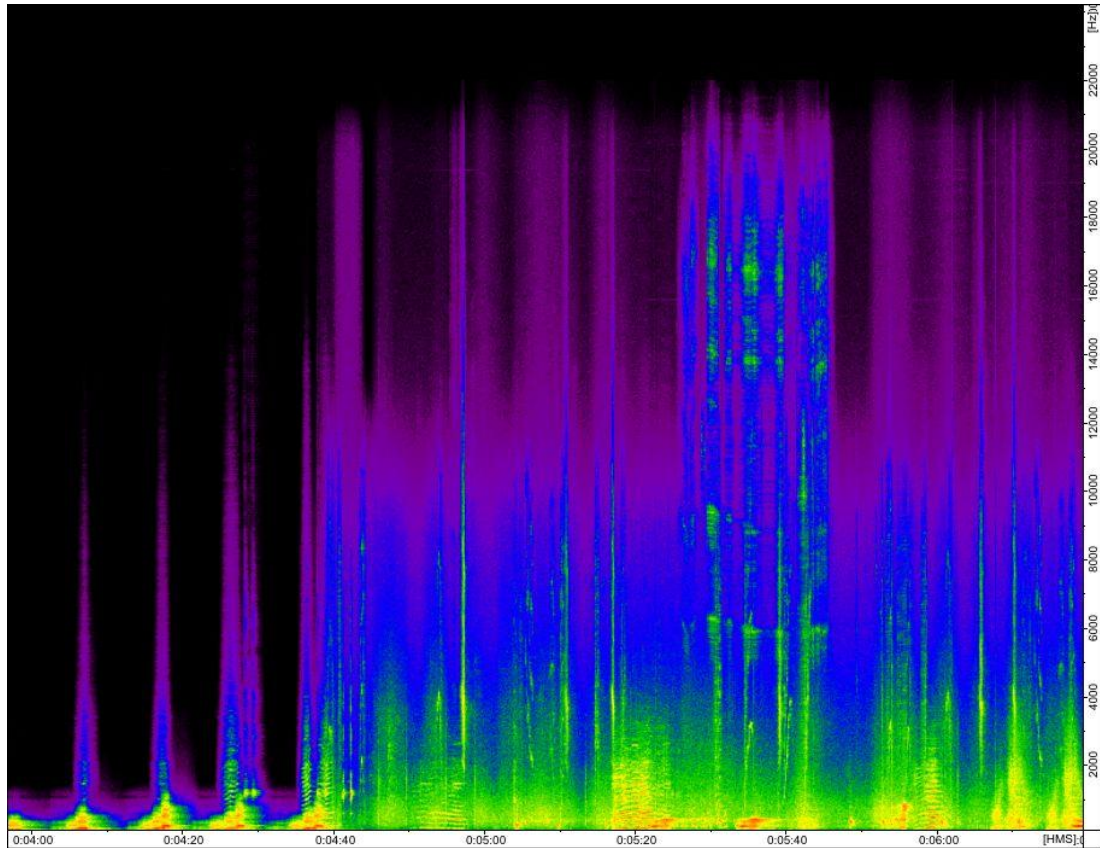
The piece starts with a pitchshifted rhythmic figure. This figure is repeated three times, and then we hear a bird call right at 0’26’’. Between 0’36’’ and 0’46’’ we hear the sound of water panned slowly from left to the right. Between 0’52’’ and 0’58’’ the sound of the bird call is repeated with a variation. At 1’ 03’’ we hear the sound of the forest and an electronic tone most probably created by processing the bird call. The sound of a creaking door is like a welcome to the soundscape that we are moving into. At 1’33’’ we hear a very fast panned sound of water. This is an interesting technique because until this moment all of the textural and spatialization elements were in slow change, whereas right at that moment this fast panning is like a warning of a world we are heading into. Until 2’00’’ the pitchshifted figure is

repeated. It is interesting to note that the spectral content of the forest looks like different trees on the spectral analysis.



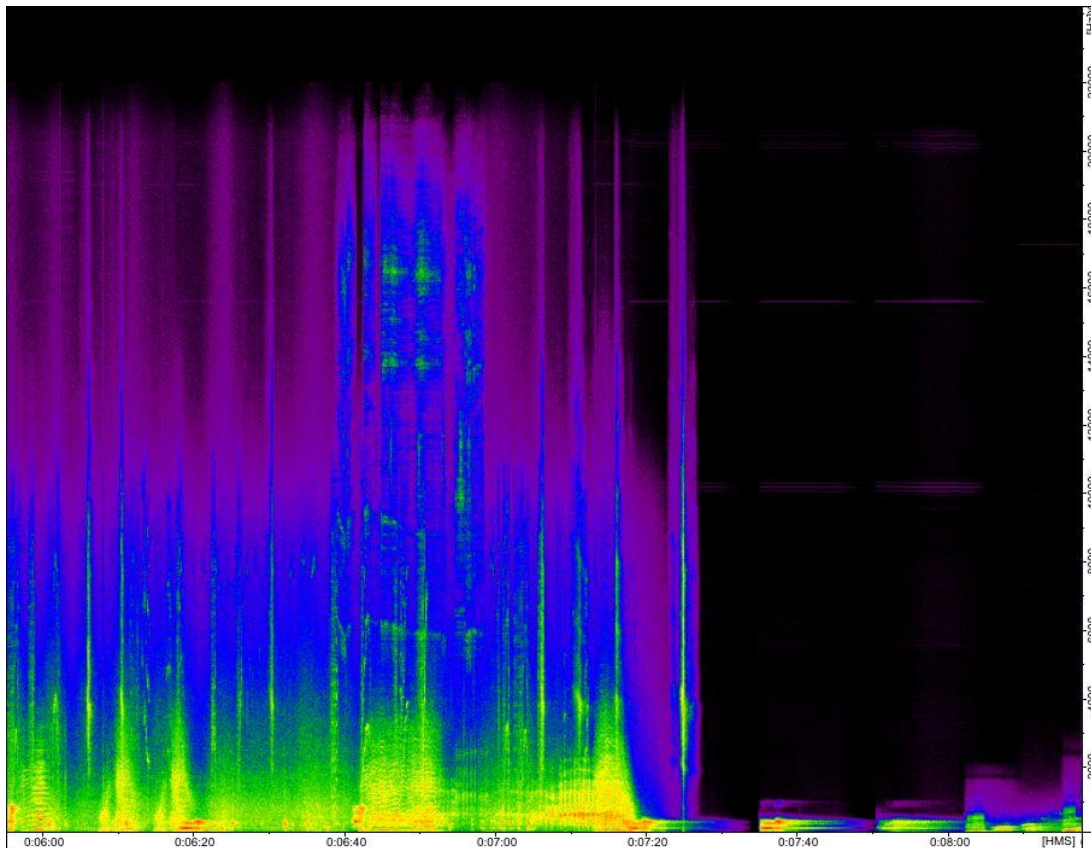
**Figure 5.1b** : Spectral analysis “Beneath the Forest Floor” 2’00’’- 4’00’’.

The volume of the melodic line gets higher between 2’00’’ and 4’00’’. The various sounds of the forest are heard during this section. One of the interesting points is the repeated element between 2’35’’ and 2’50’’. The sound of the water is repeated three times, each time with a slight change in volume, eq. At 3’25’’, the fast panned figure repeated again. It is the opening of a new section. Until 4’00’’ the pitchshifted figure is repeated, right at 3’56’’ another pitchshifted rhythmic figure is heard on along with that.



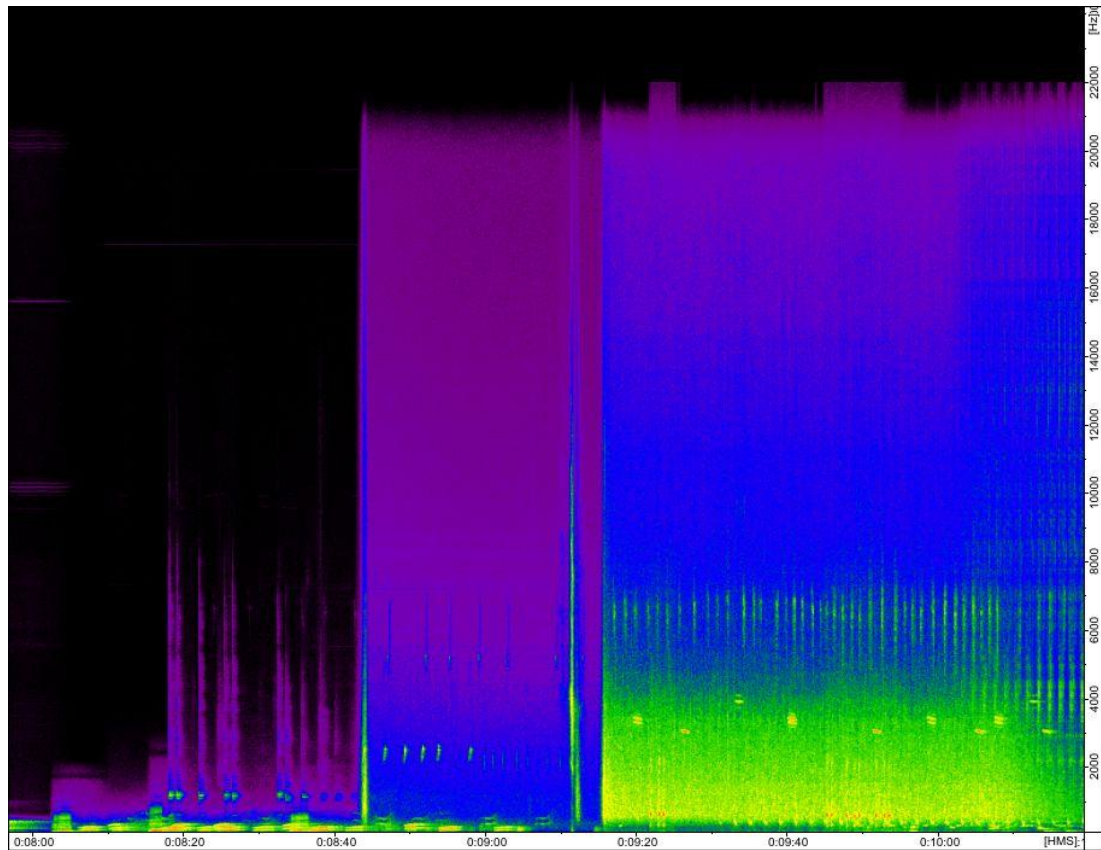
**Figure 5.1c** : Spectral analysis “Beneath the Forest Floor” 4’00’’- 6’00’’.

Between 4’00’’ and 4’30’’, the new pitchshifted figure is repeated three times. At the third repeat, we notice that one of the sounds heard within this element is the sound of a treecutter. Between 4’35 and 6’00’’, we hear the sound of the tree cutter in various panned and reverb environments besides the crackling door, other forest sounds. This section is where the first pitchshifted figure is not heard anymore. Also the general form of the piece changes from a sparse, minimalist approach to a dense texture. Starting from 4’35’’, this can be called the second section of the piece, a dark, more dramatic one.



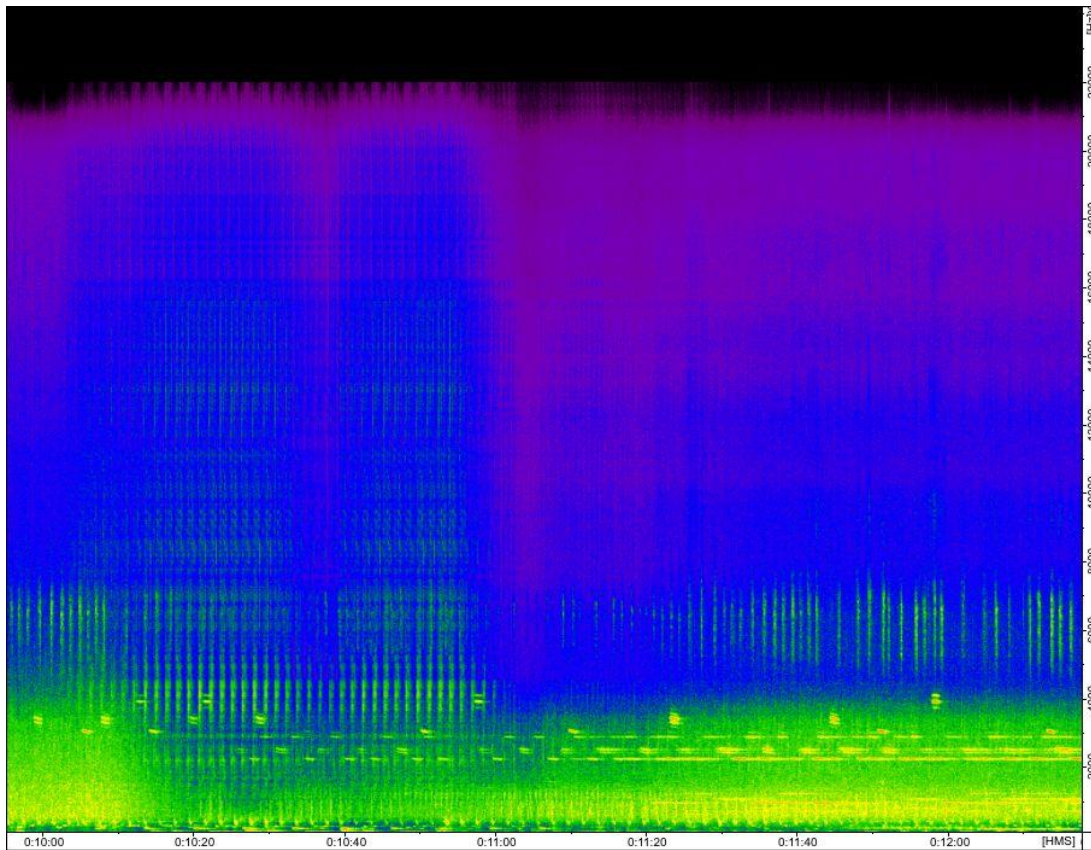
**Figure 5.1d** : Spectral analysis “Beneath the Forest Floor” 6’00’’- 8’00’’.

The dense texture within this section continues until 7’30’’. Within this section, we continue to hear the sound of the treecutter, crackling door, bee, fly and various forest sounds. The background sound all through this section is the sound of a waterfall. Also it is interesting to note that the fast panned water figure is repeated here again, but now with the panned setting reversed. Between 7’15’’ and 7’18’’ the sound of the treecutter is pitchshifted down fast. Right that moment indicates the ending of this section. There is a 3 second silence at 7’32’’. Between 7’35 and 8’00’’, we hear the sound the pitchshifted melodic figure, now with a darker textural color.



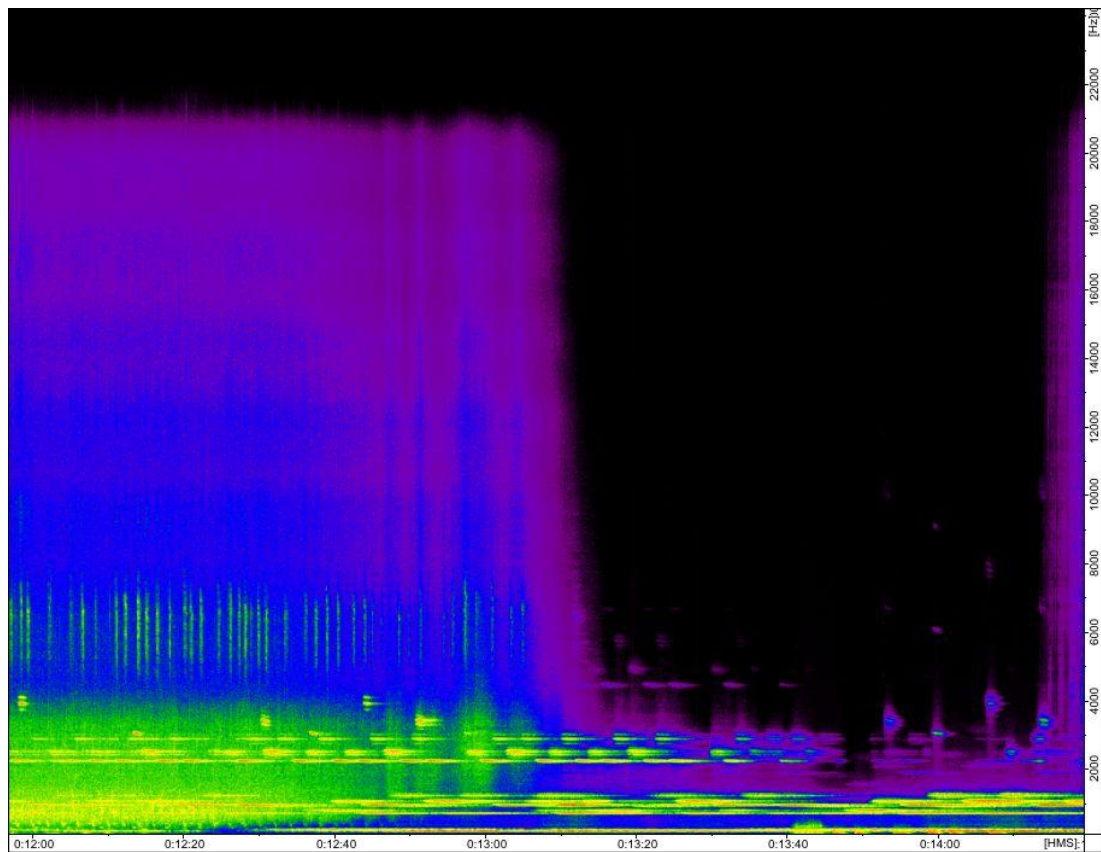
**Figure 5.1e** : Spectral analysis “Beneath the Forest Floor” 8’00’’- 10’00’’.

Right at 8’00’’, the varied pitchshifted figure is heard again. During this section, we hear now the counterpoint between the pitchifted low rhythmic figure and the low mid heavy texture. Right at 8’44’’, the sounds of the bird call and water are heard along with the elements mentioned above. It is the starting point for a crescendo. The pitchshifted figure and the textural element is treated with an analog delay with a setting of approximately 350 ms during this section. Right at 9’15’’, the sound of the water fall is heard with a high volume level. This is clearly an abrupt change that indicates a section change. Between 9’30’’, and 10’00’’ another rhythmic figure is introduced which constantly changes panningwise.



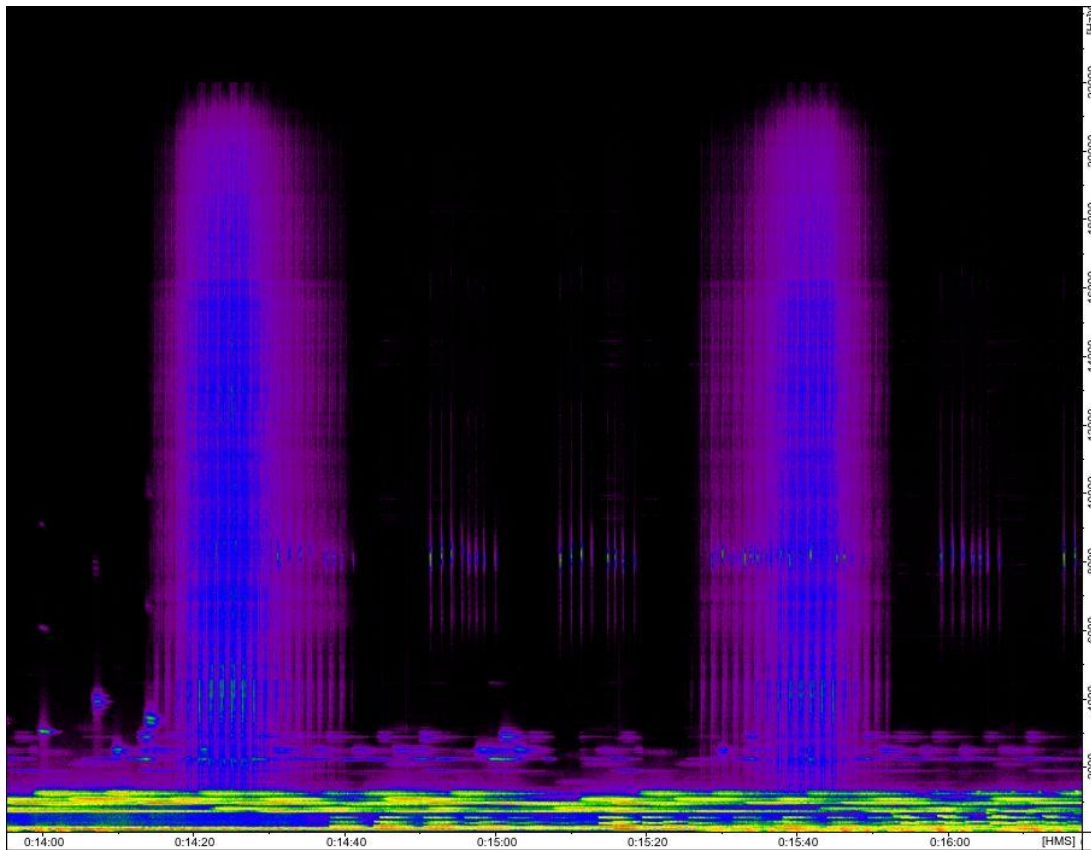
**Figure 5.1f :** Spectral analysis “Beneath the Forest Floor” 10’00’’ - 12’00’’.

The dense textural section continues until 12’00’’. Between 10’00’’ - 12’00’’ different rhythmic figures based on the processed sounds of the forest are heard. Also during this moment, the high pitched melodic lines are heard. These lines are mostly moved in stepwise, in seconds and thirds.



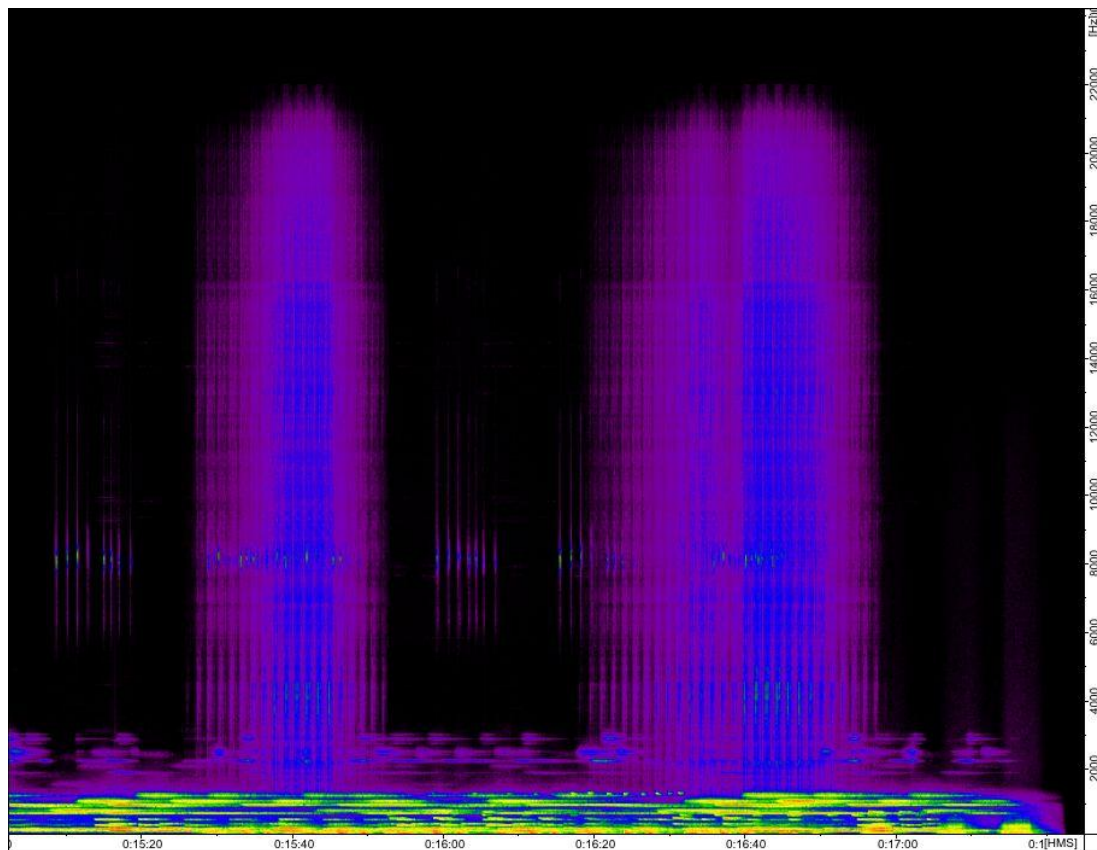
**Figure 5.1g :** Spectral analysis “Beneath the Forest Floor” 12’00’’- 14’00’’.

Between 12’00’’ and 13’00’’ the dense textures continue. Starting from 12’40’’ the sounds of waterfall, forest are decreased to the level of zero. Between 13’20’’ and 14’00’’, the varied processed melodic lines are heard. These lines consist of two high pitched, one mid pitched and low pitched ideas. At 13’40’’ the pitchshifted rhythmic figure that was heard right at the beginning of the piece is heard again. This is the starting point for the coda section.



**Figure 5.1h** : Spectral analysis “Beneath the Forest Floor” 14’00’’- 16’00’’.

Between 14’00’’ and 16’00’’ the coda section continues. At 14’ 15’’, we hear the sound of the water, but now with a high pass filter. During this section, we hear occasional bass lines which was created by the processing one of the recorded sounds in the forest. At 14’38’’, the pad like element is heard. Its pitch and pan is modulated through time. At 15’35’’ the bass line is heard again along with the highpass filter water sound. Together they cover the lowest and highest frequency range of the piece at this moment.



**Figure 5.1i** : Spectral analysis “Beneath the Forest Floor” 16’00’’ - 17’23’’.

Between 16’00 and 17’23’’, the processed melodic lines are being heard. Between 16’30’’ and 16’50’’ the overall level goes to a crescendo. During this section, the only unprocessed sounds we hear are the sounds of water and birdcall. Between 17’00 and 17’23’’ the overall level is faded out. During this last 23 seconds, we only hear the processed sounds including the pitchshifted figure that started the piece and the mid and high pitched melodic ideas.

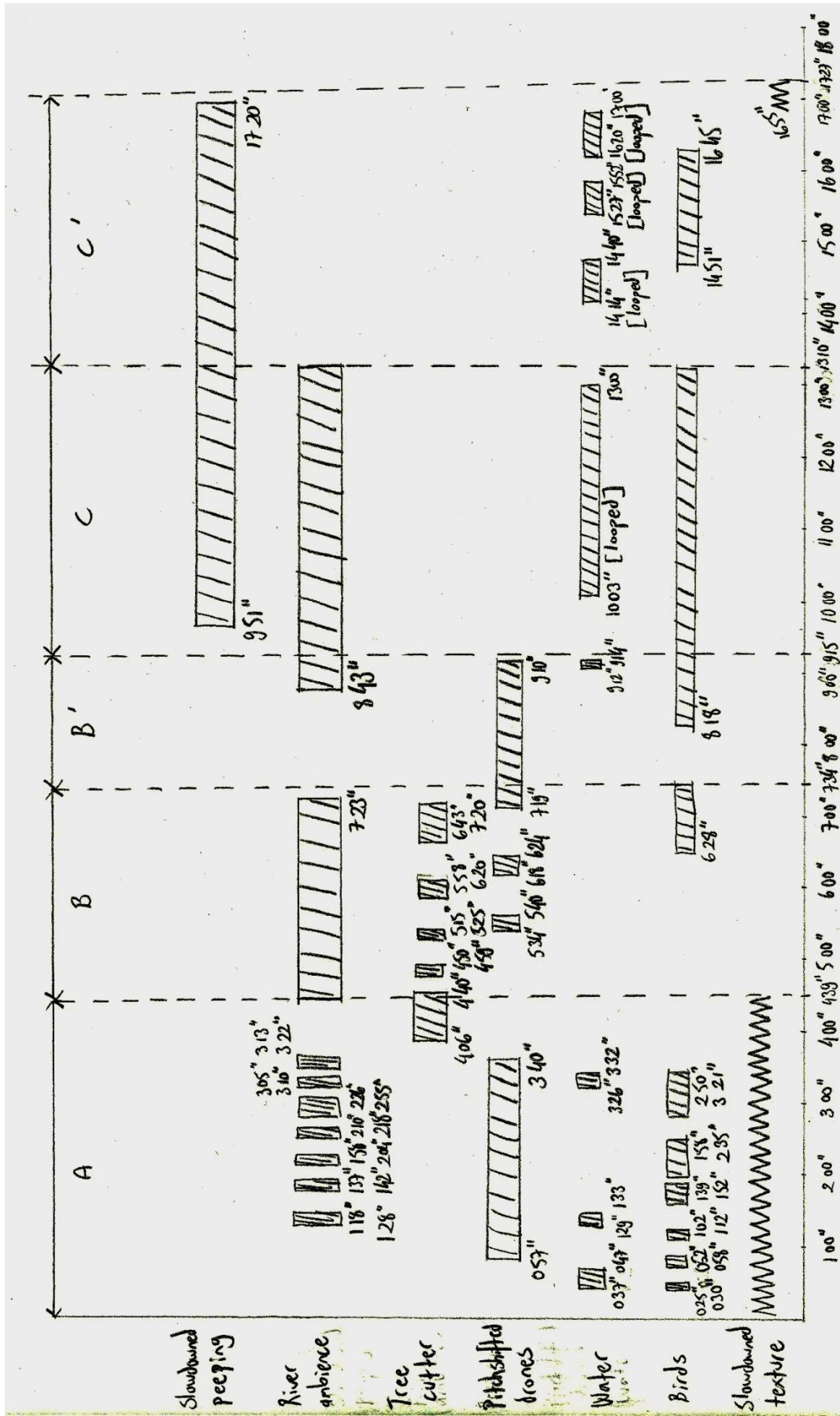


Figure 5.1j : Formal analysis – graphic score “Beneath the Forest Floor”.

## **5.2 Ros Bandt “Thrausmata” – 1997 (Australia) Electroacoustic tape piece in seven movements, length: 24’08”**

Ros Bandt’s piece “Thrausmata” is an example of sonic archeology with its created, imagined sound worlds and ancient texts.

It was premiered 30th of May 1998. It was made in Cologne during August 1996 and December 1997. It represented Australia for the International Society of Contemporary Music in Bucharest in 1999.

Producers: Klaus Schoning and Ros Bandt

Sound engineering: WDR Studios Clologne, Benedikt Bitzenhofer

Voices: Arthur McDevitt (Ancient Greek text readings), Ros Bandt (Woman’s voice)

Performer: (Renaissance recorder, slide whistle, medieval psaltery, sampler, vocoder, Fairlight) Ros Bandt

Soundscape recordings for this work were made over a 5 year period at the Mediterranean sites where the texts were first uttered, Olympia, the shores of the Aegean Sea, Delphi, Santorini, Mycenae, Eressos.

The program note for the piece is as follows:

“Thrausmata is seven different renderings of six fragments of ancient Greek texts chosen by the composer for their enduring subjects of love, hospitality, war, sport, sexuality, philosophy and atomic theory. The Sappho text has two different renderings, one in female voice and the other in male. The language is alive in the readings, a rare concurrence in the twenty-first century. Much of the meaning would not be apparent if it weren’t sounded in the authentic voice.

Each fragment is interpreted from the actual utterance of the ancient Greek text itself. Key words and phrases were treated by a variety of new and old technologies including the Fairlight, the vocoder, the ring modulator, the sampler, the computer and the mixing desk. New and virtual instruments were made to simulate the ancient extinct instruments of the period; the seven-string lyre and the water organ, and to make new relationships, the text driving the instrument and the sampler redistributing the text. Each fragment is a new interpretation of the original meaning

and tries to convey this, whether it is linguistically decipherable or not. The essence of the context, the tone of voice and the narrative convey enduring feelings common to every generation and language, so powerful are the texts of these works. They transcend the English translations which can be helpful cues in appreciating their richness.

This re-sounding provides an opportunity to try to catch some of the spoken phonemes as they roll through the centuries emanating from a world which has almost slipped beyond our reach. *Thrausmata* catches some of these moments in the net of time.”

The piece is divided into seven movements. The names of these movements are as follows:

1. Parmenides Fragments 1&5
2. Homer Iliad XI 618-652
3. Sappho Fragment 1, Realisation 1
4. Bacchylides Ode 5 16-49
5. Sappho Fragment 1, Realisation 2
6. Euripides Hippolytus 1199-1233
7. Democritus Fragment 9 (DK 68A, 128)

The texts in these individual movements are as follows:

1. Parmenides Fragments 1&5

“The steeds that carry me took me as far as my heart could desire, when once they had brought me and set me on the renowned way of the goddess, who leads the man who knows through every town. On that way was I conveyed; for on it did the wise steeds convey me, drawing my chariot, and maidens led the way. And the axle blazing in the socket – for it was urged round by well-turned wheels at each end-was making the holes in the naves sing, while the daughters of the Sun, hasting to convey me into the light, threw back the veils from off their faces and left the abode of night. There are the gates of the ways of Night and Day, fitted above with a lintel and below with a threshold of stone. They themselves, high in the air, are closed by mighty doors, and avenging Justice controls the double bolts. Her did the maidens

entreat with gentle words and cunningly persuade to unfasten without demur the bolted bar from the gates. Then, when the doors were thrown back, they disclosed a wide opening, when their brazen posts fitted with rivets and nails swung in turn on their hinges. Straight through them, on the broad way, did the maidens guide the horses and the car. And the goddess greeted me kindly, and took my right hand in hers, and spoke to me these words.

Welcome, o youth, that comest to my abode on the car that bears thee, tended by immortal charioteers. It is no ill chance, but right and justice, that has sent thee forth to travel on this way. Far indeed does it lie from the beaten track of men. Meet it is that thou shouldst learn all things, as well the unshaken heart of well-rounded truth, as the opinions of mortals in which is no true belief at all. Yet none the less shalt thou learn these things also-how the things that seem, as they all pass through everything, must gain the semblance of being. It is all one to me where I begin; for I shall come back there again in time.”

## 2. Homer Iliad XI 618-652

“Now when the others came to the shelter of the son of Neleus, they themselves dismounted to the prospering earth, and the henchman Eurymedon unharnessed the horses of the old man from the chariot. The men wiped off the sweat on their tunics and stood to the wind beside the beach of the sea, and thereafter went inside the shelter and took their places on settles. And lovely-haired Hekamede made them a potion, she whom the old man won from Tenedos, when Achilles stormed it. She was the daughter of great-hearted Arsinoos. The Achaians chose her out for Nestor, because he was the best of them all in counsel.

First she pushed up the table in front of them, a lovely table, polished and with feet of cobalt, and on it she laid a bronze basket, with onion to go with the drinking, and pale honey, and beside it bread, blessed pride of the barley, and beside it a beautifully wrought cup which the old man brought with him from home. It was set with golden nails, the eared handles upon it were four, and on either side there were fashioned two doves of gold, feeding, and there were double bases beneath it. Another man with great effort could lift it full from the table, but Nestor, aged as he was, lifted it without strain. In this the woman like the immortals mixed them a potion with Pramneian wine, and grated goat’s milk cheese into it with a bronze grater, and scattered with her hand white barley into it. When she had got the potion

ready, she told them to drink it, and both when they had drunk it were rid of their thirst's parching and began to take pleasure in conversation, talking with each other, and Patroklos came and stood, a godlike man, in the doorway. Seeing him the old man started up from his shining chair, and took him by the hand, led him in and told him to sit down, but Patroklos from the other side declined and spoke to him:

No chair, aged sir beloved of Zeus. You will not persuade me. Honoured and quick to blame, is the man who sent me to find out who was this wounded man you were bringing. Now I myself know, and I see it is Machaon, the shepherd of the people. Now I go back as messenger to Achilleus, to tell him.”

### 3. Sappho Fragment 1, Realisation 1

“Richly-enthroned immortal Aphrodite, daughter of Zeus, weaver of wiles, I pray to you: break not my spirit, Lady, with heartache or anguish;

But hither come, if ever in the past you heard my cry from afar, and marked it, and came, leaving your father's house,

Your golden chariot yoked: sparrows beautiful and swift conveyed you, with rapid wings a-flutter, above the dark earth from heaven through the mid-air,

And soon they were come, and you, Fortunate, with a smile on your immortal face, asked what ails me now, and why I am calling now,

And what in my heart's madness I most desire to have: Whom now must I persuade to join your friendship's ranks? Who wrongs you, Sappho?

For if she flees, she shall soon pursue; and if she receives not gifts, yet shall she give; and if she loves not, she shall soon love even against her will.

Come to me now also, and deliver me from cruel anxieties; fulfill all that my heart desires to fulfill, and be yourself my comrade-in-arms.”

### 4. Bacchylides Ode 5 16-49

“As the eagle, messenger of Zeus loud-thundering

Whose realm spreads wide,

Cleaves the deep sky, high

On the pulsing beat of wings, swift,

Confident, trusting in his mighty strength,  
And the screeching birds cower in fear;  
The mountain peaks of the great earth  
Do not confine him  
Nor the towering waves of the tireless sea;  
He, driving on restless wing, featherlight,  
High in the endless, empty sky,  
Rides on the breath of the western wind,  
A sight well known among men.  
So now, high-minded children of Deinomenes,  
I too have on all sides  
Numberless pathways of song  
To praise your excellence,  
By the grace of dark-haired Victory and the bronze-armoured god of war.  
I pray that the god will not grow weary doing good.  
The morning sun whose arms are golden  
Watched him win, the chestnut colt Pherenikos,  
The colt that runs on the wind,  
Beside the wide-swirling stream of Alpheos,  
And at holy Delphi too.  
Calling the earth to witness I declare:  
Never yet, as he rushed to the line in a race  
Was he stained by the dust  
Of horses in front.  
For with onrush matching the wind from the North,  
Responsive to his rider's hand he flies,

Aiming to bring again applause and victory

For Hieron, friend of guests.”

#### 5. Sappho Fragment 1, Realisation 2

Text ringmodulated and vocoded with live performance on a 1535 Ganassi alto recorder.

#### 6. Euripides Hippolytus 1199-1233

“When we were entering the lonely country

The other side of the border, where the shore

Goes down to the Saronic Gulf, a rumbling

Deep in the earth, terrible to hear,

Growled like the thunder of Father Zeus.

The horses raised their heads, pricked up their ears,

And gusty fear was on us all to know,

Whence came the sound. As we looked toward the shore,

Where the waves were beating, we saw a wave appear,

A miracle wave, lifting its crest to the sky,

So high that Sciron’s coast was blotted out

From my eye’s vision. And it hid the Isthmus

And the Asclepius Rock. To the shore it came,

Swelling, boiling, crashing, casting its surf around,

To where the chariot stood.

But at the very moment when it broke,

The wave threw up a monstrous savage bull.

Its bellowing filled the land, and the land echoed it,

With shuddering emphasis. And sudden panic

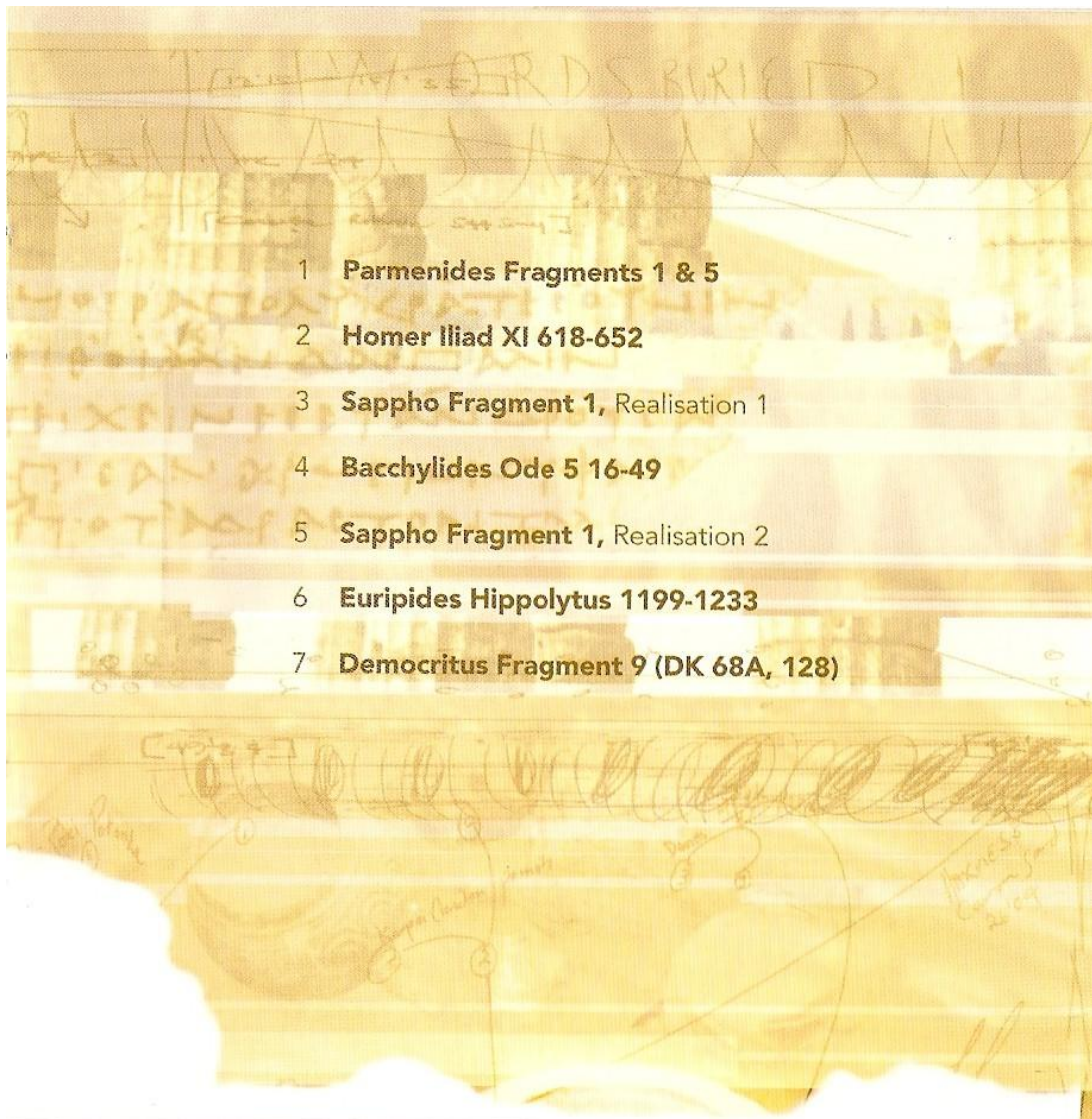
Fell on the horses in the car. But the master-

He was used to horses' ways-all his life long  
He had been with horses-took a firm grip of the reins  
And lashed the ends behind his back and pulled  
Like a sailor at the oar. The horses bolted:  
Their teeth were clenched upon the fire-forged bit.  
They heeded neither the driver's hand or harness  
Nor the jointed car. As often as he would turn them  
With guiding hand to the soft sand of the shore,  
The bull appeared in front to head them off,  
Maddening the team with terror.  
But when in frenzy they charged toward the cliffs,  
The bull came galloping beside the rail,  
Silently following until he brought disaster,  
Capsizing the car, striking the wheel on a rock."

7. Democritus Fragment 9 (DK 68A, 128)

With live performance on a replica of Percy Grainger's slide air whistle.

"Democritus says that the air is broken up into bodies of like shape and is rolled along together with the fragments of the voice."



**Figure 5.2a** : Handwritten notes by Ros Bandt for “Thrausmata”.



**Figure 5.2b** : Handwritten notes 2 by Ros Bandt for “Thrausmata”.

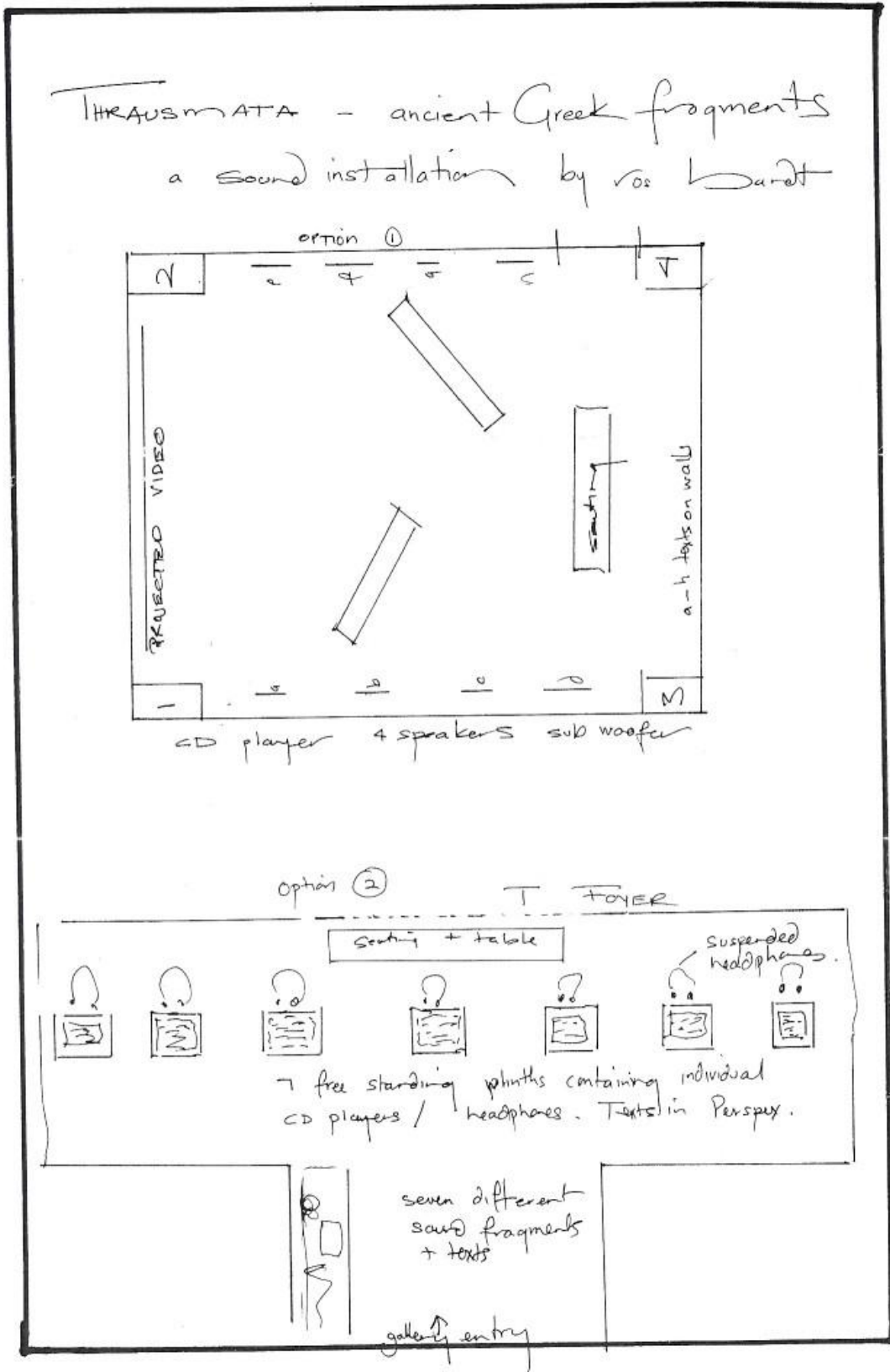
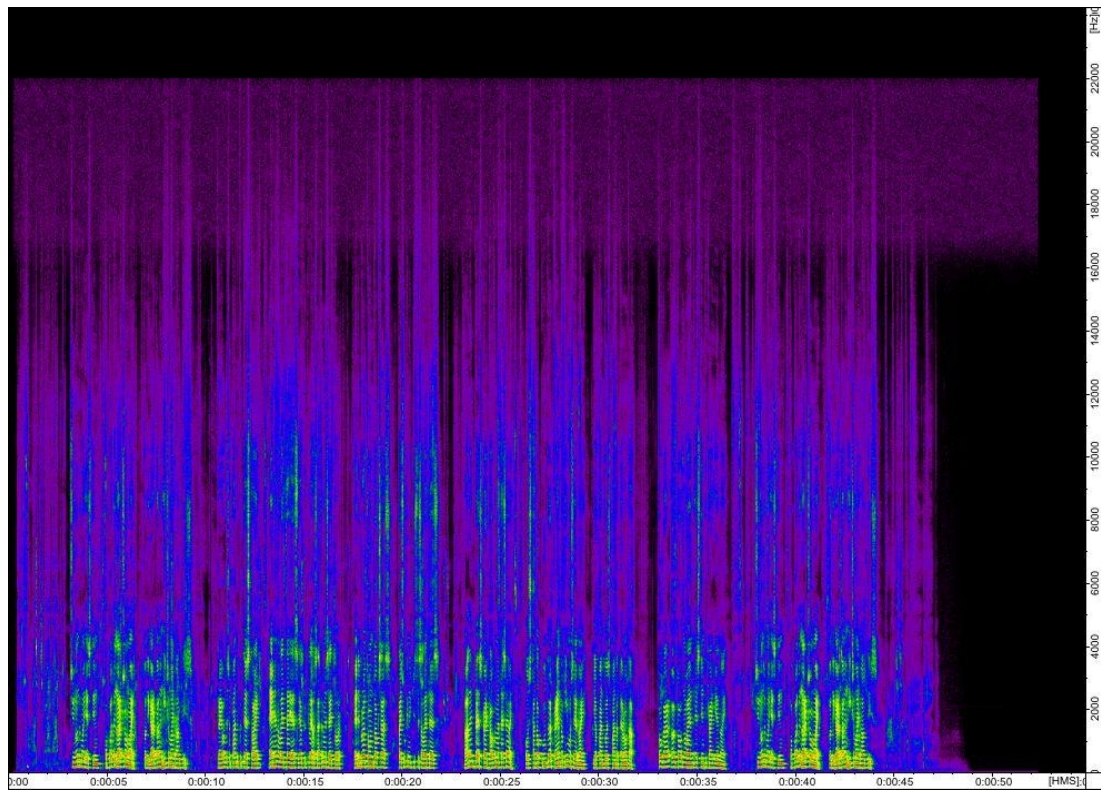


Figure 5.2c : Performance notes of “Thrausmata” as a sound installation.

### 5.2.1 Analysis of “Thrausmata” Part 1

The spectral analysis of individual movements is as follows:



**Figure 5.2.1a** : Spectral analysis “Thrausmata” Part 1 0’00” – 0’52”.

The part begins with the voice of Ros Bandt saying the words “It is all one to me where I begin; for I shall come back there.” This part includes the voice of Ros Bandt speaking in English and the voice of Arthur McDevitt speaking in Ancient Greek. Bandt’s voice at this section has a whisperlike quality, whereas the timbre of the Arthur McDevitt’s voice has a harsher quality. She recorded the same excerpts two times and panned these recordings to the left and the right. For the voice of Arthur McDevitt, a short timed delay has been used. There is no other instrument, processing, field recording or electronic treatment.

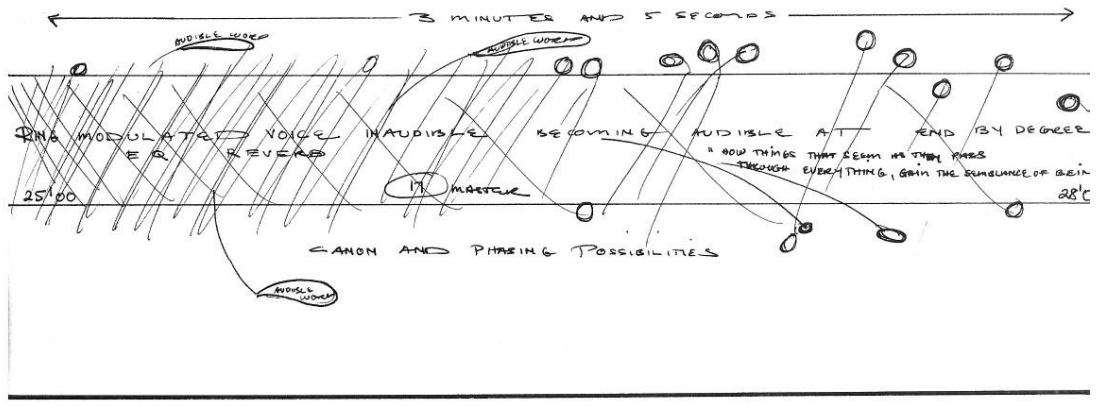
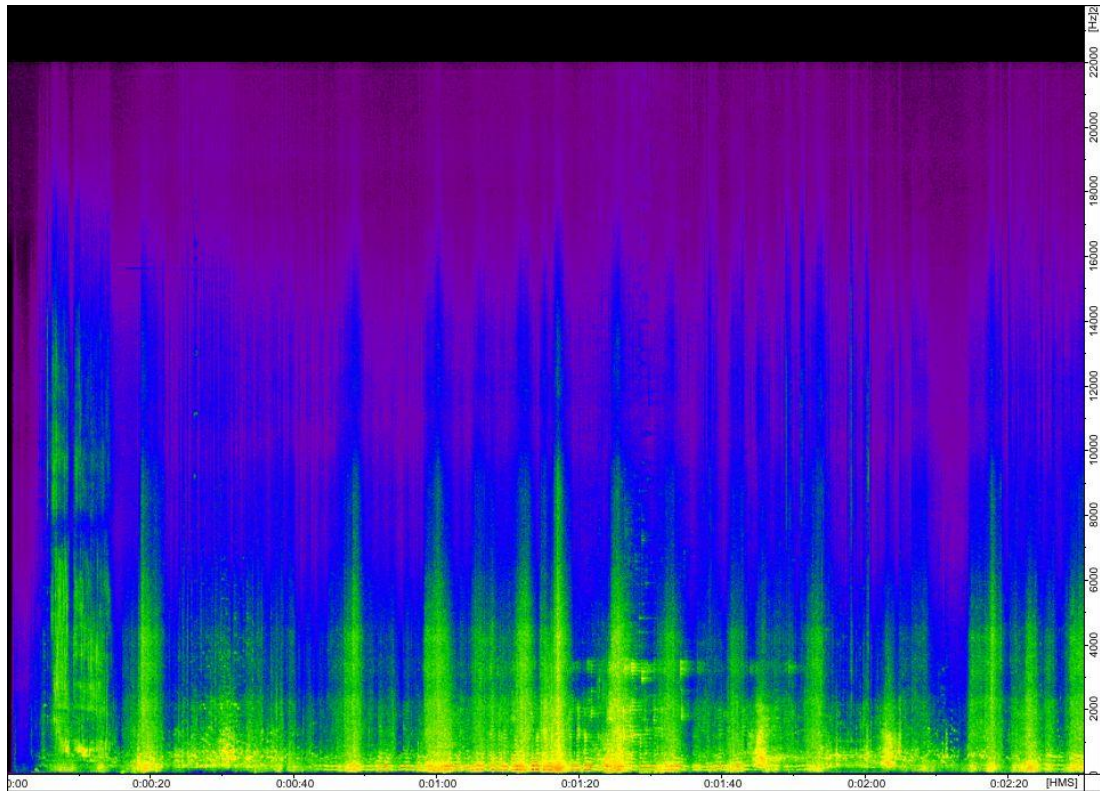


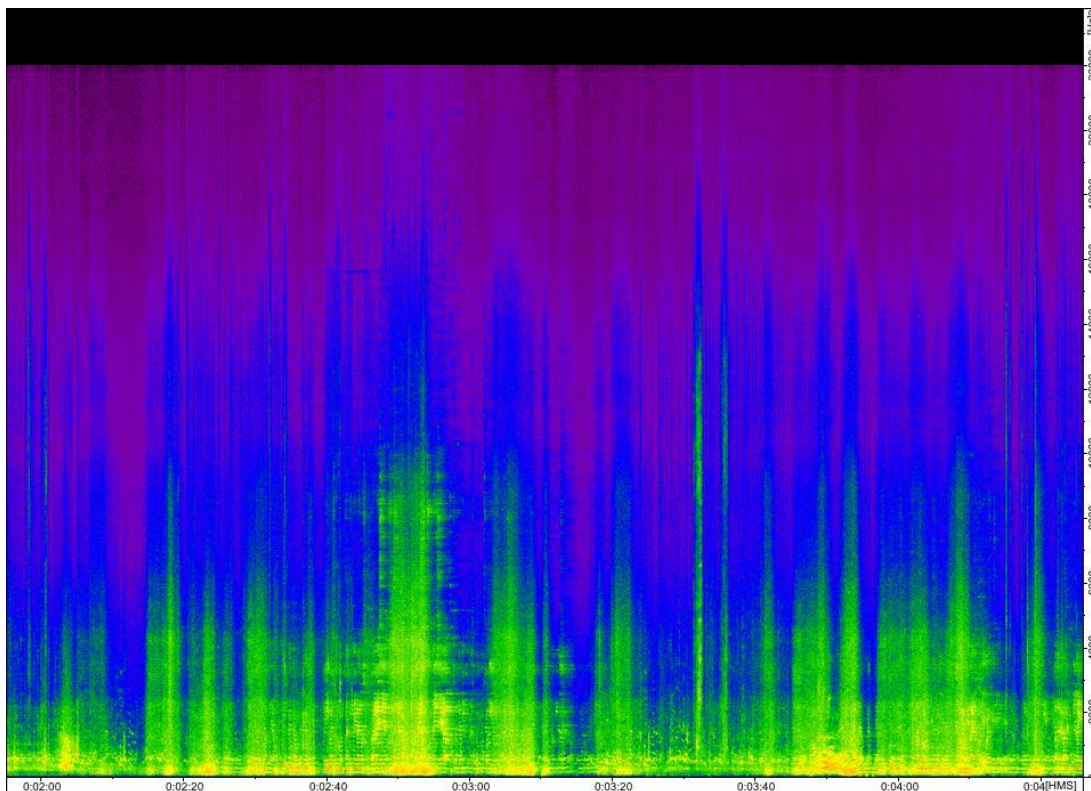
Figure 5.2.1b : Handwritten notes of “Thrausmata” Part 1.

## 5.2.2 Analysis of “Thrausmata” Part 2



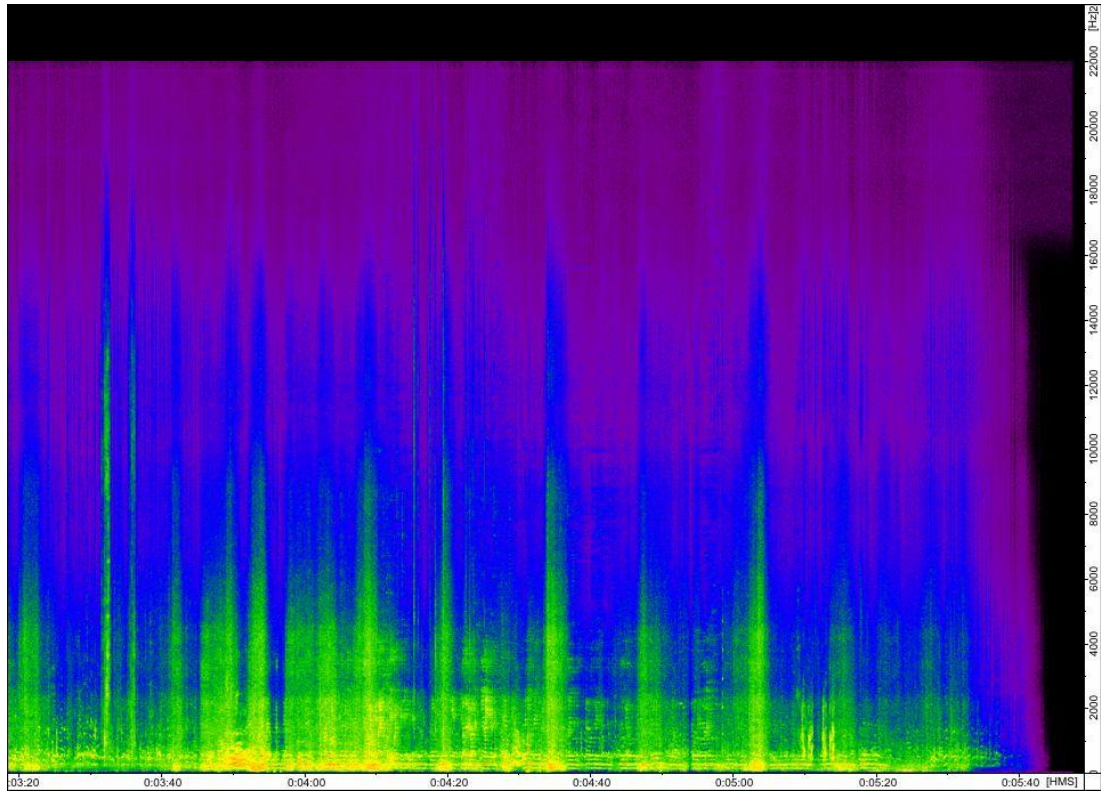
**Figure 5.2.2a** : Spectral analysis “Thrausmata” Part 2 0’00’’ – 2’ 00’’.

Part2 begins with the sound of water. At 0’10’’, we start to hear the sound of the ocean waves, chattering at a bazaar, distant timbres of a medieval psaltery. At 0’ 45’’, the voice of Arthur McDevitt is being heard. This time the voice is treated with a midtimed reverb. The fx send of the reverb is heard more than the actual voice. Between 1’00’’ and 2’00’’, his voice is treated with several fx, first with some reverb automation and then a subtle vocoder setup. This electronic treatment is the first processing that is heard within the piece. The use of this treatment and the text in Ancient Greek creates a beautiful contrast and tension.



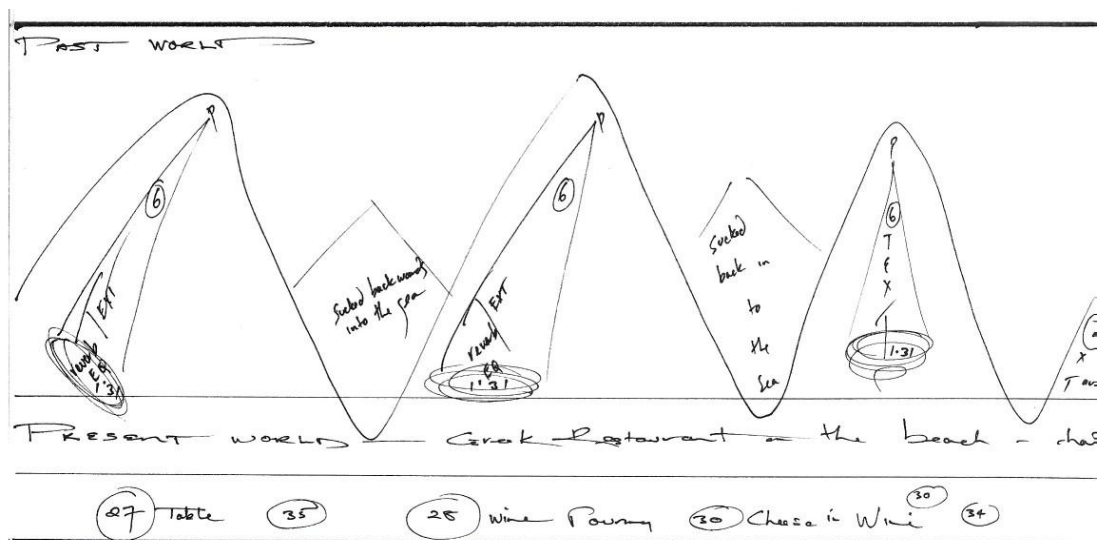
**Figure 5.2.2b** : Spectral analysis “Thrausmata” Part 2 2’00’’ – 4’ 00’’.

The volume level of the people talking rise up through this section. The sound of the ocean waves and the single drippings of water into a bucket are the main background textures of this section. Between 2’30’’ and 4’00’’ the voice of Arthur McDevitt is again heard with the highpass filter and vocoder treatment. The talks of the people are heard all throughout this section.



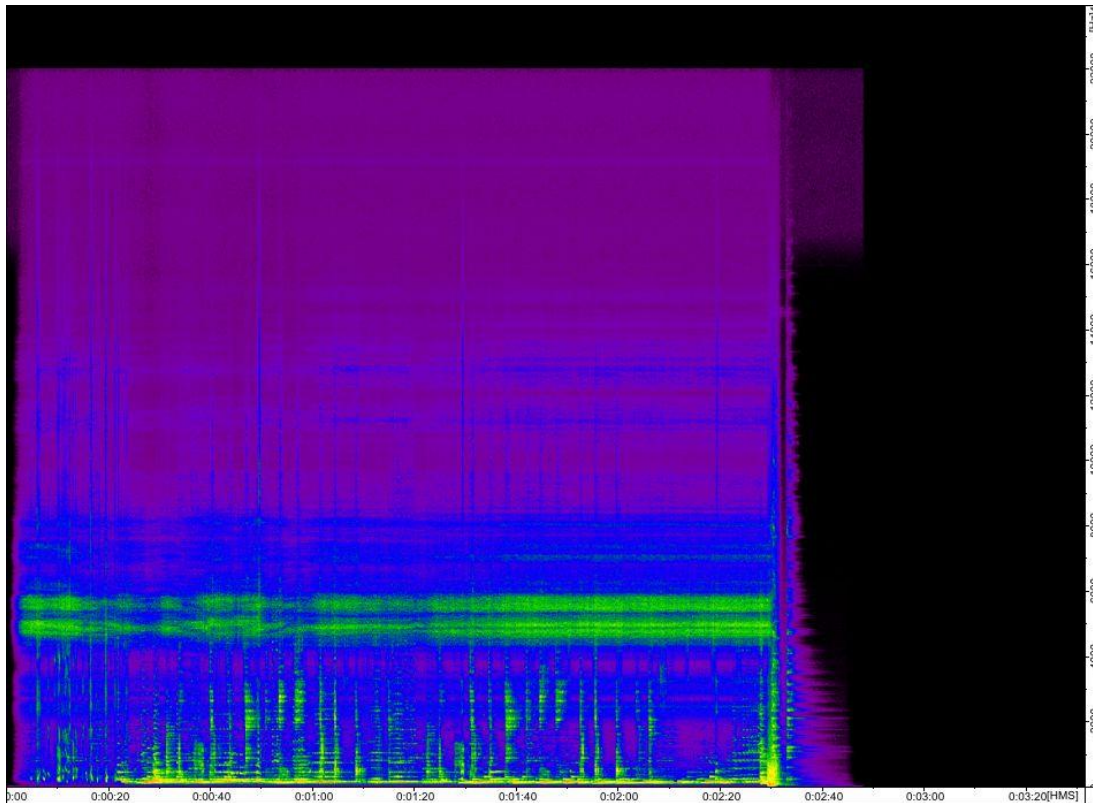
**Figure 5.2.2c** : Spectral analysis “Thrausmata” Part 2 4’00” – 5’ 48”.

The timbres used in this section are very similar to the ones used between 2’00” and 4’00. The similar electronic treatment for the voice of Arthur McDevitt is used. In addition to the talks of the people, we also hear the growling of the dogs



**Figure 5.2.2d** Handwritten notes “Thrausmata” Part 2.

### 5.2.3 Analysis of “Thrausmata” Part 3



**Figure 5.2.3a** : Spectral analysis “Thrausmata” Part 3 0’00’’ – 2’48’’.

This section starts with the sounds of crickets. At 0’03’’, we hear the distant timbre of the medieval psaltery and the giglings of Ros Bandt. Her laughter, giglings were recorded in two different takes and were panned to the left and to the right. The second psaltery is being heard starting from 0’26’’. This is the take where there is a varied melodic line throughout the section. Also within this section, the vocoded voice of Ros Bandt is heard. The combination of the loud cricket sound with the psaltery and the vocoder creates an interesting all-around timbre for this section. This section ends with a combfiltered, pitchshifted delay effect for the psaltery.

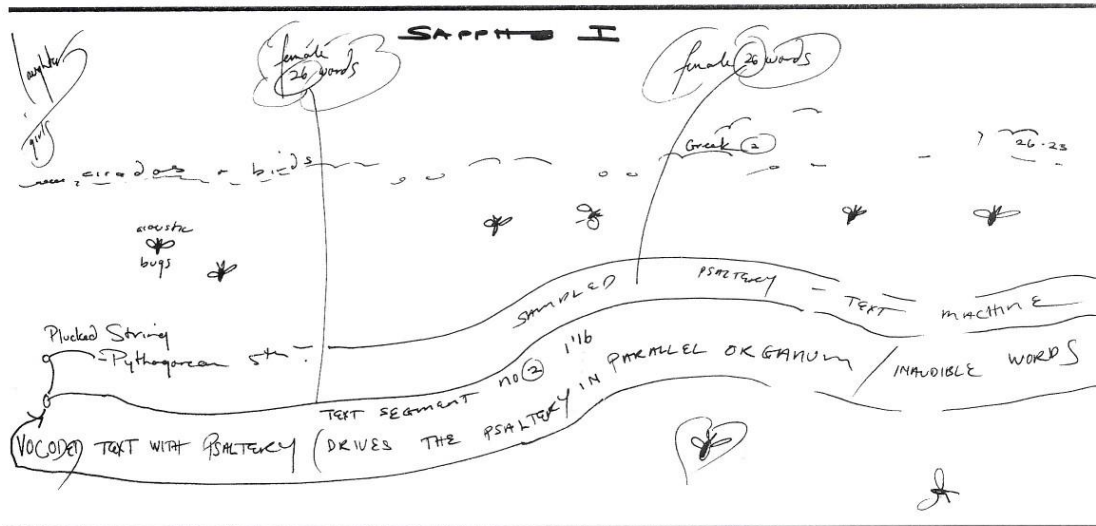
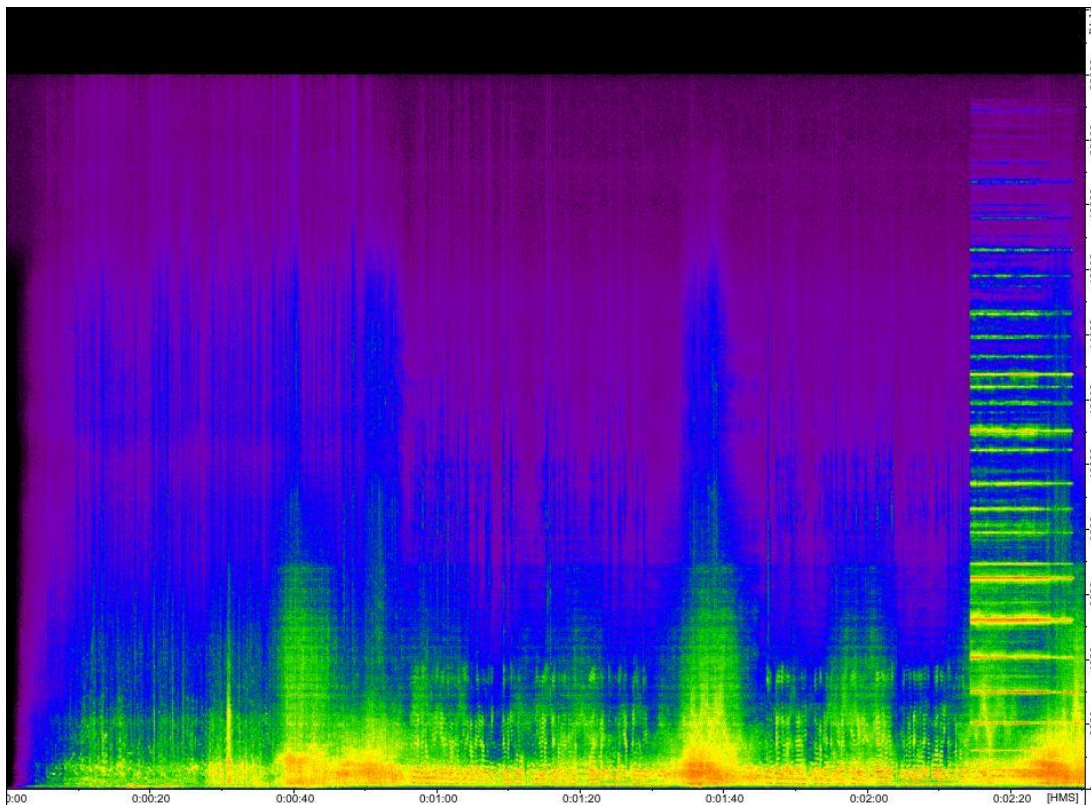


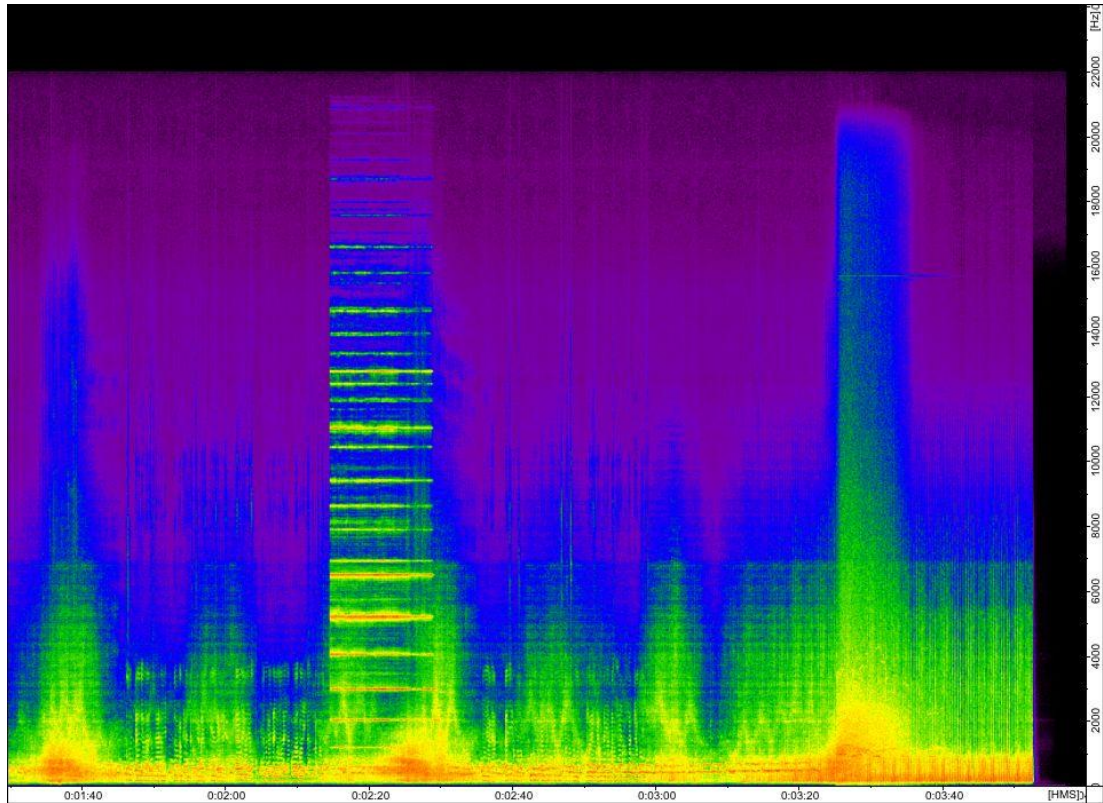
Figure 5.2.3b : Handwritten notes “Thrausmata” Part 3.

## 5.2.4 Analysis of “Thrausmata” Part 4



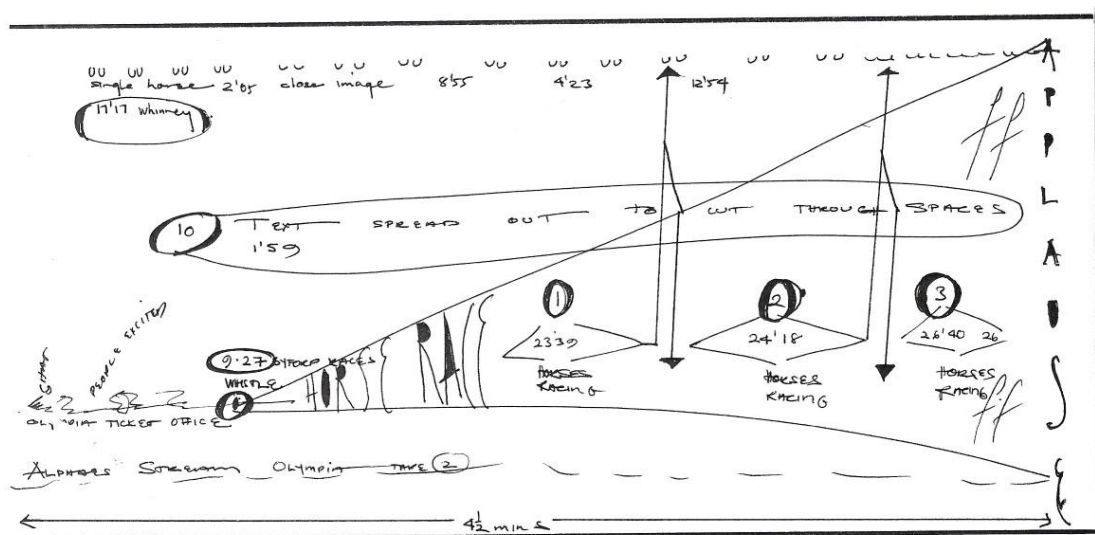
**Figure 5.2.4a** : Spectral analysis “Thrausmata” Part 4 0’00’’ – 2’ 00’’.

This section starts with the sound of the water and the talks of the people. At 0’29’’, a galloping horse is heard. The sound of several horses is blended with the sound of the wind. At 0’57’’ the voice of Arthur McDevitt is heard again. At the same time, a bandpass filtered voice is heard on top of that. Through 1’30’’ and 2’00’’, the blend of filtered voices, galloping horses, the wind create an eery atmosphere.



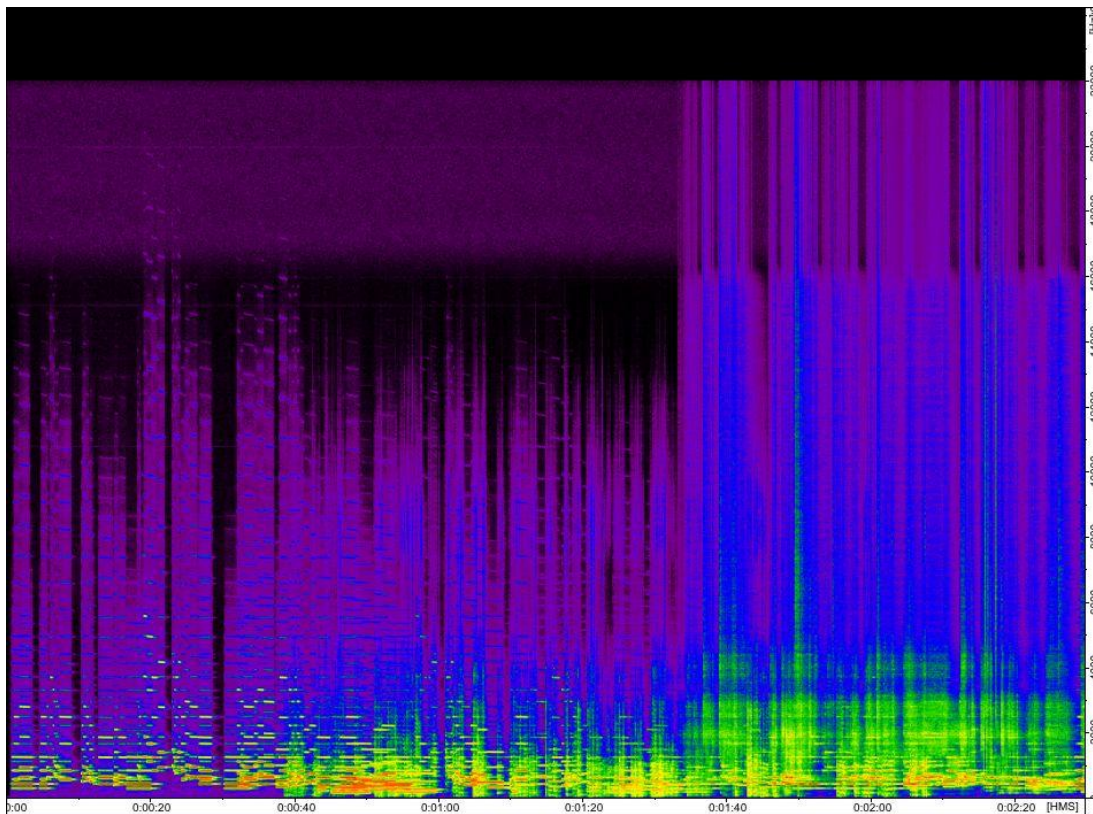
**Figure 5.2.4b :** Spectral analysis “Thrausmata” Part 4 2’00” – 3’ 57”.

Right at 2’15’’, a bell is heard. This sound goes on for 15 seconds. Besides this bell, all of the other textures are the same ones heard between 0’00’’ and 2’00’’ of this part. At 3’25’’, a loud clapping, cheering sound is heard. This part ends with the sound of the galloping horse.



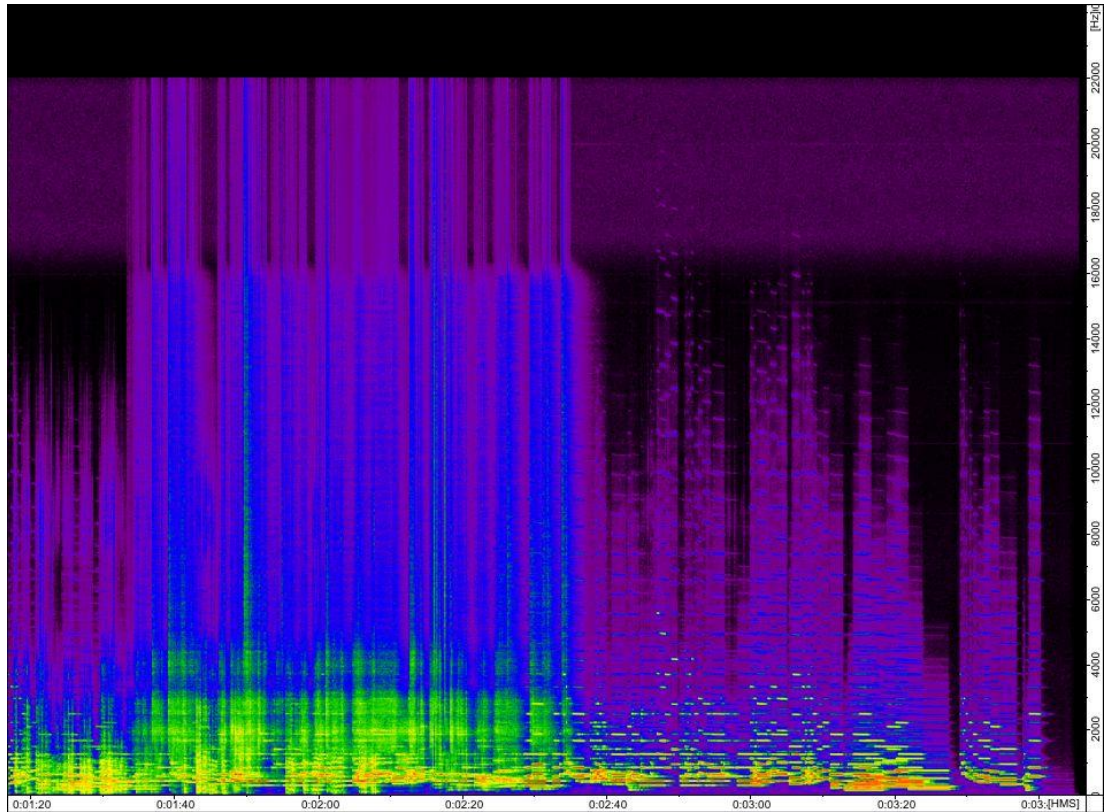
**Figure 5.2.4c :** Handwritten notes “Thrausmata” Part4.

## 5.2.5 Analysis of “Thrausmata” Part 5



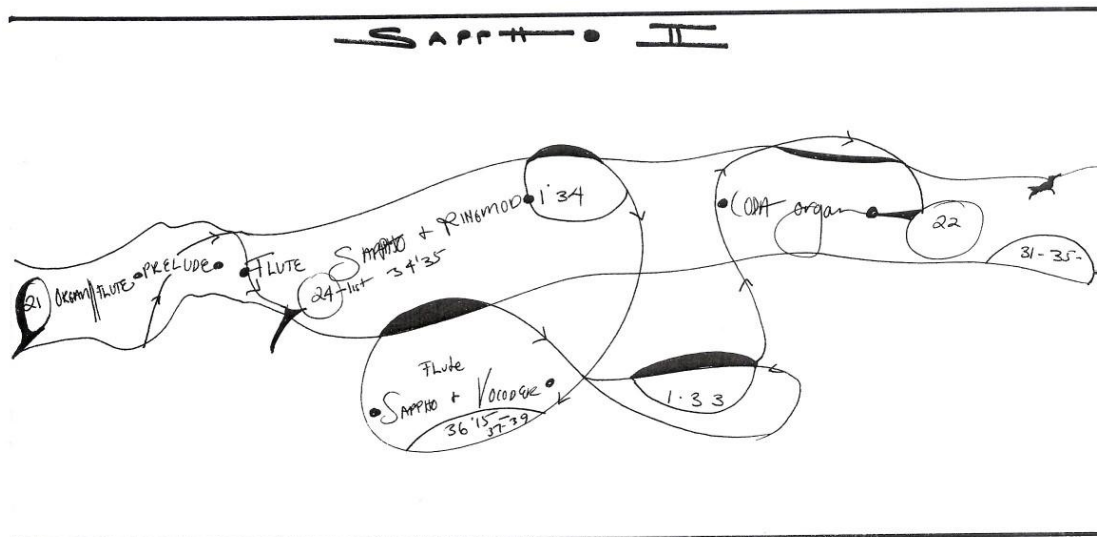
**Figure 5.2.5a** : Spectral analysis “Thrausmata” Part 5 0’00” – 2’ 00”.

This part starts with a melody played on the Renaissance recorder by Ros Bandt. At 0’35”, we start hearing the filtered and vocoded voice of Arthur McDevitt. His voice is effected through a slowly changing autopan effect. The blend of the effected voice and the Renaissance recorder goes on until 2’00”.



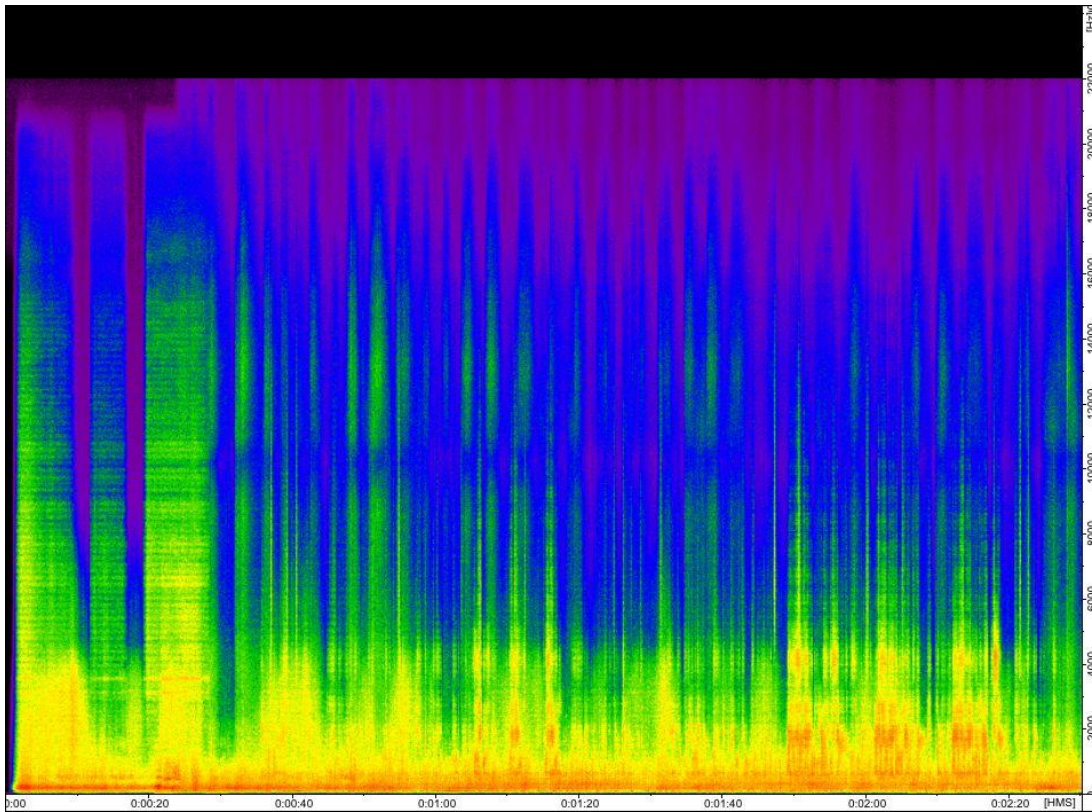
**Figure 5.2.5b** : Spectral analysis “Thrausmata” Part 5 2’00” – 3’ 46”.

This section includes the timbres described above. This section ends with the Renaissance flute.



**Figure 5.2.5c** : Handwritten notes “Thrausmata” Part 5.

## 5.2.6 Analysis of “Thrausmata” Part 6



**Figure 5.2.6a** : Spectral analysis “Thrausmata” Part 6 0’00” – 2’ 00”.

This parts starts with a loud combination of three different textures. The main energies of these textures are around 2-6 khz. This can be seen at the spectrogram above. These textures are most probably the processed version of the sound of water, waves, ocean. These textures are blended with the unprocessed sound of waves, the vocoded sound of Arthur McDevitt starting around 0’35” . All through this section, the overall level of the textures are loud and aggressive.

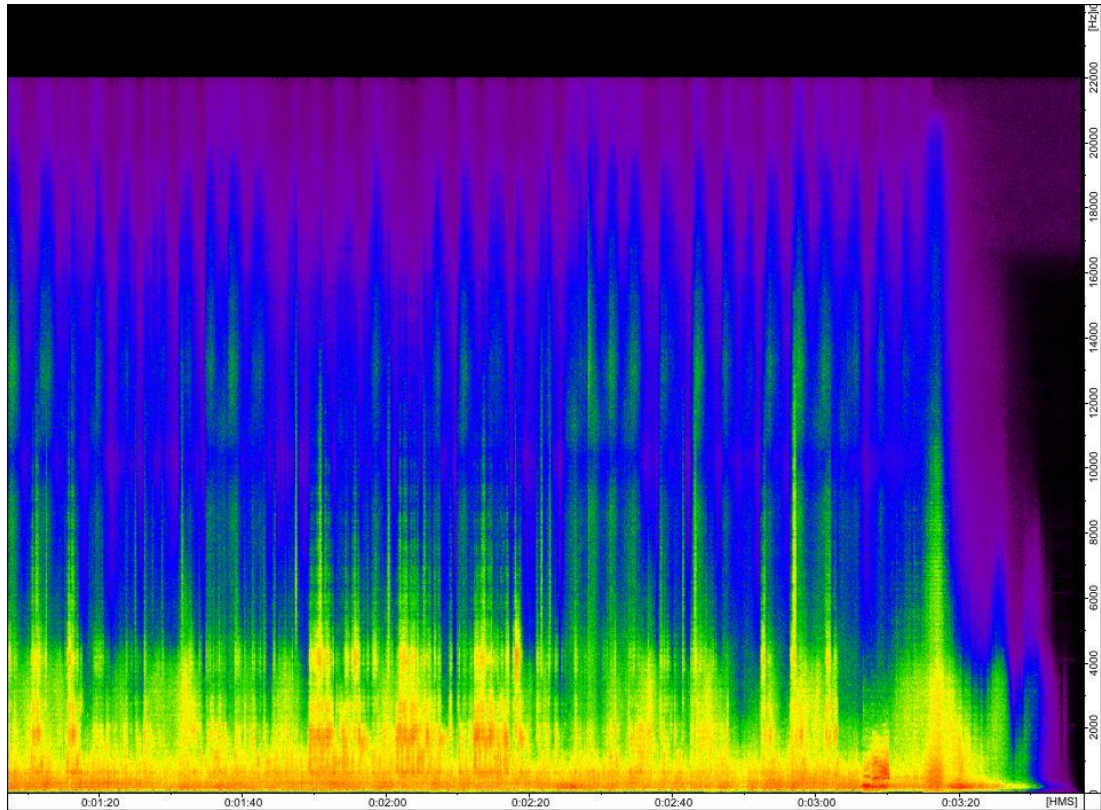


Figure 5.2.6b : Spectral analysis “Thrausmata” Part 6 2’00” – 3’ 37”.

These textures gon on until the end of this part. At the last 15 seconds the textures have been treated with a lowpass filter and with a slow fadeout.

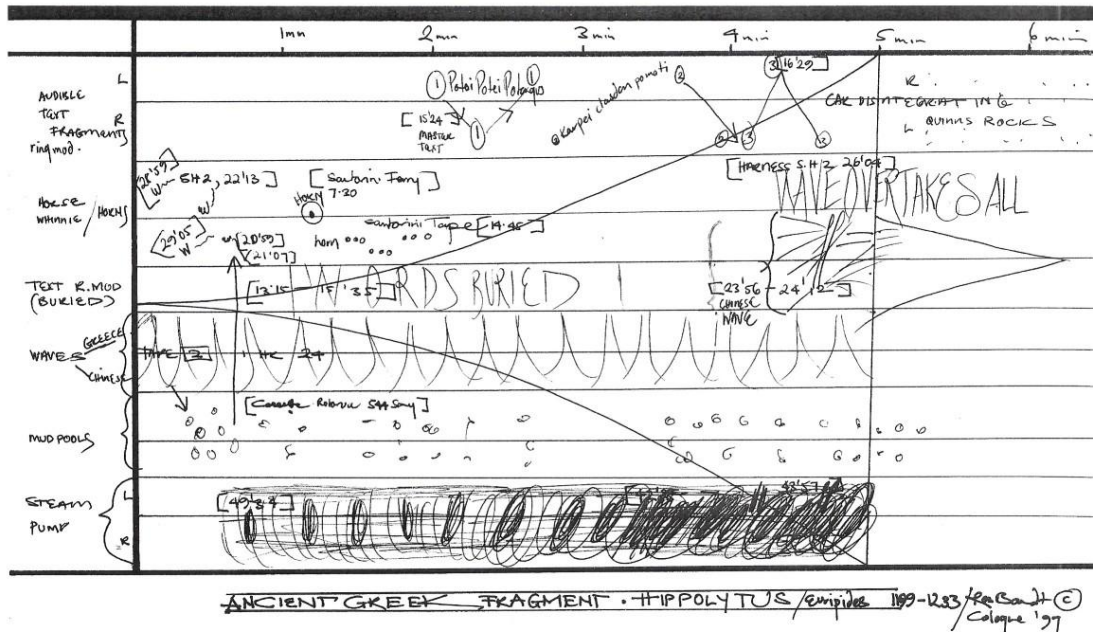
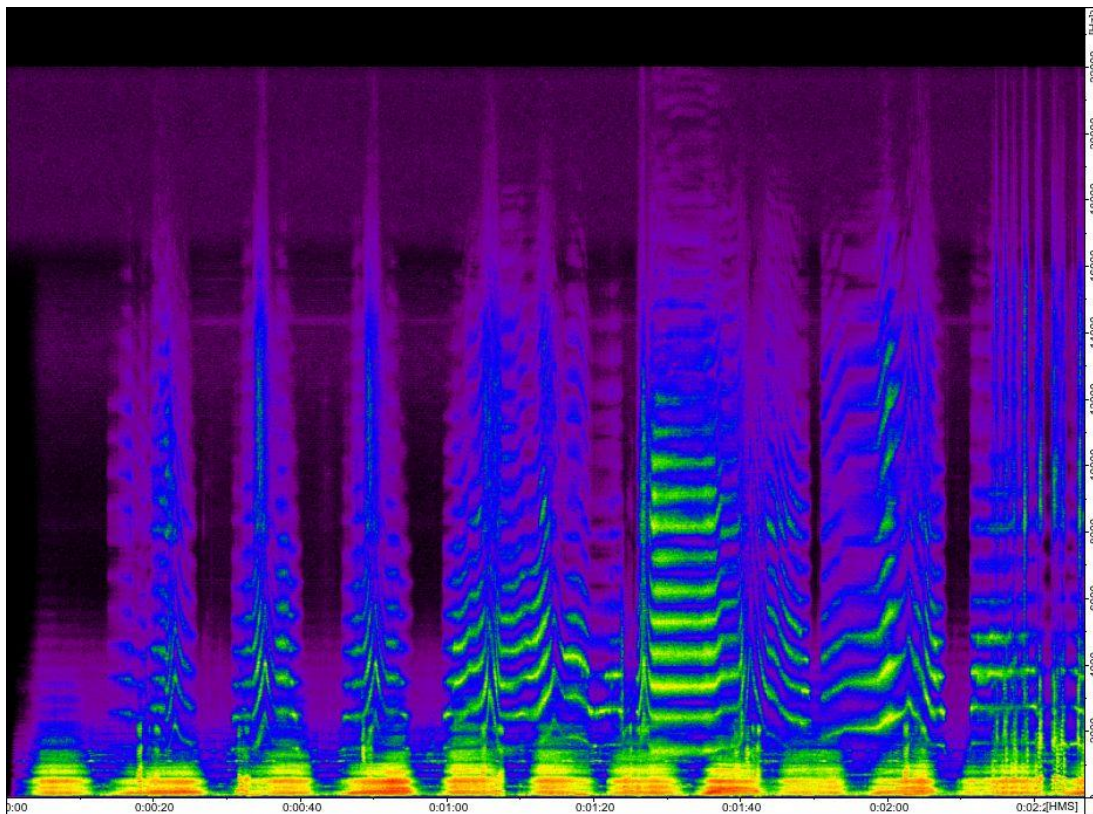


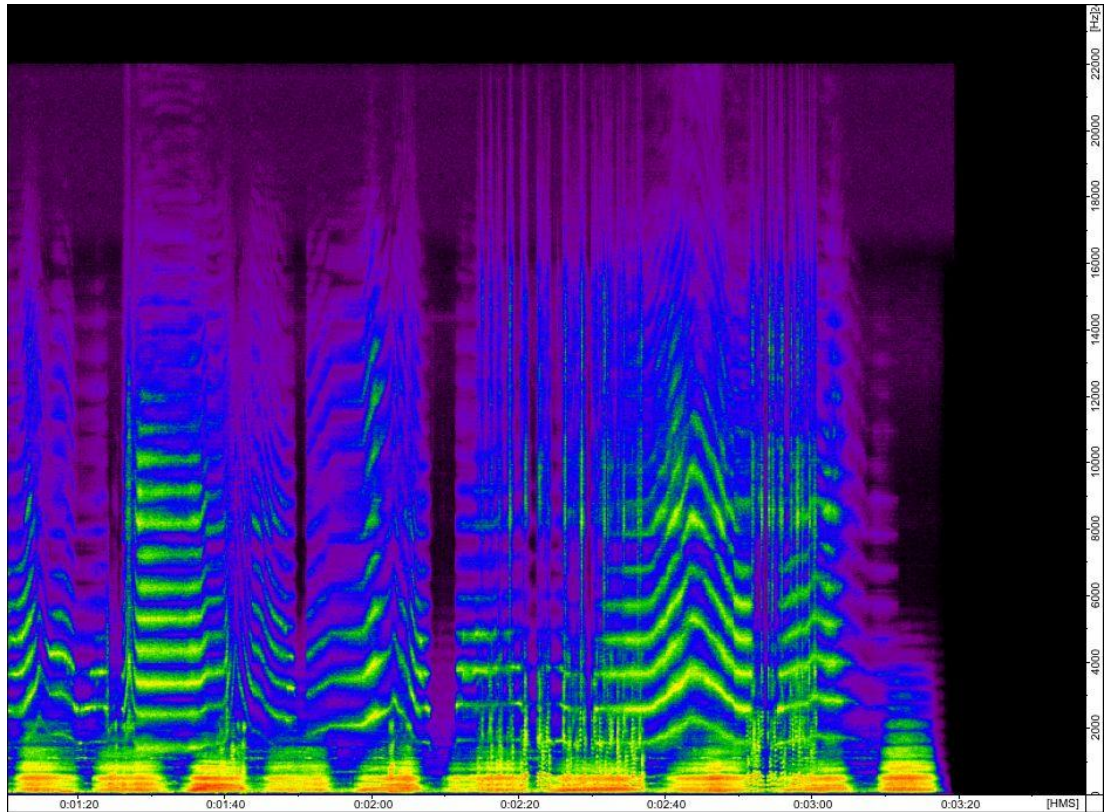
Figure 5.2.6c : Handwritten notes “Thrausmata” Part 6.

## 5.2.7 Analysis of “Thrausmata” Part 7



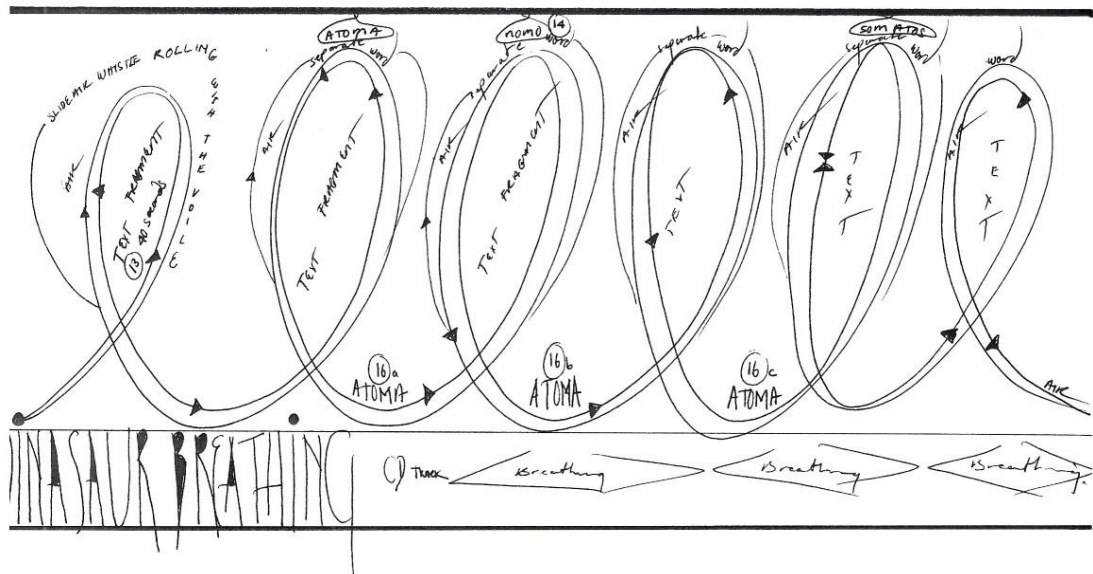
**Figure 5.2.7a** : Spectral analysis “Thrausmata” Part 7 0’00” – 2’ 00”.

This part starts with a lowpitched drone. This beginning reminds me the very beginning of the piece “Beneath the Forest Floor” by Hildegard Westerkamp. At 0’15” we hear the sound of the slide whistle played by Ros Bandt. Apart from these textures, we also hear the pitchshifter voice of Arthur McDevitt. These textures go on until 2’00”.



**Figure 5.2.7b** : Spectral analysis “Thrausmata” Part 7 2’00” – 3’ 19”.

Between 2’00” – 3’19”, we hear the slide whistle, the lowpitched drone and the reverbed voice of Arthur McDevitt. The piece ends with the drone texture that was heard right at the beginning of this part. At the very end of the piece, there is a ten second silence.



**Figure 5.2.7c** : Handwritten notes “Thrausmata” Part 7.

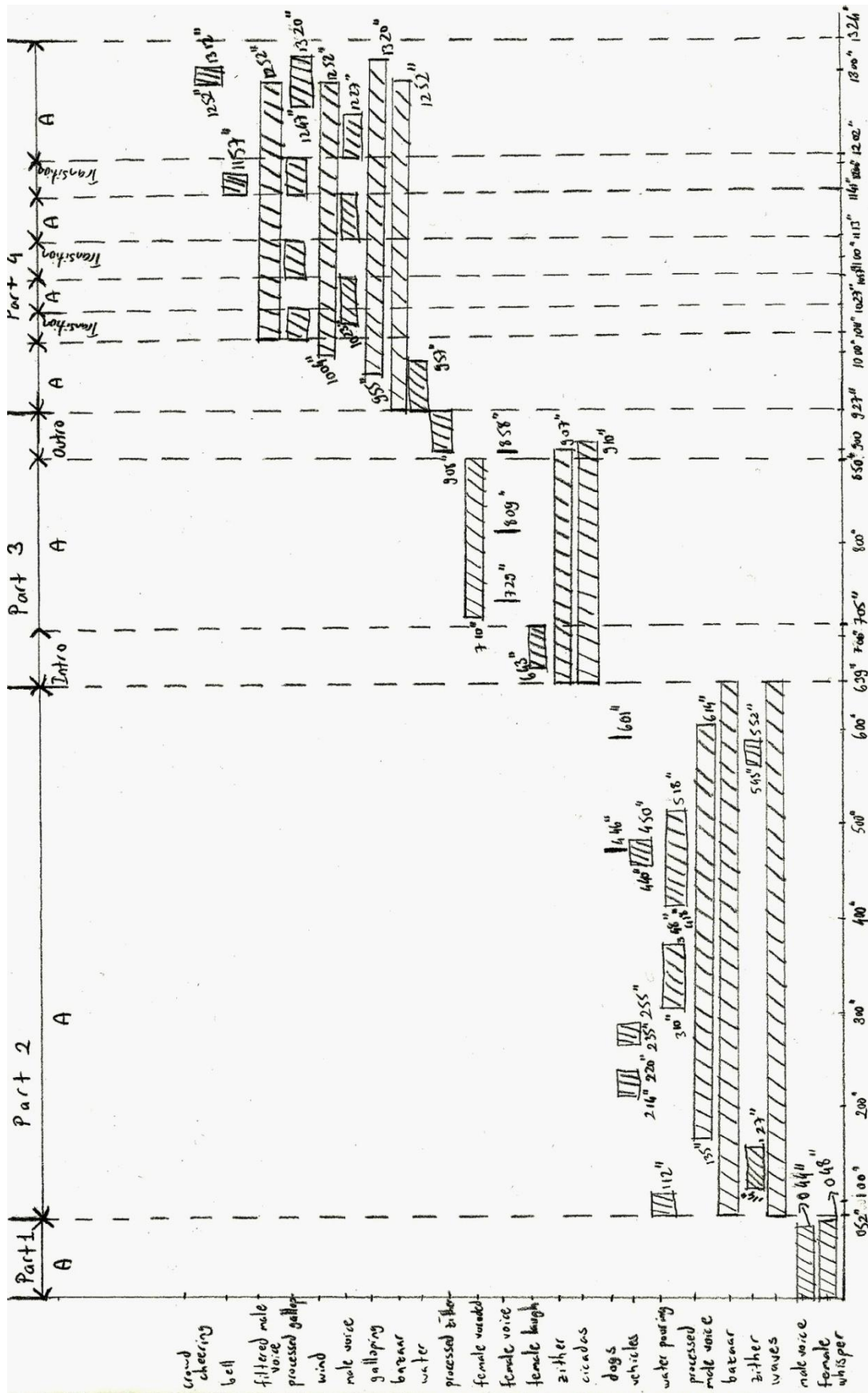


Figure 5.2.7d : Formal analysis - graphic score "Thrausmata" Part 1 through Part 4.

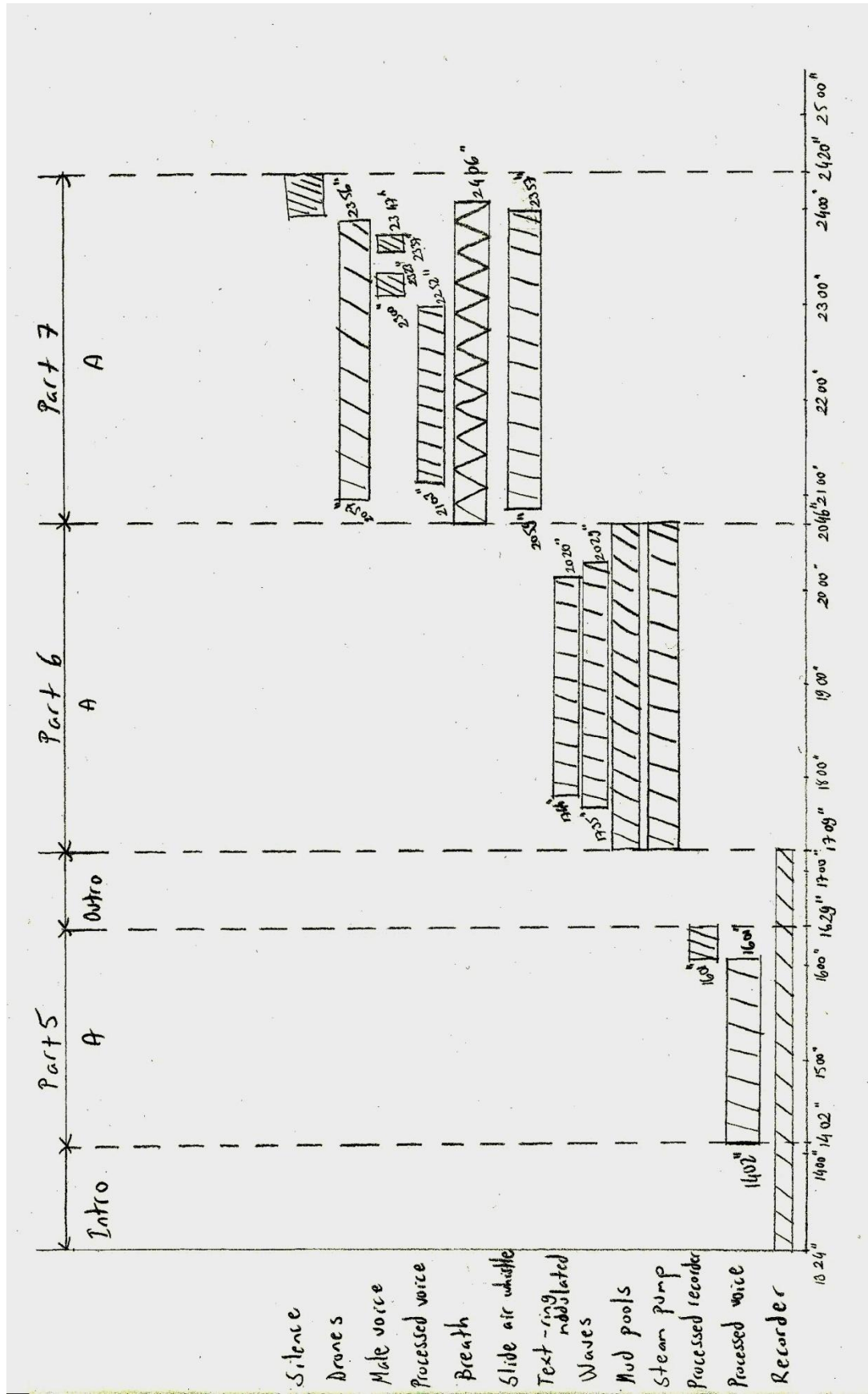
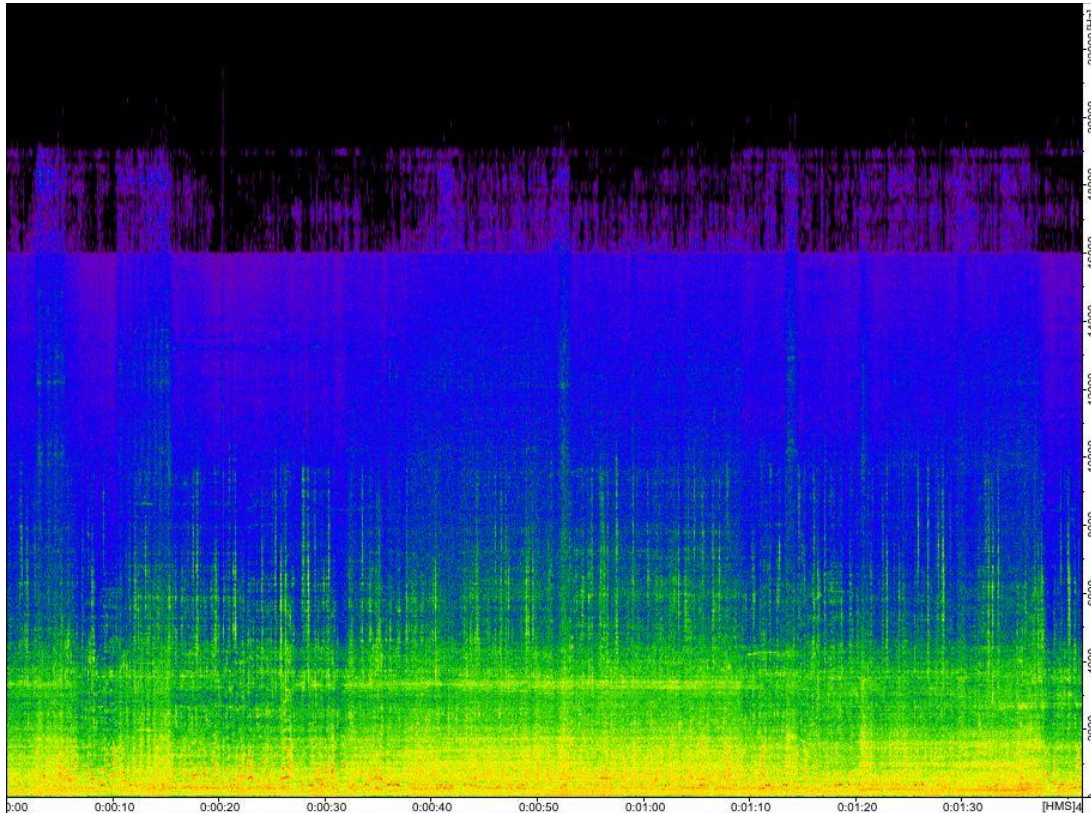


Figure 5.2.7e : Formal analysis - graphic score "Thrausmata" Part 5 through Part 7.

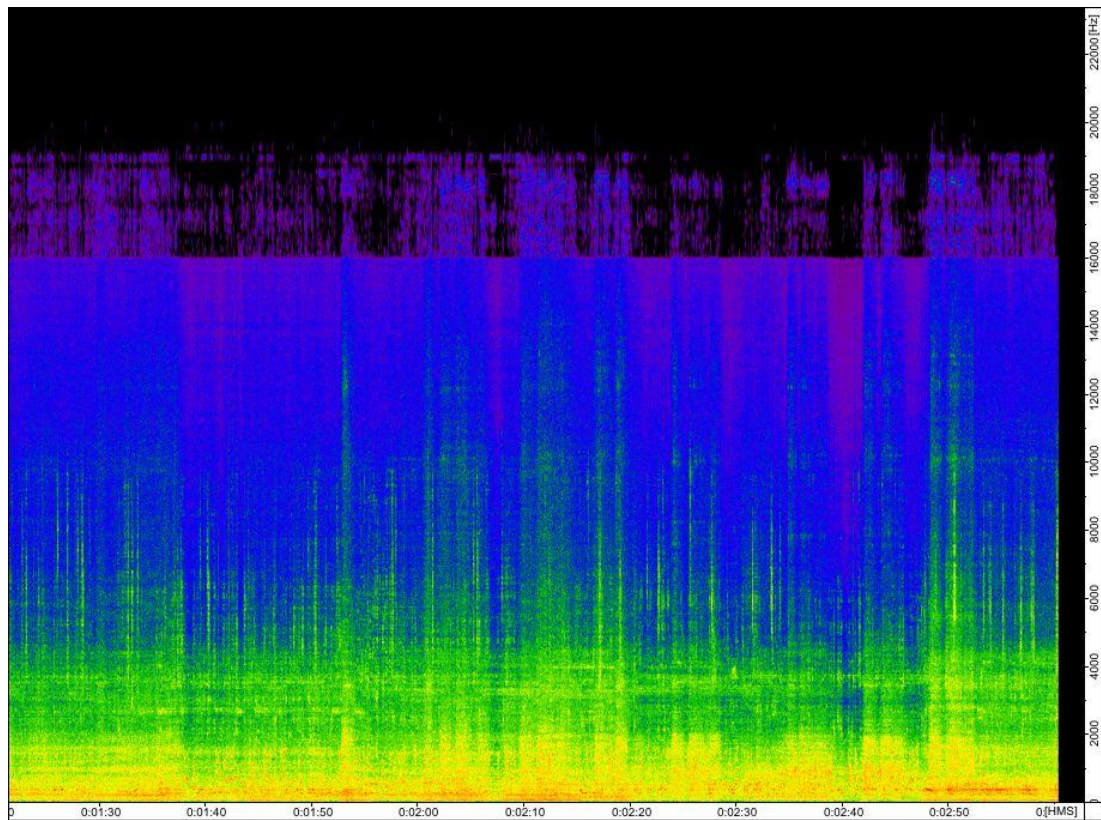
### 5.3 Rajivan Ayyappan “Subsequent Hearing” – 2003 (India, Asia)

“Subsequent Hearing” is a piece based on Mumbai residential soundscapes; the field recordings were generated from /through tape to tape to trace the noise as the resulting soundscape.



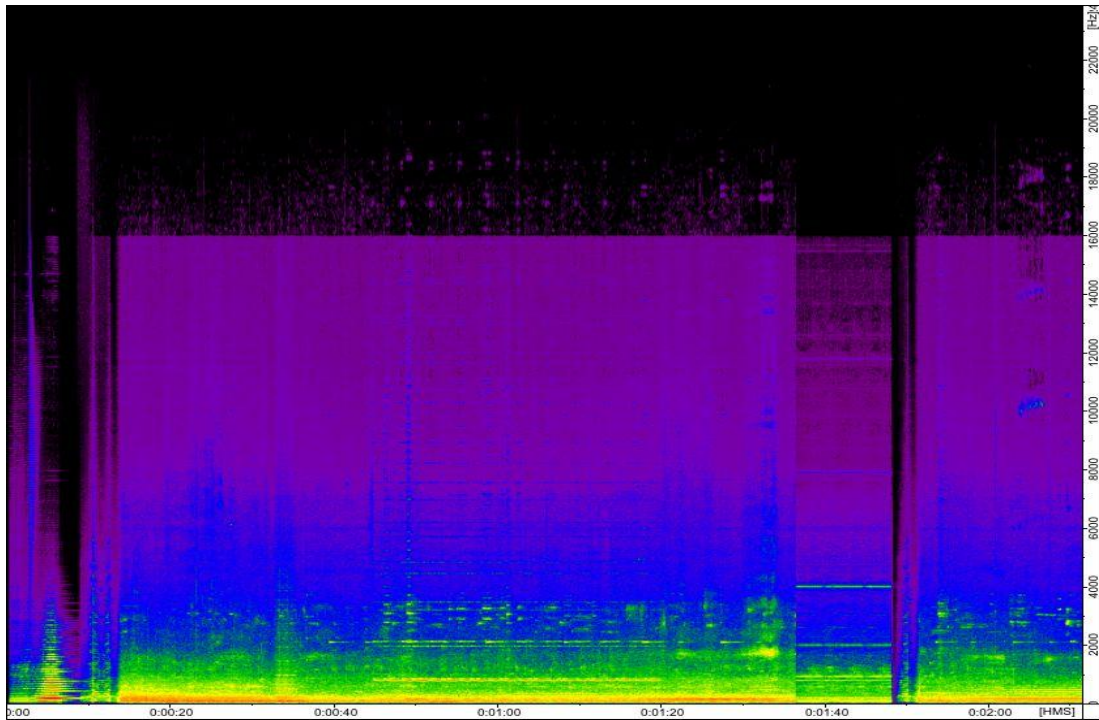
**Figure 5.3a** : Spectral analysis “Subsequent Hearing” Part 1 0’00” – 1’ 30”.

The opening section is a pure field recording of a bazaar in Mumbai. We can notice the loud environment in which the recording was done. There are elements like people chatting, vehicles passing by, sounds coming from a tv etc. We can also see from the spectral analysis that there is very little information in bass frequencies, but a lot of information in the mid and high frequency. In fact it is such a dense texture that it may nearly be regarded as white noise. Also it is noticeable that the composer has not moved and changed his position while doing this recording.



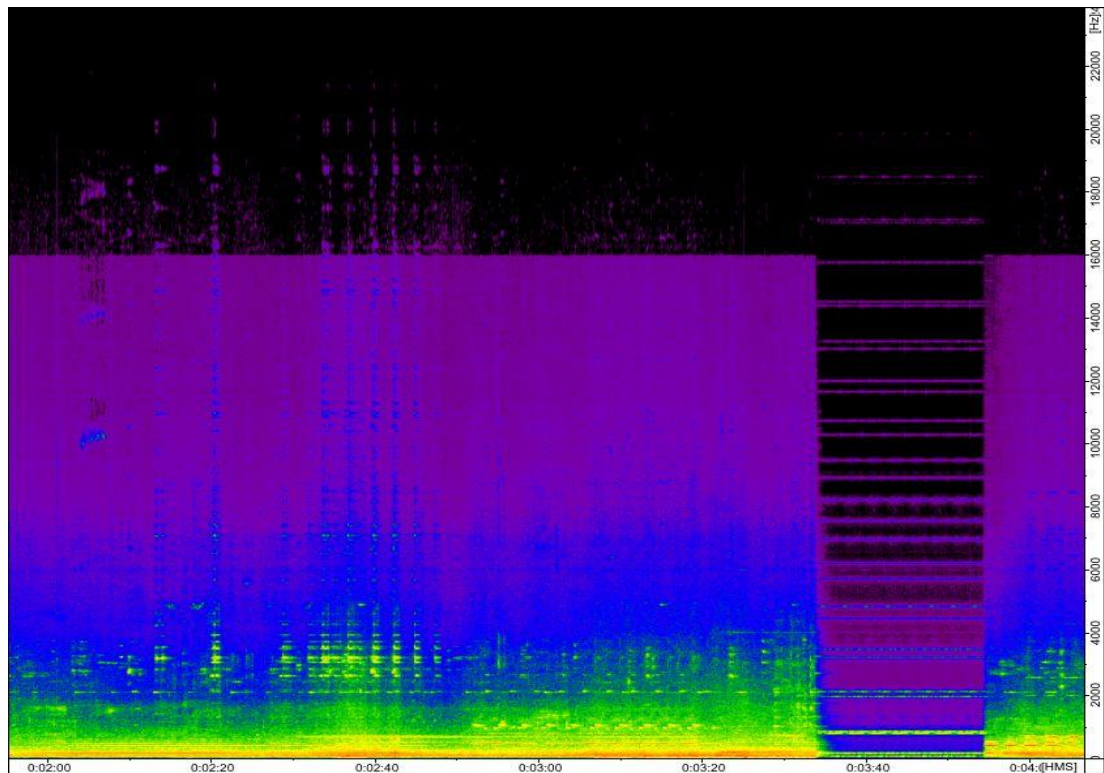
**Figure 5.3b** : Spectral analysis “Subsequent Hearing” Part 1 1’30” – 3’00”.

Between 1’30” and 2’18” the field recording sounds very similar to the introduction with very similar textures of people chatting, vehicles and the sound coming from the tv. At 2’18”, the vehicle that was heard from the left moves to the right of the composer and all of a sudden we start to hear the bird chirps. This indicates a new point in the piece. The bird chirps along with the other urban sounds go on until a sudden cut at 3’00.



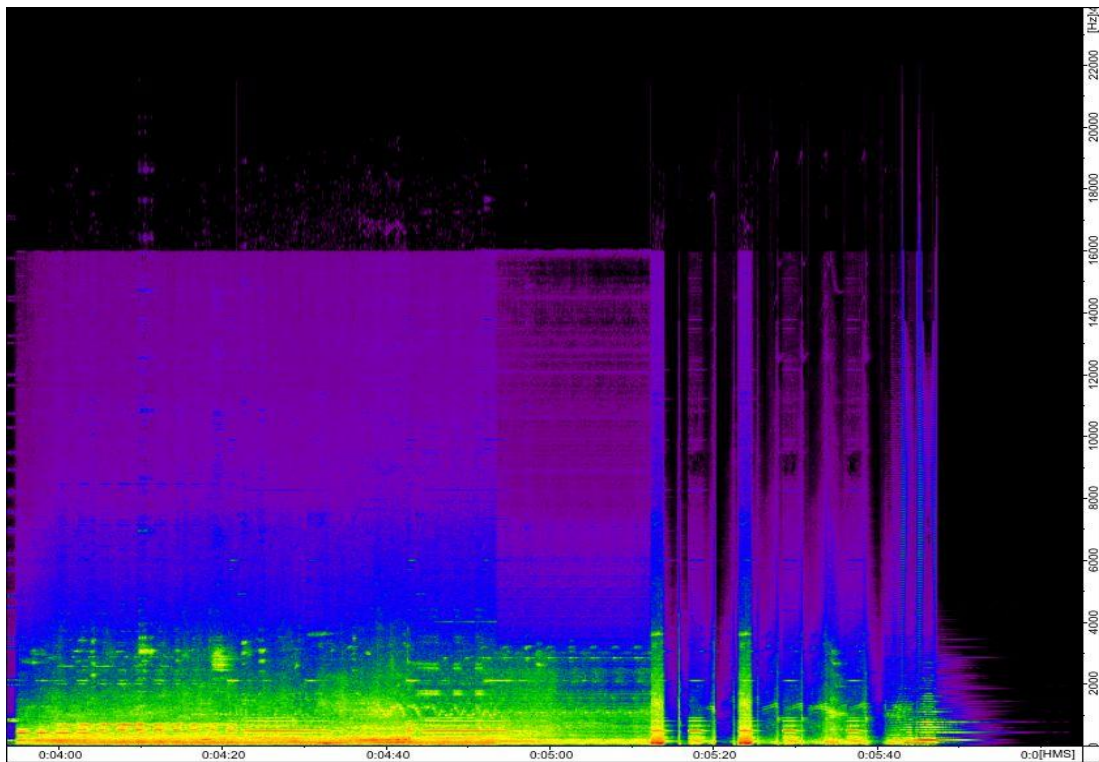
**Figure 5.3c** : Spectral analysis “Subsequent Hearing” Part 2 0’00’’ – 2’ 00’’.

The section starts with a volume swell of a texture that resembles a pitchshifted car horn. We can see from the spectral analysis above that this introduction has a lot of bass frequency energy. Between 0’08’’ and 0’12’’ there are two reverse sounds of the traffic noise. Right after the second reverse sound, the piece moves on with the original field recording. This creates a nice tension and drama to this introduction. Between 0’14’’ and 0’33’’ the field recording goes on uninterrupted and unprocessed. Right at 0’33’’ we hear three slowly fading reverse sounds of the field recording, at the end of the third reverse sounds, there is a quick cut to another field recording. On top of this recording, we also hear a long dronelike timbre based on a bell sound that resonates at the pitch of G. This sound fades out around 1’20’’. At 1’37’’ there is a quick change of atmosphere and sound, here we hear another drone, this time sounding at the pitch of B. This texture ends at 1’48’’. After a silence of one second, we hear another reverse sound which is followed by another unprocessed field recording. On top of this location recording, we start to hear another drone at the pitch of Eb around 1’56’’.



**Figure 5.3d** : Spectral analysis “Subsequent Hearing” Part 2 2’00” – 4’ 00”.

The location recording and the drone goes on until 3’35”’. During this time interval, the drone fades around 2’51”’ and another one fades in. Also between 2’20”’ and 2’50”’ the composer loops a short excerpt of the actual unprocessed field recording. He uses this loop in different durations as many as ten times. At 3’34”’ the field recording ends and only a new drone begins to resonate. As we can see from the spectral analysis above, the volume of the section drops down significantly at this moment. Between 3’35”’ and 3’54”’ only a bell like drone that has a pitch of Ab is heard. Right at the end of this sound, another drone texture is heard. This texture has a tremolo effect on it that creates short volume swell gestures and these repeat for ten times in total.



**Figure 5.3e** : Spectral analysis “Subsequent Hearing” Part 2 4’00’’ – 6’ 04’’.

The unprocessed field recording and the drones go on until 5’12’’. At that moment, we hear a 1,5 second loop that includes a segment of the piece with location recording and the drone. The loop was derived from the segment around 4’43’’. After the loop ends, there is a reverb with a reverberation time of about two seconds. At 5’15’’, we hear a sound that was processed with the waves doppler effect plugin. At 5’17’’, the loop is repeated but this time the drone timbre is more prominent within the mix of the loop. Again another reverse sound is heard at 5’20’’. At 5’22’’ the third reverse sound of this outro is heard and right after that at 5’23’’ the loop that was first heard at 5’12’’ is heard again. After two more reverse timbres, the mixed loop is repeated at 5’28’’. Another doppler effect is heard at 5’30’’, 5’33’’ and 5’38’’. Another version of the opening texture is heard at the end of the piece. This timbre starts at 5’41’’ and ends at 6’03’’.



#### **5.4 Thomas Gerwin “Kurzgeschichten” – 1998 (Germany, Europe)**

Thomas Gerwin’s work “Kurzgeschichten” is a soundscape work that combines environmental, rural, urban soundscapes and traditional music in a collage-like aesthetic.

Here is the program notes for the piece :

Kurzgeschichten / Short stories (1995-98)

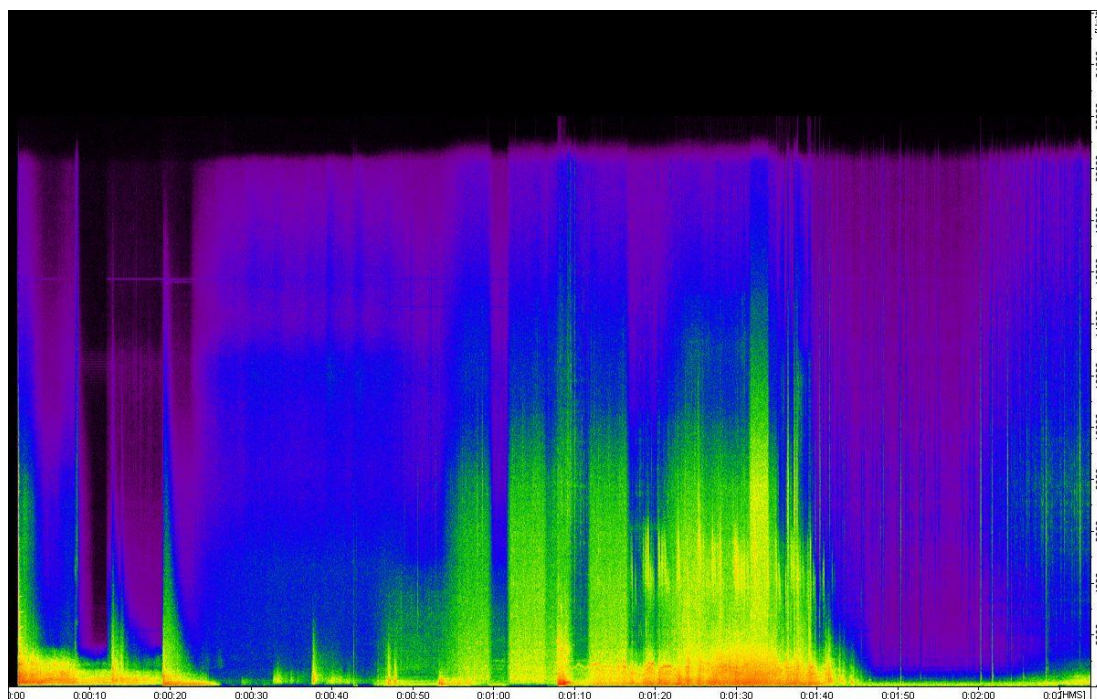
A (very) short history of the environmental sound

Sounds are beings. They were born, spent a discrete live-time at distinct locations and then die. Sometimes they form higher organisms. This piece tries to contribute artificially to the sensual awareness and to make sensitive for the richness and beauty, but also for the vulnerability of our sounding environment.

The piece presents exclusively concrete sounds, which are cut, arranged and processed very respectfully. Indeed I only tried to learn more about the sounds and their characters to find out how to combine and to expose them in an adequate manner. The aim is always to model a natural flow of happenings.

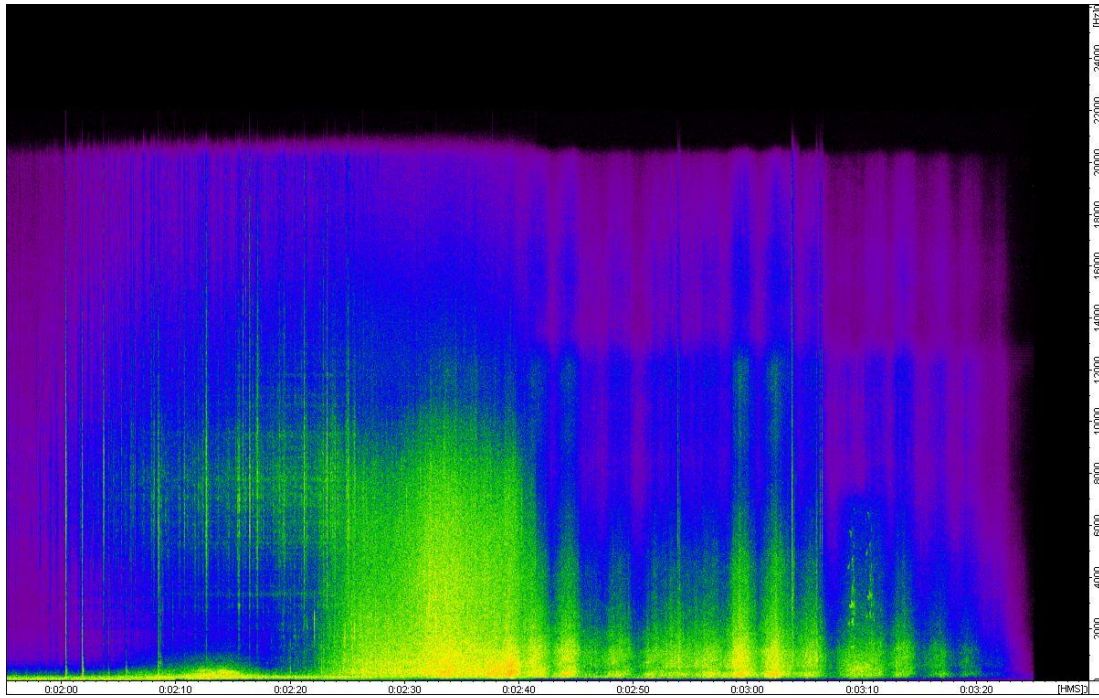
For production a Sennheiser artificial head mic, a AT 9350 gun mic, an AIWA CMS32 stereo mini mic, a Sony portable DAT, a Power Mac 7600/132, a Mackie mixer and a Yamaha ProR3 digital reverberator were used. The software used was Emagic Logic audio, Alchemy and some selfwritten smaller tools.

Both parts of "Kurzgeschichten" came from CD "Klangbilder", which I composed 1995 as a commission of EXPO 2000 Hannover. I reworked and rearranged them 1998 again. "Kurzgeschichten" was published 1999 on CD-ROM "Soundbox 2.0" by KIASMA, Museum Contemporary Art Helsinki Finland. The 2nd Movement "Mensch-Natur-Technik" was published on SAN SOUNDING SOUNDSCAPE COMPOSITION CD with "SAN DIFFUSION", Sonic Arts Network, UK, November 2001.



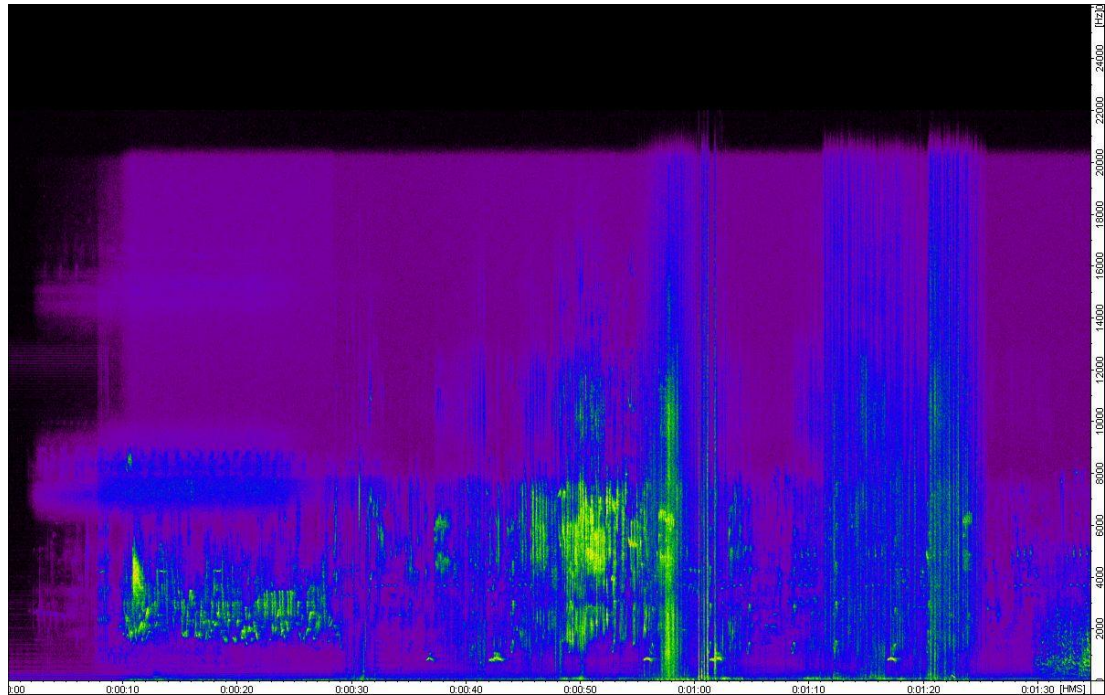
**Figure 5.4a** : Spectral analysis “Kurzgeschichten” Part 1 0’00’’ – 2’ 00’’.

The piece starts with the sound of a loud door slam, followed by a crackling kind of texture that pitchshifts down slowly. On top of this texture, the location recording of a sea is heard. Eight second into the piece, a short high pitched percussive sound is heard. Between 0’12’’ and 0’19’’ the sound of a thunder is heard along with the low pitched drone that started right at the beginning of the piece. Until this moment, the actual location recordings are being heard along with the processed textures. At 0’19’’ the sound of a thunder is heard along with the sound of its processed version. Between 0’ 26’’ and 0’53’’ the sound of thunder and rain is heard. Right around 0’54’’ there is an abrupt change of a rainy atmosphere. It sounds like Gerwin used a very short crossfade between the two very different rain sounds. This kind of change also occurs at 1’00’’ and 1’02’’. The rainy sonic atmosphere that has started at 1’02’’ goes until 1’08’’. Right at 1’08’’ again we hear another abrupt change. This time, the sound of fire, wind and human voice are heard on top each other. This is another example of how the composer juxtaposes different sonic atmospheres. This atmosphere goes to a crescendo which ends at 1’40’’. Another interesting technique he uses during this section is the very short cuts that has been executed to different field recordings. Between 1’40’’ and 2’00’’ the sound of a cracking fire is heard along with the sound of thunder that ends at 1’47’’.



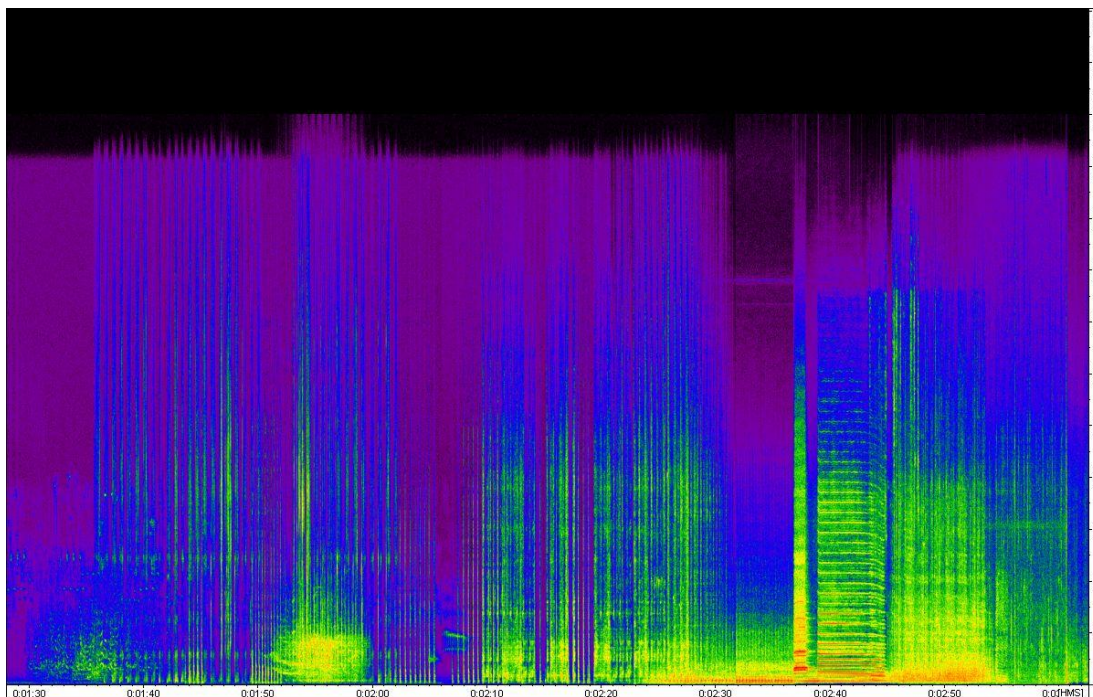
**Figure 5.4b** : Spectral analysis “Kurzgeschichten” Part 1 2’00’’ – 3’ 30’’.

The crackling sound of fire goes on until 2’30’’. During the thirty seconds between 2’00’ and 2’30’’, the sound of the fire seems to dissolve and change into the sound of rain. This effect has been achieved with the cleverly and artistically done long crossfade and convolution. The sound of thunder and rain actually starts slowly around 2’05’’. Right around 2’40’’ the sound of rain crossfades into the sound of sea. During this part, we hear these seamless interesting crossfades and changes in sonic atmosphere. The sound of the sea goes on until the end of this part. The main change is the change of the recording distance from the main source. Right around 3’’06’’ he seems to insert a location recording of the sea waves done from some meters away, also added on top is the chattering of the seagulls. The main interesting point of this end section of the Part 1 is the seamless changes of atmosphere and interesting crossfades.



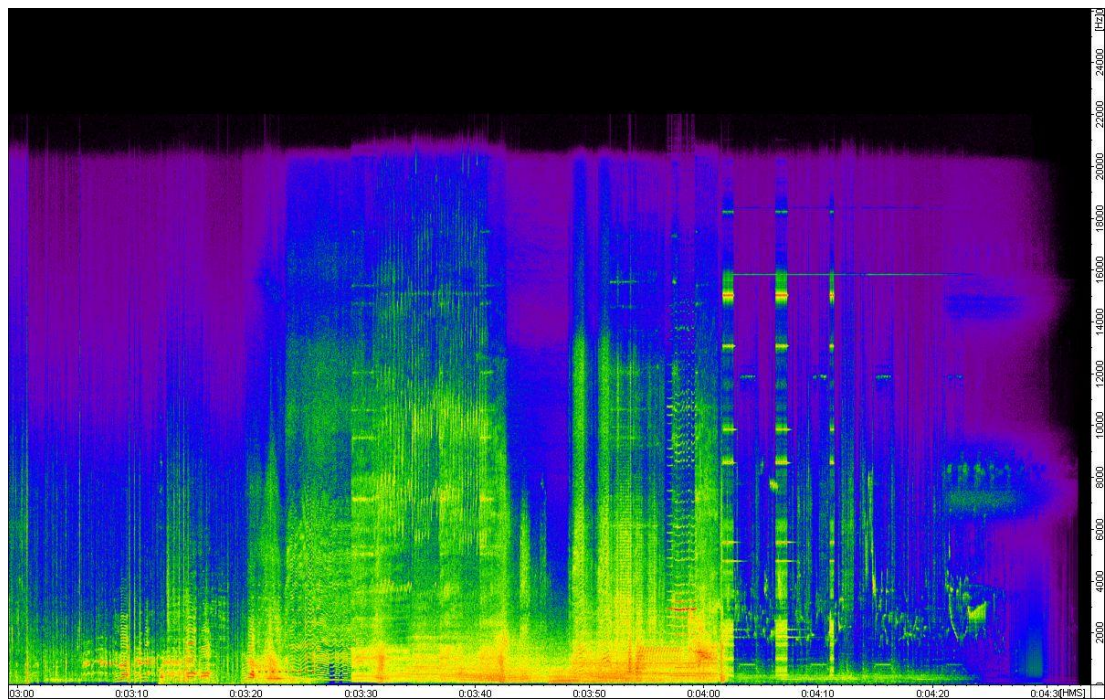
**Figure 5.4c** : Spectral analysis “Kurzeschichten” Part 2 0’00’’ – 1’ 30’’.

The Part 2 of the piece Kurzeschichten starts with the sound of birds. This location recording goes on until 1’30’’. While we hear this one main location recording, at times Gerwin also added various other field recordings on top. Like right around 0’31’’ a footstep and the sound of a flying bee are heard. Also between 0’40’’ and 1’26’’ various footsteps can be heard along with the main bird recording. It is obvious that these footsteps have been recorded on a grassy surface. The variation to these footstep sounds is the different speeds that the person has walked on the surface. At 1’23’’ an exclamation of the composer himself can be heard. This whole section starts very low in volume. The starting 10 seconds have an rms volume of -44.1 db. Around 0’50’’ the volume increases to -25.2 db rms. The difference is 18.9 db. There is very little energy in the bass frequencies during this section, which can be seen by looking at the spectral analysis above.



**Figure 5.4d** : Spectral analysis “Kurzgeschichten” Part 2 1’30’’ – 3’ 00’’.

Right at 1’30’’ a field recording of various people talking can be heard. This recording fades in until 1’36’’ where it reaches its maximum volume and then fades out around 1’43’’ with a 3 second fadeout. On top of these voices, a scratching noise can be heard which lasts between 1’35’’ and 1’53’’. Between 1’43’’ and 1’52’’ various percussive sounds may be heard. These sounds most probably have been achieved by striking a wooden surface with a mallet. Between 1’52’’ and 2’00’’ an African tribal dance performance may be heard and this recording fades out very quickly at 2’00’’. A rhythmic beating happens between 2’00’’ and 2’20’’. A wood cutting like texture may be heard between 2’10’’ and 2’30’’. The interesting thing around this moment of the piece is the timbral transition which happens between 2’25’’ and 2’30’’. During these five seconds, the timbre of the woodcutting gadget turns into the timbre of the steam train. The sound of the train goes on until 2’55’’. The loudest sound of the piece which is the horn of a train happens at 2’37’’ where the peak level is right at 0 db. Between 2’54’’ and 3’00’’ the sound of water dripping into a bucket may be heard. This sound is cut abruptly right at 3’00’’.



**Figure 5.4e** : Spectral analysis “Kurzgeschichten” Part 2 3’00’’ – 4’ 30’’.

Between 3’00’’ and 3’20’’ the sound of rain on a window pane may be heard. On top of this field recording, the moos of cows, a few footsteps, a rhythmic beating on a wooden panel, a toilet flush, a laughing man, various duck sounds may be heard. These twenty seconds have a rural sonic ambience and this ambience changes all of a sudden at 3’20’’. The piece moves from the rural sonic atmosphere to an urban soundscape. Right at 3’20’’ we hear the beeping sound of an alarm clock, the passing by sound of an automobile followed by the sound of a woodchopper. At 3’29’’, the section that includes the sounds of various machines which are used on roadwork starts. This section ends with a crescendo at 4’01’’. This crescendo is the end of the urban soundscape part of the piece. After the crescendo, we hear the sounds of birds like the recording right at the beginning of Part 2. On top of this location recording, some elements of urban soundscape may be heard though now much lower in volume. The piece ends with the sound of an analog synthesizer on top of the bird songs. This ending is a great summary of the whole piece which combines both natural and processed field recordings, rural soundscapes and urban soundscapes and the sounds of machines and technological instruments.

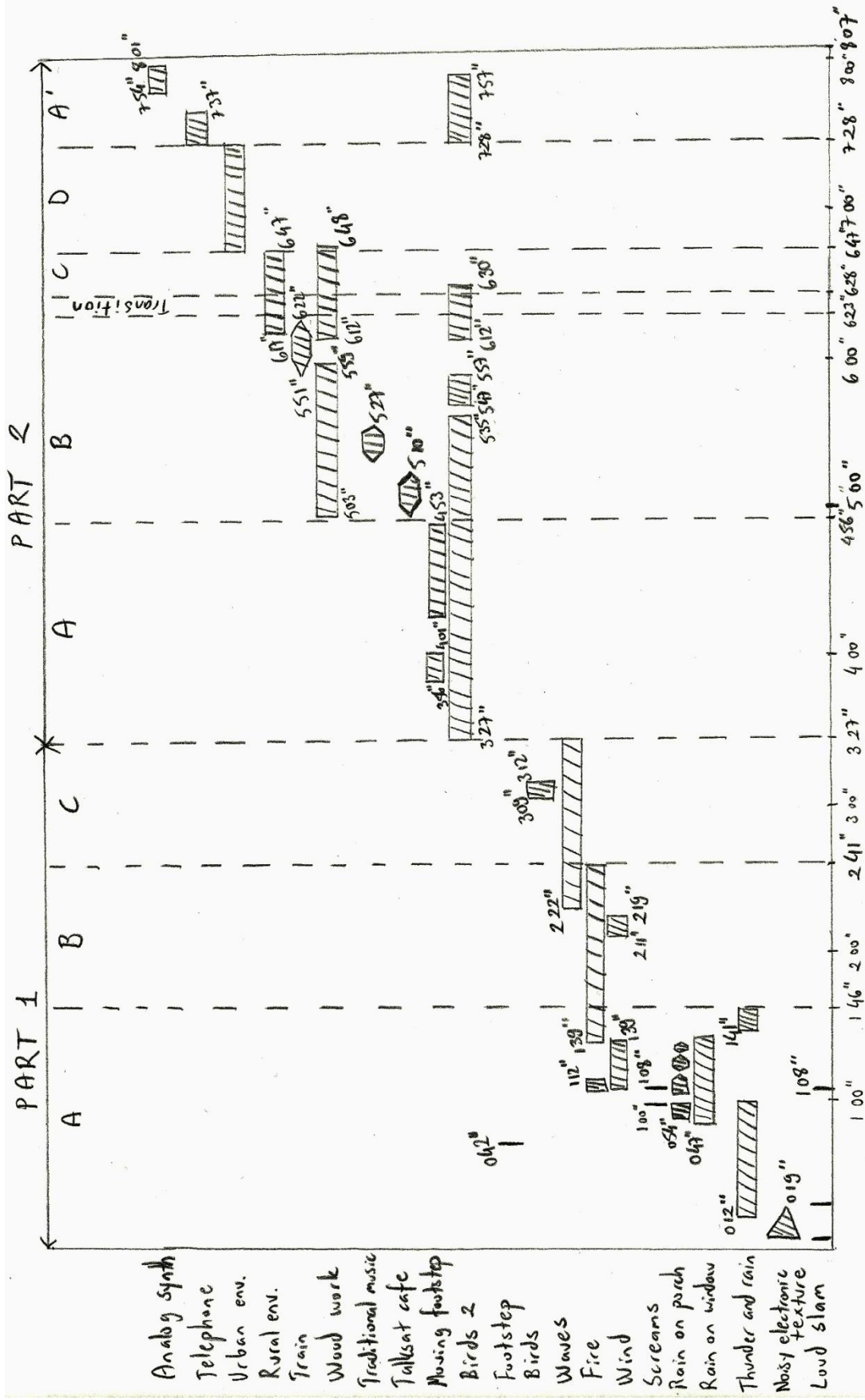


Figure 5.4f : Formal analysis – graphic score “Kurzgeschichten”.

### **5.5 Damian Keller “touch ‘n’ go” – 1999 (Argentina, Latin America)**

Damian Keller’s piece “touch ‘n’ go” is based on ecological sound models. The piece is divided into 14 movements. These movements are :

1. Pandemonium 2
2. Realpolitik
3. Action to be taken in the event of a fire
4. Farewell, welfare
5. let me see...how can I word it?
6. least, but not last
7. let me see...how can I word it? 2
8. Pandemonium 1
9. A waltz in a ball
10. sCRATch
11. Coin a name
12. spill, spiel, spoil
13. Vox Populi
14. Pandemonium 3

Damian Keller’s piece “touch ‘n’ go” is a modular work. The idea of a modular, open work was first put forth by the Argentinean writer Julio Cortázar and later reproduced by other theorists such as Umberto Eco (Italy) and Arlindo Machado (Brazil). In touch'n'go, the sections of the piece can be heard from beginning to end, from end to beginning, or in any order that the listener desires. The work is just a field of possibilities that take shape at the moment of its performance. Therefore, the listener has an active role in the realization of the piece. touch‘n’go also provides a rich field for the integration of extra-musical elements, such as acting, text and

images. This move toward multimedia formats was further developed by other ecocomposers, such as Matthew Burtner (USA) and Ana Lúcia Fontenele (Brazil).

Here is what Damian Keller tells about the compositional processes used in the piece:

“touch'n'go/toco y me voy” (1998-1999) is a piece for eight-channel computer-generated tape and hypertext. Depending on the venue, “touch'n'go” has been played as a tape solo piece with an eight-speaker diffusion system, as a stereo piece with hypertext markup language (HTML) and as a live performance work for actor and tape. In its live version, the text can be interpreted by one bilingual actor or by two actors who share the Spanish and English texts. As a WWW page, it can be explored through its hypertext links.

I chose the enhanced CD format for the commercial release of “touch'n'go” based on the formal layout of the piece. “Touch'n'go” can be heard as a linearly composed piece, or it can be explored through randomly chosen paths. The piece comprises 11 self-contained sections, each of which stands as independent compositions. The CD is divided into 14 tracks. Each track corresponds to one section, with the exceptions of “Pandemonium”--separated into three tracks--and “Let Me See . . . How Can I Word It?” which has two parts. Its structure is based on Jorge Luis Borges's [28] 1956 short story “The Garden of the Forking Paths”. In this story, Borges describes a Japanese garden in which the visitor must choose among several paths at each bifurcation. The road chosen becomes the traveller's reality, and all other potential futures are lost.

This idea is not explicitly explored in any section of “touch'n'go” but permeates the structure of the music and the text. The form of the piece is created as the listener/reader “walks” through its sections. The path can be laid out by using the shuffle mode on a CD player or it can be set by the user while listening to the tracks.”

Here is what Damian Keller tells about the text used in the piece:

“In each musical section of “touch'n'go”, short literary texts complement or develop the ideas presented in the music. This format can be seen as an extension of the traditional program notes. Nevertheless, the hypertext presentation opens up a more complex interlocking of meanings. For example, the words chosen as hypertext links

suggest a specific relationship with the text to which they lead. Similarly, the unfolding of text establishes a dynamic form of poetry that is hard to attain on plain paper (e.g. “Coin a Name”, “sCRATch”). Most importantly, the exploration of the text becomes a time-based process similar in form and dynamics to the form-creation process one realizes by listening to the piece.

The cross-cultural references in the piece as well as the impossibility of a literal translation of poetic material led me to write different texts in English and Spanish. As demonstrated by masterpieces of translation, the best way to adapt a text to another language is to rewrite it. But this is not feasible for well-known works such as José Hernández's “Martín Fierro”, or Borges's and Cortázar's texts. Therefore, I organized a working team of English and Spanish speakers, including a certified translator, Ivan Roksandic, and myself to attempt a close transcription of meaning and feel for these texts. I wrote the remaining material in either English or Spanish, without attempting a literal translation. The same procedure was used for the title of every section.

Each title suggests ambivalent meanings and hints at political and social issues within either a North American or Latin American context. Explicit political references are explored in “Coin a Name ([Me] Río de la Plata)”, “Realpolitik (En Vías de Desarrollo)” and “sCRATch (El Escrache)”. Moreover, both the thematic axis and the choice of texts imply a social commentary and a firm cultural grounding. José Hernández's “Martín Fierro” is the epic poem that gave birth to the tradition of socially engaged Argentinean literature. The main character of the book, the outcast wanderer gaucho, is symbolically taken up in “touch'n'go”. Thus, the piece could be understood as the possible worlds visited by a gaucho or a traveller. “Coin a Name” draws a parallel between the action of throwing coins in a river and the murders committed by the most recent military dictatorship in Argentina. One of the modus operandi of the military killers was to throw their victims alive into the river from helicopters. Presently, human rights organizations are denouncing these and other crimes by doing public demonstrations called escraches. Escrachar means to put in evidence, to unveil someone who tries to hide his true identity. Many individuals who committed crimes against humanity are still free. Some of them occupy positions of political power and continue their illegal practices. The objective of the escraches is to make their names and addresses known to the communities in which

these people live. “Realpolitik” was inspired by the bombing of Baghdad. During the realization of “touch'n'go”, reality caught up with art as Belgrade, Yugoslavia, another ancient and culturally rich city, was destroyed by bombs.”

Here is what Damian Keller tells about the sounds used in the piece.

“Ecologically based composition integrates representations of environmental sound classes with social and cultural references. Sound models are constrained to perceptually recognizable parameter ranges. In this context, formal issues take a quite specific meaning. Form is a dynamic process taking place at the micro, meso and macro levels. When properties not explicitly determined by specific parameters emerge at different levels, we witness a pattern-formation process. In this case, form is not defined by the algorithmic parameters of the piece but results from the interaction among its sonic elements. In a general sense, pattern-formation refers to the emergence of higher-level forms or behaviours resulting from the interaction of two or more systems. F.J. Varela and his colleagues have used the term “pattern formation” to describe the mutual adaptation processes taking place between the individual and the environment.

From the ecological perspective, the formal structure that serves as a vehicle for communication seamlessly integrates references to the cultural environments of both the listener and the piece. This compositional approach does not imply any judgment on the value of abstract music; I am simply acknowledging the impossibility of listening to music in a cultural vacuum.

Furthermore, the sound classes my work utilizes as source material constrain the transformational processes employed. The relevance of everyday sounds as compositional raw material derives from their acoustic richness and their direct reference to the listener's environment. Ecological models provide a framework that extends the use of mundane sounds to formally and perceptually consistent domains, i.e. the sound classes can be compositionally shaped without losing their perceptually relevant characteristics. Once a sound model is defined, a range of behaviours can be explored. Because ecologically based sound classes can be easily recognized, paradoxical and extended sonic transformations can be integrated into the compositional discourse. These techniques are explored in *Coin a Name*, where the sound of splashing water is smoothly turned into splashing glass--that is, glass impacts that resemble the meso-temporal behaviour of splashing water. Similarly, in

“Action to Be Taken in the Event of Fire”, the sounds of matches being lit are used to excite string resonators, creating the effect of stringed instruments being played by fire.

The musical material of “touch'n'go” is the result of dynamic processes both at the meso and macro levels. Two structural processes are exploited in this piece: (1) the emergence of macro-structural properties by interactions among lower-level elements and (2) isomorphism. “Farewell, Welfare” provides an example of isomorphic processes at conceptual, algorithmic and perceptual levels. The section develops Zeno's idea of an infinite labyrinth. This labyrinth consists of a straight line that one travels recursively by covering half its length with each movement. Obviously, the end of the line can never be reached. The algorithm I used for producing all sounds in this 2-minute section is a variation of the Karplus-Strong string model and uses a single short sample as source material. This sample is “walked” by two pointers at different rates, producing an ever-rising or ever-falling sound, depending on the parameters input to the model. These parameters are randomly generated within dynamically changing ranges. The sound produced is akin to a combination of Shepard tones with self-similar events that occur at ever-expanding time spans. Although “Farewell, Welfare” does not make use of everyday sound models, it explores a sound space generated by a synthetic instrument consistently with the methods employed in other sections. Specifically, sound results from the interaction of an excitation process with a resonant system. Here the system does not represent a real-world model, but its behaviour produces a sonic result consistent with the concept and the algorithmic structure of the piece.

The model I developed for “Vox Populi” uses a small pool of conch shell sound samples. These samples have a harmonic spectrum with some noise content. When combined randomly, they approximate the behaviour of choir-like formants. These formants result from the interaction of the samples at a meso level. Thus, the effect at the macro level is qualitatively different from the characteristics of the source sounds.

A similar phenomenon can be observed in the “structured rain” material in “least, but not last”, which makes use of a three-stage process to generate this sound. First, I produced several types of drop sounds using convolution. Convolution consists of applying the spectral dynamics of a source sound to those of a target sound. I then

organized the drops as constrained random meso-level events. Finally, I distributed the meso events in a slightly irregular rhythmic pattern by employing a slowly evolving dynamic process. The result was a sound that resembled wind and rain with metallic reverberations in the background. “Least, but not last” makes use of two contrasting spaces--metaphorically speaking, the space of the living and the space of the dead. I produced the first space by mixing a recording of a big, open building; the enclosed space was created through convolution of granular samples.

The sound event as a basic musical unit is the driving principle of the synthesis and organization of material in “touch'n'go”. No sound in this piece includes an ecologically impossible attack or decay. Excitations arise from using grains extracted from real-world sounds: water drops, cracking wood, glass hitting glass, etc. The key contribution of the ecological models to this piece is the organization of spectrally complex samples into feasible meso-temporal patterns. Furthermore, the consistency among meso and macro levels unveils new properties resulting from the interaction of these levels. For example, the rising pitch produced by two bottles bouncing against each other results from amplitude modulation of the accelerating, resonant glass impacts. Likewise, the wind-like sound of high-density water-drop textures is produced by the overlap of granular decays, which are heard as slowly varying formants. As used here, the method is somewhat similar to formant wave function (FOF) synthesis.

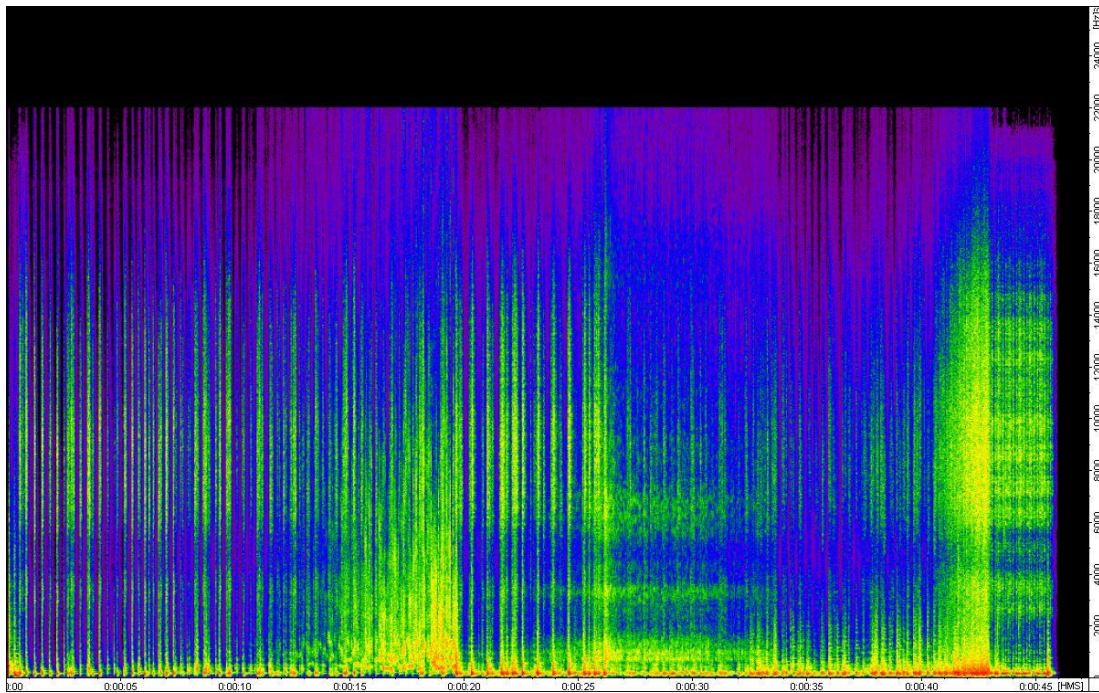
At the basis of the ecological models I use a set of constrained random algorithms that generate constantly varying parameters within predetermined ranges. The constraints applied approximate the range of variation in environmental sound classes. I obtained ranges of parameter variation by synthesizing hundreds of instances of each sound model and comparing the aural results to various examples of recorded sounds. I further tested the recognisability of resynthesized sounds through informal listening sessions with both musicians and non-musicians.

Ecological models produce statistically constrained sound classes instead of a single deterministic sound. As simplistic as it may seem, this is what allows algorithmic models to simulate the behaviour of ever-changing environmental sonic worlds. No sound in the environment exists twice in the same configuration. Therefore, no sound in an ecologically based piece should be literally repeated. By the same token, each realization of the piece is unique in its micro- and meso-level characteristics.

In “touch'n'go”, all sounds “live” in feasible spaces. I used two methods for placing events within a virtual acoustic field: convolution of granular samples and control of phase synchronicity among granular streams. A convolution-designed grain consists of an ecologically meaningful short sound, such as a water drop or a bubble, which is convolved with the impulse response of a cavern or any other reverberant space. When distributing these grains as meso-level time patterns, the result is a stream of events that occurs within the space defined by the impulse response used; for example, bubbles inside a cavern. Given that I could use several types of grain, the number of simultaneous spaces created depended on the limits of our auditory system in discriminating sounds coming from different reverberant spaces. The other method I utilized for virtual sound placement is phase-controlled granulation. This type of processing increases the volume of the source sound, as defined by Truax by superimposing several granulated versions of the processed sound. If the phase-delay among these streams is kept constant, the effect is akin to the reflections produced by a reverberant space. The number of “reflections” is roughly proportional to the number of streams. The “structured rain” in “least, but not last” was produced using these techniques.

Ecological consistency guided my organization of the eight-channel diffusion of the piece. I used Harmonic Functions' DM8 computer-controlled diffusion system. Actions that suggest movement, such as breaking, rolling or scraping, were diffused through dynamically changing patterns. I gave environmental background sounds produced by static sources--e.g. water and distant horns--wide diffusion settings and very little or no movement. I treated the human voice as a single source by placing it on a stereo field. The circular speaker layout allowed me to explore a variety of sound trajectories: front-to-back, back-to-front, diagonal and side-to-side movement. This disposition disrupted the hierarchy of front as the only important reference and kept the audience constantly surrounded by consistently placed sources.”

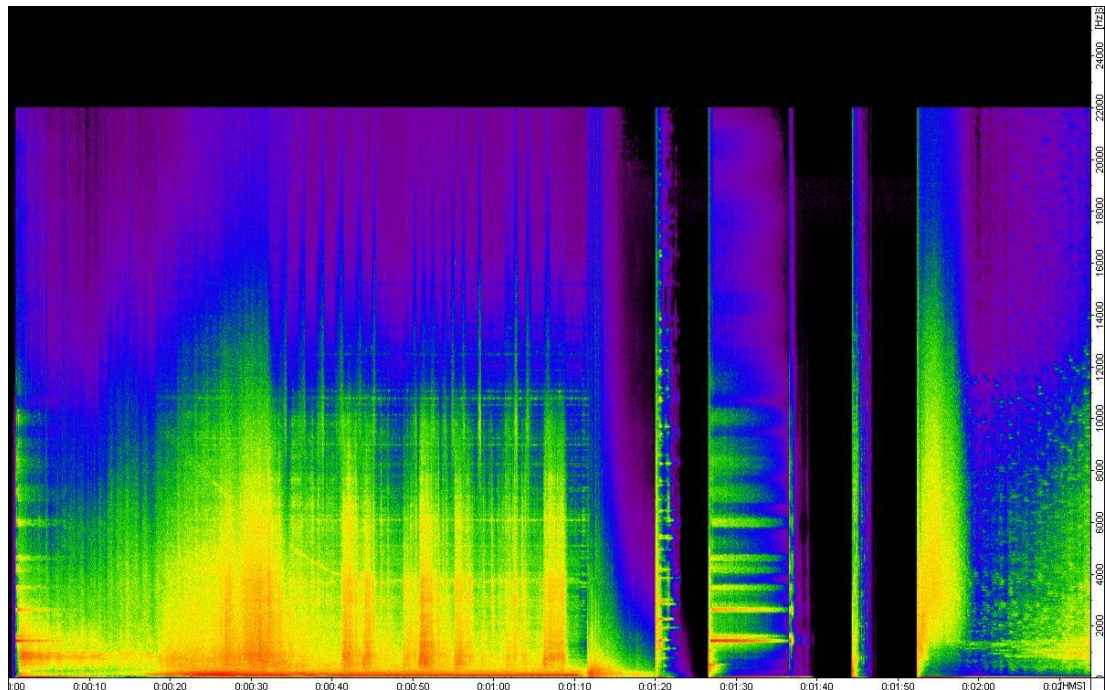
### 5.5.1 Analysis of “touch n go” Part 1 “Pandemonium 2”



**Figure 5.5.1** : Spectral analysis “Pandemonium 2” 0’00” – 0’ 46”.

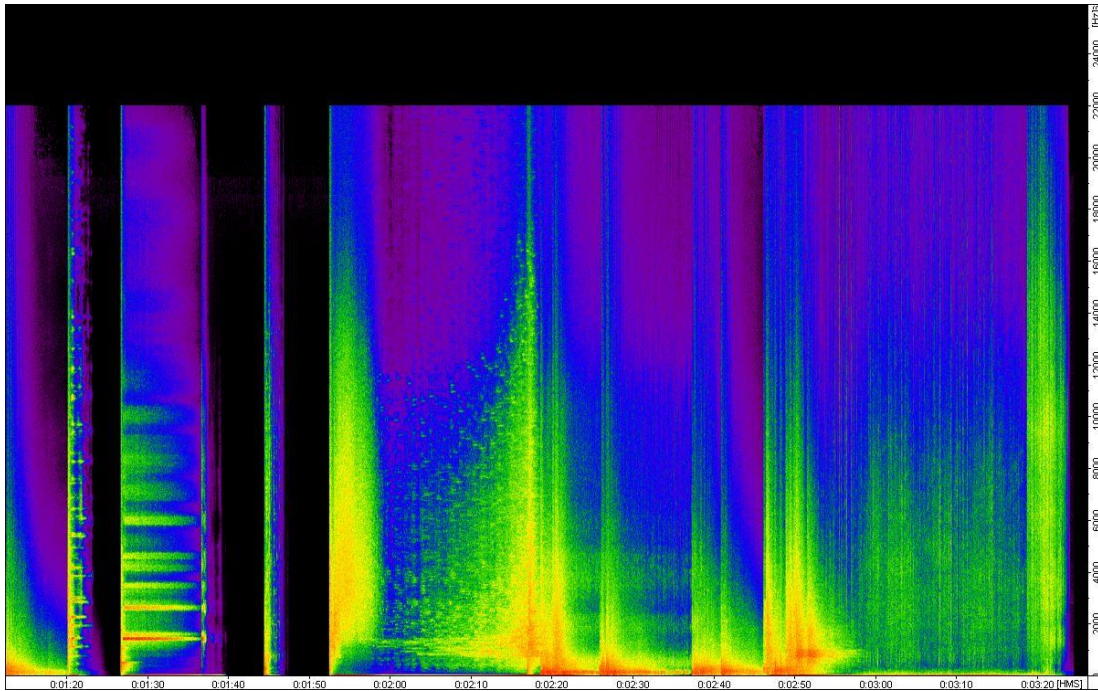
The “Pandemonium2” starts with the sound of a Latin American percussion instruments probably a bongo and a tambourine. Right after hearing the actual timbres of the instruments, the sounds get processed by granular synthesis. The timbres get granulated in different lengths. Around 0’11” a high pitched noisy texture is heard which goes into a crescendo at 0’19”. Between 0’19” and 0’26” the granulated instrument sound gets a rhythmic character. Between 0’26” and 0’33” the high pitched noisy textures are heard louder in the mix. Then until 0’41” the unprocessed timbres get heard still granulated but with slightly longer time intervals. Between 0’41” and 0’43” the granulation times get shorter and overall sound goes to a crescendo. Between 0’43” and 0’45” the granulated sounds go on but the section ends with a short percussive hit from the actual instrument.

## 5.5.2 Analysis of “touch n go” Part 2 “Realpolitik”



**Figure 5.5.2a** : Spectral analysis “Realpolitik” 0’00” – 2’ 00”.

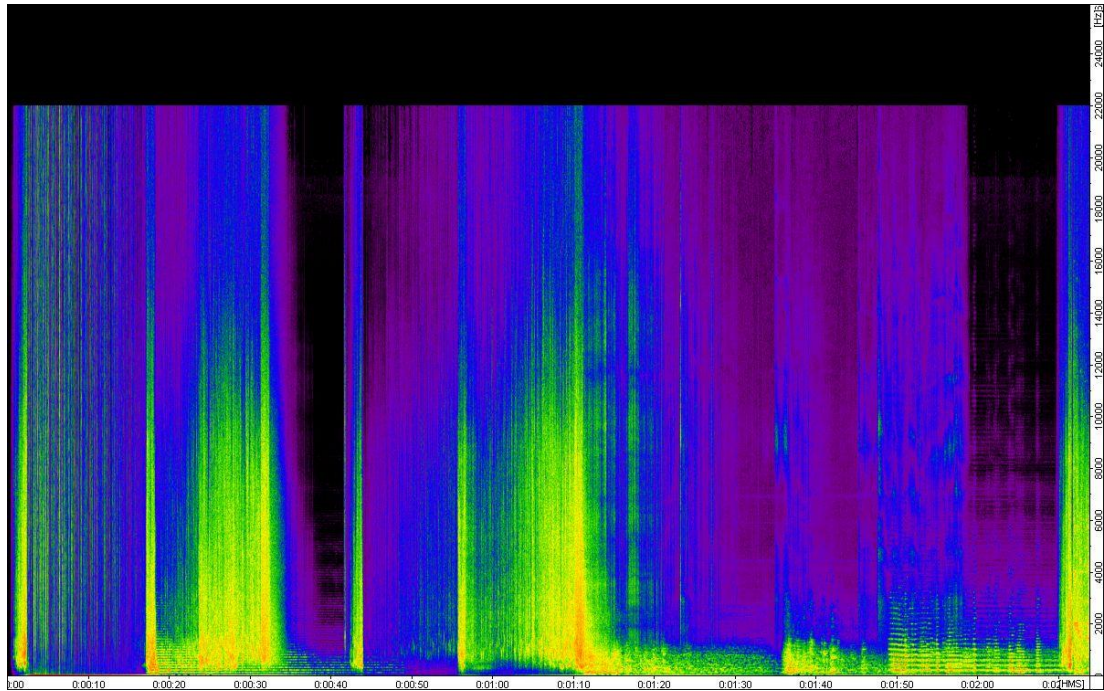
This section was inspired by the bombings of the city Baghdad. First we hear a metallic sound which is followed by a bomblike texture. This texture goes on until 0’18” . At that moment, there is a fade in to a new sound which resembles the sounds of an army tank slowly approaching. This textures goes to a crescendo around 0’30” and then slowly fades out to a volume of rms -15.3 db and continues to sustain until 1’08” where it abruptly ends. Between 0’30” and 1’08” , we hear not just the motor sound, but also various short, aggressive metallic hits. We can see from the spectral analysis that there is a quite a significant amount of bass energy during the first minute. At 1’12” , we hear a sound that resembles a heavy bombing. Between 1’00” and 2’00” all of the sounds have a short, metallic character with long silences in between each event. This creates a tension for the listener. The hit at 1’52” resembles the sound of fireworks and this timbre fades out to -38.4 db rms at 2’00”.



**Figure 5.5.2b** : Spectral analysis “Realpolitik” 2’00” – 3’ 26”.

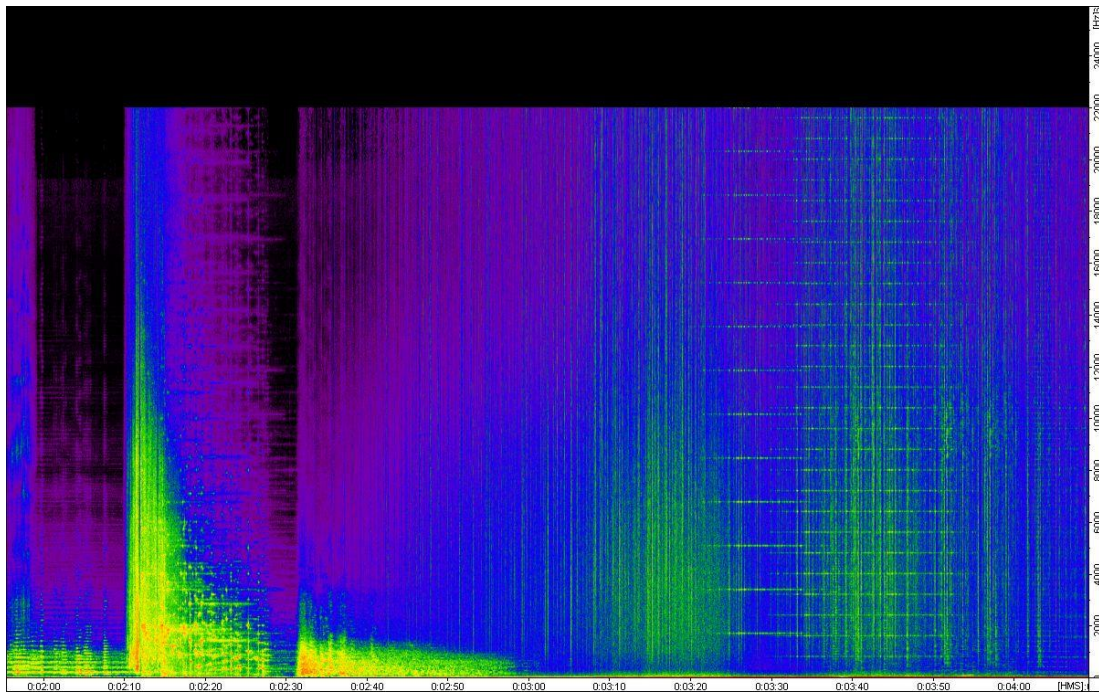
Between 2’00” and 2’18” the texture gets more dense and louder. This crescendo ends with a loud, aggressive texture that resembles a collection of gun shots and bombs. At 2’25” the texture sounds like a wind machine. Between 2’16” and 2’55” the bass heavy hits are combined with high frequency granulated textures. Between 2’55” and 3’18” we hear fire-like sounding granulated textures which are heavy in high mid frequencies. This section ends with a louder and denser texture with more grains of sound compared to the section before.

### 5.5.3 Analysis of “touch n go” Part 3 “Action to be Taken in the Event of a Fire”



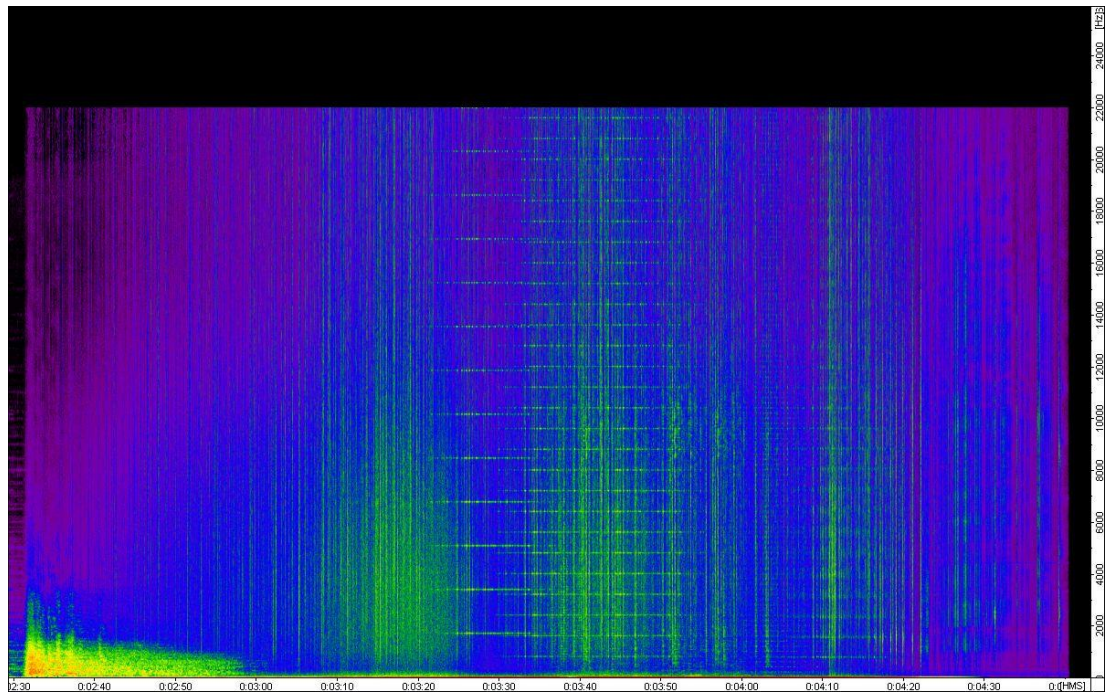
**Figure 5.5.3a** : Spectral analysis “Action to be Taken in the Event of a Fire” 0’00’’ – 2’00’’.

This section starts with a two second crescendo which peaks at -0.5 db. Right after this crescendo ends, we hear sounds that resemble fire crackles. These sounds are not actual field recordings but rather synthesized timbres. At 0’17’’ we hear a combfilter sound that sustains until 0’50’’ while slowly fading out. Between 0’17’’ and 0’18’’ we hear a more granulated synthesized crackle sound which also repeats between 0’20’’ and 0’38’’. We can also see on the spectral analysis that the energy at the high frequencies fade away and the level of the piece goes down to -43.7 db rms between 0’35’’ and 0’41’’. Right at 0’41’’ we hear two short spikes which last 70 and 90 ms. After the ending of these spikes, we hear a short crescendo that ends at 0’44’’. Between 0’44’’ and 1’11’’ there is a rise in volume of the granulated fire timbre, this crescendo peaks at 0 db and has an rms volume of -14.3 db. Right at 1’11’’ we hear the combfiltered timbre which lasts until 1’49’’. During this section the fire textures go on although now quieter and with lesser actual grains. At 1’49’’ the pitch of the combfiltered pad jumps an octave higher and instantly the pitch starts to go down slowly until 2’10’’.



**Figure 5.5.3b** : Spectral analysis “Action to be Taken in the Event of a Fire”  
2’00’’ – 4’ 00’’.

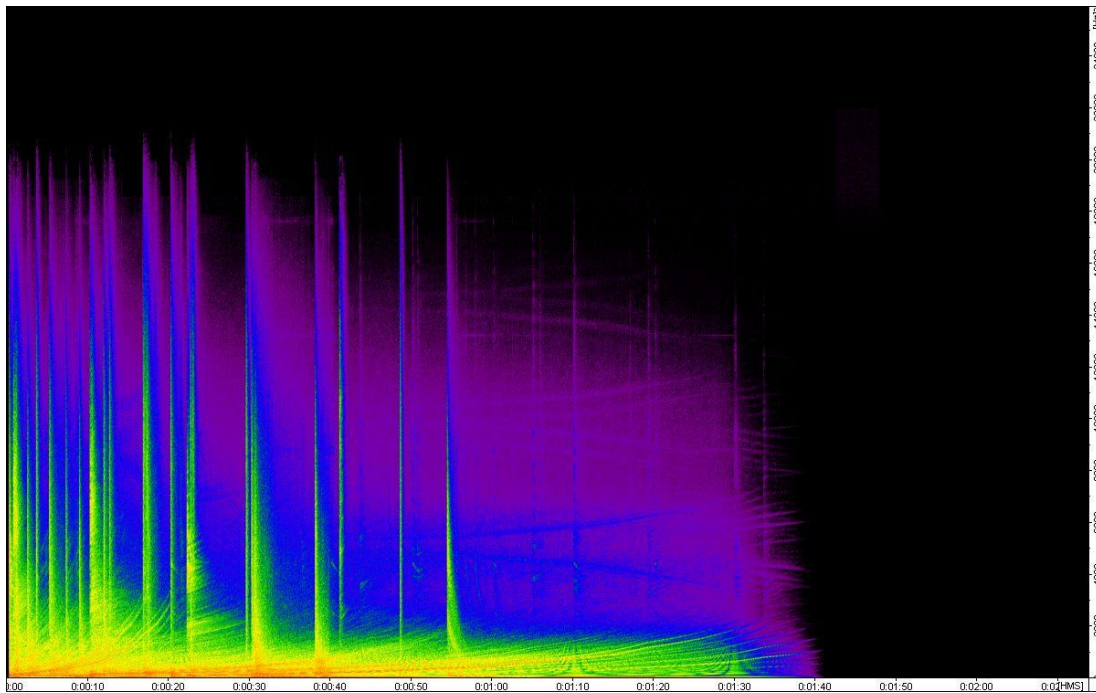
Between 1’50’’ and 2’10’’ we hear two different versions of the combfiltered sound, one of these versions is the time stretched one while the other one is the short percussive one which changes in pitch all the time during these twenty seconds. At 2’11’’ the music peaks at -0.3 db and the rms volume is -14.4 db. Between 2’11’’ and 2’31’’ we hear the two different versions of the combfiltered timbre. At 2’31’’ the pitch of the combiltered pad is Ab, this timbre sustains until 3’02’’ and fades out during this thirtyone seconds. During this section we also hear the fire crackles along with the fading out pad. On top of these, there is also a filter white noise like texture. Apart from the combiltered pad, the other two textures go on until 4’00’’. At 3’20’’ the combiltered texture is heard now with granulation effect. Between 3’20’’ and 4’00’’ there is a lot of sub frequency energy.



**Figure 5.5.3c** : Spectral analysis “Action to be Taken in the Event of a Fire”  
4’00’’ – 4’ 41’’.

The granulated combfilter pad, fire crackles all peak at -0.7 db at 4’12’’. After this peak the piece slowly fades out. During this fade out we hear five different trials of lighting up the match. At 4’22’’ we actually hear the sound of lighted match. This is an actual location recording not a synthesized sound. Between 4’22’’ and 4’41’’ the processed and nonprocessed fire sounds are heard at the same time. This section ends with a pitch shifted version of the recording that was heard at 4’22’’. The combfiltered sounds heard during this section are the string resonators. The sounds of matches being lit have been used to excite string resonators which have created the effect of stringed instruments being played by fire.

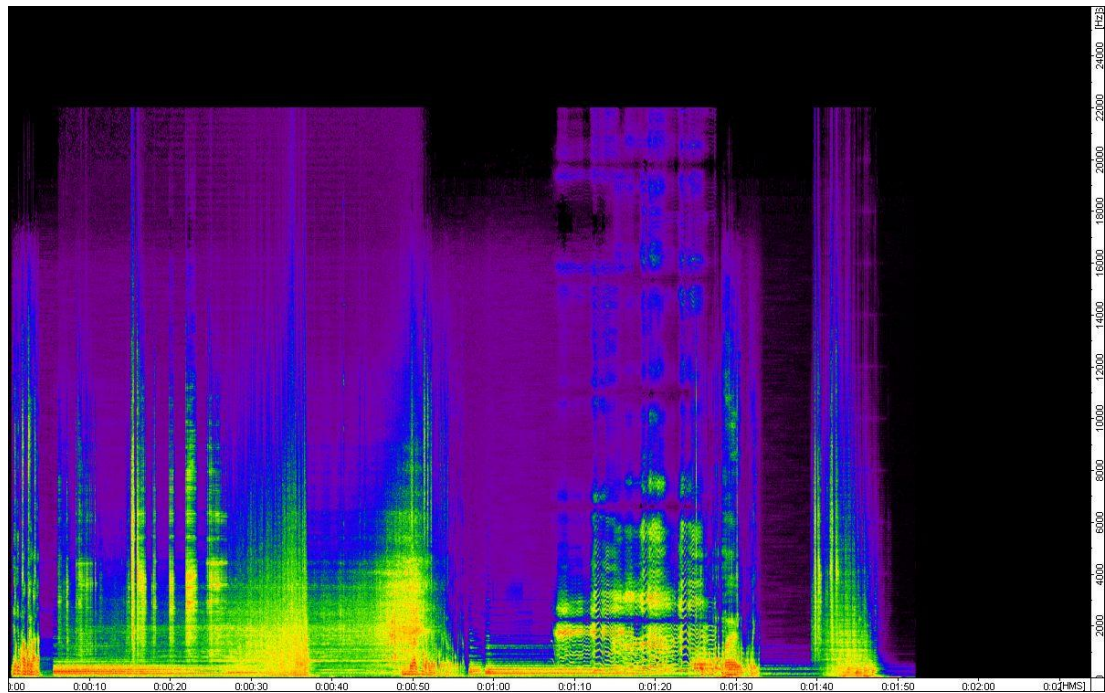
#### 5.5.4 Analysis of “touch n go” Part 4 “Farewell, Welfare”



**Figure 5.5.4 :** Spectral analysis “Farewell, Welfare” 0’00” – 1’ 48”.

All of the sounds in this section are variations of the Karplus-Strong string model and based on a single short sample as source material. The whole section has an ever-rising or ever-falling kind of texture. There is no use of location recording in “Farewell, Welfare”. The volume peaks at -3.2 db right at the start and then fades out to – infinity at the very end. There are two main timbres that have the character of ever-rising or ever-falling effect during this whole section. The section does not make use of everyday sound models, it explores a sound space generated by a synthetic instrument. The sounds result from the interaction of an excitation process with a resonant system.

### 5.5.5 Analysis of “touch n go” Part 5 “Let Me See...How Can I Word It”



**Figure 5.5.5a** : Spectral analysis “Let Me See...How Can I Word It 1” 0’00”–1’52”.

The structure of this movement is based on Jorge Luis Borges' 1956 short story “The Garden of the Forking Paths”. In this story, Borges describes a Japanese garden in which the visitor must choose among several paths at each bifurcation. The road chosen becomes the traveller’s reality, and all other potential futures are lost.

The section starts with a male voice reading a text. The sound of the voice is filtered and right at the end of the phrase an infinite reverb effect is heard. At 0’05’’ a chord played on a classical guitar is heard. This chord also gets effected through an infinite reverb. While this effect goes on, various metal like textures are heard on top of this main background. The main infinite reverb texture fades out around 0’30’’ while two different textures are being heard and these sounds reach to a crescendo at 0’36’’. Between 0’36’’ and 0’46’’ two different dronelike textures are heard. Between 0’46’’ and 0’57’’ various recordings of text are heard. At 0’57’’, the first inversion of the A major chord is heard and right after that chord played, the I chord D minor is heard. The very first chord that was heard was the I chord, so after a minute of various textures, the piece seems to go to the dominant and then to I again. Between 1’07’’ and 1’33’’ various filtered recordings of texts are heard. After a six second infinite reverb texture, this section ends with metal like sounds.

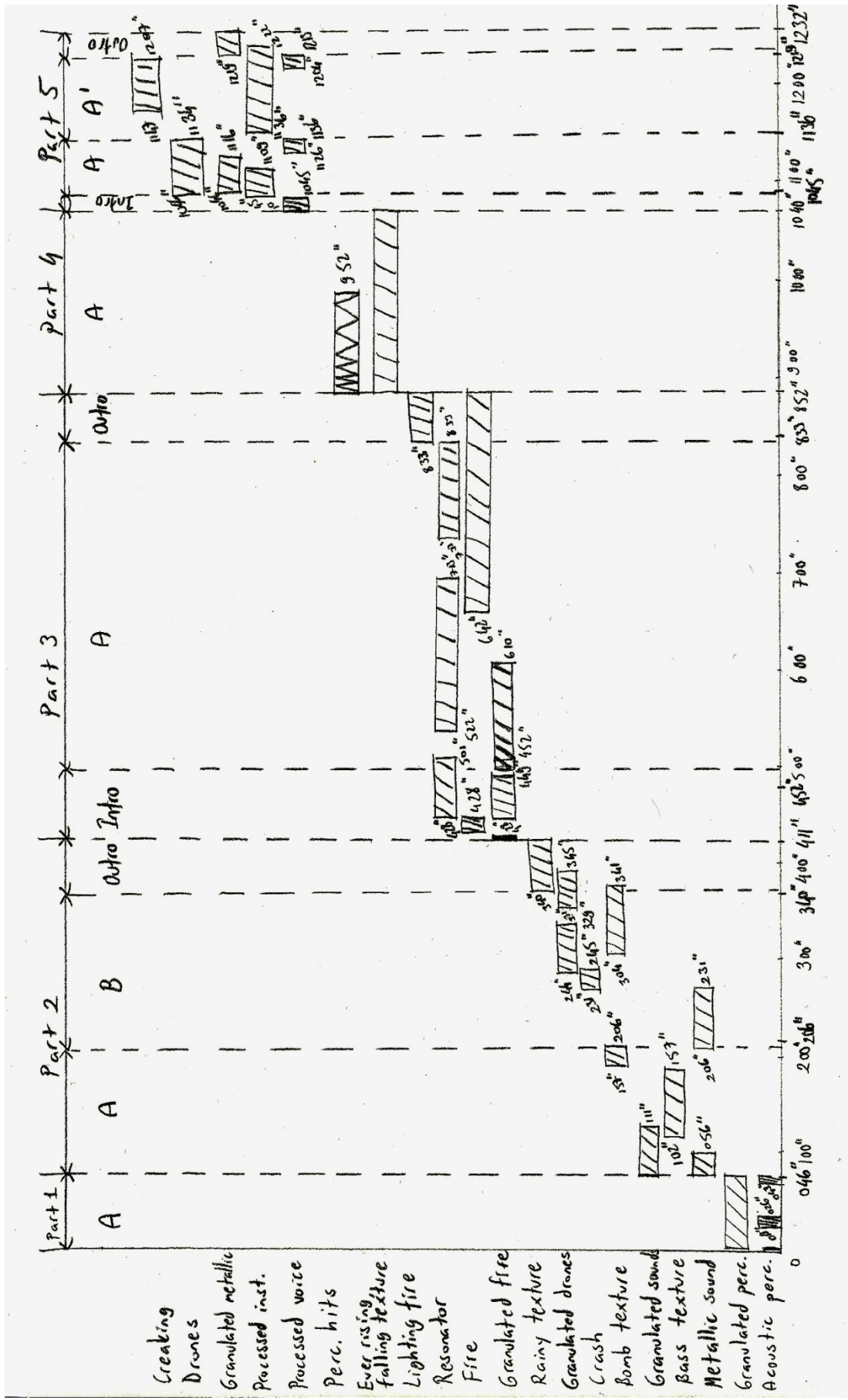
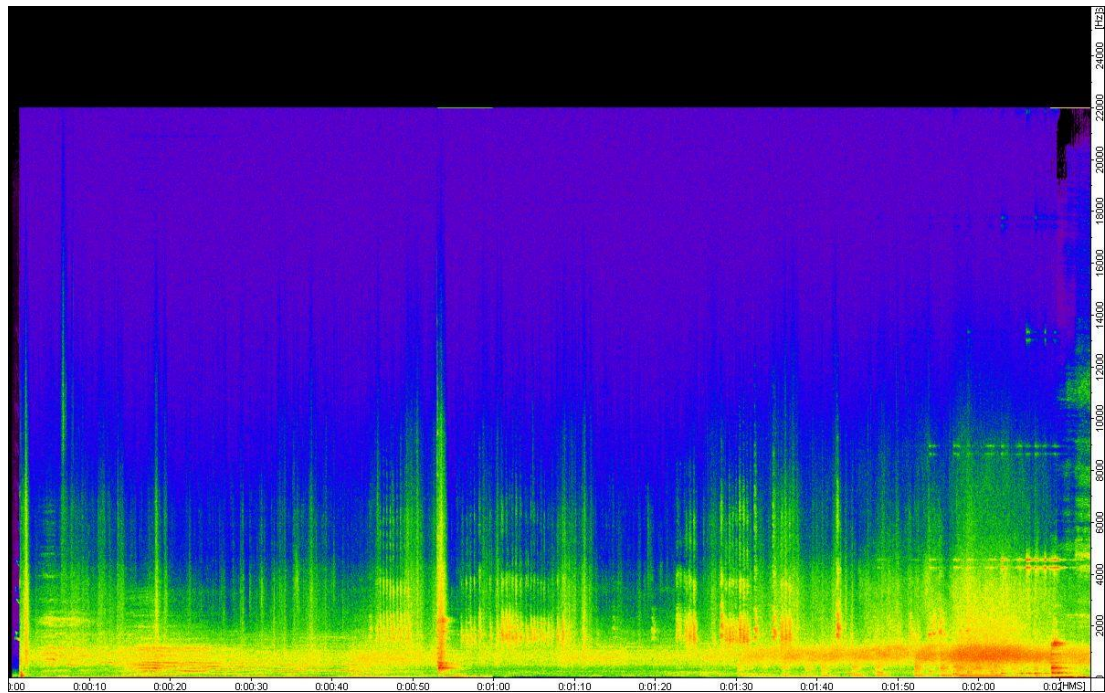


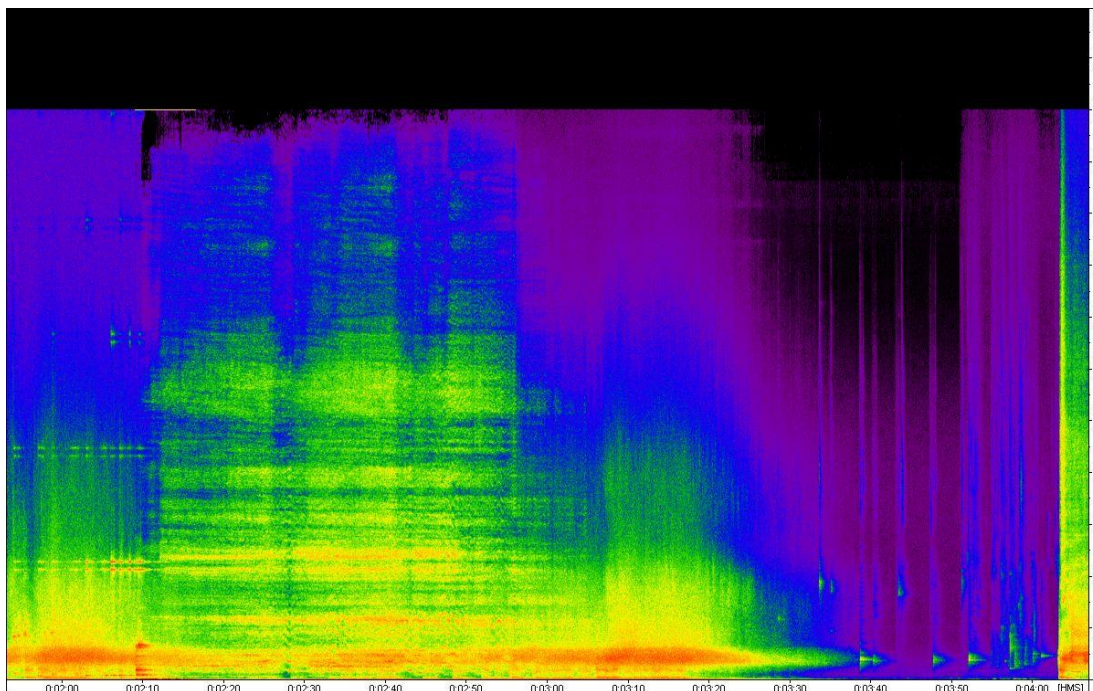
Figure 5.5.5b : Formal analysis – graphic score “touch n go” Part 1 through Part 5.

### 5.5.6 Analysis of “touch n go” Part 6 “Least, But Not Last”



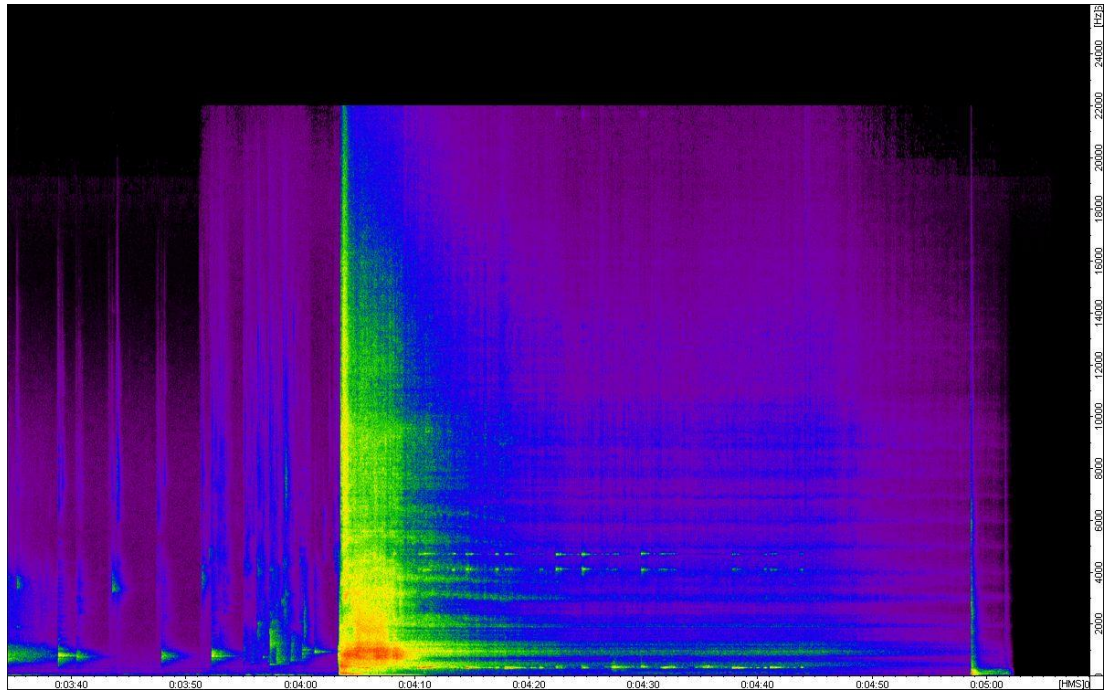
**Figure 5.5.6a** : Spectral analysis “Least, But Not Last” 0’00” – 2’ 00”.

This section starts with the crackling sound of a door and followed by two percussive hits. Then we hear the sound of rain. This is not a part of a location recording but a created texture by using the granular synthesis technique. Actually the detailed description of this technique is called “phase – controlled granulation”. This type of processing increases the volume of the source sound by superimposing several granulated versions of the processed sound. If the phase-delay among these streams is kept constant, the effect is akin to the reflections produced by a reverberant space. The number of "reflections" is roughly proportional to the number of streams. The "structured rain" in this section was produced using this technique. The sound of the structured rain goes on until 2’10”. During this time interval, we also hear timestretched textures, sounds of various birds, bell-like sounds and various percussive hits.



**Figure 5.5.6b** : Spectral analysis “Least, But Not Last” 2’00” – 4’ 00”.

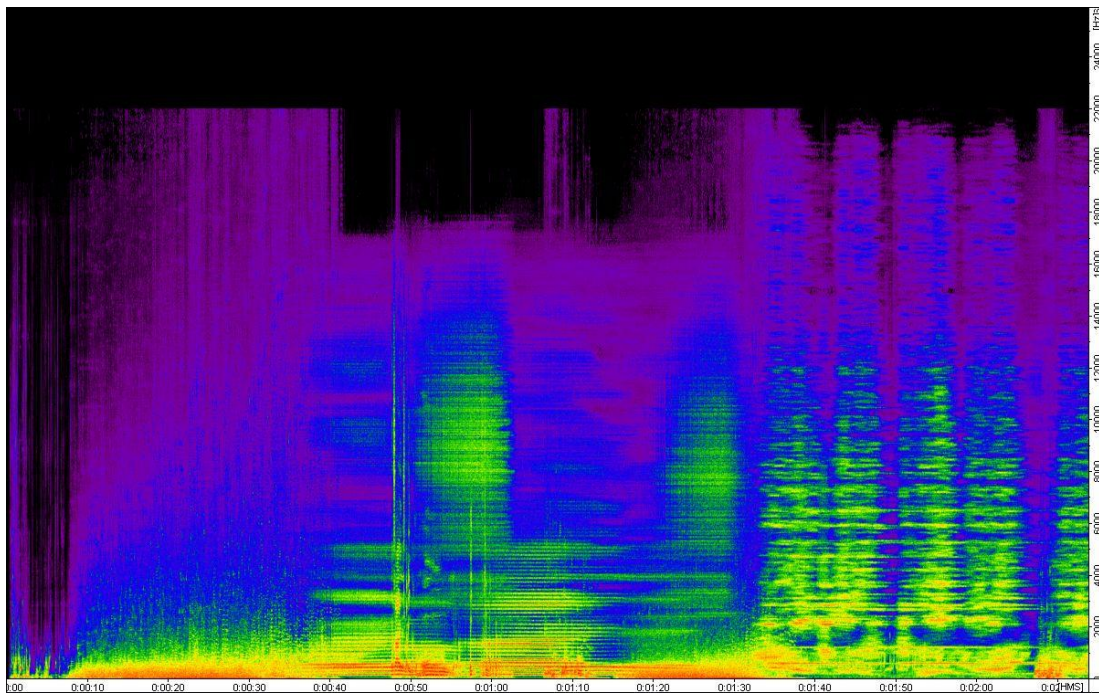
Between 2’00” and 2’09” the sounds of the structured rain, timestreched textures, various bells and percussions are heard. Right at 2’09” there is a filtered percussive sound very similar to the one heard at 0’53”. This hit in a way indicates the beginning of the middle section of this whole part. Between 2’09” and 3’07” the slowly evolving drone is heard. The pitch of this texture constantly changes during this one minute interval. The general level of this section slowly fades out between 3’17” and 3’37”. Between 3’37” and 4’00” we hear the single drops of the structured rain with a five second long reverberation added.



**Figure 5.5.6c** : Spectral analysis “Least, But Not Last” 4’00” – 5’ 06”.

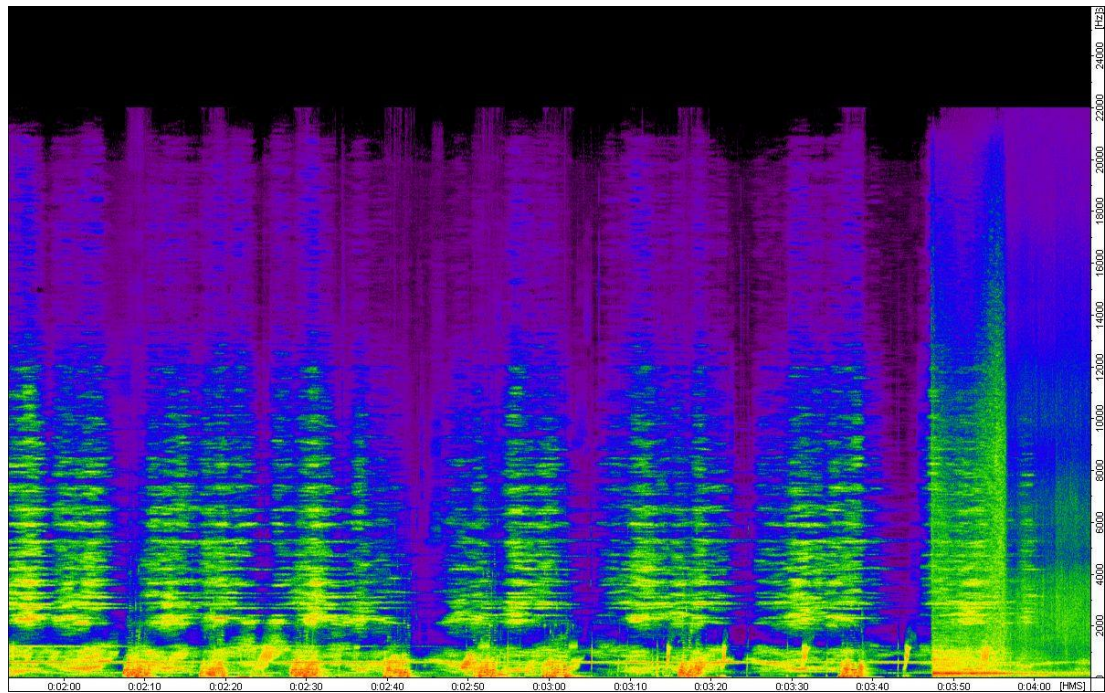
Between 4’03” and 4’08” a combination of various textures including the structured rain, percussive hits, and filtered sounds are heard. The rms level of this short segment is -12.8 db while the one minute segment right before it is -39.7 db rms. There is nearly 27 dbs of difference. This loud passage fades out until 4’20”. Between 4’20” and 4’58” the sound of the structured rain continues and right at 4’58” a short sound of a door slam is heard. This sound indicates the end of this whole section.

### 5.5.7 Analysis of “touch n go” Part 7 “Let Me See... How Can I Word It 2”



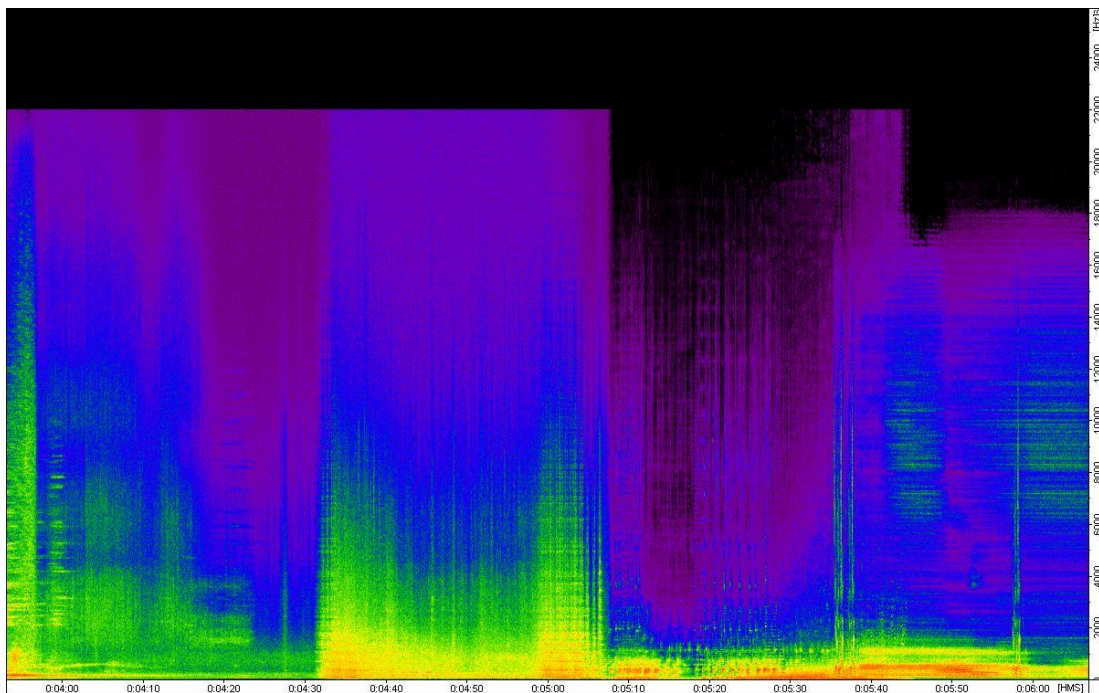
**Figure 5.5.7a** : Spectral analysis “Let Me See...How Can I Word It 2” 0’00’’-2’00’’.

This section starts with the pitchshifted recording of a male voice reading a text. The filtered voice reminds me of the robotic text reading program AnalogX Sayit. Between 0’08’’ and 0’42’’ the spectrally modified text recording is heard. Between 0’36’’ and 1’00’’ the glitchy text recording goes on and on top of that texture, the combfiltered text is heard. Between 1’00’’ and 2’00’’ the timestretched voice is heard, this texture gets higher in pitch and through a slowly modulating highpass filter. Between 1’18’’ and 1’48’’ the spectrally modulated voice is heard and this texture also gets higher in pitch and slowly fades out.



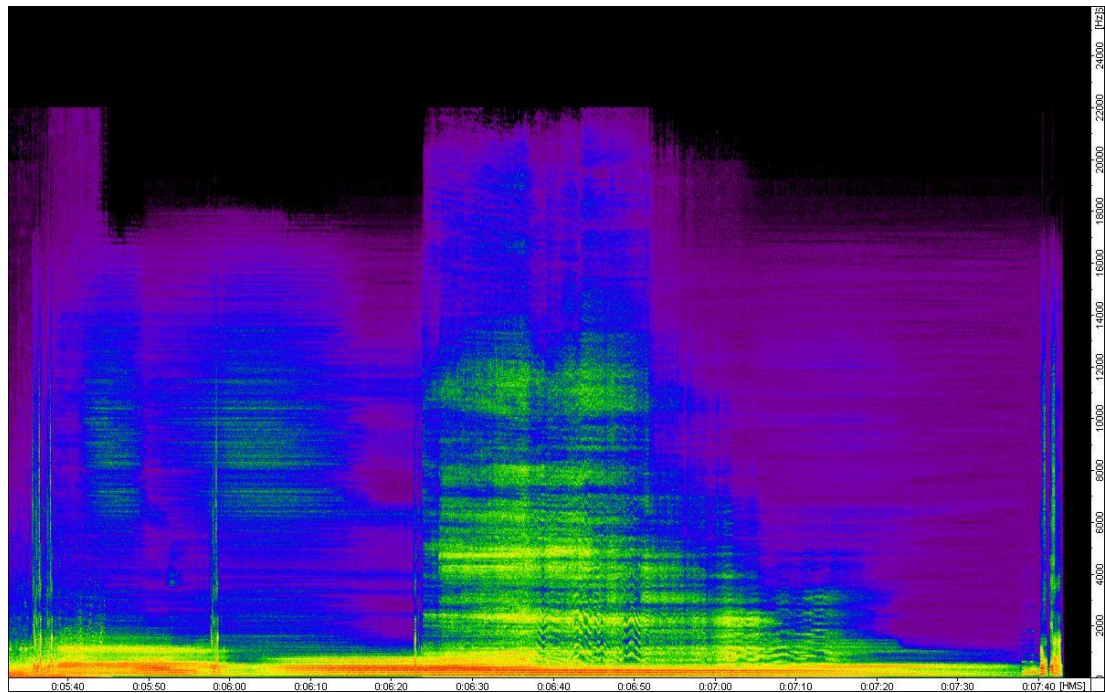
**Figure 5.5.7b** : Spectral analysis “Let Me See...How Can I Word It 2” 2’00”-4’00”.

Between 2’07” and 3’40” the spectrally morphed texture is repeated 8 times, each time with a slight change. These repetitions can also be seen at the spectral analysis above. On top of these repetitions we hear the timestretched voice which functions as the main drone sound during this part. Between 3’47” and 4’00” a percussive version of the voice is heard and this texture fades out around 4’00” while another granulated texture fades in at that moment. The most characteristic aspect of this section are the repetitions that we see on the spectral analysis and the sonic events that take place between those repetitions.



**Figure 5.5.7c** : Spectral analysis “Let Me See...How Can I Word It 2” 4’00”-6’00”.

The granulated texture goes on until 4’20’’. During this section until 4’30’’ we hear a filtered room noise like texture and created rain sound. This part goes down in volume until 4’30’’ at when we hear a loud combfiltered percussive texture. This sound ends at 4’45’’ while the room noise texture goes on. The percussive sound is repeated at 4’59’’. After the repetition, the vocoded voice texture is heard and it goes on until 5’45’’. At 5’35’’ the unprocessed version of the voice is heard and at the end of the text phrase the last sound of the text gets timestretched. This stretched sound goes on until the end of the piece with different variations.



**Figure 5.5.7d** : Spectral analysis “Let Me See...How Can I Word It 2” 6’00”-7’44”.

The timestretched voice goes on until 7’38”’. During this time frame, many variations to the timestretch texture occur. During 6’24”’ and 7’20”’ a flanged version of the voice is heard and this sound goes through a lowpass filter. The cutoff frequency of the filter goes down in frequency during this one minute interval. At 7’38”’ the sound of a filtered classical guitar chord is heard which is followed by the recording of the voice which has a short delay and filter effects on it.

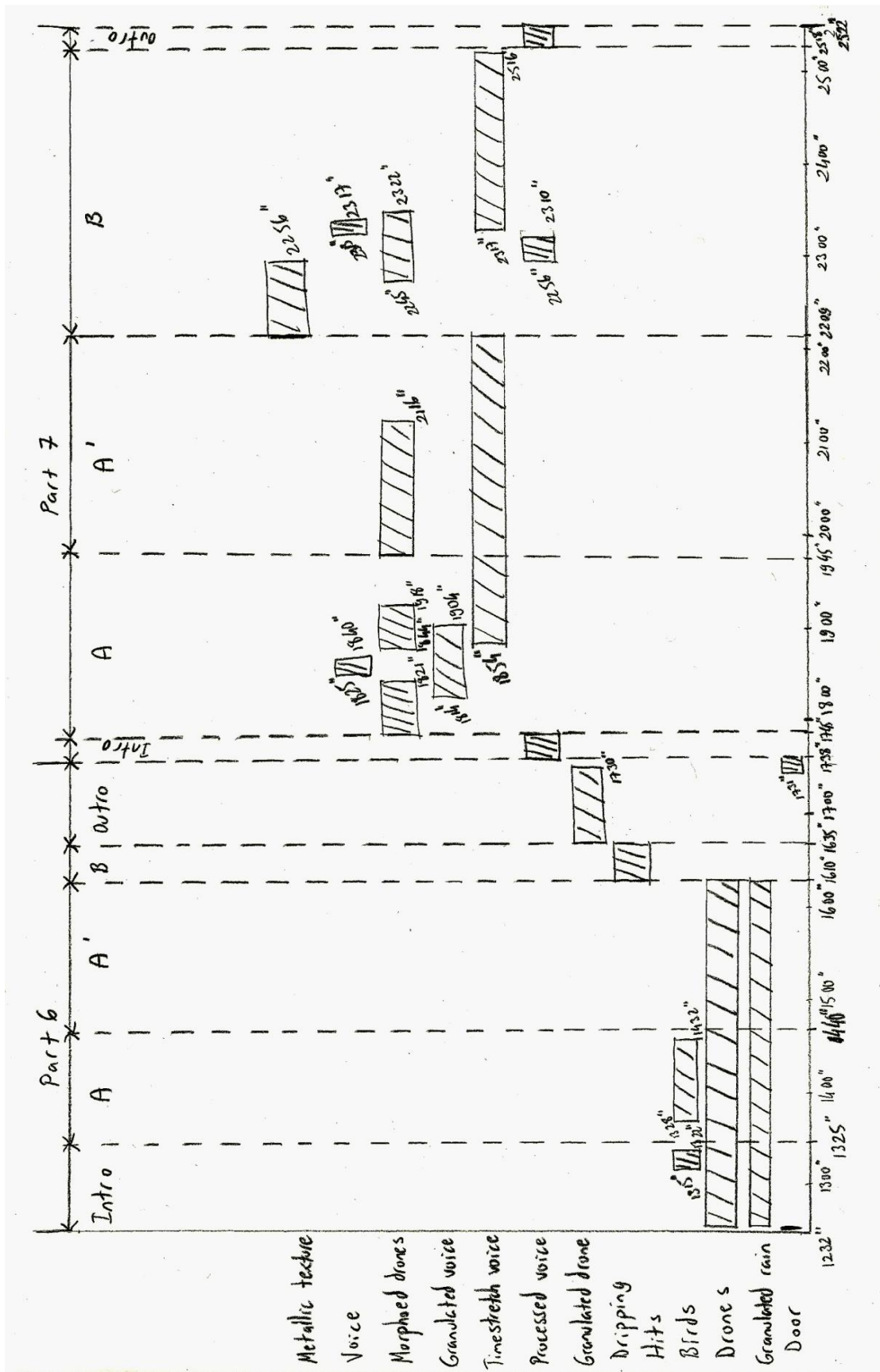
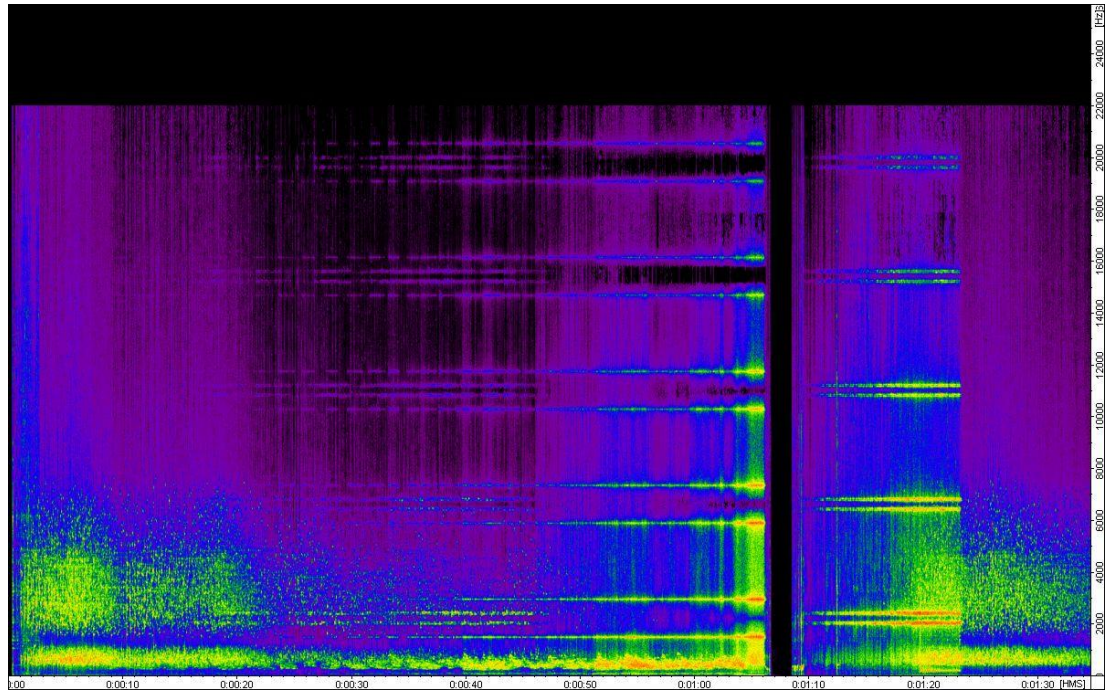


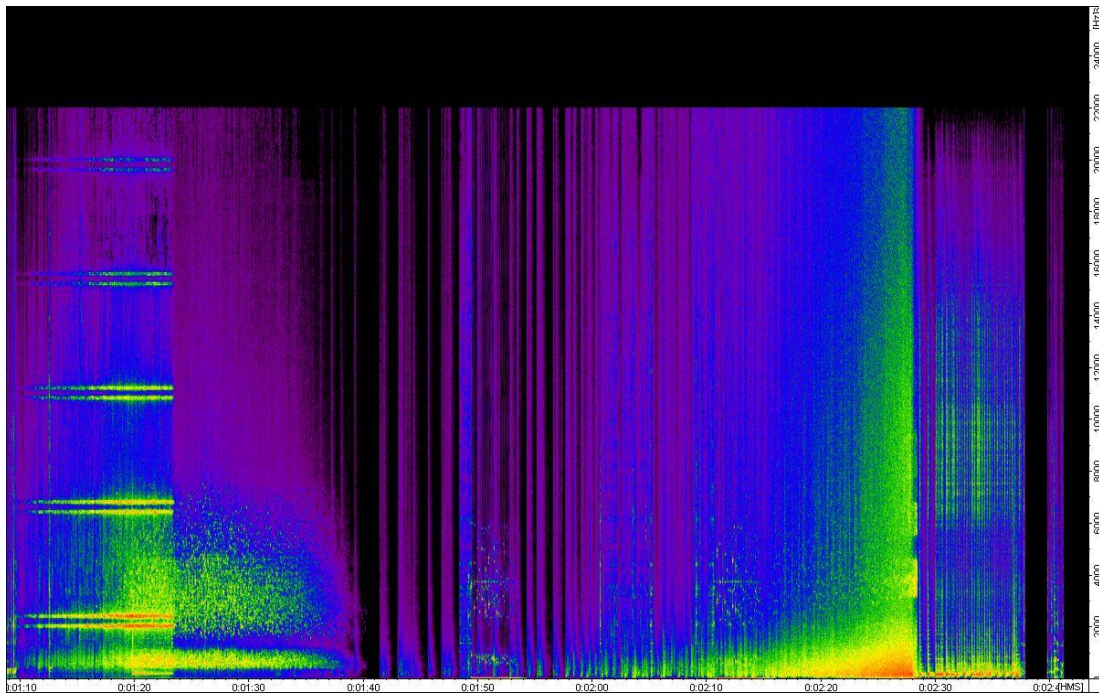
Figure 5.5.7e : Formal analysis – graphic score “touch n go” Part 6 and Part 7.

### 5.5.8 Analysis of “touch n go” Part 8 “Pandemonium 1”



**Figure 5.5.8a** : Spectral analysis “Pandemonium 1” 0’00’’–2’00’’.

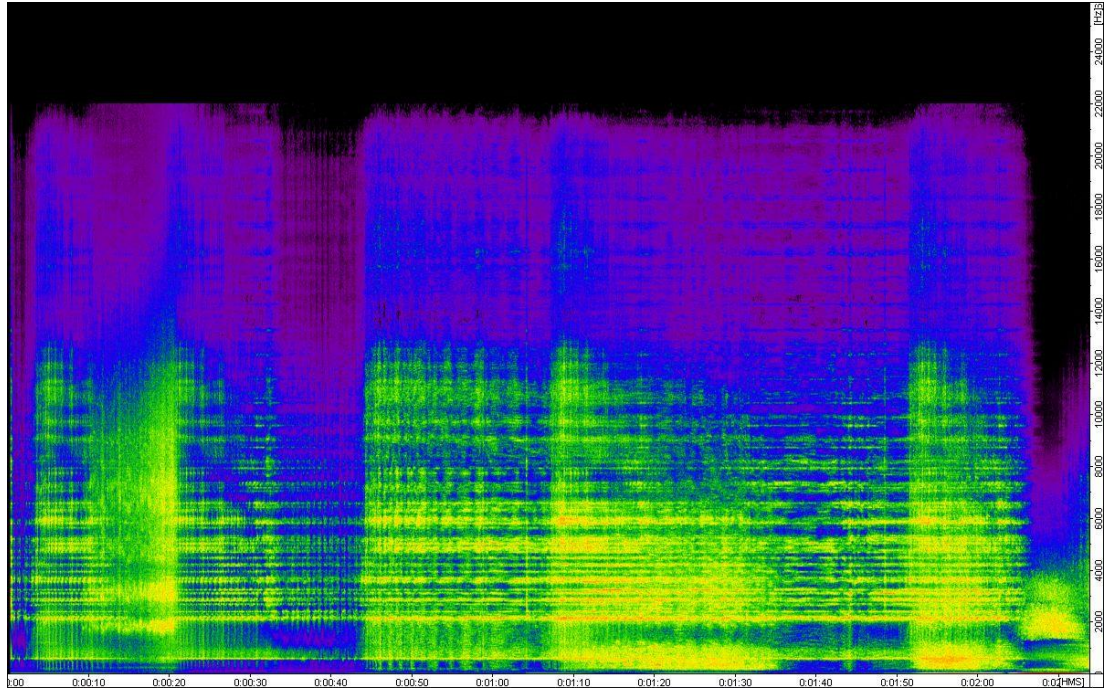
This section starts with the sound of the spectral extractor effect found in programs such as Soundhack. This effect was most probably used on the traditional South American percussion. This effect goes on until 1’04’’ with different variations in frequency. The rms level of the introduction of this section is -22.4 db. This level goes down gradually to -36.5 at 31 seconds into the section. At 0’33’’ another spectral extractor like texture begins to emerge into the mix. This sound goes on until the crescendo at 1’06’’. During this thirty three seconds this specific texture goes up in volume and the level of distortion added goes up along with it. At 1’06’’ a sound that reminds us of the bottle opening is heard, right after it there is a two second total silence which can also be seen at the spectral analysis above. At 1’08’’ again we hear the bottle opening like sound followed by the granulated, spectral extracted and pitchshifted versions of it. These versions go down to total silence at 1’ 40’’. Also during this time interval, the actual non-processed version of the percussion is heard between 1’19’’ and 1’23’’. Between 1’40’’ and 1’48’’ very soft percussive hits are heard, the rms level of this 8 seconds is -54.5 db. These hits go on until 2’28’’ while changing texturally along the way.



**Figure 5.5.8b** : Spectral analysis “Pandemonium 1” 2’00”–2’41”.

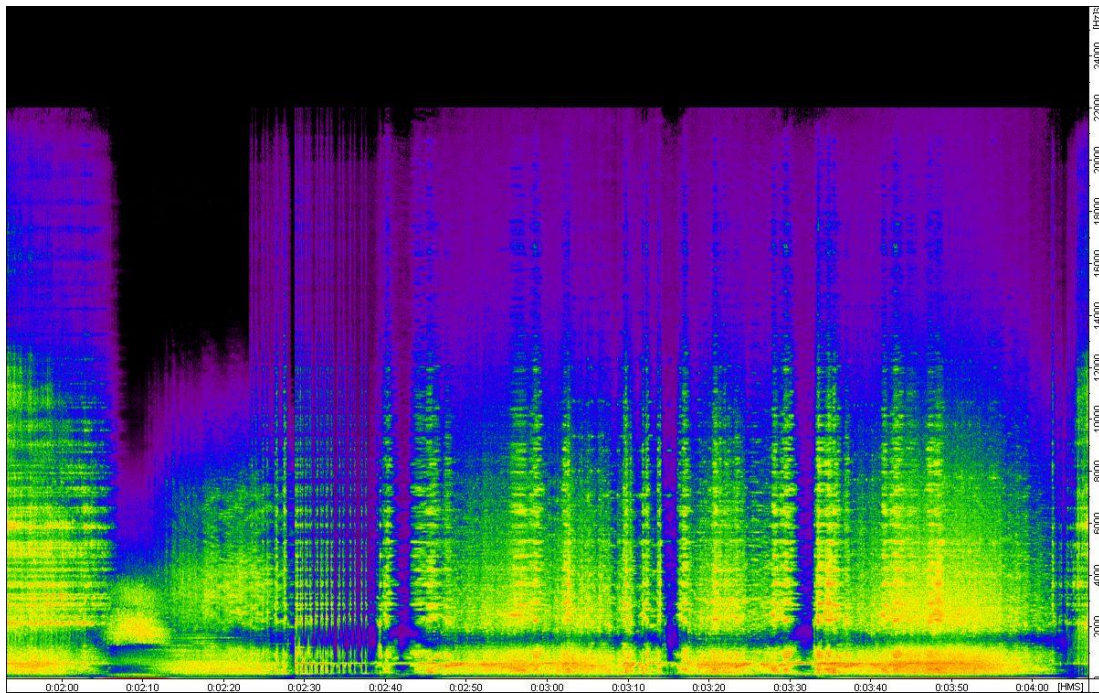
The soft percussive hits go up in volume until the crescendo at 2’28”. During this interval, the density of granulation goes higher. After the crescendo, the glitchy nonprocessed traditional percussion sound is heard, this goes on until a sudden stop at 2’37”. After a two second total silence, the section ends with 1,5 seconds of actual percussion recording.

### 5.5.9 Analysis of “touch n go” Part 9 “A Waltz in a Ball”



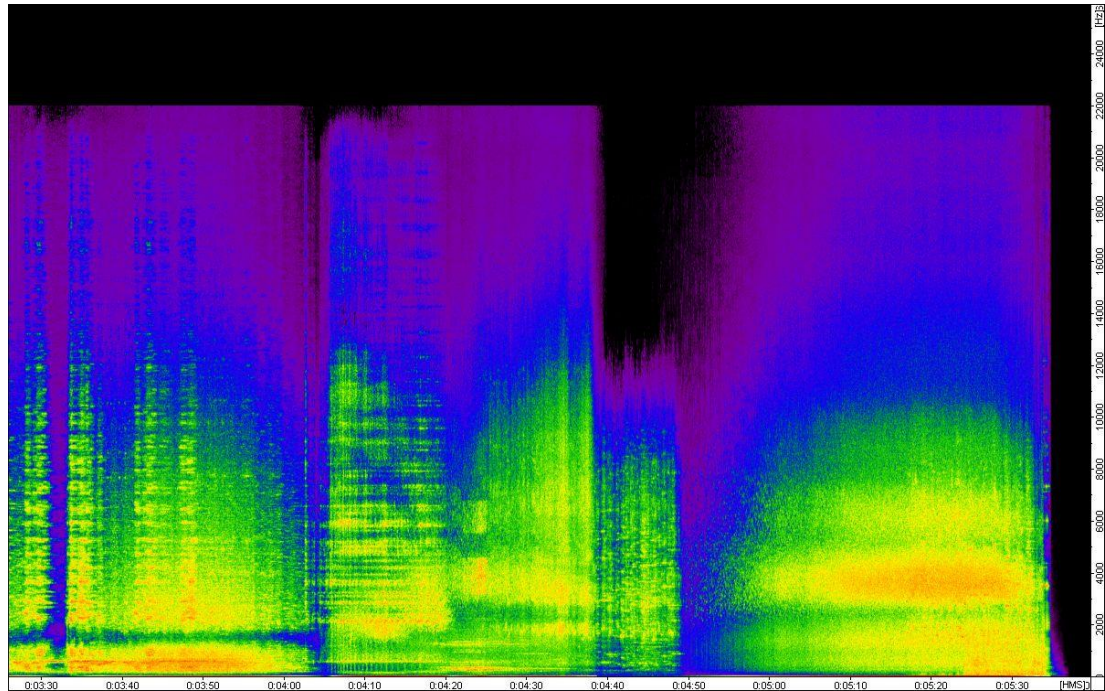
**Figure 5.5.9a** : Spectral analysis “A Waltz in a Ball” 0’00’’– 2’00’’.

This section starts with a sound that resembles the sound of a marble turning round and round in a bowl. While this sound fades at 0’15’’, a differently processed version of this texture starts around 0’09’’ and goes on until 0’21’’. We can state this processing is granular synthesis because of the fact that the density and number of the grains increase over time until 0’21’’. Right at that instant, the very first texture heard at the beginning of this section gets repeated. The processing of this sound varies through time. Also different processed versions of the texture get played on top of each other. Between 1’07’’ and 1’37’’ another version which has more information in the low and lowmid frequency range is heard. While the main texture goes on until 2’00’’, we also hear a combfiltered version of the original texture at 1’52’’ and 2’05’’.



**Figure 5.5.9b** : Spectral analysis “A Waltz in a Ball” 2’00’’– 4’00’’.

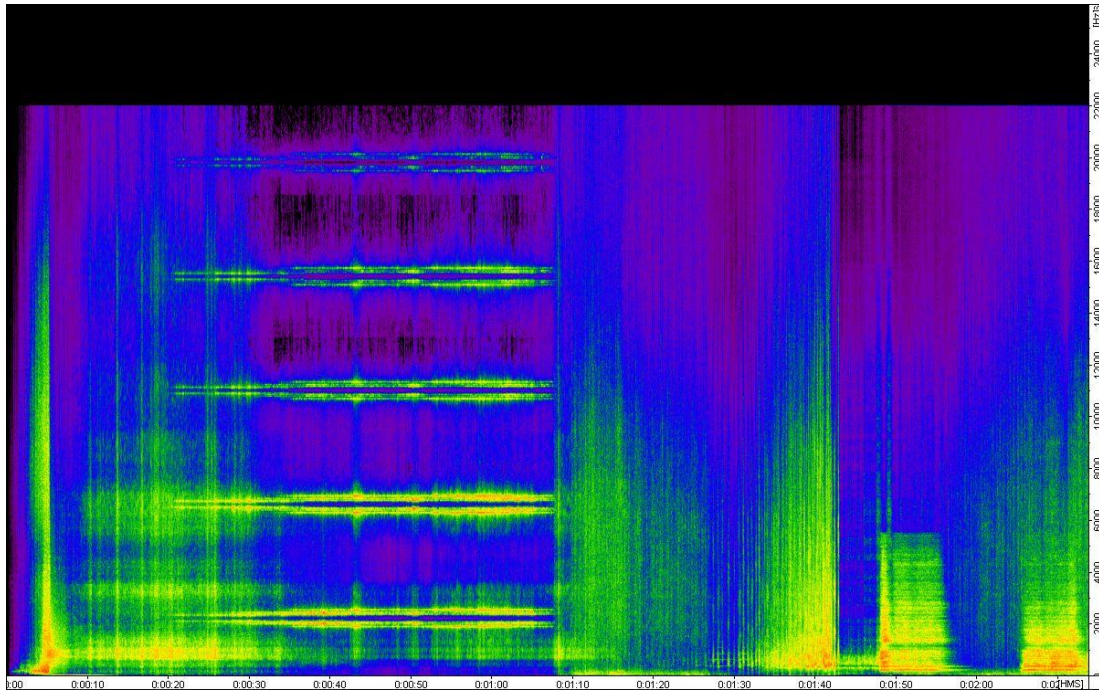
Between 2’05’’ and 2’12’’ another variation of the original texture is heard. This sound has a lot of information around 1900 hz. The texture heard between 2’11’’ and 2’28’’ is modulated through granular synthesis. The beginning of this sound is dense and the density and the number of grains get less until its end at 2’28’’. Between 2’28’’ and 2’38’’ the marble like sound is heard with an added synthlike sound that has a pitch of D. This synth sound is probably sidechained to the main marble sound, so that the peak of the marble sound triggers the synth texture. At 2’39’’ the timestretched version of the marble sound is heard. This texture goes on until 4’00’’ with various variations. A new timbre consisting of combfiltering starts at 2’46’’ and goes on until 4’00’’. During this time interval the texture fades out and then restarts at 3’16 and 3’32’’.



**Figure 5.5.9c** : Spectral analysis “A Waltz in a Ball” 4’00’’–5’37’’.

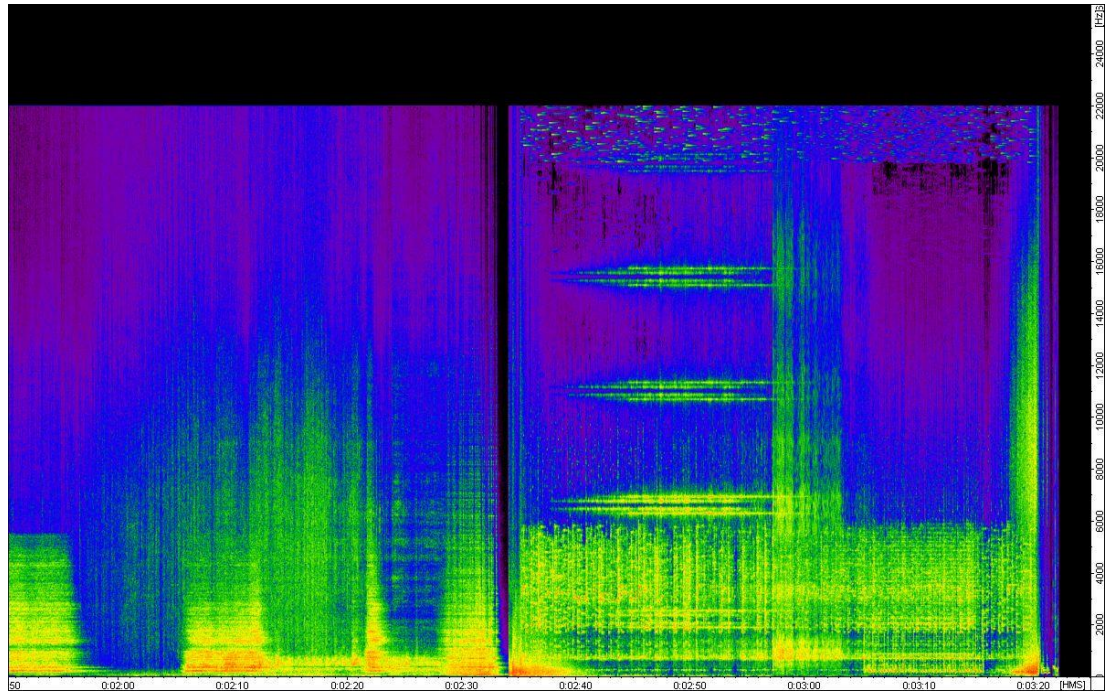
The granulated texture starts at 4’03’’ and goes on until 4’48’’. During this time, the number and the density of the grains change gradually. At 4’49’’ the last long phrase of this section starts. This granulated texture has grains of short duration. Until the crescendo at 5’33’’ the duration of these grains get longer and the number of grains increase. This dense and evolving texture ends at 5’33’’ and then the whole section ends with the short sample of the original marble-like sound.

### 5.5.10 Analysis of “touch n go” Part 10 “Scratch”



**Figure 5.5.10a** : Spectral analysis “Scratch” 0’00’’– 2’00’’.

This section is based on the timbre of traditional South American percussion instruments. The introduction sound goes to a crescendo at 0’05’’. The opening texture is based on granular synthesis. Right after the crescendo at 0’05’’, we hear another timbre again based on granular synthesis. This sound has a peak around 1000 hz and while this timbre goes on, another one is added on top which has a peak frequency at 6500 hz. These go on until 1’15’’. Between 0’20’’ and 1’05’’ the timbres on top of each other have certain peaks at frequencies 2 000, 6 500, 11 500, 15 000 and 20 000 hz. This can easily be seen at the spectral analysis above. At 1’09’’ another granular synthesis timbre is heard which has more information in the low mid and high mid register. This sound goes to a crescendo at 1’42’’. Right after the crescendo a metallic timbre is heard. Another metallic timbre which has a highcut filter on and which has a five second reverberation on it is heard at 1’48’’. This texture fades out at 1’55’’.



**Figure 5.5.10b** : Spectral analysis “Scratch” 2’00’’– 3’22’’.

While the metallic timbre fades out, another granulated texture fades in and goes on until 2’24’’. The metallic texture heard at 1’48’’ gets repeated with a variation at 2’05’’ and at 2’21’’. Also at 2’27’’ another version of this texture is heard, this time the number of grains get less until 2’33’’. At 2’34’’ a slightly distorted bomblike hit is heard and at the same time, a breaking, shattering like sound is heard. Between 2’40’’ and 2’55’’ there are peaks at frequencies 6 000, 11 000 and 16 000 hz which can be seen at the spectral analysis above. While these textures go on, at 3’05’’ we hear the actual nonprocessed traditional percussion instrument and this ends at 3’15’’. Between 3’15’’ and 3’20’’ there is a crescendo that contains the granulated texture of the percussion instrument. The section ends with two hits performed on the instrument and the sound similar to the opening of a bottle.

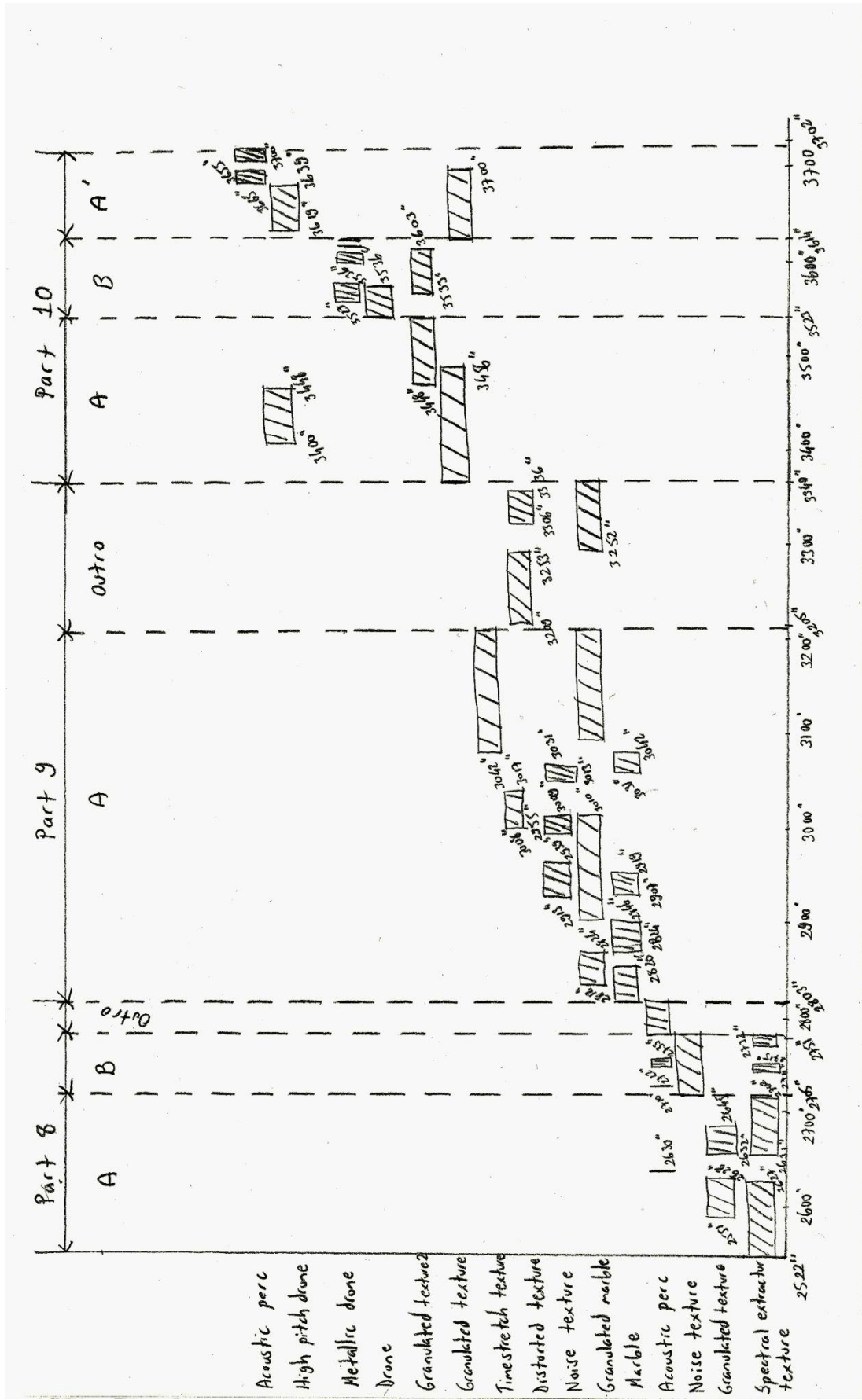
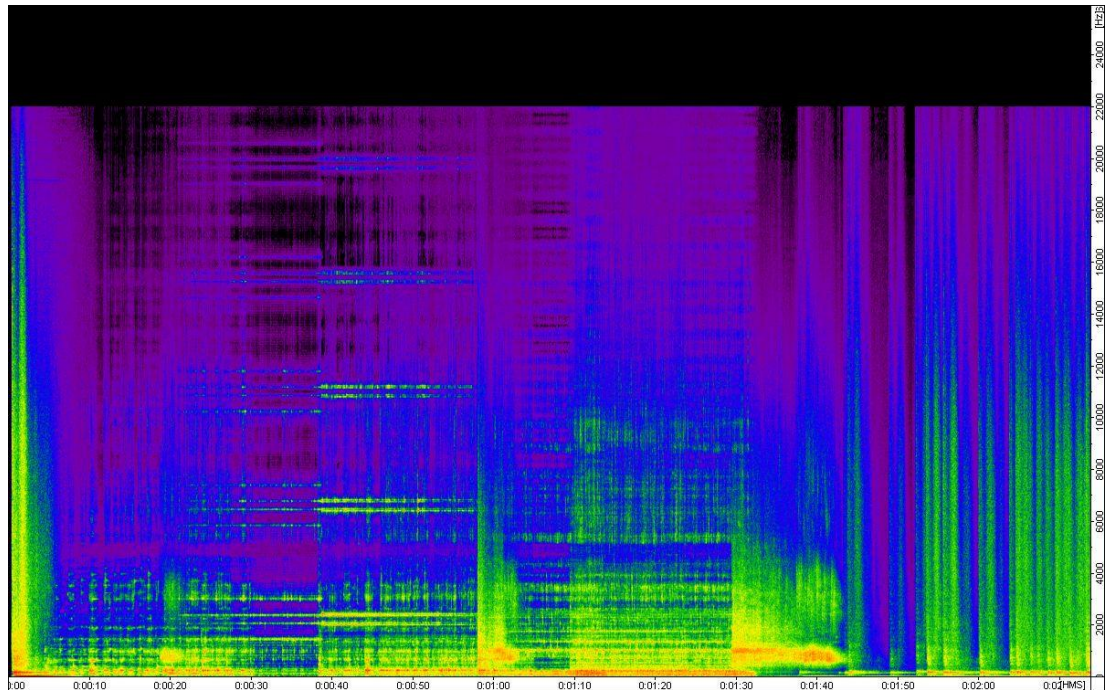


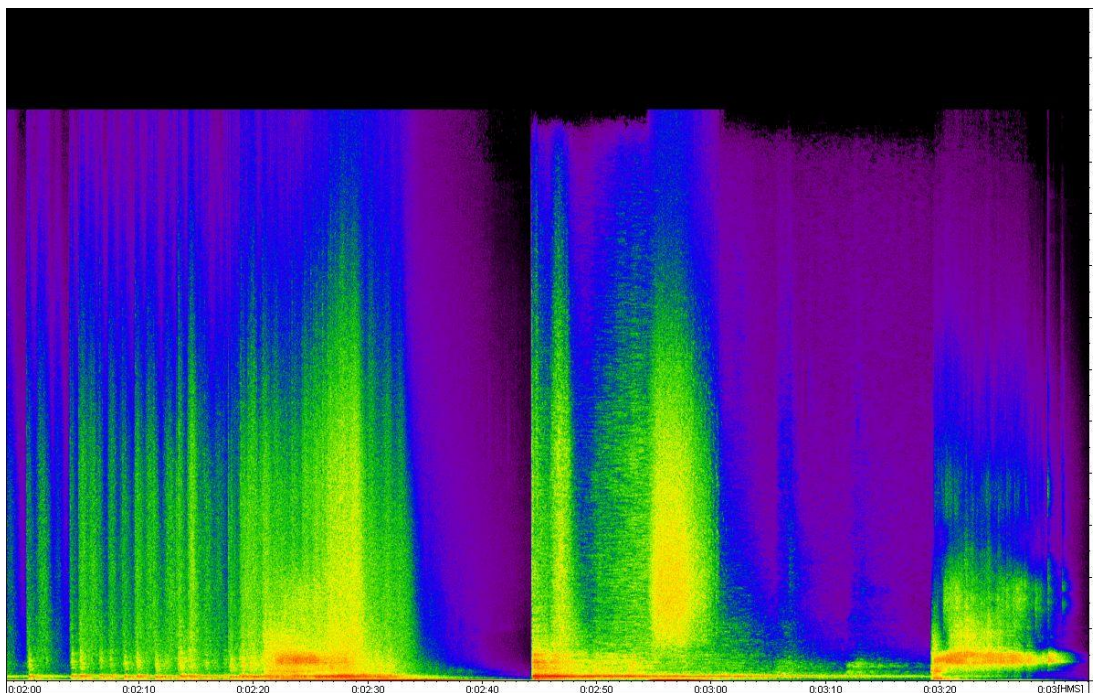
Figure 5.5.10c : Formal analysis – graphic score “touch n go” Part 8 through Part 10.

### 5.5.11 Analysis of “touch n go” Part 11 “Coin a Name”



**Figure 5.5.11a** : Spectral analysis “Coin a Name” 0’00’’– 2’00’’.

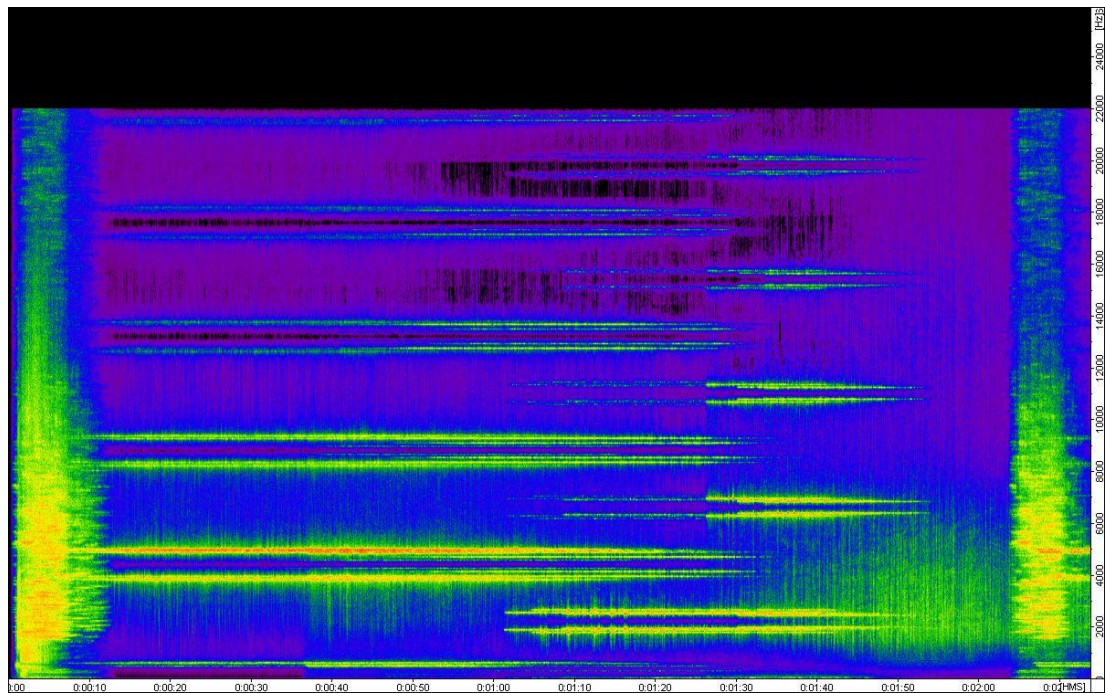
“Coin a Name” draws a parallel between the action of throwing coins in a river and the murders committed by the most recent military dictatorship in Argentina. One of the modus operandi of the military killers was to throw their victims alive into the river from helicopters. The section starts with a loud splashing sound followed by the sound of dripping water. The combfiltered version of this texture is heard along its unprocessed self. The bell like combfiltered texture has a base note at Bb which changes to D abruptly at 0’38’’. This along with the water sound goes on until 0’58’’. At that moment we hear a loud metallic splash similar to the one at the very beginning of the piece. The splash is repeated at 1’29’’ and followed by the dripping water sound with a metallic reverb added to it. Between 1’43’’ and 2’00’’ we hear sounds that are similar to the sounds of objects thrown into water. In this case, this sound symbolizes the people thrown into the river from helicopters.



**Figure 5.5.11b** : Spectral analysis “Coin a Name” 2’00’’– 3’34’’.

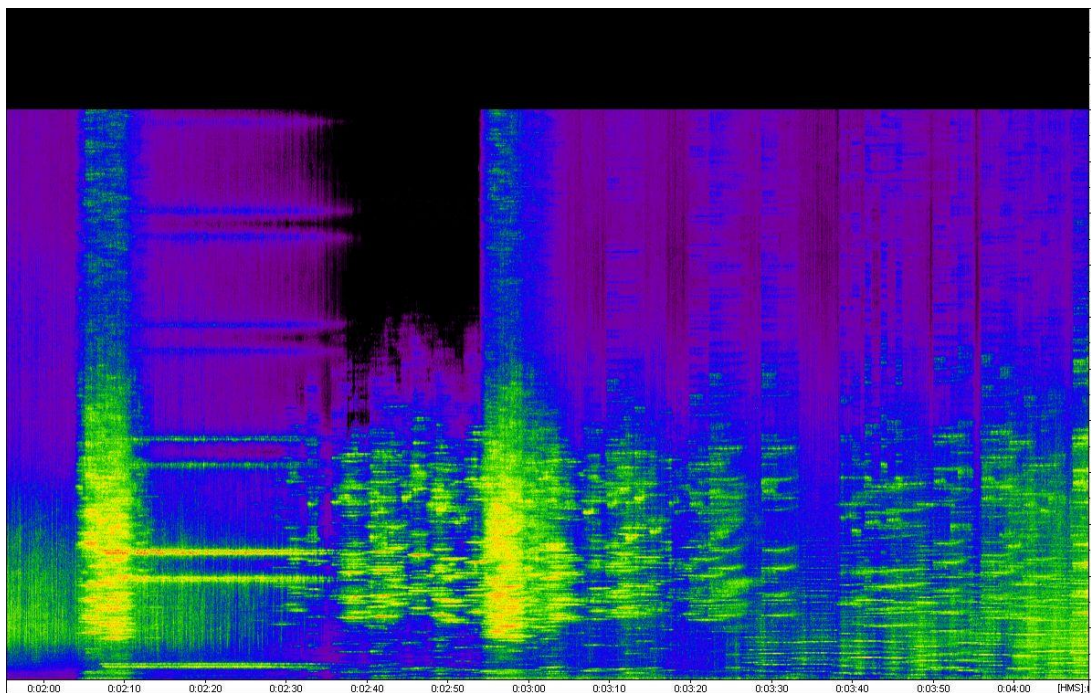
The splashing sounds go on until the crescendo at 2’30’’ and slowly fade out. During this crescendo many different examples of the splashing are heard on top of each other and between 2’20’’ and 2’30’’ we can see from the spectral analysis above that there is a lot of bass and low mid frequency content during that time interval. At 2’44’’ the loud splashing sound is heard again, the rms volume of the sound is -12.5 db. Between 2’55’’ and 3’00’’ the sound goes through a highpass filter and then slowly fades out until 3’19’’, also during this time the high frequency content is filtered out gradually. At 3’19’’ the metallic splash is heard the last time which is followed by water drips in a metallic reverberant space.

### 5.5.12 Analysis of “touch n go” Part 12 “Spill, Spiel, Spoil”



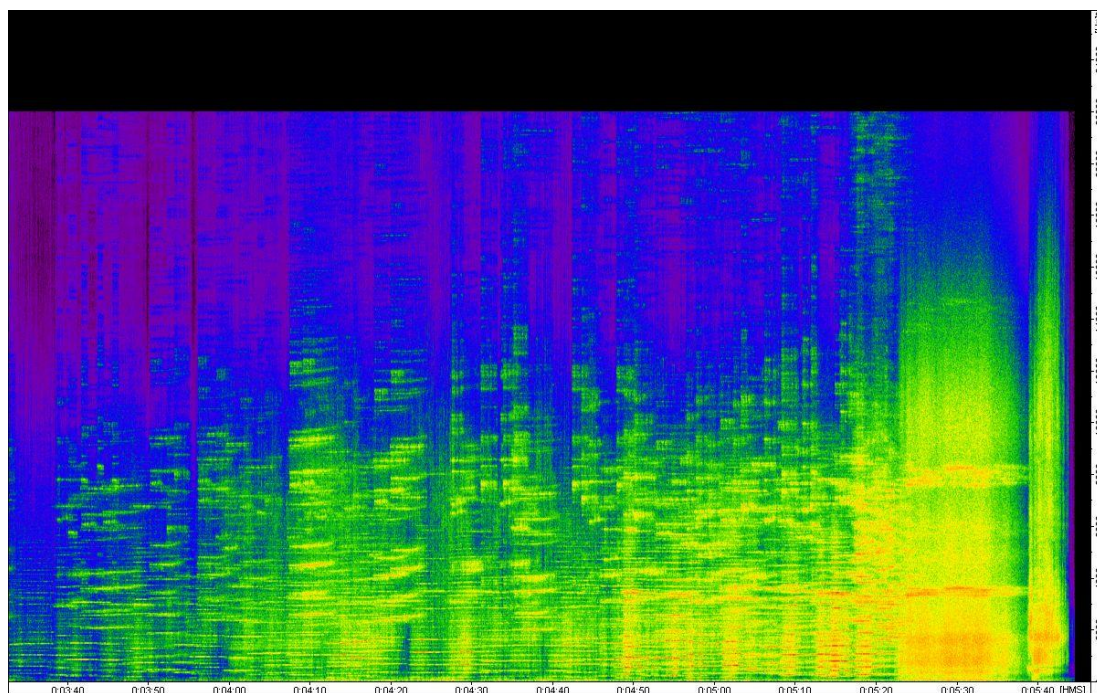
**Figure 5.5.12a** : Spectral analysis “Spill, Spiel, Spoil” 0’00’’– 2’00’’.

The section starts with a sound similar to many marbles rolling on the surface. After this first impact, the sound gets granulated and filtered and we begin to hear the glassy sounding like grains which have base frequencies around 4000 and 8000 hz. Along with this texture, there is also another sound which is around 500 hz. These frequencies can easily be seen at the spectral analysis above. Also we can realize that the volume of the high frequency sound is louder then the lowmid character pad. At 0’38’’ the volume of the lowmid pad gets louder and at 1’00’’ we begin to hear a new glassy like pad which has a peak frequency around 2000 hz. All of these timbres start to fade out at 1’45’’ while a new cloud of low mid character sound is heard which goes on until 2’35’’. This sound cloud acts as a transition point between the previous high frequency character grains and pads to the next section.



**Figure 5.5.12b** : Spectral analysis “Spill, Spiel, Spoil” 2’00’’–4’00’’.

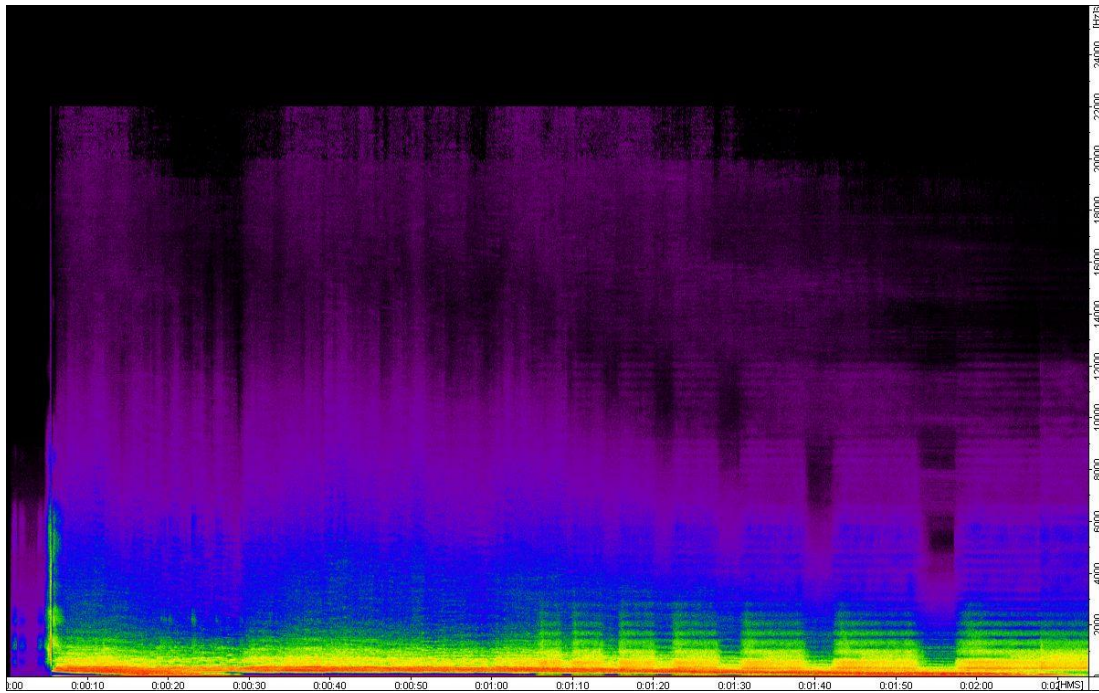
Between 2’04’’ and 2’11’’ we hear a comparatively loud bright timbre and at its fade out we again hear the same textures that were there at the beginning of the section. Added to those timbres is the cloudy texture that was first heard at 1’45’’. Between 2’35’’ and 3’35’’ we hear the time stretched version of the main bright timbre of this section. During this time interval, there is a crescendo at 2’56’’ and around this moment, the granulated textures start to emerge.



**Figure 5.5.12c** : Spectral analysis “Spill, Spiel, Spoil” 4’00’’–5’45’’.

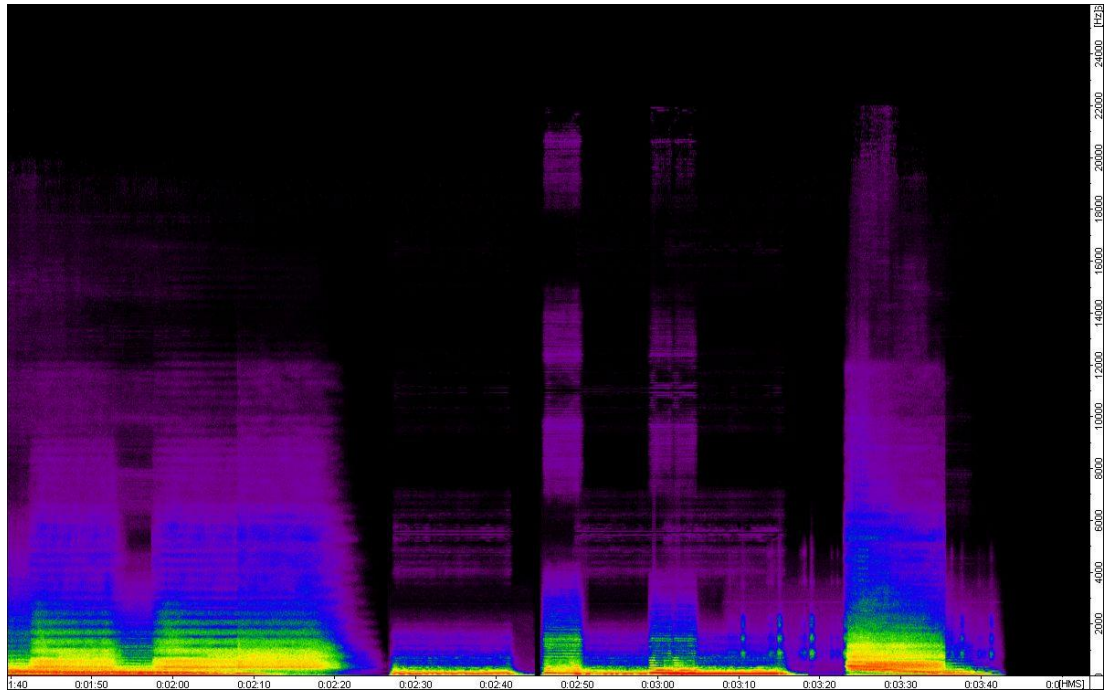
From 4’00’’ until the end of this section, there is a dense sound world. This is in contrast to the sounds heard before this moment in this section. During this time interval, the granulated textures are heard along with pitched metallic pads which are the different versions of the sounds heard at the beginning of this section. From 5’22’’ until the end of this section, we hear only the granulated timbres.

### 5.5.13 Analysis of “touch n go” Part 13 “Vox Populi”



**Figure 5.5.13a** : Spectral analysis “Vox Populi” 0’00’’– 2’00’’.

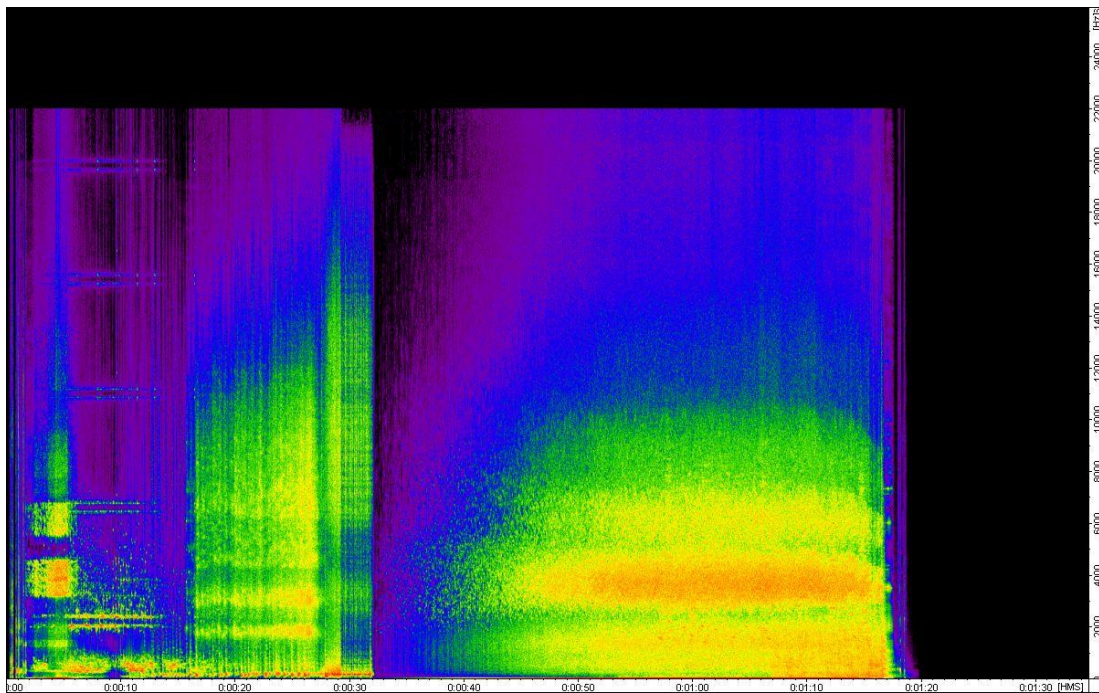
For this section, Damian Keller developed a model that uses a small pool of conch shell sound samples. These samples have a harmonic spectrum with some noise content. When combined randomly, they approximate the behaviour of choir-like formants. These formants result from the interaction of the samples at a meso level. Thus, the effect at the macro level is qualitatively different from the characteristics of the source sounds. The section starts with a very quiet breath sound that has a peak volume of -36.8 db. At 0’05’’, we hear a male voice which is followed by the many conch shell sound samples heard at the same time. The dense sonic textures have a vocal quality and it goes on until 2’25’’. During this time there is an interaction between the low frequency formant and the mid-high frequency formant. They seem to follow each other in the mix, sometimes one gets louder in the mix and sometimes the other. One other thing to note is that during the whole section there is a DC offset problem which could be solved by processing the whole section with a gentle high pass filter around the frequency of 30 hz.



**Figure 5.5.13b** : Spectral analysis “Vox Populi” 2’00”– 3’50”.

Between 2’26” and 2’42” we hear a bass sound that has a base frequency at 62 hz. After a four second silence, we again hear the 62 hz bass texture. Between 2’59” and 3’05” an octave higher version of the bass timbre is heard. After this sound fades out, the original bass is heard again until 3’15”. Between 3’15” and 3’23” the breath like texture heard at the very beginning of this section is heard again. From 3’23” until the end of this section the dense sound world is heard again which ends with the bass and the breath character following each other.

### 5.5.14 Analysis of “touch n go” Part 14 “Pandemonium 3”



**Figure 5.5.14a** : Spectral analysis “Pandemonium 3” 0’00’’– 1’20’’.

The last section of the whole piece starts with short percussive sounds and these eventually get granulated. Between 0’05’’ and 0’15’’ spectral morphing or a similar technique has been used. At 0’15’’ the granulation of the percussive instrument starts and goes on until 0’32’’. Right after the crescendo at 0’32’’ the level of the section drops to -44.1 db rms. The section builds up until 1’16’’ and then the whole piece ends at 1’19’’ with the sound of a bottle. The buildup is based on the granulation of the sound of a glass.

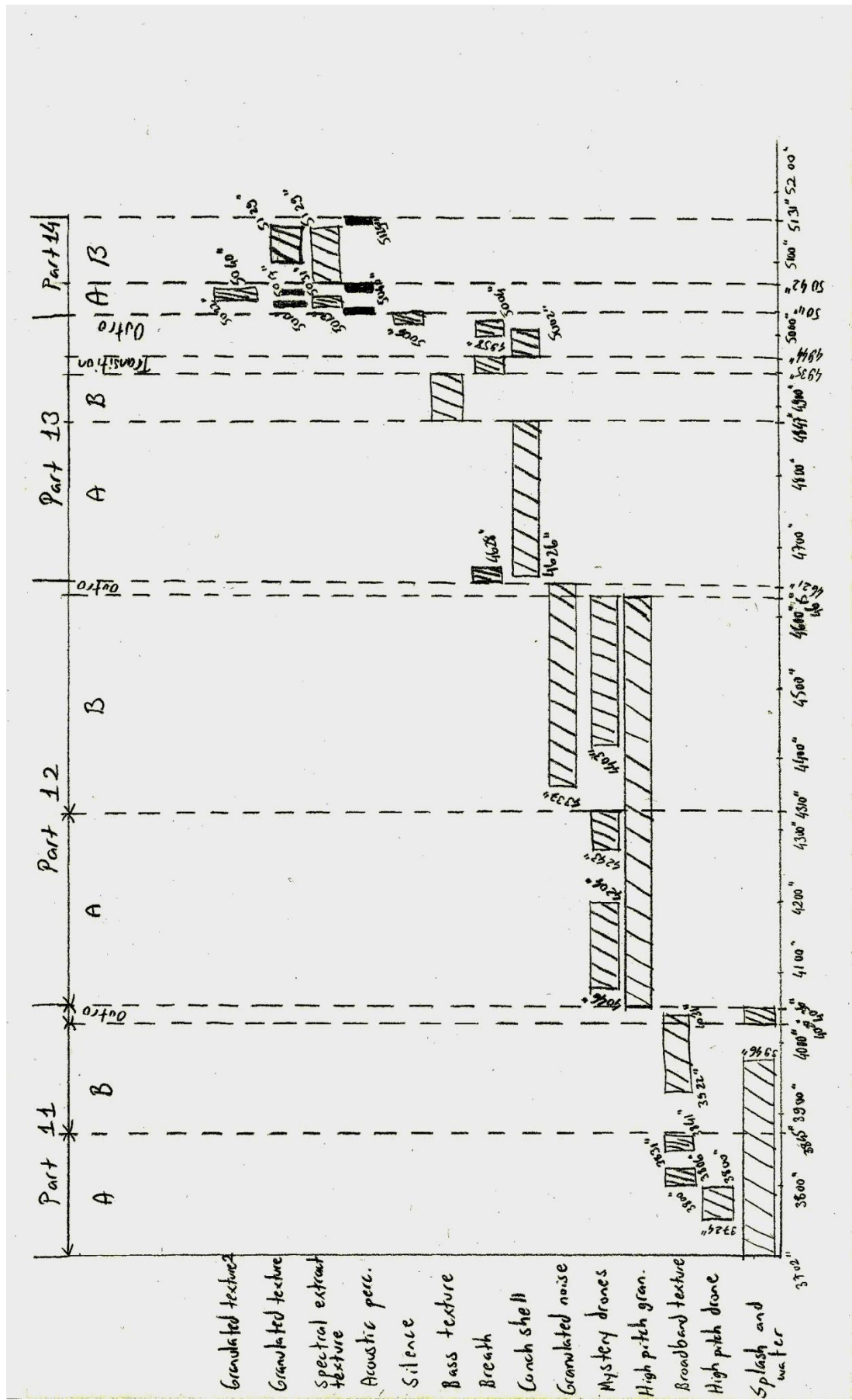


Figure 5.5.14b : Formal analysis – graphic score “touch n go” Part 11 through Part 14.



## 6. ANALYSIS OF PERSONAL COMPOSITIONS

Five personal compositions have been created based on the techniques and aesthetics discussed in the previous section. These compositions are :

- 1- Aeterna Pulchritudo
- 2- Wandering Around the City
- 3- Untitled Conversation
- 4- A Walk Through the Bazaar
- 5- Into the Future

“A Walk Through the Bazaar” is a soundscape piece with a duration of 13’53”. The piece is based on the soundscape of a bazaar in Istanbul. The recording was done with Audio Technica AT825 stereo condenser microphone and Tascam DPA1 portable DAT recorder. Although the work starts with ambient and drone textures, it goes into a rhythmic section in the middle and finishes with variations of the textures heard at the beginning of the piece. During the rhythmic section, the piece has sonic elements of both techno timbres and short loops of the unprocessed field recording.

“Wandering Around the City” is a soundscape piece with a duration of 8’13”. It is an aural description of Istanbul, a city of more than 10 million inhabitants. The piece contains various field recordings from all over the city including traffic noise, children playing around, sounds from bazaars, sounds of ships and various transportation vehicles. These recordings are blended with both textural sounds and processed versions of the original location recordings. The piece also includes minimally processed (like pitchshifting and timestretch) versions of the traditional and historic Turkish instruments. This approach is the result of inspirations taken from the works of Hildegard Westerkamp and Ros Bandt. The field recording used in this piece were done with Audio Technica AT825 stereo condenser microphone,

Tascam DPA1 portable DAT recorder, Audio Technica AT822 stereo condenser microphone and SHARP portable md recorder.

“Untitled Conversation” is a short soundscape piece with a duration of 3’07”. The piece is a mosaic of recorded conversations and other field recordings from various parts of Istanbul, combined with electronic sounds. The piece conveys a fleeting impression of the atmosphere of everyday life in this city on the Bosphorus, between Asia and Europe. The title was inspired by the conversation between two old men which was recorded secretly at the Gezi Park near Taksim Square. The field recordings used in this piece were done with Audio Technica AT825 stereo condenser microphone, Tascam DPA1 portable DAT recorder, Audio Technica AT822 stereo condenser microphone and SHARP portable md recorder.

“Into the Future” is a soundscape piece with more emphasis on the rhythmic side of the sonic spectrum. It has a duration of 16’38”. The main sonic inspiration for the piece are the recordings of the street sellers located all around Istanbul. These specific sellers chosen for this work have all their unique voices. Some shout in a specific high register while some use their hands and equipment they use for their work to make rhythms that accompany their singing. The work includes many different aesthetics and approaches. The minimal processing techniques are present alongwith heavily processed ambient timbres created based on the field recording of the street sellers. Short loops are heard alongwith collage-like aesthetic that include the many unprocessed field recording excerpts. The field recordings used in this piece were done with Audio Technica AT825 stereo condenser microphone, Tascam DPA1 portable DAT recorder, Audio Technica AT822 stereo condenser microphone and Olympus LS-10 portable card recorder.

### **6.1 Analysis of “Aeterna Pulchritudo”**

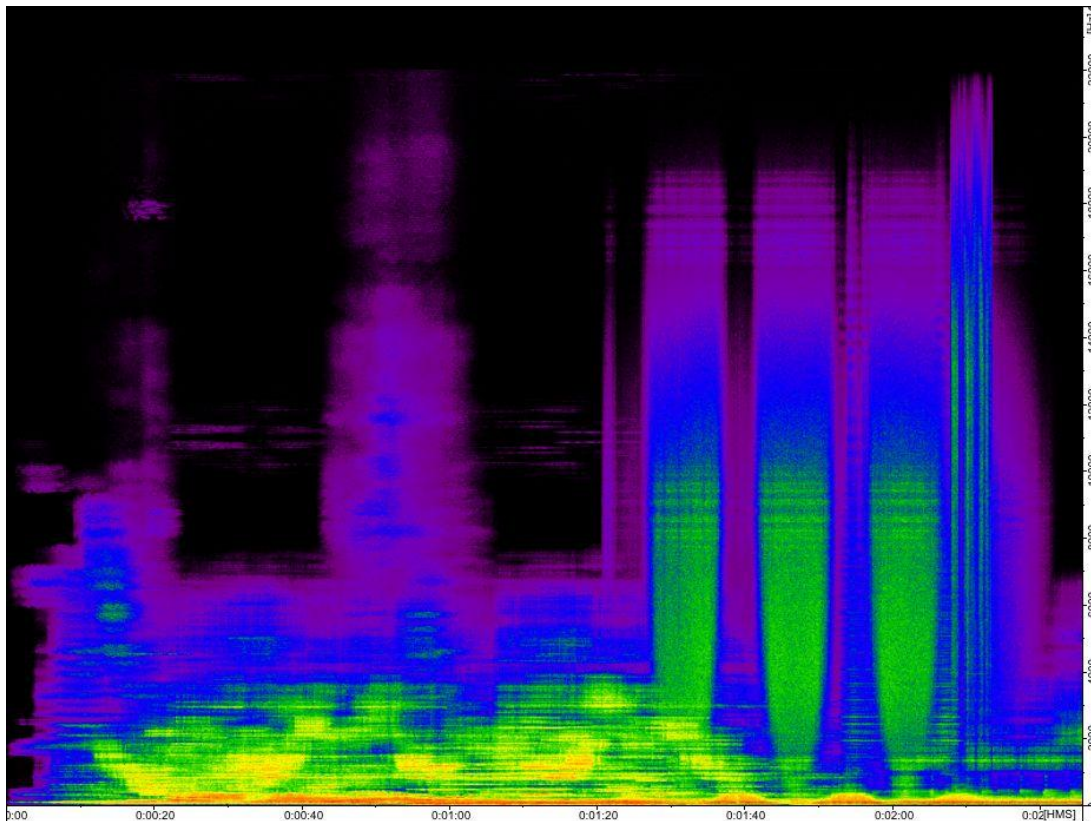
“Aeterna Pulchritudo” is a soundscape work based on various field recordings done in Istanbul. The piece has a duration of 14’28”. The main inspiration for the piece is the recording of a street musician at Taksim Square. The microphone was placed very near to the speaker of the amp that the musician was using. Besides this closeup microphone recording, other far away recordings of the musician have been made. This recording was processed with various techniques such as timestretch, granular synthesis, filters, overdrive, distortion, reverberation, pitchshifting etc. The resulting textures are the main components of the piece until around 9 minutes into the piece.

Between 9'30'' and 11'20'' various field recording done around the city are heard in a collage-like aesthetic. After 11'20'' the piece includes voices of a male and female singer singing in Latin and saying words such as prosperity, Constantinus, beauty etc.

The piece contains all the techniques and aesthetic choices discussed and analyzed in the previous section. It involves minimal processing aesthetic of Hildegard Westerkamp especially during the last section. The work also includes the sonic archeology concept of Ros Bandt with the studio recording of a Latin text and the collage-like aesthetic of Thomas Gerwin for the two minutes between 9'30'' and 11'20''. "Aeterna Pulchritudo" also has elements of drone – loop aesthetic of Rajivan Ayyappan especially during the introduction. The piece includes the ideas of ecocomposition present in Damian Keller's work with timbres and dynamics inspired by the actual field recording of the street musician at Taksim Square. The field recordings used in this piece were done with Audio Technica AT822 stereo condenser microphone and Olympus LS-10 portable card recorder.

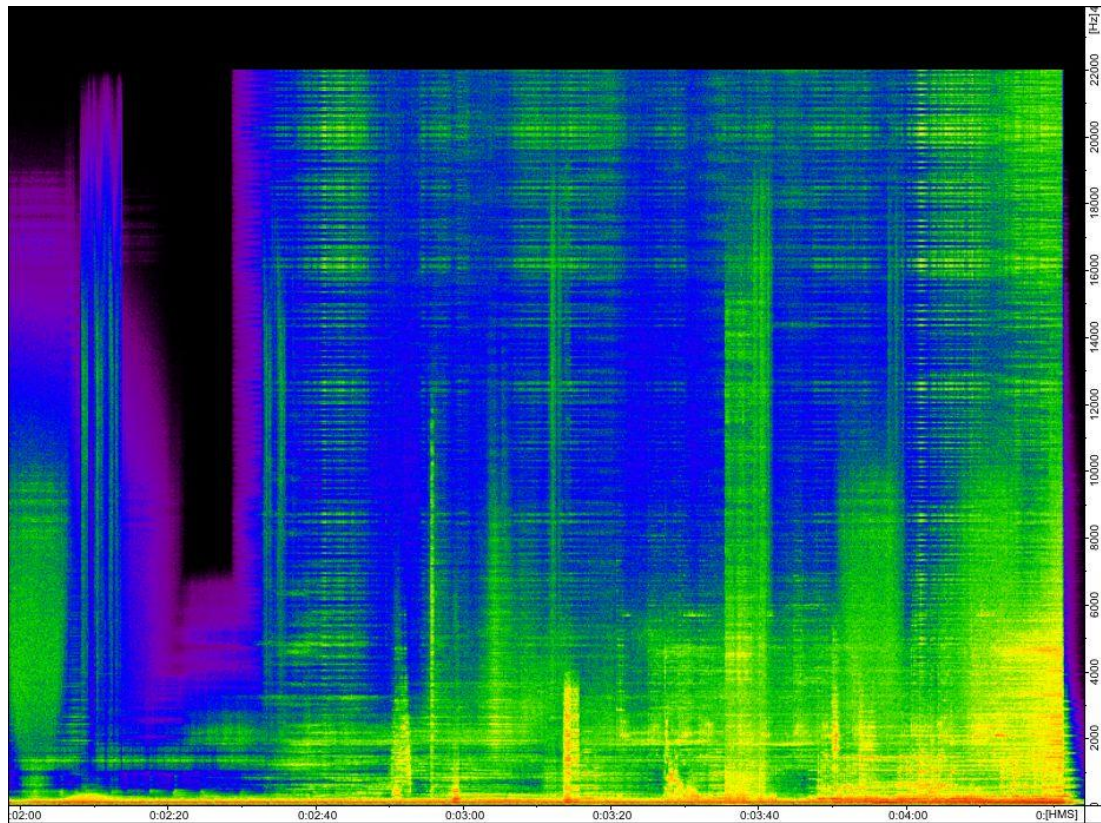
Here is the program notes for the piece which was written through the voice of the public living in Constantinople expressing their respect and admiration to the emperor :

“Supreme Constantine. We feel obliged to express our sincere gratitude to you for providing us this city. You have illuminated our pathes with your wisdom. You have brought bread to our homes, peace to our families, prosperity to our city and power to our empire. Let all the beauty be with you eternally.”



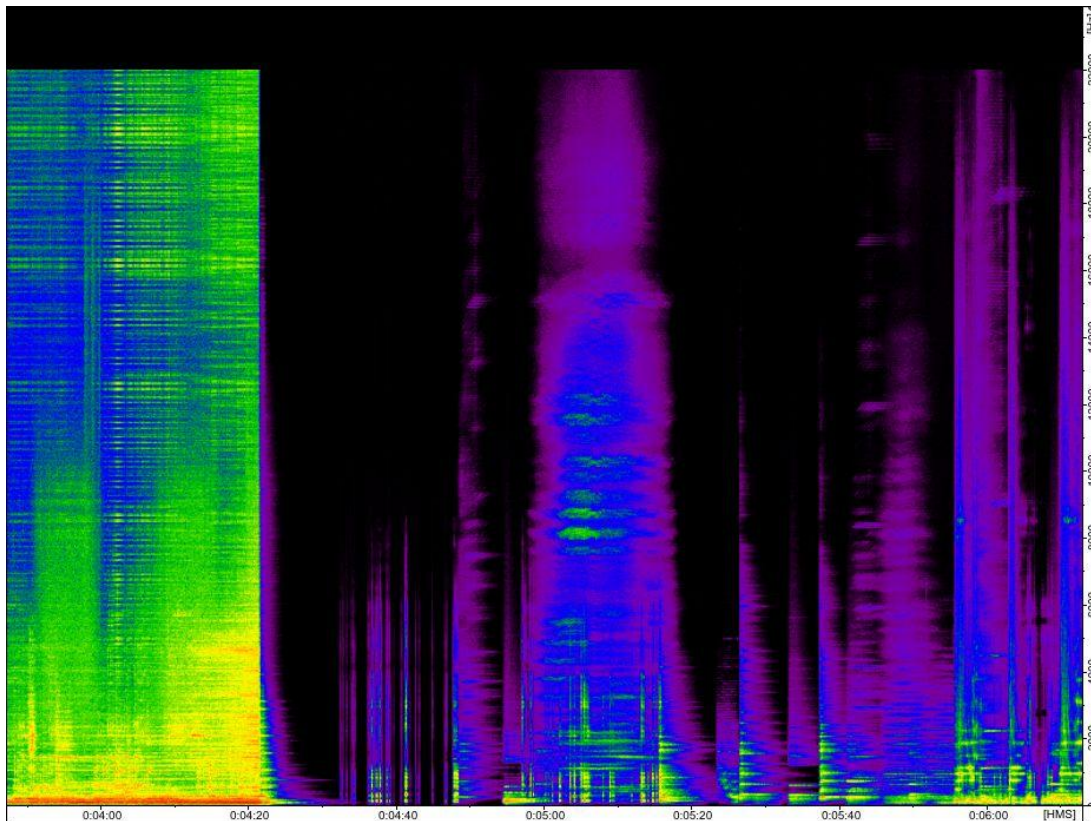
**Figure 6.1a** : Spectral analysis “Aeterna Pulchritudo” 0’00’’– 2’00’’.

The piece starts quietly for the first ten seconds with a rms volume of -37.9 dbs. All of the drones heard during the first section are based on the field recording of the musician at Taksim Square. The very first textures heard at the beginning of the piece do not have a distorted sonic character, but they have a glitchy kind of sonic signature. This glitchy character is one of the sonic ideas used in the piece. This technique which creates a tense sonic environment can be heard at the constantly changing volume, pan parameters. During the first two minutes the piece has a lot of sonic information around 40 and 60 hz. Another thing to point out during this first section is the three repetitions of the heavily distorted texture at 1’26’’, 1’41’’ and 1’56’’. This timbre has a specific sonic spectrum which can easily be seen at the spectral analysis above. Besides being the first heavily distorted texture, it also has significance in the form of the work. It points out the beginning of the other heavily distorted textures to be heard which also serves as the B section of the first part of the whole piece.



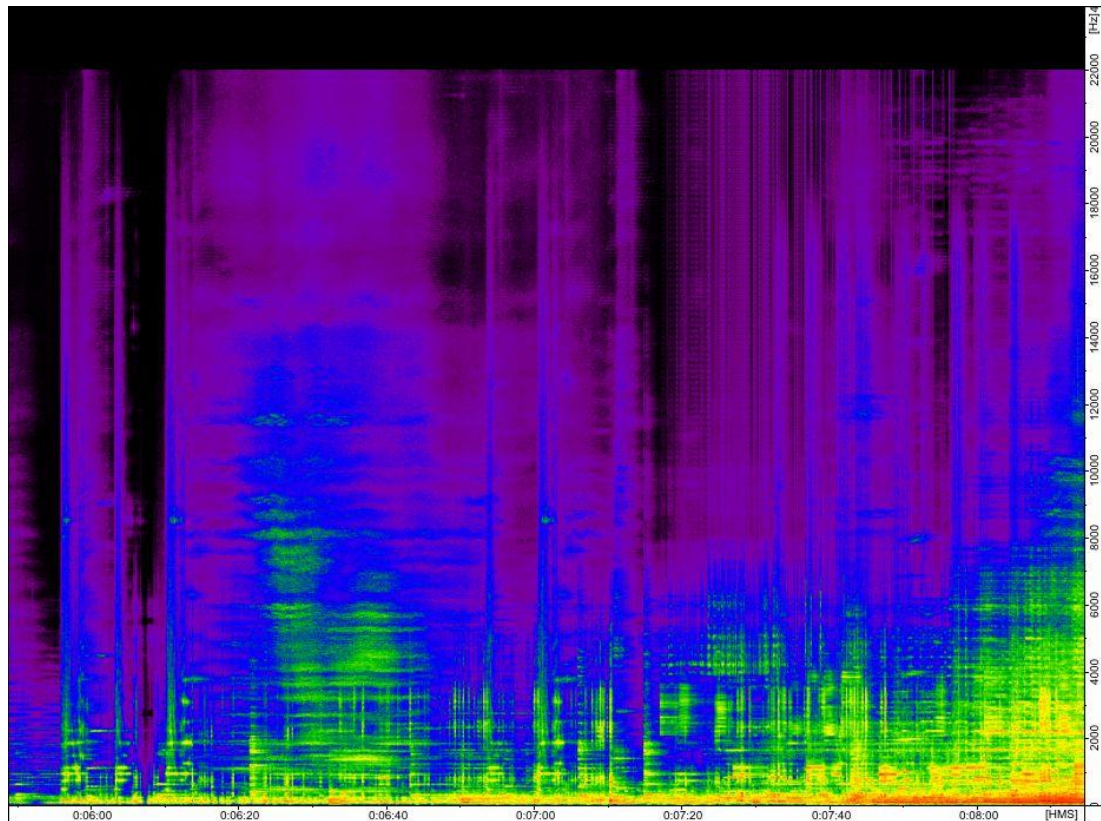
**Figure 6.1b** : Spectral analysis “Aeterna Pulchritudo” 2’00’’– 4’00’’.

A new distorted texture starts right at 2’00’’ while the third repetition of the piece’s very first noisy timbre ends around 2’07’’. Right around this moment which indicates the second part of the whole work’s first section, the piece starts to get more distorted, noisier and darker. Also right at 2’08’’ a new distorted timbre is heard that gets repeated three times. Between 2’14’’ and 2’30’’, two different distorted textures are heard along with a subtle percussive hit. Added to these sounds is a lowpass filtered sound. At 2’30’’ one of the main characteristic sounds of the whole piece emerge. This bright and smooth sounding ambient texture creates a contrast to all the heavily processed and distorted timbres heard so far. Between 2’50’’ and 2’53’’ a new percussive sound is heard. This is the first time in the piece such a sound gets heard. One of the interesting points in this section is the pitchshifted field recording that only lasts for a second at 2’58’’. This is the first time in the piece that such minimal processing gets used. A loud distorted hit is heard at 3’13’’ while the first tremolo effect is heard at 3’25’’. Until 4’00’’ the piece gets louder and the textures get denser.



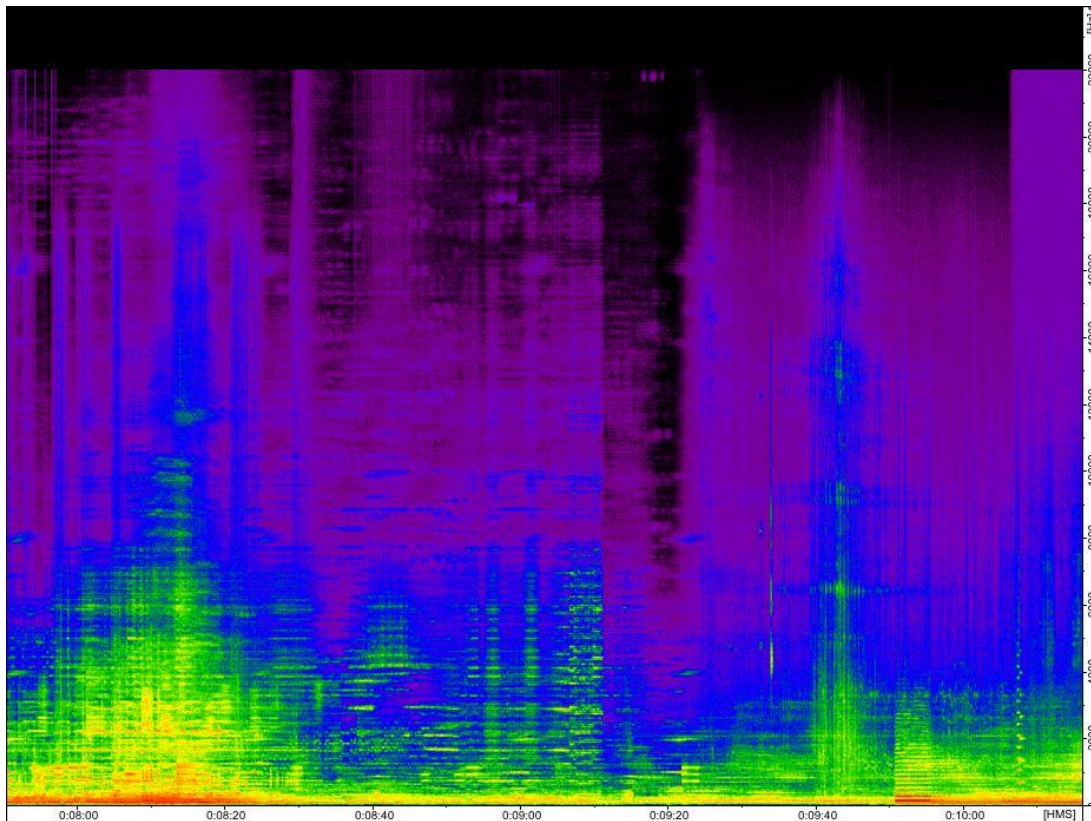
**Figure 6.1c** : Spectral analysis “Aeterna Pulchritudo” 4’00”– 6’00”.

The textures get denser and more distorted until the crescendo at 4’21”’. The first three minutes of the piece has a lot of sonic information around 40 – 80 hz, whereas the last minute until the end of the crescendo, the work gets much more aggressive because of the addition of high mid frequency information. This crescendo marks the end of the first section of the piece. There is a five second total silence between 4’27”’ and 4’32”’. The quite, glitchy texture marks the beginning of the second part of the whole piece. This quite start is a contrast to the loud crescendo. Besides this difference in dynamic range, there is also a major difference between the frequency content of the two parts. While the first section of the piece has a lot of information in the subbass and bass frequencies, the second part is mostly based on mid frequencies. The glitchy texture goes on without any other effect and reverberation until 4’47”’ at when a new pitchshifted ambient timbre is heard. At 4’55”’ a low frequency based pad with a long reverberation gets heard which indicates the beginning of the variations to be heard in the second section of the piece. 5’15”’ is another important point in the whole piece where a very short excerpt from the unprocessed field recording gets heard for the very first time.



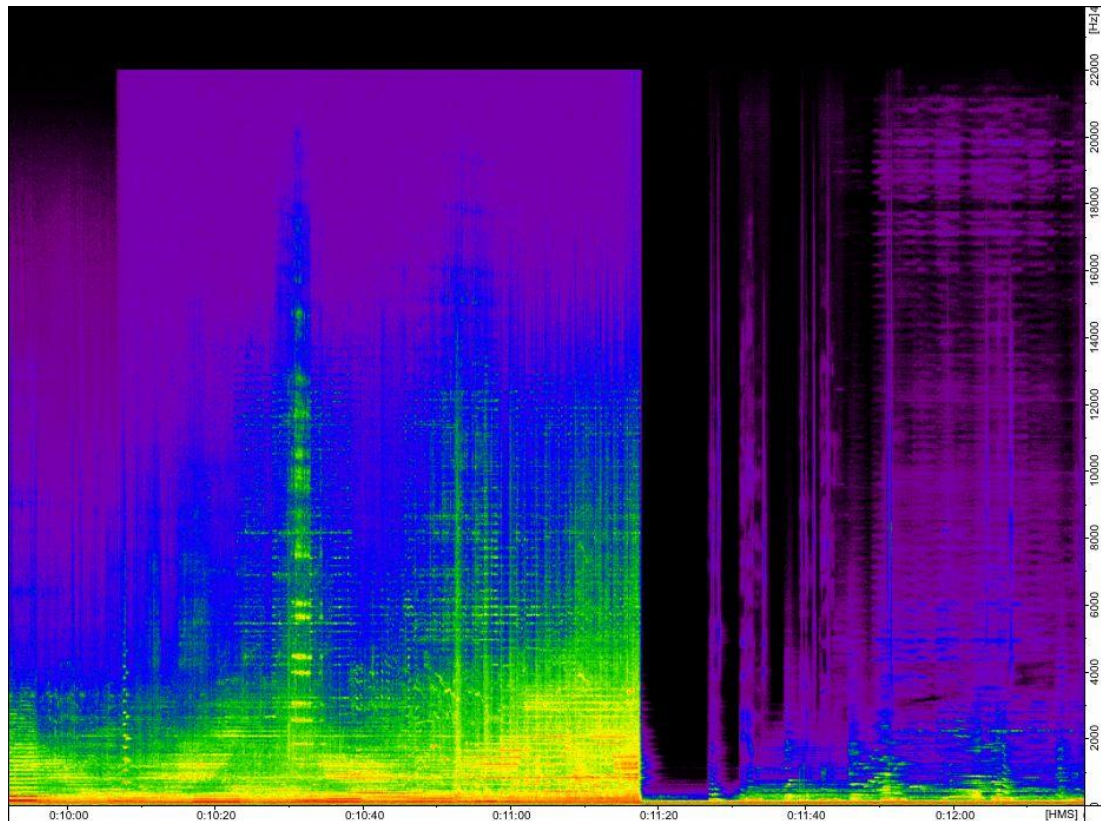
**Figure 6.1d** : Spectral analysis “Aeterna Pulchritudo” 6’00’’– 8’00’’.

The glitchy texture continues during this section. We also hear a rhythmic texture at 6’03’’ that was created with the Waves mondomod plugin. At 6’09’’ we only hear the reverberation return of one of the timbres. This technique creates a new dimension and contrast between the glitchy texture with no reverberation at all and the only reverberation heard sounds like this one. At 6’21’’ a short excerpt of the original, nonprocessed field recording is heard along with a long reverberation. Also at 6’31’’ the pitchshifted version of the original location recording is heard. Until the crescendo at 8’08’’ the number of non or minimally processed excerpts of the field recording gets higher. The rhythmic texture created with the waves mondomod plugin is repeated at 6’53’’. Between 6’50’’ and 7’10’’ the glitch texture’s volume gets higher and its sonic character gets more distorted. Between 7’10’’ and 8’00’’ the textures get denser and more variations of the glitchy and distorted textures are heard.



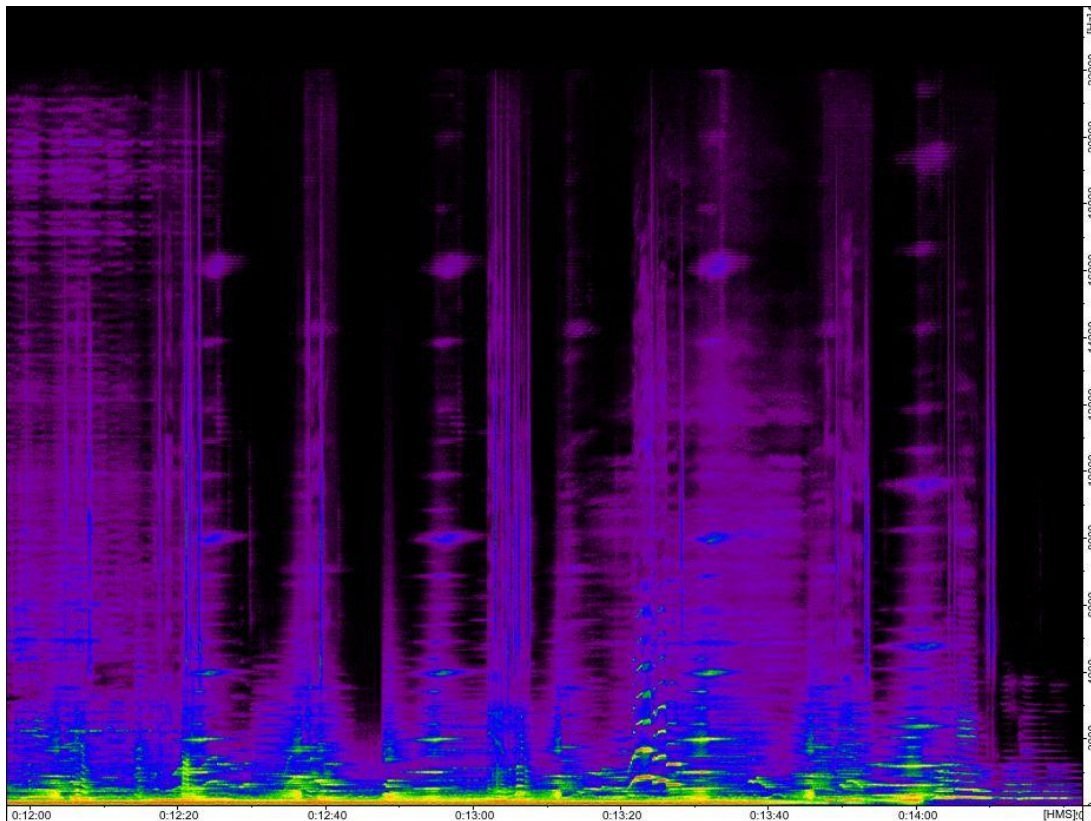
**Figure 6.1e** : Spectral analysis “Aeterna Pulchritudo” 8’00’’– 10’00’’.

The piece goes to a second crescendo at 8’10’’. While the processed textures slowly get quieter, the original field recording done at Taksim Square gets heard. This is the sound of the recording not done with a close-mike setup but rather done with a distance from the actual street musician and it goes on until 9’20’’. It is quite easy to notice the actual slightly distorted sonic character of the sound coming from the musician’s amp. This raw quality has been the inspiration especially for the first section of the whole piece. The distorted and raw sonic character along with bright and smooth long timbres work well together to present the overall atmosphere of the city itself. At 9’24’’ a completely new unprocessed field recording is heard which goes on until 10’ 00’’. This new location recording (of a horseback ride) which is very different from the original sound recording of the musician at Taksim Square marks the beginning of the third section of the whole piece. Between 9’51’’ and 9’58’’ the horns of ships are heard. Until this moment of the piece, the location recordings heard all had been recorded with close-up mic position and of sources with little bass energy. The recording of the ship horns indicates this difference within the piece.



**Figure 6.1f** : Spectral analysis “Aeterna Pulchritudo” 10’00”– 12’00”.

Between 10’00 and 11’17” various ambient textures are heard along with the field recordings done in Istanbul. Between 9’51” and 11’17” completely separate field recordings are heard in a collage-like aesthetic. For instance, around 10’08” a horse carriage recording is heard along with the sound of the train horn. Between 10’16” and 10’23” the sound of the horse carriage comes from the slightly right panned panorama while the ship horn comes from the center and the sound of a saz player from the left of the panorama. Between 10’52” and 11’17” the main field recording is the sound of the fireworks. Until this moment the nonprocessed recordings have been heard with nearly the same volume as the processed textures whereas at this instance of the piece, the field recording takes the major sonic role. The piece goes to its final crescendo at 11’17”. The interesting things to note about this point is the use of reverberation for the processed ambient texture at the end of the crescendo and the sudden change in the frequency content. Only the low pass filtered sound with a peak in the 60 hz frequency is heard at 11’18”. This change marks the beginning of the last section of the whole piece and sets a new sonic environment for the listener. At 11’27” a female voice singing the word “Constantinus” is heard. These singings of Latin text go on until the end of the piece.



**Figure 6.1g** : Spectral analysis “Aeterna Pulchritudo” 12’00”– 14’28”.

The “Constantinus” text is sang between 11’58” and 12’05”. During this last section the only effect that has been applied to the voices is the reverberation with different settings. This sonic choice creates a balance between the highly processed textures and the voices. Another thing to note that is the timbral characteristic of the ambient textures heard in this last section. While the distorted timbres dominate the sonic world during the first section of the piece, none of them appear during the last section. This is another sign of the differences between the parts of the whole piece. At 12’13” a two second excerpt from the main field recording of the musician is heard. This excerpt is the sonic connection between the last section of the piece and the other parts. Between 12’16” and 12’23” four voices are heard on top of each other, each with different panorama and reverberation settings. The modes that are sung are Dorian and Aelion. At 13’21” a crescendo in the female voice is heard followed by an ambient texture with a similar gesture. During this last section of the piece, the ambient timbres mimic the gestures of the actual voices similar to the ideas of the ecomposition. The piece ends with the female voices singing “Contantinus” and “Sapientia” (wisdom). The “Sapientia” text is sung in a very slow pace and only the reverberation fx return is heard which creates an eerie ending to the whole piece.

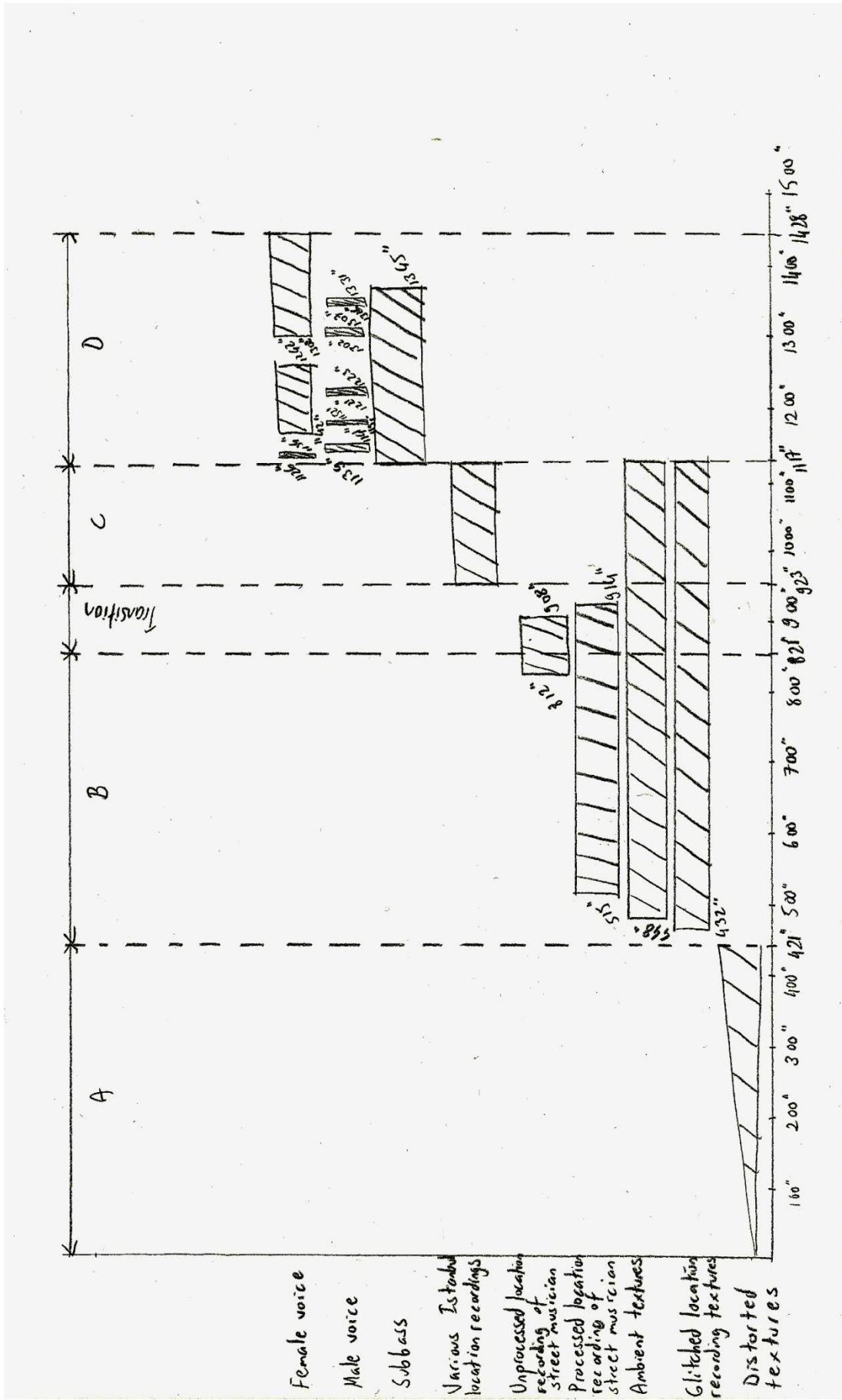


Figure 6.1h : Formal analysis – graphic score “Aeterna Pulchritudo”.



## 7. CONCLUSION AND SUGGESTIONS

The soundscape composition is one of the most important genres to emerge in electronic music in the last forty years. Its influence can be noticed and heard in many recordings at this moment. From the idea of acoustic ecology, to the techniques of minimal processing, from the idea of deep listening, to the idea of creating a sonic link between the space and the audience, the soundscape composition has been very influential in many ways.

While artists such as Luc Ferrari, Luciano Berio, Ottorino Respighi have worked on the soundscape starting from the 1920's, it was the Vancouver based researchers and composers who have worked on ideas about sonic ecology, study of soundscape, various processing techniques extensively and compiled all these ideas into a new style of listening and a new style of music. These researchers and composers R Murray Schafer, Barry Truax, Bruce Davis, Claude Schryer and Hildegard Westerkamp have all composed pieces that emphasize the aesthetics, techniques associated with soundscape composition. Besides these composers, other Canadian composers such as Darren Copeland, Andra McCartney, Francis Dhomont, Gilles Gobeil, Ian Chuprun, Jean Francois Laporte, and Eldad Tsabary have all been active in composing soundscape composition pieces or works directly related with a specific soundscape. Although post production of editing, processing the recorded soundscape is vital in this art form, it is also interesting to see a composer like Jean Francois Laporte who transforms sound at the location of the recording. This shows how the actual creation process of soundscape composition has changed and evolved through time and through the advance of technology. Besides these Canadian composers, this music form in its very different variations have been practiced by many artists all around the world such as French composers Eric Lacasa, Yannick Dauby, Jean Claude Risset, Bernard Fort and Marc Namblard, German composers Michael Rösenberg, Hanna Hartman, Christina Kubisch, Lasse Marc Riek, Stefan Funck, Helmut Lemke, Rinus van Alebee, Sascha Karminski and Asmus Tietchens,

British composers Jonty Harrison, John Leveck Drever, Chris Watson, Peter Cusack, Neil Bruce, Duncan Whitley, Peter Cusack, Andrew Liles, Trevor Wishart, Max Eastley, Rob Mullender and Katharine Norman, Scottish composers Pete Stollery, Robert Dow and James Wyness, Czech composer Slavek Kwi, Norwegian composers Bj Nilsen and Kjell Samkopf, Danish composer Jacob Kirkegaard, Swedish composer Gilles Aubry, Portuguese composer Paulo Raposo, Finnish composer Petri Kuljuntausta, Spanish composer Francisco Lopez, Italian composer Alessandro Bosetti, Icelandic composer Thor Magnusson, American composers Christopher DeLaurenti, Bob Gluck, Steve Feld, Jeff Gburek, Bernie Krause, David Rothenberg, Bruce Odland, Stephen Vitiello, Brandon Labelle, Dallas Simpson, Aaron Ximm and Kim Cascone, Australian composers Ros Bandt, Michael Noble, Philip Samartzis, Murray Schaffer and John Cousins, New Zealand composers Annea Lockwood, Chris Brown and Jack Body, Indian composers Rajivan Ayyappan and Budhaditya Chattopadhyay, Japanese composer Toshiya Tsunoda, Latin American composer Damian Keller and many others. The interesting thing to note here is that the wide diversity of styles that these composers and field recordists work in. For example, Francisco Lopez uses field recordings to create drone based pieces, Christina Kubisch combines field recordings with light installations etc. Some sound artists who are very important in the field of sound installation have not been mentioned within the interviews. One of these artists is Bill Fontana. He works with contact microphones, piezoelectric accelerometers to create sound installations. His most famous works are Harmonic Bridge, Falling Echoes and Sound Sculpture with a Sequence of Level Crossings. Some of the other artists that should be mentioned within this genre are Maryanne Amacher, Ryoji Ikeda and Alvin Lucier. Although these composers do not work directly within the soundscape composition genre, their works are all concerned with the limitations of human hearing, resonances of spaces and psychoacoustic phenomenons which would all occur in a soundscape recording in extreme conditions. The five works that have been analyzed within this dissertation also shows the variety of styles that are associated with soundscape composition in the 21st century.

Even though the style has become very diverse and practiced all around the world, the number of artists who work within this style in Far East and South America is small, in Africa and Middle East near to none. One of the reasons for this is the fact

that the traditional musics of these areas are dominant in the local music culture and it is harder for artists to break out that bond. Although the style has become very diverse, the technologies used for recording soundscape and composing are very similar. All composers work with microphones, portable recording devices and mixing platforms. Generally the microphones used by the composers are stereo microphones, omni directional microphones, binaural microphones, hydrophones, shotgun microphones and surround microphones. Some composers and location recordists also make their own microphones. For stereo microphones, composers prefer to use brands such as Sony, Sennheiser, Audio Technica, Schoeps, Telinga dat science, for omni directional microphones, Bruel & Kjaer and DPA are preferred. For binaural microphones, the brand Soundman is preferred mostly and for hydrophones, the brands Offshore Acoustics and DPA are used. For shotgun microphones, Sennheiser mics are preferred and for surround microphones the brand Soundfield is used. It is interesting to note that most of the composers and location recordists still prefer to use condenser stereo microphones even though they occasionally use the other types mentioned above. Another interesting point is that none of the artists interviewed have mentioned the use of parabolic reflector or contact microphone. Parabolic reflector is a reflective device used to collect or project energy such as light, sound, or radio waves. Its shape is that of a circular paraboloid, that is, the surface generated by a parabola revolving around its axis. Parabolic reflectors are used to collect energy from a distant source (for example sound waves or incoming star light) and bring it to a common focal point. Parabolic reflector is the perfect device for recording the soundscape that is very far away from the observer. Contact microphone is a form of microphone designed to sense audio vibrations through solid objects. Unlike normal air microphones, contact mics act as transducers which pick up vibrations and convert them into a voltage which can then be made audible. Although a regular contact microphone would not be the right choice for recording a rural or an urban soundscape, it would be a good choice for recording the vibrations of certain structures. Another device that is not used widely but very important for sound installation is the piezoelectric accelerometer. Piezoelectric accelerometer is a device that utilizes the piezoelectric effect of certain materials to measure dynamic changes in mechanical variables such as acceleration, vibration, and mechanical shock. This has been used by sound installation artist such as Bill Fontana to record the sounds of big constructions such as bridges.

For the recording medium, four different category of gear is used. They are DAT recorders, card recorders, mini disk recorders and hard disk recorders. In all these four categories the main brands that are used are Sony, Tascam, Zoom, Marantz, Maudio, Nagra, Sharp and Sound Devices. It is noticeable that DAT recorders are used very rarely due to the advance of the music technology. Composers prefer to use mostly card or hard disk recorders. They are portable, have decent sound quality with many features and the files recorded can be transfered to any other media easily. Even portable mp3 players, ipods are being used for recording various events. Although they do not have a high fidelity sound quality for recording, they have a unique lofi character of their own. The mixing platforms consist of digital only systems or hybrid systems that contain both digital and analog equipment. For editing and mixing, programs such as Protools, Max-msp, Logic, Cubase, Ableton Live, Wavelab, Soundforge, Amadeus, Samplitude, Digital Performer, Audition, SADiE, Peak, Soundtrack Pro and Audiosculpt are used. Nearly all of the composers prefer to work in the digital domain all throughout the editing and mixing process. Only a very small percentage of composers still combine digital technology, with analog mixers, analog synthesizers, drum machines, analog fx processors etc. This is quite the opposite of the scene that was active twenty years ago where the digital equipment was very expensive compared to analog gear.

Like in all other music styles, the advance in music technology has also changed the soundscape composition. First of all, because of the low price in recording gear and microphones, the number of people interested in location recording has increased dramatically. Not just the soundscape composers, but also composers from different styles have started to embrace the use of field recordings in their works. The second big change is the low price in the digital systems of editing and mixing. It is now very possible to transfer all the recorded data to a laptop and finalize the work in a software in the laptop, this was unimaginable twenty years ago. Although soundscape composition pieces have been performed in a multichannel environment, mostly in 8 speaker system setup for a long time, recently there is a tendency to present works in Ambisonics format. There is also a growing interest towards recording not just soundscape of nature or urban environments but of microscopic events and even sometimes dangerous places. All these new developments have turned the soundscape composition into a wider known and practiced art form.

The growing interest towards field recording will definitely affect the soundscape composition aesthetics even more. This affect and change is already happening in all parts of the world. First of all, field recording is not just used by composers of this genre but also by visual artists and popular music producers. The new generation of composers work very openly and freely and they do not stick to a very specific style, but there are two obvious aesthetics that seem to emerge. One is the aesthetic of drones (long sustaining sounds created based on field recordings) and the aesthetic of lofi (recording done with low fidelity equipment).

Acoustic ecology is still a very important part of soundscape composition. But will the new musical works raise consciousness towards environment and the sonic quality of our surroundings? This is doubtful and this consciousness will be better fulfilled at a political and social level, but still we can see that strong compositions can encourage the listener to listen to their environment more openly, carefully and to engage in a deep and meaningful way with their immediate sonic environments.

Can the soundscape composition be the base of new electronic music composed outside of Europe and North America? This is a hard to question to answer and without one specific solution. It is no doubt that listening, recording your own environment is a great tool for new compositions. But will the number of people interested in this style of music and the ideas associated with it rise to a certain amount? This is really doubtful especially for certain parts of the world where there is a long tradition of local music. Even though soundscape composition uses environment for its inspiration, it is still a genre within the electronic and contemporary music field. It will be hard to engage with listeners in places where there is no or very little history of contemporary classical or electronic music. The interesting thing to point out is that although soundscape composition is part of contemporary music and which has started in the 20th century, people living in certain parts of Africa, India, Guatemala etc have already been making environmental music and engaging with their direct surroundings for centuries. I think any form of field recording based music will be much more respected in the 21st century as long as people do not forget to listen to their own surroundings. I think this deep listening mode has already started to happen. We see more people interested in environmental issues due to global warming, pollution etc and this interest will also include the sonic part of the environment in the long run. We do not

know yet if this number will be substantial or marginal. Various ordinary listeners have been influenced by the soundscape compositions presented at festivals, but will their enjoyment and awareness translate into everyday life habits? To turn this enjoyment and awareness into a longterm habit, architects, engineers and urban planners should work along with soundscape composers and acousticians. This has already happened in Scotland with the city councils employing acoustic specialists (often soundscape composers) as part of the team.

Turkey has been a pivot point for many civilizations throughout history and sounds, music in various styles have emerged from this part of the world. Although contemporary electroacoustic music is pretty new for the listeners in Turkey, there are still a number of universities that include courses on electroacoustic music and quite a few composers who are interested in this genre. Besides the current generation of electronic music composers in Turkey, we know that there have been two composers who have been very influential in the electronic music history. İlhan Mimaroğlu and Bülent Arel. They have been influenced by the contemporary music scene of the 1950's and 1960's. They have created some of the master pieces of electronic music in the 20th century. For the future of electronic music composers in Turkey, soundscape composition and the aesthetics, techniques along with it could be a new way of finding innovative ideas. As noticed through the comparative analysis of the interviews done with the fortythree composers, Turkish electronic music is rarely known in the world. Most of the composers interviewed agreed upon the fact that soundscape composition could be the base of new, exciting, innovative electronic music emerging from Turkey. A combination of unique field recordings and techniques, newly designed hybrid instruments along with the early music instruments of Anatolia, sound samples of processed traditional musics could be this starting point.

Based on the techniques and aesthetics of the composers analyzed in this dissertation, I can suggest these ideas for the creation of the new electronic, electroacoustic music in Turkey.

The environmental and political issues can be considered for the general concept of the new compositions. The end section at the Hildegard Westerkamp's piece "Beneath the Forest Floor" uses a simple processing method called pitchshift. This technique seems to work very well especially with location recordings that have a lot

of information in the overtones. Specific location recordings may be done with this technique in mind. There are also other minimal processing techniques such as equalization, filter, reverberation, phaser, chorus, flanger, delay etc. Equalization is the process of adjusting the balance between frequency components within an electronic signal. The most well known use of equalization is in sound recording and reproduction. The equipment used to achieve equalization is called an equalizer and these devices strengthen (boost) or weaken (cut) the energy of specific frequency bands. By boosting and cutting certain frequencies of the recorded material, it is possible to come up with new timbres. Electronic filters are electronic circuits which perform signal processing functions, specifically to remove unwanted frequency components from the signal, to enhance wanted ones, or both. These filters can be of different characters such as analog, digital, passive, active, linear, non-linear, discrete-time, continuous-time, high pass, low pass, band pass, band reject, infinite impulse response and finite impulse response. The most widely used filters that could also be useful for the composers would be the low-pass filter (passes low frequencies while blocking higher frequencies), high-pass filter (passes high frequencies), band-pass filter (passes a band (range) of frequencies), band-stop filter (passes high and low frequencies outside of a specified band). Reverberation is the persistence of sound in a particular space after the original sound is removed. Reverb is created when a sound is produced in an enclosed space causing a large number of echoes to build up and then slowly decay as the sound is absorbed by the walls and air. This is most noticeable when the sound source stops but the reflections continue, decreasing in amplitude, until they can no longer be heard. The length of this sound decay, or reverberation time, receives special consideration in the architectural design of large chambers, which need to have specific reverberation times to achieve optimum performance for their intended activity. In comparison to a distinct echo that is 50 to 100 ms after the initial sound, reverberation is many thousands of echoes that arrive in very quick succession (.01 – 1 ms between echoes). As time passes, the volume of the many echoes is reduced until the echoes cannot be heard at all. There are several types of reverberation such as chamber, plate, spring and digital. Convolution reverb under the main category of digital reverberation needs special consideration. It is a process for digitally simulating the reverberation of a physical or virtual space. It is based on the mathematical convolution operation, and uses a pre-recorded audio sample of the impulse response of the space being modelled. To apply the

reverberation effect, the impulse-response recording is first stored in a digital signal-processing system which is then convolved with the incoming audio signal to be processed. The process of convolution multiplies each sample of the audio to be processed (reverberated) with the samples in the impulse response file. The primary goal of a convolution reverb is to sample real spaces, in order to simulate the acoustics of the sampled space. By sampling the reverberation characters of various unique spaces, composers will have a new palette of textures to work with. Phaser is an audio signal processing technique used to filter a signal by creating a series of peaks and troughs in the frequency spectrum. The position of the peaks and troughs is typically modulated so that they vary over time, creating a sweeping effect. For this purpose, phasers usually include a low-frequency oscillator. Flanging is an audio effect produced by mixing two identical signals together, with one signal delayed by a small and gradually changing period, usually smaller than 20 milliseconds. This produces a swept comb filter effect: peaks and notches are produced in the resultant frequency spectrum, related to each other in a linear harmonic series. Varying the time delay causes these to sweep up and down the frequency spectrum. A flanger is an effects unit dedicated to creating this sound effect. Part of the output signal is usually fed back to the input, producing a resonance effect which further enhances the intensity of the peaks and troughs. The phase of the fed-back signal is sometimes inverted, producing another variation on the flanging sound. Chorus effect occurs when individual sounds with roughly the same timbre and nearly (but never exactly) the same pitch converge and are perceived as one. While similar sounds coming from multiple sources can occur naturally, it can also be simulated using an electronic effects unit or signal processing device. When the effect is produced successfully, none of the constituent sounds is perceived as being out of tune. It is characteristic of sounds with a rich, shimmering quality that would be absent if the sound came from a single source. The effect is more apparent when listening to sounds that sustain for longer periods of time. Delay is an audio effect which records an input signal to an audio storage medium, and then plays it back after a period of time. The delayed signal may either be played back multiple times, or played back into the recording again, to create the sound of a repeating, decaying echo. All these and other various simple processing methods will be essential for the composers.

Besides these minimal and relatively simple processing methods, there are much more complicated and cpu intensive methods that are also essential. Some of them are extreme timestretch, wave shaping, spectral morphing, convolution, granular synthesis. Time stretching is the process of changing the speed or duration of an audio signal without affecting its pitch. With extreme time stretching for example one minute of recorded material could be extended to twenty four hours or even more. Wave shaping is a type of distortion synthesis in which complex spectra are produced from simple tones or samples by altering the shape of the waveforms. Spectral morphing is a process where the morph module matches the frequencies of the input signal to match the spectrum of the target signal. Convolution is a mathematical operation on two sounds, producing a third sound that is typically viewed as a modified version of one of the original functions. Granular synthesis is a basic sound synthesis method that operates on the microsound time scale. It is based on the same principle as sampling. However, the samples are not played back conventionally, but are instead split into small pieces of around 1 to 50 ms. These small pieces are called grains. Multiple grains may be layered on top of each other, and may play at different speeds, phases, volume, and pitch. At low speeds of playback, the result is a soundscape, often a cloud, that is manipulable in a manner unlike that for natural sound sampling or other synthesis techniques. At high speeds, the result is heard as a note or notes of a novel timbre. By varying the waveform, envelope, duration, spatial position, and density of the grains, many different sounds can be produced.

The sonic archeology is another great idea to explore for the creation of new works. There are many languages that have been forgotten or spoken by very few people in Anatolia. Also there are sounds that have vanished because of the change in technology and environment. These sounds and languages may come to life by creating them in the studio. For example, certain traditional instruments that have gone out of fashion can be created again which can also include the contemporary electronics technology. This way these new hybrid instruments can be recorded both with regular condenser microphones but also with their DI outputs connected to various fx processors.

The collage and multitracked technique used by Thomas Gerwin is also vital in creating new pieces. Location recordings done all around Turkey can be blended

with the sounds that have been created in the studio and also new sonic meanings may be created by placing two or more completely different location recordings on top of each other. During these recordings, besides the regular stereo condenser mics, microphones such as binaural, hydrophone, omni directional, shotgun, surround can be used. For even wilder results, parabolic reflectors, contact microphones and piezoelectric accelerometers are essential for the composers.

The use of drones and looping plays a major role in Rajivan Ayyappan's works. The drones may be created either by processing the actual field recordings or with various synthesizers and instruments. Creating short loops of these drones and location recordings create a new rhythmic element that can give the compositions more electronica like feel. Also using the long sounds along with the short loops create a feeling of tension and a feeling of drama within the piece.

Eco composition is another important aesthetic approach that can be the base for new works. From the underwater recording at the Bosphorus to the stillness at the Gobeklitepe – the oldest temple known to mankind – various ecological events may be analyzed and used as the main inspiration for the new works.

All these five different aesthetics, approaches and techniques (minimal soundscape, sonic archeology, collage – multitrack, drone - loops, eco composition) mentioned in this dissertation are vital tools to the new generations of electronic music composers in Turkey.

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## **APPENDICES**

**APPENDICE A :** Glossary of terms

**APPENDICE B :** Bios of composers interviewed

**APPENDICE C :** Compositions by Hildegard Westerkamp, Ros Bandt, Thomas Gerwin, Rajivan Ayyappan, Damian Keller and Erdem Helvacıoğlu (on DVD-ROM)

**APPENDICE D :** Interviews done with composers and location recordists  
(on DVD-ROM)

**APPENDICE E :** Articles referenced within these interviews (on DVD-ROM)

## **APPENDICE A : Glossary of terms**

### **Abstract music**

Music in which the sound organization strategies avoid extra-musical references. Most "serious" European and North American music falls within this category.

### **Accelerometer**

Accelerometer is a piezoelectric accelerometer that utilizes the piezoelectric effect of certain materials to measure dynamic changes in mechanical variables such as acceleration, vibration, and mechanical shock.

### **Acousmatic music**

Acousmatic music is a form of electroacoustic music that deals specifically with acousmatic sound as a compositional resource.

### **Aesthetics**

Aesthetics is known as the study of sensory or sensori-emotional values, sometimes called judgements of sentiment and taste. Scholars in the field define aesthetics as "critical reflection on art, culture and nature." Aesthetics is a subdiscipline of axiology, a branch of philosophy, and is closely associated with the philosophy of art. Aesthetics studies new ways of seeing and of perceiving the world.

### **Abstraction**

Abstraction is the process or result of generalization by reducing the information content of a concept or an observable phenomenon, typically in order to retain only information which is relevant for a particular purpose.

### **Acoustic ecology**

Acoustic ecology, sometimes called soundscape ecology, is the relationship, mediated through sound, between living beings and their environment. Acoustic ecology studies started in the late 1960s with R. Murray Schafer and his team at Simon Fraser University (Vancouver, Canada) as part of the World Soundscape Project.

### **Acousmatic sound**

Acousmatic sound is sound one hears without seeing an originating cause. The term acousmatique was first used by the French composer, and pioneer of musique concrete, Pierre Schaeffer.

### **Ambisonics**

Ambisonics is a series of recording and replay techniques using multichannel mixing technology that can be used live or in the studio. By encoding and decoding sound information on a number of channels, a 2-dimensional ("planar", or horizontal-only) or 3-dimensional ("periphonic", or full-sphere) sound field can be presented. Ambisonics was invented by Michael Gerzon of the Mathematical Institute, Oxford, who – with Professor Peter Fellgett of the University of Reading, David Brown, John Wright and John Hayes of IMF, and building on the work of other researchers – developed the theoretical and practical aspects of the system in the early 1970s.

### **Anthropology**

Anthropology is the study of humanity. Anthropology has origins in the natural sciences, and the humanities. Ethnography is both one of its primary methods and the text that is written as a result of the practice of anthropology and its elements. The German philosophers Magnus Hundt and Otto Casmann are regarded as the founders of modern anthropology since they invented and popularized the term.

### **Aural safari**

Aural safaris seek to convey the audible drama of hunting sound in an unstable, perhaps dangerous environment.

### **Authenticity**

Authenticity is a technical term in existentialist philosophy, and is also used in the philosophy of art and psychology. In philosophy, the conscious self is seen as coming to terms with being in a material world and with encountering external forces, pressures and influences which are very different from, and other than, itself. Authenticity is the degree to which one is true to one's own personality, spirit, or character, despite these pressures.

## **Autonomy**

Autonomy (Greek: Auto-Nomos - nomos meaning "law": one who gives oneself his/her own law) is the right to self-government. Autonomy is a concept found in moral, political, and bioethical philosophy. Within these contexts, it refers to the capacity of a rational individual to make an informed, un-coerced decision.

## **Binaural**

Binaural recording is a method of recording audio which uses a special microphone arrangement intended for replay using headphones.

## **Biophony**

Biophony (aka ecological soundscapes) is the sound all animals make at a given location absent humans and man-made machines. The term was coined by Dr. Bernie Krause. The sound nature makes is usually recorded via acoustic reflection. The study of ecological soundscapes is called acoustic ecology. The opposite of biophony is anthrophony, i.e., man-made noise (also coined by Dr. Krause).

## **Collage**

A collage is a work of formal art, primarily in the visual arts, made from an assemblage of different forms, thus creating a new whole. Use of this technique made its dramatic appearance among oil paintings in the early 20th century as an art form of groundbreaking novelty.

## **Commoditize**

The act of making a process, good or service easy to obtain by making it as uniform, plentiful and affordable as possible. Something becomes commoditized when one offering is nearly indistinguishable from another. As a result of technological innovation, broad-based education and frequent iteration, goods and services become commoditized and, therefore, widely accessible.

## **Contact microphone**

Contact microphone is a form of microphone designed to sense audio vibrations through solid objects. Unlike normal air microphones, contact mics act as transducers which pick up vibrations and convert them into a voltage which can then be made audible. Although a regular contact microphone would not be the right choice for

recording a rural or an urban soundscape, it would be a good choice for recording the vibrations of certain structures.

### **Convolution reverb**

In audio signal processing, convolution reverb is a process for digitally simulating the reverberation of a physical or virtual space. It is based on the mathematical convolution operation, and uses a pre-recorded audio sample of the impulse response of the space being modelled. To apply the reverberation effect, the impulse-response recording is first stored in a digital signal-processing system. This is then convolved with the incoming audio signal to be processed.

### **Crossfade**

Crossfade is the act of fading out a previous recording while at the same time fading in the latter one to create a soft transition between the two of them.

### **Delay**

Delay is an audio effect which records an input signal to an audio storage medium, and then plays it back after a period of time. The delayed signal may either be played back multiple times, or played back into the recording again, to create the sound of a repeating, decaying echo.

### **Digital performer**

A music production software developed by the company Motu.

### **Ecological composition (Eco composition)**

Ecological composition (Eco composition) is a musical genre that has connections to electroacoustic music, soundscape composition and phonography. Eco composition pieces have structures, parameters that are all based on ecological models and recordings. The noted composers of this aesthetic are Damian Keller, Matthew Burtner and Ana Lucia Fontenele.

### **Ecological models**

Algorithmic tools used for the resynthesis of everyday sounds.

**Ecological psychology**

The study of perceptual processes from a systemic perspective. Perception is understood as an adaptive process that transforms both the perceiver and the environment.

**Ecological validity**

A set of experimentally based principles that define parametric constraints for sound resynthesis models and sonic organization strategies.

**Emotiveness**

Emotiveness is the state of being excited by emotions.

**Electroacoustic music**

Term for compositions that utilize the capacities of electronic media for creating and altering sounds.

**Elektronische Musik**

Is a genre of electronic music developed in Germany in 1950's by Werner Meyer-Eppeler, Robert Beyer, and Herbert Eimert (who became its first director). The studio was soon joined by Karlheinz Stockhausen and Gottfried Michael Koenig.

**Empirical**

The word empirical denotes information gained by means of observation, experience, or experiment. It is a central concept in science and the scientific method is that all evidence must be empirical, or empirically based, that is, dependent on evidence or consequences that are observable by the senses.

**Equalization (EQ)**

Equalization, equalisation or EQ is the process of using passive or active electronic elements or digital algorithms for the purpose of altering (originally flattening) the frequency response characteristics of a system.

**Ethnography**

Ethnography is a genre of writing that uses fieldwork to provide a descriptive study of human societies. Ethnography presents the results of a holistic research method founded on the idea that a system's properties can not necessarily be accurately

understood independently of each other. The genre has both formal and historical connections to travel writing and colonial office reports. Several academic traditions, in particular the constructivist and relativist paradigms, employ ethnographic research as a crucial research method. Some cultural anthropologists consider ethnography the essence of the discipline.

### **Feedback**

Audio feedback is a special kind of feedback which occurs when a sound loop exists between an audio input (for example, a microphone or guitar pickup) and an audio output (for, example, a loudspeaker). In this example, a signal received by the microphone is amplified and passed out of the loudspeaker. The sound from the loudspeaker can then be received by the microphone again, amplified further, and then passed out through the loudspeaker again. This is a good example of positive feedback. The frequency of the resulting sound is determined by resonant frequencies in the microphone, amplifier, and loudspeaker, the acoustics of the room, the directional pick-up and emission patterns of the microphone and loudspeaker, and the distance between them.

### **Field recording**

Field recording is the term used for any recording produced outside of a recording studio. Field recording of natural sounds, also called Phonography (a term chosen to illustrate its similarities to photography), was originally employed as a documentary adjunct to research work in the field and foley work for film. With the availability of high-quality portable recording equipment, it has subsequently become an evocative art in itself.

### **Formants**

Groups of partials that form a spectral peak. Vowel sounds are characterized by two or more formants produced by the resonances of the vocal track. FOF (formant wave function) synthesis simulates formants by using trains of pulses. The pulses are windowed sine waves; the characteristics of the formants depend on the shape of the window applied.

## **Found composition**

Found composition is a composition in which the main elements of sound are derived from everyday objects.

## **Grain pools**

Several short sampled sounds that retain their natural attack and decay characteristics.

## **Grains**

Sound quanta. Short windowed sounds with durations from a few milliseconds to several centiseconds.

## **Granular**

Pertaining to the grain. Granular attack and decay occur within milliseconds, as opposed to the event's attack and decay, which can last several seconds.

## **Granular phase synchronicity, or phase-controlled granulation**

A technique developed by Keller and Rolfe (1998) that uses the phase among grain streams as a synthesis parameter.

## **Granular synthesis**

Granular synthesis is a basic sound synthesis method that operates on the microsound time scale.

## **Genre**

A music genre is a categorical and typological construct that identifies musical sounds as belonging to a particular category and type of music that can be distinguished from other types of music. Genres are often divided into subgenres.

## **Geomorphology**

Geomorphology is the scientific study of landforms and the processes that shape them. Geomorphologists seek to understand why landscapes look the way they do: to understand landform history and dynamics, and predict future changes through a combination of field observation, physical experiment, and numerical modeling.

## **Harmony**

In Western music, harmony is the use of different pitches simultaneously.

## **Hydrophone**

A hydrophone (Greek "hydro" = "water" and "phone" = "sound") is a microphone designed to be used underwater for recording or listening to underwater sound. Most hydrophones are based on a piezoelectric transducer that generates electricity when subjected to a pressure change. Such piezoelectric materials, or transducers can convert a sound signal into an electrical signal since sound is a pressure wave in fluids. Some transducers can also serve as a projector (emitter), but not all have this capability, and may be destroyed if used in such a manner.

## **Hypnotism**

Hypnosis is a mental state or set of attitudes usually induced by a procedure known as a hypnotic induction, which is commonly composed of a series of preliminary instructions and suggestions. Hypnotic suggestions may be delivered by a hypnotist in the presence of the subject, or may be self-administered. The use of hypnotism for therapeutic purposes is referred to as "hypnotherapy".

## **Intrinsic**

The term intrinsic denotes a property of some thing or action which is essential and specific to that thing or action, and which is wholly independent of any other object, action or consequence.

## **Incongruous**

Out of keeping or place, inappropriate.

## **Logic**

A music production software owned by Apple.

## **Loop**

In electronic music, a loop is a sample which is repeated. Loops may be repeated through the use of tape loops, delay effects, cutting between two record players, sampling, a sampler or with the aid of computer based looping software.

## **Lyricism**

Lyricism is the character or quality of subjectivity and sensuality of expression, especially in the arts.

**Macro-time**

Level of sound structure composed of several events. Forms of organization at this level usually result from interactions among lower-level processes.

**Max-msp**

A music production software developed by the company Cycling74.

**Meso-time**

Level of sound structure ranging from a few grains (centiseconds) to several seconds. Most ecologically feasible events can be resynthesized by using meso-time patterns.

**Micro-time**

Level of sound structure lasting between a few nanoseconds to a few milliseconds.

**Microtonal music**

Microtonal music is music using microtones — intervals of less than an equally spaced semitone. Microtonal music can also refer to music which uses intervals not found in the Western system of 12 equal intervals to the octave.

**Minimalism**

Minimalism describes movements in various forms of art and design, especially visual art and music, where the work is stripped down to its most fundamental features.

**Musique concrete**

Musique concrète is a form of electroacoustic music that utilises acousmatic sound as a compositional resource. The compositional material is not restricted to the inclusion of sonorities derived from musical instruments or voices, nor to the elements traditionally thought of as 'musical' (melody, harmony, rhythm, metre and so on). The theoretical underpinnings of the aesthetic were developed by Pierre Schaeffer, beginning in the late 1940s.

**Multitrack editing**

Editing more than one track in a music recording session.

**Noise gate**

A Noise Gate or gate is an electronic device that is used to control the volume of an audio signal. In its most simple form, a noise gate allows a signal to pass through only when it is above a set threshold: the gate is 'open'. If the signal falls below the threshold no signal is allowed to pass (or the signal is substantially attenuated): the gate is 'closed'.

**Parabolic reflector**

Parabolic reflector is a reflective device used to collect or project energy such as light, sound, or radio waves. Its shape is that of a circular paraboloid, that is, the surface generated by a parabola revolving around its axis. Parabolic reflectors are used to collect energy from a distant source (for example sound waves or incoming star light) and bring it to a common focal point. Parabolic reflector is the perfect device for recording the soundscape that is very far away from the observer.

**Parsing (or segregation)**

The process of separating sound events from the constant flow of auditory stimuli. From a compositional perspective, parsing is defined as the process of selecting sounds that fulfil ecological constraints.

**Pattern formation**

Refers to the emergence of higher-level forms or behaviours from the interaction of two or more systems. From a biological perspective, Varela et al. define it as the process of mutual adaptation between the individual and the environment.

**Perception**

In psychology and the cognitive sciences, perception is the process of Attaining awareness or understanding of sensory information.

**Phonography**

Phonography is a term that means field-recording. This entails the capture of any event that can be reproduced and represented as sound. Auditory events are selected, framed by duration and method of capture, and presented in a particular format and context. Phonography is analogous to any other form of recording; it is distinct from recording in general only to the extent that the capture of sound is privileged over its

production. Some useful analogies can be made between phonography and photography. The majority of early photographs were intended to be documentary or forensic, and many field-recordings serve these same purposes. Whereas the vast majority of field-recordings are manipulated as raw material for soundtracks and other auditory projects, and untreated field-recordings are used primarily for forensic and academic purposes, a new generation of recordists has emerged, preoccupied with the abstract and formal dimensions of captured environmental sound.

### **Piezoelectric accelerometer**

Piezoelectric accelerometer is a piezoelectric accelerometer that utilizes the piezoelectric effect of certain materials to measure dynamic changes in mechanical variables such as acceleration, vibration, and mechanical shock. This has been used by sound artists such as Bill Fontana and Jacob Kirkegaard to record the sounds of big constructions such as bridges.

### **Pitch shift**

Pitch shift is a sound recording technique in which the normal pitch or tone of a sound is altered ("shifted") for effect or for other purposes.

### **Proselytism**

Proselytism is the practice of attempting to convert people to another opinion and, particularly, another religion.

### **Protools**

A music production software developed by the company Digidesign.

### **Pure tone**

A pure tone is a tone with a sinusoidal waveshape. A sine wave is characterized by its frequency — the number of cycles per second, or its wavelength — the distance the waveform travels through its medium within a period, and the amplitude — the size of each cycle. A pure tone has the unique property that its waveshape and sound are changed only in amplitude and phase by linear acoustic systems.

### **Reverberation**

Reverberation is the persistence of sound in a particular space after the original sound is removed. A reverberation, or reverb, is created when a sound is produced in

an enclosed space causing a large number of echoes to build up and then slowly decay as the sound is absorbed by the walls and air. This is most noticeable when the sound source stops but the reflections continue, decreasing in amplitude, until they can no longer be heard. The length of this sound decay, or reverberation time, receives special consideration in the architectural design of large chambers, which need to have specific reverberation times to achieve optimum performance for their intended activity.

### **Semantics**

Semantics is the study of meaning in communication.

### **Site-specific art**

Site-specific art is artwork created to exist in a certain place. Typically, the artist takes the location into account while planning and creating the artwork.

### **Social ecology**

Social ecology is a philosophy developed by French geographer and anarchist Élisée Reclus and revived by Murray Bookchin in the 1960s. It holds that present ecological problems are rooted in deep-seated social problems, particularly in dominatory hierarchical political and social systems. These have resulted in an uncritical acceptance of an overly competitive grow-or-die philosophy. It suggests that this can not be resisted by individual action such as ethical consumerism but must be addressed by more nuanced ethical thinking and collective activity grounded in radical democratic ideals. The complexity of relationships between people and with nature is emphasised, along with the importance of establishing social structures that take account of this.

### **Sonic archeology**

Archaeology is the science that studies human cultures through the recovery, documentation, analysis, and interpretation of material remains and environmental data, including architecture, artifacts, features, biofacts, and landscapes. Sonic archeology is the act of studying old sonic material with the aim of understanding the soundscape of that era.

## **Sound installation**

Sound installation is an intermedia and time based art form. It is an expansion of an art installation in the sense that it includes the sound element and therefore the time element. The main difference with a sound sculpture is that a sound installation has a three dimensional space and the axes with which the different sound objects are being organized are not exclusively internal to the work, but also external. A work of art is an installation only if it makes a dialog with the surrounding space. A sound installation is usually a site-specific but sometimes it can be readapted to other spaces. It can be made either in close or open spaces, and context is fundamental to determine how a sound installation will be aesthetically perceived. The difference between a regular art installation and a sound installation is that the later one has the time element, which gives the visiting public the possibility to stay a longer time due possible curiosity over the development of sound. Sound installations sometimes use interactive art technology (computers, sensors, mechanical and kinetic devices, etc.) but we also find this type of art form using only sound sources placed in different space points (like speakers), or acoustic music instruments materials like piano strings that are played by a performer or by the public. Some of the widely known sound installation artists are Bill Fontana, Ryoji Ikeda and Christian Marclay.

## **Sound interface**

Soundcard connected to a computer for recording and playback of sounds.

## **Sound mapping**

Sound mapping leverages web mapping protocols and late 20th century acoustic ecology research to create archives of geo-referenced field recordings.

## **Sound object**

In music, a sound object (object sonore: Pierre Schaeffer 1959, 1977, p.95), a generalization of the concept of a musical note, is any sound from any source which in duration is on the time scale of 100 ms to several seconds.

## **Sound sculpture**

Sound sculpture is an intermedia and time based art form in which sculpture or any kind of art object produces sound, or the reverse (in the sense that sound is manipulated in such a way as to create a sculptural as opposed to temporal form or

mass). Sound sculpture artists were primarily either visual artists or composers, not having started out directly making sound sculpture. Some of the widely known sound sculpture artists are Bill Fontana, Maryanne Amacher, Ellen Fullman, Alvin Lucier and Ros Bandt.

### **Soundscape**

A soundscape is a sound or combination of sounds that forms or arises from an immersive environment.

### **Soundscape composition**

The soundscape composition is a form of electroacoustic music, developed at Simon Fraser University and elsewhere, characterized by the presence of recognizable environmental sounds and contexts. The purpose of soundscape composition is to invoke the listener's associations, memories, and imagination related to the soundscape.

### **Soundscape awareness**

Being aware of the soundscape that the person lives in.

### **Soundwalk**

A soundwalk is the empirical method proposed by R. Murray Schafer for identifying a soundscape for a specific location. In a soundwalk you are supposed to move through a limited geographic area, with your ears as open as possible, registering all the environmental sounds that you hear.

### **Spatialization**

Spatialization is the aspect of music related with space. The term is connected with electroacoustic music and spatial music to denote sound's different sources in space or sound's spatial movement.

### **Spectral**

Related to the spectrum of a sound, i.e. its frequency content.

### **Surround sound**

Surround sound, using multichannel audio, encompasses a range of techniques for enriching the sound reproduction quality, of an audio source, with additional audio channels reproduced via additional, discrete speakers. The three-dimensional (3D)

sphere of human hearing can be virtually achieved with audio channels above and below the listener. To that end, the multichannel surround sound application encircles the audience (left-surround, right-surround, back-surround), as opposed to "screen channels" (center, [front] left, and [front] right), i.e. ca. 360° horizontal plane, 2D). Surround sound technology is used in cinema and home theater systems, video game consoles, personal computers and other platforms.

### **Texture**

Texture is one of the basic elements of music. The term texture is used to describe the amount of rhythms played at a specific time. In music, texture also means the overall quality of sound of a piece, most often indicated by the number of voices in the music and by the relationship between these voices. A piece's texture may be further described using terms such as "thick" and "light", "rough" or "smooth". The perceived texture of a piece can be affected by the number and character of parts playing at once, the timbre of the instruments or voices playing these parts and the harmony, tempo, and rhythms used.

### **Timbre**

Timbre is the quality of a musical note or sound or tone that distinguishes different types of sound production, such as voices or musical instruments. The physical characteristics of sound that mediate the perception of timbre include spectrum and envelope. Timbre is also known in psychoacoustics as tone quality or tone color.

### **Time patterns**

Temporal structures of sound events.

### **Timestretching**

Timestretching is the process of changing the speed or duration of an audio signal without affecting its pitch.

### **Typology**

Typology is the study of types.

## **APPENDICE B : Bios of composers interviewed**

### **Hildegard Westerkamp**

Hildegard Westerkamp was born in Osnabrück, Germany in 1946 and immigrated to Canada in 1968. After completing her music studies in the early seventies Westerkamp joined the World Soundscape Project under the direction of Canadian composer R. Murray Schafer at Simon Fraser University (SFU) in Vancouver. Her involvement with this project not only activated deep concerns about noise and the general state of the acoustic environment in her, but it also changed her ways of thinking about music, listening and soundmaking. Her ears were drawn to the acoustic environment as another cultural context or place for intense listening.

The founding of Vancouver Co-operative Radio during the same time provided an invaluable opportunity to record, experiment with and broadcast the soundscape. One could say that her career as a composer, educator, and radio artist emerged from these two pivotal experiences and focused it on environmental sound and acoustic ecology. In addition, composers such as John Cage and Pauline Oliveros have had a significant influence on her work. While completing her Master's Thesis, entitled *Listening and Soundmaking - A Study of Music-as-Environment*, she also taught courses in Acoustic Communication together with colleague Barry Truax in the School of Communication at SFU until 1990. Since then she has written additional articles and texts addressing issues of the soundscape and listening and has travelled widely, giving lectures and conducting soundscape workshops, internationally. She is a founding member and is currently active on the board of the World Forum for Acoustic Ecology (WFAE), as well as the Canadian Association for Sound Ecology (CASE). Between 1991 and 1995 she was the editor of *The Soundscape Newsletter* and is now on the editorial committee of *Soundscape -The Journal of Acoustic Ecology*, a new publication of the WFAE.

Her compositions have been performed and broadcast in many parts of the world. The majority of her compositional output deals with aspects of the acoustic environment: with urban, rural or wilderness soundscapes, with the voices of children, men and women, with noise or silence, music and media sounds, or with the sounds of different cultures, and so on. She has composed film soundtracks, sound documents for radio and has produced and hosted radio programs such as *Soundwalking*, and *Musica Nova* on Vancouver Co-operative Radio.

In a number of compositions she has combined her treatment of environmental sounds extensively with the poetry of Canadian writer Norbert Ruebsaat. (Cordillera, *A Walk through the City*, Cricket Voice). She also has written her own texts for a series of performance pieces for spoken text and tape. In addition to her electroacoustic compositions, she has created pieces for specific "sites", such as the Harbour Symphony, and *École polytechnique*. In pieces like *The India Sound Journal* she explores the deeper implications of transferring environmental sounds from another culture into the North American and European context of contemporary music, electroacoustic composition, and audio art. In 1998 she collaborated with her Indian colleagues Mona Madan, Savinder Anand, and Veena Sharma on a sound installation in New Delhi entitled *Nada-an Experience in Sound*, sponsored by the New Delhi Goethe Institut (Max Mueller Bhavan) and the Indira Ghandi National Centre for the Arts. In 2000 she created together with photographer Florence Debeugny, *At the Edge of Wilderness*, a sound installation about ghost towns in British Columbia, commissioned by Vancouver's Western Front Society. And in her latest compositions *Für Dich/For You* and *Liebes-Lied/Love Song*, based on poetry by Rainer Maria Rilke and its translation by Norbert Ruebsaat, she explores the theme of love and connectedness with the sounds and languages of her German/Canadian existence.

By focusing the ears' attention to details both familiar and foreign in the acoustic environment, Westerkamp draws attention to the inner, hidden spaces of the environment we inhabit. Her compositional work has been discussed in various articles, but most extensively in Andra McCartney's dissertation *Sounding Places with Hildegard Westerkamp*.

Personal web site: (Url-9).

### **Claude Schryer**

Claude Schryer's electroacoustic and environmental compositions focus on spiritual, artistic, and social aspects of acoustic ecology. He was raised in and around the city of North Bay (Ontario) where he was active as a pianist, clarinetist, composer, hunter and fisherman with his parents Maurice and Jeannine, and his brothers Luc, Guy, Marc, and Richard. He studied composition with Owen Underhill at Wilfrid Laurier University (BA Mus, 1977-81), interdisciplinary arts and new music at The Banff Centre for the Arts (1981, 85, 93) and composition with Alcides Lanza at

McGill University (Master Mus, 1982-89). He also studied with Denis Smalley and Luc Ferrari (1986-87). His professional activities are principally in the fields of electroacoustics, interdisciplinary production, acoustic ecology and the media arts, notably: artistic director of the Inter-Arts program at The Banff Centre for the Arts (1988-90); co-founder of the production group DIFFUSION i MÉDIA (1989-92); artistic director of the 7e Printemps électroacoustique festival of ACREQ (Association pour la création et la recherche électroacoustiques du Québec, 1990-92); special collaborator with the Radio-Canada cultural FM network and Musicworks Magazine (1990-); member of the organizing committee of the World Forum for Acoustic Ecology (1993-); director of the CEC (Canadian Electroacoustic Community, 1993-94); assistant program director of ISEA95 Montréal (1995); sound editor for the documentary film Chronicle of a Genocide Foretold (Alter-ciné, 1996); collaborator in the production of R Murray Schafer's Winter Diary (WDR, 1997); co-founder and president of the Canadian Association for Sound Ecology (CASE, 1997-).

He has received commissions from the North Bay Symphony Orchestra (Ontario), la Muse en circuit (Paris), the Music Gallery (Toronto), Société Radio-Canada (Montréal), Shauna Rolston (Banff) and Trevor Turesski (Toronto) and has been artist in residence at Brahmshaus (Baden-Baden), Grame (Lyon), Groupe de musique expérimentale de Marseille, Muse en circuit (Paris) and Simon Fraser University (SFU - Vancouver).

As a composer he was awarded 2nd prize (ex-aequo) in the performer and tape category at the 14th Bourges International Electroacoustic Music Competition for "a kindred spirit"(1986); 1st Prize (documentary section) at the 6th Phonurgia Nova International Radio Art Competition (France, 1996) for "Marche sonore I (Le matin du monde)"(1992), and shared with Hélène Prévost the Prix de la création radiophonique of Radio-Canada 1996 for "Autour d'une Musique portuaire".

Personal web site: (Url-10).

### **Bruce Davis**

Between 1972 and 1976, he worked as a research assistant and sessional lecturer at the Simon Fraser University Department of Communication Studies. Following graduation from the Faculty of Music at McGill University, He began as an assistant

to R. Murray Schafer in a unique program he developed in the area of music, music teaching and environmental sound, later known as the World Soundscape Project. Responsibilities included teaching, writing, research, management of the electronic music studio, and community relations.

In 1976 he worked as a field researcher at the Centre for Aboriginal Studies in Music, University of Adelaide. This was an independent research project partly funded by the Canada Council. It involved work in a tribal community and in the C.A.S.M teaching centre in Adelaide, Australia.

Between 1976 and 1984 he worked as a freelance composer. During this period he composed on a commission basis for a number of performing arts groups and the CBC.

Between 1980 and 1984 he worked as a teacher at the David Tompson University Centre, Nelson, B.C. As part of a small department in a new arts-oriented Community College, he taught both in the commercial and classical streams, and developed most of my own course material in the areas of composition, orchestration, and world music (the anthropology of music). The institution was closed in 1984 after a protracted staff strike.

### **Christopher DeLaurenti**

Christopher DeLaurenti is a Seattle-based composer, improviser, and phonographer. He is a member of the Seattle Phonographers Union, an ensemble that collectively improvises with unprocessed field recordings. Christopher's music resides at ([Url-11](#)) along with many music-related essays and articles.

### **Ros Bandt**

Dr Ros Bandt is an internationally acclaimed sound researcher, composer and sound artist. She is based at the Australian Centre, the University of Melbourne where she is the director of the Australian Sound Design Project, a new nationwide website, data base and research facility dedicated to the study of sound design in public space. This is a new cross-disciplinary study that crosses the boundaries of art practice and research in new ways. It is funded by an ARC grant from the Australian Government and the Australia Council, the national arts funding body. Published writings on sound include 3 books, most recently *Sound sculpture: intersections in sound and sculpture in Australian Artworks*, Thames and Hudson, 2001, encyclopaedic entries,

and numerous articles. She has been the recipient of many international awards grants and commissions for her pioneering work in interactive sound sculptures, installations, sound playgrounds and spatial music systems. The Studio of Akustische Kunst WDR, Radio ORF, Transit, ABC have commissioned her original music, and her works are published by New Albion, Wergo, EMI, AMC, Allans Music, Currency Press and Move Records. She has won the Don Banks Composers award, the highest honour to an Australian Composer and the Sound Art Australia Prize. She has performed at the Paris Autumn Festival, the International Society for Contemporary Music, Warsaw and Bucharest, the Asian Arts Festival Hong Kong, throughout Europe, the U.K., Canada and the USA.

Personal web site: (Url-12).

### **Thomas Gerwin**

He was born in 1955. He studied music history, musicology and linguistics/philosophy in Berlin and Tübingen (M.A.). He studied music compositional studies in Darmstadt, Hamburg, Köln, München, Straßbourg, studied composition and electronic music in Stuttgart (K.A.-Dipl.). He held lectures and seminars in guitar, experimental music and theory for many years. He founded in 1980 the multimedia artist group "Art Wave Ensemble". He founded and headed the multimedia festival "Tübinger RaumKunstTage" between 1988 and 1990. Between 1990 and 1998 at Center for the Arts and Media (ZKM) Karlsruhe, he was the head of the music archives and audio library. He wrote and produced music for concerts, theatre, film, exhibitions and installations.

Personal web site: (Url-13).

### **Rajivan Ayyappan**

Rajivan Ayyappan is a sound artist/composer and visual artist from India. He works independently as a sound designer for film, video, choreography and installation. In live performance he is a classical Indian lead singer, contemporary voice-work improviser and a multi-instrumentalist. He has presented his work at various art spaces and festivals internationally.

He was born in Kottayam (Kerala, South India) in an artistic family. At the age 5 he began learning South Indian music (vocals and percussions) under the guidance of Sri. Kuttappan Bhagavadar, Itthithanam (1970-1986). In 1975, with a self-

carpentered acoustic guitar he started to understand other systems of music along with his brother. Between 1978-1992 he had an active role as a singer and guitarist in his hometown as well as in Ahmedabad where he spent 5 1/2 years studying visual arts/visual communication at the National Institute of Design. His traditional skills and interest in typography and his exposure to visual arts history triggered a kind of paradigm shift to his musical direction. After the design studies, he traveled extensively in India and absorbed pretty well the heterogeneity of Indian sound environment and sound culture.

As a sound artist, his work primarily falls under the perspective of soundscape discipline, referring to various resources that are rooted in Indian musical system as well as sound culture. Recent projects include: Gastric acid, a mix media real-time work about the food world, in collaboration with Vedanza artists International, Luxembourg, “Telescopes (Audio elf)”: 5.1 installation based on Soccer, Scorecologn light screen Festival, FIFA world cup 2006/ Museum für Angewandte Kunst. Koln 2006. “The Air Around” – a global network/real-time performance installation with 213 sound artists from around the world and “Signals untitled” – an installation based on travel maps from Bangalore.

Personal web site: (Url-14).

### **Damian Keller**

He was born in Buenos Aires in 1966. He has been developing an interdisciplinary research work on instrumental timbre and formal structures using tools extracted from psychology of perception, signal processing and musical analysis.

Keller composed: “Canon” in 1987; “Targo” and “Desencuentros” in 1988; “Criasom” in 1989; “Exilios” in 1991; “Incuasi-Promptum” in 1992; “Duo” in 1993; “Brasil(espacio)ia” in 1994; “La Patente” for CD, “Arrow of time” for trombone and electronics”, and “To Lions Gate” for CD, all three in 1997; “Lo femenino en la pena” for CD in 1998; “touch'n'go” (or “toco y me voy”) for eight-channel computer-generated tape and hypertext between 1998 and 1999; “Drop” for 8 channels tape, and “Waltz No. 6”, installation, collaboration with A.L.F.S. Keller (video, visual design) and Thor Sunde (sculpture), both in 1999; “The Trade/Oro por baratijas” for CD, “Metrophonie” for 4 channels tape, and “La Conquista”, installation, collaboration with A. Capasso (video, visual design), all three works in

2000; and “Instábilis”, installation, collaboration with K. Lins (visual design), in 2001.

Some of Keller’s published articles and reports are: “Theoretical outline of a hybrid musical system”, with C. Silva, published in the Proceedings of the Second Brazilian Symposium on Computer Music held in Canela, Brazil, in 1995; “Anitoo: some analysis tools”, published in the Proceedings of the International Computer Music Conference held in Hong Kong, in 1996; “Ecologically-based granular synthesis”, with B. Truax, published in the Proceedings of the International Computer Music Conference held in Ann Arbor, United States, in 1998; “touch'n'go: Ecological Models in Composition”, Master of Fine Arts Thesis, Simon Fraser University, Burnaby, Canada, 1999; “Social and perceptual dynamics in ecologically-based composition”, published in Proceedings of the VII Brazilian Symposium of Computer Music held in Curitiba, Brazil, in 2000; “Introduction to the ecological approach”, included in the accompanying CD-ROM coming with R. Bianchini and A. Cipriani (editors) “Virtual Sound”, Contempo Edizioni, Rome, Italy, 2000; “Social and perceptual processes in the installation The Trade”, with A. Capasso, published in Organised Sound Vol. 5 No. 2, 2000; “Social and perceptual dynamics in ecologically-based composition”, published in Electronic Musicological Review, Vol. 6, 2001; “Accumulation and interaction in an urban landscape: Urban Corridor”, with A. Capasso, and S.R. Wilson, published in the Proceedings of the VIII Brazilian Symposium of Computer Music held in Fortaleza, Brazil, 2001; “Everyday sounds: synthesis parameters and perceptual correlates”, with J. Berger, published in the Proceedings of the VIII Brazilian Symposium of Computer Music held in Fortaleza, Brazil, 2001. In collaboration with C. Rolfe he also developed “MacPOD”, a real-time granular synthesis software.

Personal web site: (Url-15).

### **Bob Gluck**

Bob Gluck is Associate Professor of Music and Director of the University at Albany Electronic Music Studio. He is an affiliate faculty member in the Judaic Studies Department and the College of Computing and Information. Gluck is a pianist and composer. After years of conservatory training, his musical life dramatically changed after hearing Jimi Hendrix, Frank Zappa and Miles Davis<sup>1</sup> electric bands. His recent work includes the design of live electronic musical systems for performance and

installation. Bob's repertoire spans jazz performance integrating electronics and free improvisation, avant-garde concert music and music for electronic expansions of acoustical instruments, including the ram's horn, Disklavier (computer-assisted piano) and Turkish baglama saz. His current duet partner is bassist David Katz and his trio includes bassist Michael Bisio and drummer Dean Sharp.

Bob Gluck has performed internationally, including at the Prague Spanish Synagogue (Prague, Czech Republic), Keele University (United Kingdom), Middlebury College, University of California at San Diego and Irvine, University of Ottawa, Lotus Music and Dance (New York City), Brown University, Deep Listening Space (Kingston, New York), Johns Hopkins University, The Flea Theater (New York City), Mobius Gallery (Boston), Dartmouth College, New Interfaces For Musical Expression 2003 (Montreal) and Bard College. Gluck's music on tape has been heard in Mexico City, Bucharest, Berlin and elsewhere.

Gluck's multimedia installation works include 'Layered Histories' (2004), an immersive sound and video environment with Cynthia Rubin (shown at SIGGRAPH (Los Angeles), ACM Multimedia 2004 (New York City), Immersive Gallery (Toronto), Prague Jewish Music (Czech Republic), ICMC (Miami), the Fine Family Gallery at the Marcus JCC, (Atlanta), Pixelations (Providence RI), and the Joseph Slifka Center for Jewish Life at Yale University; and 'Sounds of a Community' (2001 - 2002), in which visitors trigger and shape pre-recorded sounds by interacting with seven electronic musical sculptures.

His recordings include 'Stories Heard and Retold' (1998), 'Electric Songs' (2003) and 'Electric Brew' (2007). His work has been discussed in the Computer Music Journal, Moment, The Forward, Organized Sound, Reconstructionism Today, Hadassah Magazine and in Seth Rogovoy's 'The Essential Klezmer'. Bob Gluck's main area of academic research is documenting an international history of electronic music, beyond North America and Europe. His essays have been published in Leonardo Music Journal, Organized Sound, Journal SEAMUS, Leonardo, Living Music Journal, The Reconstructionist, Tav+, the EMF Institute, and elsewhere on the web.

Gluck's musical training is from the Juilliard, Manhattan, and Crane schools of Music, the State University of New York at Albany (BA, 1977) and Rensselaer Polytechnic Institute (MFA, 2001). His primary teacher of piano was Regina Rubinoff, first in the Juilliard Preparatory Division). He is also a rabbi (a 1989

graduate of the Reconstructionist Rabbinical College) and he holds a Master's in Hebrew Letters from the RRC (1989, and a Master's in Social Work from Yeshiva University's Wurzweiler School of Social Work (1984).

Gluck also serves as Associate Director, Publications, of the Electronic Music Foundation and he is Executive Editor (along with Joel Chadabe) of the EMF Institute, a web-based virtual museum documenting the history of the field. He has held various senior leadership positions in the Jewish Reconstructionist movement.

Personal web site: (Url-16).

### **Andra McCartney**

Andra McCartney is a soundscape artist, who works with her own field recordings to create websites, CD ROMs, tape works and performances that explore the social ecology of soundscapes. Her most recent project, a collaborative work involving several other sound artists and members of the public, focuses on the area surrounding the Lachine Canal in Montreal, resulting in a gallery installation in the oldest building on Montreal island, adjacent to the canal. Her sound works are available on CD anthologies produced by the Canadian Electroacoustic Community (Montréal), Terra Nova (MIT), Musicworks (Toronto), Deep Wireless (Toronto), Canadian Society for Independent Radio Production (Ottawa), Artemisia Gallery (Chicago), and Entartete Kunst (London, Ont), as well as online. Her website, <http://andrasound.org>, contains many examples of sound projects and written texts. McCartney is also an associate professor in the Dept. of Communication Studies at Concordia University, teaching Sound in Media. She has a long-standing research interest in issues of gender, creation, sound, and technology.

Personal web site: (Url-17).

### **Alessandro Bosetti**

He was born in Milan, Italy in 1973. He is a composer and sound artist. He works on the musicality of spoken words and unusual aspects of spoken communication and produced text-sound compositions featured in live performances, radio broadcastings and published recordings. In his work he moves on the line between sound anthropology and composition often including translation and misunderstanding in the creative process. Field research and interviews often build the basis for his abstract compositions along with electro-acoustic and acoustic collages, relational

strategies, trained and untrained instrumental practices, vocal explorations and digital manipulations. Since he's curious about differences he travels. Just in 2006 he's been living and working in West Africa, China, Taiwan, Holland, Scandinavia, United States, Germany and Italy. For the future he plans to be living and working between Berlin (D), Milano (I) and Baltimore (USA)

Personal web site: (Url-18).

### **Michael Rösenberg**

He was born in Essen in 1948. His first professional occupation was advertising. He studied theatre, tv and sociology at Cologne University. He published 3 books on the sociology of music (1974, 1978, 1986). In 1989, he was awarded Adolf-Grimme-Preis for a tv music-documentary. He made numerous radio-documentaries. Starting from 1973, he has been doing a weekly radio show at WDR. He composed music for theatre and ballet. He composed various soundscape works that were released commercially on cds.

Personal web site: (Url-19).

### **Darren Copeland**

Darren Copeland's entry into music and sound was unusual. In the 1980's as a teenager he discovered analog synthesizers almost by accident. And with no previous formal musical training or even interest in music, he started studying analog synthesizers and early digital samplers through private studies with Pier Rubesa in Toronto. This led to the creation of his own compositions and collaborations with musician Ed Troscianczyk and poet/visual artist John Marriott and others in the experimental music scene in Toronto. With these artists, Darren self-published a number of cassette compilations of the work produced at this time, including "Living it Out — in the Dear Air — Space, The Three Faces, Mahwje's Outlook, An Introduction in Frost, and Dreams of Darkness".

After high school Darren studied theater sound design at Niagara College and parallel to this began making pieces using only environmental sounds. He then moved to Vancouver from 1989 to '95 to study electroacoustic composition at Simon Fraser University and was introduced to the research of the World Soundscape Project through his studies with Barry Truax that intensified his focus on soundscape composition. The compositions "Faith-Annihia" and "Always Becoming Somebody

Else” included on the disc “Perdu et retrouvé” and the works included on his previous empreintes DIGITALEs release “Rendu visible” are an outcome of this intensive investigation of soundscape recordings and electroacoustic composition.

His interest in soundscape recordings was motivated by wanting to understand better the associations that different listeners had to various environmental sounds. Reactions to pieces like “Always Becoming Somebody Else” and others from that period often brought very personal and contradictory reactions from listeners. Darren at the time concluded that this might have something to do with the visual bias of western society and the lack of a common vocabulary for talking about sound in everyday experience.

He felt that there were two solutions that would help him to better understand the visual bias of the listener: one was to investigate the nature of listening and perception more; the other solution was to combine sounds with texts and stories in order to present sounds inside a specific social or psychological context that provided more of a focus to the wide array of associations latent in the listening imagination. And so, in the mid-nineties, he branched out into other forms and made pieces that moved into the realm of theater, radio documentary, radio drama, and sound-text composition. He created an adaptation of August Strindberg’s (1849-1912) play “A Dream Play” (1901), which became the first radio drama at CBC conceived for broadcast in Surround 5.1.

In 1996-97, Darren undertook his postgraduate studies at University of Birmingham (UK) and completed his soundscape documentary *Life Unseen* in which he investigated how blind people listen and function in a visual-centered society. Following this intensive study at Birmingham, he composed “The Toronto Sound Mosaic”, the soundtrack for Samuel Beckett’s (1906-89) play “That Time” (1975) (produced by Threshold Theater), and his text-sound composition “Lapse in Perception” (produced for CBC Radio program “Out Front”). Through the late-nineties to 2002, Darren collaborated heavily in the theater and dance community in Toronto making soundtracks that integrated sound in a compelling fashion and this process also brought insight into the associative qualities of environmental sounds.

More recently, he has returned to abstraction again, using more sounds that are not environmental or recognizable. Works such as “They’re Trying to Save Themselves”, “Streams of Whispers” and “The Wrong Mistakes” represent this

interest, but have a similar dynamic flow and textural sense to the earlier works that use environmental sounds. Other works like “On Schedule” and “On a Strange Road” use environmental sounds in a more conceptual way and are less conscious of rendering the acoustic environment in a faithful or believable fashion.

As well as being a sound artist and composer, Darren Copeland is also the Artistic Director of “New Adventures in Sound Art” (NAISA), which produces electroacoustic and experimental sound art events in Toronto (Canada). With NAISA he has also toured Europe and Canada performing in concerts, facilitating workshops, and giving lectures with a focus on octophonic spatialization. Darren is an Associate Member of The Canadian Music Centre. He also currently serves on the board of directors for the Canadian Association for Sound Ecology (CASE), and previously for the Canadian Electroacoustic Community (CEC), Vancouver Pro Musica, and Rumble Productions.

Personal web site: (Url-20).

### **Douglas Quin**

Douglas Quin was born in 1956 and grew up in Algeria, Sweden, Canada, Iceland and Great Britain. After graduating from Gordonstoun School in Scotland, he went on to receive a BA in Art from Oberlin College and an MFA in Sculpture and Performance Art from Tufts University and The School of the Boston Museum of Fine Arts. He holds a Ph.D. in Acoustic Ecology from the Union Institute. Quin's music and soundscape projects have been performed at festivals and venues and for radio broadcast internationally. He has been commissioned to compose and perform music for diverse media and genres including film, video and dance. His latest recording, "Forests: A Book of Hours" is available on the Earth Ear label. In a decade of recording wildlife, Quin's fieldwork has taken him from the mountain rainforests of Madagascar to the Brazilian Amazon and from Antarctica to the Alaskan Arctic. Scientists and zoos internationally for research and education have used his recordings. Quin has received numerous awards including 2 Fellowships in Music Composition from the National Endowment for the Arts, a Media Arts Grant from the National Endowment for the Arts for Radio Production, National Science Foundation's Antarctic Artist and Writers' Program, an Individual Artist Fellowship from the Maryland State Arts Council, a grant from the Pollock-Krasner Foundation, and 8 awards from Meet the Composer.

Personal web site: (Url-21).

### **Sascha Karminski**

He played guitar and bass in hardcore-oriented bands starting from 1987. He started his own experimental solo project ((infected) wound) in 1991. He released several song-oriented albums recorded with 4-track-tape. His first field recording based LP “traumpfad – a travelogue in three acts” was released in 1993. He changed his project name to i: wound. His first CD “ram nam satya hai” based entirely on field recordings from an overland journey to India was released in 1997. He started his own label ambermusic and released 19 recordings so far.

Personal web site: (Url-22).

### **Neil Bruce**

Neil Bruce is a multi-instrumental musician, composer and highly qualified audio engineer living in Manchester. He has been involved with audio production and music for the last 20 years. Neil specializes in sound design and media composition for film, computer games and television. Neil founded and runs his own audio production company Syncrosound. He also writes and produces his unique brand of ambient guitar music under the name of Light B4 Sound. Neil has numerous qualifications to his name, including an MSc in signal processing (University of Surrey), Dip (Music) in Music (The Open University), B Eng (Hons) in Electroacoustics from University of Salford and Diploma in Media Composition (Film Institute of LA). In particular, Neil is currently involved as a researcher on the Positive Soundscape Project at the University of Salford, leading to a Phd.

Personal web site: (Url-23).

### **Peter Cusack**

Peter Cusack is an artist and musician who is a member of CRiSAP (Creative Research in Sound Art & Performance), and is a research staff member and founding member of the London College of Communication in the University of the Arts London. He was a founding member and director of the London Musicians’ Collective.

He is best-known as a member of the avantgarde musical quartet, "*Alterations*" (1978-1986; with Steve Beresford, David Toop, and Terry Day), and the creator of field and wildlife recording-based albums including:

Where Is the Green Parrot? (1999) with tracks like "Toy Shop (Two Small Boys Go Shopping)" and "Siren", which are just as advertised.

Day for Night (2000), with Max Eastley. This features "duets" between Eastley's kinetic sculpture and Cusack's field recordings.

Baikal Ice (2003), featuring tracks like "Banging Holes In Ice" and "Floating Icicles Rocked By Waves" and "Falling In".

Cusack has been involved in a wide range of projects throughout his career. Several of his pieces have been reviewed in Leonardo Music Journal, the annual music Journal published by MIT Press. He has also curated an album for Leonardo Music Journal. He is currently research fellow on the Engineering and Physical Sciences Research Council's multidisciplinary 'Positive Soundscapes Project'.

Personal web site: (Url-24).

### **Steve Feld**

During the 1970's, Steve Feld first began to sense the ways that some ideas from acoustic ecology, as expressed in Murray Schaffer's seminal *The Tuning of the World*, might inform and enliven his work as an emerging anthropologist of sound. Feld was especially taken with the suggestion that the creative interpretation and presentation of sonic fieldwork is an important avenue of both intellectual exploration and public engagement. Quite in contrast to the distinctly secondary role of recordings in most anthropology (as evidenced in generally low-quality source recordings and a relative lack of academic review and attention to audio "supplements" to written papers), Feld turned his musician's senses toward creating engaging, and eventually (as he prioritized it in his funding outreach) audiophile quality audio documents, beginning with first LP, "Music of the Kaluli", in 1982. In 1983, he took Shaffer's suggestion to heart in a half-hour NPR soundscape program "Voices of the Forest," itself expanded and enhanced by new equipment courtesy of Mickey Hart, who released an hour-long version of similar material as *Voices of the Rainforest* on his *The World* series in 1990.

By this time, Feld was committed to his somewhat iconoclastic approach to anthropology publishing. While he has contributed significantly to the academic literature (most predominantly with his award-winning *Sound and Sentiment*, 1982; second expanded edition 1990), his passion and ongoing contribution to the field is in the form of audio productions in which he crafts elaborate yet naturalistic compositions from hours of high-quality field recordings.

His Papua New Guinea work culminated with a dual release in 2001 of *Bosavi*, a 3-CD set on Smithsonian Folkways that presents three generations of music in relation to place, along with *Rainforest Soundwalks on EarthEar*, his only disc to directly and solely address the ways that he learned to listen to the forest within which his field work came to life.

Beginning in late 2000, Feld began to explore a new anthropology of sound: the role of bells in human society. A book/CD, *Bright Balkan Morning*, and a Smithsonian Folkways CD release in 2002 first made this work available.

Personal web site: ([Url-25](#)).

### **Michael Noble**

Michael John Noble is stuck in a loop. Having discovered a microphone and a variable speed tape recorder at the age of 9, he has been oscillating in the field ever since. He is currently circulating in South Korea whilst working and completing his PhD. One could spin his achievements to be something they are not, but stating simply, he likes to listen and listen to listening. His artistic aims are to extend this feedback by augmenting the cognitive with the automatic, and explore the loop between the lived and living sound environment and the cycles of an acoustic system as composition. He hopes he might some day find a revolutionary medium, or merely a loophole in the everyday, an escape from cacophony through cacophony.

### **Jeff Gburek**

A guitarist since 13 years old with explorative instinct, I studied Javanese and Balinese gamelan music, then played a self-styled percussion set-up, oud and rebab with the dance theatre company *Djalma Primordial Science*.

Reintroducing again the guitar, prepared and on the table, in 2000, evolving with the use of hacked electronic gear, mixing desk and phonography a style of musique

concrete, I continued performance and pedagogical work with dancer Ephra and began collaborations with various Berlin-based musicians; at first Michael Vorfeld, Michael Walz, and then eventually others. By the time of leaving New Mexico in 2005, I had introduced the laptop and developed new electronic processing systems that gave me further flexibility and means to express my aesthetic imaginations.

Although I still play traditional acoustic guitar, I am primarily concerned with all kinds of sounds and how they are brought together and where this becomes music in our minds and why. Maybe there is music outside our minds? But how do we know it? I find myself a question mark between forms seemingly implicit and autonomous in nature and the inadequacy of rational reductionism. I was aided in finding this an inspiration by studying the works and theories of Iannis Xenakis.

I was assisted in my re-evaluation of how I use sound by a short collaboration with Keith Rowe, whom I felt had already a long-standing intuition about these matters. After Keith, I recognized three other contributors to my tendency to deconstruct from the center called “the guitar”, namely Kevin Drumm, Annette Krebs and Pascal Battus. Studying with Helmut Lachenmann, trying to clarify for myself the relationship between indeterminate music, improvisation and an at least personally coherent system of notations, I was impressed (again) by the idea that there is a historical and ideological struggle (a graphic struggle, also) implicit in musical practice. Serialism, only as a way of organizing periodicities, is a theatre of patterns, must order to the point of chaos or growing disorder. It is recurrence of events, like Jani Christou’s score for the lunar cycle, that generates our sense of stabilities.

Personal web site: ([Url-26](#)).

### **Katharine Norman**

Katharine Norman originally trained as a composer and computer music specialist, obtaining her PhD from Princeton in 1993. Until 2003 she was an academic, most recently at Goldsmiths, University of London. She then emigrated to Canada for four years, to a small island off the coast of British Columbia, where she switched to writing and composition, and for a while had a 'day job' as a freelance editor and writer for encyclopedias, high school texts, US business books, and UK leisure and gardening publications (producing limp prose on English gardens while watching deer go past one way, bald eagles the other). She also became a West Coast Canadian

(kayaks, beer, very bad French) and learned some more programming skills (code, wine, very bad language). In 2004 she published “Sounding Art: Eight Literary Excursions through Electronic Music” (Ashgate) that, as her publisher realized too late, is not really about music. She is now back in England, keeping sanity at bay by working on her Flash skills and her first new media novel. She has a part-time job as managing editor of an academic journal.

Personal web site: (Url-27).

### **Thor Magnusson**

Thor Magnusson is an Icelandic musician/writer/programmer working in the fields of music and generative art of all kinds. He is currently working on a PhD at the University of Sussex where his research is focused on the semiotics of computer music interfaces, human-machine interfaces and the sociology of programming computer music. He teaches courses on computer music and algorithmic and interactive systems in the University of Sussex Music Informatics course and the Sonic Arts course of Middlesex University. Thor is mainly interested in improvisation, live performances, installations and audio software production. He is a co-founder and member of the *ixi* audio collective and with *ixi* he has written various musical software and given workshops and talks in institutions all over Europe on the design and creation of digital musical instruments and sound installations. Thor has presented and performed in various festivals and conferences, such as Sonar festival, Ertz festival, Transmediale, ICMC (International Computer Music Conference), NIME Conference (New Interfaces for Musical Expression), Impact Festival, Soundwaves festival, Cybersonic festival, Ultrasound festival, Pixelache, and various others.

Personal web site: (Url-28).

### **James A Wyness**

James Wyness is a composer and sound artist living in Southern Scotland. A native of Aberdeen, he studied French at Aberdeen University.

As a composer he works almost uniquely in the electroacoustic medium. His current research into stereo and multi-channel acousmatic composition focusses on the detailed investigation of the sound object, on syntactical unfolding through the musical process, and on the contrast and dialectic between overtly musical material

on the one hand and mimetic material on the other. As a sound artist his research focuses on ethnography, documentary and archive and in the establishment of a working critical discourse.

His concert and radio works and sound installations have been performed and presented throughout the UK, Europe and in North and South America. He is currently studying towards a PhD in composition with Pete Stollery at Aberdeen University.

Personal web site: (Url-29).

### **Bernie Krause**

Bernie Krause (born December 8, 1938 in Detroit, Michigan) is an American bioacoustician. In a previous career as a musician, he was a member of The Weavers, and was one of the first players of the Moog Synthesizer in the 1960s. He formed Beaver & Krause with fellow synthesist Paul Beaver (who had played the instrument on a Monkees recording, "Star Collector"), to make electronic music featuring the Moog and other instruments.

In November 1968, Krause demonstrated the Moog for Beatle George Harrison, who was visiting California; a recording of the session became the basis of "No Time Or Space", a track featured on Harrison's "Electronic Sound" album the next year. Krause also provided soundtrack music for "Rosemary's Baby", "Love Story", "Dr. Doolittle", and "Apocalypse Now".

Krause holds a Ph.D. in bioacoustics from Union Institute in Cincinnati, and is also remembered as the "Pied Piper" who lured a stray humpback whale from the Sacramento River Delta back to the Pacific Ocean, through the use of sounds.

Krause's 1970 album "In a Wild Sanctuary" was the first to employ the sounds of nature on a large scale, as a source of musical tones and rhythms, and to make a statement about the environment. Krause continues to compose and produce electronic and environmentally-themed music, including a popular series of albums for The Nature Company.

In 1998, Heyday Books published Krause's autobiography, "Into a Wild Sanctuary: A Life in Music and Natural Sound". In 2002, Wilderness Press published his instructional "Wild Soundscapes: Discovering the Voice of the Natural World" with

companion CD. In 2007, Krause demonstrated a KML layer to Google Earth and Google Maps that makes it possible to listen to the soundscapes from all over the world. He's planning to make part of his sound collection available via this add-on.

Personal web site: (Url-30).

### **Petri Kuljuntausta**

Petri Kuljuntausta is a composer, performer and sound artist. He is famous for music composed of sounds both natural and extraordinary. In close collaboration with natural scientists, he has composed an underwater installation from underwater materials and made music out of whale calls and the sounds of the northern lights. In many ways Kuljuntausta's art is based on good knowledge of tradition; environmental sounds, live-electronics, improvisation and collaborations with media artists has influenced him as a composer.

His recent composition project "Northern Lights LIVE", based on soundscapes of the northern lights and feedback sounds, was performed at the ISEA2004 festival, 12th Symposium on Electronic Arts. The work was a vivid collaboration between art and science, recycling original field recordings of the phenomena as well as processing aurora borealis sounds. A forty-five minute long continuous audio-visual dialogue between nature's own soundscapes and their digitally altered, urban noise-art substitutes were created on stage.

Kuljuntausta has composed digital music for experimental films, visual art and dance projects, and made media and sound installations in museums, galleries and concert halls. His works have been performed in many European countries, Australia and the USA, and he has made recordings for various labels in Australia, England, Finland, France, Germany and the USA. Kuljuntausta has collaborated with the experimental film director Sami van Ingen, urban architecture group Ocean-North, composers Morton Subotnick and Atau Tanaka, sound artist Richard Lerman and musician/philosopher David Rothenberg.

He is the author of an 800 page History of Finnish Electronic Music, On/Off, and in 2006 he published his second book, Äänen eXtreme ('eXtreme Sound', info), on his own approach to music. In 2005 he won an award, The Finnish State Prize for Art, from the Finnish government as a distinguished national artist.

Personal web site: (Url-31).

## **Annea Lockwood**

Annea Lockwood (born July 29, 1939 in Christchurch, New Zealand) is a New Zealand born American composer and teaches electronic music at Vassar College. Her work often involves recordings of natural found sounds, though she may be more famous for her Fluxus inspired pieces involved burning or drowning pianos.

Lockwood studied composition as a girl in New Zealand and went on to pursue a B.Mus (hons) from Canterbury University, New Zealand. There after she went on to study composition at several institutions around Europe with notable teachers: The Royal College of Music (London) with Peter Racine Fricker, the Darmstadt Ferienkurs fur Neue Musik with Gottfried Michael Koenig, the Musikhochschule, (Cologne, Germany) and in also Holland. During the late 60's and early seventies, Annea performed-composed around Europe but made London her home. Her compositions featured non-conventional instruments, such as glass tubing and burning, moss covered pianos, which she described as sound sculptures, and presented in performance pieces with other sound poets and integrated choreography. Lockwood is most well-known for her mossy opus "The Glass Concert" (1967) which was published in Source Music of the Avant-Garde then recorded and released by Tangent records.

In the 70's Lockwood began to compose what could be considered performance art pieces, though her work was still situated in the realm of music; they are considered so because the essence of the compositional ideas made the audience and environment agents in the piece. During this time Lockwood worked with environmental sounds, capturing them and building developed compositions around an environmental inspiration: A Sound Map of the Hudson River (1982), World Rhythms (1975), and parts built on of archetypes and conversations with significant people, Conversations with the Ancestors (1979), composed on conversations with 4 women in their eighties, Delta Run (1982, based on a conversation with the sculptor Walter Wincha), One piece, Three Short Stories and Apotheosis (1985) notably used what Lockwood named the Soundball, which was a foam-covered ball that was made of 6 small speakers and a radio receiver. The impetus for this unusual piece of equipment was to "put sound into the hands of dancers".

Lockwood's most recent pieces are written for acoustic-electric instruments and incorporate multi-media and indigenous instruments in her compositions: Thousand

Year Dreaming (1991) is a work for four didgeridoos and blends images of the Lascaux cave as part of the performance.

Her progressive ideas and the breadth of her range is quite impressive; from the microtonal, electro-acoustic soundscapes and vocal music, she seems to have explored and expressed previously ignored spaces in modern composition. Lockwood is a consummate craftswoman who explores and reshapes boundaries. Her music has been presented at festivals all over the world, from Germany, Scandinavia, Italy, Britain, Australia, New Zealand and the U.S. Lockwood a Professor Emeritus at Vassar College, NY since 1982 has retired from teaching though she still writes and performs. Her recordings are distributed through these labels: Lovely, XI, ?What Next?/OO Discs, Rattle Records (NZ), Harmonia Mundi, Earth Ear, CRI and Finnadar/Atlantic.

Personal web site: ([Url-32](#)).

### **David Rothenberg**

Musician, composer, author and philosopher-naturalist David Rothenberg plays clarinet with a band of birds and crickets and writes thoughtfully on the deep connections between humans and the natural world. His highly regarded albums and work as founding Editor of MIT Press's Terra Nova book series, have earned him a unique place in the landscape of thoughtful creative humans wrestling with (and honoring) the kinship ties which bind us to the earth and its creatures.

"There is music in nature and nature in music. What may be most wonderful is that we can love and be immersed by both without needing to understand how the two are forever intertwined. It is enough to know that they are," says Rothenberg in "A Sense of Soundscape" (below). The very challenge of writing about sound, like the complex feelings enmeshed in simply being in the wild, are part of David Rothenberg's meditation. He seeks to describe and explore this experience through words, music and his presentational skills as Editor in a way that highlights collaboration, intellectual history, and the celebration of natural beauty.

His voice is inclusive and calls on us to shift the way we listen. "...If the voice of an animal is not heard as message but as art, interesting things start to happen: Nature is no longer inscrutable, some alien puzzle, but instead immediately something

beautiful, a source of exuberant song, a tune with some space for us to join in, at once a creative place for humanity to join in."

Personal web site: (Url-33).

### **Jack Body**

Jack Body (Born 1944) is a New Zealand composer, photographer, artist and ethnomusicologist. He studied at Auckland University from 1963–67. With a QEII Arts Council grant he attended the Ferien Kurse fur Neue Musik, Cologne and Institute of Sonology, Utrecht, Netherlands (1969–70). For two years (1976–77) he was a guest lecturer at the Akademi Musik Indonesia, Yogyakarta and since 1980 he has lectured at the School of Music, Victoria University of Wellington.

His music covers almost all genres, including solo and chamber music, orchestral music, music-theatre, music for dance and film as well as electroacoustic music. A fascination with the music and cultures of Asia, particularly Indonesia, has been a strong influence on his music. His ethnomusicological recordings include "Music for Sale: Street Musicians of Yogyakarta" (OMCD 006, and TC HLS-91), "Music of Madura" (CD ODE 1381) and "Jemblung: Sung Narrative Traditions" (PAN 2048CD).

His music has been played widely and by such performers as Lontano, Kronos Quartet, ARC, the New Zealand String Quartet, the New Zealand Symphony Orchestra, the BBC Symphony Orchestra and so on. He also works in experimental photography and computer-controlled sound-image installations, having received commissions from several public galleries. His opera "Alley" was premiered to wide acclaim at the 1998 New Zealand International Festival of the Arts. But his composition best known to the New Zealand public is the 1975 theme to the TV sitcom, "Close to Home".

As a promoter of New Zealand music he has organised a series of Sonic Circuses, simultaneous multi-venue music marathons. He is the Director of Waiteata Music Press which publishes scores of New Zealand music, and has edited numerous CDs of New Zealand music. Jack Body was the artistic director for the Asia-Pacific Festivals and Conferences in 1984 and 1992, which focused on the music (traditional and contemporary) of New Zealand and its Asia-Pacific neighbours.

Recordings of his music include “Suara” (Ode CD Manu 1380), electroacoustic compositions using field recordings from Indonesia, “Sacred and Profane” (Ode Portal CD 1004), three large scale works for voices and “Pulse” (Rattle D009), a series of five works based on transcriptions from traditional music. “Pulse” won the 2002 New Zealand Music Award for Best Classical CD and in 2003 Waiteata Music Press released a “Composer Portrait” on CD.

In 1985 he received the Composers' Association of New Zealand Citation for Services to New Zealand music and in 2001 he was honoured with an OMNZ in the New Year's Honours. In 2004, the Arts Foundation of New Zealand presented him with a Laureate Award.

Personal web site: (Url-34).

### **Rinus van Alebeek**

Rinus Van Alebeek is an electronic musician and performer born in Holland in 1956. He arrived to music relatively late, after publishing two books in his native country under the pseudonym Philip Markus, the first of which, released in 1991, received the prize for the best first novel.

His approach to musical improvisation is seen as a radical one. Very frequently he uses as a source for his work the sounds recorded in his many trips to the USA, Europe and North African countries. Rinus Van Alebeek utilizes simple sound capturing resources as microphones connected to old walkmans and mixes and processes them using a mixer and an effects pedal, creating powerful *lo-fi* sound collages somewhere between noise and pure poetry.

According to Rinus Van Alebeek himself: “There are different ways of presenting my music. Call it musique concrète because of the use of tapes; call it noise because it can be loud; call it dark ambient, because you like it that way; call it industrial, because there is some drones every now and then. Call it poetic, because you want to get away from worn out definitions, or call it soundscape, because you have read that one book. I call it pop music. And by now I know there is enough of us, worldwide, to justify this definition.”

Rinus was the organizer of das kleine field recordings festival, which took place in Berlin between November 2006 and February 2007 and is the author of the *tape care*

blog, dedicated to the use of cassettes and other magnetic tapes as an artistic resource.

Personal web site: (Url-35).

### **Kjell Samkopf**

Kjell Samkopf's involvement in music includes chamber and orchestral music, electro-acoustic works, music for choreographed dance, documentary and art house films, television productions, music for educational purposes and a number of works for percussion. He has written over 30 commission works, among these are compositions for the Bergen Philharmonic Orchestra, The Swedish Radio, Bergen Wind Quintet, the Norwegian Broadcasting Co., Norwegian Cultural Council, Collage Dance Company, Ultima - Oslo Contemporary Music Festival and the Festival of Northern Norway.

Music for dance has a central position in Samkopf's production. He has written music for seven whole night dance performances. His co-operation with the choreographer Lise Nordal deserves special mention. In addition to their involvement with numerous short ballets they have made three whole night performances together: Aqua (1986), Tidevann (Tide) (1990) and Entré (2000).

A red thread in Samkopf's work as a composer has been a development towards sound. From composing for traditional instruments he has gradually augmented his sound palette to include electro-acoustics and an increasing number of untraditional sound-making objects. In his two out-door concerts Sandvika September 8, 1991 and Oslo October 3, 1992 the main instrumentarium was ten large sound sculptures by the artist Sverre Hoel. The last step in this development is his two sonographic CDs "Mårådalen Walk" (1994), containing recordings of footsteps, and "Mountain Listening" (1998), containing five sonographical portraits of people listening. These CDs also reveals Samkopf's engagement of the relationship between art and nature. In 2002 released the CD "Music for Large Mountain and Vibraphone" together with the Dutch composer and sonographer Floris van Manen. Here the sounds of the mountain and the sounds of the vibraphone have equal importance in the final sound picture. Kjell Samkopf was the Festival Composer at the Festival of Northern Norway in 1985. Kjell Samkopf received the Cultural Prize of the Municipality of Bærum 1992.

Personal web site: (Url-36).

### **Gilles Aubry**

Gilles Aubry is a Swiss sound artist & computer musician based in Berlin since 2002. He uses field recordings, computer programming, surround sound, hacked electronics and improvisation to create live performances, sound installations and CD works.

In his work Gilles Aubry has been experimenting on auditory perception, space representation, site specificity, room acoustics, streams of information and interactivity. He has been involved in numerous collaborations with international artists throughout Europe, USA, Russia and Asia since 1995. Recent artistic projects & collaborations include “Six Cowa” (2005) with Soichiro Mitsuya, “Camp Victory” (2005) with Stéphane Montavon, “Urbanus Vulgaris” (2006), “Cairo Talking Heads” (2007), “Berlin Backyards” (2007, laureate of the Phonurgia Nova Award 2007) and “Maulwurf” (2007).

Gilles Aubry is a permanent member of noise band MONNO, improv duo THE SAME GIRL with drummer Nicolas Field. Other collaborations have included musicians such as Vladislav & Evgeni Makarov (RU), Mickael Renkel (D), Lars Scherzberg (D), Axel Doerner (D), Torsten Pappenheim (D), Dave Phillips (UK), Bertrand Denzler (CH), Antoine Chessex (CH), Dirk Bruinsma (NL), Alexei Borisov (RU), Lethe (JP), Keiji Haino (JP), Tomoko Miyata & Fe-Mail (NO). His work has been published on Absinth Records, Creative Sources, Cronica Electronica, Schraum, Conspiracy, Sound Implant and broadcasted on Frameworks (resonance.fm, London), Sound of Space (Radio Zero, Lisbon), Giant Ear (NYC) and Radio Inkorrekt (Berlin).

Personal web site: (Url-37).

### **Bruce Odland**

Bruce Odland — sonic thinker, composer, and sound artist — is known for his large scale, public space sound installations which transform city noise into harmony, realtime. In 2004 he and Sam Auinger (O+A) altered the harmonic mix of the World Financial Center Plaza using the moon, tides, harmonic tuning tubes, and cement loudspeakers ("Blue Moon"). Together they have changed the sonic character of many public spaces around the world. His collaborations include work with Laurie

Anderson, Dan Graham, Andre Gregory, Wallace Shawn, Peter Sellars, Joanne Akailitis, Robert Woodruff, Tony Oursler, Peter Erskine, and the Wooster Group. He has contributed ideas and energy to projects in theatre, film, dance, public art, festivals, radio, and museums. His "Sounds from the Vaults", a playable orchestra of virtual instruments for the Field Museum in Chicago, won the Gold Muse Award from the Association of American Museums. Recently his first indoor gallery show "Hearing Space" was shown, O+A's "Requiem for fossil fuels" was performed to acclaim at Judson Memorial Church in NYC, and he toured as musical director of Wooster Group's "La Didone" to the Edinburgh Festival. Currently he is working on "Harmony in the Age of Noise" a cross disciplinary project at Tufts University mapping the psychoacoustics of the campus.

Personal web site: (Url-38).

### **Stephen Vitiello**

"Electronic musician and sound artist Stephen Vitiello transforms incidental atmospheric noises into mesmerizing soundscapes that alter our perception of the surrounding environment. He has composed music for independent films, experimental video projects and art installations, collaborating with such artists as Nam June Paik, Tony Oursler and Dara Birnbaum. In 1999 he was awarded a studio for six months on the 91st floor of the World Trade Center's Tower One, where he recorded the cracking noises of the building swaying under the stress of the winds after Hurricane Floyd. As an installation artist, he is particularly interested in the physical aspect of sound and its potential to define the form and atmosphere of a spatial environment." CD releases include Listening to Donald Judd (Sub Rosa), Scratchy Monsters, Laughing Ghosts (New Albion Records), Buffalo Bass Delay (Hallwalls), Scanner/Vitiello (Audiosphere/Sub Rosa), Bright and Dusty Things (New Albion Records), Scratchy Marimba (Sulphur UK/Sulfur USA), Light of Falling Cars (JDK Productions) and Uitti/Vitiello (JDK Productions) and 17:48 from the Texas Gallery (Texas Gallery). Recent solo exhibitions include Museum 52, London, The Project NY, Galerie Almine Rech, Paris, The Project, and Los Angeles. Group exhibitions include the 2006 Biennale of Sydney, the 2002 Whitney Biennial, Ce qui arrive at the Cartier Foundation, Paris, curated by Paul Virilio, Yanomami: Spirit of the Forest, also at The Cartier Foundation. Previous exhibitions include Greater New York at P.S. 1 Contemporary Art Center presented in collaboration with

the Museum of Modern Art, and a solo exhibition at the Texas Gallery, Houston, TX. In 1999, Stephen Vitiello was awarded a 6-month WorldViews residency on the 91st floor of the World Trade Center. The residency resulted in a site-specific sound installation that has been broadcast and exhibited internationally.

In 1999, Stephen Vitiello created music for White Oak Dance Project's See Through Knot, choreographed by John Jasperse and featuring Mikhail Baryshnikov presented at Brooklyn Academy of Music, NY. New media productions include work for the Internet, Sound Archive 7.01-7.31.01 for the San Francisco Museum of Modern Art in collaboration with The Walker Art Center and ZKM and Tetrasomia, for the Dia Center for the Arts. In July 2000, Dia Center for the Arts published the CD-ROM Fantastic Prayers, a collaborative work with artist Tony Oursler, writer Constance DeJong, and composer Stephen Vitiello.

Past performances include The Tate Modern, London, the San Francisco Electronic Music Festival, The Kitchen, NYC, the Whitney Museum of American Art at Philip Morris, and participation in per/Son, Cologne, Germany -- a concert series of solo and collaborative pieces also featuring Pauline Oliveros, Scanner, Frances Marie-Uitti and Andres Bosshard. Per/SON was broadcast by WDR radio's Studio Akustische Kunst program.

In addition to music based work, Vitiello directed the videos Light Reading(s) (Visual Display), Nam June Paik: SeOUL NyMAx Performance, 1997 - Dress Rehearsal and The Last Ten Minutes and Nam June Paik: Two Piano Concerts 1994/1995. He also produced the audio CD, Nam June Paik: Works 1958-1979 (Sub Rosa) and a number of archival CDs from the archives of The Kitchen in NYC, published by Orange Mountain Music.

As a Media Curator, he curated the Sound Art component to the Whitney Museum's exhibition The American Century: Art and Culture 1950-2000, Young and Restless a video program for the Museum of Modern Art and New York, New Sounds, New Spaces at the Museum of Contemporary Art, Lyon. Over the last 20 years he has collaborated with such musicians as Scanner, Pauline Oliveros, Frances-Marie Uitti, Andrew Deutsch and Yasunao Tone and visual artists including Nam June Paik, Tony Oursler, Julie Mehretu and Eder Santos. Stephen Vitiello is currently Assistant Professor of Kinetic Imaging at Virginia Commonwealth University (VCU).

Personal web site: (Url-39).

### **Jacob Kirkegaard**

Jacob Kirkegaard is a sound artist born in 1975 in Denmark, living in Berlin, Germany. In early 2006 he graduated at the Academy of Arts and the Media in Cologne Germany. Jacob is exploring sound in art with a scientific approach. Parallel to his studies, he has been giving lectures on sound and space at the Royal Architect Academy and at the Art Academy in Copenhagen.

Aside from academics, Jacob Kirkegaard collaborates with various artists on installations and resonances and has performed in Asia, America and Europe.

Jacob Kirkegaard's sound works focus on investigations into the potential musicality in hidden sound layers in the environment. In this context he has been capturing and exploring sounds from, for example, volcanic earth, ice, atmospheric phenomena, nuclear power plants and deserted places. Recording tools used include accelerometers, hydrophones and home-built electromagnetic receivers.

Personal web site: (Url-40).

### **Duncan Whitley**

Duncan Whitley is an artist, sound recordist and archivist. Over the past decade his work has demonstrated a critical interest in the presentation of sound in the visual arts. He has exhibited installations and interventions in public spaces, galleries and non-gallery spaces, and has presented field recording projects nationally and internationally at various events such as the London Placard headphones festival (2004), Sounds Like Trouble (Stroud Valley Artspace, 2005), Sound Caf é (Jedburgh Arts Centre, 2005), The Listening Project (Slade Studios, London, 2006), Soundlab IV (newmediafest.org, 2006), Sound: Space (South Hill Park, Bracknell, 2007) and Otton Osaka (Osaka, Japan, 2007).

His interest in curating sound work led him to work with Measure and Melanie Smith on “Me and My Shadow”, at Wilton's Music Hall in the East End of London. The show included work by Thor McIntyre-Burnie and Chris Watson, and a premiere performance of new work by Janek Schaefer and Philip Jeck. Duncan's own work appropriates forms and conventions of sound installation, field recording, oral history, and sonic archive. In ongoing sound recording projects Duncan has focussed

on collecting, analysing, categorising and editing raw material extracted from the social and urban fabric. Underpinning his work is an interest in the social and documentary value of sound as a medium, and the use of sound and new media to develop alternative narrative forms. Whilst displaying a critical interest in sound and audio work, Duncan remains committed to producing intuitive, accessible work for broad audiences.

Personal web site: (Url-41).

### **Lasse Marc Riek**

The work of Lasse-Marc Riek is an assemblage of the most diverse styles and techniques. His interdisciplinary productions are shaped by elements of the fine arts, phonography, environmentalism, performance, sound-art and conceptual art. These productions are situated in a tight relationship with one another. They complement and enrich one another — just like human beings, created by nature, find themselves in an ongoing process of change and are part of the eternal becoming and fading.

In the domain of phonography Riek's focus rests on acoustic ecology and bio-acoustics by means of field recordings of both society and nature. His music, recorded with a microphone, is brought about by coincidence and the immediate presence of nature, society and animals. In his quest after the archaic sound Riek collaborates with scientists, ecologists and musicians.

Since 1996, his sound works have been released on various record labels. His works have been broadcast on Hessischer Rundfunk and Hessenfernsehen/Frankfurt/M, Norddeutscher Rundfunk and Fernsehen/Hamburg, DeutschlandRadio, Berlin and independent radio stations in Germany and internet based radio stations across the world.

Since 1999, he did concerts, installations in museums, galleries, cathedrals and off-spaces across Europe.

Since 2000, he has been an artist in residence in Germany, Finland, Bosnia & Herzegovina, France, Greece, England, Poland, Russia and Africa.

In 2003, he has become the Co-founder of the label “Gruenrekorder” that release albums based on soundscapes and field recordings.

Since 2006, he has been a member of the European Forum Klanglandschaft (FKL). He did audio lectures at universities and art schools like the Hamburg University/Institutes for Theology and Music Studies and the HFBK Braunschweig/Studio for Sound-Art

In 2007, he taught sound-art in Finland. He did concerts, lectures and installations in Norway, Finland, Austria, Romania, Luxembourg, Italy, Germany and Japan.

In 2008, he did studies in Denmark, Espania, Romania and Germany. A collaborative book with Christoph Korn was published in Germany. He did concert and lectures in Europe and Japan.

Riek works and lives with his family in Frankfurt am Main, Germany.

Personal web site: (Url-42).

### **Philip Samartzis**

Philip Samartzis (Melbourne, Australia) is currently co-ordinator and lecturer in Sound within the School of Art, RMIT where in 2004 he completed a doctorate into surround sound in installation art. Outcomes from his research have informed numerous exhibitions including; *Dodg'em* (2006), *Grosser Wasserspeicher*, Berlin; *Unheard Spaces* (2004), Candiani Cultural Centre, Mestre; *Presence & Absence* (2002), *Statenlogement*, Hoorn; and *Transparency* (2001), *Fondation Cartier pour l'art Contemporain*, Paris.

As an independent curator he has organized four Immersion festivals focusing on the theory and practice of sound spatialisation, as well as *Variable Resistance* - a series of international sound art presentations for the Australian Centre for Contemporary Art, the San Francisco Museum of Modern Art and the Podewil Art Centre in Berlin. As a solo artist he has performed widely in Australia, Japan, Russia, Europe and the United States including presentations at the Andy Warhol Museum, Pittsburgh, The DOM, Moscow and Mori Arts Centre, Tokyo. Samartzis has published five solo compact discs, *Residue* (1998), *Windmills Bordered By Nothingness* (1999), *Mort aux Vaches* (2003), *Soft and Loud* (2004) & *Unheard Spaces* (2006). Samartzis uses field recordings of natural and constructed environments as his primary material to render densities of space and discrete zones of aural experience, arranged and mixed to reflect the acoustic and spatial complexities of everyday sound fields.

Personal web site: (Url-43).

### **Brandon LaBelle**

Brandon LaBelle is an artist and writer working with sound and the specifics of location. Through his work with Errant Bodies Press he has co-edited the anthologies "Site of Sound: Of Architecture and the Ear", "Writing Aloud: The Sonics of Language", "Surface Tension: Problematics of Site" and "Radio Territories". He initiated and curated the Beyond Music series and festivals from 1997 – 2002 at Beyond Baroque Literary/Arts Center in Los Angeles, and in 2001 he organized "Social Music", a radio series for Kunstradio ORF, Vienna. Throughout the 90s he played drums in various bands in Los Angeles, notably Farflung and Purse, and worked as idbattery (with l. chasse) producing experimental performances and performative field recordings. His installation work has been featured in exhibitions and festivals internationally, including "Sampling Rage"(1999) Podewil Berlin, "Sound as Media"(2000) ICC Tokyo, "Bitstreams"(2001) Whitney Museum New York, "Pleasure of Language"(2002) Netherlands Media Institute Amsterdam, and "Undercover"(2003) Museet for Samtidskunst Roskilde, and his writings have been included in various books and journals, including "Experimental Sound and Radio" (MIT) and "Soundspace: Architecture for Sound and Vision" (Birkhäuser). He presented a solo exhibition at Singuhr galerie in Berlin (2004), and an experimental composition for pirate drummers as part of Virtual Territories, Nantes (2005). His ongoing project to build a library of radio memories, "Phantom Radio", was presented fall 2006 as part of Radio Revolten, Halle Germany. He is the author of "Background Noise: Perspectives on Sound Art" (Continuum 2006).

Personal web site: (Url-44).

### **Dallas Simpson**

Dallas has performed at the London College of Music a couple of years ago with composer Chris Thorpe, in York with Chris Thorpe and Linda Merrick (2000); in Glasgow in 1999 as part of the Drift environmental sound art / acoustic ecology project, with Max Eastley and Helmut Lemke at Creswell Craggs several of years ago. His work has been selected, against an open world field, for inclusion in every themed sound art compilation for the past three years curated by Colin Fellows of the John Moores Liverpool University (Hope, Trace and Zero). Dallas' tracks have been

released through Time Recording's EMIT series (abha - EMIT 2296, waterpump - EMIT 1197). He was included as a composer in the regrettably one-off "Music for Spaces" series on BBC Radio 3 some four years ago.

In December 2000, Anya Bernstein, a Russian social anthropologist made a short video of his work at Lambley Dumble and in various locations around Nottingham City Centre at night (available on request). Dallas has written a more in-depth article: The Art of Location Binaural Performance, which was first published in the UK Journal of Free Improvisation: Rubberneck. It was subsequently reproduced on the US website for free improvisation The Improvisor.

Dallas Simpson has over 50 hours of unreleased and unbroadcast live location binaural performance recordings.

Personal web site: (Url-45).

### **Aaron Ximm**

Aaron Ximm (b.1970) is a San Francisco based field recordist and sound artist. He is best known for his composition, installation, and performance work as Quiet American, much of which can be found at his personal web site. From 2001 to 2005, Aaron curated and hosted the Field Effects concert series, which, like his own work, sought to showcase the quiet, fragile, and lovely side of sound art, particularly that working with found sound and field recordings. Along with his wife Bronwyn, Aaron produces the occasionally popular One Minute Vacation podcast. Aaron Ximm performed at the Tenth Annual Activating The Medium festival in 2007, and contributed an installation at the Seventh Annual Activating The Medium festival in 2004. Ximm is also one of the the directors of 23five.

Personal web site: (Url-46).

### **Francisco Lopez**

Over the last twenty five years Francisco López has been developing a powerful and consistent world of sound creations, 'trying to reach an ideal of absolute concrète music'. To date, his catalog comprises more than 180 sound works, which have been released by over 140 record labels throughout the world. He has toured extensively throughout Western and Eastern Europe, North, Central and South America, Japan, Taiwan, South Africa, Australia, and New Zealand doing live acousmatic

performances and sound installations, and he has received commissions from a number of renowned institutions and organizations, such as the Dutch and Spanish National Radios, the Goethe Institut, V2 Organization (Rotterdam), Yale University Theater (New Haven), the Ralph Lemon Company (New York), the Zeitkratzer Ensemble (Berlin), Creative Time (New York), Quartier Ephemere (Montreal), Sound Traffic Control (San Francisco), Argos Festival (Brussels) and Radio New Zealand (Auckland).

Through what he once called as 'the exploration of the universe of broad-band noise from the real world', his music arises from the processing of environmental recordings. In deep contrast to the classical soundscape movement (and even despite his paradoxical past involvement with related organizations as the Environmental Tape Exchange, the World Forum for Acoustic Ecology and the Nature Sounds Society), his vast activity doing field recordings all over the world (50 countries in the five continents) never pursued a documentary or representational goal, but a dramatically opposite objective perspective. And in this sense, the evolution of his aesthetics and conceptual background is a profound process of refinement towards an extreme musical purism, with a voluntary and forceful refusal of any visual, procedural, relational, semantic, functional or virtuosistic elements. What is left is an astonishingly powerful musical essence capable of reaching both the deepest and most dreadful abysses of crude strength and the most subtle and diffuse aural edges; a complex territory of anti fast-listening where perceptual awareness and the power of naked music are strikingly rediscovered; a world where things are uneasy, unclear, unsolved and where one is forced to immerse and search. He calls it *belle confusion*.

Personal web site: ([Url-47](#)).

### **Pete Stollery**

Pete Stollery (born Halifax, UK 1960) studied composition with Jonty Harrison. He now composes almost exclusively in the electroacoustic medium, particularly music where there exists an interplay between the original "meaning" of sounds and sounds existing purely as sound, divorced from their physical origins. In his music, this is achieved by the juxtaposition of real (familiar) and unreal (unfamiliar) sounds to create surreal landscapes. His music is performed and broadcast throughout the

world. His music is published by empreintes DIGITALEs in Montréal and a solo DVD-A “Un Son Peut en Cacher un Autre” was released in 2006.

“Shortstuff” (digital music) was awarded Special Prize in the Musica Nova 1994 competition; “Onset/Offset” (digital music) was given an Honourable Mention at the Stockholm Electronic Arts Award, 1996 and also the 1st Pierre Schaeffer Competition for Computer Music; “Altered Images” (digital music) won 2nd prize at CIMESP ‘97 (Concurso Internacional de Música Eletroacústica de São Paulo); Vox Magna was awarded an Honourable Mention in the Musica Nova 2003 competition and was pre-selected for the 32nd Bourges International Competition of Electroacoustic Music and Sound Art in 2005.

He has collaborated with a number of artists from all aspects of the arts, most notably sculptor Anne Bevan, with whom, along with choreographer Andy Howitt, he collaborated to produce the multimedia piece “Sunnifa” to great acclaim at the St Magnus Festival in Orkney.

He has also worked with sound designer Peter Key on a number of projects including Our Dynamic Earth in Edinburgh, UK and Magna in Rotherham, UK.

He is currently Head of the Music Department and Professor in Electroacoustic Music and Composition at the University of Aberdeen where he is able to guide school children, students and teachers in the creative use of technology in music education. He is also Artistic Director of “discoveries” - an occasional series of concerts in Aberdeen that aims to bring together electroacoustic works by school children and students to be performed alongside works by established composers from around the world.

He has been Chair of Sonic Arts Network, the national organisation supporting electroacoustic music and sonic art in the UK, for which he has been a board member since 1985; he was also editor of the Journal of Electroacoustic Music published annually by SAN. In 1996, along with Alistair MacDonald, Robert Dow and Simon Atkinson, he established the group “invisibleEARts” whose aim is to perform acousmatic music throughout Scotland and to promote Scottish acousmatic music to a wider audience, both in Scotland and abroad.

Personal web site: ([Url-48](#)).

### **Kim Cascone**

Kim Cascone is an American composer of electronic music, who is best known for his releases in the ambient genre on his own record company, Silent Records. Cascone studied electronic music at Berklee College of Music, Boston, and started his career as assistant musical supervisor to director David Lynch on “Twin Peaks” and “Wild At Heart”. In the mid-80s he left the film industry to pursue a solo career in San Francisco, California. He founded Silent Records in 1986, and went on to release several albums under the moniker PGR (an abbreviation of Poison Gas Research). He has used various aliases over the years, but has become best known under the moniker Heavenly Music Corporation, a name taken from a track on the record “No Pussyfooting” by Brian Eno and Robert Fripp. Cascone has since released four full albums under this name from 1993 to 1996.

In 1996 he left the Silent label to work for a period as a sound engineer. He returned to making music in 1999, and has since been releasing records using his own name, most on his new record company, Anechoic (named after his last Heavenly Music Corporation release), which he established in 2000.

Personal web site: ([Url-49](#)).

### **Yannick Dauby**

Yannick Dauby (b. 1974, France) is involved in electroacoustic music and improvisation, using found objects, phonographies and computers. As a field recordist, he has particular interest for animal or natural environment sounds as well as urban or industrial contexts and unusual acoustic phenomena. Each excursion is the pretext of a sonic gathering, and often leads to the realization of a phonographic collage. He works oftenly in collaboration with other musicians, and with visual artists, producing multi-media performances or installations. He is currently interested into studies about soundscape and listening-based relationships with animals. His work has been published and presented in various international festivals and labels.

Personal web site: ([Url-50](#)).





## CURRICULUM VITAE

**Candidate's full name:** Erdem HELVACIOĞLU

**Place and date of birth:** Bursa, 22 May 1975

**E-Mail:** [erdem@erdemhelvacioğlu.com](mailto:erdem@erdemhelvacioğlu.com)

**Universities and**

**Colleges attended:** Yıldız Technical University Industrial Engineering

**Istanbul Technical University Music for Advanced Studies Department,  
Masters Degree on Sound Engineering**

**Publications:**

- **Helvacioğlu Erdem**, artistic statement for *The Cambridge Companion to Electronic Music*, 2007
- **Helvacioğlu Erdem**, artistic statement for *The Book of Guilty Pleasures*, 2011
- **Helvacioğlu Erdem**, solo album, “*A Walk Through the Bazaar*”, 2003
- **Helvacioğlu Erdem**, solo album, “*Altered Realities*”, 2006
- **Helvacioğlu Erdem**, solo album, “*Wounded Breath*”, 2008
- **Helvacioğlu Erdem**, album with Per Boysen, “*Sub City 2064*”, 2010
- **Helvacioğlu Erdem**, album with Ros Bandt, “*Black Falcon*”, 2010
- **Helvacioğlu Erdem**, album with Şirin Pancaroğlu, “*Resonating Universes*”, 2011

