Soundscape

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Crossing Listening Paths

The Journal of Acoustic Ecology

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Soundscape is an English language publication of the World Forum for Acoustic Ecology (WFAE). It is conceived as a place of communication and discussion about interdisciplinary research and practice in the field of Acoustic Ecology, focussing on the inter-relationship between sound, nature, and society. The publication seeks to balance its content between scholarly writings, research, and an active engagement in current soundscape issues.

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WORLD FORUM FOR ACOUSTIC ECOLOGY (WFAE)

The World Forum for Acoustic Ecology, founded in 1993, is an international association of affiliated organizations and individuals, who share a common concern for the state of the world's soundscapes. Our members represent a multi-disciplinary spectrum of individuals engaged in the study of the social, cultural, and ecological aspects of the sonic environment.

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CONTRIBUTIONS

Ideas for journal themes, proposals for new sections, as well as visual materials, are welcomed. You may submit either a proposal or a complete manuscript of a potential article to *Soundscape*. The Editorial Committee would generally prefer to communicate with you beforehand regarding your idea for an article, or receive a proposal, or an abstract (contact information below). Please also download our *Guide to Contributors*: Instructions for the Preparation of Materials for Submission to Soundscape (PDF) on the WFAE Website at: www.wfae.net
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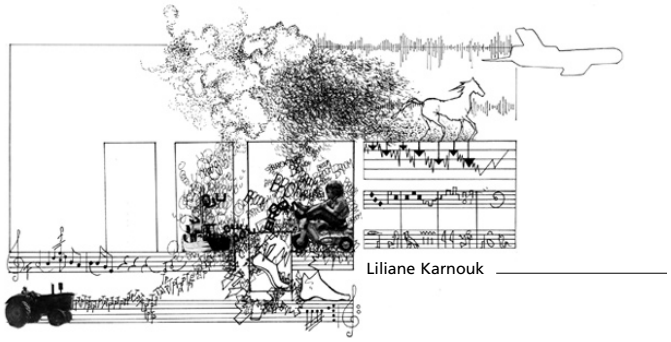
Liliane Karnouk

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Contents

This edition of *Soundscape* includes an online **Audio Supplement**, which features sound files associated with various articles. The files may be listened to online or downloaded from: **http://www.akouse.gr/soundscape_journal_Vol11**

Editorial

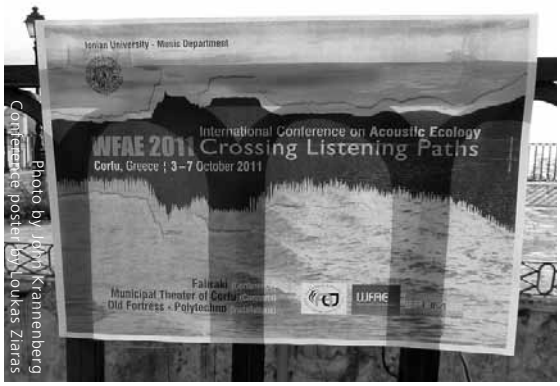

Photo by Conference poster by Loukas Zaras

WFAE 2011 Conference poster: Crossing Listening Paths

From the World Soundscape Project in Vancouver in the late 1960s to the founding of the World Forum for Acoustic Ecology in 1993, to an expanding Acoustic Ecology movement in the 2010's… An experimental ecological sound based movement introduced by R. Murray Schafer about half a century ago, today has spread in time and space reaching a stage of maturity associated with an emerging tendency for self-reflection and re-examination of its identity. Its strong association with art, science, and community makes it especially prone to the multiple and profound changes introduced in the above areas since its emergence.

The WFAE 2011 Conference in Corfu Greece with its theme: *"Crossing Listening Paths"*[1] attempted to address the issue of the current identity of Acoustic Ecology in the context of artistic, scientific and societal changes, as they have been reflected in the field's actions globally. In an age of complexity, globalization and overspecialization, basic questions about Acoustic Ecology's identity that appeared worth pondering were:

- What are the "listening paths" taken or invented by acoustic ecology researchers and artists?
- To what extent are there crossovers within and between research and artistic approaches, methodologies, terminology etc?
- Is there an overarching philosophy? Are there overarching values and ethics?
- Is there really a common code or does every researcher/artist/activist address the imbalances in the acoustic environment from his/her own professional and personal perspectives?

The current issue of *Soundscape* is coming as a complement to the WFAE 2011 Conference, to highlight issues of identity and crossroads in Acoustic Ecology.

To introduce the theme of this journal issue, *"Crossing Listening Paths,"* I would like to refer the reader to a Cretan myth about learning to play the traditional string instrument 'lyra'.[2] According to this myth, in order for a musician to learn to play the lyra with great virtuosity, he has to go with his instrument to a deserted crossroads at midnight. There, he is supposed to mark with his black-hilted dagger a circle around himself, inside of which he must stay and play his lyra. Remaining always inside his circle, the lyra player is taught by the fairies how to play the lyra through listening and imitating them on his instrument which is being passed back and forth between the fairies and himself, making sure that neither of the two parties crosses the circle. If a part of the musician's body crosses the circle by mistake, this part becomes amputated or he goes insane. When the first cock crows, the fairies ask the young man to give them something of his own so

1 The theme *"Crossing Listening Paths"* was formulated by the members of the Board of the Hellenic Society for Acoustic Ecology (the writer, Katerina Tzedaki, Andreas Mniestris, Kimon Papadimitriou and Evangelia Drakou), while the actual title was suggested by Katerina Tzedaki.

2 The myth appears in: Psilakis, M. & Psilakis, N. (2003). *Herbs in cooking: Dietary choices from nature's supply of seasonings and drugs.* Heraklion, Crete, Greece: Karmanor, p. 42.

that in return they would teach him to play his lyra as beautifully as they do. Usually, the lyra player gives to the fairies one of his nails and the fairies teach him how to play the lyra like a supreme virtuoso. The lesson lasts until dawn, when the fairies disappear.

There is a story about a shepherd who used to go every night to a crossroads to play his lyra. The most beautiful of the fairies fell in love with him. One night the young shepherd went to the crossroads and started playing his lyra, but forgot to mark the circle with his black-hilted dagger. The fairy, who had fallen in love with him, was away that night. The rest of the fairies did not like the melody of his lyra and started to drag him and hit him with rage until a little before dawn they had killed him. At that time, his good fairy arrived to find him dead from the brutal attack. She cried and did not know what to do, as dawn would come in just a few minutes and she would have to disappear. While in despair, she smelled a herb with a beautiful odour and cut a few sprigs from it. It was the herb *'adonajida*'. She rubbed the sprigs on the face and chest of her beloved dead shepherd and to her surprise he soon started breathing again. He was resuscitated! However, by the time he had come back to life, the sun had risen and his good fairy had missed the chance to fly back to eternity and therefore remained in the world of the mortals, where she shared her life with the resurrected lyra player.

One could certainly interpret this myth and the related story in a variety of ways. Here is one:

Humans become initiated to the art of music through listening intensely to nature (deserted place) and to the supernatural (the fairies). The musician (lyra player) in order to learn his profession at the highest level has to be open to different perspectives (going to the crossroads and listening to the melodies of all different fairies) at a time that fosters silence, concentration and self-reflection (midnight). To embrace acoustic ecology, an artist or scientist inevitably places him/herself at a crossroads of sound, listening and ecology. The question remains how open he/she would be to listen carefully to the melodies of several familiar but also unknown fairies.

An important symbolism in the myth is the marking of the circle around the body of the lyra player by using a black-hilted dagger. The sharp dagger leaves on the ground a clear, yet easily erasable circle, defined by the place of the player/listener in the centre of a crossroads and by the stretch of his open arms. The circle on the ground —almost immaterial—is nevertheless of utmost importance as it could be interpreted as defining the line between humans and the rest of nature, between the natural and the supernatural (lyra player—fairies), the present and the past (melodies of the present—melodies of the past), self and the others, as well as innocence and wisdom (inexperienced lyra player—experienced fairies). Exchanges between the inside and outside of the circle are possible (as in the passing back and forth of the lyra) but are strictly regulated in that either party may not cross the limits. One could possibly imagine here a parallel on the one hand between the lyra player and a human listener/sound producer and on the other, between the dagger-marked circle and the circle of acoustic space. When extending him/herself beyond the line of his/her circle of soundmaking, the human musician/citizen knowingly or unknowingly crosses over to the circles of others, invading and violating nature and society. Here the myth could be read as revealing the issue of ethics of listening and soundmaking. The consequences of violating the boundaries are potentially deadly in the myth and could be quite detrimental in its metaphor in reality.

Technological advances and specialization have made possible in our days many crossings, in terms of variety, quality and quantity. However, these crossings are not always realized with special care for the limits. Acoustic Ecologists of today face the challenge of checking their creativity against the possibility of violating the acoustic and psychological circles of humans or other species. As the reader is informed about the interesting crossings of listening paths that are presented in this issue, such as between archaeology, soundscape composition, acoustic design, acoustic ecology theory and history, media theory, ecophilosophy, museology, sound design, special environmental education, sound education, virtual acoustic communities –*second life of sounds* etc, he/she is encouraged to appreciate the 'whats' and 'hows', while also being critical about the 'whys' and 'at what expense'.

In the story of the shepherd with the lyra who forgot to mark his circle and was killed for his mistake, it is significant to realize that restoration of health was not achieved by one agent but through a synergy of nature (the herb *adonajida*) with the supernatural (fairy) in the context of strong emotions (being in love) as a catalyst. In an age of increased tendencies towards virtual realities, it might be useful for acoustic ecology to consider where it stands as a field in terms of its association with nature and life as primary sources of experience. Is today's acoustic ecology still connected with a primary ecology of life in the environment or has it moved more to a secondary ecology of an art in the context of a virtual life? Are there limits, and if so, what is their nature and function?

In the myth of the lyra player, to get the most benefit, the young man has to pay a price which cannot be paid with just *any* object, but it must be a part of himself—even if it is a small one, e.g. his nail. This small self-sacrifice could be interpreted as pointing to the self-commitment necessary for learning the 'secrets of soundmaking'. A deep knowledge and understanding of the sound environment and its workings could only be a product of an intense and persistent self-involvement with listening and soundmaking in the context of nature and beyond.

In the old times, when a Cretan lyra player was given a compliment about his playing, he usually answered: "What do you think? I learned to play the lyra at a crossroads".

And you? Wishing you to keep learning your 'acoustic ecology lyra' at a crossroads…

Here follows an introduction of the articles presented in this issue:

Hildegard Westerkamp writes about listening and soundmaking, about focus and balance in acoustic ecology. In her paper she explores the 'normalized' contemporary trends of *schizophonic* listening, as expressed through Muzak's products and 'educational' projects and through computer gaming, internet global environment platforms and walkman listening; practices that tend to disconnect listeners and soundmakers from their "own expressive voice, their family and immediate community […]". She proposes the practice of *soundwalking* as a powerful tool for reeducating people's listening abilities and guiding them in re-establishing an intimate connection with their immediate soundscapes and environment as a whole. Furthermore, as a step towards achieving balance and focus in the field of acoustic ecology, Westerkamp proposes a multilevel approach, which begins with the education of acoustic ecologists themselves.

Her most inspiring paper comes as a critique of some rather 'unhealthy' current listening and soundmaking practices, but also provides a broad clear perspective and concrete directions towards moving the field of acoustic ecology to a mature stage of integration, characterized by increased balance and focus.

Katharine Norman, in her sensitively descriptive and thought provoking paper entitled: *"The listening workshop: Nature notes from WFAE 2011, Corfu"* uses everyday scenes from life and nature in Corfu during the conference in October to highlight the

sound environment of the island as it relates to social activity and as perceived through listening and the other senses. Among other topics, she discusses the social aspects of sound environments in both real and virtual contexts and she proposes a new vision for the WFAE given the needs and developments of contemporary societies.

In her thoroughly researched article, **Sabine Breitsameter** explores the common ground and contrasts between two internationally known Canadian contemporaries, Marshall McLuhan (1911–1980) and Murray Schafer (1933–), focusing especially on aspects of listening, the environment (space) and ecology. In crossing the listening paths of these two men, Breitsameter portrays the historical and philosophical climate which gave birth to Acoustic Ecology as a field, clarifies its identity and points out the need for soundscape theory to "open up further towards trans- and interdisciplinary joint ventures."

The article by **Jordan Lacey**, philosophical in tone, crosses interesting paths between acoustic ecology and biophilia, ecophilosophy and the concepts of striated and smooth space, encouraging the reader to think about the identity and direction of Acoustic Ecology as a field. For the modern urban environments he proposes a biophilic soundscape design, which is imbued by nature through nature's real presence and through its sound mediated *affect*.

Vincent Andrisani in 2010 revisits the documentation of Vancouver's soundscapes after the two previous important recording collections of the early 1970's and the 1990's. His focus is not on the sounds of the everyday but on Vancouver's festivals. In his informative description of the recording process he touches on technical considerations but also explains the social aspects of soundscape and the ways in which they inform the sound recordist's sensibility and shape the final product.

Apostolos Loufopoulos' and **Andreas Mniestris'** article moves naturally between a case study and the development of theory. Taking as their starting point the large amount of recorded material produced from the systematic aural documentation of the area around Lake Antinioti on the island of Corfu, Greece, the authors propose strategies for soundscape composition, which could be applied to verisimilar, abstract and hybrid soundscapes in acousmatic music.

Mikis Zisiou, in his article based on a research study in progress, introduces a theory of *Museological Soundscape Design* with an educational component. He also proposes the establishment of the new profession of '*soundscape designer-museologist*'.

Acoustic ecology's educational perspective is offered by **Charikleia Minotou** et al. In their interdisciplinary project, the authors focus on the ecosystem of the sea turtle *Caretta caretta* at the National Marine Park on the island of Zakynthos (Greece). This ecosystem functions as the context and theme for the development of an acoustic ecology and environmental education program, which is accessible to both able and disabled participants.

Ros Bandt presents an acoustic profile of the *Etz Hayyim* synagogue in Hania, Crete, Greece, through a case study, which she conducted there between November 2010 and April 2011 acting as a participant observer. She describes the history of the synagogue, its current state and its unique multi-cultural and ecumenical community. Her description includes a variety of sounds classified into 20 categories, as well as an aural documentation of events and numerous interviews by members of the Etz Hayyim synagogue.

A contrasting case study is presented by **Stephan Moore** and **Scott Smallwood** in their article "The Soundscape of Burning Man", which includes a highly descriptive presentation and analysis of the soundscape of the Burning Man Festival. The authors guide the reader through an imaginary tour of Black Rock City, the ephemeral week-long home of the festival, which is built and then taken down every year since 1991 in the Nevada Black Rock Desert (U.S.A.). The festival soundscape is approached in terms of content, energy levels and meanings of its sounds, focusing on spatial and temporal variations through daily and weekly cycles.

Phylis Johnson discusses sound in the context of *Second Life*, a contemporary development of the digital era, launched in 2003. This online virtual social network platform uses sound not only as enrichment to the virtual landscapes but also as the main feature for concerts, sound installations etc. The author discusses the creative possibilities offered by sound in Second Life and their relevance for acoustic ecology.

The year 2011 was the 10th anniversary of the death of Iannis Xenakis, the Greek composer who lived most of his adult life in France. **Kostas Paparrigopoulos** writes about Xenakis' special interest in natural phenomena and describes his common concerns with acoustic ecology. Finally, he presents a list of the various concerts, symposia and other events that took place in Europe and North America during this year in honor of the composer.

Ioannis Paraskevas et al, present their research in progress, which aims at developing automatically updated sound maps as tools for environmental monitoring.

In closing this introduction and editorial, I would like to thank the student volunteers from the Ionian University and the Department of Music Technology and Acoustics of the Technological & Educational Institute of Crete in Rethymnon, Crete, the town volunteers from Corfu, the Municipality of Corfu and the Cultural Association of Pelekas village, for their contributions in organizing the WFAE 2011 conference in Corfu. Special thanks are extended to my collaborators: Andreas Mniestris, Katerina Tzedaki as well as to Lena Kokkinomilioti, Despoina Pagoni, Zoe Dionyssiou, Alexandra Theogianni, Dionyssios-Ioannis Kyriakoulis and Filippos Theocharidis.

I would also like to express appreciation to the keynote speakers Murray Schafer, Katharine Norman, Christopher Clark, and Allen Weiss for their stimulating presentations. Finally, many thanks are extended to Hildegard Westerkamp for inspiring and supporting the HSAE and its projects all along! Her role has been instrumental in setting the tone of the conference (as a keynote speaker) and assisting in editing the present issue of the *Soundscape Journal.*

Regarding the journal, in addition to Hildegard, I would like to thank the WFAE Editorial Board as well as the Greek Editorial team: Katerina Tzedaki, Costas Paparrigopoulos, Theodore Lotis, Panagiotis Panopoulos and Andreas Mniestris.

It was truly special to have *crossed listening paths* with many of you in Corfu!

Enjoy reading, remembering, imagining, listening!

Ioanna Etmektsoglou is an assistant professor at the Department of Music of the Ionian University (Corfu, Greece), where she teaches courses in psychology of music, music education, and music therapy. She has studied psychology of music at the University of Illinois, U.S.A and music therapy at Anglia Ruskin University in Cambridge, England. She is currently serving as president of the Hellenic Society for Acoustic Ecology. Her recent work focusses on the development of educational material which fosters children's creativity, refines their acoustic perception and encourages a sound-based appreciation of the environment.

Report from the President

The WFAE had an interesting year of activity mostly centred within the affiliate groups and of course the wonderful conference in Corfu, Greece. Each affiliate report here indicates there is a life blood of action moving through the organisation's organs. The rapid growth of the American Society both in membership numbers and newly formed sub-groups across that continent reflects the continued interest in the field and a desire of individuals to meet and collaborate. This also brings more people into administrative roles in the organisation and ensures a larger pool of talent upon which a robust future can be built. Growth is important for renewal both in terms of generating fresh ideas as well as maintaining 'volunteer energy'.

With that in mind it may be surprising to be reading my words again after having stepped out of the Chair last year. Hill Kobayashi has been operating as Chair since Finland 2010 under quite difficult circumstances. The earthquake and tsunami disasters in Japan have impacted in so many ways not just on an environmental level but also on a human level. In response Hill has returned his full attention to his professional and personal life. We wish him well and thank him for the dedication and time he spent looking after the WFAE as Chair of the Board. After the Corfu meetings the WFAE has formally adopted the executive structure of our operating by-laws. The position of president takes on the role of Chair and now we have a vice-president, Eric Leonardson, who will take over the presidency in July 2012. At that time we will also be looking to announce a new vice-president. We hope that this process of renewal will then continue with new people coming into and moving through the Executive.

For the past few years the WFAE has been fortunate enough to have an international event where both our members and Board have an opportunity to meet face to face. Where possible these events are endorsed by the WFAE and thereby provide the benefits of reduced fees and resources for Board meetings. In 2011 it was Corfu through the agency of the Hellenic Society who hosted the engaging 'Crossing Listening Paths' conference. The theme was a 'shoe-in' metaphor for the Acoustic Ecology movement as witnessed by the contents of this journal. The healthy attendance of people from around the world, both WFAE members and non-members, were treated to a spectacular location, warm weather and even warmer reception and hospitality by the band of hard working volunteers.

Within this journal there is an underlying theme of both questioning and exploration. It is often stated that Acoustic Ecology is on a constant search for meaning - both in terms of the research undertaken as well as its relationship with other fields of study. In fact it might be said that the WFAE exists purely as an environment for hosting these enormously varied lines of enquiry. It is not a rigid structure like those that traditionally define academic fields. While in Corfu I spent some time with the distinguished bio-acoustician Christopher Clark discussing the nexus, or 'crossed-listening-paths', between his field and those of other presenters at the event. The notion of Acoustic Ecology continues to challenge the scientific world and yet, as we learnt from his intriguing keynote address, the animals he studies inhabit the world's oceans where sound is of even more fundamental importance for survival than it is for us. The complexity of the acoustic ecology at play within the oceans is a rich resource for exploration that will inevitably help us to understand our own airborne world as well as the impact we are having on the animals that live in the sea. One has to wonder whether the creative minds that inhabit the acoustic ecology community can offer insights to complement the scientific measurement of the intriguing vocalisations of underwater species.

The next opportunity for us all to meet will be in July 2012 in Darmstadt, Germany where we can continue exploring these listening paths. The WFAE has again been offered facilities for Board meetings as well as opportunities to present ourselves to the conference delegates. We look forward to that opportunity and to continue on our journey of creative thinking, inquisition and discovery.

—**Nigel Frayne**
President, WFAE Board, nfrayne@wfae.net

Regional Activity Reports

Australian Forum for Acoustic Ecology (AFAE)

by Anthony Magen & Jordan Lacey

The theme "Crossing Listening Paths" has broad implications as is reflected in the range of papers presented at the recent WFAE conference held in Greece, and the articles submitted for this volume of *Soundscape*. It is clear that the interaction of the acoustic and visual environment is where new stories are continuing to be created and uncovered.

The AFAE was involved recently in *Open House* (Melbourne), a global not for profit phenomenon that allows public access to the architecture of the city – iconic, banal and utilitarian. The festival allows thousands of people access to built form and exposes the public to ideas beyond architectural histories, creating new dialogues and new listening paths of architectural significance in a simple and understated way. The ideals of the *Open House* align with that of the AFAE regarding free and open access to all to experience hidden aspects of the city. The AFAE embarked on a series of 9 soundwalks. These were separated into three distinct soundwalks – a river walk, a park walk, and a laneways walk – that reflect different landscape typologies and sites in Melbourne. The soundwalks allowed people to listen to spaces rather than just look at spaces.

Open House received overwhelmingly positive feedback from participants regarding the soundwalks. Many reported sublime experiences in which they got to know their city in ways they hadn't before. Some were shocked by the sudden change in acoustic space when moving from the main street into the laneways. Many commented on the annoying sounds of air-conditioners they had been unaware of previously, while some were surprised, even enchanted by the presence of bird life. Entering buildings as a silent group was a profound experience for many. Some participants acknowledged that it helped them to appreciate the buildings in a new way, though some were uncomfortable about how to handle Melbourne *Open House* attendants who would ask them questions – particularly in the lift!

This collaborative effort continues the work of the AFAE in exploring ways to empower citizens to understand their listening modalities by encouraging them to become more attentive listeners through soundwalking, and challenging the technocratic domination of space through the simple act of walking with aural awareness.

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American Society for Acoustic Ecology (ASAE)

by Eric Leonardson

"Who are we?" The ASAE board of directors and its chapter representatives are mostly artists and teachers working at the university level. Our members are primarily involved in media, sonic, and musical arts, with a significant portion also engaged in the biological and health sciences. Others of us are researchers, journalists, and activists in the fields of environmental preservation seeking balance in our soundscapes.

In 2011 the ASAE has grown to include eight regional chapters with 58 members. Our governing structure mirrors the affiliate structure of the WFAE in which each affiliate has a voting member on our board who serves as the affiliate's chapter representative. The long-established New York Society for Acoustic Ecology (NYSAE) covers the New York City area and is represented on the ASAE board by Edmund Mooney. Its sister chapter in New Mexico changed its name in 2010 to the Southwest Society for Acoustic Ecology (SWSAE), represented by Brandon Hawley and encompassing both states of Arizona and New Mexico. Bay Area Sound Ecology (BASE), represented by Jeremiah Moore, covers the metropolitan areas of Oakland, San Francisco, and San Jose in Northern California, and Jay Needham represents the Midwest Society for Acoustic Ecology (MSAE). Newer chapters are the Pacific Northwest Society for Acoustic Ecology (PNWSAE) represented by Steve Barsotti in Seattle, Southern California Sound Ecology (SCSE) represented by Glenn Bach in the Los Angeles metropolitan area, and the Colorado Society for Acoustic Ecology (CSAE) represented by Michael Komatsu Doherty. Our newest chapter is the New England Forum for Acoustic Ecology, led by Jed Speare in Boston.

With our growth in membership we have also organized more successful events than before. 2010 energized our membership with "Listening for the Future," the first ASAE Symposium in Chicago. The momentum continued into 2011, presenting us with a new challenge: steering the ASAE from a small informal group to a larger and more formal organization. The process of defining and clarifying our bylaws, expansion over large geographic regions, managing local and international partnerships, while seeking inclusive ways for our members to define our future, will continue well into 2012 and beyond.

Significant changes in our board's membership include founding member and President Jim Cummings stepping down to be replaced by me in 2010. Our Treasurer and Membership Coordinator, Michelle Nagai moved to Japan. Edmund Mooney serves as our new Treasurer in New York. Michael Doherty has stepped up to serve as our Membership Coordinator.

ASAE chapters organized many notable events in 2011, including soundwalks, educational soundscape activities for children and adults, artists' talks, and phonography concerts. MSAE partnered with the United States National Park Service (NPS) at the Indiana Dunes National Lakeshore in Gary, Indiana for many events through the spring, summer, and fall. This partnership is an important opportunity for the ASAE. Michael Doherty, our Colorado chapter founder has met with the NPS Natural Sounds and Night Skies Division recently. In July, the Natural Sounds Division participated in the second annual World Listening Day, a significant global event initiated by the World Listening Project (WLP). It attracted many hundreds of people and dozens of organizations to observe, celebrate, and explore all forms of listening practices connected with acoustic ecology. Among other partnerships and connections, ASAE members serve on the Steering Committee of the Global Sustainable Soundscape Network that Professor Bryan C. Pijanowski is launching with support from the National Science Foundation, and ASAE Vice President Andrea Polli is Artistic Director of the 2012 International Society for Electronic Arts (ISEA2012) conference in New Mexico.

ASAE depends on our website to communicate our mission and news. SWSAE chapter representative Brandon Hawley plays an important role in ASAE's online presence. He helped set up its own domain, created our logo and helps in its all-important maintenance. Visitors to http://acousticecology.us can link to the respective websites and e-mailing lists of our affiliate chapters close to their cities, and learn how to join.

Growth is often a mixture of dread and wonder. While exciting opportunities are on the horizon, with our so-called economic recovery said to be a "jobless" one, so is a growing sense of despair. I hope our experience can serve as a positive lesson for our sister affiliates in the WFAE, showing some ways to negotiate the challenges of running a small organization with a very big mission: finding ways to be responsive across large physical distances, and to understand how the future depends on individual actions. Working best when and where we can listen to each other's unmediated voices, we hope to continue educating our public on the value of acoustic ecology as it contributes and enriches so many activities in professional and personal life.

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Finnish Society for Acoustic Ecology (FSAE)

by Noora Vikman

Greetings from Finland!

This year the Finnish Society for Acoustic Ecology (FSAE) has been active mostly in two different geographical areas: Turku and Northern Karelia, as reported in the WFAE's online Newsletter throughout 2011. Internationally, the FSAE has been participating in the EU funded project *European Acoustic Heritage* that will continue also in 2012. See: http://europeanacousticheritage.eu.

In 2011 Turku was one of the Capitals of Culture in Europe and in that context several sound art projects were presented. One of these was the project *River Aura Symphony*. The FSAE was the producer of the project *Turku is listening* which will be developed into a future project of the *Turku Listening Map*. A strong continuing aim is to develop Turku into a centre for sound art.

In Northern Karelia an active group from the town of Nurmes wanted to realize the project *Soundscapes of Pielisen Karjala*. The aim was fore mostly to activate young people into exploring the soundscape and teach them to record and edit sounds. Stephen Schwarz from Danish radio visited and gave a lecture in Nurmes in August. Two groups of young girls who participated have become the pioneers who started collecting soundscapes of Pielisen Karjala. This collection has been opened to the public and all suggestions and possible recordings will be archived in the museum of Nurmes. This page is unfortunately only in Finnish: http://pielisenaanimaisema.blogspot.ca.

In Joensuu – also a North Karelian town and the home of the University of Eastern Finland – the FSAE participated in

organising a soundscape competition with the local association of popular music. We received over 150 works from all over the world. It was surprising, even if the growing interest in soundscapes may not be a secret to anybody reading this journal. Also this competition project – altogether an encouraging experience – may now be the seed for a fruitful continuity, something we may call cultural sustainability: it is hoped to be reorganized biannually in the future. We will let you know. Meanwhile you can read about the contest setting here: http://www.ilosaarirock.fi/popkatu/2011/index.php?option=com_content&view=article&id=16&Itemid=24.

One important theme concerning sound environments that is getting more attention in Finland is silence. Finland is marketed for international travelers as a silent place with the theme "Silence, please". Have you heard anything? The following website is unfortunately only in Finnish: http://pielisenaanimaisema.blogspot.com.

As part of the research project *Soundscapes and Cultural Sustainability* led by professor Helmi Järviluoma-Mäkelä, Dr. Noora Vikman is now continuing her research on the subject of silence or rather quietness. The main aim – very shortly – is to study how quietness is utilized as a resource and an image especially in the tourism business in Northern Karelia. Getting an opportunity here I encourage you all to follow the echoes of this "national marketing project" and report any reflections of Finnish "silence" outside Finland. I would also like to encourage all you listeners to send me any hints or questions about phenomena related to this subject or similar (marketing) ideas you have been encountering in different places around the world. Please contact me via email: noora.vikman@uef.fi

See also:

http://socsproject.blogspot.com/p/about.html

http://socsproject.blogspot.com/p/project-group.html

http://formin.finland.fi/public/default.aspx?contentid=206413&nodeid=15145&contentlan=2&culture=en-US

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Hellenic Society for Acoustic Ecology (HSAE)

by Ioanna Etmektsoglou

The Hellenic Society for Acoustic Ecology had an active year mostly focussed on the preparation of the WFAE 2011 Conference in October and in the editorial of the current issue of the *Soundcape* journal. Through these major projects--often challenging for our small team--we had the opportunity to communicate, cross listening paths and create human bridges at local and international levels.

In terms of other actions, we initiated an English version of our society's website, and carried out workshops on acoustic ecology for students, educators and the general public in several parts of Greece (Corfu: May & September 2011, Chania: June 2011, Skiathos: December 2011). At the level of college education, acoustic ecology continues to be incorporated in the professional training of composers, music educators, sound technicians and ecologists in the following Greek academic institutions: Department of Music of the Ionian University and its Electroacoustic Music Research and Applications Laboratory, Department of Music Technology and Acoustics of the T.E.I. of Crete, Department of Sound Technologies & Musical Instruments of the T.E.I. Ionian Islands, Department of Ecology, School of Biology of Aristotle University of Thessaloniki and possibly others.

A final project with educational ramifications sponsored by the HSAE in the past year has been the Greek translation of Murray Schafer's book: *"HearSing: 75 Exercises in listening and creating music"* [D. Tsagaraki (transl.), I. Etmektsoglou (ed.)]. Future plans of the HSAE are a) to build on the communication established at local, national and international levels through exchanges and common projects, b) to increase its membership, c) to continue and expand on the educational work and d) to encourage more members to take active roles, including the management and enrichment of the society's website (http://www.akouse.gr).

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Japanese Association for Sound Ecology (JASE)

by Masami Yuki

JASE is working with the Soundscape Association of Japan (SAJ)—domestically, in fact, all JASE members join SAJ. Here are some of the highlights of our activities this year.

As usual, we all enjoyed SAJ's annual events—a symposium held in the spring of 2011 and an academic meeting held in the autumn. First, the annual symposium, which was held at the University of Yamanashi on May 14, focused on the "(Re-)Introduction to Soundscape." In order to explore soundscape as a middle ground of different fields, three young scholars gave talks on soundscape study in the fields of sociology, education, and art respectively, followed by a discussion. As the SAJ's first such event, the whole event was u-streamed, too. The next day, on May 15, members joined a soundwalk at Katsunuma footpath, an area known as the most famous viticultural area in Japan. Second, we had our annual academic meeting on November 11 and 12 at Kumamoto University. Nine members gave presentations each from the perspective of artistic, educational, or academic fields. Members enjoyed a special session on modernization and sound at the university campus as well.

Of special note regarding SAJ's activities during 2011 were a series of soundscape projects focused on the earthquake disaster of 3.11. As was reported in the WFAE Newsletter 8.6 (Nov./Dec. 2011), some SAJ members visited Miyagino in Sendai, which was severely damaged by the earthquakes and tsunami, and they researched the local bell crickets whose beautiful sound is recognized as one of the 100 iconic soundscapes of Japan. See: http://en.wikipedia.org/wiki/100_Soundscapes_of_Japan.

There is also a project in motion to visit another place included in the 100 soundscapes of Japan: Ouchijuku, a former post town located in South Aizu, Fukushima, which preserves remnants of the Edo period (1603–1867).

The SAJ has continued the discussion of what we can and should do in response to the devastation of the 3.11 earthquakes and tsunami.

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Exploring Balance & Focus in Acoustic Ecology

By Hildegard Westerkamp

Keynote Presentation at Crossing Listening Paths,
International Conference on Acoustic Ecology
Corfu, Greece, October 3–7, 2011

This article features accompanying sound files, available online at: **http://www.akouse.gr/soundscape_journal_Vol11/westerkamp.html**
Or if preferred, the entire keynote presentation can be heard at the same online address.

The presentation begins with this sound example: Backyard soundscape in Vancouver, with the following welcoming words:

> *It is September 20th in Vancouver – a sunny September day – in a residential area – a fountain in the background – sirens, traffic – air planes – sounds from the nearby tennis court – birds in the maple tree* – chickadee-dee-dee*, the chickadee. And yet for you in Corfu it is October 3rd in the morning – you have just all gotten together for this conference – and hopefully there is great excitement about what you will be experiencing at this conference in the next few days – so at least I can offer my voice to this event, some thoughts, ideas, sounds, words – we can see this as an opportunity – you can close your eyes while you are listening, since there are probably no visuals in this presentation – I am grateful that I am having this opportunity to do this presentation in this way and I thank all the organizers in Corfu, my friends and colleagues, very much for this.*

Introduction

The world at this time is in quite a bit of turmoil – environmentally, politically, socially, economically. Our conference hosts live in the middle of one right now that – I imagine – must have created some extraordinary challenges in their conference preparations. Despite it they kept going, following their passions and interests, working hard and against all odds. That's why we are all able to gather for this event now. Please let's acknowledge this and thank them warmly and loudly with a big round of applause.

Applause expresses how an audience feels about a performance or presentation. Is it a supportive sound, enthusiastic, bored, happy, moved, angry, or indifferent? Applause also gives us feedback about the room acoustics: how reverberant or sound absorbent it is; how the space distributes the frequencies, whether the space transmits all frequencies equally, or whether it emphasizes certain parts of the spectrum more than others, and so on.

I had a spectacular applause experience a few years ago when I visited the ancient amphitheatre of Herodeion, built at the base of the Acropolis in Athens. I had gone because I was curious about its acoustics. By chance a concert of Greek folk music was on that evening. The theatre holds 5000 people and was packed that night. Quite apart from the enthusiastic expression in the 5000 claps, the acoustics of this amphitheatre gave the applause a powerful brilliance and transparency. As a result my ears were drawn right inside this sound, into the whole massive texture, while seemingly hearing each little grain, each clap. I found my ears actively moving inside this entire acoustic space, inspired by its clear quality, crisscrossing through the full sound spectrum, and investigating the multiple ever-changing rhythms among the many little clapping grains. Similar to how one can listen to flowing water.

Sound Example: creek, water flowing

When I was invited to do this keynote presentation, I told Ioanna, Andreas and Katerina that I would gladly do it, but I could not be sure that I could be there in person. My presentation however would be there. So here is my voice presenting to you in Corfu while I am fast asleep in Vancouver.

I will be crisscrossing through a network of listening paths in this presentation, a network that is deeply characteristic of the field of acoustic ecology, indeed perhaps even its essence. My main theme for this journey is exploring the *idea of balance and focus in acoustic ecology* – a theme that has been our deepest challenge since the beginning. And even now, each conference and each soundscape journal struggles with the same issue. How can we find focus and balance in such a vast interdisciplinary, intercultural field – in a field that has listening at its very core of study and educational action and therefore naturally touches on all aspects of life. Like all of us, I will be coming to various crossroads in this network of listening paths where ideas will meet, overlap, or grow apart. As in a soundwalk, even though there is always a bit of a plan and pre-composed route, I may walk along unplanned and unprogrammed paths in this presentation, stop and listen to unexpected thoughts and sounds that will come up in the process. Please join me on this journey in thoughts, words and sounds.

Already in these first few minutes we have walked on various listening paths that highlight issues of balance in the soundscape. Let's take the ambience in my backyard: at the beginning of the recording the soundscape does not sound like a garden soundscape.

Sound Example: Backyard, Vancouver, loud

Sirens and airplanes dominate. After these recede, the closer sounds of water, birds and wind become more audible. We are more clearly inside the garden now, at the same time hearing sounds half a block away of tennis balls bouncing while still aware of distant urban sounds.

Sound Example: Backyard, Vancouver, quieter
From the listener's stance in the garden this soundscape is completely out of balance at the beginning of the recording. The acoustic space of sirens, plane and traffic overlap significantly with the acoustic space of the garden soundscape and indicate that we are close to a number of hospitals, under a flight path of seaplanes as well as jets, and that there are nearby and distant roads. After a few minutes in this recording a more balanced relationship develops between all sounds of this location: the foreground sounds, although not exactly dominating, are present enough to establish a sense of place and focus inside the garden; the mid-ground sounds from the nearby tennis court and park connect the listener to the activities in her immediate community, while the distant traffic sounds make it clear that this garden is in a fairly central urban neighbourhood of Vancouver. Considering the urban context, the quieter parts of the recording could be indicators of a relatively balanced garden soundscape.

Sound Example: Footsteps in quiet ambience (continues under text off and on for a few minutes)
However, when this listener returns home from a time in quieter places, even the quietest moments in this garden seem acoustically imbalanced. The *memory* of an ambience without traffic, planes and sirens creates this perception of imbalance. Similarly if one were to come from a noisy, lively soundscape into a silent space that feels oppressive and lifeless, a strong sense of imbalance would be perceived as well. Like all transitions in life, these transitions in soundscape and perceptual experience, unpleasant or difficult as they may be, can in fact be important opportunities of learning. Rather than getting frustrated, depressed, or angry, these transitional experiences, *if sufficiently noticed*, may be wake-up calls, significant sources of inspiration that may spark action in us to make creative changes in our soundscapes – may in fact cause us to rebalance what was out of balance. The keyword here is: if sufficiently noticed. Interestingly enough many noise studies, if they include the listener at all, avoid such transitional experiences, as they add a level of complexity that is daunting to say the least.

> Ecological balance has been defined by various online dictionaries as, "a state of dynamic equilibrium within a community of organisms in which genetic, species and ecosystem diversity remain relatively stable, subject to gradual changes through natural succession." [1]

When I was addressing the applause earlier, I was talking about different ways of listening: on the one hand a more analytical form in which we listen to the acoustic properties of the sound and how the room acoustics feed the sound back to us; on the other hand listening to the tone and emotional expression of a sound. In most situations we make sense of sound meaning by applying these two types of listening and balancing them simultaneously in our own personal way. Blesser and Salter in their book *Spaces Speak, are you listening?* distinguish between these two with new terminology. They say that

> …Acoustic architects focus on the way that space changes the physical properties of sound waves (spatial acoustics), whereas aural architects focus on the way that listeners experience the space (cultural acoustics). Although some individuals function as both aural and acoustic architects, the fundamental difference in the two functions is the distinction between choosing aural attributes and implementing a space with previously defined attributes.[2]
>
> Ideally it would be acoustic ecologists who function as both aural and acoustic architects. If so, it would mean acquiring and balancing the know-how of both approaches. The task would also be to aim for an *inner* balance inside our listening attention, that will shift in emphasis continuously precisely because we would be traveling on two different listening paths at the same time. The more conscious we are of this process the more we may be able to keep a dynamic equilibrium – the term we just heard in the definition of ecology – between various listening levels and approaches. So, the multiple listening paths do not just cross in the external multidisciplinary sound worlds, but also in our very personal inner world of sound experience and listening.

For a moment lets examine the type of listening balance that American composer Pauline Oliveros proposes. She illustrates it visually with a simple, drawn image: a circle with a dot in the middle.
She says:

> While one's attention is focused to a point on something specific, it is possible to remain aware of one's surroundings, one's body, movement of all kinds, and one's mental activity (in other words remain aware of inner and outer reality simultaneously). Attention is narrow, pointed and selective– that's the dot in the middle. Awareness is broad, diffuse and inclusive – that's the circle. Both have a tunable range: attention can be honed to a finer and finer point. Awareness can be expanded until it seems all-inclusive. Attention can intensify awareness. Awareness can support attention. There is attention to awareness; there is awareness of attention.[3]

This balance about which she speaks is relatively easy to experience in such a soundscape as this:

Sound Example: Crickets, at Ioanna Etmektsoglou's place, Corfu 2010
I recorded this in Corfu from Ioanna's house south of Kerkyra in July of 2010, in the middle of the day when it was about 35° Celsius! The crickets are the point of focus, the dot in the middle. All other sounds are the circle of awareness around it.

But let me tell you of a recent experience where this concept of balance in listening was challenged hugely but ultimately elevated to a higher level of balance and equilibrium, precisely because of the challenge.

I had signed up for a five-day yoga intensive workshop in town. A construction site was in full action right next door during the entire workshop. We all knew that the class could not be moved and the noise was going to stay. We all wanted to be there, work hard and stay positive. But really the instructor's stance was key here. Her voice stayed calm and clear throughout. She made sure we could hear her. Her words and instructions emphasized and encouraged intense engagement with our physical bodies and a positive spirit, and deeply focused our attention to the task at hand.

Her wacky sense of humour also helped. In one instance when we had returned from lunch and were asked to relax in a restorative pose that would help with digestion, she suggested, "just pretend that it is your digestive system, those sounds out there".

Sound Example: Construction noise near yoga studio, Vancouver, 2011 (continues under text for a while)
This was one of the very few times when the noise was even spoken about. The intense intrusiveness of the noise could have become a huge and negative issue during those five days. Instead we had a positive, enriching experience and felt truly rejuvenated by the end

1 http://www.panda.org/about_our_earth/teacher_resources/webfieldtrips/ecological_balance

2 Barry Blesser, Linda-Ruth Salter, *Spaces Speak, are you listening?* 2007. MIT Press, Cambridge, Mass., London, England, p. 5.

3 Pauline Oliveros "On Sonic Meditation" in *Software for People*, 1984, Smith Publications, p. 139

Window of Faliraki (the main conference venue) where Westerkamp's keynote speech was heard.

of it. How was this possible? When external pressures are present and we cannot escape them for whatever reason, our focus *has* to turn inside and with extra strength and determination. Inner focus and inner expansion become a necessity for survival in such instances.

I said earlier that Oliveros' concept of balance in listening attention and awareness was ultimately elevated to a higher level in this instance. Let me explain. Awareness of the noise was inevitable as it was right in our face. And intense inner focus was a necessity as a result if we wanted to get anything out of this experience. Visually the circle and dot image would be drawn in bold for this occasion.

We could have used all our psychological effort to block out the noise, to fight it in some way, to numb ourselves to it. This would have meant, that we had closed our receptive listening door not only to the outside but also to our inner world. Instead the atmosphere in the room suggested that we accept the presence of the noise and use our energy to find the inner focus for the yoga tasks at hand. I found that it created a kind of highlighted equilibrium between inner and outer sound worlds, leaving enough room for experiencing both, even moments of receptive listening to the construction sounds.

I had experienced this kind of listening stance consciously for the first time in India: for example in a meditation room while outside loud car motors and trucks were struggling up a mountain road, or people worshipping in deep inner focus at a temple while crowds and noises, hustle and bustle happen around them. Strangely there was a feeling of balance in these situations as well: a strong sense of inner calm and silence in the face of unpredictable noise mayhem from outside. In this culture, the inner world is a source of sacredness that empowers daily life. It is that which seems to give such situations what I called earlier, an elevated sense of focus and balance.

None of this is to say that we should buckle down and accept unbearable soundscapes in our lives, of course. It simply points out the many complexities we face in the acoustic environment and in the relationship we have to it. Each soundscape situation has its very own characteristics, each culture, each listener reacts uniquely. And it is precisely this complexity that challenges us as acoustic ecologists to keep opening our listening, to keep up the practice, to keep on learning at all stages of our work and action.

Again the word dynamic equilibrium jumps into the foreground here. In acoustic ecology it would imply the recognition and acceptance of the continuously shifting sound dynamics that are characteristic for most soundscapes. The shifts occur over time and that fact alone demands continuous openness and flexibility in aural perception from us, no matter what is studied. What is stable and not shifting is the acoustic ecologist's commitment to listening.

And it is precisely this that needs improvement and increased understanding in all of us. How can the practice of listening be better learnt and developed. Blesser and Salter discuss various scientific studies that examine how sensory practice changes the brain. I quote:

> There is evidence that those who practice a sensory or motor skill for thousands of hours change their brain wiring. Neurological studies […] show that the cortical regions that process specific auditory cues are larger in conductors, musicians, and those with visual handicaps than in other people. […] Listeners strengthen their neurological structure by repeated auditory exercise, just as athletes strengthen their muscles by physical exercise.[4]

Can we develop a school of listening practices specifically for acoustic ecologists? Already in 1967, 44 years ago, Murray Schafer wrote his book *Ear Cleaning*, and in it he says,

> Before ear training it should be recognized that we require ear cleaning. Before we train a surgeon to perform delicate operations we first ask him to get into the habit of washing his [or her] hands. Ears also perform delicate operations, and therefore ear cleanliness is an important prerequisite for all music listening and music playing.[5]

…and for all soundscape listening and soundmaking, I might add.

Ear cleaning can happen through one powerful listening experience that will never be forgotten. Or it can happen over a longer stretch of time. But once the ears have been cleaned, unplugged, opened, it is impossible to close them again. This is an important and necessary first stage that has been part of our work now for a long time. But my sense is that we are at a cross roads now. While ear cleaning

4 Barry Blesser, Linda-Ruth Salter, *Spaces Speak, are you listening?* 2007. MIT Press, Cambridge, Mass., London, England, p. 36

5 R. Murray Schafer, "Ear Cleaning", in *The Thinking Ear*, 1986, Arcana Editions, Toronto, Canada, p. 46

needs to remain part of our ongoing professional practice, a rigorous ear *training* program – specifically for acoustic ecologists – needs to be developed and implemented and needs to include soundmaking training for obvious reasons: a central issue in acoustic ecology is about the balance between listening and soundmaking, impression and expression, input and output. In *Ear Cleaning* Schafer addresses this as well:

> […] as a practicing musician, I have come to realize that one learns about sound only by making sound, about music only by making music. All our investigations into sound should be certified empirically by making sounds ourselves and examining the results.[6]

This also means understanding and using the terminology, the language of the various fields to do with sound, music, noise, acoustics, ecology and more. Listening to them, being open to them, speaking them ourselves in competent ways – this is not only another type of balance in listening and soundmaking, it is also the moment when we start to cross each other's listening paths in a very real and informed sense.

I would like to suggest an additional aspect to such a program. Like in the study of psychology that requires a rigorous self-analysis, I would like to propose that every budding acoustic ecologist might benefit from undergoing a process of inner study and self-reflection in order to better understand what kind of soundscape listener and soundmaker he or she is. With that knowledge as a basis, issues of acoustic ecology and balance I believe can be studied and understood more profoundly.

In my own erratic way I voluntarily underwent what I called a personal case study in the late 80s, which was motivated by what I perceived as a personal oversensitivity to aspects of the soundscape and I found that disturbing enough to want to do something about it. This case study became part of my Master's Thesis in 1988 entitled Listening and Soundmaking, A Study of Music-as-Environment. As a balance to the rather serious academic study I ended up satirizing it in my performance piece *Cool Drool*. Let me play you an excerpt of the piece, performed during a Vancouver New Music concert in the 1980s, in which I speak of this oversensitivity. I apologise for the rather poor recording quality, but the point comes across despite it, I believe.

Sound Example: Excerpt from ***Cool Drool*** with following text:

> *I want to listen to background music because it affects me. The worst schlock can make me cry, especially if it is in a minor key or if it's a Christmas song or if I feel vulnerable. It makes me angry when that happens.*
>
> *We are all sophisticated listeners here? How can we stoop so low and helplessly sink into the swamp of Muzakland? It is interesting to note that between 1963 and 1971 the Muzak Corporation was a wholly owned subsidiary of the Wrather Corporation, who also owned Disneyland Hotel and the TV film series "Lassie", "Lone Ranger", and "Sergeant Preston".*
>
> *It seems politically and ideologically simply incorrect to cry to the tune of Muzak.*
>
> *Nevertheless, it does affect me. If it affects me it must affect others. The Muzak Corporation itself – through its "Human Engineering Laboratories" – has done enough research to prove that it not only affects people, but it affects them in very specific ways. I quote, from Muzak's own publicity material:*
>
> *People are encouraged to work harder and to be more relaxed at jobs, which – by nature – may not be exciting or motivating...*
>
> *The music should be barely noticeable, and non-distracting – a soft fog, or music you "breathe"... It is not the music itself that increases production, but rather, the relief from the monotony of the work that the music provides.*
>
> *End of quote.*
>
> TAPE ON: churchmusic by the cash register
> (sound of cash register)
>
> *We are at Eaton's. A few days before Christmas. This is the men's clothing department. Two loudspeakers are placed close to the cash register.* (banging of cash register, rustling of bags)
>
> (instrumental) *The music invokes the image and atmosphere of a cathedral* (chorus comes back) *and thereby the memory of religious celebration.* (men sing main tune, one phrase) *It creates a holy atmosphere around the cash register, makes it an altar.* (voice on tape, cash register) *It is as if one is involved in a holy act while paying for the goodies.* (cash register)

My thesis argues that the existing delicate balance between listening and soundmaking in quiet environments is vulnerable to the influx of externally imposed "voices". It proposes that "MUSIC–AS–ENVIRONMENT"—and I am referring here to background music or Muzak—is such a voice, which encourages "distracted" listening habits and silences our own voices. Proceeding from the soundscape and acoustic communication perspectives developed by Schafer and Truax, it argues that music–as–environment has a "schizophonic" effect on the human soundmakers/listeners and thus dislocates them from their physical present and the self.

The irony has it that I am joining you in your space in full schizophonic presence. I will take full advantage of this situation now and explore the experience of schizophonia in further depth. It is a split or gap that we all have learnt to bridge with a certain amount of ease. In fact, it has become such a 'new normal' (one of the many new normals that keep cropping up as new technologies, new inventions, new attitudes, new habits flood the markets and us) that many people are disturbed by the term schizophonia. Let me remind you of the definition given originally in the WSP's *Handbook for Acoustic Ecology* in 1978:

> (Greek: *schizo* = split; *phone* = voice, sound) The term was first employed by R.M. Schafer in *The New Soundscape* (Toronto 1969, pp. 43–47) to refer to the split between an original sound and its electroacoustic reproduction. Original sounds are tied to the mechanisms, which produce them. Electroacoustic sounds are copies and they may be reproduced at other times or places. Schafer employs this 'nervous' word in order to dramatize the aberrational effect of this twentieth-century development.[7]

The dramatization certainly has worked. The word has received a lot of attention. Initially it simply raised awareness and clarified a very simple fact: the split between the sound source and its electroacoustic reproduction. Nothing more. The fact that the word schizo may imply an unhealthy split was not usually contested in those years. Perhaps it was even perceived as an inspiring, slightly amusing aspect that helped to shift our perception of such soundscapes and perhaps even stimulated us to study them in more depth. Whoever has researched the Muzak Corporation – like I did for my Master's Thesis – quickly recognizes that the term was rather well applied for this corporate practice of piping background music into commercial and industrial spaces.

6 Ibid. p. 46

7 *Handbook for Acoustic Ecology*, Barry Truax, Editor, 1978, A.R.C. publications, Vancouver, p. 109

Sound Example: Background music, excerpts from Cool Drool (continues underneath text for a while)

And there was nothing amusing about this, quite the opposite, the more one studies it the more sinister the practice seems. Muzak created *music-not-to-be-listened-to,* as its own advertising stated then. In other words, it intentionally created an atmosphere of lulling workers or consumers into a kind of false comfort in order to increase production or encourage purchasing and thus its own corporate profits. Because the corporation had done its research about listening perception and psychological reactions to music, the specific approach of piped-in music worked exceedingly well for a long time to the delight of the corporation. Muzak helped corporations, industry and businesses to increase their profit because millions of people became habituated non-listeners, unconscious of how the schizophonic situation attempted to direct and manipulate their behaviour.

That was then. In the late 80s when I wrote my thesis, headphone listening was a relatively new phenomenon. With the Walkman, initially brought onto the market by the Sony Corporation, music listening became for the first time ever, a private experience in public space, and the acoustic environment became further removed from the Walkman listener's consciousness. Nowadays Apple's iPod provides hours and hours more music than the Walkman cassette recorder ever could.

This is the new normal I was speaking about earlier. Nowadays using the term schizophonia tends to backfire. Its dramatic or nervous character is not only rejected but also criticized precisely because for so many people headphone listening or hearing music, voices and sounds over loudspeakers has become a daily status quo. Why would we want to rattle them by calling it schizophonia and thereby suggesting the possibility of an unhealthy trend? Get used to it, may be a current response.

Of course I recognize and don't need to elaborate here that not every use of headphones or loudspeakers means an unhealthy split. But the split simply *is* a fact and ideally we would treat it consciously in our use of it. Despite the wide spread resistance to and critique of the term schizophonia I continue to find its use entirely appropriate especially when there is *no* awareness of the split between source and reproduction. But more importantly, let's go back to the Muzak Corporation in this context.

When I checked its website in 2008 I found a very up-to-date corporation swinging with the modern iPod times. We would be hard-pressed nowadays to call it "a firm dealing in the music of silencing", as Jacques Attali did 20 years ago. Muzak's language has changed; in fact, it *had* to change in order for the corporation to stay in business. Not a word anymore about *music-not-to-be-listened-to*. Instead it aims to affect people's emotions quite directly and openly. Here is some of the language that made up the tone of Muzak's website in 2008:

> MUSIC IS OUR SOUL. IT IS THE PASSION THAT RACES OUR PULSE. ... MUZAK ISN'T ABOUT MUSIC PER SE. WE'RE ABOUT THE EMOTION BEHIND THE MUSIC. ... WHAT REALLY MAKES US DIFFERENT IS THE WAY WE TRANSFORM MUSIC FROM SOMETHING HEARD TO SOMETHING FELT (*written in capital letters on website*).

That was Muzak's language in 2008. Now, 3 years later in 2011 I checked the site again and found a very different tone:

> Music and more for any business.
> Drive your brand. Drive customer loyalty. Drive sales.
>
> At Muzak, we're passionate about the experiences we create and how they impact your business. Your customer experience is a business opportunity. Muzak can partner with you in strategic and creative ways to maximize this opportunity and ensure that every aspect of the customer experience works for you. [8]

No romantic language left here! It's quite simple and straightforward: music will help your business. History shows that it has worked. Muzak's almost 80 years of existence has been successful in spreading this kind of music use all over the world. In fact I would like to go further and propose that it has managed to condition large parts of the world's population towards believing that they need music in the background of their daily life, not realizing that it is potentially masking the real connection to and concern for the environment in which they live. One could argue that this need has taken on an addictive quality especially with those who think that they cannot exist without it.

When I have discussed the issue of music and headphone listening with students, one frequent comment would be "I cannot study, I cannot concentrate without music on". I requested that they do an experiment and study with ear plugs in their ears instead and pay attention to what happens to their concentration. Many of them returned to class, speaking with astonishment about the fact that they could concentrate really well. In some cases this may have been the beginning of breaking an addictive cycle. It may be interesting for someone to conduct a proper scientific study about this.

As I said earlier, over the years Muzak has had to adjust its approach, as consumers on the one hand grew deaf to its soft background music and were seemingly unaffected by its subtle manipulation; on the other hand a younger generation became increasingly savvy as audio consumers, purchasing Walkmans, iPods and light portable recording equipment and thus transformed into more active and perhaps more selective music listeners. In addition computer software that allows anyone to compose music in the digital domain, has created a new generation of potential music makers.

Of course, this latter development was also picked up by Muzak. Like any self-respecting corporation, Muzak also has a community outreach programme. It's name: the *Heart & Soul Foundation*. I quote:

> Heart & Soul is just that, the heart and soul of Muzak—the world's largest business music provider. The Foundation is rooted in Muzak's core belief in the emotional power of music, and extending that power to the lives of today's youth.
>
> The Foundation's mission is to redefine and expand the scope of music education.
>
> ….taking the curriculum and definition of music education to the next level.
>
> …..changing the way we think about music education outside of the classroom.
>
> The Muzak Heart & Soul Foundation helps students turn their passion for music into real world opportunities—by providing teens with new and exciting programs focused on all aspects of the music business.[9]

Cleverly it calls this programme for young people *Noise!* I quote from the website:

> What is NOISE!?
> Aside from what your second grade teacher told you not to make, NOISE! is the first summer program for teens who long to understand and someday be a part of the music industry. NOISE! is loud! Not to mention life altering, mind-bending and dream-inspiring.[10]

The message is: *Noise!* is cool. Muzak is cool. Muzak wants to appeal to the boundary pushing energy in teenagers who like noise, need noise expression in order to make themselves heard in the face of

8 See: http://www.muzak.com

9 See: http://heart.muzak.com/default.aspx

10 ibid.

parental or institutional authority. It seduces by offering a much-needed creative outlet to teenagers but which ultimately educates them to create music speaking the "heart of Muzak" and thus successfully subsumes their creative talents into what they called "muzak culture" in the 2008 website.

So you see, the Muzak corporation knows all about focus and balance. It is clever enough to create its own internal balance: a culture of listening (the music it sells to businesses) and a culture of soundmaking (the training program for young people to make, create music). Not only that, it is aiming to build its own profitable future.

Sound Example: student of NOISE! playing and talking, from YouTube[11]

Our most urgent task perhaps is to create our own listening and soundmaking training program, 'redefining and expanding' the scope of education in environmental listening and soundmaking as an effective balancing agent in the face of such corporate forces.

We can extend this argument into many other areas that involve schizophonic/audio and visual media. Consider the gaming world where we have millions of mostly young people in front of screens whether in an arcade or on the computer, in the internet, intensely focused on often violent games with the corresponding soundscapes – a huge industry making huge profits, giving many people jobs, including the sound designers out of our ranks – creating a most addictive pastime. Considering the soundtracks that gaming people are exposed to daily Muzak's soundtracks seem outright benign. The silence of each player and isolation in the soundscape of their game is the sonic expression of this industry – people caught in a global prison-like network of game soundscapes, disconnecting from their own expressive voice, their family and immediate community, ultimately caught in the corporation's real agenda of the flow of money and profit. The Muzak Corporation and audio industry in my opinion have done their part – by making individual listening under headphones attractive – in moving people further into isolated, ultimately meaningless activities that disconnect them from life reality. We have a big job ahead of us indeed if we want to reach such a population.

But on a much more positive note, I have noticed that many young people quite naturally and spontaneously seek a balance from this isolation behind headphones and computer screens by showing up at our soundwalks. This simple activity of walking, listening and soundmaking, invariably has the effect of not only re-grounding people in their community but also inspiring them about it, about creating a more balanced life between the global attraction of the computer and the local contact and touch with live human beings and reality. The enormous upsurge of music and sound improvisation certainly in North America and Europe may also be an indication of such a natural re-balancing act. In my thesis in 1988 I wrote that:

> …paying attention to and developing body, ear and voice are forms of taking control of one's acoustic and physical existences in time and space; that it is a form of "naming", "composing" and "designing our lives"; and finally that it is a way of being receptive and creative at the same time and thereby acquiring a state of peace.[12]

And today I would add – balance.

I was referring to exactly this when I recommended earlier that every budding acoustic ecologist might benefit from undergoing a process of *inner* study and self-reflection in order to better understand what kind of soundscape listener and soundmaker he or she is. This personal education naturally would need to happen parallel to a rigorous educational program in acoustic ecology. All of us in the field have developed enough experience, materials, documents, recordings, and ideas, to be able to focus it on such a training program. It has been precisely in that balance between the personal experience of listening and soundmaking and the acquiring of the more objective, specialized knowledge about all aspects of sound, soundscape, and the environment that our understanding of acoustic ecology has deepened. It is precisely in that balance also where acoustic ecology is located.

The theme of the acoustic ecology conference in Stockholm in 1998 was *From Awareness to Action*. We all received a *Manifesto for a better environment of sound* that was adopted by the Board of the Royal Swedish Academy of Music, February 8, 1995. It is 28 pages long and really tries to cover all aspects of soundscape issues and listening perception. Let me just read three examples. The first paragraph says:

> Awareness and knowledge about our acoustic environment, its potentials and its risks, must be generated at all levels of society from the individual citizen to governmental authorities. A whole-some environment of sound is based – as all other social situations – on empathy, sensitivity and respect for our fellow human beings' situation or needs.[13] (p.8)

Under Acoustic Ecology it says:

> A new course of studies at graduate school level ought to be established, combining environmental sciences, urban planning and architecture in which acoustics and aesthetics play a central role. Acoustical design studies can be established in schools of art and industrial design. Appropriate governmental agencies and business enterprises ought to be urged to recruit regularly personnel with competence in acoustic ecology in all areas of urban and landscape planning.[14]

And lastly about Hearing Silence:

> Decibel is not a measure of silence but only the intensity of sound waves. Absolute silence does not exist for human beings with functioning organs of hearing. There is always a mixture of sound and different kinds of silence. If one has auditory sensibility one can hear the silence in a pause or between the tones in a harmony or in the song of birds. Becoming sound conscious requires training in listening for moments of silence – and hearing their significance.[15]

Sound Example: Excerpt of Whisper Study

(continues under text for a while)

Whisper Study is based on the whispered words "When there is no sound hearing is most alert". This sentence floated among us, in the consciousness of the WSP group in the seventies. It is by Kalil Gibran and penetrated powerfully enough that my first ever composition emerged from it a few years later, entitled *Whisper Study*. The excerpt you heard is the beginning of the piece.

This sentence speaks of silence as an enriching experience, as one enhancing our listening, as an opportunity for discovery, in a similar sense in which Canadian Physicist Ursula Franklin spoke about it at our very first *International Conference on Acoustic Ecology* in Banff, in 1993. Her powerful words have been quoted often and I will repeat them here again.

11 See: http://www.youtube.com/watch?v=GZxu_PLpyto

12 Hildegard Westerkamp, *Listening and Soundmaking: A Study of Music-as-Environment,* Thesis for a Master's Degree in Communication at Simon Fraser University, Vancouver, 1988, p. 150.

13 *Manifesto for a better environment of sound,* 1996, The Royal Academy of Music, Stockholm, Sweden, p.8

14 Ibid. p. 9

15 Ibid. p. 15

> …silence as an enabling environment…*an enabling condition in which unprogrammed and unprogrammable events can take place.* That is the silence of contemplation; it is the silence when people get in touch with themselves, it is the silence of meditation and worship. What makes this domain distinct, is that silence is an enabling condition that opens up the possibility of unprogrammed, unplanned and unprogrammable happenings."[16]

Soundwalks, where we walk in silence, not speaking, are similarly enabling opportunities. To walk in a group without talking is a rare opportunity in this day and age where few of us engage in spiritual worship and meditation. Such silence enables the deepening of our listening and invariably makes unexpected, unplanned inspirations and recognitions possible in the engaged listener.

I witness this opening of listening perception, this unplugging of ears, again and again in people who participate in soundwalks. Enthusiasm and inspiration invariably mark such moments of true perceptual opening. They are a pleasure and often unforgettable. Would it not be an essential task and a natural desire for any educator, whether in music, psychology, urban planning, acoustic engineering, architecture, environmental studies, biology, and of course acoustic ecology, to enable such inspirational moments in all students?

Taking people regularly on soundwalks is a little bit like building trails into unexplored wilderness environments: like a person walking in an indigenous forest for the first time will recognize what is lost when this forest gets logged, a first time soundwalker will notice what is missed when not listening, when not being aware of the sonic environment. It is as if people experience the rich nature of the soundscape for the first time, and the source of inspiration it in fact can be. And this experience drives most of us listeners to go on many more soundwalks, perhaps even developing a soundwalk practice.

> Acadia University, Wolfville, Novia Scotia, Canada, Sunday, January 23, 2011:
>
> We are on the last day of the Acadia New Music Festival entitled *Shattering the Silence*. It is Sunday morning and we are meeting at 11 a.m. for a 1-hour soundwalk that had been prepared during the previous days by three music students, two of whom had never been on a soundwalk let alone led one. It is deep and cold winter. It had been snowing, the wind had been very icy and piercing during the last few days, and on this day it is –15°C. Luckily it is no longer windy and eventually the sun comes out. The final route leads us through many interesting acoustic worlds, but here I'll limit myself to highlighting just one significant moment.
>
> We have been immersed for a while now in the sound of our footsteps crunching through the cold snow. Suddenly our leader stops in her tracks. All is quiet once the last soundwalker has arrived and stopped. We are standing in a bright and sunny spot. Gradually as if by magic tiny dripping sounds enter our consciousness and enliven the quiet atmosphere. They are warming sounds: despite the freezing weather the sunshine slowly melts the icicles hanging from the roof of a small house. The dripping sounds are random, each drop sounding its own weight and size, drumming and splashing differently onto the frozen ground below. Our ears are drawn into this glassy-transparent and watery-clear sound.[17]

Speaking of listening and soundmaking, focus and balance in acoustic ecology… I will now end my presentation by taking you on a short listening experience to another, hotter place that will keep your ears very busy and occupied.

Sound Example: "Silent Night", excerpt ***From the India Sound Journal*** (composed by the author between 1993 and 1999)

> *"donkey bray"*
> November 26, 1997. This is the season of weddings in India. Last night we witnessed a glittering, rich version from the rooftop terrace of our hotel. Some relative of the Maharaja of Udaipur was getting married. Musical sounds floated up to us from where the guests were gathering to receive the bridegroom. Gradually distant band sounds mingled with the music below: drums, trumpets and euphoniums were approaching from our left, getting louder and at times covering up the other music.
>
> *first brassy, musical phrase*
> We can see the band now, a whole procession of instruments, lights and people accompanying the bridegroom who is arriving on a magnificently decorated elephant. A majestic scene, but the music sounds just as raunchy as at any ordinary Indian wedding. *(brass)*
>
> *multitone carhorn*
> On the street below another small procession of uniformed musicians enters the already dense musical soundscape with its own strangely incoherent wedding band sound and disappears again around the next corner.
>
> *reverb music fades in*
> Another wedding procession announces itself with explosions from friendly firecrackers, two glittering bridegrooms on horseback and huge musical clamour. This time there is no live band. Instead one of those loudspeaker-carts is pushed through the streets and blasts out similarly raunchy music with max reverb, in tandem with the live band still playing at the other wedding.----I can't help but think of Charles Ives' music as I hear all this.
>
> *loud multitone carhorn followed by quieter one*
> Cars, scooters, auto rickshaws are not deterred and squeeze past the procession, honking their way through the music-filled street. In the middle of all this, as if there was still room for more sounds, we suddenly hear electronic fragments of "Silent Night". *(listen to fragment)* The source: a small passenger car. Every time the driver puts the car in reverse gear, this electronic signal is turned on, continuing the tune of *Silent Night* wherever it had stopped the last time he drove backwards. As the driver maneuvers the car back and forth, back and forth in a small alleyway, we are ear witnesses for several minutes to "Silent Night" being ripped into small, sonic shreds.

Hildegard Westerkamp lectures on topics of listening, environmental sound and acoustic ecology, and conducts soundscape workshops internationally. A founding member of the *World Forum for Acoustic Ecology* and co-editor of its journal *Soundscape*, Westerkamp was a researcher with the *World Soundscape Project*, and has taught acoustic communication at Simon Fraser University with colleague Barry Truax. Her compositional work draws attention to the act of listening itself and to the inner, hidden spaces of the environment we inhabit. For details see: http://www.sfu.ca/~westerka

16 Dr. Ursula Franklin, "Silence and the Notion of the Commons" in: *Soundscape – The Journal of Acoustic Ecology,* Vol. I, Number 2, Winter 2000, p15.

17 Hildegard Westerkamp, "Ears Unplugged, Reflections on 40 Years of Soundscape Listening" *Japanese Journal of Music*, Vol. 9, No.1, August 2011, pp. 7/8.

The Listening Workshop: Nature notes from WFAE 2011, Corfu

By Katharine Norman

Mopeds, skateboards, fountains, swallows, swimmers, dogs, birds and whales, and people, rabbits and pheasants, the lady from Farnham and the silent gramophone.

Having to arrive late, I miss the usual rituals of conference registration. A volunteer greets me and another lost latecomer with smiles, and directs us to Murray Schafer's outdoor workshop. It's a nice way to begin—a short walk in the morning sun with a new acquaintance and then a chance to listen.

Photo by Kyriaki Karydi. Visit http://aweekofsoundandsilence.tumblr.com for Kyriaki Karydi's project about the WFAE conference

R. Murray Schafer at the WFAE 2011 conference in Corfu.

The venue is in a shady garden beside a café, overlooking the sea. The air is still cool—in that way that won't last. The workshop participants are local children, and still running around in all directions, chattering and squealing. A trio of small boys peers over the wall to the beach below, giggling at an amply endowed lady who is struggling to make progress against the waves. Their teacher and I exchange a rueful, raised-eyebrows smile. No words necessary. A couple of young girls, enjoying being purposeful and responsible, move chairs into a circle. They lift them carefully to avoid scraping the metal legs against the paving stones. The woman who works in the café behind answers a call and walks out of earshot, rotating on one heel as she talks and listens. She fixes an unfocused gaze on the mid distance in that way people sometimes do when using a mobile phone, suspended in two places at once. Life is a mass of activity, and we are more aware of sound than we might imagine.

The children take their seats, and the workshop begins. Murray Schafer asks them to stand and then sit, doing so as quietly as possible. We listeners smugly agree that we can still hear them—no problem. Then he turns the tables, and asks the 'audience' of adult conference goers to do the same. We rise and sit down again, rather awkwardly, making an effort. The children are equally unimpressed, gleefully identifying the unsuccessfully muted rustles and shufflings of people trying to make no sound. It's a task destined to fail, but of course that doesn't matter; the real task has listening, not silence, as its goal.

Sometimes there is so much to listen to that silence, or at least relative tranquillity, seems a desirable alternative to the more natural, often noisy ways of moving in place. A couple of times in conversation during the conference I was asked for my definition of silence, and about my preferred soundscapes—with the implicit assumption that these would be quiet or somehow 'natural' in character. Silence and tranquillity are a wonderful retreat, but the hubbub of the world goes on, and also has its vast attractions. Why long for silence, or assume tranquillity as a preference? Sitting in silence is an impossible ideal, in any case, while we still breathe; we would none of us last a minute before the smallest child leapt forward to proclaim 'I heard you, I heard you!'.

What makes for a 'good' state for a soundscape is a difficult, moral question. The search for silence has become emblematic of a desire to escape from what appears beyond control and anti-social. But it is people—vocal, loud, garrulous, unpredictable, selfish, greedy and generous, and many other things in unquantifiable proportions besides—not silence, that are not only the problem but also the solution when it comes to creating healthy places in which to live in sound. In one conference presentation Meri Kytö, a Finnish researcher, presents a brief roundup of her ethnographical work on apartment sound: in an apartment block in Finland the first course of action if annoyed by noisy neighbours was to call the police, anonymously, whereas in Istanbul she found this course of action was unheard of: instead, there would be face-to-face discussion between neighbours. Nothing involving human nature is simple, and no solution can be entirely right or wrong. Should we try for legislation or negotiation, or something in-between? Should we lobby for complete prohibition, or cultivate more social empathy so that 'inconsiderate soundmaking' is minimized in consequence? Or should we ban excessive sounding indoors, forcing heavy sounders to stand huddled outside buildings in the freezing cold, listening together to overloud headphone music or talking loudly on their mobile phones. Hey, at least they'd be out of earshot, right? But what would it solve? And perhaps it is not 'quiet' but a measure of individual control that people yearn for.

The workshop is gathering pace. Schafer guides the circle of children through various listening exercises, calling for volunteers to stand in the middle and say their name with different kinds of articulation that the listeners then imitate. It is all good-humoured and giggly, and focused on attention. A tall, gangly boy goofs about a bit, swinging his arms, self-conscious in front of his peers. A bright, cheerful girl plays to the crowd. Her ponytail swings from side to side as she cocks her head to listen for a response, resting her cheek on one finger. Even saying your name out loud can be an intricate social performance that encompasses far more than sound.

The children all know each other from school. The visiting adults are less at home: we watch, listen, smile, and take part in a more restrained fashion— still at that stage where the conference is young and distances are preserved.

Mopeds, skateboards & fountains

As people gradually become relaxed in each other's company their social movement becomes a far less awkward dance. Their senses reach out into an increasingly familiar environment, and with this comes the desire both to listen and respond.

The summer evenings in small Mediterranean towns are perfect for people watching, and listening, and I am a shameless eavesdropper. Old Corfu town, or Kerkyra, is suffused with the putt-putting of the motorbikes and mopeds that are everywhere, insinuating themselves into the winding streets of the Venetian quarter. A young guy pulls up beside a nightclub to shout a greeting to a friend, rocking the moped to a halt as an extension of his body; a middle-aged couple putter by, stiffly upright on a motorbike with their small dog propped up against the handlebars. And in the seafront public park and plaza there's evening chatter, parents calling, and behind it the rhythms of cars coming and going, doors opening and closing, music from clubs and restaurants. A grandfather lifts his baby grandson to touch a fountain, both grin from ear to ear with the self-same smile. A small child on a rumbling skateboard nearly runs me over, her face scrunched up in novice concentration. Friends gather to lose themselves in political discussion; elderly ladies perch in a row on a long park bench, conversing occasionally while watching the world go by; late season tourists stroll past. Greece is struggling in economic crisis, as it has struggled in so many different ways before, and there is worry and concern in the air—but there are also always the rituals of community, maintained in a social landscape that offers its own kind of tranquility—and just happens to create an interesting sound. So every evening while I'm in Corfu I sneak off to this 'fringe' event: a more 'local' conference that comes together and then disperses—a soundscape of people fraternizing, observing, chattering and calling, eventually leaving to settle for the night.

Swallows

The morning air is already heating up as the sky loses its early haze. Overhead, a swirl of darting swallows spits shards of sound into the blue—at first I can hardly make them out, they are so high up that they are almost invisible. But this will become one of the keynote sounds for these days in the hot sun in Corfu, along with the sounds of the waves.

What do the children taking part in this workshop think of their ordinary listening experience? Do they notice the swallows—are they yet embedded in their sense of home? Will they remember them, twenty, thirty or forty years hence, triggered by an unexpected moment of recognition? A few weeks previously, on a windy weekend away in a coastal town in England, I had woken up to sand martins performing the same airborne acrobatics, clicking and peeping above the houses in search of food. It had taken me quite some time to figure out what was happening. But now, this common listening thread binds these two very different places together and I understand the sound almost immediately.

Gilbert White, an educated 18th-century English country parson writing in his home village of Selbourne, sent hundreds of letters to similarly minded naturalist friends. In them, he joyfully describes the natural environment surrounding him; including the annual departure and return of swallows and house martins, which he held in great affection. One of the first to notice migration, his observations of his local environment were written at a time when it was far more common for naturalists to examine and dissect dead, and therefore silent, specimens. But interconnectedness is a living thing. White's correspondence, full of descriptions of birdsong and seasonal change, marks him out as England's first ecologist—one of the first naturalists to have a real concern and respect for the environment, and for his place within it.

When I get home I search for an online sample of the sound of swallows and come across a YouTube video of swifts, which is close enough. The video is lovely, but it's the string of informal comments that move me. They show just how universally important sound can be in defining a sense of home:

"My city (Rostov-on-don, Russia) full of swifts too! This birds building nest under the roofs and balcony."

"I hear this sound every summer here where I live. "

"I love that sound… it reminds me of hot summer days here in Sweden." (www.youtube.com/watch?v=cNy5KltSNLQ&feature=related).

Gilbert White would more than understand what's going on: people are still passing nature notes back and forth, it's just that delivery times are so much faster than in his day, and it is easier to share.

The children and audience have moved on to a new exercise now, this time working together. With eyes closed they try to locate a volunteer who walks around the space talking.

There was a time when people spoke of the 'information highway', as if digital communications would move sedately from place to place to given destinations. But the digital has infused existence with such immediacy that this metaphor has fast become redundant: the digital, for many, is in our very veins—and the current anxiety to curate, archive and 'know' all this information is symptomatic of the realization that, increasingly, the digital is 'us'. Communities gather in the no-places of the online, with people forming meaningful relationships and talking about many things; cultures are formed as entirely digital entities—and there are listening landscapes too, and memories of sound. For some that mediated communication still feels like a dislocated, quasi-schizophonic experience that has negative connotations, but for others, it increasingly feels like meeting in a public square among friends and acquaintances with similar lives, in order to exchange observations, play, and watch the world go by.

Arriving very late on my first night in Corfu, I'd fallen into bed without paying much attention to my surroundings. So in the morning when I eased open the shutters of my fourth-floor room I was surprised by a glorious clutter of mottled tiled roofs studded with aerials and TV satellite dishes. I recalled how in Havana people turn their satellite dishes towards America, seeking US TV stations—CNN news blaring out from semi-derelict houses, and how my English father-in-law in Italy turns his satellite towards the BBC, to catch the news from home. The distance between us contracts as the airwaves fill with sound.

The blind listeners' outstretched arms move together like anemone fronds, as they follow the sounds they are tracking, together. Without even seeing it, they have formed a listening community.

Later, in exactly the same spot in this garden but now in the cool darkness of late evening, conference goers put on wireless headphones to walk around in Marcus Leadley's engaging sound installation. Somewhat in the manner of a Kubisch soundwalk, sound samples are triggered by the listener's position in an invisibly mapped space. It's an intriguing but unnatural experience to be seeking sound in a place you cannot 'see', where it is *you* rather than the sound that moves, and while the parallel visual-sonic world of 'here and now' continues all around. But I think what makes this kind of experience most strange (not necessarily a bad thing) is being publicly engaged in a mysteriously private experience of the spatial world. Wandering around like mad people, swaying and moving to locate invisible sonic signposts, we must look very odd to observers. Indeed I suffer the indignity of being severely reprimanded by a tiny pet dog, despite its owner's protestations.

On Schafer's signal, everyone opens their eyes and laughter immediately ensues, at finding how accurate, or inaccurate, the listening guesses have been. Either way, the experience was evidently a shared pleasure and surprise. Listening in the dark is an interesting game with unexpected consequences.

Swimmers

In the pleasant map-lined room where the papers are presented the windows and shutters are open to let in the trace of a breeze. But noise sometimes wafts in from the downstairs bar so it's a little hard to hear the person talking, and the sunlight throws a glare on the PowerPoint slides. People move to close the shutters. Listening in the darkened, quietened space is fine for a while, but it's not long before the shutters are re-opened, and the outside world returns exultantly. We need to breathe.

During the conference microphones are routinely used to amplify the presenters, with the usual ritual of checking they're on, moving them into position, setting the levels for optimum use. Nobody objects to this unnatural amplification of 'natural' sound: quite the opposite; the audience members are here to listen, and soon indicate when they can't hear. It appears that there are certain sensory aids and prostheses—the projector, the microphone—that are not only tolerated, but welcomed.

There is nothing black and white about sound environments, or about how we listen to them. And there is nothing so simple as a 'sound environment' that is entirely divorced from other sensory experience. When the shutters are reopened, I glance out of a window at a patch of the bluest sea I've ever seen. The sun blazes overhead. In the water, three people well past middle age are treading water so that they can chat together. Suspended between air and sea, they are exchanging gossip, while the salt water laps over their shoulders. A distant ferry passes behind. I cannot hear a word they're saying, but would not have missed that picture for the world.

There have been a series of quiet listening games, and the children are getting a little tired and fidgety. Schafer moves on to an energetic game where two people walk towards each other and swap places. The added complication is that they must move with a silly walk and a sound of their own choosing. And as they pass each other they must 'exchange' behaviour—taking on the other person's walk and sound.

A large stray dog wanders through and watches the children for a while, scratches the ground, gathers that nothing of especial food-related interest is happening, and leaves without attracting very much attention.

Greece is not noted for its concern for animal welfare, and Corfu has many stray dogs in various states of health. A Greek friend informs me ruefully that they are intermittently rounded up and 'put down', a practice I find hard to take. But individual practices don't necessarily fit with the prevailing culture of a place. I also saw a family walking a glossy poodle, a dozy puppy proudly clasped by a teenage girl, and the aforementioned self-important terrier. Life is incongruous. People can be willfully blind or deaf when they feel impotent, or unwilling, to make change, yet sometimes change happens by degrees, as knowledge and values are exchanged. But not always. The solution is not to make attempts to rescue every stray, because there will always be more strays while certain attitudes still hold. So the difficulty is in knowing how and where to start—and often it's not something you can achieve alone.

The game involves a degree of listening and a degree of empathy—and a great deal of hilarity from the audience as, in turn, pairs of children, and now adults too, hop, hobble, scream, whoop, gibber, twirl and skip towards each other. Things are almost raucous, but everyone's listening and nobody's holding their ears. Quiet just wouldn't work, and loud can be exhilarating and bring people together.

Birds and whales, and people

The conference is a joy to be at, and a chance to meet and communicate with people passionate about the sonic environment—presenting our research, talking quietly in the sun, or simply listening. Later in the conference Nigel Frayne, long-time WFAE Chair, provides an extempore history of how the organization came into existence in 1993, formalizing the communications reverberating from the earlier World Soundscape Project. The reverberations continue, with the WFAE's somewhat understated function, to provide 'an international association of affiliated organizations and individuals, with common concern for the state of the world's soundscapes'. Frayne's quietly intelligent comments in paper sessions are a similarly understated highlight of the conference for me.

But most of us attending this friendly, well-organized conference are not members of the WFAE, and the organization's influence remains frustratingly slight outside the community that has come to it via first- or secondhand encounters with Schafer's influential thought. If you are not a member already it's quite hard to find out who the WFAE are—who is on the board, who is currently Chair, what the WFAE does. I received no leaflets or information on joining at the conference. And yet there has been an explosion of interest in listening, sound and environment in the last twenty years, emerging simultaneously in a wide array of disciplines. Only some are regularly represented in this friendly, articulate community, with its emphasis on the media arts and cultural studies, and its focus on the 'state of world soundscapes'.

While the distance between technology and sound may have been compressed, I think there is way too much space between the various constituencies that think, or might think, about sound and environment. Perhaps one challenge for the WFAE, and for its members and potential members it hopes to attract, is to consider how to maximize the potential of a wired, transglobal community, where projects that touch on sound, listening and environment are multifarious, and interdisciplinary, and where sound may be only a part.

Two particular concerns of acoustic ecology are certainly well represented at the conference: the threat from uncaring human activity to rare and precious natural habitats, and the threat to animal welfare from sounds made by uncaring human activity. David Monacchi's live visual and sonic manipulation of the spectrum of equatorial rainforest recordings brings the creatures of this dense soundscape into focus—heightening both their individual communications and the way they are embedded in the sound environment. A stark point is made when this sonic environment is suddenly transplanted by visual documentary footage of logging. It is a simple and effective juxtaposition. We shudder, as sonic beauty is snatched away before our very eyes.

Keynote speaker, bioacoustician Chris Clark describes his work and provides an expert account of sonic pollution from shipping noise and air compression guns used in undersea oil prospecting, and the effect on marine life communication, especially whales. We listeners gasp in astonishment and react with distress. Things are suddenly, and unavoidably close to home. A realist, Clark asserts that simply feeling bad will not change things, and suggests tackling decision makers where it hurts—their policies, their wallets, their political ambitions—as one recourse. Shuddering despite the warmth of the conference room is—to put it brutally—not going to save the world.

More and more, as the conference progresses and one after another interesting study or artistic response is outlined, I ponder on how attempts to 'stop' people, and their noise-making machines, can be at best a temporary patch and at worse a failure to understand the social landscape in which sound is but a part.

If the disciplines that at least touch on considering listening, sound and environment in their daily concerns are not necessarily

represented by the WFAE's relatively small membership, I wonder if there is another mission for the WFAE here? A distributed forum with an international brief is ideally positioned as a place to bring different organizations in different disciplines together in a valuable conversation. A forum is after all a place of assembly: a public square in which to spend time, watch and listen to each other, and strengthen communities. Perhaps a way forward for raising listening consciousness is to build stronger umbrella networks, where those differing and often small groups and organizations who are concerned with sound and listening can bump up against each other in a space about 'listening and sound'—a place as much for interested people who may be just 'passing through' as for the established groups of artists and scholars, scientists, acousticians and ecologists who are primarily invested in sound and environment. Acoustic ecology, in its concern with the sonic environment, has sound and listening—not silence—at the heart of its mission—and sharing that mission on a larger stage might in fact involve making far more noise.

A group of older British tourists pass through the crowd and are rather surprised by all the activity. An elderly lady knows another Brit when she sees one and asks me what's going on. I explain that this is a workshop as part of a conference, and that the children are learning to be more aware of listening and sound. She relays this information back to her equally elderly friend, in the tone of a seasoned expert. 'Oh, they're just teaching them how to hear things!' she says, in a loud stage whisper.

This is the way with games of Chinese whispers: something is always changed in the relaying of half-caught sounds, and what starts as one message can end up as quite another. But even if the message is softened, muted, and fades to a rather less focused definition, perhaps something comes across.

The tourists smile indulgently at the children, watch and listen for a minute or two and then wander off, seemingly satisfied that although they don't really understand the point of what we're doing, it is enjoyable, well-meaning, and benign.

Rabbits and pheasants, the lady from Farnham and the silent gramophone

On one day of the conference we all pile into a boat to take a trip to the small island of Vidos, once a prison island but now an idyllic nature reserve where pheasants and semi-tame rabbits wander around freely in an amusing co-existence. Over a relaxed and friendly al fresco lunch, our table raises a toast in several languages, 'Cheers', 'Good health', 'Yiamis', 'Skaal'! The recent students next to me chatter effusively in Greek, they are helpers at the conference. I ask them about their favourite Greek dishes—really I just want to listen to these beautiful, vibrant young women who are enjoying life so much today. The pines sway gently in the afternoon heat, people produce musical instruments and Greek songs are sung. Several people are recording sound. I wander off to buy a beer and the friendly woman behind the bar greets me in a broad English accent. Browned by the sun, she is still far from being Greek. We have enough common ground to exchange pleasantries for a minute or two and I discover she's been in Greece for over thirty years but she says 'I come from Farnham, Surrey', in the present tense—because, in some sense, it's still home. She sounds as if she left just yesterday.

I see the elderly British tourists next day at breakfast in my hotel, and on the following mornings—always sitting at the same table and fussing with the waiter about the proper way to make English tea. They are making a home away from home via trivial familiar rituals, the same way I stick on my iPod to listen to BBC podcasts when I get back to my room. There is nothing wrong with escaping for a while—whether into silence or into sound.

I make my way inside the taverna in search of the bathroom, and come across a silent gramophone. Moreover, it's a gramophone that could never have made a sound, being crafted from wicker and wood with a pinecone as its stylus. I have no idea what kind of music it might play—perhaps a soundscape of sun and waves, of the talking of friends and a hot October afternoon when many people laughed and sang together. On the boat back to Corfu the Greek flag aspires and flaps against the mast, and the sense of relaxation belies the difficult times.

The workshop ends, and we applaud each other. Chairs are dragged back to the café tables, and people meander off in groups or singly, greeting each other, talking, already on their way to the next event. Somewhere a motorbike revs into action. An electric drill starts up from inside the building behind, or perhaps it has been going on for a while. A dog barks. Above, the swallows wheel and dip in rapidly changing configurations, continuing their intricate sonic communications.

Silent Gramophone

Katharine Norman's endeavours include writing about listening and sound, making creative work through the medium of sound, and thinking about our listening relationships—both sonic and metaphorical—in everyday life. She is currently a visiting research fellow at De Montfort University, Department of Music, Technology and Innovation and has recently guest edited two forthcoming issues of *Organised Sound* journal (Cambridge University Press), on the theme of Sound, Listening and Place. More information on her work can be found at http://www.novamara.com.

Schafer's and McLuhan's Listening Paths Convergences, Crossings & Diversions

By Sabine Breitsameter

Preface

"Viel hat von Morgen an,
Seit ein Gespräch wir sind und hören voneinander,
Erfahren der Mensch; bald sind wir aber Gesang." (Hölderlin)[1]

"… seit ein Gespräch wir sind und hören voneinander…"/"… since we exist as conversation, listening to each other…." This is the line of a long poem by Friedrich Hölderlin, a German poet from the beginning of the 19th century, who is famous for his highly philosophical poetry, addressing themes of Greek mythology and essences of antique thinkers. It might seem unusual to start a lecture about two contemporary personalities, Murray Schafer and Marshall McLuhan, by referring to a German Romantic poet. However, the fragment "… since we exist as conversation, listening to each other…." seems to summarize perfectly the essence of my endeavours, to understand Murray Schafer against the backdrop of Marshall McLuhan and vice versa:

The poem talks about a common "we", a multitude of minds, which identifies itself as a medium of communication: that of conversation. This medium is based on common rules of participation and interaction: listening, sense making, understanding and sound making i.e. practicing a dynamic relationship based on listening and soundmaking. The system of conversation assigns roles and behaviours, creates perceptual structures, coins values, forms social organizations and political systems, and can thus be considered an environment, exemplary for any medium.

This lecture is primarily about Schafer and McLuhan, but on a second level is concerned with environment as a conceptual approach or a figure of thought: creating a specific mindset and relation to world and cognition, which exclusively linear-causal approaches – as cultivated traditionally in technological, historical and sociological sciences – would not allow.

1. Why this topic?

One summer evening 1999, I paid a visit to media theorist Derrick de Kerckhove at the University of Toronto, and entered his base station, the famous "Coach House", in which McLuhan already had worked. Upon entering, I noticed a huge banner quoting McLuhan: "*What John Cage and his indeterminacy was for the notion of music, Murray Schafer and his soundscape was for the notion of space.*" Here, a fascinating connection was made explicit, which nobody else had ever addressed yet.

This year's 100th birthday of McLuhan caused me to revisit this idea. By reading through his major works[2] again, the parallels between him and Schafer – foremost with *The Tuning of the World* – became obvious. Both authors' ideas illuminate each other instructively.

This is in brief what motivated me to explore the similarities and differences between McLuhan and Schafer, and to elaborate on how both their listening paths cross, move parallel, sometimes even become identical, diverge, separate, just to be found again leading into the same direction.

Indeed, I think relating acoustic ecology to the broader discourse of media and perception theory is a very necessary endeavour, as this could help soundscape theory to open up further towards trans- and interdisciplinary joint ventures, detaching it from tendencies of self-sufficient isolation or narrowing it down to a simple belief system.

2. Schafer's and McLuhan's common ground

a) Biographical parallels and contemporary climate

Schafer and McLuhan were contemporaries and compatriots, one generation apart[3]. As Murray Schafer confirmed to me, they periodically had quite a few personal exchanges during the 1970s.

McLuhan, the elder, was without a doubt the intellectual predecessor: at the beginning of the early 1960s, he was a celebrity, with a huge global presence in media, where his ideas were discussed ubiquitously, and stood for a kind of intellectual "Zeitgeist". Schafer sharpened his public profile from the end-1960s[4] on, through publications and compositions, gaining national and international acknowledgement as well as prestigious awards, however never the pop star-like image of McLuhan. It took until 1977 when Schafer's probably most important work, *The Tuning of the World*, was published and earned him a solid international reputation. Both benefited from the tolerant, innovative, intellectual and artist friendly climate during the Trudeau era in Canada.

McLuhan's famous dictum "the medium is the message" provoked the general public and academic scholars alike, as it stated, that the modeling of society's mindset would not happen through topics and opinions, but through the structural conditions of a certain technology.

> (A)ll media from the phonetic alphabet to the computer, are extensions of man that cause deep and lasting changes in him and transform his environment. Such an extension is an amplification of a(n) … sense …, and whenever it takes place, the central nervous system appears to institute

1 Friedrich Hölderlin, Hymnen (1800–1804), Friedensfeier, in Friedrich Hölderlin: *Sämtliche Werke*. Kleine Stuttgarter Ausgabe, 6 Bände, Band 3, Stuttgart 1958, also available at: www.zeno.org/Literatur/M/Hölderlin,+Friedrich/Gedichte/Gedichte+1800-1804/%5BHymnen%5D/Friedensfeier (08.12.2011)

2 I should mention here foremost: McLuhan, Herbert Marshall, *The Gutenberg Galaxy*, Toronto 1962 and McLuhan, Herbert Marshall, *Understanding Media. The extensions of man*, New York 1964.

3 McLuhan lived from 1911–1980; Schafer was born in 1933.

4 in 1967 he published his pedagogical work "*Ear Cleaning*".

a self-protective numbing of the affected area, insulating and anesthetizing it from conscious awareness of what's happening to it.[5]

To understand the order of the senses as caused by electronic media and its technologies, is considered a "survival strategy"[6] by McLuhan: "If we understand the revolutionary transformations caused by new media, we can anticipate and control them"[7], instead of remaining their slaves.

From the beginning Schafer has challenged his contemporaries, with the idea, that our ability and willingness to listen relates to an aesthetic quality in the sonic environment. By identifying cultures throughout history favouring or discouraging the auditory sense, he has been stating that sensory perception is connected with societal circumstances and the different societies' core values. These values are represented by technologies to a huge extent, or more precisely, by society's specific relationships between technology and nature. One could paraphrase and adapt McLuhan's above mentioned statement, and apply it to Schafer, stating: "If we understand the revolutionary influences on the faculty of listening caused by technologies and media, we can free ourselves from them, instead of accepting the resulting perceptual reductions as given facts."

In developing the concept of soundscape, Schafer created a model, which contravenes the signal/noise dichotomy of the engineering sciences and suggests an alternative, all-around listening model, as opposed to the more conventional model of frontal stage- or classroom based listening.

In both authors we find critical attitudes against the prevailing doctrines and authorities of their times. Both express the anti-authoritarian spirit of the 1960s and early 1970s.

b) Intellectual and scholarly references

Schafer's *The Tuning of the World* and McLuhan's main writings show to a huge extent similar bibliographical references: Harold Innis with his holistic approach to space[8], the Nobel Prize winner for medicine Georg von Békésy[9], with his groundbreaking research on the physiology and the concept of hearing, J.C. Carothers with his comparative, trans cultural studies of non-literate and Western mindsets,[10] Edmund Carpenter with his research on Eskimo-culture,[11] Lewis Mumford and his techno-cultural approach,[12] Siegfried Giedion, a historian and critic of architecture, just to name the most obvious ones.

Both, Schafer and McLuhan, share Gestalt theory with its figure and ground axioms, as important background for their theories: both come with a clear philological background building their theories and its exemplifications on an immense knowledge of literature.[13]

c) Common terminologies and approaches

Notable is both thinkers' clearly historical approach: Schafer in *The Tuning of the World* starting in mythological times, tracing soundscapes and auditory cultures up to the present; McLuhan exploring the rise and fall of aural and oral culture beginning with the ancient Greeks.[14]

Evident is their enlightenment critical position, as is their self-understanding as "artist as theorist – theorist as artist"[15], merging scholarly discourse with imagination, speculation, and aesthetization of their respective positions, coming however, from opposite directions: McLuhan coming from scholarly discourse, Schafer from composition, painting and pedagogy.

Two remarkable similarities in terminology refer to McLuhan's, the predecessor's, coining influence: his famous "Global Village",[16] quite a fashionable buzzword from the 1970s on, is very likely to have inspired Schafer's term "Global Composition". Whereas McLuhan's term stands for the electric media's worldwide instantaneous communication and the simultaneous presence and communication of individuals, the "Global Composition" imagines the world as a huge instrument, with a plurality of sounds taking place at the same time, produced by the living inhabitants. The metaphor of "globality" stands for both authors' central concepts of non-linearity and simultaneity.

The second similarity becomes obvious in the use of the word element "schizo". McLuhan stated that "Schizophrenia may be a necessary consequence of literacy",[17] attesting schizophrenia to the whole of the occidental culture, as "phonetic writing split apart thought and action", and passion from intellect.[18] With the term "schizophonia"[19] Schafer describes the potential perceptual irritation for listeners in the face of mediated sound split off from its source: only with the invention of the phonograph the sound of an event or a living being could gain an existence independent from its physical origin.

Both authors view the dominant technologies and their economic circumstances as a condition that determines the level of people's perceptual abilities within a specific society: noticeable are only those perceptual impressions, which are "allowed" for by the technologies, their economy and related structures. It would require a huge effort, in fact, a strong socio critical stance, in order to prevent our well-functioning senses, their abilities and practices, from finally getting reduced or even abandoned by virtue of techno-socio-political conditions.

3. Listening

a) Critique of the visual

When it comes to characterizing the contemporary order of the senses, both authors' critique of the visual plays a central role. McLuhan often refers to the "visual stress" of the present culture, and both talk of a visual bias or a visual dominance in Western societies mainly.

However, their critique of the visual is often misinterpreted. It is not a denigration of the visual as such and as a result is not caused by any anti-sensual impetus – neither by Schafer nor by McLuhan – but it is a critique of the system behind the visual.

In *The Tuning of the World* Schafer builds on McLuhan's elaborations – already widely discussed in the 1960s – that the

5 McLuhan, Herbert Marshall, *Playboy Magazine* (March 1969), at: http://www.digitallanteamcluhan/mcluhanplayboy.htm (08.12.2011), without pagination.

6 Ibid.

7 ibid.

8 cf Cavell, Richard, *McLuhan in Space. A Cultural Geography*, Toronto 2002, p. 20.

9 "for his discoveries of the physical mechanism of stimulation within the cochlea"

10 Carothers, John Colin, "Culture, Psychiatry and the Written Word", in: *Psychiatry*, November 1959, p. 308.

11 Carpenter, Edmund, *Eskimo*, Toronto 1959.

12 Mumford, Lewis, *Technics and Civilization,* New York 1934.

13 McLuhan predominantly based in the literature of the Elizabethan age, Schafer in the Romantic period.

14 especially in *The Gutenberg Galaxy*, McLuhan (1962).

15 cf Cavell on McLuhan: "McLuhan situated his work between critical and artistic discursive system", in: *Cavell*, ibid., p. XiV.

16 "...space has vanished. We now live in a global village... a simultaneous happening" (McLuhan 1967, p. 63)

17 McLuhan (1962), p. 22.

18 ibid.

19 R. M. Schafer, *The New Soundscape*, Toronto, 1969, pp. 43–47.

dominance of visual perceptual habits had originated in Gutenberg's technology of movable typescript and was fortified by the Renaissance and its visual inventions (be it the telescope, the picture-frame stage – *Guckkastenbühne*- and perspective)[20]. For McLuhan this visual dominance corresponds to society's basic principles of homogeneity, linearity and repeatability, of frontal perception and the distancing towards the object of perception. It became fundamental for the development of Enlightenment, the sciences and Western economy, universalizing characteristic structures of print technology by applying them to all aspects of life.

Schafer doesn't follow McLuhan's structural argumentation openly. However, he uses it as a subtext. He explains the visual bias as an expression of industrialization but also of economization, rationalism, consumerism and commodification[21]. It is here where the starting point for his ecological approach is located.

According to McLuhan the ongoing visual bias results from a fundamental misunderstanding of contemporary electric media and its potentials. As a result it has to be terminated and replaced by what McLuhan called the "audile-tactile complex", leading to a better understanding and mastering of contemporary media. For Schafer, however, it is more important to gain a different relationship to the world by apprehending its auditory aspects and not relying predominantly on its visual appearance.

Both emphasize the importance of all senses being interrelated, not replacing one bias with another. They envision that an end to the underrating of the listening sense would lead to an explicit appreciation of the tactile dimension, "the interplay of the senses" [22] and of the physical body.

b) The marginalization of the auditory sense

> Before the invention of the phonetic alphabet, man lived in a world where all the senses were balanced and simultaneous, a closed world of tribal depth and resonance, an oral culture structured by a dominant auditory sense of life.[23]

Many would ascribe this quote to Schafer, but it is by McLuhan, and gives an idea about their similarity. Throughout his writings McLuhan describes the *violent lopsided stimulus* (1960)[24] of linear visuality, which created a closed system, frozen and blocked, numbed against other stimuli, mainly the auditory one. McLuhan named this effect "Narcissus Narcosis", following the Greek myth of Narcissus, who got addicted to image (not being aware that it is his own), and despised what was audible.

This bias, based on the inherited Gutenberg-coined culture, could however change. Thus McLuhan's optimistic assessment: he predicted that the electronic age and the simultaneity of its global village would return humans to the audile-tactile realm. Murray Schafer sympathizes with this idea in his preface to *The Tuning of the World*[25], however does not share his optimism in regard to electronic media.

In the everyday life of industrialized nations, the sonic environment, he states, is often ugly, random and stressful, and besides lacking aesthetics, it rarely carries significance. Therefore, being hard of hearing may seem to be quite an efficient survival strategy. But instead, while McLuhan trusted electronic media for reinstating listening and an integration of the senses, Schafer developed his pedagogical concept of *Ear Cleaning* (Toronto 1967). It centers on creating critical awareness of the sonic environment in which listeners live, with the aim of bringing to their consciousness those sounds, they usually ignore. Ideally this would lead to an overall appreciation of listening as such and encourage a critical listening stance toward the environment, which in turn would enable inhabitants to claim improvements in their soundscapes. – To re-instate listening, Schafer does not trust the media's historical development, but does trust the power of creating awareness through pedagogy and enlightenment, leading to action and change.

c) The "field approach"

In *Understanding Media* (1964) McLuhan explains his famous sentence "The medium is the message."[26] It is not the medium's content, which conveys communication, but the medium as such understood as a "field". McLuhan calls this also a "mosaic approach"[27]: his focus is not on partial aspects of the medium, but he understands it as an entity of configuration and dynamic relationships.

According to E. H. Gombrich this field approach is rooted in Cubism at the beginning of the 20th century.

> [C]ubism sets up an interplay of planes and contradiction or dramatic conflict of patterns, lights, textures, […] drops the illusion of perspective in favor of instant sensory awareness of the whole.[28]

It is this "instant total awareness"[29] which suspends sequentiality and linearity, making such "field" approach plausible.

The medium, so stated McLuhan, is not a conveyor of society's interests and values. But reversely, attitudes and values emanate from the medium, as its respective structure would allow them to come into effect. Around 1968, this must have sounded quite strange, as in Marxist discourse, the liberating or oppressive effect of a medium was assumed to be generated by the content, influencing the recipients' opinions.

What is the connection to Schafer here? With his soundscape model, Schafer turns away from a selective attitude of eavesdropping (listening to a certain content or signal, and ignoring others), but wants to foster an evenly suspended attention to any sound. This "mosaic approach" to the auditory world favours an overall auditory awareness: all at once – nothing should be ignored. Not what you listen to is of main interest, but how you listen. The listening attitude of the soundscape listener when practiced in everyday life will certainly bring the recipient's perception into a different order. This will lead to a different relationship towards the phenomena of the world, and will result in a different hierarchy of values, as it alters the utilitarian perceptual habits of everyday life. These are closely interrelated – as Schafer describes throughout his book – with the predominance of the visual culture, and – as McLuhan made aware and Schafer implicitly confirms – its cultivation of rationalization, sequentiality and linearity.

4. Environment

McLuhan's "field approach" leads directly to the idea of "environment", which both – Schafer and McLuhan – share. In the preface to *The Gutenberg Galaxy* McLuhan mentions early, that instead of the term "galaxy" he could have equally used the term "environment".

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20 Schafer, R. Murray, *The Tuning of the World*, Toronto 1977. p. 10

21 ibid. p. 212, Schafer exemplifies this thought here by pointing to farmland real estate business and tourism.

22 McLuhan (1962), p. 65.

23 McLuhan (1969).

24 literally from: http://learningspaces.org/n/files/mcluhan_educating_senses.pdf (08.12.2011). McLuhan, Herbert Marshall, „Report on Project in Understanding New Media". (National Association of Educational Broadcasters 1960).

25 Schafer (1977), p. 11.

26 McLuhan (1964), p. 25.

27 McLuhan (1962), p. 0. (Preface – without specifying headline – directly before "Prologue", no pagination).

28 McLuhan (1964), p. 25.

29 ibid.

a) The environmental Gestalt

By establishing the term "environment" McLuhan had obtained a new concept. For him, an environment is technology based: this means, based on script, papyrus, wheel, electricity, etc. which all led – after their respective invention and propagation – to fundamental environmental changes.[30] He conceived of environments not as "passive containers", but as "active processes that reshape people and other (*older*) technologies alike",[31] constantly reconfiguring their elements, and involving their recipients as environments' interactive parts.

Schafer's central term soundscape[32] is characterized by the same dynamics. It derives from landscape and suggests first of all soundscape as an acoustic representation of a visual appearance. However, the term implies much more: Schafer introduced it to emphasize, that our auditory experience of the world cannot rely on the attitude of selecting the assumed signal and ignoring the rest of the present sounds as noise. It is the entirety *(Gesamtheit)* of sounds, which constitutes the identity of a place, space or situation, and makes up a soundscape.

" Soundscape" shifts the time-based notion of sound to a spatial notion, without neglecting its time factor. Instead of segmentation and sequentiality he established an "all-in-one" and an "all-at-once." This complies with McLuhan's field approach. And it was Barry Truax' *Acoustic Communication* (2001) which brought Schafer's implicit assumption to the surface of soundscape being a process and a dynamic entity: that its three basic elements, "listener", "sound", and "environment" are in a constant process of re-adjusting to each other, continuously shifting their relationships to each other. Through this, the similarity to McLuhan's environmental paradigm, stated in the early 1960s, becomes obvious.

An agitated, interactive and participatory "all-in-one" and an "all-at-once", this is the environmental Gestalt McLuhan established and Schafer concretized. The awareness that this environmental concept creates, transgresses the borders of a mere cognitive model and paves the way for what McLuhan called the idea of "environment as artwork": "[…] designed to maximize perception."[33] At the time however, he was not able to exemplify concretely what this might be[34]. But examples for similarly novel artistic endeavours, such as installation art[35] or the sound environment became numerous.

b) The novel space concept of acoustic space

"You can't have a point of view in the electric world!" exclaimed McLuhan in a TV-interview 1967, "You have to be in everything at once, whether you like it or not. You have to be participating in everything going on at the same time."[36] In order to substantiate this figure of thought, with which he explained the new effects of electronic media, McLuhan had been researching for its existence since the 1950s. He found it in the concept of acoustic space.[37] Acoustic space, not to be confused with the Engineering Science's notion of spatial acoustics, is for McLuhan the concept of a space that is not enclosed, and therefore not to be defined visually. The Vancouver-based McLuhan researcher Richard Cavell impressively describes how agonizing McLuhan's struggle to find a space concept was – a concept which definitely does not follow naively the linear and sequential perceptual habits of the visual culture, but allows for the experience of perceiving different impressions simultaneously. Not earlier than 1967, McLuhan stated clearly: "The ear world is a world of simultaneous relationships."[38]

At that time, the term soundscape had not yet been born. It did not become popular before the end of the 1960s.[39] It is the term soundscape as coined by Schafer which meets McLuhan's requirements for this new, and moreover alternative, space concept: simultaneity, all-at-once, the interactive dynamics of the soundscape's elements, as well as the impossibility of a fixed "point of view".

From the musicological point of view, the term soundscape realizes a "field approach" to sound – in the late 1960s a very unorthodox idea. The famous aphorism "The medium is the message", corresponds perfectly with the notion of soundscape configuring the senses, recipients, contents as well as perceptual and communicational behaviour towards a holistic and inseparable entity. With the notion of soundscape, Schafer completed McLuhan's idea of space and unfolded it – still stuck between visual and auditory thinking – fully. As the listener is an active element in a soundscape, the process of listening can be considered a systemic one, which is precisely how perception, is generally understood by McLuhan.

It needs to be mentioned at this point, that both contemporaries never relate in their major writings to new phenomena developing in the artistic world, although the avantgarde at this time delivers excellent and plentiful examples for new space concepts and the environmental figure of thought. John Cage clearly represents a field approach to music, starting with his spectacular performance "*4'33*" in the early 1950s. Allan Kaprow with his "*Environments*" which definitely were the immediate start off point for installation art coming up during the1960s, not to mention the new genre of sound installation (the first ones by Max Neuhaus or Maryanne Amacher in 1968) or network based performances (by Cage in the early 1950s, and by Stockhausen in 1968 for example).

Even if not all of these artists have consciously adopted McLuhan's and Schafer's idea, the latter have definitely shaped the discourse and thereby created a milieu – one could again say, an environment – in which sonic, visual and tactile experiences based on new notions of space became organized in a novel way.

5. Ecology

a) McLuhan's structural term

Although McLuhan rarely used the term ecology, it emerged as one of his central ideas, describing his overall methodology. His endeavour to understand media as systems and environments was motivated by regaining control over them, which he considered a matter of survival[40] – a survival in the sense of being able to master

30 McLuhan (1962), p. 0 (Preface – without specifying headline – directly before "Prologue", no pagination).

31 McLuhan (1962), p. 0. See also: "Environments are not passive wrappings, but are rather, active processes which are invisible. The ground rules, pervasive structures, and over-all patterns of environments elude easy perception." McLuhan, Herbert Marshall, Fiore, Quentin, *The Medium is the Massage.* New York 1967, p. 68.

32 Schafer coined the term, however the word first appeared in 1969 in an urban study by the young US-American architect Michael Southworth, who used it for sounds and noises unfolding and – literally – taking place in urban spaces.

33 McLuhan/Fiore (1967), p. 68.

34 http://darin.rtgit.com/2011/08/marshall-mcluhan-environment-art.html (08.11.2011) "We have now become aware of the possibility of arranging the entire human environment as a work of art, as a teaching machine designed to maximize perception and to make everyday learning a process of discovery. Application of this knowledge would be the equivalent of a thermostat controlling room temperature. It would seem only reasonable to extend such controls to all the sensory thresholds of our being. We have no reason to be grateful to those who juggle these thresholds in the name of haphazard innovation." McLuhan/Fiore (1967), p. 68.
"The ear world is a world of simultaneous relationships." ibid. pp. 110/111.

35 Allan Kaprow used the term "Environment" in 1958 to describe his indoor installations.

36 in his interview Marshall McLuhan: "The World is Show Business" (1967), at: http://www.youtube.com/watch?v=9P8gUNAVSt8 (08.12.2011)

37 Cavell, p. 20

38 McLuhan/Fiore (1967), pp. 110/111

39 with the book: R. Murray Schafer, *The New Soundscape*, Toronto 1969.

40 McLuhan (1969).

electronic medias' effects on psyche and intellect, and retain the individual's freedom of wishing, acting and perceiving. „We shape our tools, and then the tools shape us", is a famous and critical quote for underlining McLuhan's ecological substance. It is based on his central thought that each sense or faculty which is extended technologically or stimulated excessively, "leads to the 'closure' or equilibrium-seeking among the other senses"[41], and to the Narcissus Narcosis, the denial of the audile-tactile, mentioned earlier.

McLuhan is considered the godfather of "media ecology". Scholars like Neil Postman, Lance Strate or Christine Nyström sharpened this approach to media theory from the late 60s on. In 1971, Postman founded the program "Media Ecology" at New York University (NYU), which attracted worldwide attention. The ecological notion which some of McLuhan's successors carved out of his writings successfully [42] is not a biological one, dealing with natural resources, pollution and sustainability, but a structural one, applying the term ecology in a metaphorical sense, but also considering its systemic methodology (as coined by Ernst Haeckel in the late 19th century, in the sense of "oikos" – "household"). A societal system is the result of interdependencies between technology, order of the senses and specific practices and phenomena.

R. Murray Schafer teaching a song to the group on the last day of the WFAE 2011 conference in Corfu.

b) Schafer's hybrid term

Rooted in a systemic ecological approach similar to McLuhan's, Schafer unfolded his argumentation, that efficiency, mobility and consumption – a superabundance of sounds which came into existence through the Electric Revolution – create a multitude of uncontrolled auditory presences, resulting in chaos, ugliness and mental overload: physical and psychological blockages in hearing perception (*Schwerhörigkeit*)– or as McLuhan put it, closure of the auditory sense – a survival strategy.

Beyond that, Schafer related the growing inability and unwillingness to listen to a biologically oriented understanding of sustainability: to a concept of ecology which emerged in North America in the early 1960s, and became more and more popular until the mid-1970s.[43] For Schafer's theory it means: environmental pollution decreases the diversity and specificity of sounds all over the world, a growing uniformity, a leveling of the multitude of sounds in everyday life, of the acoustic identity of spaces, places and situations, and as a result making sound as a medium of communication insignificant. Ecological imbalances will result in a loss of auditory aesthetics and therefore in a loss of awareness, auditory sensitivity and listening culture.

Schafer applies ecology's systemic as well as biological implication, and takes it further with the current course of time, into the practical political realm. His acoustic ecology implies a clear opinion on the morality and hierarchy of values in the age of commodification, an aspect of ecology, which became relevant at the same time for Neil Postman's Media Ecology.

6. Contrasts

a) Engagement vs observation

"I ceased being a moralist and became a student."[44] A moral attitude was clearly rejected by McLuhan, as it would inhibit him to learn about the functioning of the change he described. Although he conceded, he was not enjoying the development of media he described he always defined himself publicly as an observer with a neutral scientific attitude. Moreover, he was convinced, although often criticized for this, that operationally, he had nothing to contribute to change the situation, but simply to provide analysis and understanding of the media.

Schafer was most probably the first one who formulated and elaborated on the idea of changing an unsatisfactory soundscape, and designing it sonically. Although listening (which corresponds to observing) inevitably is the basic pre-requisite before design, he finally calls for operational practice and change, by formulating guiding values and criteria. His definitive position is obvious, and so are his intent and his mission. With such engagement, he is transgressing the systemic concept of ecology considerably.

b) Nature and technologization

McLuhan, in describing media and technologies as "extensions" of the body, emphasizes its welcome potential of also extending human capacities and faculties.

Schafer does not share this attitude that technology is enriching. By the time of the Electric Revolution in the last third of the 19th century, he sees the essence of sound changed from being an immaterial, singular and volatile entity into becoming materially objectified, easily copied and manipulated. His special concern is directed to the fact, that audio-media technology can multiply and amplify sound up to a volume, which causes physical damage to the human ear. Instead of perceiving them as value neutral "extensions", he considers such technologies as controlling and inauthentic, taking on a life of their own, suppressing possibilities instead of extending them, exerting power beyond human measure – an extension which disfigures human autonomy as it alienates from the physically or naturally given capacities.

In McLuhan's theory, the concept of primeval nature as an a priori cannot be found. Since the early days of mankind, every technology became an extension of the body, stepping into a system of interrelations and configurations with the environment, be it in balance or bias, not leaving the human being in a state of origin or purity.

7. Conclusion

So, what can be shown by reading Schafer, through the ideas of McLuhan and vice versa? To position Schafer and acoustic ecology in relation to the broader frame of McLuhan's model and to the ongoing discourse in media and perception during the 1960s and 1970s shows the intellectual-creative milieu and its pre-requisites in which an environmental and ecological approach to media and sensual

41 McLuhan (1964), p. 66.

42 "We cannot get out through linear logic and cause-and-effect thinking alone. We need to work dialectically and ecologically, riding through complex systems on the edge of chaos." This quote by Lance Strate sums up this position in: Strate, Lance, "Studying Media as Media: McLuhan and the Media Ecology Approach", *MediaTropes eJournal* Vol I (2008): 127–142, p. 137.

43 In Europe, this conceptual specification of ecology started 10 years later.

44 McLuhan (1969).

perception could happen. Reading McLuhan through Schafer, shows in which aspects Schafer was able to complete McLuhan's ideas, as for example with the term soundscape and with driving McLuhan's paradigms further towards an operational concept of ecology – an achievement which McLuhan obviously appreciated, otherwise nothing would explain the praise on the banner in the "Coach House".

"…since we exist as conversation, listening to each other…". From the beginning, the quote by Friedrich Hölderlin has wanted to remind of this essay's wider context: understanding McLuhan's "environment" and Schafer's soundscape as closely related systemic concepts, based on paradigms not conforming with linear-causal approaches and inherited dialectical cognition. The philosophical traces of these "all around" concepts lead to Martin Heidegger: Heidegger's thought of "In-Sein" – "being in", "being inside": inside a system or an environment – implies, that a separation between a human being and the sphere in which he/she is existing, is not possible. The individual or the society exists amalgamated with its surroundings, which makes – according to Heidegger – object and subject, perceiving and creating the phenomena to be perceived, inseparable. An environment, be it natural or technological, can be conceived as figure of thought, the sonic environment (the soundscape) especially as existential concept: being a listening part of the auditory world as well as an auditory part of the listening world.

Bibliography

Carothers, John Colin, "Culture, Psychiatry and the Written Word", in: *Psychiatry*, November 1959, pp. 307–320.

Carpenter, Edmund, *Eskimo*, Toronto 1959.

Cavell, Richard, *McLuhan in Space. A Cultural Geography*, Toronto 2002.

Heidegger, Martin, *Sein und Zeit*, Tübingen 1953, pp. 130.

Hölderlin, Friedrich, *Sämtliche Werke*. Kleine Stuttgarter Ausgabe, 6 Bände, Band 3, Stuttgart 1958, S. 135.

McLuhan, Herbert Marshall, *The Gutenberg Galaxy*, Toronto 1962.

McLuhan, Herbert Marshall, *Understanding Media. The extensions of man*, New York 1964.

McLuhan, Herbert Marshall, Fiore, Quentin, *The Medium is the Massage*. New York 1967.

McLuhan, Herbert Marshall, *Playboy Magazine* (March 1969), at: http://www.mcluhanmedia.com/m_mcl_inter_pb_01.html (13.5.12). No pagination.

Mumford, Lewis, *Technics and Civilization*, New York 1934.

Schafer, R. Murray, *Ear Cleaning*, Toronto/New York 1967

Schafer, R. Murray, *The New soundscape*, Toronto 1969.

Schafer, R. Murray, *The Tuning of the World*, Toronto 1977.

Strate, Lance, "Studying Media as Media: McLuhan and the Media Ecology Approach", *MediaTropes eJournal* Vol I (2008), pp. 127–142.

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Biophilic Soundscape Design in the Second Order of Nature

By Jordan Lacey

Introduction

Exploring links between disciplinary approaches is fundamental to acoustic ecology, which since its inception has been discussed in interdisciplinary modes. In this paper I will attempt to illustrate links between soundscape studies, biophilia and biophilic design, the eco-philosophy of Henri Lefebvre and Deleuze and Guattari's concept of striated and smooth space. Exploration of links between these conceptualizations forms part of my research at SIAL Sound Studios at RMIT University, and expresses an attempt to re-imagine the urban environment and the role acoustic ecologists have to play in this re-imagining. It is the conceptual point at which these actual and potential listening paths intersect that creative opportunities for soundscape design can be imagined.

Biophilia and Acoustic Ecology

With the exception of Hildegard Westerkamp (2000) there is little mention of biophilia in the literature of the acoustic ecology community. Similarly biophilic practitioners are scarcely aware of the central importance of sound in fostering connections between self and place, limiting its sonic descriptions to the therapeutic affects of the sounds of water (Mador 2008, 49) and the sense of wonder elicited by the sounds of animals (Beatley 2011, 38). However, these two modes of consciousness share comparative aims, particularly a shared concern for the deteriorating conditions of human experience as humanity's disconnection from nature exacerbates, and the importance of design in restoring this connection; additionally, both disciplines have written extensively about the positive health and restorative effects of the natural. I propose that the acoustic ecology movement can draw strength by forging philosophical connections with biophilic design approaches, and biophilic design can benefit from acoustic ecology's understanding of the effects of sound on humanity, by integrating soundscape design into its larger objective of biophilic design.

Criticisms of Biophilia and Acoustic Ecology

The biophilia hypothesis and acoustic ecology movement also share a common nemesis, and that is the unyielding attack of supposedly more rigorous disciplines that reduce these philosophical approaches to aesthetic movements. In biophilia the belief that nature has restorative affects has been dismissed as a value judgment that could just as easily be applied to synthetic qualities (Joye and DeBlock 2011, 200). In acoustic ecology the concern that soundscapes are degenerating into lo-fi, dehumanized environments have been redefined as phenomenological concerns rather than ecological concerns (Redstrom n.d., 1). Regardless, both movements have strong scientific credentials to support their theses; biophilia proposes bio-cultural genetic evolution as a scientific basis for biophilic attitudes toward nature (Wilson 1984, 12) to account for the link between humanity and nature[1], while acoustic ecology has been embraced by engineers and scientists, whose studies are influencing government authorities. *The Positive Soundscape Project* (Davies et al. 2009), the work of urban acoustic designer Jian Kang (2007) and the work of environmental planner Lex Brown (2004) are recent examples. However, it is the shared call for the rediscovery of human imagination, and the ability to demonstrate philosophical relevance through design, which provides biophilia and acoustic ecology the legitimacy that is of interest in the context of this essay.

The Second Order of Nature & Biophilic Cities

Lefebvre[2] has been described as the ignored philosopher (Aronowitz 2007, 133). The environmental movement has certainly ignored him, yet he has many compelling arguments regarding nature and humanity's relationship with nature. In the words of Lefebvre (1991):

> If we are to believe the word 'nature', with its ancient metaphysical and theological credentials, what is essential occurs in the depths. To say 'natural' is to say spontaneous. But today nature is drawing away from us, to say the very least. It is becoming impossible to escape the notion that nature is being murdered by 'anti-nature' – by abstraction, by signs and images, by discourse, as also by labour and its products. Along with god, nature is dying. 'Humanity' is killing both of them – and perhaps committing suicide into the bargain (70).

And

> The finiteness of nature and of the Earth … has the power to challenge blind (ideological) belief in the infinite power of abstraction, of human thinking and technology, and of political power and the space which that power generates and decrees (330).

When Lefebvre discusses the second order of nature he recognizes that the urban environment has been constructed from the raw materials of the natural world. When he argues for the re-imagining of space as second nature he is searching for a means to challenge Capitalism's domination of space (which reifies exchange-value only), as a means to facilitate the emergence of the space of nature

1 It should be noted that the biophilia hypothesis has sustained much criticism regarding its scientific claim that biophilic tendencies are a genetic predisposition. See Simaika and Samways (2009, p. 904) and Joye and DeBlock (2009, p. 190).

2 Henri Lefebvre's most famous work, *The Production of Space,* describes new approaches to Marxism based on Capitalism's domination of space. As such he is considered a socio-political theorist; however, this approach includes interesting philosophical discussions related to nature. Henri Lefebvre has been described as an eco-philosopher (Aronowitz 2007, p. 133) and it is in this context that Lefebvre is discussed in this paper.

in the urban environment as characterized by its abundance, depth and spontaneity.

Lefebvre's concerns regarding urban space and nature partially resonate with the contemporary American biophilic practitioner, Timothy Beatley, the author of *Biophilic Cities*. Beatley (2011) writes:

> (a) biophilic city is a city abundant with nature, a city that looks for opportunities to repair and restore and creatively insert nature wherever it can. It is an outdoor city, a physically active city, in which residents spend time enjoying the biological magic and wonder around them. In biophilic cities, residents care about nature and work on its behalf locally and globally (2).

The creative insertion of nature into the urban environment of which residents enjoy its magic and wonder, certainly resonates with Lefebvre's desire to re-imagine the social space of cities as spaces that encourage human creativity and liberate human activity from the quotidian, abstract and functional representations of space informed by modern-day capitalism. However, Lefebvre's account of the second order of nature is not just concerned with the stuff of nature but the *affect* of nature, apropos, its infinite creativity:

> "'the 'beings' it [nature] creates are works; and each has 'something' unique about it... 'Things' are born, grow and ripen, then whither and die. The reality behind these words is infinite" (Lefebvre 2007, 70).

And in regard to re-imagining this affect in the second order of nature, Lefebvre,

> … calls for the immediate production or creation of something other than nature: a second, different or new nature, so to speak. This means the production of space, urban space, both as a product and as a work, in the sense in which art created works. If this project fails, the failure will be total, and the consequences of that are impossible to foresee (109).

Thus while both Lefebvre and Beatley argue for the emergence of nature in urban environments, Lefebvre desires the *affect* of nature, whereas Beatley desires the merging of cities with the natural world. Acoustic ecologists are able to employ approaches to soundscape design that can actuate both Lefebvre's and Beatley's ideas. The integration of urban soundscape systems and electroacoustic soundscape composition[3] in urban spaces can create the *affects* of nature, while acoustic ecologists are able to imbue urban environments with the sounds of nature through the reintroduction of the stuff of nature.

Restoring Imagination – Schafer and Wilson

The eco-philosophy of Lefebvre, Biophilia and Acoustic Ecology are three disparate intellectual explorations of the relationship between the natural world and humanity. Yet all are concerned with the evaporation of imagination, and the potential effects of this on human health and indeed human survival. Lefebvre's approach to these concerns is outlined above, in regard to his statements of nature as creative abundance (which I take to be synonymous with nature's capacity to stimulate human imagination). Edward Wilson credited with the invention of the terms biodiversity and biophilia equates "ultimate survival … [with the] … survival of the human spirit" (Wilson 1984, 40). Additionally, he states:

> I offer this [engagement with nature] as a formula of re-enchantment to invigorate poetry and myth: mysterious and little known organisms live within walking distance of where you sit. Splendour awaits in minute proportions (139).

And Murray Schafer (1977), inventor of the term soundscape and acoustic design writes:

> From the arts, particularly music, we will learn how man creates ideal soundscapes for that other life, the life of the imagination and psychic reflection (4).

What can the concerns of three intellectuals from different domains tell us about the human condition? That the true risk of humanity's separation from nature is the loss of our imaginative capacities, and that in fact these imaginative capacities are fundamental to our survival; *the re-emergence of the imagination is synonymous with the re-emergence of our relationship with nature*. Humanity cannot survive surrounded exclusively by its own creations. David Orr (1993), a contributor to the *Biophilia Hypothesis*, most dramatically captures these concerns:

> The human mind is a product of the Pleistocene age, shaped by wildness that has all but disappeared. If we complete the destruction of nature, we will have succeeded in cutting ourselves off from the source of sanity itself. Hermetically sealed amidst our creations and bereft of those of the Creation, the world then will reflect only the demented image of the mind imprisoned within itself. Can the mind doting on itself and its creations be sane? (437).

The Striated Soundscape: *The Voice of the Machine*

Biophilia emphasizes that humanity spent most of its history immersed in the matrix of nature. Wilson (1984) explains:

> ... human history did not begin eight or ten thousand years ago with the invention of agriculture and villages. It began hundreds of thousands or millions of years ago with the origin of the genus Homo ... In short, the brain evolved in a biocentric world, not a machine-regulated world. It would be therefore quite extraordinary to find that all learning rules related to that world have been erased in a few thousand years.... (32).

This statement is equally true for humanity's relationship with soundscapes. Barry Truax in his book, *Acoustic Communication*, describes the modern soundscape as devoid of information, in particular due to the broadband sounds of machines, which have a dominating and homogenizing effect on urban soundscapes. The result is the establishment of the alienated listener, who is unable to communicate with, or enter into a meaningful relationship with the soundscape. Truax (2001) explains,

> The soundscape that was information rich (is now) information poor, and the mediated relationship that was interactive and integrative becomes habitually withdrawn, alienated, and even pathological. In the most extreme case, meaninglessness itself becomes the person's long-term auditory image of the environment, and since relationships are mediated both ways by sound, a lack of meaning in the environment is reflected back to the individual's own self-image, which must suffer (97).

This observation becomes more pertinent when reviewing the work of ethnographers Edmund Carpenter (1959), and Steven Feld (1996) both of whom so eloquently describe the rich acoustemo-

3 Foreman's (2011) recent article in *Soundscape* elegantly describes the ability of soundscape composition to evoke imaginative states: "… soundscape studies […] enables us to constantly see and hear anew; to uncover dreams and the imagination into our lived environments. Soundscape composition allows us to approach an aural environment as a palimpsest […]. "(9).

logical[4] characteristics of language, music and culture that emerge in pre-modern relationships with the soundscape. Additionally, historians such as Bruce Smith (1999), reconstructing human-centered Elizabethan soundscapes, and the improvisational musician Hodgkinson (1996), who explores links between Eastern Siberian shamanic music and soundscapes, further emphasize the importance of healthy relationships between listeners and soundscapes.

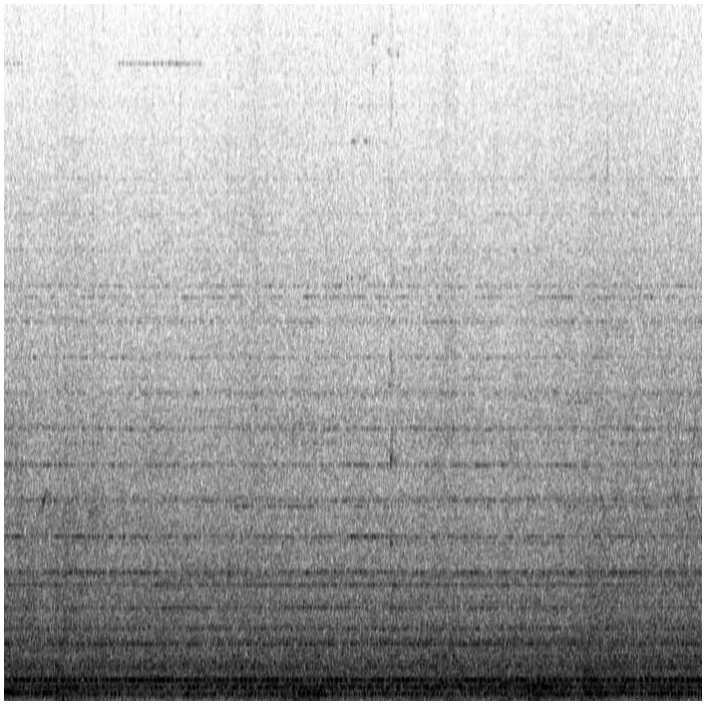

Figure 1: The Striated Soundscape

To conceptualize the lo-fi, broadband characteristics of the contemporary soundscape, I have applied the concept of striated space as developed by Deleuze and Guattari (1987). When viewed in sonogram form the sounds of the machine are horizontal, parallel lines that fill the lower portion of the frequency spectrum (See figure 1). Thus sounds of this character can be called the *striated soundscape*[5].

Striated space is dominated, homogenized space:

> Homogeneous space … is the form of striated space … It is striated by the distribution of matter into *parallel layers, the lamellar and laminar movement of flows*. These parallel verticals have formed an independent dimension capable of spreading everywhere, of formalising all the other dimensions, of striating all of space in all of its directions, so as to render it homogenous (408) (my italics).

(Though described as verticals in this quote, striations such as laminar flows can be equally conceptualized as horizontal.) Compare this to the description of smooth space:

> A field, a heterogeneous smooth space, is wedded to a very particular type of multiplicity: non-metric, acentered, rhizomatic multiplicities which occupy space without "counting" it and can "only be explored by legwork." They do not meet the visual condition of being observable from a point in space external to them; examples are the *system of sounds*, or even of colours, in opposition to Euclidean space. (409) (my italics).

This description of smooth space is compellingly resonant with McLuhan and Carpenter's (1960) comment in their paper on Acoustic Space: "the essential feature of sound […] is not its location but that it *be*, that it fill space" (67); as related to Schafer's maxim (1985) "We are always at the edge of visual space, looking in with the eye. But we are always at the centre of auditory space, listening out with the ear." (112). Smooth space is the space of open experience where humanity enters into imaginative relationships with space, sonorous or otherwise. Striated space is controlled space in that human experience is regulated, directed and homogenized, which is true also of the listening experience. There are clear links between these passages and biophilia, which describes how humanity's co-existence with nature is gradually yielding to civilization (to striated space):

> The world began to yield, first to the agriculturalists and then to technicians, merchants, and circumnavigators [think striated space]. Humanity accelerated toward the machine antipode, heedless of the natural desire of the mind to keep the opposite well. (Wilson 1984, 13)

The implication for soundscape design is that conceptualizing the striated soundscape allows for the summoning of creative solutions to re-impart smooth space, apropos, to reintroduce the *affects* of nature. To locate and identify the striated soundscape is the first step in breaking its homogeneity. Accounting for the political ramifications of Deleuze and Guattari's approach, the striated soundscape can be conceptualized as the voice of the machine, of progress and of modernity. The striated soundscape has dominated the voice of smooth space, which is the voice of dialogue, spontaneity and imagination; thus, the alienated listener has emerged in the contemporary soundscape. However, Deleuze and Guattari (1987) explain that "we must remind ourselves that the two spaces in fact exist only in mixture: smooth space is constantly being translated, transversed into a striated space; striated space is constantly being reversed, returned to a smooth space." (524). Presently, striated space is globally dominant; however, these conditions may allow for the reimparting of smooth space. This reimparting of smooth space can be imagined as the emergence of the second order of nature and the design of biophilic cities – and here lies acoustic ecology's niche in this process: biophilic soundscape design.

Biophilic Soundscape Design

The techniques of biophilic soundscape design would be vast, heterogeneous and guided by the creativity of practitioners. There is no totalizing answer to the issue of the deterioration of the soundscape. Rather the answer lies with the listener's willingness to enter into a dialogue with the voice of the machine, slowly and patiently refining this voice to augment the second order of nature; working towards a dialogue between listener and soundscape that recognizes the acoustemological creation of culture, as catalyzed by dialogical soundscape-listener relationships.

Acoustic ecologists could work hand in hand with architects and designers to begin reshaping the city to make emergent the natural world we have left behind: the sounds of animals and insects; greenery and wood dancing in the wind; water movement over rocks and silt; the textured footfalls of ever-changing ground cover, all contributing to the heterogeneous soundscapes of the second order of nature. Murray Schafer's soniferous garden foresaw such changes, though these need not only be confined to spaces of quiet. Biophilic sounds also have their place within the structures of striated space, where the voice of nature can begin to convolve with the voice of the machine, perhaps altering it, as machines have forever altered ancient and forgotten soundscapes.

4 For a description of acoustemology see Feld (1996) p. 91.

5 For an extensive description of the striated soundscape, and the field work from which this concept emerged see Lacey, J. and Harvey, L. 2011, 'Sound Cartography Approaches to Urban Soundscape Research: CitySounds and Sites-of-Respite in the CBD of Melbourne' In Caquard, S., Vaughan, L. and Cartwright, W. (eds.), *Mapping Environmental issues in the City: Arts and Cartography Cross Perspectives*, Springer, Berlin, pp. 246–265.

Acoustic ecologists have a unique role to play in reintroducing the affects of natural soundscapes through electroacoustic means. Westerkamp has both composed and written extensively on soundscape composition and its ability to evoke imaginative responses through transformations of existent soundscapes[6]. This is fitting for a second order of nature, which would not try to recreate nature but try to re-imagine it, and its affects on humanity. As such, perhaps an integration of soundscape composition with urban soundscape systems into urban environments is desirable[7] [8]. Such systems can engage the existing soundscape by transforming the voice of the striated soundscape through loudspeaker and/or microphone placement. In my own research I have used the image to sound platform Metasynth© to do exactly this by re-imagining striations through spectral analysis and transforming striations with designed cyclical modulations, which are replayed alongside originating striating agents, transforming their voice to a more nature affected one. Further to this, the striating agents of the forest – insects, particularly cicadas – could point the way to re-imagining the striated soundscape. They demonstrate heterogeneity with constant variation in the width of frequency bands and intensity of amplitude, whilst simultaneously immersing the listener in synchronous chorusing – imagine machines singing in a more harmonious and integrated pattern. It is all a question of creativity for the acoustic ecologist: can we teach our machines to sing together and sing with us, rather than speaking the commanding voice of progress, of subservience?

Postscript: *Rediscovering the Voice of Echo in the Second Order of Nature*

The call for the re-emergence of the imagination is familiar to all the philosophers and thinkers referred to in this paper; for imagination to thrive, a relationship with nature and its role as the ultimate Other is necessary. Therefore, it seems fitting to finish this essay with a myth, for myth *is* imagination, timeless, resonating in our urban ears as it did in our ancestor's ears thousands of years before us. The myth of Narcissus and Echo elucidates the alienation of modern humanity from nature. So compelling is this myth one wonders if the struggle between striated space and smooth space, between the civilized and the natural, between dominated space and open space has been a constant theme for humanity – only now the theme is global.

Echo is a nymph. As an anthropomorphic representation of nature she can be considered the voice of nature – the soundscape. She is destined to utter only the final word spoken by the one who has her attention. Echo discovers Narcissus (representative of humanity) and loves him. Yet Narcissus rejects Echo. For this rejection of nature he is cursed. His curse is to fall in love with his own reflection, and soon after Narcissus looks into a still pool of water. Although unable to gain any nourishment from his beloved, Narcissus cannot bear to part from his reflection. Unable to be embraced, nourished or loved, Narcissus dies of a broken heart. Had he reached out to Echo, who cries by his side upon his death, he would have been embraced and found love.

Modern man is like Narcissus, enamoured with the objects created by his own mind, he too is in love with his own reflection. Can our own creations sustain us, or will humanity, like Narcissus, be doomed by the emptiness of the visual reflection of our own image? Should we be wiser than Narcissus and open our ears and search for Echo – the echo of our own voice in the soundscape? Not just an acoustic echo of reflection liberated from the masking agents of the striated soundscape, but the echo within our own being desiring a sustaining and nourishing relationship with the natural world. Can such a voice be found in the emerging philosophy of biophilia, and the second order of nature? If so, no one is better placed to listen to, and re-imagine the emerging voice of Echo in the second order of nature than the acoustic ecologist.

6 See Westerkamp, H. 2002, 'Linking Soundscape Composition and Acoustic Ecology', *Organised Sound: An International Journal of Music and Technology, vol. 7,* no. 1, pp. 51–56. Amongst Westerkamp's numerous compositions, *Into India* and *Transformations* are particularly evocative examples of re-imagining urban soundscapes.

7 See *The New Sonic Garden* < http://www.architetturasonora.com/AS/04-profile/sonic-garden-lab> accessed 12/9/2011, and the *RMIT Urban Soundscape Group report* <http://sound.sial.rmit.edu.au/Index/Projects+UrbanSoundscapeProject.php> and *Hellstrom et al (2008)* for contemporary examples of the emergence of urban soundscape systems.

8 Hellstrom, whose research is aligned more to the 'urban, structural approach formulated by CRESSON rather than the more unspecified 'ecological' view of the WFAE' (Hellstrom 2003, 21) has conducted considerable research in Urban Soundscape Design. See Hellstrom, B. 2003, *Noise Design: Architectural Modeling and the Aesthetics of Urban Acoustic Space*, Royal Institute of Technology, Stockholm, Sweden and, Hellstrom, B., Nilsson, M., Becker, P., and Lunden, P. (2008) Acoustic Design Artifacts and Methods for Urban Soundscapes, in *15th International Congress of Sound and Vibration*, 6–10 July 2008, Daejeon, Korea.

References

Aronowitz, S. 2007. 'The Ignored Philosopher and Social Theorist: On the Work of Henri Lefebvre', *Situations Journal*, *vol. 2,* no. 1, pp. 133–155.

Beatley, T. 2011. *Biophilic Cities: Integrating Nature into Urban Design and Planning*, Island Press, Washington D.C.

Brown, L. and Muhar. A. 2004. 'An Approach to the Acoustic Design of Outdoor Space', *Journal of Environmental Planning and Management, vol. 47*, no. 6, pp. 827–842.

Carpenter, E. 1959. *Eskimo*, University of Toronto, Toronto.

Carpenter, E. and McLuhan, M. 1960. 'Acoustic Space' in *Explorations in Communication*, Beacon Press, USA, pp. 65–70.

Davies, W.J., Cain, R., Carlyle, A., Hall, D.A., Hume, K.I., and Plack, C.J. 2009. 'The positive soundscape project: A synthesis of results from many disciplines', In *Internoise* August 23–26, 2009, pp. 1–8.

Deleuze, G. and Guattari, F. 1987. *A Thousand Plateaus*, Continuum International Publishing Group, London New York.

Feld, S. 1996. 'Waterfall of Song: An Acoustemology of Place Resounding in Bosavi, Papua New Guinea', In Feld, S. and Basso, K.H. (eds.), *Senses of Place,*School of American Research Press, New Mexico, pp. 92–135.

Foreman, I. 2011. 'Vertiginous Spaces, Phantasmagorical Geographies: Soundscape Composition After Sebald', *Soundscape: The Journal of Acoustic Ecology*, vol.*10,* pp.7–9.

Hellstrom, B. 2003. *Noise Design: Architectural Modeling and the Aesthetics of Urban Acoustic Space*, Royal Institute of Technology, Stockholm, Sweden.

Hellstrom, B., Nilsson, M., Becker, P., and Lunden P. 2008. 'Acoustic Design Artifacts and Methods for Urban Soundscapes', In *15th International Congress on Sound and Vibration, 2008, Korea*, pp. 1–8.

Hodgkinson, T, 1996. Siberian shamanism and improvised music', *Contemporary Music Review*, *vol. 14,* parts 1–2, pp. 59–66.

Joye, Y and De Block, A. 2011. 'Nature and I are Two: A Critical Examination of the Biophilia Hypothesis', *Environmental Values*, *vol. 20,* p. 189–215.

Kang, J. 2007. *Urban Sound Environment*, Taylor and Francis, London and New York.

Lacey, J. and Harvey, L. 2011. 'Sound Cartography Approaches to Urban Soundscape Research: CitySounds and Sites-of-Respite in the CBD of Melbourne' In Caquard, S., Vaughan, L. and Cartwright, W. (eds.), *Mapping Environmental issues in the City: Arts and Cartography Cross Perspectives*, Springer, Berlin, pp. 246–265.

Lefebvre, H. 1991. *The Production of Space*, Blackwell Publishing Limited, USA, UK, Aus.

Mador, M.L. 2008. 'Water, Biophilic Design, and the Built Environment', In Kellert, S.R. Heerwagen, J.H. & Mador, M.L. (eds), *Biophilic Design*, John Wiley & Sons Inc, Canada, pp. 43–58.

Orr, D.W. 1993. 'Love It or Lose It: The Coming Biophilia Revolution', In Kellert, S.R. and Wilson, E.O., (eds) *The Biophilia Hypothesis*, Island Press, USA, pp. 415–440.

Redstrom, J. (n.d.). *Is Acoustic Ecology about Ecology*? Retrieved 9/9/2011 from http://www.wfae.proscenia.net/library/articles/redstrom_aeecology.pdf

Schafer, M. 1985. 'McLuhan and Acoustic Space', *Antigonish Review*, *vol. 62*, pp. 105–113.

Schafer, M. 1977. *The Soundscape*, Destiny Books, Canada.

Simaika, J.P. and Samways, M.J. 2010. 'Biophilia as a Universal Ethic for Conserving Biodiversity', *Conservation Biology*, *vol. 24*, no. 3, pp. 903–906

Smith, B. 1999. *The Acoustic World of Early Modern England: Attending to the O Factor*, University of Chicago Press, The University of Chicago.

Truax, B. 2001. *Acoustic Communication*, Ablex Publishing, USA.

Westerkamp, H. 2000. 'The Local and Global "Language" of Environmental Sound', In *Sound Escape: An International Conference on Acoustic Ecology*, Ontario, Canada, June 28 – July 2, 2000, pp. 1–8.

Westerkamp, H. 2002. 'Linking Soundscape Composition and Acoustic Ecology', *Organised Sound: An International Journal of Music and Technology*, *vol. 7*, no. 1, pp.51–56.

Wilson, E.O. 1984. *The Biophilia Hypothesis*, Harvard University Press, England.

Discography

Westerkamp, H. 2002. 'Gently Penetrating Beneath the Sounding Surfaces of Another Place', in *Into India*, viewed 12/9/2011, http://www.electrocd.com/en/cat/es_02002.

Westerkamp, H. 1991. 'A Walk Through the City', in *Transformations*, viewed 12/9/2011, http://www.electrocd.com/en/cat/imed_1031.

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Revisiting the Vancouver Soundscape Tape Collection: Motives, Intentions, & Practice

By Vincent Andrisani

This article features accompanying sound files, available online at: **http://www.akouse.gr/soundscape_journal_Vol11/andrisani.html**

During the early 1970s, a team of researchers at Simon Fraser University began documenting soundscapes throughout Vancouver. These recordings eventually became a significant part of *The Vancouver Soundscape* (World Soundscape Project, 1978), which was at the time, the most comprehensive sonic analysis of an urban environment anywhere in the world. Just over twenty years later, during the mid 1990s, the project was revisited for the first time, where the motive of the endeavor remained similar to that of the 1970s: the documentation of "typical" Vancouver sound signals, soundmarks, and soundscapes.

Beginning in the summer of 2010, and following the lead of both the original group and 1990s recordist Robert MacNevin, I too had the opportunity to contribute to the legacy of The Vancouver Soundscape as the project's most recent recordist. Inevitably, this endeavour once again lent itself to a longitudinal analysis, marking the third revisit to the tape collection, separated by more-or-less twenty-year increments. Yet, unlike the others that preceeded me, I had the opportunity and the fortune of assessing the first two attempts, and in turn of developing an approach that simaltaneously upheld the motives and intentions of the initial group, while addressing my own research interests as well. In what follows, I will explore some of the decisions behind the recording process conducted during the summer and autumn of 2010.

Before proceeding, it is worthwhile to mention that all of the recordings have been captured with a Marantz solid-state recorder, using an Audio-Technica stereo condenser microphone. Not only have these recordings been archived according to time and date, but corresponding log sheets have also been completed in order to communicate both the SPL measurements, and the specific acoustic attributes of the recordings (i.e. particular sounds, and the times at which they occur). Photographs are used as visual representations to supplement the audio, and as such, I have captured several at each recording site. And finally, embedded within the metadata of each photograph are GPS coordinates, which will allow future recordists to trace my exact location at the time of recording.

Vancouver Festival Soundscapes

The entry point for much of my scholarly work concerns the contextual contingency of the practices of soundmaking and listening. With this in mind, I continue to ask, how might sound be employed as a medium through which we can conduct a significant social and cultural inquiry?

The efforts of the Vancouver Soundscape Project have in large part been born out of such a notion, and so in this vast archive of literature and sound, there are invaluable tools through which to construct such an analysis. Not only do the LP and booklet produced in the 1970s offer a thorough evaluation of Vancouver's sonic attributes, but they simultaneously offer a methodological, theoretical, and discursive approach that can be applied to almost any urban sound environment. The project's tape collection, which is perhaps the most meticulously organized part of the archive, functions as an acoustic placemarker, one that offers an aural glimpse into the socio-cultural activity, and defines a very particular set of circumstances in time and space. It is this hands-on portion of the project that was revisited once in the 1990s, and in so doing, the focus largely remained upon the sounds of "the everyday". There is, however, more to the Vancouver soundscape than its everyday sound signals and soundmarks.

In contrast to the more common themes that emerge within Vancouver's soundscape, an untapped site of socio-cultural activity worthy of the project's attention is the festival.[1] The festival, or the event, represents a unique opportunity to sample social processes and activity that are specific to local culture. Typically, they are communal gatherings in which citizens congregate in a public space and engage in a shared activity as participants, audience members, or some combination of both. Festivals draw people together from different socio-economic backgrounds, and disparate geographical areas, in order to make use of infrastructure and social networks, while celebrating an occasion that in many cases possesses some sort of historical significance.

Perhaps what is most apparent about the festival is its ephemeral quality, as it lacks the temporal potentiality that characterizes the day-to-day composition of the soundscape. Like most cities in North America, many of Vancouver's festivals and events, and certainly those that are required to be held outdoors, take place during the summer months. The occasions that are celebrated during this season are countless, and offer a multiplicity of opportunities that are deserving of acoustic documentation. Each one is representative of a different community, and the demographic that is present at each can vary tremendously. As a result, every event possesses its own acoustic character, and the manner in which sound functions in that particular context offers a fleeting, yet an intriguing point of departure for further sociological and anthropological inquiry.

In addition to the ephemerality of the festival, such events also articulate significant ties to place. Festivals are so often relied upon at the municipal level as a means of promoting and asserting the city's character and cultural identity. Indeed, there is an economy that surrounds and dictates the nature of the contemporary cultural event, and by extension, there is an inevitable commercial and touristic quality to the promotion and the experience of such occasions. However, in each of my samples, there is at the very least, a particular community within the local culture for whom the event is meaningful. And so, in much the same way as a soundmark, the sound events

Pride Parade 2010

of a festival are also a site-specific articulation of local culture, which functions as an assertion, and in some cases even a reclamation, of the physical terrain.

The first stage of the current revisit to the Vancouver Soundscape Project focused largely upon the documentation of summer festivals and events, which ranged from the Pride Parade to the Canada Day celebrations at the downtown Convention Centre. Concerning the events that I have documented, the two most significant contributors to the soundscape on most if not all such occasions are the voice and music making.

Whether it is a Master of Ceremony (MC) speaking from a stage through a public address system, or the chatter amongst participants and festival goers, the presence of the voice at many festival events can at times be ubiquitous. And the manner in which it functions, is telling of the social and cultural dynamics that are present at that moment. For instance, the amplified voice likely implies a single person talking to many, which is indicative of a performer/audience relationship. Or, we might pay attention to the language being spoken, which is suggestive of a particular ethnic community with which an event is associated (for instance, the Chinatown Night Markets). And finally, the sounds of unamplified, omnipresent voices are often associated with high concentrations of people, found in audiences, large crowds, or at street festivals.

In addition to the voice, musical soundmaking has long been a significant part of festival celebrations. While the type of music being played remains specific to each event, the manner in which it is introduced into the soundscape is also telling of the social relationships that are being performed on that occasion. For instance, beyond the musical genre in and of itself, we might ask: is the music being performed live for a listening audience, or is the act of music making communal and participatory? Or perhaps, the act of musical soundmaking is not engaged at all, and the festival's source of music is electroacoustically reproduced. Not only do the answers to these questions begin to address the manner in which sound functions on that particular occasion, but in so doing, they also have the capacity to offer a rich description of music as a form of cultural production as well as the social dynamics that surround it.

The Sociology of the Musical Performance

The Canada Day celebrations that took place on the evening of July 1st, 2010 at the Convention Centre, for example, offered an exceptional scenario of communal music making ("Fireworks at Jack Poole Plaza", 2010). Interestingly enough, the "official" singing

1 It is interesting to note that most, if not all of the festivals that have been documented in this iteration of the project did not exist at the time of the original project's recording (that is, in the 1970s). Vancouver's changing socio-cultural demographics have contributed in part to an evolving funding structure in the cultural sector, and so many of the city's current festivals and events did not emerge until the late 1970s or 1980s.

Celebration of Lights Fireworks Presentation 2010

of the national anthem that occurred during the day (at 12 o'clock noon, following the "O Canada" horn) was sparsely participated in ("Canada Place on Canada Day", 2010). However, the spontaneous (and in some cases drunken) rendition of "O Canada" that was sung during the evening celebrations was participated in by hundreds, if not thousands of people. The impromptu, a cappella national anthem quickly defined the character of the soundscape surrounding both the Convention Centre and Canada Place, and was indeed the highlight of a recording in which I was attempting to merely capture the fireworks celebration.

This serendipitous encounter can be read and evaluated from numerous vantage points, one of which might be the self-evident patriotic appeal that is enacted by the singing of the national anthem. Given the spirit of the occasion, many, if not all of those gathered in Jack Poole Plaza outside the Convention Centre were willing participants in a celebration to honour Canada. As such, the staggering number of voices heard in the recording is not entirely unprecedented, given the size of the event and the amount of people in attendance. However, social behaviour demonstrated a significant variation from midday to the evening, and thus the evening's egalitarian and participatory nature of communal soundmaking could also be read as the reclamation of performance and music making at a point during the festivities that centered upon the spectacle of the fireworks. This previously unannounced, uncoordinated communal performance at the 2010 Canada Day celebrations exemplifies an instance of the participatory, albeit spontaneous, nature of music making at a Vancouver festival.

The recordings at the Coastal Jazz Festival on the other hand, present a typical scenario of the audience/performer relationship ("Gastown Latin Jazz Performance", 2010). The outdoor stage set up on Water St. in Gastown allowed for an audience of several thousand to gather and listen to live jazz music at no cost. The performers were a local ensemble named "Zapato Negro", a Latin-jazz quartet with several members of Cuban origin.

This particular recording articulates the typical soundscape one might expect at a concert: the music dominates the acoustic environment when being performed, and when finished, the audience reciprocates with applause, cheering, and yelling. Part of the dialogue between performer and audience arises out of a performance etiquette that is generally understood by those in attendance. When the performers play, one listens, and when the piece comes to a close, audiences show their appreciation in a manner of their choice. But the other part comes from the dynamics created by the sound system in place for the given event. In the case of the outdoor stage at the Coastal Jazz Festival, the musicians were playing through an amplification system that was loud enough to dominate most any soundscape. The volume of the ensemble through the public address system was such that the music could be heard at quite some distance from the stage. Moreover, in order to speak with the person immediately beside you, you would have to raise the volume of your voice substantially. In this case, we are presented with one of the more apparent and recurring scenarios for the field recordist, which is how to deal with electroacoustically produced sound.

The Electroacoustic Dilemma

Electroacoustic reproduction is a ubiquitous form of soundmaking in both public and private environments that invariably shapes the manner in which we communicate, respond, and listen to sound (Schafer, 1977; Truax, 2001). It has the capacity to reconfigure social relationships that otherwise could not exist (telecommunications being perhaps an obvious example), or by simultaneously subverting those that otherwise would (as evidenced in the attempt at interpersonal communication during the jazz performance in Gastown).

In terms of Vancouver's summer festivals, the reliance upon electroacoustic sound varied for each one, yet, there was no occasion that was without it. From the music at various artist and vendor booths at the street festivals, to the voice of the MC in the performer/audience setting, reproduced sound played an integral role in every festival that was documented. As such, the extent to which electroacoustic sound was part of the overall production of festivals was significant, and it determined how I approached the recording of each occasion.

Prior to recording, I ask: to what extent does such sound dictate the nature of the event, and by extension, to what extent is its recorded presence sufficient without dominating or even becoming oppressive to the remaining soundscape features? The answers to these questions certainly shape my approach, where in most circumstances, I have attempted to survey and capture the entirety of the soundscape with as much attention to the range of sound signals as possible.

Take for instance the amplified musical performance to which I have previously referred. It would be nonsensical as a recordist to assume a position in the front row, and to record within close proximity of the public address system. Whatever audience sounds were captured during the songs themselves (people chatting, yelling, and moving about) would be masked, and the documentation of a balanced soundscape would never be achieved. Similarly, the amplified voice is also a characteristic of the festival soundscape, evidenced on recordings such as the Pride Parade, and the street festivals. During the Pride Parade for example, where the MC's voice dominates the local soundscape, I again maintained a comfortable distance from the loudspeaker, and ensured a position behind the street side viewing audience. This offered the opportunity to

capture many of the details in the soundscape without the overbearing presence of the voice, and as a result, I was able to preserve the sounds of people's voices, footsteps, and miscellaneous activities. Such sounds are as much a part of the event's soundscape as the music or the amplified voice. To capture one at the expense of the other would be to forfeit the recording's capacity to comprehensively articulate the whole of the festival.

The Recording Aesthetic

By discussing the multiplicity of discrete sounds that I endeavour to document and preserve, I effectively suggest that in most cases, there are great benefits to seeking comprehensive documentation. That is to say, in order to achieve the desired notion of balance in a festival setting (or in any setting that seeks documentation that is inclusive), one is on some level required to assess the characteristics and behaviour of sound amongst the physical terrain.

In order to accomplish this, there is a definite 'scouting' period that is undertaken when I arrive at a location. Prior to recording, I aim for a level of familiarity amidst the soundscape, and attempt to cultivate a sense of place within the social context, in order to effect the most beneficial and fruitful choices for the recording itself. This could imply anything from observing the unique acoustic characteristics of a particular social activity, to listening intently to the most banal of soundscapes, ultimately seeking the most opportune moment and spatial position for documentation.

While the choices to be made are endless, and the very notion of a value-neutral and objective recording is non-existent, part of the motive to maintain the breadth of discrete sounds within the soundscape comes as a result of its potential benefit to the listening audience. By choosing to represent the soundscape in this manner, my intent remains to offer the individual that is absent from the event the most inclusive and complete aural description of the proceedings. That is, the manner in which I position myself as a recordist, and the choices that are made in order to frame each recording, are negotiated and informed by an aesthetic that attempts not only aural preservation, but also a comprehensive listening experience during playback, given the amount of information it can offer the listener about the original experience.

The previous example of monitoring the recording distance from the amplified sound of the stage is perhaps an all-too-obvious instance of determining the recordist's physical positioning in such a location. However, there are scenarios when this relationship is not quite as apparent. Bearing in mind both the fundamentals of acoustics in terms of the behaviour of sound in space, as well as Barry Blesser and Linda-Ruth Salter's notion of aural architecture (2007) which emphasizes the social function of soundmaking and the manner in which it "illuminates" the attributes of the physical terrain, the Celebration of Lights fireworks presentation offered the opportunity to explore spatial positioning with a great amount of acuity. This event was documented with two separate stereo microphones and a four-channel output was developed for playback, recreating a more complex and detailed spatial character for the listener than that of a stereo recording alone.

Prior to recording the fireworks display, my colleague Nathan Clarkson and I decided that given the nature of the physical terrain at English Bay, the recording might benefit from situating ourselves on the road in front of a condominium complex at the corner of Beach Ave and Cardero Street. This intersection is mere metres away from the water, and the fireworks themselves were being lit on a barge some ways from the shore. Our decision to record from this location originated first in the idea to try to document the event as it was experienced by the listening audience within our vicinity (in which there were thousands of people). And secondly, we wanted to capture the rich sonic colouration of the space itself which was produced by the acoustic reflections of the fireworks bouncing off the exterior of the condominium. With one microphone directed toward the fireworks, and the other facing the opposite direction – toward the condominium – the recording recreates that soundscape with an incredible amount of intricacy and nuance given its unique spatial characteristics.

Canada Day Festivities at Jack Poole Plaza 2010

Employing a Fixed vs. Moving Spatial Perspective

A large number of festival recordings were accomplished using a *fixed spatial perspective*. That is, where the recordist remains physically anchored for the duration of the recording, "emphasizing smoothly a space/time flow" (Truax, 2002, p. 8). In the case of the festival, this approach is most effective in the documentation of the unique sound event such as a performance, exemplified by the Celebration of Lights recording, or that of the Coastal Jazz Festival. By spatially situating oneself in a fixed position, the listening audience can experience a particular soundscape with a specific focus on the nature and type of sounds themselves, and the manner in which they propagate through physical space.

A *moving spatial perspective* on the other hand, is one where the recordist traverses the physical terrain in order to capture the desired soundscape(s). It is a "journey emphasizing a smoothly connected space/time flow" (Truax, 2002, p. 8), which functions as the most profitable manner of documenting the event with numerous distinct sound environments. For instance, the very design and intention of the street festival lends itself to the moving spatial perspective as a result of the many acoustic environments associated with such an occasion. Such environments are experienced by the recordist, and eventually by the listener, in a manner that emphasizes the notion of the aural narrative created by movement.

The most comprehensive documentation of both the "Hats Off Day" street festival on Hastings Street in Burnaby as well as "Car Free Day" on Main Street in Vancouver were accomplished by soundwalking the length of the designated area. Given the countless number of vendors, street stages, musicians, and activities at each festival, it would be impossible to have experienced the many sound environments from a fixed position. Upon arriving at both street festivals, I spent time surveying the terrain, and estimating the length of the enclosed area. Both festivals spanned a distance that could be walked within ten to fifteen minutes, and so I began at one end, and with the recording device positioned in front of me, walked toward the opposite end. In so doing, the narrative quality of the festival emerged. Each point along the length of the street articulates its own distinct sonic character, and not only is each one comprehensively documented in this way, but also, the points of transition in between unique sound environments emerges according to the movement of the recordist. The acoustic profile of discrete sound events such as musicians, ghetto blasters, MCs coordinating activities, and so on, evidence themselves in the route and the speed of the recordist in such a way that the journey of the street festival is most accurately articulated by movement between distinctive soundscapes.

Conclusion: a Sound Sensibility

Ultimately, just as there is no single, ideal manner to photograph a particular object, there also exists no such manner in which to acoustically document a festival or event. However, the process is riddled with decisions one must make, which challenge the recordist to remain mindful of the conventions that afford desired results. By recording the festival from a balanced, inclusive, and comprehensive perspective, not only does it capture the soundscape in a manner that resembles the original experience for so many of its participants, but it also offers the greatest amount of information about the occasion. This is not to say that a close examination of discrete sounds (or sound objects) is of less value for scholarly inquiry; rather, that a complete acoustic image of a festival in all of its complexities remains a highly useful resource for articulating the general nature of the event to the greatest amount of people.

Finally, the one remaining facet of the recording process I have yet to address is not so much a decision, or a motive, as it is a sensibility. Field recording is filled with surprises and unexpected situations, and it is up to the recordist to be acutely aware of their context, and simultaneously be prepared to document it. This implies creating and listening closely to a "test" recording, one in which the recordist merely assesses the functionality of the recording device, as well as the recording levels themselves. Similarly, another approach that can produce fruitful results is by beginning recording prior to the event that requires documentation, and also allowing it to extend beyond the required length. The recording captured during the evening celebration for Canada Day demonstrated precisely that, where I began the recording well before the fireworks began. As a result, I happened to document the impromptu singing of "O Canada" in Jack Poole Plaza, which is indeed one of the more memorable moments of all of the 2010 festival recordings. As a field recordist, the motto "keep it running" is indeed one to stand by, and sometimes, the unanticipated, chance event, is the one that contains the most desirable qualities of the given soundscape. It is from this position, and with this in mind, that I approached my contribution to the Vancouver tape collection archive during the summer of 2010.

Bibliography

Blesser, B., & Salter, L.-R. (2007). *Spaces Speak, Are You Listening? Experiencing Aural Architecture.* Cambridge, MA, USA: MIT Press.

Schafer, R. M. (1977). *The Tuning of the World.* New York, USA: Knopf.

Truax, B. (2001). *Acoustic Communication* (2nd Edition ed.). Westport, CT, USA: Ablex Publishing.

Truax, B. (2002). Genres and techniques of soundscape composition as developed at Simon Fraser University. *Organised Sound , 7* (1), 5–14.

World Soundscape Project. (1978). *The Vancouver Soundscape.* (R. M. Schafer, Ed.) Vancouver, BC, Canada: ARC Publications.

Discography

Vancouver Soundscape Project. (2010). Canada Place on Canada Day. [wav]. Vancouver, BC, Canada.

Vancouver Soundscape Project. (2010). Fireworks at Jack Poole Plaza. [wav]. Vancouver, BC, Canada.

Vancouver Soundscape Project. (2010). Gastown Latin Jazz Performance. [wav]. Vancouver, BC, Canada.

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Soundscape Models & Compositional Strategies in Acousmatic Music

By Apostolos Loufopoulos & Andreas Mniestris

This article features accompanying sound files, available online at: **http://www.akouse.gr/soundscape_journal_Vol11/loufopoulos_mniestris.html**

Abstract

Soundscape recordings of nature may often provide us with a valuable sound-basis as a primary compositional material, offering a rich sound world to transform and develop certain compositional strategies. Soundscapes can also be an inspirational source, offering a number of sound images and sound behaviours to be approached mimetically, and thus to develop a certain type of 'nature-oriented' musical language.

The soundscapes recorded on the Greek island of Corfu between 2006 and 2007 during the study of the Lake Antinioti area were captured at different times of day or night and during all seasons of the year. As such they constitute entities of different sound-environments, often demonstrating antithetical relationships regarding the existence of sound sources and sound-behaviours within their boundaries. To define these relationships through listening, one needs to consider a number of characteristics regarding sources and sound-behaviours and the manner in which these co-exist within the recorded soundscape.

Through the application of certain processing techniques, soundscapes may be transformed into different soundscapes or they may be deconstructed to their individual components. In the current research our aim was to create a rich variety of original 'sound vocabulary', overcoming basic problems existing in the recorded sound material (noise elimination, presence enhancement, event isolations, enhancement of tonality etc.) and further explore the transformational potential of the recorded and created sounds.

From a macro-perspective, and as can be concluded through the research, different 'models' of sound environments can be found within an acousmatic musical context. Such environments can be described as 'real-like' (or 'verisimilar'), 'abstract', or 'hybrid', depending on the degree to which they suggest the real world in which their constituent sources can be recognized, and also on the relationship between sounds and spaces with regard to recognition.

1. The Soundscape Project of Corfu

During 2006 a research group consisting of researchers from four Hellenic academic institutions, carried out a study of the rural environment of a NATURA 2000[1] protected area in the north of the Greek island of Corfu[2]. The aim was to study the spatial-temporal changes in the soundscape of this area by collecting, analysing and interpreting various types of data synchronously acquired.[3] These data were a) sound recordings, b) sound pressure level measurements and c) subjective observations. They were collected from 15 different points spread equidistantly, covering the whole area (spatial sampling) during two time cycles: a 24 hour cycle (one 10 minute sample every 3 hours which added up to a total of 8 samples) and a 12 month cycle (once every season, namely on the solstices and equinoxes)[4]. In this article we focus on the artistic direction of this project, which was the creation of original music based on the sound materials recorded during the data collection phase.

1 Natura 2000 is the centrepiece of EU nature & biodiversity policy. It is an EU wide network of nature protection areas established under the 1992 Habitats Directive. (http://ec.europa.eu/environment/nature/natura2000/index_en.htm).

2 Papadimitriou K., Mniestris A, Mazaris A., Tzanopoulos J.,Fragkiskos G., Koutsodimakis C., Valsamakis N., Pantis J.D.: Mapping the variations of a rural soundscape. The case study of Antinioti, Greece. (http://users.auth.gr/paki/files/soundscape/projects/Paper@WFAE09.pdf)

3 Matsinos Y.G., Mazaris A.D., Papadimitriou K.D., Mniestris A., Hatzigiannidis G., Maioglou D., Pantis J.D. (2008). Spatio-temporal variability in human and natural sounds in a rural landscape. *Landscape Ecology*, 23, 945–959.

4 ibid.

2. The Antinioti Soundscapes

2.1. Fundamental characteristics

The original sonic materials acquired from the field sound recordings can be described according to:

a) their spectral and morphological character, i.e. the spectral coverage, density, morphology, etc., and

b) their micro-structural semantic content, i.e. recognition of the sound source, space, distance etc.

Analysing the sonic materials in that way, we observed the following characteristics, which we consider fundamental:

a) Noise: The sound, quite naturally in outdoors environments, often gives a 'noisy' impression, in the sense of an almost complete absence of tonality. This 'noisy' character of most of the field recordings is the result of 'geophonic' elements on the one hand, caused mainly by wind-through-vegetation and sea surf, which were heard at almost every sampling point of the area; on the other hand it is the result of a multitude of indiscriminate sound sources coming from a continuum of very near to very far distances (such as sounds of various human activities, occasional traffic sounds from a distant major road, insect sounds etc.)

b) Complexity: In addition to 'noisiness' these sounds are characterized by a widespread spectral content, due to the sonic contribution of a plethora of sources sounding at the same time, and – perceived at the recording point – the same loudness, which makes the complexity even greater.

c) Spaciousness: Most of the time the recorded material gives the impression of a large sonic space because near sound sources coexist with discrete ones from various distances allowing for the perception of large spaces. The accuracy in capturing this characteristic depends, apart from the quality of the sound recording equipment and technique, on the landscape formations (large fields, far away hills, refraction[5] from the lake or sea, etc.)

d) Fusion: Most of the sound recordings' spectra display a broad acoustic energy distribution of various intensities. This is due to many coexisting sound sources, particularly when they sound simultaneously in comparable loudness levels.

2.2. Additional characteristics

a) Seasonal Sonic Diversity: Examination of the sound materials collected throughout a whole year revealed significant diversity of sound sources, sonic behaviours and sonic energy levels, depending on the season in which they were recorded. This is due to the yearly variation of geological phenomena, biological cycles and human activities.

b) Sonic Contrasts: Through a comparative study of the 10-minute audio samples we observed many significant differences in loudness levels and density of information. More specifically some of these recording samples are louder overall, either because of some predominant and clearly distinguishable sound sources active during the recording time or because of a plethora of such sources sounding simultaneously. In contrast, other recording samples sound very soft or "empty" either because of exclusively soft sound sources present during recording or an altogether minimal presence of sound sources.

Contrasts of this sort may appear between soundscapes during the daily and the yearly cycles (ex. early dawn vs. late night, summer vs. winter etc.)

3. The Compositional Process:

3.1 Problems and solutions regarding sonic material

Often the process of musical composition starts with solving problems related to selecting and organizing sound material as well as developing musical content from this material. During the first phase of approaching the audio recordings two basic problems had to be resolved:

1) The large amount of recorded material: Of a total of 480 ten-minute audio recordings each had to be listened to carefully and classified, in order to select a collection of fragments, from which the fundamental material for the composition was derived. In a second phase these fragments were extracted, subdivided into shorter fragments and were then used as the primary sonic material for the whole work[6].

2) The complex character of the sonic material: This is related to the usability of the sonic material as a starting point for an acousmatic piece. Indeed, the recorded soundscape very rarely contained discrete and well defined sonic events, consisting mostly of an agglomeration of many sources sounding at the same time in various degrees of loudness, proximity and locality. In addition, the tonal character of the sonic material was very limited – which was expected since it originated in a natural environment with a strong presence of 'noisy' geophysical sound sources (ex. the sea). To overcome this difficulty and in order to acquire 'well defined' sound materials for the piece, audio processing devices were applied which led to further exploration, variation and proliferation of the original sound fragments.

3.2 Transformations and compositional strategies

1) It became clear very soon, that additional recordings had to be made which would focus on certain sonic elemental gestures (ex. the sound of walking – steps on sandy ground). Sometimes these recordings were mixed with other sonic materials to create virtual soundscapes. Or they were processed in order to create isolated sonic events, which then were reintegrated into the context of the composition.

2) On other occasions, isolated sonic actions were created artificially, by applying heavy processing, rearranging the morphology of the recorded soundscapes. A characteristic example of this appears in the first part of the work Icarus[7] where a sonic event resembling a bird's 'flapping' gesture is derived from the sound of the sea. In this example, the transformation was made by applying a combination of amplitude modulation, pitch shifting and Doppler effects.

3) Very often it was necessary to separate some individual sonic elements originating in a certain sound source. Since, as we have seen, the soundscape recordings were complex entities of many simultaneously coexisting sound sources, it was necessary to use spectral filtering methods and algorithmic recognition of spectral characteristics.

4) On many occasions it was important to create sound material with intense tonal content – drones – to accompany foreground gestures, other tonal elements (like long notes) and to create harmonic backgrounds. These elements did not exist in the original materials and they had to be created artificially by means of processing through resonant filters, pitch shifting and time stretching.

4. Soundscapes and Acousmatic Appreciation

4.1. Composed structure

A "soundscape", or else a "sound environment", as it is composed in the context of a musical work or as it exists in the real world, can be structured by two categories of sonic elements:

a) sonic events, by which we mean sonic entities suggesting some kind of action. Usually they are sounds of short duration with clearly distinct beginnings and endings, evolving independently or in sequences.

b) sound *textures* (Smalley. 1997: 114), by which we are referring to entire sonic continua, which are conglomerations of a very large number of constituent micro-sounds (ex. roar of the sea, handclaps in a full theatre, etc.). A wide and more-or-less uniform distribution of energy is observed in the spectra of these sounds as well as slow – if any – changes during their temporal evolution. Textures do not suggest certain actions and even more, they do not suggest gestures. They may, however, refer to recognizable natural phenomena (ex. sound of the leaves resulting in a tree shaken by the wind).

5 Sometimes, particularly on recordings of a quiet night, a low hum is present coming from the engine of a ship passing-by many kilometres away.

6 Here the difficulty was partly reduced by the use of observer's data, where qualitative observations by a trained member of the research group, about the kind of sound sources that were forming the soundscape, were kept synchronously during the audio recording.

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The combination of the above elements in various spatial[8] and temporal[9] layers constitutes the sonic basis for the composition of a soundscape. This sonic basis may be evaluated further, in detail, in relation to the loudness of each sound element, the kinds of movement each suggests and their individual timbral characteristics as they are combined. This approach relates to the microstructure of the soundscape.

On the macro-structural level, a definitive factor contributing to the shaping of musical form is the way in which the sound environments evolve over time, i.e. whether there is a gradual transition, an interruption, a fusion or a combination, etc. Thus the sonic basis for the composition of a soundscape, on the macro-structural level, can be evaluated further on the basis of the above factors, i.e. the relationship between different contributing sonic environments, the manner in which they are inter-connected as well as their relationship to the context.

4.2. Foreground-background relationships

In a soundscape, space is imaginary. This spatial percept is formed by cues emanating from the various sounding sources depending on their distances and their spread in reference to the listener (or the microphone system)[10]. The relationship of the sonic elements in regards to their positioning within this imaginary space is very important for the evaluation of the sonic context and can be described in terms of two imaginary zones, i.e. foreground and background. In other words, sonic elements within a soundscape can be on its surface (foreground), its depth (background) or the space in-between (middle ground)

4.3. Soundscape models and referentiality in the acousmatic context

All soundscapes within the context of a musical work can be described as 'virtual' since they are not real spaces but metaphors or representations of such spaces, even when they indicate specific recognizable acoustic spaces or when they are incorporated in a work as unprocessed recordings of real spaces.

The various types of soundscapes that appear in musical contexts can be described as "verisimilar" (or "real-like"), "abstract" or "hybrid".

As *verisimilar* we describe the soundscapes that suggest real spaces either as excerpts of recordings of real environments, or as soundscape compositions through the combination of sonic features, natural or artificial ('*mimetic process*', Emmerson, 1986: 17) and their spatialisation. These soundscapes are realizations of the model: 'real activities' (recognizable actions) – 'real spaces' (recognizable sites).

As *abstract* soundscapes we describe virtual soundscapes where 'real' or recognizable sound sources or places cannot be detected. However, they give an impression of an acoustic environment through spatial relationships of sonic events, i.e. impression of distance (loudness and spectral differences), reverberation and distribution within the stereophonic – or periphonic [11] – acoustic space. These soundscapes are realizations of the model: 'unreal activities' (unrecognizable actions) – 'unreal spaces' (non existing sites).

Hybrid soundscapes are a combination of the above two and can be described as 'supernatural' or 'surreal'. They realize the following relationships: a) 'unreal events' – 'real space' and b) verisimilar or 'real' events – unreal space. These soundscapes may contain 'ambivalent' elements, i.e. elements reminding of natural behaviours and natural soundscapes (ex. because of similarities with the morphological or spectral development of sound events in the natural world) but they are not sufficiently recognizable relative to their 'naturalness'.

The relationships described above are summarized in the following Figure 1.

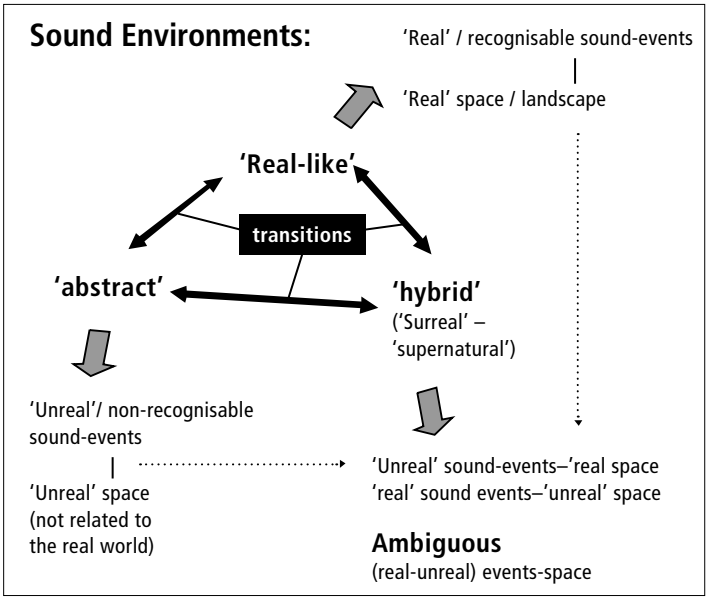

Figure 1: soundscape models within an acousmatic musical context

It is worth noting here – in relation to the above image – that during the unfolding in time of the musical context, the above types of composed soundscapes may be combined or transformed from one type to another (ex. an 'abstract' soundscape can gradually become 'verisimilar' or 'hybrid' through the gradual appearance of sonic elements suggesting recognizable sound sources etc.).

4.5. Sound Examples

A couple of characteristic examples drawn from the work *Secret Coast*[12] can be highlighted here, demonstrating different models of composed/transformed soundscapes within the acousmatic context:

(Example a): 'human walk on the shore…'

A real-like environment is demonstrated in this example, taken from the introduction of the work, although this environment is not actually 'real'. It is composed by mixing different recordings (distant sea noise, close-to-water sound, summer insects, human walk on sand) mixed in such a way as to suggest a real space, and moreover to indicate the human experience of it: the close, always present human steps, together with the change of scenery suggest a human exploring and observing the coast, and the listener being metaphorically 'in the ears' of this created observer.

(Example b): 'hybrid night…'

In this example, a 'night' atmosphere is suggested, consisting of foreground animal-like motions and ambient night sounds. During its temporal development, this night soundscape gradually becomes more and more 'supernatural' in that the sound behaviours in it gradually become mysterious and tend to get detached from the initial environment. More specifically, insect sounds become over-amplified and crispier, and animal-like gestures become more ambiguous and hard to recognize. Moreover, the ambient cricket texture (also artificially mixed) becomes interwoven with a harmonic background. This sound-environment metaphorically may suggest the idea of transition from reality to the dream world, which is dominant throughout the work.

8 i.e. sensation of distance and direction, distribution of sonic sources etc.

9 i.e. dynamic evolution, interaction, alteration, etc.

10 Blauert, J. *Spatial Hearing: Psychophysics of Human Sound Localization* MIT Press; 2nd Revised edition

11 Gerzon, M.A. "Periphony: With-Height Sound Reproduction", *J. Audio Eng. Soc., vol. 21*, pp. 2–10 (1973 Jan./Feb.)

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References

Emmerson, S. (1986). The relation of language to materials. In *The Language of Electroacoustic Music* (ed. S. Emmerson), pp. 17–39. Macmillan Press, Basingstoke.

Loufopoulos, A., (2005). *Nature in Electroacoustic Music*, Ph.D. Thesis, City University London, Music Department, London, United Kingdom.

Loufopoulos, A., (2010). *Soundscapes as the primary source for electroacoustic composition* (translation from the Greek language), post-doctoral essay, Ionian University, Department of Music Studies, Corfu, Greece.

Smalley, D. (1986). Spectro-morphology and structuring processes. In *The Language of Electroacoustic Music* (ed. S. Emmerson), pp. 61–93. Macmillan Press, Basingstoke.

Smalley, D. (1996). The Listening Imagination: Listening in the Electroacoustic Era. *Contemporary Music Review*, 13 (2), 77–107.

Wishart, T. (1986). Sound Symbols and Landscapes. In *The Language of Electroacoustic Music* (ed. S. Emmerson), pp. 41–60. Macmillan Press, Basingstoke.

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Towards a Theory of Museological Soundscape Design: Museology as a 'Listening Path'

By Michail Zisiou

Museological experience takes place in a fine-tuned 'museological scene' where time and space unfold as the visitor wanders among exhibits. It is indeed like telling a story…

Abstract

The traditional image of museum as a peaceful, monumental institute, where cultural heritage is preserved and presented in an uncontested way to be worshipped, is being challenged little by little in many parts of the Western world. The fulfillment of the educational and entertaining role of a new museum may be achieved through active and interactive ways of learning so that the visitor can be 'touched' and eventually acquire a complete museological experience. However, with the exception of certain innovative projects, there seems to be little awareness in the museological community at large of the communicational potential for methodically designed soundscapes. This essay underlines the necessity for the existing knowledge and experience around the fields of Soundscape and Museology to be gathered and combined in order to form a theory of Museological Soundscape Design along with an expanded model of methodology which would be incorporated in museum studies. Such a theory may be outlined in a framework of certain principles derived from various scientific fields such as museology, acoustic communication, education theory, music aesthetics, acoustics, psychoacoustics, architectural theory etc. Finally, a new field of expertise is proposed, that of soundscape designer–museologist by analogy to architect–museologist, archaeologist-museologist or educator-museologist.

The 'New Museum'

According to recent trends in museology, "both museum communicators and audience are construed as active meaning makers with the field of meaning being in permanent flux" (Hooper-Greenhill 1994, 17). Having multiple ways of perceiving exhibits is encouraged by the contemporary museological theory which has been generally influenced by the main concept of post-processual archaeology. According to this relatively new field of theoretical archaeology, material culture may be perceived as a reflection of multiple meanings which are produced through social action (Hodder and Hutson, 2003).

In the process of finding successful ways to communicate the meanings of a certain collection to the public, museologists make key decisions regarding the aspects of an artefact's context (social, personal, historical, gender, economical, technical, aesthetic, etc) which could be highlighted in order for it to form the appropriate *museological scene*. These decisions also involve classifying and grouping artefacts as well as tracing routes for the visitor to follow.

As far as the interpretation process is concerned, it is obvious that the final effect is built through a multitude of interpretations and noetic interactions starting from cross-fertilization within the creative team and ending with the multilevel/multithread dialectic relationship between the cultural and personal background of visitors and the museological scene.

In many ways, contemporary museology can be regarded as the setting up of a *cultural/communicational act* by the museological team which is finally performed by the visitors. It is thus expected that the museologists will make use of all means at their disposal to promote certain communicative approaches. But isn't soundscape design an optimal strategy to encourage communication through sonic environment?

Museology as a 'listening path'

A few acoustic designers and sound engineers, such as N. Frayne and M. Stocker, have explored this possibility for quite some time now and applied their ideas in innovative projects (Stocker M. http://www.msa-design.com/ProjectsMain.html, Frayne N. http://www.resonantdesigns.com/projects.html). They have also provided some valuable information about their work and ideas in related reports or articles (Stocker 1994 and Frayne 2000, 2004). Other pioneer projects have focused on the development of intelligent platforms compatible to information protocols (Hatala et al. 2004) in order to control a personalized, real-time designed soundscape which is transmitted through headphones. Although a promising technique with unique potentiality, we shouldn't underestimate the social dimension of visiting a museum (Falk and Dierking 1992). The use of headphones may create too much of an acoustic/social separation from the museum environment and thus discourage social interactions. Museological research has pointed out the fact that the presence of specific companions has a crucial effect on the museological experience, especially on the visitor's learning behavior, (Economou, 2007). After all, museums have always been ideal places for social interaction and the sharing of knowledge, interpretations and experiences.

Apart from exceptional projects such as those mentioned above, common uses of sound in museums tend to involve segmental approaches such as audio guides, multimedia interfaces or documentary video projections, far from the idea of a *holistic soundscape design*. The fact remains that both theory and practice of museology lack a methodically designed soundscape adapted to both architectural and museological planning and design.

The communicational impact of a holistic approach in the museum's soundscape has been rather underestimated by the museum community. More than ever before, we have acquired an understanding of soundscape's functional principles – such as balance, listening levels, acoustic orientation, contextualization, symbolism – and its inner structure in terms of textural, spatial and temporal articulation. (Truax 1984; Frayne 2002). Electroacoustic music – including all contemporary forms of sound art, e.g. sound design, acousmatic music, computer music, etc has developed into a rather 'global language' featuring a characteristic suppleness, as far as the continuum between mimetic and abstract aesthetic approaches is concerned (Emmerson 1986; Field 2000). Acoustics and psychoacoustics have undoubtedly made progress throughout the past century, providing extensive theoretical knowledge about the nature of sound itself, the mechanism of auditory scene analysis (Bregman 1994), as well as practical experience in architectural acoustics. Similarly, the unprecedented technological maturity in creating and controlling complex networks, sensor based installations and interactive interfaces, as well as recent developments in sound distribution technologies such as ambisonics and directional (ultra)sound speakers provide a vast range of technical solutions to support a sophisticated approach to soundscape design. All of the above make *Museological Soundscape Design* an integral part of the "new museum".

Multidisciplinary approach

Analysis and synthesis of existing knowledge and experience in various fields of applied sciences, such as museology, acoustic design, education theory and architecture make it possible to present a framework of certain distilled principles of *Museological Soundscape Design*:

Holistic design: Museological soundscape design may be most effective if treated as a whole. The soundscape designer could aim for an "overall cohesive functional design" (Frayne 2004, 17) which the visitor will discover step by step, providing a sense of continuity, narrativity and naturalness to the museological experience. It is thus expected that the designed soundscape may function as a holistic communicational framework of reference for the exhibits. Within such a framework each element of the design would contribute towards establishing a *functional entity*. Moreover, it is essential to control every aspect of the soundscape by controlling and incorporating in the design process any sound sources (human, mechanical, indoor, outdoor) that may occur after the museum opens its gates to the public. Holistic design, as a principle, may as well apply to the general museological design and it can only be achieved through constant and substantial cooperation between museum experts.

Balance as a paradigmatic feature of natural soundscapes: Truax (1984) has defined balance as a principle of acoustic design suggesting the notion of the variety/coherence dipole. Variety and complexity in acousmatic features, time scales and spatial dimensions, are important considerations for a promising listening experience, that would also convey meanings, information and concepts. Prudent/selective use of expressive means and techniques may promote coherence and may as well obviate the disadvantages of an overdesigned soundscape. Moreover, silence, as introduced by Schafer (1977), presents a very strong psychological impact, which can be wisely used in contrast to the extensive use of supporting sound material.

Museums as acoustic communities: Visiting the museum has always been a social activity and the term *acoustic community* (Truax 1984) could be applied to describe the 'habitat' of a museum's soundscape. It is thus possible that the soundscape designer will attempt to introduce visitors to a temporal idiosyncratic 'language', which may develop gradually throughout the museological experience. Another challenge for the designer is to encourage the process of **social learning** by introducing special features such as multi-user interactive interfaces to allow a real-time participation of groups of visitors in the formation of their local soundscape and thus a direct acoustic exchange of interpretations. Finally, this principle also points to the necessity of finding ways of distributing sound so that it could embrace all visitors rather than acoustically isolating them from each other preventing any attempt for an acoustic community to be formed within the museum.

Sonic museological design should generally support the main **museological concept.** Moreover, it is advisable that the **context** of *museological scenes* be taken into account at every stage of the creative process: "The presence of an artefact may not be nearly as important as its relationships with the surroundings, the artefacts, and the overall sights, sounds, smells, movements, and appearance of the exhibit" (Alter and Ward 1992, 208). Defining these relationships lies at the core of the museological design and therefore designed soundscapes have to be kept "*tuned in* to the site" (Frayne 2004) since it's not difficult to go astray into a sonic art or music technology show. **Authenticity** within a given cognitive framework – usually provided by the curator – is an objective of soundscape design in the

case of realistic representations. Furthermore, sound technology of any kind should be kept 'invisible' for "an authentic listening experience" to be achieved (Frayne 2002).

Emotional experience is of vital importance for human existence**.** According to modern education theorists, communication and learning come as a *result* of emotional experience (Bakirtzis 2003). Moreover, communication is not regarded as a mere exchange of information and meanings, but as the establishment of a deeper relationship with the environment involving all features of one's personality. The mechanism of *active listening,* which is the basis of the perceptual process of extracting valuable information from the soundscape, is triggered by 'new' sound, i.e. new forms, new textures and sound messages of low redundancy and small predictability (Truax 1984). As long as the overall effect remains attractive, original/inspiring concepts may initiate the required emotional experience for learning and communication to take place through listening to the soundscape. Finally, **enjoyment** should not be forgotten as it is one of the main purposes of museums, according to the latest definition adopted by the International Council of Museums ("ICOM Statutes", 2007, http://icom.museum/who-we-are/the-vision/museum-definition.html).

Acoustics, Psychoacoustics & Ergonomics: Specific standards in terms of audibility must be set from the early stages of programming. Possible failure in defining or meeting these standards could undermine the whole project of soundscape design. Furthermore, the *soundscape designer* needs to be familiar with practical solutions regarding common acoustic problems of exhibition spaces, and may also consider principles of auditory scene analysis to encourage segregation into separate perceptual units when dealing with mixtures of sounds (Bregman 1994, 29–43).

Technical efficiency & flexibility: As museum projects in some cases last for several years or even more, long-term planning and design requires adjustability, updating services and possible modular structures to maintain a level of basic operation when something fails. Many important decisions will be taken together with the architect during the early stages of planning, since sound control and distribution requirements may set several restrictions to the architectural design.

Problem seeking: Almost every design project can be defined as a problem solving process which presupposes a well-established method for problem definition, i.e. the stage of *programming* which must be clearly separated from the design. According to Pena and Parshall (2001, 52) "successful programming relies on analysis", whereas "successful design relies on synthesis". Soundscape museological design has much to benefit from architectural theory, adapting and rearranging wisely those methods of programming that will ensure the success of the design procedure.

Soundscape designer-museologist

Museum studies are commonly offered as postgraduate programs attracting curators of various scientific fields such as art historians and archaeologists, as well as architects, educators, managers, etc. Through the development of museological theory and practice a new field of expertise appears to be emerging. The soundscape designer – museologist will combine skills and training background not only in sound engineering, acoustics, acoustic design, music aesthetics, interactive and sensor based music technology, but also in museology, communication theory, education and cultural studies. Consequently, museology could be broadened by including the theory of museological soundscape design while the museum community may find it useful to adopt an expanded model of methodology: one that would place soundscape designer–museologist at the core of the museological creative team.

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References

Alter, P., Ward, R. 1992. "Exhibit evaluation: taking account of human factors," in E. Hooper-Greenhill (Ed.), *The educational role of the Museum*, London: Routledge.

Bakirtzis, K. 2003. *Communication and Education*, Athens: Gutenberg.

Bregman, S. 1994. *Auditory scene analysis: the perceptual organization of sound*, Cambridge, Massachusetts: MIT Press.

Economou, M. 2007. "Examining the potential and shortcomings of digital applications in cultural heritage," in Chang, L.H., Liu, Y.T., & Hou, J.-H. (Eds.), *Proceedings DACH2007 (Digital Applications in Cultural Heritage)*, National Centre for Research and Preservation of Cultural Properties, Tainan, 355–62.

Emmerson, S. 1986. "The relation of language to materials," in S. Emmerson (Ed.), *The language of electroacoustic music*, London: Macmillan.

Falk, J. H., Dierking, L. D. 1992. *The Museum Experience*, Washington DC: Whalesback Books.

Field, A. 2000. "Simulation and Reality: The New Sonic Objects," in S. Emmerson (Ed.), *Music, Electronic Media and Culture,* Aldershot, Ashgate, 36–55.

Frayne, N. 2002, "Electroacoustic soundscapes: aesthetic and functional design," in E. Waterman (Ed.), *Sonic Geography Imagined and Remembered*, Ontario: Penumbra Press.

Frayne, N. 2004. "Acoustic Design in the Built Environment," *Soundscape: the Journal of Acoustic Ecology*,(5) 1.

Hatala, M., Kalantari, L., Wakkary. R., Newby K. 2004. "Ontology and Rule based Retrieval of Sound Objects in Augmented Audio Reality System for Museum Visitors," in *Proceedings of the 2004 ACM symposium on Applied computing*, Nicosia: ACM Press.

Hodder, I., Hutson, S. 2003. *Reading the past: current approaches to interpretation in archaeology*, 3rd ed., Cambridge: Cambridge University press.

Hooper-Greenhill, E. 1994. "A new communication model for museums," in E. Hooper-Greenhill (Ed.), *The educational role of the Museum*, London: Routledge.

Pena, W., Parshall, S. 2001. *Problem Seeking: an architectural programming primer*, 4th ed., New York: John Wiley & Sons, Inc.

Schafer, R. M. 1977. *The Soundscape: our sonic environment and the tuning of the world*, New York: Knopf.

Stocker, M. 1994. "Exhibit Sound Design for Public Presentation Spaces: considerations for the inclusion of sound in museum exhibit," *Museum Management and Curatorship*, (13) 2.

Truax, B. 1984. *Acoustic Communication*, Norwood, NJ: Ablex Publishing Corporation.

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Listening to the Ecosystem of the Turtle: Enabling the disabled to cross the listening paths of acoustic ecology and environmental education

By Charikleia Minotou, Andreas Mniestris, Ioannis Pantis,
Ioanna Etmektsoglou, Stefanos Paraskevopoulos

Abstract

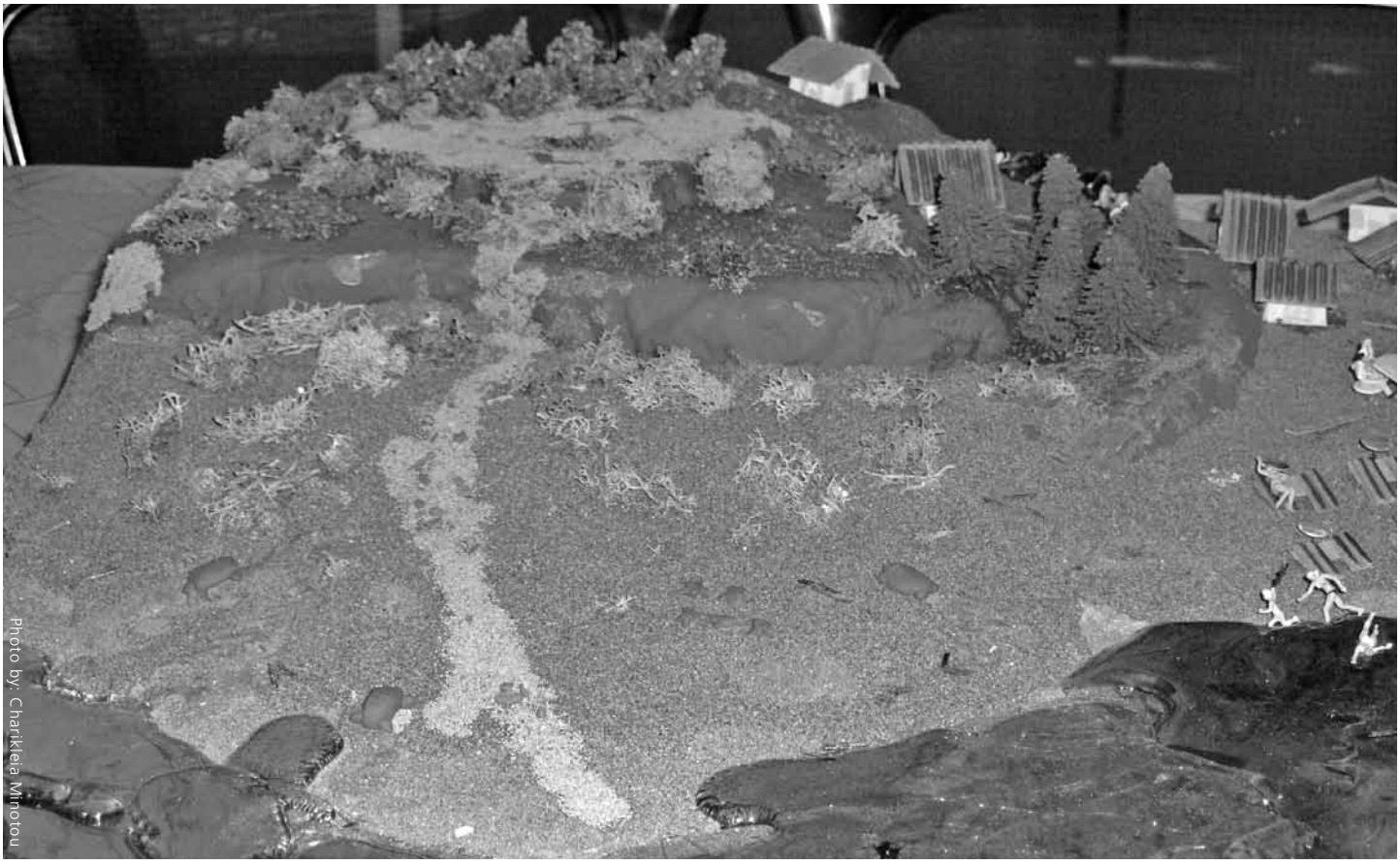
Environmental education and awareness projects foster environmentally friendly attitudes, contributing to the protection of the environment, through active participation. Special Environmental Education provides to groups of people with disabilities, opportunities for both education and active participation in environmental protection projects. The science and art of Acoustic Ecology may function as an especially useful educational tool, which could assist students with disabilities to metaphorically cross the listening path of environmental education.

The National Marine Park of Zakynthos (NMPZ) is officially recognized as a nesting beach of the sea turtle **Caretta caretta**. Within the framework of academic research, appropriate environmental education material was created for special groups, and particularly for people with visual, hearing, as well as mobility disabilities.

The National Marine Park of Zakynthos was chosen as the location for the case study, because it appeared to be an ideal site for environmental education activities that could 'embrace' people with disabilities.

An interdisciplinary approach was adopted for the development of the environmental education material for special groups, combining Acoustic Ecology with Conservation Education, that is, education for ecosystem's management and conservation (Jakobson, 1987, 1991). The current research drew on knowledge from these two fields. The educational material was created and successfully implemented, resulting in the participants' increase of environmental awareness and the development of environmentally friendly attitudes, as demonstrated by the research results.

Keywords: acoustic ecology, special environmental education, protected areas, education for ecosystem's management and conservation (conservation education), disabled.



Model virtualization of the National Marine Park of Zakynthos

Activity box for environmental education with natural materials

1. Introduction: Environmental education – Acoustic ecology – Conservation education

Environmental education that is designed and adjusted to the needs of special groups may help the people involved develop their self esteem. It promotes their social integration, and provides them with opportunities to participate in environmental actions. The process of understanding the complicated systems of nature turns environmental education into a tool for nurturing the participants' self-worth and perception of the self[1] (Pentovoulou–Ziaka, 2007). When designing environmental education material for people with disabilities, it is particularly important to consider ways of activating their senses so as to transfer knowledge through a variety of sensory stimuli and not only through simple visual symbols. From this perspective, image, sound and touch, either individually or in combination, may function as invaluable educational resources and tools. Stressing emotional engagement in the planning of environmental education activities is of utmost importance as well, if one takes into account that in special groups, emotion and sentiment tend to dominate experience and may facilitate knowledge acquisition (Blanchet & Trognon, 2002).

Acoustic ecology can be implemented and utilized as a learning tool for the visually impaired. Sounds, sonic ecosystems, foreground sound, these are the parts that compose a synthesis which may compensate for the lack of visual information about the landscape and its biodiversity (Wojciechowski, 2008).

Recording the sounds of a protected area's ecosystem is a way of mapping the area's geomorphological characteristics, its different species, the landscape, human interventions and presence, as well as cultural elements. The recordings of the sounds produced by various species, like the sea turtle *Caretta caretta* under study in this paper, are accompanied by additional multimedia material, such as videos, which present sounds not as isolated audio files, but as real sounds in their original context. In this way, the material can describe biological processes (e.g. laying eggs), instead of simply presenting snapshots of biological sounds.

1 Gibson (1979) supports that our perceptual systems are at the same time exterosensitive and *propriosensitive*; able to provide us with information about the external and internal worlds. Therefore, based on his ecological approach to perception, one's perceptual acts in the environment may improve his/her perception of the exterior world but also the perception of him/herself in it.

2. Research objectives

The general objectives of the present research were: a) to familiarize special groups with the ecosystems and the species that inhabit them, b) to enhance their willingness to participate in environmental actions, and c) to highlight their options to participate in the management of a protected area through environmental and management activities. Further objectives of the project included social integration, enhancement of self esteem, physical, social, professional, psychological and cognitive development, knowledge acquisition, adoption of appropriate attitudes towards the management of protected areas and development of environmental morality (see Taylor, 1981).[2]

3. Methodology – Environmental education material

In the framework of recording the soundscape of the National Marine Park of Zakynthos, the sounds were first classified into distinct categories. The sounds were recorded during the sea turtle egg-laying season (May-October), and cover four parts of the day: a) morning, b) noon, c) afternoon, and d) evening. Apart from audio recordings, audiovisual material was also produced. The sounds were classified according to the different ecosystems of the area, such as beaches, dunes, seaside pine forests, rural and tourist areas. The classification was realized according to the referential aspects of the sounds (such as in Schafer, 1994/1977). At the same time, we recorded the sounds made by the various animal species that inhabit the protected area. These sounds were not short isolated audio files, but an ensemble of sounds displaying continuity and coherence, that is, a complete soundscape. Particular emphasis was placed on distinguishing between foreground and background sounds as well as on the balance and imbalance of the soundscape – as viewed from the perspective of acoustic ecology – in relation to the management of the protected area.

In the context of the present research project, environmental education material was produced, based on audio and video recordings of the egg-laying process of the *Caretta caretta* sea turtle. The presentation of audio files to the Special Needs groups begins by listening to the recordings of the sea turtle. The recorded files include a) breathing as she emerges from the sea, b) crawling on the sandy beach, producing different movement sounds depending on whether the sand is wet or dry, c) digging with her fins to make her nest, d) laying her eggs to fill the nest, e) covering the nest with sand, f) breathing intensely and returning to the sea. The audio narration that has been added to the audiovisual material helps to provide the participants with necessary environmental information. The implementation of the material showed that, by listening to the turtle's "ecosystem", participants perceive space and time data, such as the geomorphological features, season, human presence and activity, etc.

2 The environmental morality and the respect towards nature, as determined by Taylor's theory (1981) consists of three elements: a system of beliefs, a moral attitude, and a set of norms regarding our duties. Participants can develop a system of beliefs through a holistic program of environmental education, particularly through the knowledge they gain. They can adopt a moral attitude through their participation, action, and awareness reinforcement. They can create a set of norms by engaging in ecosystem management.

The specific combination of natural, urban, rural or human origin sounds constitutes each area's soundscape, and is unique in space and time (see Truax 1999; Schafer 1977). Background sounds, foreground sounds, soundscape changes over time and space at the same locations, all these form the soundscape of the National Marine Park of Zakynthos, which provides disabled participants with data necessary for the protection and management of the area, helping them analyze the situation. These recordings formed the basis for the development of environmental education material for the hearing impaired and for people with mobility disabilities.

As already implied, the environmental education of special groups draws heavily on experiential learning and on the activation of the senses (Chrysafidis, 1994). The environmental education material was created with the objective to include experiential elements that are comprised of audio, tactile and visual tools.[3] Depending on the special group involved, their particular combination may facilitate the transfer of environmental information. During the implementation of the material, the audio recordings were accompanied by a three-dimensional model representing the protected area and by tactile natural materials.

Schafer suggests that one way to improve the soundscape is "to increase sonological competence through an education programme that attempts to imbue new generations with an appreciation of environmental sound" (in Wrightson, 2000, p. 13). Listening is at the heart of acoustic ecology[4] and a sound education, which opens the students' ears to the sounds of the environment leads to an awareness of the unique characteristics of the soundscape (Dietze, 2000). This approach to sound was incorporated in the present research project and in combination with other educational tools (narrations, model, structured activities like biodiversity boxes) intends to help participants perceive the unique character and importance of the protected area through visual, audio and tactile stimuli.

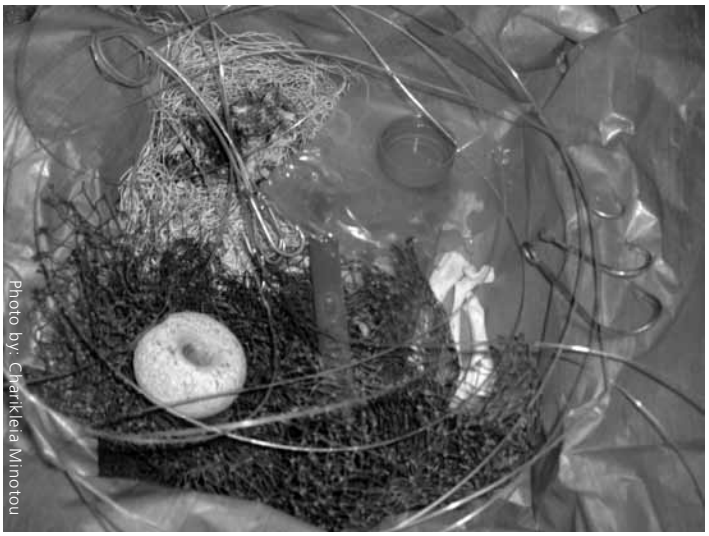
4. Implementing the environmental education material

Five special schools were chosen for the presentation, implementation and evaluation of the environmental education material. The Greek Educational Authorities granted a specific permit for this applied research project. The participants' age ranged from 13 to 25 years. Overall, 110 students participated, of which 65 were with special needs and 45 without disabilities.[5]

Participants' reaction to the presented material was friendly and positive. They displayed a strong willingness to participate, keenly observed the presentations, the video and audio recordings, and experimented with the tactile diagrams concerning eco-paths in the protected area as well as with the tactile material that was part of the constructed model of the protected area. The result of the implementation was that participants were 'virtually transported' to the protected area of the National Marine Park of Zakynthos.

Through the audio recordings, they were informed about the geomorphological features, the biodiversity and human activity of the area. The audio recordings of sea turtles laying eggs helped participants follow the process of egg-laying step-by-step, feeling the suspense, participating with questions, and perceiving environmental information. The sounds provided them with information about the shape of the turtle, her struggle to dig a nest with her fins, her eggs filling up the nest one by one, the volunteers who observed the process for scientific reasons, as well as the foreground and background sounds that influence and determine the data necessary for the management of the area. It should be noted that participants could extract information from the sounds such as as the season, the time of day, the type of landscape and the activities in the area; for example the background sounds of the egg-laying beaches indicated that a neighboring area featured tourist and urban activities.

The environmental education material was evaluated with the use of questionnaires. After each presentation, two questionnaires were distributed, one to the special groups' participants and one to the educators that were present. Based on the statistical analysis, the vast majority of participants (80%) expressed a desire to visit the National Marine Park of Zakynthos, and a significant number (65%) stated a willingness to participate in protection and management actions. Regarding the educators, 96% found that the environmental education material could be easily implemented in special groups and could effectively "transfer" environmental information through audio recordings. The statistical analysis of the relevant questionnaire answers also revealed that participants adopted an environmentally friendly attitude, stating that the protection of the environment is a priority.



Activity box for environmental education with plastic materials coming from human activities

5. Conclusions

Two particularly important fields of environmental studies can be utilized to produce environmental education material and be used as tools to educate special groups. These are: a) acoustic ecology, and b) education for ecosystem's management and conservation (conservation education). The sonic identity of an ecosystem can be easily analyzed and utilized in educating and promoting the awareness of the general public and special groups on issues that pertain to the protection of the environment. The combination of visual, audio, and tactile material, depending on the abilities of the participant groups, contributes to a more effective environmental education and awareness reinforcement.

A particular finding of the present research on special groups is that through ecosystem management and conservation education with an emphasis on sound and acoustic ecology (determining foreground-background sounds, identifying keynotes, sound signals

3 Even though acoustic ecology focuses primarily on sounds, Schafer stresses the importance of a multimodal approach in children's education. According to him, "[...] a total and sustained separation of the senses results in a fragmentation of experience. [He urges us to consider] once again the possibilities of synthesis of the arts." (Schafer, 1986, p. 249) Such an approach could be proven especially effective in the context of developing environmental education material for disabled students.

4 According to Schafer (1986), "the habit of listening [should not be confined] to the music studio and the concert hall. The ears of a truly sensitive person are always open" (p. 246).

5 The environmental education material was implemented in special schools and in general schools with integration classes. In the latter case, the teaching was realized in mixed groups including students with and without disabilities.

and soundmarks, considering issues of sound pollution etc.), the participants appear to experience a strengthening in their willingness and eagerness to participate in environmental management activities, while at the same time they become familiar with the priorities of caring for, preserving and managing a protected area. In addition, they learn how to think about taking measures to solve environmental problems. Secondary effects of such an intervention also include the socialization of disabled people through participation in collective learning and activism for the protection of the environment.

Acoustic ecology in this project acted as a tool and a catalyst for crossing listening paths at different levels. Such crossings – literal and metaphorical – involved the listening paths of the abled and the disabled and those of acoustic ecology, biology, acoustics, environmental education and special education, to mention the most obvious ones. While they were important for the students involved (with and without disabilities), these crossings of listening paths proved to be equally important for the researchers-educators who were given the opportunity not only to create them for others but also to experience them for themselves. Crossing these 'listening paths' appears to have led everyone involved to a deeper appreciation of the environment and the self.

References

Argyropoulos, B. (2004). *Students with visual impairments and Curriculum: Towards a new "topology."* European Conference on the European dimension of special education. Proceedings of the conference.

Blanchet, A. & Trognon, A. (2002). *La psychologie des groupes*. Athens: Savvalas publishing. *[Text in Greek]*

Chrysafidis, K. (1994). *Experiential-Communicative Teaching: Introducing projects to the school*. Athens: Gutenberg. [Text in Greek]

Dietze, L. (2000). Learning is living. Acoustic Ecology as Pedagogical Ground. A Report on Experience. *Soundscape. The Journal of Acoustic Ecology, 1*, pp. 20–22.

Dimopoulos, D. (2007). *Implementing an environmental education programme on sea turtle Caretta caretta, with the objective of developing positive attitudes at young people towards the environment*. Aristotle University of Thessaloniki, Department of Ecology. *[Text in Greek]*

Gibson, J. J. (1979). *The Ecological Approach to Visual Perception*. Boston: Houghton Mifflin.

Jakobson, S. K. (1987). "Conservation education programmes: Evaluate and improve them". *Environmental Conservation*, 14: 3, Autumn, pp. 201–206.

Jakobson, S. K. (1991). "Evaluation Model for Developing, Implementing and Assessing Conservation Education Programs: Examples from Belize and Costa Rica". *Environmental Management*, 15:2, pp. 143–150.

Lundberg, I., Olofsson, A., & Wall, S. (1980). Reading and spelling skills in the first school years predicted from phonemic awareness skills in kindergaten. *Scandinavian Journal of Psychology*, 21, 159–173.

Mayer, R. E. (1987). *Educational psychology: A cognitive approach*. Boston: Little Brown.

Pentovoulou–Ziaka, A. (2007). *Special education in the society of knowledge.* 1st Greek Conference on Special education, 26–29 April. Athens: Grigori Publishings. *[Text in Greek]*

Schafer, R. M. (1994/1977). *The soundscape: Our sonic environment and the tuning of the world*. Rochester Vt: Destiny Books.

Schafer, R. M. (1986). *The thinking ear*. Indian River, Ontario: Arcana Editions.

Sternberg, R. J. (1977). *Intelligence information processing, and analogical reasoning: The componential analysis of human abilities*. Erlbaum, Hillsdale, N.J.

Taylor, P. W. (1981). "The Ethics for Respect for Nature". *Environmental Ethics*, 3(3), pp. 197–218.

Truax B. (1999). *Handbook of Acoustic Ecology, 2nd Edition*, (cd-rom version), Cambridge: Burnaby Publishing.

Wojciechowski, K. H. (2008). "J. Grano's Concept of the landscape as an experience". In Bernat, S. (ed.), *Sound in Landscape*. Lublin: Uniwersytet Marii Curie – Sklodowskiej.

Wrightson, K. (2000). "An Introduction to Acoustic Ecology". *Soundscape: The Journal of Acoustic Ecology*, 1, pp 10–13.

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Bringing the Sounds Back to Etz Hayyim: An acoustic profile of a resurrected endangered space

By Dr. Ros Bandt

This article features accompanying sound files, available online at: **http://www.akouse.gr/soundscape_journal_Vol11/bandt.html**

Etz Hayyim Synagogue. Interior looking west to the bema, TuB' Shebat festival, 2011. *Used with kind permission of Etz Hayyim Synagogue*

The *Etz Hayyim*, (the Tree of Life), is the only remaining synagogue on the island of Crete, Greece**.** It is located in Parodos Kondylaki in the old Jewish quarter of Hania, a town in the north-west of Crete with a population of around 60,000.

In 1995, the Synagogue was listed as one of the 100 most endangered monuments in the world. This paper traces the sounds that were experienced, heard, listened to, and recorded in the restored synagogue from the beginning of November 2010 until the end of April 2011, just nine months after two arson attacks severely damaged the buildings and its contents. These sounds and stories heard and recorded at Etz Hayyim are those of a special and diverse international Jewish community. The building and the people have a unique history, whose values and identity are embodied in the sounds heard.

Historically Tracing the Sound and Silence, Presence and Absence

Etz Hayyim synagogue has had a puzzling and chequered history from its outset, a history of presence and absence, sound and silence, according to Crete's occupation. Originally, it was built by the Venetians as a Christian church, named St. Eirini. The earliest indication of Jewish presence in the building is a Hebrew inscription citing the year 1487, on the original entrance to the north courtyard. In the sixteenth century, Etz Hayyim was bombarded by Barbarossi, the infamous Redbeard pirate. It was left empty then from 1530–1630, when it was renovated as a synagogue. In 1840 an additional women's quarter was built. In 1912 there was an earthquake. By 1941 there were an estimated 265 Haniot Jews left after emigration due to political pressure and unrest. In May of 1944 the entire Jewish community was arrested by the Nazis and after a period of incarceration in a nearby prison, were herded onto a ship, the Tanais. It was struck by torpedoes fired from a British submarine and sank within fifteen minutes – there were no survivors. No one really knows or remembers the last sounds that were heard at Etz Hayyim before the Nazi invasion when it was a living culture. From 1944 to the earthquake of 1995, the synagogue had been derelict, given over to post war squatting.

The director, Nicholas Stavroulakis, an English born Jew of Cretan descent, devoted himself to the idea of restoring the Etz Hayyim to keep alive the "thread of continuity of Jewish presence and memory." He gave a paper to the UNESCO World Monuments Watch and Etz Hayyim was listed as one of the 100 Most Endangered Sites on August 4, 1995. Through international funding and immense effort, he succeeded in saving it from becoming a "kind of martyrium – a witness to how successful at least one nazi action had been." (Stavroulakis, 1999, p. 11.) It was completely restored and re-dedicated on the 10th of October, 1999, (Rosh Hodesh Tishri 5760) when the mezuzoth[1] was put on its doors and a Sepher Torah was brought ceremoniously into the synagogue.

The Synagogue's website describes the building as follows:

The exterior is nondescript, as is typical of synagogues in Greece, the Jews keeping a low profile, and not wanting to draw attention to themselves. The interior is in the typical Romaniote style, the Bema, (the reader's table) on the western wall and the Aron, (Ark) on the eastern.[2]

One can see the remains of the original mikveh through an archway to the right and the tombstones of rabbis in the courtyard in the rear. In the entrance courtyard there is a plaque in memory of the Jews of Chania who perished in the Holocaust. (www.etz-hayyim-hania.org/_synag/arch.html)

The building was completed in 1999, but without a Jewish community. What sounds would enter this synagogue? Who would bring them and on what basis? In 1999 Stavroulakis wrote in his commemorative booklet:

"We are gathered together today Jews, Christians and Muslims to celebrate paradox and contradiction. We are the new community of Keilat Kodesh Etz Hayyim of Hania. In the coming years it is our hope that this precious place of worship will also play a significant role in the public cultural life of Hania as a resource centre and host for seminars and colloquia as well as concerts." (p. 26)

In 2008 Stavroulakis writes in retrospect that, "the community built gingerly from all nations and creeds, following its Jewish orientation with weddings, bar mitzvahs, memorial services, festivals, as well as secular activities: evening lectures on archaeology, history of religions, poetry readings and even concerts." (p. 13)

1 The Mezuzah is a parchment scroll of the biblical passages Deuteronomy 6:4–9 and 11:13–21 and marked with the word Shaddai, a name of the Almighty attached to the door of a home in a small case to proclaim its Jewish identity.

2 The Bema is the readers' table from where the rabbi addresses the community, the Ark is where the holy scrolls, (the Torah) is kept. Their position east-west is typical of Romaniot synagogues, unlike the Sephardic layouts.

There was a "well balanced and well represented library" providing an invaluable resource centre that is open to the public. A unique community was growing, due to the vision of the director and his unique knowledge and skills.[3]

In November 2010 this was the community I stepped into. Many of those who attend are non-Greek internationals. As well as the small number of Jews, not sufficient for a minyan, a quorum of 10, there are Roman Catholics, Protestants, a communist, an atheist, a Greek Orthodox and Buddhists. The services are carried out in biblical Hebrew and English, but other languages spoken include German (3), Danish (1), French (4), Spanish (1), Israeli, Modern Hebrew (2), Albanian (1), Greek (1), and Italian (2). Most have English as a second language. The synagogue is managed by a Cretan Greek/English speaker and the archivist is a German researching Zionism in Israel. Three quarters are permanent residents in Hania.

At one Friday Shabbat, Nikos Stavroulakis, asked this unusual community to try to define its identity and meaning. He posed three questions to help the focus of the response: What does the synagogue mean to you? Would it matter if there were no synagogue? Has it changed you in some way? People would be given a few months to make their written statements, which would be collated into a publication.

Listening and Recording the Community

Through my listening in this unique and tranquil multicultural meeting place, it seemed obvious to me that the answers should be audible, not just read. Hearing the sounds of the voices themselves, embodies the life force and individuality of everyone's different spirit, their age, gender, attitudes, emotions, their mood, conviviality, personality, style, as conveyed thought the loudness, speed, timbre of the voice, the untouchable things which the written word often can't contain.

I offered to record their answers so their individual authentic voices would be the aural conduit for the information. This process would act as a catalyst for discussion, and would encourage listening to themselves and each other, in line with the UNESCO mandate to encourage participation of the local population in the preservation of their cultural and natural heritage. I was interested as a musicologist as to why certain songs and sounds had come here and why? This would begin a new oral history audio archive, so some of the history that was lost in the fires could be reclaimed. After some time everyone was excited about the appearance of the sound recorder and permission was given for the service to be recorded. They started to listen to their community with heightened sensitivity, suggesting various things, the cracking of the eggs, lighting candles, the resident cat, the clock.

I had a crash course in listening and participating in the life of Etz Hayyim. For five months, I recorded interviews and attended a weekly Shabbat service, Festivals of Channukah, T'ub Shebat, Purim for the fires, took Hebrew lessons, joined the Ladino singing group and shared in festivals. With Gabriel Negrin, a young devout Romaniote Jew brought up in the Sephardic tradition, I played a benefit concert of Sephardic and original music on flutes, recorders and Tarhu, a bowed spike fiddle.[4] He also assisted as sound engineer for the mix of the CD, *Voicing Etz Hayyim*.

Indoor, outdoor, private and public, day and night listenings revealed the following rich sounds heard from the Etz Hayyim synagogue community captured in my digital recorder.

The Acoustic Profile of Voicing Etz Hayyim Soundscape and Score

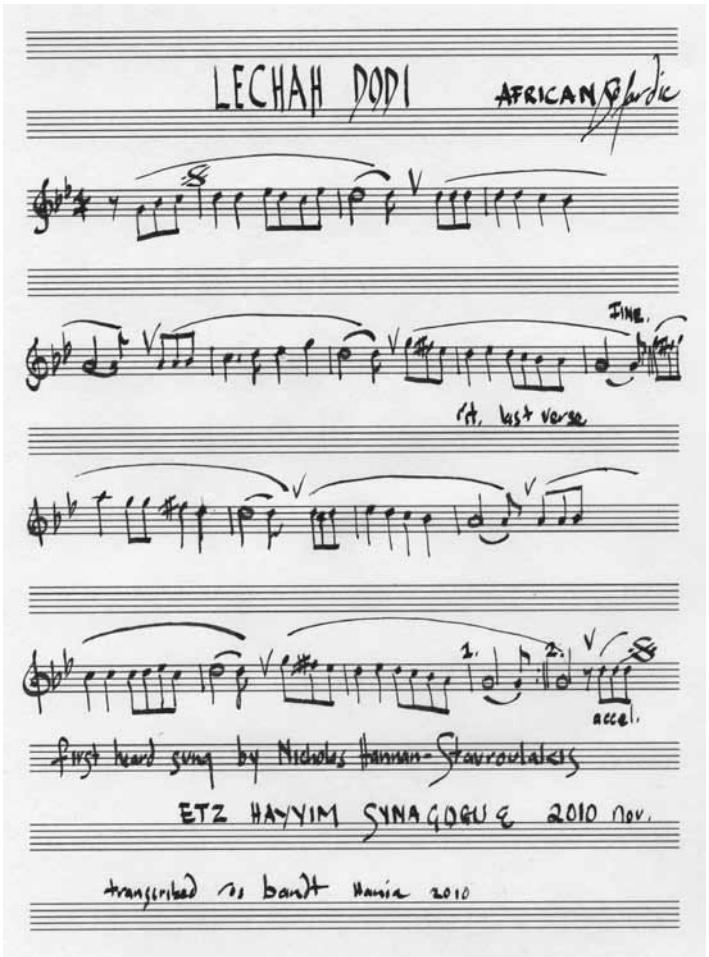
Some hundreds of raw sound files on 14 CDs, can be classified into 20 generic sound types in order to understand the variety and density of acoustic information recorded.

1. The synagogue's streetscape: Etz Hayyim is situated in the secluded and dead-end old Jewish quarter, with its narrow paved, reverberant streets – free of car traffic. It feels like the old town of Jerusalem. The walled entrance opens to the old Venetian pebbled courtyard with exquisite Turkish plantings, creating a garden haven of peace and quiet separated from the street.

2. Internal soundscape of the Etz Hayyim building: the building has excellent acoustics, due to its proportions, wooden staircases, woven prayer mats and cushions. Sound spreads up to the women's quarters and library if the doors and windows are open. Bird sounds abound in the courtyard gardens, and water drips into the fish ponds in the urn outside the office. Inside, the constant ticking and bell of the late eighteenth century French clock, its occasional winding up and the purring of Chiko the cat are ever present, almost unnoticeable. They give a lovely intimacy to the space.

3. People's movements can be heard from the buildings next door, visitors, rituals, the mikveh, a working library, an office, a bookshop, a kitchen, Hebrew lessons in the garden, festival gatherings for Channukah, Shabbat, TuB' Shebat.

4. **The individual spoken word** is prominent in the service and in the solo stories in interview. There are personal portraits and histories of involvement with the synagogue, stories of cleaning up after the fires, compassionate relationships, helping out in difficult times, commentaries of festivals, art exhibitions and cultural reports. Anja talks about the new research centre, Amelia about how special it



Lechah Dodi Tune for Sephardic Shabbat service
Transcribed by Dr Ros Bandt

3 Nicholas Hannan Stavroulakis was the co-founder of the Jewish museum of Athens, a successful international artist, interdisciplinary scholar, expert on Byzantine and Ottoman art and architecture, academic in Greece, Tel Aviv and publisher of several culinary editions.

4 The Tarhu is a bowed spike fiddle invented by the Australian luthier Peter Biffin. It has frets, 12 strings, 8 of which are sympathetic and is a truly unique Australian cross-cultural mix of east and west. See http://www.spikefiddle.com.

is for her. Lorenzo guides his new singing group through linguistic refinements of Ladino pronunciation, the old language of the Sephardic Jews, and Roger speaks about bringing his special tune of Lechah Dodi from his community in Paris. The spoken word is charged with their personalities and individual voices.

5. Chant, intoning scripture, the psalms, and some prayers.

6. Secular and sacred song: two Ladino songs were learned for the festival of Pesakh, including the popular *Had Gadya* (One Kid). The sacred unison song for the Shabbat service, which follows the Sephardic Portuguese rite, is *the Lechah Dodi*, the Welcome of the Sabbath sung in Hebrew to the Moroccan-Sephardic tune, a four beat version brought by the director via his rabbi in Athens.

At a Shabbat service in December we were introduced to another tune in triple time that Roger, one of the members had sung in his synagogue in Paris. In April, I composed an instrumental variation on Roger's tune, so in all there were three versions of the *Lechah Dodi* tune heard during those five months. The first two were sung, and all three were woven together in an instrumental medley to dedicate the benefit concert to the director.

7. Massed Vocal Antiphonal and Ritual Responses of the people to the cantor. Amen Interjections, a blessing for the lighting of candles, the Women's prayer before Shabbat, *Nerot shel Shabbat*.

8. Sonic Ritual activities, include cracking of eggs, pouring of wine, eating of bread, lighting of candles, Shabbat Shalom Greetings, (that your Sabbath without work will be peaceful).

9. Communal Silent prayer: *the Amidah*, like that of the Quakers. In his interview, Nicholas Stavroulakis emphasised the importance of quiet and contemplation, "One knows before whom he stands." So much time for him had been spent in the building alone, the solitary space being a comfort for prayer and meditation. The quietness is amplified. One can hear oneself in the absence of other. In most synagogues there would be frequent times for male sung prayer. Here it happened rarely.

10. Educational activities: Hebrew classes twice a week in the garden or when cold in the library. Poetry, literature, translation, torah study.

11. Tours: Alex, Anja, Marianne and others giving tours to visitors, tourists, community groups and school children.

12. Maintenance work: Beznik, the caretaker restoring the leaking roof or any other maintenance requirement.

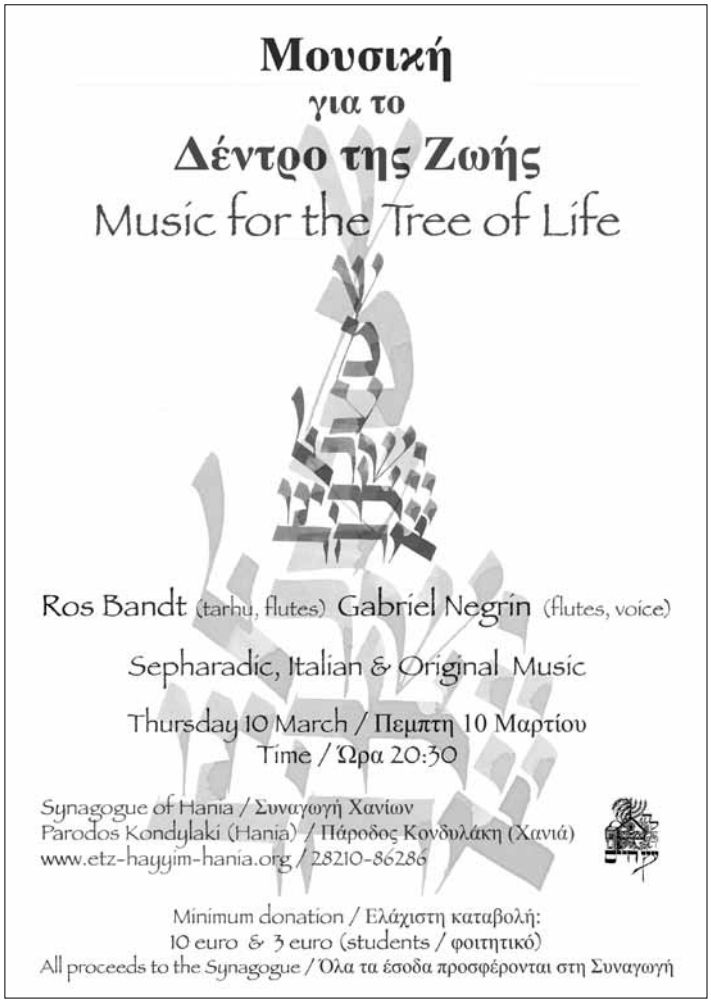
13. Music and Concerts: recorded Sephardic music playing in the office coming through the open ceiling, originally the women's quarters upstairs. It was to set the atmosphere before the joyous festival of Purim. On this occasion I played an original Tarhu dedication for the restoration by the community after the fires. In March there was a public benefit concert of original and Sephardic music by myself and Gabriel Negrin.

14. Professional activities: a writer working on Danish short stories in the loft, a librarian cataloguing and sorting books donated to the library, an office of administration and management.

15. Cultural activities: a DVD on Buddhism, a film, an exhibition, a lecture series on Turkish cuisine.

16. Festivals: we hear the sounds of eating together for festivals.

17. Socialising: lots of chat and socialising, the Havurah, derived from the term 'haver' or friend in Hebrew, but also meaning a 'circle' or 'joining' of friends together in a common ideal, or search for an authentic spiritual life.



Music for the Tree of Life , Poster for benefit concert.
With kind permission of Etz Hayyim
Illustration by Nicholas Stavroulakis

18. Children playing.

19. **The echoey Mikveh room**: the subterranean spring silently feeding the mikveh ritual bath with its constant stream of fresh cool water.

20. The silent outdoor graveyard, separated from the pathway by a shallow wall.

Voicing Etz Hayyim is a composition of 18'50" minutes built on the interplay of these rich sonic occurrences; the blending and mixing of the sounds against each other conveys the social aspect, more than words can possibly manage. Gabriel Negrin provided the much needed technical equipment and assistance for this large piece. I returned to Hania in November 2011 to present this new work to the director and the archive of the Evlagon Centre for Cretan Jewish History, as well as presenting a personal copy to everyone who had so generously donated their time and stories of attachment to the synagogue. The benefit concert, the archive of 14 CDs and the original work *Voicing Etz Hayyim* CDs, were gifts of my appreciation for the wonderful things I also experienced as a member of that community over the duration of a year.

Observations

How do we respond to the sounds of Etz Hayyim and what do we learn from them? What kinds of sounds are present?

The sounds of this synagogue are recognizably Jewish in the services and festivals but their location is different. Men, women and children sit side-by-side and facing each other at the same level. Women as well as men are included in the service reading prayers. There are fewer prayers out of service time and the use of the mikveh

has been infrequent for weddings and holy events. The clock and the cat are ever present sounds inside the beautiful acoustic. Singing and sharing music has been on the increase although as a community singing has not been an important element but for the Lechah Dodi each Friday. The community participates in all parts of the Shabbat and festival services, conversing in many languages, not necessarily in the native tongue. People make an effort to communicate. I found myself speaking French, German, a bit of Greek as well as English and Spanish. The meals contributed by all, are festive and gastronomic events. We hear communication through diversity. The sound is testament to a rich lively community. Etz Hayyim is indeed a tree of life. We hear density and quiet, the ebb and flow of life itself.

Sound as Information Transfer

We find out about the traumatic fires in January 2010 which burned all synagogue records and documents, 2,500 rare books and manuscripts, and some of the unique CD collection of international Jewish music, particularly of Sephardic origin. Some 100 or so CDs were saved although their cases had been burned. We learn about life stories and people's relationships, their feelings.

We hear personal identity through listening

It is not only the linguistic content of what is heard that matters. Sound contains clues in its delivery, telling us about the overriding emotions and mood, the age, gender, the number and proximity of the people, who is talking to whom and the overall politics of the social interaction. That is why it is so important to listen to oral histories. Much of this is lost in the written word alone. If there is a sardonic tone of voice or a worried element to the rendition of text this could be lost in the literal transcriptions. The timbre of each person's voice is a completely individual signature. Together they combine to reform a new identity. I have not transcribed every word but left CDs of all the files so that the process of listening continues with paths crossing through everyone's dedicated time and aural engagement. The act of listening shows respect for the other.

Conclusion

Bringing the sounds back has traced the sounds of *The Etz Hayyim* synagogue and its community during the months from November 2010 to April 2011. The sound recordings and mixes are evidence of a synagogue with a lively international community who shares common religious and cultural activities. The sounds reflect an acceptance and flexibility of national identity. The *Lechah Dodi* Shabbat song changes from Sephardic to French, any week with an instrumental variation by an Australian. The Jewish calendar of Festivals is preserved, as well as the weekly services, but its ecumenical calendar includes Christian and Moslem correlates. Education through the library, the new research centre and the Hebrew lessons given by the director, ensure the passing on of Jewish traditions and knowledge. This is an original acoustic community, unique in its multi-cultural and ecumenical breadth and newly created. Its pluralist nature is of ancient origins and its spiritual, educational and moral values continue the concerns of Jews throughout centuries. Listening to the layers on many levels the *Etz Hayyim* is a model for international tolerance and co-operation. It is a jewel for Hania. The listening paths of this community are rich and varied. They make an effort to blend different languages, nationalities and creeds, thus forging a new modern multicultural Jewish identity. This acoustic profile validates and communicates the life and energy of this unusual Jewish community of *Etz Hayyim* in 2010–2011.

CREDITS

- The Etz Hayyim Synagogue http://www.etz-hayyim-hania.org.
- Its director Nikos Stavroulakis, Anja Zückmantel, Alex Phoundoulakis and the Etz Hayyim community.
- The Jewish Museum of Athens, particularly Anastasia Loudarou. The British School of Athens. The Blegen library, Athens. Dr Stavros Paspalas, Deputy Director, Australian Archaeological Institute of Athens. Arts Victoria. Gabriel Negrin.

BIBLIOGRAPHY

Angel, Marc D. Undated. *Lekha Dodi:Shabbat Stories and Songs of the Sephardim.*

Produced by the Sephardic House at Shearith Israel, unpaginated. Jewish Museum of Athens, Special Collection.

Hannan-Stavroulakis, Nicholas. 2011. "Concert by Ros Bandt and Gabriel Negrin and Voices of Etz Hayyim Project" *Jottings,* Issue 12:3. Etz Hayyim.

Hannan-Stavroulakis, Nicholas. Undated. *Kabbalat Shabbat* according to the Sephardic and Portuguese rite Etz HThe Shabbat, Nicholas Hannan-Stavroulakis in English and Modern Greek. Synagogue service ritual publication.

Starr, Joshua. 1942. "Jewish life in Crete under the rule of Venice". Proceedings, vol. XII. New York: American Academy for Jewish Research.

Yahalom, Joseph. 1995. "Hebrew mystical poetry and its Turkish background," in Andreas Tietze and Joseph Yahalom, *Ottoman Melodies Hebrew Hymns: A 16th century cross-cultural adventure*, 9–43. Budapest: Akadémiai Kiadó.

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The Soundscape of Burning Man

By Stephan Moore and Scott Smallwood

This article features accompanying sound files, available online at: **http://www.akouse.gr/soundscape_journal_Vol11/moore_smallwood.html**

Abstract

The Burning Man Festival, an annual art festival in the Nevada Black Rock Desert of the Western US, has been going strongly for over 20 years, and has grown immensely since its humble beginnings in 1986. In the last few years, the event has reached a population of well over 50,000 people, featuring hundreds of performances, and thousands of works of art in all media and on all scales imaginable. A party in the desert for some, a way of life for others, the festival and the temporary city that supports it is a remarkable human enterprise, thriving on communal effort and participation, a gifting economy, radical self-reliance, and radical self-expression. The unique soundscape of Black Rock City, Burning Man's ephemeral home, with its multitude of sonic art works, musical performances and immersive environments, offers some of the most unusual and interesting sonic experiences for the week that it exists. This study looks at the evolution of this unique soundscape through the course of the event, from its beginning as an uninhabited desert, to the gradual construction of the city by the inhabitants, to the height of its celebratory completion as the tenth largest city in the state of Nevada, its ultimate destruction with the burning of the central art structures, and the leave-no-trace cleanup process that follows. Throughout the event, we witness a ritualistic ebb and flow of sound as the citizens of the city celebrate radical self-expression in remarkable ways: hot days of construction and exploration, the city-wide celebration of sunset, the festive all-night dancing, the exhausted and restful morning, the exuberant burning of the man, and the contemplative and quiet burning of the temple. Our study analyzes the soundscape across the vast space of the event, looking at its daily and week-long evolution, through field recordings, discussions with participants, and personal observations. The paper is derived from observations over the previous eight years of the event, as well as a sound journal based on Burning Man 2011.

I. What Is Burning Man?

Burning Man is a multifaceted event that serves many different purposes for many different groups of people. It has been referred to as a week long "celebration of art, community, and fire,"[1] a "New Age techno-fest,"[2] and "glorious Hell on earth,"[3] among many other descriptions. "Caveat," the pseudonymous author of several posts on the Burning Man blog, reduced it to this: "Burning Man is also about a kind of epic confusion that is good for the soul."[4] Burning Man has the power to delight, confuse, confound, and offend just about everyone who attends, and it does so without any specific "script" or "program."

The event occurs annually over an eight-day period that concludes on the first Monday of September (Labor Day in the United States). Begun as a small beach party in 1986, it has taken place in the Black Rock Desert of northern Nevada, about 190 km north of Reno, since 1991. "Black Rock City," the foundations of which are planned and provided by the Burning Man Organization (funded through ticket sales), is literally built by the participants as they arrive and begin to populate the streets with structures, shelters, theme camps, art installations, and a variety of community services. In accordance with some of the Ten Principles of Burning Man, there is no commerce, and a "gift economy" is practiced. Participants also agree to the Principles of radical self-reliance, radical self-expression, radical inclusion, communal effort, and an expectation of universal participation, among others. For a detailed description of the event and its history, the Ten Principles, and information about the organization itself, see the Burning Man website.[5]

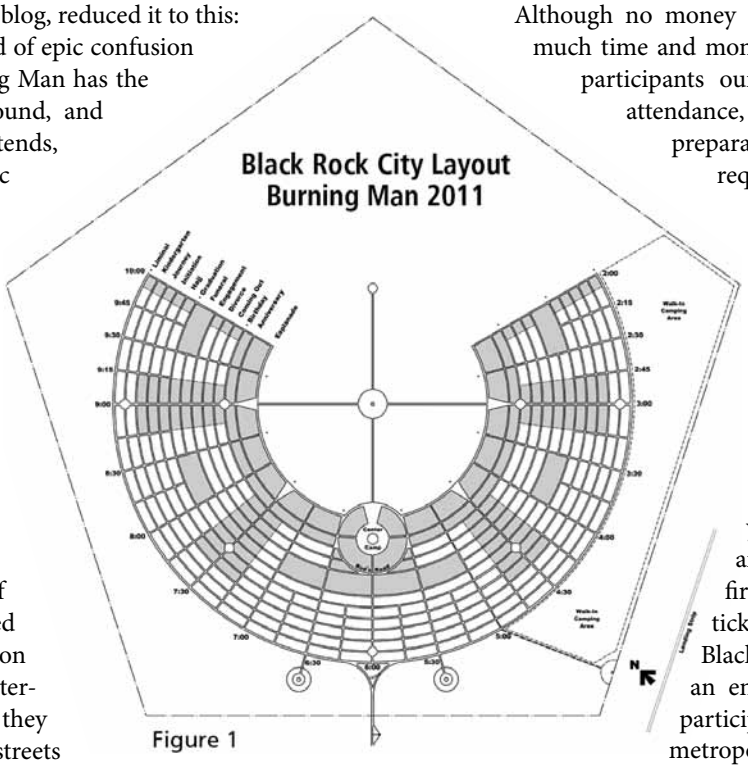

Figure 1

Although no money is exchanged at Burning Man, much time and money is spent preparing for it. As participants ourselves over multiple years of attendance, we can attest to the immense preparation and sacrifice the event requires. Indeed, we acknowledge our role in writing this paper as that of participant-observers, invested in the culture and community of the event even as we attempt to explicate aspects of the experience for a larger audience.

The population of the city has increased almost every year, surpassing 50,000 in 2010, and causing the event, for the first time in its history, to cap ticket sales in 2011. Accordingly, Black Rock City has evolved from an encampment of a few thousand participants into a fully-functional metropolis boasting its own post office and zip code (89412), several radio stations, at least two daily newspapers, a public works department, and its own non-professional police force – the Black Rock Rangers – who act as an interface between Burning Man participants and

state and federal law enforcement agencies. Due to another of its Ten Principles, Burning Man is the largest leave-no-trace event in the world.[5] As a locus of art, music, performance, dancing, and widely varied manifestations of alternative culture and celebration, it also has a unique and extremely fascinating soundscape. Below we will discuss the soundscape of Burning Man, in terms of its primary features, its function as map, calendar, and clock, as well as some general observations about the role sound plays in the lives of its residents as the event unfolds in time and space.

2. The Soundscape of Burning Man

The Black Rock Desert is a vast expanse of the Great Basin in northern Nevada that was once the bed of Lake Lahontan during the Pleistocene epoch, and is now a perennial dry playa between the Jackson and Calico Mountains, a 2600 square-km area northeast from the small town of Gerlach, about 1,191 m in elevation. The Desert is bisected by the Black Rock Mountains, which frame Black Rock City's horizon and play a prominent role in its daily activities – a critical moment is marked each evening when the sun descends behind Granite Peak and the air temperature begins to plummet. In addition to hosting Burning Man, the desert is a mecca for rocketry enthusiasts, and a favorite location to attempt to break the vehicular land speed record, second only to the Bonneville Salt Flats some 600 km to the east. Otherwise, it is a mostly-uninhabited desert wasteland that is hostile to life. The ground is hard, crusty, crack-ridden clay with a saline, mineral crust, free of vegetative material, and with large areas that are perfectly flat. Some claim that it is "the largest flat piece of land on earth."[6] The cracks in the desiccated ground form a complex, irregular polygonal pattern. Sound radiates with few reflections, since there are literally no geological features, other than the flat ground itself, for many kilometers in all directions. This is a boon for radio broadcasting and transmission artists – Burning Man's plethora of radio stations broadcast well beyond the borders of the event during the week of their charter.

The soundscape of the event location, about 25 km northeast of the town of Gerlach, just off of Nevada's County Road 34, is normally very subdued. There are few plants, birds, insects, or humans living nearby, only the occasional sounds of traffic on the nearby road, and high-flying aircraft. The wind races across the playa unobstructed, raising great plumes of dust from the hard-packed ground. Once participants arrive and begin constructing the city, things change. Light construction sounds emerge, along with arriving vehicles, gasoline-powered generators, loud voices, amplified music from loudspeaker systems large and small, and an increasingly dust-filled wind. As structures change the path of the wind, the sound of the city begins to emerge, using both its physical structure and its content to define listening paths in the dust. The Burning Man soundscape emerges once the population and building surpass a critical point, and begin to resemble and function like a city.

2.1 Primary Features

While it is difficult to characterize the soundscape of Burning Man, there are several sounds that have consistently assumed prominent roles during the past ten years:

- Amplified music
- Fireworks (though formally banned, they nonetheless occur regularly)
- Air horns
- Bursts of flame from a variety of jets and cannons
- Large fires
- Megaphones
- Gasoline-powered generators
- Bicycle-related sounds
- People talking, laughing

The first item, which is far more complex than it may seem at first, is the most essential to understanding the sonic fabric of the city. It consists primarily of electronic dance music multiplied and spread across an enormous, flat space. Beat-oriented and heavy in the low frequencies, all genres of DJ-driven dance music can be found in Black Rock City, with an emphasis on psy-trance and, in recent years, dubstep. This music is played throughout the city, at a variety of volume levels, throughout the day and night. It emanates from mobile sources known as "art cars" or "mutant vehicles" – huge industrial and public-transit vehicles converted into stages or clubs – as well as hundreds of individual encampments dedicated to public entertainment and celebration. At its peak, between midnight and 3:00 AM, the city becomes a sound-mass of thumping, ambient confusion. As one traverses the city at that time, the soundscape, more than any other sensory experience, communicates the massive size and diversity of the city, as well as the passion and energetic celebration of its inhabitants.

Most of the prominent elements from the list above can be heard throughout the city at all times of day and night, but the emphasis, demeanor, and overall sound level of the soundscape varies widely with time and place and is occasionally marked by unmistakable events. The Black Rock City soundscape thereby harbors a wealth of information regarding one's location in both space and time that can be easily gleaned by an experienced citizen, some of which is available even to relative newcomers. In this section we will attempt to describe the most salient features of the soundscape's spatial and temporal structures, while speculating upon the origins and consequences of these self-organizing phenomena.

2.2 Spatial Organization: The Burning Man Soundscape as a Map

Black Rock City's layout consists of a two-thirds circular grid of streets, arrayed around the central point of the Burning Man effigy (See Figure 1). Ring streets (after the innermost street, called the Esplanade) are named alphabetically according to an acrostic that changes with the year's theme, while radial streets are named according to their clock positions, e.g. 2:00 or 5:30. Addresses of particular camps are commonly given in terms of these coordinates. For example, in 2011 our camp was placed at 2:45 on Anniversary. Radial streets span from 2:00 to 10:00, and ring streets have extended as many as ten blocks behind the Esplanade.

Within the circle of the Esplanade, there is an open space dotted with dozens upon dozens of art installations. A large plaza can be found at 6:00 and Esplanade, surrounding a "Center Camp" structure. Medium-sized plazas are embedded in the city at 3:00 and 9:00, and smaller plazas can be found in numerous locations. The "temple," a secular structure whose architecture changes drastically each year, is located in the 12:00 direction, opposite Center Camp. Beyond the temple is a large area of open desert commonly referred to as "deep playa", also dotted with a multitude of art installations and other isolated structures, continuing until the outermost border of the city, the "trash fence," is reached. This layout reflects many years of refinement. Listening paths and other lines of desire have played a key role in this development, resulting in a city that is, in part, shaped by sound and, accordingly, can be navigated and understood through listening.

The most highly trafficked and interactive camps are placed at the Esplanade and plaza areas, imparting a "residential" and "public" sound to different areas. This distinction is heightened at night (further discussed in the next section). In more residential areas, there may be some local small sound systems playing music, or loud hums from generators, but generally these areas are much quieter than other parts of the city due to the surrounding, noise-blocking structures and the tendency of sound to radiate upwards from the hard surface of the desert.

The length of the 2:00 and 10:00 radial roads, facing the deep playa, are districts designated for the loudest sound installations, and are the locus of many DJ performances and a fair portion of the city's nightlife. Proximity to these roads guarantees a higher level of ambient sound from electronic music sources through much of the day and all of the night. By contrast, an area designated "Hushville", located in the city's residential area, disallows its residents from operating sound systems, gasoline-powered generators, and other noisy devices. Adjacent to Hushville is "Kidsville", organized by and for parents bringing small children to the city and wanting to maintain an area that is removed from the more licentious, graphic, and noisy areas elsewhere. In 2011, the Kidsville/Hushville area consumed two enormous city blocks, between the 5:00 and 5:30 radials, and the "D" and "F" rings.

Perhaps the most sonically interesting portion of the city is the deep playa. In this large empty area, the sound being hurled out into the desert from all other points in the city combines into a complex soup far too dense and complicated to readily dissect. Distance eliminates most of the high frequencies, and disperses much of the power of the non-directional low end. The occasional art car, equipped with a mobile sound system, can emerge from the soup and dominate it for a while as it passes by. But the unique, vibrant, and utterly complex noise floor remains a constant, ready to absorb any temporarily differentiated sound back into its happy chaos. In the deep playa, especially at night, one feels compelled to listen to the soundscape's slow shifting, which is more of an ongoing reorganization than an evolution, and become lost in one's awareness of its simultaneous enormity and quietness. Consequently, the most shocking and eerily gratifying sounds in deep playa can be ones that are small but nearby, like a zipper or a bicycle bell, that trigger a sudden collapse of scale, a rapid return to local listening.

Traversing Black Rock City's diverse territory demonstrates the communicative power of the distinctions between its regions, as the nature of an area being entered often announces itself to the ear before the eye perceives a change. In this way, consciously perceiving the soundscape serves to increase the circumference of one's awareness of one's surroundings beyond the present visual horizon in a way that is coherent, informative, and useful in navigation. The entry gate is filled with the sounds of joyful greetings and bells being rung by first-time visitors. The city's bustling Center Camp is filled with the commotion of many boisterous conversations and small groups of musicians or spoken word performances. The temple features a hushed mixture of quiet voices, expressions of grief, and occasionally a soft vocal or instrumental performance. Artworks with bells or chimes announce themselves across distances in high winds. A 2010 performance piece called "Ein Hammer" dominated the evening soundscape of the inner playa with a maniacal amplified voice. Within earshot of our camp in 2011, the clatter of a wheel of fortune continually identified the center of a nearby plaza. As the city is built and soundmarks materialize and become familiar, the sonic identity of one's neighborhood rapidly solidifies. While this is hardly a quality unique to Burning Man, its pervasive availability and its prominence within an environment that is inherently so transient are unexpected and remarkable.

2.3 Temporal Organization: The Burning Man Soundscape as a Clock

The sun rises in Black Rock City around 6:00AM, and sets around 7:00PM. In the mid-afternoon, the temperature can rise as high as 45 degrees Celcius, while at night it can fall as low as 5. Some of the most universally quiet moments across the city occur during the hottest part of the afternoon, between 1:00 and 4:00PM. While it is never impossible to locate a place to hear dance music, a majority of the city's sound systems are quiet or operating at lessened volumes during this time. The inner playa is still full of activity, including some vehicles with mobile sound systems, but no more so than the typical neighborhood street anywhere in the city's residential areas. There is a notably muted quality to the overall soundscape.

With the descent of the sun toward the horizon, the heat becomes noticeably less oppressive and the citizenry's ability to work and play returns quickly. Vehicle traffic increases, and food preparation commences in many camps. At "sun-mountain time" – the moment when the sun disappears behind the mountains – there is a daily roar of celebration that passes through the city, heralding the beginning

Another Door

Photo by: Scott Smallwood

Thunderbridge

of nighttime with cheering, air horns, sirens, and other noisemakers. As the temperature plummets, the city's nighttime soundscape blooms. By 9:00PM, the city has settled into a new sonic pattern, with the residential districts emptying out or shutting down and becoming virtually silent save the distant sounds of celebration, while at the same time the sound of the Esplanade and the inner playa picks up, the large dance camps crank up their volume and play more aggressive music, and the deep playa fills with increased noise. The sound levels in these areas rise until around midnight, and remain at their highest point until 4:00AM or beyond, even as the residential areas become hushed, filled with empty tents, or sleeping campers.

The first hints of color in the sky typically coincide with a shift towards mellower, more ambient music, and the volume slowly decreases, though dance beats continue to be heard throughout the morning while the temperature remains low. The daylight hours contain a broader diversity of musical styles than the nighttime's emphasis on dance music, and that diversity begins to emerge with the sun. Around noon, the cycle completes itself with the return of intense heat and the temporary abatement of the multi-musical soundscape.

The daily cycle has also given rise to a number of activities that have become quasi-"traditional", and which one can use to mark the passing of time. The cheering at sun-mountain time may be the most widely practiced example, but there are many more that are specific to certain neighborhoods or art pieces on the open playa. For many years, the 3:00 Plaza's Hokey Pokey Camp has hosted a public-participation rendition of its namesake dance at exactly noon throughout the festival. The procession of lamplighters jingles around the city's main thoroughfares each evening just before the sun sets. Camps in the vicinity of the Deathguild each year become familiar with the "Two men enter, one man leaves" speech from the film *Mad Max Beyond Thunderdome*, which marks the start of the evening's activities at their own Thunderdome, a re-creation of the post-apocalyptic movie's dueling chamber. Afternoon calls of "Otter pops!" announce the arrival of a group of participants handing out the frozen treats at the peak of the day's heat. Most neighborhoods have some sort of timed occurrence, whether planned or naturally resulting from changes in use and participation throughout the day. Through a familiarity with their surroundings, participants quickly develop an intuition about the precise time of day that comes as much from a reading of the sounds surrounding them as it does from the position of the sun and the sensation of temperature.

2.4 Temporal Organization: The Burning Man Soundscape as a Calendar

While the general outline of daily sound evolution unfolds across Black Rock City's expanse, other qualities of the soundscape evolve over the course of the week, and serve as aural reminders of the week's progress. In the days leading up to the official opening of the event, many members of placed theme camps are allowed into the city early to begin the construction and decoration of their structures. Even on these days, the sound of music is never absent for long, but the sounds of wind, vehicle traffic, generators, and the use of electrical and hand tools predominate. The morning and evening periods, where natural light intersects with reasonable work temperatures, are most active. At night, many camps use generators to power floodlights and continue their labors.

By 12:01AM on Monday, the official start of the event, many aspects of the cyclical soundscape described in the section above have already come into focus. Added to them is the frequent tapered whirr coming from the engines of slowly passing cars, trucks and recreational vehicles that are finding their homes – the universally observed speed limit in Black Rock City is 5 miles per hour (8 kph). A new roar of construction and physical labor commences as the newcomers begin to build their encampments. Work in the desert can be exhausting, and while there are dance parties already in action by Monday evening, they lack the earnestness of those in the coming days.

By Tuesday evening, the city sounds like it is in full swing. Generally, more than 60% of the population has arrived and set up their quarters, and the focus has shifted from unpacking and construction to exploration and celebration. This can be noticed in the increased volume and duration of the evening's wash of music, and the increased volume and energy of the noise floor, as well as the diminution of the sound of passenger vehicles. The city's intensity will increase incrementally each night until Saturday, when the ceremonial burning of the Burning Man effigy brings the long crescendo to its catharsis.

Starting as early as Wednesday night, a new sound can be heard on the inner playa between 8:00PM and 12:00AM – the sound of other major effigies and smaller artworks being burned in their own ceremonies. The sound from these events manifests both as the distinctive low rumble and high crackles of a bonfire, and the shouts and cheers of the participants who observe it. Dozens of major sculptures are burned in this way over the next three evenings. In 2011, a ring of large effigies built by community groups hailing from places across North America, Europe, and Australia, and installed in a circle surrounding the man, were burned simultaneously on Thursday night, dramatically altering the inner city's soundscape for an hour or more. On Friday night, the shouts and cheers accompanying the combustion of an enormous Trojan Horse sculpture could be heard even in distant neighborhoods.

As the city's population swells, its culture inevitably shifts as well. Participants arriving on Friday have not experienced the construction of the city, and they come more as tourists than residents. Sometimes their behavior reflects an ethos disconnected from the event's Principles. Not surprisingly, this difference can be discerned in the sounds they produce, and, while subtle, this new color in the sonic fabric is perceived and remarked upon by participants every year.

The Saturday night burning of the man is preceded by a ceremony of hundreds of fire performers and musicians (primarily drummers) known as the Fire Conclave. The micro-soundscape of this event is among the most bewildering and intense to be found in the city at any moment, as a significant portion of the city's population crowds around the safe perimeter, and a majority of the city's mutant vehicles, many with sound systems fully cranked up, crowd in behind them, forming a noise-ring of unbelievable complexity and high noise levels. Following the Conclave performance, the burn begins with a lengthy display of fireworks that gradually evolves into an 30+ meter tall bonfire. When the structure of the man falls, many members of the crowd begin a spirited race around the burning structure, while others rapidly disperse and wander out into the night's celebrations, which are the most intense of the week so far.

Sunday's soundscape dramatically reverses the trend that has been progressing all week, as the sound of de-construction and packing up begins in the morning and dominates the soundscape throughout the day. Familiar elements persist, but with a strongly shifted emphasis. By Sunday evening, as much as 20% of the population has already departed. The final structure to be burned each year is the temple, an event that reflects the somber and introspective nature of the structure, and the function it serves in the life of the city. While the burning of the man is an unparalleled bacchanal, the tens of thousands of people gathered at the temple burn are almost universally silent. Distant dance camps shut down their systems, and the mutant vehicles turn off their motors. The sounds of the enormous fire – in 2011 the temple consisted of six enormous wooden towers, including one over 40m tall – can be heard clearly across and beyond the gathered crowd. A different, more intimate sort of catharsis is reached through collective respect and restraint.

The event officially ends at noon the next day, and the phenomenon referred to as "exodus" has its own, distinct soundscape: a miles-long column of idling vehicles, straining back towards the overburdened two-lane highway.

3. Conclusion

Black Rock City embodies an ostensible oxymoron – the impermanent metropolis. Each year presents an opportunity to change anything and everything about the city. Obviously, since the city is literally constructed by its participants, this change is inevitable, but there are aspects of the city that return annually in some form, albeit retooled around fresh ideas, often related to the year's theme. In terms of sound, we do tend to choose a loud city each year, and if anything, the city has gotten louder as it has increased in size. However, structural and scheduling decisions made by the event's organizers reflect an ongoing awareness of sound's role in the city's life, and seek to mitigate its potentially detrimental effects even as they cultivate and encourage the noisy celebration that is, for many, the point of the event. While more traditional metropolitan settings must confront their own history any time a change is contemplated, Black Rock City provides us with an urban model of annual refinement, a template that is as fascinating and instructive as it is unique.

Endnotes

1 Gilmore, Lee. *Theater in a Crowded Fire: Ritual and Spirituality at Burning Man.* Los Angeles: University of California Press, 2010.

2 Horn, Thomas. "The Burning Man," in *Worth Christian News* (blog), Feb. 3, 2000: http://www.worthynews.com/1713-the-burning-man [accessed Aug. 10, 2011]

3 Hughes, Sharon. "Raising pagan children, scary," in *Renew America* (blog), Oct. 31, 2006: http://www.renewamerica.com/columns/hughes/061031 [accessed Aug. 10, 2011]

4 The Burning Man blog: http://blog.burningman.com/2011/06/spirituality/confusion/ [accessed November 3, 2011]

5 The Burning Man website: http://www.burningman.com/ [accessed Aug. 10, 2011]

6 The AERO-PAC website: http://www.aeropac.org/blackrock.html [accessed November 3, 2011]

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Scott Smallwood is a sound artist, composer, and sound performer who creates works inspired by discovered textures and forms, through a practice of listening, field recording, and sonic improvisation. He also designs experimental electronic instruments and software, as well as sound installations and site-specific performance scenarios. He performs as one-half of the laptop/electronic duo Evidence (with Stephan Moore), and currently lives in Edmonton, Alberta, where he teaches Composition, Improvisation, and Electroacoustic music at the University of Alberta. 2011 marks the fourth year he has attended the Burning Man Festival.

A Second Life for Sound: Crossing Sonic Paths in Virtual Worlds

Article and Photography by Dr. Phylis Johnson

I am not the first to discuss the wonders of virtual worlds. A read of Edward Castronova's *Exodus to the Virtual World: How Online Fun is Changing Reality* (2007) is a good place to start to understand the potential of such environments and fascination with exploring life in technological microcosms. In 2010, I published *Second Life, Media and The Other Society*, a book that continues Castronova's discussion, but with a narrower lens directed at one virtual world. A chapter of that book was dedicated to the role of sound in immersive virtual environments.

Second Life is a virtual social network platform that allows its more than 20 million registered users to represent themselves or to create alternate identities, importing from the real world, archiving past and present, toying with history and the future, and considering real life consequences in a safe place of exploration. Art, history, science, literature and music are themes for communities. Second Life began as a blank slate, and members have remained encouraged by its founder's mission, Philip Linden of Linden Lab, to create in this new world, as well as to enjoy the creations of other residents. Admittedly, much of what is created replicates real life.

In October 2011, I celebrated my fifth year as a virtual resident of Second Life, and have felt compelled to share my sonic perspectives, noting the evolution from merely canned sounds to the growth of an acoustic community of composers, sonic artists and architects that have created increasingly authentic and credible soundscapes and installations. The conference theme – *Crossing Listening Paths* – seemed an appropriate launch pad to a discussion on technology's role in how some come to hear and understand sound, particularly natural, in virtual environments. Second Life is more than a metaphor for listening; it has actually contributed to a refocussing on how sound shapes our listening environment, be it real or artificial.

The Basic Premise

The idea that we can emulate nature virtually is one that stimulates curiosity and concern simultaneously. The environmental setting and ambience associated with virtual gaming worlds is not a primary focus in the field of acoustic ecology, other than what might be perceived as the consequences of substituting an artificial experience for reality. Some achieve a sense of solace in video game play, even with all the incessant "bings" and "bangs" that signify action. My thoughts, however, focus on "residential" virtual games like Second Life, where members form communities and experience a second life through exploration of varied environments. Members come together to share in art and amusement, and sound (as music, ambience and effects) often accompanies this alternative life. Second Life has gained the attention of numerous real life musicians, who perform at these online live music venues set in a virtual world. One of the most prominent has been the British band Duran Duran that rose to fame in the 1980s. The band has toured twice internationally and created two albums in recent years. But on June 22, 2011, it opened a themed "sim" called Duran Duran Universe that is not intended primarily to promote music; rather, it is a project that has taken nearly five years and is designed to explore the potential of virtual worlds as artistic retreats and exhibition spaces. One of the band's artistic spaces is called Khanada Kinesis, in which the Second Life explorer enters a spiral filled with an array of sound and spoken word.

In Second Life, some virtual installations are intended as long-standing works, especially when the land (often referred to as a "sim") is used for the re-creation of a prominent city or time period or the creation of a fictitious setting. Pierre Schaeffer (2005) would likely envision the inclusion of a sound object within virtual worlds as one risky to the perceiver's interpretation, apart from the original source. In essence, the imported sound would take on its own meaning apart from the source. The soundscape of Virtual Greece, for instance, would not offer the listener the same sonic experience, as if he or she were actually in a Greek city. In contrast, Francisco Lopez (2005) would offer a completely different take on the listener's experience. The recorded sounds, by the very act of recording, have already been transformed. It is not their placement within Second Life that alters what is heard; it is the actual recording itself.

Second Life, however, may contribute to a different interpretation, by the fact that the sound is embedded in a different medium and is represented in a virtual landscape. The intention of the virtual artist may be to reinterpret the outer sounds into this inner space, or the virtual space may serve as an archive to preserve such sounds. In the former instance, the very idea that the sound was removed from its source calls question to its role in this new world in which listeners respond to it. It is no longer merely a means of removing the sound from the source, for it becomes also a matter of rehearing the sound in a new context, the virtual environment. Schizophonia, according to R. Murray Schafer (1977), is the separation of a sound source from its original locality and cultural context via recording or transmission, and consequently the sound loses its connection to the environment from which it was isolated. That sound was rooted in an acoustic ecological community. Schafer (1977) would likely see this separation from its source as counterintuitive to the idea of preserving the sonic environment from which this sound had originated. What if an environment had itself changed over a period of time and was devoid of the rich sound that once occupied its space? Is there a role for recreating such an environment through old recordings imported into the virtual environment? Virtual environments might be either viewed as the culmination of technological practices that

remove the listener further and further from real world experience, or simply another way for people to access memory and interpretation of experiences as presented by virtual composers and archivists.

Second Life can provide that cultural and educational immersive space to create and recreate soundscapes of small rural African villages or natural parks and refuges or even a world not yet possible in real life. For instance, you can experience Africa, China, Egypt, France, Greece, India, and Japan in the past, present and future – visually and sonically, not always to the extent of authenticity but that is changing as technology advances and becomes more user-friendly to artists. Second Life entangles science and fiction, and offers a space for the reinterpretation of sounds. The authenticity of these sounds might be evaluated case by case. In the same manner in which a sound installation at a gallery changes the context of listening, so does a virtual world at times.

Crossing Over to Virtuality

The very idea that sound is being imported into virtual spaces begs us to ask, what might one hear in a virtual world beyond music – canned and live. Apart from relaxing at the fairly common dance venues, some residents tap into the creativity afforded by virtual environments, creating soundscapes that combine everyday noises with natural sounds. Others create venues and amphitheaters to showcase original ambient compositions; still others create sound installations to complement virtual landscapes. Some soundscapes are responsive to environmental scripts, triggered by touch and location, as one enters a portal or physically clicks on an element such as a leaf or a painting. Yet, sound – in all its forms – is a significant element of the virtual soundscape.

Athens, as conceived in Second Life

One can recreate real life sound environments within virtual worlds, and this practice has significantly attracted attention over the past decade among some sound artists. Enter the world of Second Life, and the sound of birds, ocean waves, trains and so forth have become a regular part of virtual settings, as created by the various residents, laypeople and artists alike. Within Second Life, at virtual locations like New Babbage, you hear various industrial sounds coming together to create a Steampunk or science fiction scenario. Among the plethora of virtual worlds online and on the horizon, my focus has been on Second Life, a multiplayer role-playing game in which residents create the world. As a listener within an interactive environment, real life and Second Life converge to create the psychological context. As McLuhan (1951; 1964; 1967) espoused, technology extends our human capability. Increasingly our society is becoming connected online and virtually through social networks.

Virtual worlds thrive on interaction, memory and emotion, and in the instance of Second Life, a sense of physicality is experienced through online engagement. Nie (2001) tells us that the feeling of proximity can be interpreted as physical fulfillment in real life. In Second Life, proximity is expressed through animations and scripting, but it is the interaction of and among participants within an environment that shapes their responses; the memories and experiences that they bring to the encounter lend to their interpretation. Moreover, Aaron Ben-Ze'ev (2004, p. 1) concurs that while cyber experiences are not tangible—because their dimensions such as distance and location are not physically measured—there is an experiential psychological imprint that infuses the virtual to the real within the mind of those engaged as listeners and viewers. He states, "Such a novel psychological reality is supported by sophisticated technology, but it is not defined by this technology;" Ben-Ze'ev purports, rather, "it is defined by the various psychological interactions occurring in it" (pp. 1–2).

In Second Life, one can teleport to the past and the future in a moment, and explore cities and regions across the world. The past and the future can be expressed simultaneously, and that of course has its own consequences, as in the ethics of rewriting history. Yet, history is usually and to some degree a matter of interpretation. There are a host of ethical questions here, with regards to such ends. I am merely arguing that virtual worlds do have a place in the understanding of acoustic ecology. Early 20th Century notions of noise and futuristic sound art (Russolo, 1967; 2005) contribute to the crafting of soundscapes – music and environmental sounds – that accompany Second Life Steampunk communities, along with electronic and eclectic compositions and period music. The factory smoke stacks puffing on cue, rhythmically, give life to this fictionalized era, a reinvention of the industrial age and homage to the technological visions of Charles Babbage and Nikola Tesla. Notably, there is also a fascination with the importation of reality into Second Life. The ramifications of sampling the real sonic environment might appear worrisome to those not familiar with Second Life, and some might be aghast that certain soundscapes become part of an acoustic ecology remix.

Second Life and like forms can offer a perspective on how sound has impacted the past and offer both listener and composer the chance to learn from ecological abuses; what would our world sound like if certain care had been taken to preserve sonic environments now extinct? Perhaps such questions help one understand the consequences of our societal and ecological actions.

Importing Reality and Dreams into Virtual Worlds

A few years ago, some Walden enthusiasts created Henry David Thoreau's retreat on an impressive virtual lot in Second Life. By the time I discovered it, the land was mostly vacant. Things change quickly in Second Life, for it is a place of experimentation. I created my own little Walden in a skybox, importing natural sounds into the region from my field recordings captured during my visit to Concord, Massachusetts. The train sounds were scripted to play upon touch and proximity. To understand why people would choose a virtual visit to Walden rather than a real one might be an economic consideration in some instances; in other instances, it might be attributed to physical limitations. The Linden Lab and other organizations like Virtual Ability have made strides to accommodate disabled communities within Second Life, providing land and resources (Deeley, 2008). CNN Correspondent Steve Mollman (2007) reported on the opportunities for some disabled residents. From walking to flying to creating art and music, to being employed, virtual worlds offer some residents hope to experience life in innovative ways. A visual and

sonic replica of real life locations might allow some to experience certain sights and sounds when travel is not possible.

Why some intentionally choose to virtually experience life, either as a complement or to supplement one's real life experiences, is at the least a valid question for anyone, even acoustic ecologists, to ask. Numerous universities teach within Second Life, with some having exhibited soundscapes as installation pieces on their virtual campuses. Nonetheless, the members of Second Life are the creators. Individuals often form memberships within community groups of similar interest through networking at various in-world locations, such as live music venues, cafés, offices, beaches, and numerous artistic exhibition and installation sites. Initially, sound had minimal presence within Second Life, and then a variety of businesses began to offer "canned" sound effects, such as birds, wind and water to complement residential and office landscapes. At one point, it seemed virtual worlds might solely become a depository for natural sound recordings marketed to enhance visually pristine spaces online.

Most sounds in virtual worlds can be purchased in similar ways one might obtain environmental sound effects. Some artists have created authentic soundscapes to accompany their virtual lands. In Second Life, you cannot easily separate yourself from the visuals to solely appreciate the sound aesthetics in a virtual environment. I can note many times, sitting at the edge of a boat dock at virtual sunset, immersed in the beautiful visuals and surrounding harbor sounds. Such examples occur frequently in Second Life. Memories play a big part in Second Life: the idea of recreating places of beauty that one has experienced in real life.

In another instance, there are rural landscapes in Second Life, rich with sounds of farm animals and countryside ambience. When we encounter such environments within a virtual world, do we think about the natural counterparts that we have heard throughout our life, and those we have often taken for granted? Most soundscapes in Second Life lack the acoustic detail that surrounds us daily. But those captured and imported sounds, if done well, might contribute to our appreciation of natural sound in real life. Alas, while acoustic ecologists might concede that there are some interesting aspects to soundscape compositions in virtual worlds, many would be disinclined to redefine their practice to accommodate it. Virtual environments as immersive spaces are still removed from the original source and context. These concepts, however, offer some possibilities for experimental research in the way listeners perceive their worlds. Virtual worlds simulate real life, and the degree to which people experience these as valid to their identity is still under debate.

Sound in Virtual Geography

Midsomer Isle is a long-time virtual area that draws listeners into its mystical landscapes, mingling sonic elements into an ambient composition. Tourists also can create music on the island. The possibilities for sound in virtual environments, at times, seem limited to one's imagination. For many, virtual worlds are places for exploration and experimentation. Certain sounds in our real environments have become increasingly lost among a sea of noise and are barely audible. Second Life can call attention to sound. Installations are built with teams of visual and sound designers, and exhibitions run from a few weeks to months. *Dynafleur* was the creation of Douglas Story and Desdemona Enfield; it was a virtual installation of colors and movement enriched with sound by Dizzy Banjo. Banjo is the Second Life avatar of Robert Thomas, an interactive music composer. His credentials in Second Life include creating the music for the first soundtrack to a virtual location and thereafter he became instrumental to the sound design of a number of projects. The Dynafleur exhibition received 11,000 visits in 2008, and many more during its second showing two years later.

Tony Gerber, known by his avatar Cypress Rosewood, is a professional ambient space musician who performs regularly in Second Life to large audiences. His primary instrument is the Native American flute. Being among the first sound composers to cross over into virtual platforms, Gerber has provided sound design for major in-world installations, as well as performed more than 800 concerts for in-world audiences since 2006. He describes himself as a pioneer of live space and ambient music in virtual worlds. Rosewood and Bango have begun to pave the way for others, some of whom might lean more heavily toward the infusion of acoustic ecology practices in their virtual compositions. All that remains to be seen.

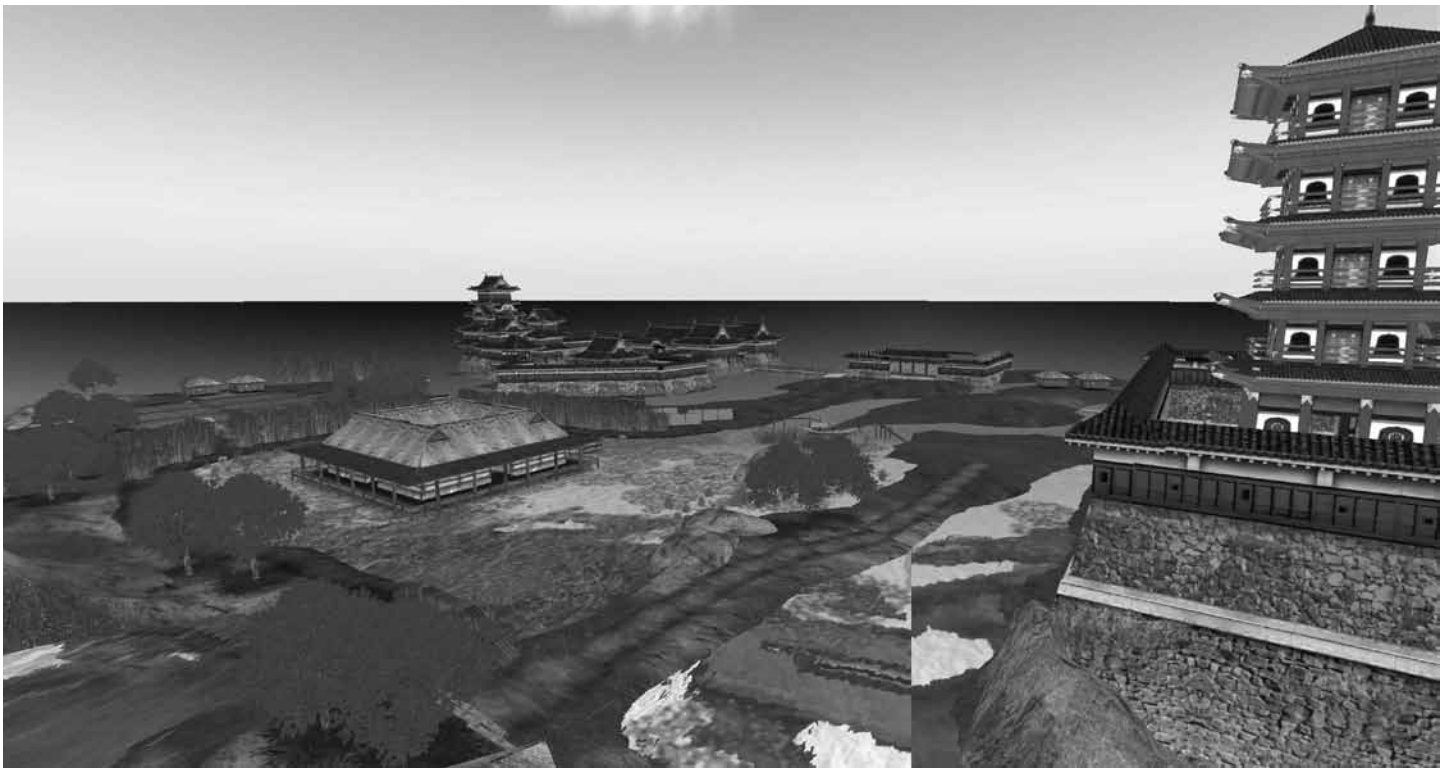
The New Media Consortium based in Austin, Texas has provided space for Second Life artists to exhibit their sound and visual installations on one of its sims, Ars Simulacra. A variety of work can be experienced there at any one time, virtually. In such cases, sounds can be imported, exhibited and preserved for their historical and cultural significance. Soundscapes designed to reflect real and imagined spaces might help us to understand how we as listeners and composers are impacted by sound in our various communities and environments. Virtual worlds can serve as sonic microcosms of acoustic surroundings in real world settings.

The Garden of Immersive Sounds in Second Life was among a handful of projects that demonstrated how virtual environments could create "sonic" reference points when, in this instance, sound was experienced as vibrating from within omnidirectional spheres. In another instance, The Gallery of Musical Sculptures has featured ambient, electronic and experimental performances from around the world, as well as sound sculptures, which are intentional sound objects created as artistic works, and might take the form of a statue or artistic sculpture (as might be viewed in real life) but in this virtual instance they contain scripted sound.

Madhu's Café invites people to listen to music from India, Africa, Latin America and Arab nations in the garden area, and the surrounding ambience is offered for meditation and relaxation. Or one might take a shopping trip to Bird Island to acquire an assortment of tweets and chirps to enhance his or her residential soundscape on personal virtual property. Second Life residents create bountiful landscapes rich with color and texture, ranging from ancient ruins, forests and ocean fronts. One can listen to ocean sounds and seagulls. The chirping of birds is fairly common to most natural soundscapes. Through the history of Second Life, regions have been constructed to emulate the appearance and cultural feel of certain nations, in part through the application of sound.

Based on my own observation, the soundscape in the sim Durrat AL-Ghawwa had been designed, at one point, to portray the spiritual aspects of northern Africa, and included a "call to prayer" embedded within. In other instances, one can hear the village bell in virtual towns, and such Schaferian soundmarks enhance the cultural and historical aesthetics of virtual locations, as they would in real life settings. The Sound Factory at Sanctuary Falls is visually and aurally an aesthetic environment with New England charm. Crossing a bridge you will hear water lapping beneath the wooden fame. Water dripping from an underground cavern adds to the feel and mystery of the village. As one stands on deck of a nearby boat, its gentle rocking against the water below periodically creates rustic-sounding creaks. Cicadas, water, birds and other natural-sounding elements lavish tourist ears with a fairly authentic soundscape – light, relaxed and it complements the region.

Hildegard Westerkamp (2003, online reference) cautions, "Our love-hate relationship with technology challenges healthy soundscapes….People in today's urban societies are surrounded by sound walls. Mechanical sounds cut us off from our communities. They also make it difficult to reach down to voices we all have -- singing and speaking voices." She continues, "Sound is about Place. Locality.



ABOVE: China, as conceived in Second Life.
BELOW: Paris 1910, as conceived in Second Life

It surrounds us like water. We are inside sound waves, they are touching us all the time. We all depend on technology but mechanical sounds disconnect us aurally from our communities, wipe out natural sounds."

How might we understand the immersive nature of virtual worlds now and to come, as contributing to or detracting from acoustic ecology? I propose further discussion on how sound might be virtually represented and contribute to our interpretation of reality. It is not a replacement for our natural environments. I say this with the understanding that our world view of nature is impacted, to varying degrees along this path, and to an extent that cannot yet be measured. However, is not such contemplation a worthy mental exercise? Virtual worlds offer us a chance toward speculation of the near and distant future, if we as acoustic ecologists, sound artists and audio theorists choose to consider such online spaces as worthy of our attention. There are those soundscapes designed to sound nearly authentic to time and place, even if that space is one that emerges from the pages of literary classics like those of H.P. Lovecraft or H.G. Wells. Many creators draw upon literature and movies for inspiration. Medieval villages and Victorian cities, as creative outlets, are designed to allow for role play in settings reflective of literature and historical interpretations. Sound underscores the intent of the setting, adding variations of acoustic accuracy depending on the resourcefulness, imagination and innovativeness of the maker.

Sound artists Janet Cardiff and Hildegard Westerkamp among others have reconstructed history and culture through sound walks and installations, with varying goals in mind depending on the nature of their projects. With Cardiff, fiction and reality might converge within her interactive and interpretative pieces. Her work is set in real spaces, but there is a sense of displacement at times, although calling attention to the authenticity of her sounds. How we listen back to sound, whether at a gallery, museum or at the natural point of origin changes our perceptual understanding. A gallery space in real life has limitations as does a virtual installation. The locale, in and of itself, is rarely a fixed construct of place and time; the present is birthed from the nostalgic (Appiah 1992; 1995). One can only ever record a moment in time and place. Memories contribute to individual interpretations of sonic experiences. Imagined space shifts time and place, especially within virtual worlds, and our memories converge to accept both realities.

Converging Worlds

To borrow from cultural geographer David Harvey (2002), culture is rooted and transformed by space, physically and socially as people segue into various situations and environments. Breinig & Lösch (2002; 2006) discuss a similar idea called transdifference. Johnson (2006) extended their discussion by applying transdifference to sound: the idea that listeners interpret sounds from within their cultural framework and their interactions from within multiple spaces at a moment or a series of moments over a lifetime. Sound culture exists within the paradoxical geographies of the virtual and the real. New sound cultures within virtual environments are exported into our sense of reality. Sonic geography is a space of negotiation over time between the physical environment and the perceiver of the soundscape, depicting history and cultural artifacts (such as music) against a backdrop of modernity (Thompson, 2002; Sterne, 2003). Consequently would not what we hear virtually be imprinted within us, similarly, as one might process other life experiences?

One might easily argue that to import sound into virtual environments changes its authenticity, separating it from its original source.

True, the act of recording separates sound from its source and context as noted by R. Murray Schafer (1977; 1992: 2004) and Francisco Lopez (2005), physically and culturally. Regardless, virtual worlds offer potential for experimentation by sound artists and exploration by listeners. It is not necessarily the right or only path, but it is one of many sonic voyages worthy of discussion. Perhaps it might be a way to bridge the scientific and artistic communities through innovative partnerships, as well as call attention to those cultural practices that threaten the extinction of natural sound. It might also serve as a means toward advocacy of sound (culture) preservation through importation and archiving of natural sound. It might help some to discover the richness and diversity of nature virtually, only to stimulate desire for experiencing it first hand at the source.

From sound preservation of key geographic locations around the world to the virtual performance of sound in digital amphitheaters and concert halls, to the Foley work in the reconstruction of a Victorian landscape, Second Life offers a space for contemplation. It creates sound culture that pays ecological and artistic tribute to our past and present, and offers a glimpse, perhaps, of our sonic future. Second Life offers us an opportunity to rehear the humanities and arts through the science and technology of virtual worlds. *Victorian Soundscapes* (Picker, 2003) and so many other books, ideas and visions could be sonically expressed through virtual technologies. Acoustic ecologists might also find a welcoming space for their archiving of at-risk sounds and a means to promote and demonstrate the significance of global sonic awareness through the assistance of technically savvy communities of virtual artists.

References

Appiah, Kwame Anthony. (1992*). In My Father's House. Africa in the Philosophy of Culture*, New York: Oxford University Press.

Appiah, Kwame Anthony. (1995). The Postcolonial and the Postmodern, in Bill Ashcroft, Gareth Griffiths & Helen Tiffin, eds., *The Post-Colonial Studies Reader*. New York: Routledge, 119–124.

Ben-Ze'ev, Aaron. (2004). *Love online: Emotions on the internet.* Cambridge: Cambridge University Press.

Breinig, Helmbrecht & Lösch, Klaus. (2002). Introduction, Difference and Transdifference, in H.B., Jürgen Gebhardt & K.L., eds., *Multiculturalism in Contemporary Societies. Perspectives on Difference and Transdifference*. Erlangen: Universitatsbund, 11–36.

Breinig, Helmbrecht & Klaus Lösch (2006). Transdifference, *Journal for the Study of British Cultures*, *13* (2), 173–185.

Castronova, Edward. (2007). *Exodus to the Virtual World: How Online Fun is Changing Reality*. New York: Palgrave Macmillan.

Deeley, L. (2008, March 24). Is this a real life, is this just fantasy? *The Times*. Accessed February 24, 2009, from http://women.timesonline.co.uk/tol/life_and_style/women/body_and_soul/article1557980.ece

Harvey, David (2002). *Spaces of Capital: Towards a Critical Geography*. New York: Routledge.

Johnson, Phylis. (2006). Hearing Transdifference: Sound, Strife and Sonic Processes of Cultural Negotiation. *Journal for the Study of British Cultures 13* (2), 173–185.

Lopez, Francisco (2005). Profound Listening and Environmental Sound Matter, in Christopher Cox & Daniel Warner, eds., *Audio Culture. Readings in Modern Music*, New York: Continuum, 82–87.

McLuhan, Marshall (1951; 1967). *The Mechanical Bride: Folklore of Industrial Man*. Reprint 1951. New York: Beacon Paperback.

McLuhan, Marshall (1964). *Understanding Media: The Extensions of M*an, Cambridge, MA: MIT Press.

Mollman, S. (2007, July 10). Online, a virtual business option for disabled. CNN.com. Accessed July 12, 2009, from http://edition.cnn.com/ /2007/BUSINESS/07/10/virtual.disabled/index.html

Nie, N. J. (2001). Sociability, interpersonal relations, and the internet. *American Behavioural Scientist, 45* (3), 420–435.

Picker, John P. (2003). *Victorian Soundscapes*. Oxford:University of Oxford Press.

Schaeffer, Pierre. (2005). Acoustmatics, in Christopher Cox & Daniel Warner, eds., *Audio Culture. Readings in Modern Music*, New York: Continuum, 82–87.

Russolo, Luigi. (1967). *Art of Noises* (1913), transl. Robert Filliou, New York: Something Else Press, http://www.ubu.com/historical/gb/russolo_noise.pdf (25 February 2006).

Russolo, Luigi. (2005). The Art of Noises: Futurist Manifesto, in Christopher Cox & Daniel Warner, eds., *Audio Culture. Readings in Modern Music*, New York: Continuum, 10–14.

Schafer, R. Murray. (2004). The Music of the Environment, in Christopher Cox & Daniel Warner, eds., *Audio Culture. Readings in Modern Music*, New York: Continuum, 29–39

Schafer, R. Murray. (1992). Music, Non-Music and the Soundscape, in John Paynter et al., eds., *Companion to Contemporary Musical Thought*, London: Routledge, 34–45.

Schafer, R. Murray. (1977). *The Tuning of the World.* Toronto: McClelland & Stewart. Reprinted 1994, Destiny Books.

Sterne, Jonathan. (2003). *The audible past: Cultural origins of sound reproduction.* Durham: Duke University Press.

Thompson, Emily. (2002). *The soundscape of modernity. Architectural acoustics and the culture of listening in America, 1900–1933*. Cambridge, MA: MIT Press.

Westerkamp, Hildegard. (2003). Interview, Living Sounds. *Paula Gordon Show*, Accessed November 1, 2001, available at http://www.paulagordon.com/shows/westerkamp

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Automatically Updated Soundmaps as a tool for environmental monitoring: Research in progress

By Ioannis Paraskevas, Stelios M. Potirakis, Ioannis Liaperdos and Maria Rangoussi

The research work presented here is focused on the development of a method for the formation of Automatically Updated Soundmaps (AUSs) aiming to utilize them as a tool for environmental monitoring, regional planning and decision making. The proposed method consists of three steps: Development and deployment of a Wireless Sensor (Microphone) Network – WSN (Step 1), Pattern Recognition of the Environmental Sounds recorded and transmitted by the network (Step 2) and automated Soundmap creation, publishing and update (Step 3). Ongoing research based on encouraging preliminary results obtained within the scope of Steps 2 and 3, (Paraskevas et al., 2009; Rangoussi et al., 2010), currently focuses on Step 1 issues (electronics design, energy awareness and communications aspects of the WSN) as well as on the integration of all three steps into an interoperable application. The novelty of this research, compared to other relevant works (Aspuru et al., 2011), (Lavia et al., 2011), lies in the engineering approach taken towards the development and automated updates of the AUSs, inspired by the similar yet distinct notion of noise maps.

Automatically Updated Soundmaps: Method Outline

Research related to the environmental or ecological assessment of landscapes was originally focused on their visual content, e.g., the morphological characteristics of a biotope. However, acoustic ecology has shown that the sound content of a site can be employed as a valuable additional information stream in order to characterize or monitor areas of ecological interest (Mazaris et al. 2009). Indeed, sound can provide an additional ecological indicator for areas of environmental interest, for purposes that include monitoring of the wildlife or the various human activities and their evolution with time. After appropriate signal processing, the large amounts of information required to this end, originally in the raw form of sound recordings, can be presented in the concise yet meaningful form of a soundmap.

Soundmaps are useful tools for the conservation of nature, because periodic assessment of soundmaps from a certain area can lead to significant ecological observations. They extend the mature concept of noise mapping to cover the whole sound / acoustic content of a site of interest, signals and noises all considered as useful information. In contrast to the geographic maps that are rarely changed, soundmaps require regular updates because they vary with time (Paraskevas et al. 2010).

In the following part, a three-step method is proposed for the development of an AUS:

Step 1: Wireless Microphones Network

The first step for the development of an AUS is the collection of sound recordings by microphones that are placed at selected locations over the whole area of interest. Sound is recorded locally but is processed centrally. Specifically, a wireless sensors (microphones) network is designed, developed and deployed so as to communicate the locally pre-processed sound information from the sensors to the central processing node, where the pattern recognition and the soundmap formation steps take place (Step 2 and Step 3), (Raghavendra et al., 2005).

Step 2: Pattern Recognition of Environmental Sounds

In the second step, sound/audio recordings are searched for 'events'; events detected are classified into a hierarchy of target classes. In order to 'feed' the classifier selected for this step, sets of features are extracted by signal processing of the sound recordings.

The pattern recognition step includes: (i) the feature extraction stage and (ii) the classification stage. In feature extraction, class discriminating features are extracted in order to classify each sound recording (Duda et al. 2000). Efficient feature extraction requires that the signals be transformed either to the frequency domain e.g., via the Fourier transform, or to the time-frequency domain, through a time-frequency signal representation, e.g., the spectrogram, according to their (non-) stationary character.

The classification of the environmental sounds is addressed hierarchically in levels that proceed from 'coarse' to 'fine' classification. Specifically, at the first level of the hierarchy, the aim is to group sounds into three major sound classes, namely: anthropogenic, geophysical and biophysical (other than anthropogenic) (Mazaris et al. 2009). At the second level, the aim is to further classify sounds into subclasses that belong to the same major class, e.g., to identify different species of animals within the major class of biophysical sounds. At the third level, sounds within the same subclass are further classified e.g., sounds produced by different kinds of birds (biophysical) are classified into the existing families of this species within the area of interest.

For the classification stage, different kinds of classifiers, e.g., distance metric classifiers, Artificial Neural Networks (ANNs) etc., can be employed. The final selection of a feature extraction and a classification method pair is typically driven by the spectral characteristics of the signals at hand; recognition performance can be critically influenced by a judicious choice, (see (Paraskevas et al. 2009), (Rangoussi et al., 2010) for a discussion on choices appropriate for the aims of soundmapping).

Step 3: Soundmap Formation

In the final step, each classified acoustic / sound 'event' (Step 2) is placed as a tag on a geographical map of the area of interest. The soundmap thus formed expands into various levels of detail, depending on the 'depth' of levels in the associated hierarchical classification scheme employed; it may therefore cover a wide range of environmental interests, visualizing the results of the sound classification (Rangoussi et al., 2010; Paraskevas et al., 2011).

At this point, the relevant research carried out in Greece by the 'Reconstruction Community' Group is worth referencing. A sample of this work (t-echos) can be found in (Reconstruction Community, 2011). The methods and tools employed therein differ from the ones employed here, however, because the main purpose of that work is the development of soundmaps for the monitoring of noise pollution within urban surroundings, while here the purpose is to monitor the whole sound / acoustic content of a natural environment of interest, mainly for nature preservation, ecology and regional planning purposes.

Applications

Web publishing and periodic update is designed to be the typical function of the AUS of an area of environmental interest (e.g. a NATURA 2000 protected area). Hence, governmental / non-governmental agencies will be able to monitor and compare these AUSs in order to draw conclusions that will assist the decision making process regarding the area of interest. Moreover, the audio related information (AUSs) can be combined with visual information from cameras, in order to protect certain areas more efficiently. Thus, the proposed method aims to contribute to the multidisciplinary research related to acoustic ecology from the aspects of a wireless sensor system for automated environmental monitoring, the pattern recognition of environmental sounds, and the soundmap formation.

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References

Aspuru, I., Garcia, I., Herranz-Pascual, K., Garcia-Borreguero, I. (2011) "Understanding soundscape as a specific environmental experience: Highlight the importance of context relevance." *Proceedings of Meetings on Acoustics, vol. 14*: 015004.

Duda, R. O., Hart, P. E., Stork, D. G. (2000) *Pattern Classification.* (2nd ed.) J. Wiley & Sons, Ltd, ISBN: 0471056693.

Lavia, L.R., Dixon, M., Axelsson, O., Witchel, H. (2011) "Using a soundscape approach to develop an acoustic ecology plan for a city." *Journal of the Acoustical Society of America, vol. 30,* issue 4: 2532–2532.

Mazaris, A.D., Kallimanis, A.S., Hatzigiannidis, G., Papadimitriou, K., Pantis, J.D. (2009) "Spatiotemporal analysis of an acoustic environment: interactions between landscape features and sound." *Landscape Ecology 24*(6): 817–831.

Paraskevas, I., Potirakis, S. M., Liaperdos, I., Rangoussi, M. (2011) "Development of automatically updated soundmaps for the preservation of natural environment." *Journal of Environmental Protection 2*(10): 1388–1391.

Paraskevas, I., Potirakis, S. M., Rangoussi, M. (2009) "Natural soundscapes and identification of environmental sounds: a pattern recognition approach." *Proceedings of the 16th Intl. Conf. Digital Signal Processing* (DSP'09), Santorini, Greece, pp.1–6.

Paraskevas, I., Potirakis, S. M., Rangoussi, M. (2010) "Pattern recognition of environmental sounds for soundmap modelling." *2nd Conference on Acoustic Ecology*, Rethymnon, Greece.

Raghavendra, C. S., Sivalingam, K. M., Znati, T., (Eds.) (2005) *Wireless Sensor Networks.* 2nd Ed., Computer Communications and Networks Series, Springer.

Rangoussi, M., Potirakis, S. M., Paraskevas, I. Tatlas, N.A. (2010) "On the development and use of sound maps for environmental monitoring." *Proceedings of the 128th Convention Audio Engineering Society* (AES), London, UK, paper no.: 8113.

Reconstruction Community, available at http://www.reconstruction.gr/soundmap/General.html, last date accessed: 29/11/2011.

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In Memory of Iannis Xenakis

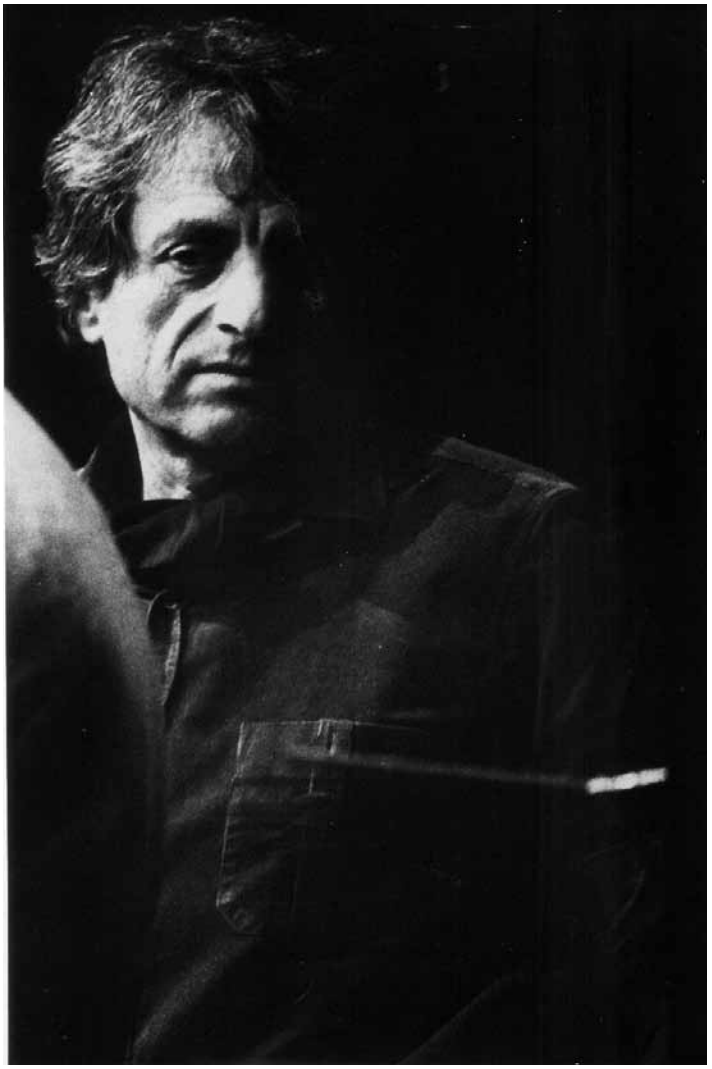
By Kostas Paparrigopoulos

2011 marked the 10th anniversary of the death of Iannis Xenakis, a composer and a thinker who greatly influenced the music of the second half of the 20th century and beyond. He traced fascinating crossing paths between art and science, music and architecture, aural and visual perception, determinism and indeterminism.

Xenakis expressed a great and particular interest in natural phenomena; the natural paradigm shaped a large part of his musical works as well as his theoretical texts. In these texts, both musical and philosophical, he often refers to the sounds of nature. However, Xenakis' main objective was not to imitate the sounds of nature directly, but rather to find the "secret reasons" behind the natural phenomena, to look out of Plato's Cave, and to apply them in his music.

In the 1950–60s, among natural phenomena, his main interest seemingly focussed on mass acoustic phenomena, on "galaxies", or "clouds" of sounds as he calls them, like "the collision of hail or rain with hard surfaces", "the song of cicadas" etc. How do these masses operate? Randomly? According to causality? Is there certain "logic" in the undetermined? If order and disorder, determinism and indeterminism, are dipoles we find in nature and in our every day life, they are also philosophical subjects, and Xenakis was an enthusiast of philosophy. Xenakis' "answer" was to look towards modern sciences. On a more abstract level, the constitution of the sound masses, the "game" between order and disorder, determinism and indeterminism, can be comprehended with the assistance of mathematics, especially with the Theory of Probabilities. He applied this theory to composition, and to the creation of the clouds of sounds, and named this music "stochastic" (Xenakis 1992). This was his first important "invention". Other compositional techniques, mainly inspired from a reflection on nature's operations, will follow, such as arborescences, Brownian motion and cellular automata (Harley 2004).

Xenakis shares common concerns with acoustic ecology. In his instrumental music, we can find sonorities inspired from, or referring to, acoustic natural phenomena. In his electroacoustic works, the sonic material is often recordings of "concrete" sounds that evoke those of nature, like earthquakes and thunderstorms, but also environmental sounds caused by human activity like sounds of jet planes, crashing railroad cars etc. (Solomos 2002). Furthermore, he was very interested in the relationship between soundscapes and landscapes. These relationships guided him to sonic spatialization research, but also to the transfer from visual to aural (i.e. Metastaseis, UPIC), and vice versa, from aural to visual (i.e. Tourette, Philips Pavilion). The Polytopes and the Diatope are paradigms of "alloys" between optic and acoustic diffusions, while Persepolis and Mycenae, can be viewed as archaic soundscapes emerging through ruined landscapes.



Iannis Xenakis, 1975. Photo taken from *http://www.iannis-xenakis.org/xen/read/photos.html*

In 2011, various concerts, symposia and other events took place in Europe and North America honouring the tenth anniversary of Xenakis' death. The following were among them:

- In January in Los Angeles, CEAIT Festival. Concerts of Xenakis' works during three days with Maurita Thornburg, Erika Duke-Kirkpatrick, Mark Menzies, Dzovig Markarian, Curtis Roads, Rohan de Saram, Claire Chenette, Matthew Cook, Trio Kobayashi, Maggi Payne, Takuro Mizuta Lippit. Pre-concert presentations. (http://www.redcat.org/event/ceait-festival-5).

- In March in Geneva, Festival Archipel. Concerts of Xenakis' works with the Ensemble Namascae, CIP, Arne Deforce, Vlad Maistorovici, Amandine Lecras, Yugi Noguchi, Ensemble Contemporain de l'HEMU, William Blank. (http://www.archipel.org).

- In April in London, Iannis Xenakis International Conference London 2011, at Southbank Centre, organized by the Centre for Contemporary Music Cultures at Goldsmiths, University of London. In parallel, workshops on UPIC, concerts with London Sinfonietta, André de Ridder, Ensemble Exposé, Rodger Redgate, performances by students from The Royal College of Music, film screening. (http://www.gold.ac.uk/ccmc/xenakis-international-symposium/).

- In June in Amsterdam, Holland Festival. An exhibition and concerts of Xenakis' works with Asko|Schönberg Ensemble, Arturo Tamayo, Amsterdam Sinfonietta, Candida Thompson, Slagwerk Den Haag, Orchestre de la Résidence de La Haye, Reinbert de Leeuw. (http://www.hollandfestival.nl).

- In June in Athens, Athens and Epidaurus Festival. Concerts of Xenakis' works with Arditti Quartet, London Sinfonietta, Ryan Wigglesworth and Ergon Ensemble, Nikos Tsouchlos. (http://www.greekfestival.gr).

- In July in Reims, Flâneries Musicales de Reims. The festival pays tribute to Iannis Xenakis. During a week, fifty of his works were performed in twenty concerts, accompanied by master classes, and an exposition by Centre de Documentation de la Musique Contemporaine (CDMC). At the risk of forgetting someone, there were: Alain Giguère, Arturo Tamayo, Asko|Schönberg Ensemble, Benny Sluchin, Brigitte Poulin, Childrens' choir of Perpignan Conservatory, Christophe Roy, Christophe Roy, Daniel Tosi, Diego Masson, Elisabeth Chojnacka, Ensemble polyphonique de Perpignan, Ermis Theodorakis, Geneviève Renon, Guy Pelletier, Izumi Sinfonietta Osaka, Jack Quartet, Jean-Claude Casadesus, Jean-Pierre Arnaud, Jean-Pierre Robert, Joey Marijs, Julie Trudeau, Julien Grégoire, Kuniko Kato, Les Percussions de Strasbourg, Leszek Lorent, Lori Freedman, Maciej Nerkowski, Noémi Schindler, Norichika Iimori Orchestre National de Lille, Rachid Safir, Roger Woodward, Rohan de Saram, Steven Schick, Thierry Miroglio, Vincent Dubois. (http:// www.flaneriesreims.com).

- In October in Vancouver, Random Elements – a celebration of Iannis Xenakis. A city wide celebration of the life, work and influence of Iannis Xenakis. Vancouver New Music and the Canadian Music Centre present a special exhibition featuring reproductions of images and documents from the CDMC. Vancouver New Music presents two Xenakis inspired performances by the Vancouver Electronics Ensemble. Vancouver New Music Festival 2011: Xenakis–celebrating the life, work, and influence of composer, architect and visionary Iannis Xenakis. During three days, concerts with Aiyun Huang, Fringe Percussion, Lori Freedman and ensemble, Jack Quartet, Danny Tones, Roger Admiral, VEE Audio Installation, mini-polytopes, film screening. NOW Orchestra presents an improvisation workshop with Giorgio Magnanensi. Western Front New Music presents the film Charisma X by Efi Xirou. Also, Xenakinesis! by Standing Wave and Talking Pictures, John Korsrud and Peggy Lee. (http://newmusic.org/events/random-elements).

- In November in Nicosia, Iannis Xenakis – in Memoriam. A conference with performances, film screening and site-specific musical installations, organized by the Department of Arts of the European University Cyprus. Works of Iannis Xenakis by Rohan de Saram, Ermis Theodorakis, Marios Nicolaou, Angelos Angelides. (http://www.euc.ac.cy/easyconsole.cfm/id/1205).

- In November in Huddersfield, Huddersfield Contemporary Music Festival. Exhibition prepared by Sharon Kanach and concerts by New London Chamber Choir, Clement Power, Mark Knoop, Arditti Quartet, Ian Pace, Arne Deforce, New Music Players. (http://www.hcmf.co.uk).

References

Harley James. 2004. Xenakis, His Life in Music. Routledge, New York and London, 71–117 and 176–180.

Solomos, Makis. 2002. "Analysing the First Electroacoustic Music of Iannis Xenakis", Proceedings of the 5th European Music Analysis Conference, Bristol, April.

Xenakis, Iannis. 1992 Formalized Music. English translation C. Butchers, G. H. Hopkins, J. Challifour, second edition with additional material compiled, translated and edited by Sharon Kanach, Pendragon Press, Stuyvesant New York, chapter I.

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According to a Cretan myth, in order for a musician to learn to play the lyra with great virtuosity, he has to go with his instrument to a deserted crossroads at midnight. There, he is supposed to mark with his black-hilted dagger a circle around himself, inside of which he must stay and play his lyra. Remaining always inside his circle, the lyra player is taught by the fairies how to play the lyra through listening and imitating them on his instrument which is being passed back and forth between the fairies and himself, making sure that neither of the two parties crosses the circle. If a part of the musician's body crosses the circle by mistake, this part becomes amputated or he becomes insane. When the first cock crows, the fairies ask the young man to give them something of his own so that in return they would teach him to play his lyra as beautifully as they do. Usually, the lyra player gives to the fairies one of his nails and the fairies teach him how to play the lyra as a supreme virtuoso. The lesson lasts until dawn, when the fairies disappear.

– Ioanna Etmektsoglou, Editor

(see interpretation of myth on page 1)