

# *Soundscape*

Volume 2, Number 2, December 2001



*Listening*  
*Education Learning*

*The Journal of Acoustic Ecology*

# World Forum for Acoustic Ecology (WFAE)

## *Soundscape*

*The Journal of Acoustic Ecology*

Volume 2, Number 2, December 2001

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**Soundscape** is a biannual 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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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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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: <http://interact.uoregon.edu/MediaLit/wfae/journal/index.html>

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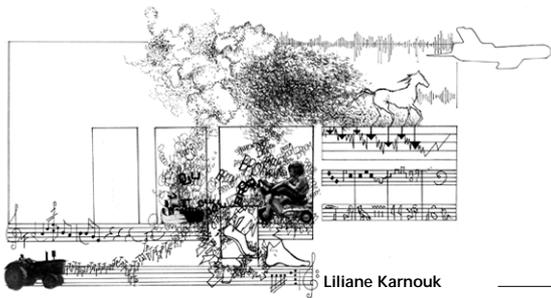
**Future themes:** The Ecology of Underwater Sound, Sacred Soundscapes, Sound Design, Economics and Acoustic Ecology.

**Submissions.** Please send articles, letters, and materials for the following sections in this journal:

**Feature Articles; Current Research:** a section devoted to a summary of current research within the field; **Dialogue:** an opportunity for editorial comment by the membership; **Sound Bites:** a summary of acoustic ecology issues found in the press; **Sound Journals:** personal reflections on listening to the soundscape; **Soundwalks** from around the world; **Reviews:** a section devoted to the review of books, CDs, videos, web sites, and other media addressing the theme of Acoustic Ecology (please send your CDs, tapes, books, etc.); **Reports, articles, essays, letters** from students and/or children; **Announcements** of acoustic ecology related events and opportunities; **Quotes:** sound and listening related quotations from literature, articles, correspondence, etc.; **Random Noise:** a section that explores creative solutions to noise problems.

Please send correspondence and submissions to: **Soundscape—The Journal of Acoustic Ecology** School of Communication, Simon Fraser University, Burnaby, B.C. V5A 1S6 Canada.

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Lilliane Karnouk

# Soundscape

## The Journal of Acoustic Ecology

Volume 2, Number 2, December 2001

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### Editorial

Imagine if all sound-related disciplines added soundscape listening, analysis and topics of acoustic ecology to their course curriculum. Imagine if, for example, future nurses, doctors, and medical staff were trained to conduct soundwalks through hospital environments followed by critical sound analyses and connect the results of such study to questions of convalescence and healing. Imagine if architecture students were requested to analyse acoustic environments of existing buildings with the same intensity as music students are asked to analyse existing musical compositions; or if students of urban planning were asked to analyse acoustic environments of existing parks or residential areas; if sound design and soundscape analysis were as high a priority in film schools as visual design and script writing; if environmental studies departments made courses on sound ecology a high priority; if business courses emphasized silence as a marketing tool for all machinery; if police education would teach the complexities of law enforcement in noise issues; if clothes designer courses would teach about the sound of fabric; if journalism courses would create ear cleaning courses focussing on the sound of language, voice, sound and music in media; if school teachers and principals were trained to create school soundscapes conducive to learning? And so on.

Some of this type of education, I am sure, already exists in many parts of the world, probably in small pockets, where an individual or group are seriously concerned with the quality of sound environments. It may exist formally as a course in an educational institution; or less obviously as a subtle influence on listeners in public spaces through conscious design; or informally in daily life where an intensely listening person influences those that cross his or her path.

When we first asked for submissions for this issue on soundscape education, I imagined all sorts of articles arriving at our doorstep that would cover the above spectrum—a vision that existed already in the early days of the World Soundscape Project and during the time when R. Murray

Schafer wrote his book *The Tuning of the World* (1977). We saw it as one of our main tasks then to bring together the various professions that are dealing with acoustics, sound and noise. Soundscape studies and acoustic ecology seemed to be the ideal forum to bridge or somehow unify these disciplines. To date—25, 30 years later—this vision has hardly taken root, we did not receive the imagined spectrum of articles for this issue, and pursuing such a vision is obviously a larger task than anyone had anticipated.

Despite that, we do believe that we are offering you some exciting texts in this issue of the journal: eight articles, written almost exclusively by music educators or authors with some type of musical background (aside from the regular reports and sections). Perhaps this should not have surprised us, since the basis of all soundscape work is listening and musicians are indeed specialists in listening. In addition, soundscape education perhaps has matured most within the field of music education, partially because of Schafer's books—already written in the sixties, breaking the narrow boundaries of music education then and still highly relevant today—such as *Ear Cleaning* (1967), *The New Soundscape* (1969), *When Words Sing* (1970), *The Rhinoceros in the Classroom* (1975), later brought together in *The Thinking Ear* (1986).

Four of the eight feature articles—by Michael Cumberland, Robin McGinley, Gregg Wagstaff, and Jonathan Savage/Mike Challis, plus Ulrike Heuer's report in Perspectives—are written by authors who have worked with school students and, in one case, with a high security unit of young offenders at a prison. Several authors mention that they were motivated to go into schools because of what they perceived to be declining listening skills. Some believe that this is caused by the incessant onslaught of media, environmental noise, information overload etc., and stress that it is not only students who need help in deepening their ability to listen but that they themselves have benefited from the work.

Some have observed that, by setting up a situation where soundscape listening is the

# Report from the Chair

central focus for learning and information gathering, a whole new dynamic emerges in the classroom: respect for everything and everybody that is heard and an equalisation of differences and hierarchies. In other words, it is not so much the pedagogical approach or an educational method that deepens the understanding of soundscape issues and social, cultural and environmental relationships, but the action of listening itself. It creates a radically different dynamic from the forced student-to-teacher-listening that is still so prevalent in many classrooms of our schools. The students benefit from the courses described in these articles, precisely because their hearing perception has been opened to the whole world, an opportunity has been given to them to analyse, interpret and understand the heard, and a more conscious relationship to the environment and society has been formed as a result.

The other four feature articles speak from the context of university education: Barry Truax' article is of value in providing an historical perspective of efforts in teaching acoustic ecology since the mid-seventies. Co-editor Gary Ferrington has contributed much to this issue with two articles and a discussion in the dialogue section, all of them challenging us to consider seriously how acoustic ecology can belong inside the universities. In his article "Teaching Acoustic Ecology: An International Overview", he presents a collection of courses that, in the words of the author, "illustrates a diversity of on-going efforts by educators who believe studies in acoustic ecology are important." Tadahiko Imada in his feature article and Vincent Valentine in his research proposal for his doctoral dissertation (in Current Research) both are considering soundscape education as a way to infuse music education with new life. Imada's article discusses how soundscape education may be able to heal a rift within his own musical culture of Japan that was created by the "imposition of European musical epistemology."

Hopfully this issue is the beginning of many more that will discuss the theme of soundscape education in the context of other sound-related disciplines. The essence of soundscape studies and acoustic ecology *is* interdisciplinary. The only form of specialization within this field lies at its very basis: information gathering through listening and subsequent analysis. But the act of listening itself involves the whole world, reaches into all aspects of life, and thus we cannot help but touch all disciplines through our work. And this is precisely where things become complex and perhaps often unmanageable for many who specialize in sound-related disciplines. Not only does real listening always reveal what is—such as social, cultural, political, environmental problems or uncomfortable inner truths—but one also encounters a difficult balancing act, that results because of the very nature of such listening, between a certain disorientation of hearing too much and a potential loss of context and overview through over-specialization.

Indeed, anyone who is involved in soundscape studies and acoustic ecology knows this complex issue all too well: of attending to detail and specifics on the one hand in our work and study, but on the other hand of not losing touch with the larger contexts that inevitably provide the deeper meanings. Listening itself (and all the learning that results from it) informs us of how to balance our perception between focal and global attention, between the sound and its ambience, between the word and its tone of voice as it were. And in today's world this practice of listening may be an important metaphor for what we need to practise in general: attention to the immediate situation in our daily lives and its continuous shifts, while staying as aware as we can of the world context as a whole.

**Hildegard Westerkamp**  
for the Editorial Committee

The WFAE board has been involved in some intense deliberations in the past few months. The most important of these relates to the future of *Soundscape*, this journal, and the relationship with FKL, one of our founding affiliated organisations. The two issues are in fact quite inter-related and draw us into a contemplation of some deeper issues about WFAE affiliation.

The recent FKL Annual General Meeting raised the question as to whether an organisation like the WFAE could or even should be engaged in the publication of a journal. At the time of printing FKL is still deliberating on this issue and whether it should remain affiliated with the WFAE. The discussion has prompted the other affiliates to reaffirm their commitment to the journal as a critical medium through which we can communicate. While the FKL board deliberated on its future the WFAE board determined that the previous journal, Vol.2 No.1, with its theme on *Blind Listening* should be distributed to FKL members at WFAE cost to demonstrate solidarity and support.

The potential departure of FKL posed a question as to whether the WFAE was being really effective in only distributing the journal to our own membership. We began to pursue other distribution models which might enable non-members to access the journal such as electronic or web based models. Consideration was also given to its cost structure. Eventually it was decided that in the future the journal would be distributed by way of a subscription model. The details and fee structures are published on page 55 in this journal. It is important to stress that all affiliated members will continue to receive the journal on receipt of the same annual fees. In addition it is now possible for non-members, both individuals and organisations, to also subscribe to *Soundscape*.

It is believed that the WFAE has an important role to play in the dissemination of information and the promotion of discussion about acoustic ecology amongst the widest possible readership. Along with the various discussion lists (thanks to the UKISC and SFU Vancouver) and the excellent web site (thanks to Gary Ferrington and University of Oregon), the journal provides a tangible product of our mutual global collaboration.

The journal could not exist however without the extraordinary dedication of the Journal Committee, in particular Hildegard Westerkamp, Gary Ferrington and until recently, Bob MacNevin. It is financially reliant on WFAE membership fees as well as the generosity of a number of people, notably the Westerkamp family for ongoing support and Murray Schafer who has provided us with the capacity to produce this bumper issue on Education. On behalf of the board and the membership I extend our warmest thanks to you all.

In addition to a broader readership it is expected that future issues will feature a broader perspective through the introduction of guest editors. The Journal Committee is considering to expand in size. In this current issue Harold Clark and Rahma Khazam already assisted significantly with their editing skills and we are looking forward to more future work with them and others. The next issue of *Soundscape* (Vol. 3 Number 1) will be guest edited by Sabine Breitsameter and Brandon LaBelle on the theme of Acoustic Ecology in the Age of Digital Networks and New Audio Technologies (working title).

Outside of journal activities, dialogue is continuing with a number of potential new affiliated organisations and the WFAE seems set to continue to grow and consolidate. It is important for us to continue to have an active board and a clear determination as to what we want to achieve together and to continually question what we are doing and how best to go about it.

**Nigel Frayne**  
Chair of the Board, WFAE

# Regional Activity Reports

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## Australian Forum for Acoustic Ecology (AFAE)

by Nigel Frayne

Through the first half of 2001 AFAE members have been active in their own fields of activity including projects, performances and book launches. There have been further developments with both the plans for the Symposium as well as the Capitol Soundscape Project reported in the last journal.

The membership in the AFAE is slightly reduced this year. This is the cause of some concern and points to the need to create more opportunities for us to meet and engage the broader community. We will be considering ways to resume the seminar series (Resonance) of last year and promote greater awareness through an international Symposium. Our most recent meeting was a small gathering of members to meet Helmi Järviluoma who kindly traveled across to Melbourne from her original destination, Sydney. Helmi briefed us on the current status of the research programme, *Acoustic Environments in Change*. It was a great opportunity to meet face to face and exchange information in an informal setting. We are very grateful to Helmi for making the effort to come to Melbourne.

The excitement generated by the prospect of the Capitol Soundscape Project at RMIT University, reported in the last journal, has subsided with the news that the project will not proceed in its original form. This has resulted in further delays and complications for our collaboration on the Symposium. The previously mentioned dates in July have now been pushed back to November or December. Details will be published just as soon as possible.

Generally our members are continuing to be active in their own work. Of note is the recent release of AFAE member, Ros Bandt's book, *Soundsculpture in Australia* (see review on page 40). This important book documents the range of artists and projects that form the historical basis upon which future work in this field will be referred.

### Contact:

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## Back Issues of *Soundscape* Now Available On Line

Adobe Acrobat PDF versions of *Soundscape* are now available for download at the URL below:

<http://interact.uoregon.edu/medialit/wfae/journal/index.html>

The free Acrobat Reader can be downloaded from here:

<http://www.adobe.com/products/acrobat/readstep2.html>

## Finnish Society for Acoustic Ecology (FSAE)

By Simo Alitalo

During the fall of 2001 FSAE has concentrated on building networks and co-operation with other organizations with similar interests. In September the *Acoustic Environments in Change* research project (AEC) organized "Kylä kuuluu!" (Villages to be heard) exhibition at the Sibelius Museum in Turku.

*Acoustic Environments in Change* revisits the six European villages whose soundscapes were charted and documented in 1975 by the *World Soundscape Project*. The AEC project is lead by FSAE chairperson PhD Helmi Järviluoma. During the three weeks of the exhibition members of the public could discover how the soundscapes and the acoustic ecology of these villages have been studied and interpreted by scholars.

Soundscape activist, composer and philosopher of time Albert Mayr gave his *Chronochronica* sound performance during the opening weekend. He also gave a guest lecture on the same subject at Turku University, Musicology Department. In the main lobby of Turku University a group of young environmental and media artists from Tampere presented their point of view and hearing of the selfsame villages. From Turku the exhibition went to the Lahti Design Institute. Field trip notes and materials from the AEC research project can be found on the internet: [www.6villages.tpu.fi](http://www.6villages.tpu.fi).

In October 2001 FSAE joined forces with The Finnish Association for Nature Conservation, The Finnish Federation of Hard of Hearing, The Guides and Scouts of Finland and The Finnish Cross Country Skiers in order to organize *The Day of Quiet* for the second time. One of the main objectives of *The Day of Quiet* (October 8) is to restore areas and places of natural silence and reduce the noisiness of leisure time. Noise has become an intrinsic part of leisure activities through the increasing use of motorised vehicles like snow scooters, 4Wdrives, SUV's, water scooters etc. Thus nature reserves and national parks can no longer provide an acoustic shelter for those who wish to escape the hectic and noisy work environments. The organizing associations in their declaration demand that noise production in nature reserves and recreational parks should be regulated more strictly and that right to quiet should become a genuine civil right.

A seminar entitled *Polymorphic Soundworld* was organized in connection with *The Day of Quiet* in Helsinki on October 8, 2001. In November Meri Kytö, the dutiful secretary/treasurer of the FSAE, left us in order to take part in a graduate student exchange program in Barcelona, Spain.

### Contact:

Simo Alitalo: simo@alitalo.pp.fi

## Canadian Association for Sound Ecology (CASE) Association Canadienne pour l'Écologie Sonore (ASES)

by Darren Copeland

Since the last issue of *Soundscape*, CASE has continued to investigate territory for new project initiatives. The board of directors encourages project submissions from the Canadian membership that create links with the general population and acoustic ecology issues and research. If you would like to propose a project, please contact Darren Copeland at [darcope@interlog.com](mailto:darcope@interlog.com). Projects can take many different forms: publications, electronic media, performances, public actions, soundwalks, research, radio programs, workshops, seminars, and so on.

In the meantime, some exciting news was reported by Ellen Waterman regarding the projected publication of *Sonic Geography Imagined and Remembered*, the conference proceedings from the conference Sound Escape held in Peterborough, Canada in the summer of 2000. Penumbra Press in Ottawa will publish the proceedings later this year through sponsorship from the Frost Centre for Canadian Studies at Trent University. See below for details!

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### Available Soon:

*Sonic Geography Imagined and Remembered* is a collection of ten essays on the relationship between acoustic ecology and culture inspired by the international conference Sound Escape, held at Trent University in 2000. For the complete story and more information see page 44 of this Journal.

### WFAE—Electronic Contact Information

**Website:** <http://interact.uoregon.edu/medialit/wfae/home/>  
Home to an extensive collection of Acoustic Ecology related materials—sembled and maintained by Gary Ferrington. (While you are at the WFAE Website—*Join our Discussion List!*)

**WFAE Board:** [garywf@oregon.uoregon.edu](mailto:garywf@oregon.uoregon.edu)  
**WFAE additional information:** [wfae@sfu.ca](mailto:wfae@sfu.ca)  
**Membership Secretary:** [wfm@sfu.ca](mailto:wfm@sfu.ca)

## Forum Klanglandschaft (FKL)

by Gabriele Proy

During the past year the FKL board has been discussing its future and its relationship with the WFAE. It was not clear until the last FKL Annual General Meeting in 2001 whether we could make a new start or whether the organisation would have to be dissolved. In the end it was decided not to dissolve the FKL and to try a fresh start.

A report of that meeting was published by Desmond Mark in Journal No 25 of the Institute for Musicology, Vienna University of Music, November 2001.

As the newly elected FKL president I focused on building up a different democratic structure within the organisation's board and to strengthen our work as a team.

The FKL is interested to remain within the WFAE. However, different organisational statutes in Switzerland compared to those in Australia demand special agreements in our international co-operation. Moreover, because the FKL represents members from Austria, Germany, Italy and Switzerland internal discussions regarding differing statutes even within these countries are necessary. We are glad that we were able recently to find a solution with the WFAE concerning the issue of subscriptions to *Soundscape—The Journal of Acoustic Ecology*.

This year's FKL Annual General Meeting will be held in Vienna, Austria in May and the following one will take place in Meran, Italy in 2003.

On our FKL homepage you can find information about conferences, concerts, soundscape art and publications on soundscape theory. Among others I would like to mention:

- The SAN Sounding Soundscape Composition CD which was curated by John Levack Drever and produced by the Sonic Arts Network in November 2001. It contains soundscape compositions by José Luis Carles, Werner Cee, John Levack Drever, Thomas Gerwin, Gabriele Proy, Dallas Simpson, Scott Smallwood and Gregg Waggstaff (see also page 52).
- The conference *Ökologie des Hörens—Von der Lärmumwelt zum Klangdesign* (The Ecology of Hearing Perception—From Noise to Sound Design) which took place in Tutzing, December 2001. Among many others Andres Bosshard and Justin Winkler gave lectures at the conference.
- A sound journey of the river "Speyerbach" by Martin Grund which will be presented at a concert in Lambrecht, March 2002.
- A WFAE sponsored acoustic ecology conference with the theme of *Music in Urban Spaces* will take place in Bologna in May 2002 (for more details see announcements section in this journal, p. 53)

You can find more details on our FKL homepage.

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# The United Kingdom and Ireland Soundscape Community (UKISC)

by Gregg Wagstaff

Since my last report in the WFAE's *Soundscape* Journal (July 2001), UKISC has produced the second issue of its journal *Earshot* which was distributed to its members just before Christmas. It was no small task bringing this issue to print and our thanks must go to Rahma Khazam (who joined the UKISC management committee last March) for undertaking the role of *Earshot's* Chief Editor. Thanks also to Andrew Deakin for assisting with the job of editing.

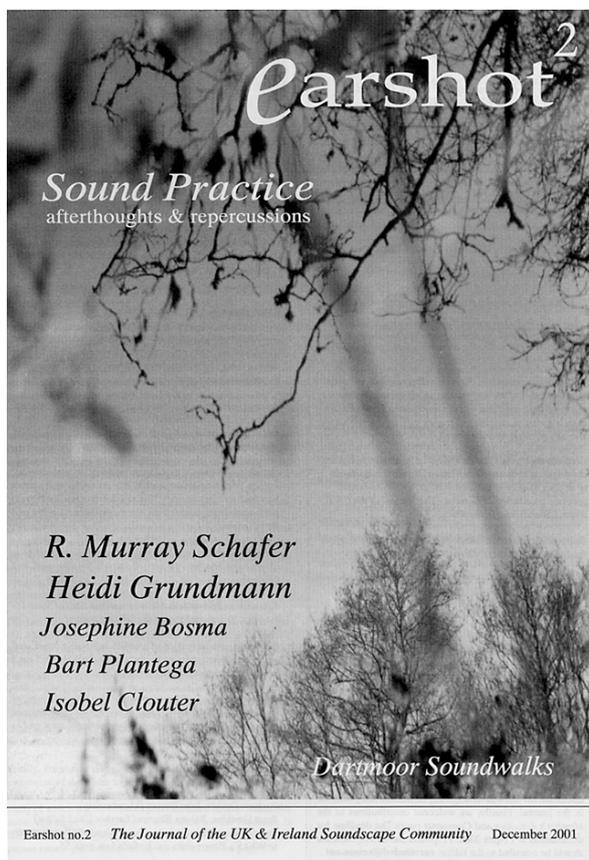
*Earshot* is intended to be a regional publication, providing coverage of UKISC members' activities, related soundscape research and events, as well as raising awareness of more wider ranging topics. This second issue of *Earshot* focuses on the 'afterthoughts and repercussions' of the Sound Practice conference, organised by UKISC and held at Dartington, England (February 2001). It features a conference report by Heidi Grundmann and

January 2002 sees the renewal of UKISC members fees and we hope that *Earshot* along with the WFAE *Soundscape* Journal will at least retain (if not boost) its 47 members at present. UKISC will also have a general meeting in April of 2002 being held at MAXIS—a Festival of Sound and Experimental Music, taking place at Sheffield Hallam University, England (HYPERLINK <http://www.maxis.org.uk> www.maxis.org.uk). We hope this will provide an opportunity for all UKISC members to gather together ear-to-ear and for us to make plans for co-ordinated UKISC projects in 2002/3.

Contact:

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John Drever: [johndrever@MOOSE.CO.UK](mailto:johndrever@MOOSE.CO.UK)



a hitherto unpublished article by Murray Schafer—*Sounds of Place*, for which we are thankful as he was unfortunately unable to attend Sound Practice as originally intended. The journal also includes articles, which could not be presented or published in the conference proceedings; Josephine Bosma's *Music & the Net* and Bart Plantega's *Poly-Aural Space*. The next issue of *Earshot* will be themed 'Sound & Architecture'.

Anyone interested in purchasing a copy of *Earshot* please contact Gregg Wagstaff at the following e-mail address: [earminded@ecosse.net](mailto:earminded@ecosse.net)

---

## NOW AVAILABLE:

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We invite your comments and criticism in response to anything you read in *Soundscape*, including other members' comments, such as those below. Please send your reactions to: [jwfae@sfu.ca](mailto:jwfae@sfu.ca), or to the mailing address at the bottom of page 2.

## Defining Ecoacoustics

A few years ago I occasionally wrote a column summarizing sound related news articles in the press. This was distributed on the acoustic-ecology listerv and is now archived at the WFAE web site at: <http://interact.uoregon.edu/medialit/wfae/ecoacoustics/index.html>. I wanted a title for the column that was catchy and simple. After some basic research of Webster's dictionary I coined the word "ecoacoustics".

Since writing those columns I have had the opportunity to search the web from time to time to see if the word ecoacoustics had made its way into the vernacular. It has to some limited degree. Although most of the web search returns point to the WFAE web site collection of ecoacoustic columns, it is used elsewhere including the title for a graduate course in Ecoacoustics at Texas A&M University.

Perhaps it is time to explain the origins of the word and to add what could be a short set of additional words for use in discussions related to our field of acoustic ecology.

Eco comes from the Greek *oikos* or house. The English use of this root includes the term habitat. Ecology, is a branch of biology that is concerned with the interrelationship between living organisms and their habitat or environment. In a sociological context, ecology has to do with the study of the relationship between humans and their environments.

Acoustic comes from the Greek *akoustikos* meaning to hear. Webster's defines acoustic as having to do with hearing or with sound as heard.

I thought that by combining eco + acoustics I would be able to suggest that our field is concerned with a new branch of biological and sociological study concerned with the interrelationship between sound, living organisms and their habitats. Ecoacoustics, as I interpret it, is a field within environmental studies that investigates the role of sound in the ecology of the planet.

I have often used the word ecoacoustics in my writings about the study of acoustic ecology. I use both acoustic ecology and ecoacoustics interchangeably. There are three words I use as my references to acoustic ecology. These are:

Ecoacoustics: (1) An area concerned with the interrelationship of sound, living organisms and their habitats. (2) A concern with the state of the world soundscape as an ecologically balanced entity.

Ecoacousticology: An interdisciplinary field of research within the area of environmental studies related to the scientific, social,

and cultural aspects of natural and human made sound environments. The suffix *logy* refers to the "study of" a subject such as geology, biology, and sociology.

Ecoacousticologist: (1) A practitioner of ecoacousticology; engaged in the study and research of ecoacoustic issues.

Gary Ferrington,  
Eugene, Oregon, USA

## Stroking Our Earlobes

Danke für das *Soundscape* Journal. Ich finde wirklich, dass es ein sehr gutes Magazin ist! Grosses Kompliment!

Thanks for the *Soundscape* Journal. I find it to be really a very good magazine. Here's a big compliment!

Sabine Breitsameter  
Berlin, Germany

Last week I got the Blind Listening issue (Vol. 2 Number 1) of the *Soundscape* Journal. Let me transmit a very personal thank you for the excellent work done! And the courage. My wife, who is not very much involved in *Soundscape* Studies (other than being married to someone who is...), has also appreciated this issue...

Justin Winkler  
Basel, Switzerland

Yes, I received the last Journal (Vol 2, Number 1) and haven't read all the articles yet. But my first impression of the Journal was: IT LOOKS SO BEAUTIFUL—you have really found the optimal layout and way of presentation, mixing more weighty text with informal notes and a number of exquisite, well-chosen illustrations. Congratulations!

Henrik Karlsson  
Stockholm, Sweden

## Soundscape Education as an Essential Part of Integral Music Education

By Vincent Valentine

### Introduction

In this text, I will demonstrate the general objective of my doctoral thesis, which is to develop a model of integral music education. I will then explain the rationale and conditions in which the education relative to *sound environment* can become an essential component of music education.

### Problematic

Since the mid 1990s, we have seen an international movement toward reform in education. This movement is expressed in various ideas and theories that translate into an apparent consensus on education. As well, the notion of competence, the concepts of socio-constructivism and cognitivism, preoccupations concerning citizenship and education relative to environment, can be considered major trends of this “new education” that must be seen from a critical perspective and integrated in an appropriate manner. As an academic discipline, music education is confronted to integrate these new educational perspectives.

Actually, since the mid XX<sup>th</sup> century, the milieu of music education has not responded to this call for change. Whether at the elementary level (methods of Dalcroze, Willems, Orff, Martenot, Kodaly) or secondary level (orchestra, harmony, jazz band, stage band), music educators seem to have found their optimal pedagogical models. This quasi unanimity leaves me perplexed, for many of these models seem outdated with regard to education (concentration on performance skills), pedagogy (pure imitation without retrospection, standardized teaching) and aesthetics (enculturation of tonal structure).

Elsewhere, fundamental research in music education remains a marginal occupation. That is why we must turn to the works of such innovative practitioners as George Self (1967), John Paynter (1970), Claire Renard (1982; 1995), François Delalande (1984) and Raymond Murray Schafer (1986; 1992) to find alternatives to prevalent models. Although these proposals appear worthwhile, they overlook some serious points, two of which are the absence of a point of reference in education and the use of argument based more on opinion than on valid research. These oversights cause many inconsistencies, and worse still, they hinder identification of the stakes involved in their statements in favor of change in music education. In the final analysis, they give supporters of the status quo a false impression of legitimacy.

Taking care not to make the mistake of changing only for the sake of change, this period of educational reform in which we now live provides an opportunity to adopt a more critical atti-



Photograph by Hildegard Westerkamp

tude toward models and to re-examine their application in music education. In order for music education to become an essential element of fundamental education, we must consider new approaches that integrate contemporary educative, pedagogic and aesthetic concerns.

One of the objects of my research is to identify and re-examine the specific contributions of the many existing concepts of music education and present them in one global and innovative vision of music education. From this model of integral music education, music educators will be able to choose those dimensions that best correspond to their context of intervention.

### Education Relative to Sound Environment and Music Education

In developments since the 1970s, education relative to environment (ERE) aims to enrich our relationship with the world through a holistic understanding of the environment. Actually, the environment can be considered from many points of view: nature-environment; resource-environment; problematic-environment; system-environment; life-space-environment; biosphere-environment; community-environment, etc. It is through development of knowledge, attitudes, values and abilities favourable to the optimization of the relation that we hold

for the environment that ERE contributes to the fundamental education of people. As well, it contributes to the protection, restoration and creation of a healthy and harmonious environment respectful of equality among person-society-environment relations (Sauvé, 2001).

In the context of my thesis, I consider ERE as a mechanism for change able to promote the emergence of a society founded on the harmonization among person-society-environment relations. According to Bertrand and Valois (1999), this idea of society is concretized in the symbiosynergetic societal paradigm.

How can music education be a dimension of ERE and, at the same time, work toward improving the world? Surprisingly, Raymond Murray Schafer (1979; 1986; 1992) remains one of the few interested in this question. His ideas allow us to see music education as one dimension of education relative to *sound* environment. Schafer helps us to see the existence and richness of the dimension of sound within the environment, but he also exposes the indifference of our civilization with regard to the ear, one of the main sensory receivers of the environment. The general insensitivity towards the sound environment has generated a global problem of “sound pollution” that has direct repercussions on the quality of life and health of populations. It is principally in viewing this problem from a dual ecological and aesthetic perspective that it can be resolved. To that effect, Schafer suggests a theory of acoustic ecology based on the interrelations of ecology and music. All music contributes to the global sound environment. But Schafer goes further. He invites us to consider the sound environment as an immense endless musical composition in which we are the audience, interpreters and composers. The abilities associated to listening, analyzing, reproducing or creating “soundscapes” are as much a part of music as they are acoustic ecology.

Schafer’s proposal allows for an unprecedented perspective on music education. However, in spite of the worthiness of his vision, certain elements require critical re-examination. First, we should clarify the theoretical foundations that allow for the construction of a relationship between education relative to sound environment and music education. To this end, we find in François Delalande (1984), researcher for the *Groupe de recherches musicales* (France), theoretical avenues that permit us to understand this relationship better. Delalande attempted to identify the common denominators of different music cultures. According to his research, these common denominators are not found in musical codes or in instrumental techniques that vary from one culture to another, but more in the musicians’ comportment, which is to say, in *conduites musicales*. These universal *conduites musicales* have always driven musical invention; they are: (1) the sensibility to sounds and ability to produce them; (2) the idea of attaching significations to sounds; (3) the ability to organize sounds and to play them. For Delalande, music education should encourage the development of musical comportment before teaching a particular style of music or instrument. This awakening of musical abilities is realized through pedagogical activities known as *jeux-sonores* (sound games) that are inspired by the creative process of musique concrète composers. Music is approached through its basic elements, such as silence, sound, gesture, etc. It is therefore music theory taken from the works of Pierre Schaeffer (1966) and enriched by more recent research in electroacoustics that support this idea of music education. Thanks to works by Delalande, it is possible to consider all activity favourably towards the development of musical comportment, such as the Schaferian perspective, as one dimension of music education.

Second, Schafer’s initial concept rests mainly on the idea of a problematic-environment. Considering the educational aims of ERE, this perspective on education relative to the sound environment is incomplete. It should be reconsidered, keeping in mind the principles and component dimensions that consti-

tute ERE. For example, an education relative to sound environment should integrate the multiple facets of the relationship with the sound environment. As well, it should include various approaches and pedagogical strategies employed in ERE: 1) the following pedagogical approaches: experiential, holistic, critical, affective, pragmatic, moral, etc.; 2) the following pedagogical strategies: problem solving, project development, case study, role play, debate, value analysis, etc. (Sauvé, 1992).

Third, such an amalgamation of educational perspectives calls for a conceptual and axiological explanation. Actually, we ought to ask ourselves where the dividing line is between music education and education relative to the sound environment. In the development of a model of integral music education, identification of the characteristics and areas of juncture between these two educational spheres is an essential step in providing solid guidelines for instructional design.

## Conclusion

Education relative to sound environment constitutes for me one of the major foundations on which a proposal for integral music education can be based. As well, in following R.M. Schafer’s work, it is important to clarify the conceptual and theoretical aspects so that the concern for the sound environment can be best integrated into a model of integral music education and understood as an essential dimension of the fundamental education of people. I invite interested parties to send their comments to me at the following address: [vincent.valentine@sympatico.ca](mailto:vincent.valentine@sympatico.ca)

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# *Acoustic Communication Studies at Simon Fraser University*

By Barry Truax

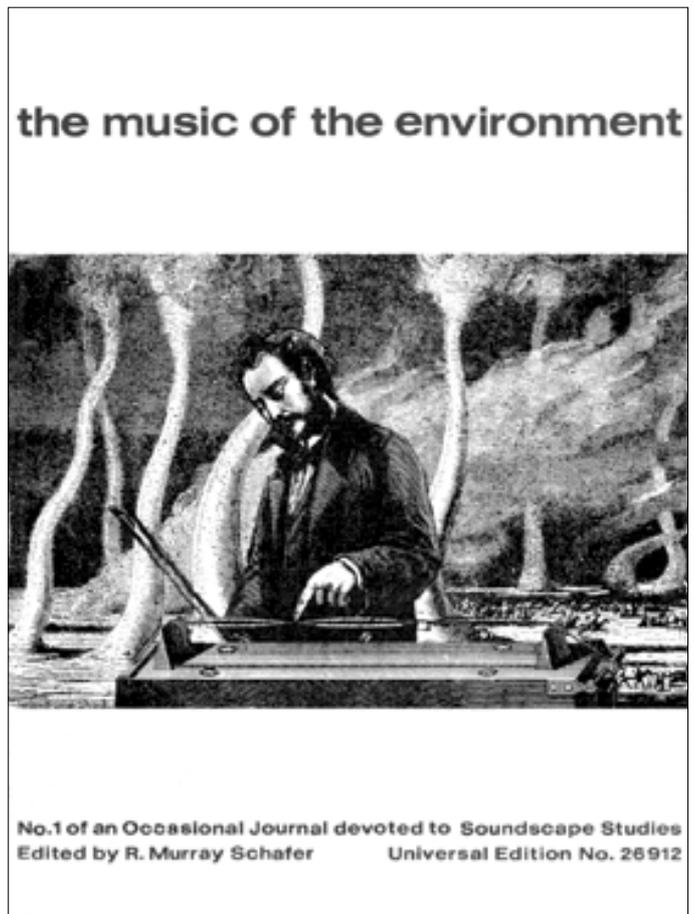
## **Background**

With a nearly 30 year history, the teaching program in the School of Communication, Simon Fraser University (SFU), at both the undergraduate and graduate level, may well be the oldest, continuous running curriculum related to soundscape studies and acoustic ecology. It was initiated by R. Murray Schafer and grew out of his work in music education, noise pollution, and soundscape studies in the 1960s and early 70s. Its current form began with the establishment of Communication Studies as a department in the Faculty of Interdisciplinary Studies at SFU in 1973 with Schafer as a Professor until his departure in 1975, the period that saw the seminal research work of the World Soundscape Project (WSP). Since 1974 the courses have been expanded, taught and supervised by Barry Truax with the assistance of instructors Hildegard Westerkamp, Susan Frykberg, Norbert Ruesaat and Robert MacNevin.

## **The Early Courses**

A look back at the design and practice of the courses in the early years shows an interesting pattern of development that may assist others in creating similar curricula. Schafer originally taught just two undergraduate courses (CMNS 239 & 339) called, as they still are, "Acoustic Dimensions of Communication." The newly emerging field of Communication Studies, having roots in a variety of traditional social science areas, but professing an interdisciplinary approach to contemporary society, put little emphasis on perception in any form, and none at all on sound. For both undergraduate students and faculty alike, an emphasis on sound as a primary if undervalued aspect of communication came as a novel and welcome addition to the field of study. Schafer's background in music and education, combined with his interest in a broad range of areas in the arts and humanities, provided an excellent background on which to define this new area of study. Added to that was his critical social perspective and a commitment to environmental activism. It remains clear that such a broadly based interdisciplinary perspective is needed to address the issues of acoustic ecology.

Schafer's outline for his introductory course from 1973 reveals the ambitiousness of his vision. It was designed for SFU's standard format of a 13 week course, with a weekly one hour lecture and a two hour small group tutorial. The texts were based on his writings (*The Music of the Environment* and the *Book of Noise*, plus sections from *The New Soundscape*) supplemented by readings from a wide range of sources in acoustics and psychoacoustics, audio recording, radio broadcasting and telephony, and George Miller's *Language and Communication*. The lecture topics were:



The First Soundscape, The Lo-Fi Soundscape, Signal and Noise, Basic Acoustics of Sound, The Recording of Sound, Radio Broadcasting Policy in Canada, The Sound Object, Masking, The Interview Technique, Radio as an Alternative Environment, Telephones and Telephone Systems, and Principles of Acoustic Design. Student work consisted of weekly exercises creating and evaluating soundwalks, researching a community noise topic, studying terminology, recording voice and environmental sounds, analyzing a radio broadcast, doing a masking experiment, recording interviews and preparing a short radio program, and critiquing bad acoustic design features in the soundscape.

For several years, this combination of acoustic and electroacoustic topics were squeezed together into single courses. When I first joined the WSP in 1973 and started teaching, there were also 3 and 6 week sections of the 100-level course in the



Top: Cover of *The Vancouver Soundscape*

Bottom: Barry Truax and Hildegard Westerkamp in the Sonic Studios, S.F.U.

school in which I offered a similarly breathless survey of sound and audio basics, soundscape approaches, acoustic space and rhythm, electroacoustics, media and computer sound production (a *terra incognita* in 1974). Besides Schafer's texts and *The Vancouver Soundscape*, an evolving document then titled "The Dictionary of Soundscape Ecology" with definitions of relevant terminology began to be used. It developed further into its 1978 publication as the *Handbook for Acoustic Ecology*. When I first began teaching Schafer's courses in 1974, there were six two-week assignments in the introductory course (later 5 plus a listening commentary essay) with the topics: Field Recording (sound objects and events, catalogues, sound sequences, or imaginary soundscape creation), The Changing Soundscape (interviews, sound references in literature, disappearing sounds), Community Soundscapes (soundscape analysis, sound profiles, community noise survey, sound level analysis), Sound Presentations (live in-class performance), Radio/Media Analysis (commercial uses of audio, radio broadcast structure, sound in radio or TV

commercials, sound references in print advertising), Physiological, Psychoacoustic and Symbolic Characteristics of Sound (both research and applied examples and analysis). More than one topic in each area could be pursued for greater depth. Later, student work began with fixed assignments in soundscape analysis and terminology investigation, followed by free choice of three projects from the first five areas listed above, plus a listening commentary analyzing one of the programs from the WSP's "Soundscapes of Canada" series or other documentaries. The second level course covered the same areas in greater depth and organized student work around two free choice projects that could later lead to individualized Directed Study, a formula still in place today.

A few additional highlights from these early course offerings are worth mentioning. Given the tradition of always beginning with listening and aural awareness (Schafer's "earcleaning" concept), the introductory course in acoustic communication began with the "earplug commentary" - and still does. Students bought or were given a pair of E-A-R earplugs and were asked to use them and report their reactions. A collection of their reports remains on file in the School. It seemed paradoxical to new students that a course on aural awareness would start with earplugs, but the purpose quickly became obvious. It was to challenge the student's conventional "taking sound for granted" by artificially changing their hearing sensitivity. Sounds that would have been ignored were suddenly missed, and relief was offered from those that were oppressive. Concentration during academic work was often noted to be improved, even if there was a fear of "missing something". When the plugs were taken out, another dramatic aural shift occurred as the person experienced a heightened auditory awareness because of their lowered hearing threshold before it re-adjusted to the current ambient level. Some students continued to use the plugs after the assignment, while others found

them discomforting, but all realized they now had a choice in any unfavourable acoustic environment.

From the start, response to the courses was mostly quite enthusiastic. Students quickly realized that, no matter what their level of interest in sound or music had been previously, the course opened their ears (and minds) to an important aspect of everyone's life and society in general, one that Schafer had presciently pointed out was being endangered. One of the more thoughtful though not atypical conclusions from a 1974 student was as follows. "We all brought pre-determined perceptions into the seminars in the early fall. They were largely structured around visual perceptions. Over the past three months I have been able to eliminate a lot of my visual hangups and to re-assess the significance of sound in my surrounding environment. I know this to be a fact, because my ears have become extremely sensitive to technological sounds that the majority of the public either can't hear or take for granted. I have also learned the value of the natural soundscape which is in as much danger of facing

extinction as the bald-headed eagle. If I learned nothing else this semester the course would still be of value to me.”

Two events that have, perhaps unfortunately, not continued as a regular part of the course are the Sound Presentations mentioned above, and my “Lecture on Nothing”. The Sound Presentation was based on Schafer’s exercises in creative music education in which students organized their peers (and the Instructor) with a rudimentary “score” and used vocal or found object soundmaking to create a performance. These tutorial events, while possibly nerve-wracking for the shyer students, always proved both entertaining and highly participatory for the class, and served as the counterpart to individualized listening. They are still practiced from time to time, but the approach depends on the Instructor. Lectures, in the meantime, had expanded to two hours in order to provide more time for group listening in one of the new lecture theatres with a well equipped (quadraphonic) playback system. During this period I tackled the subject of Silence in a two-part “performance”. During the first hour I remained totally non-verbal as a lecturer, handing out quotations about silence to the students with a written message on the overhead projector that they could read them out loud whenever they felt like it. At certain points, tapes such as Hildegard Westerkamp’s *Whisper Study* and the theme on Silence from the WSP’s *Six Themes of the Soundscape* were played. In between, the students established the pace of the lecture by reading their quotations. I always expected problems with students asking questions before the lecture, but amazingly enough they always accepted my nods and smiles with equanimity! During the second hour I performed John Cage’s “Lecture on Nothing” from his book *Silence*, with a meditative electroacoustic tape accompaniment I had prepared. In the printed version of the lecture, Cage indicates how many “beats” of silence are to be inserted in the text, as well as referring to how the text “organizes” the silences and allows the silences to be experienced. At the end of the performance, I would leave the hall quietly (though always exhilarated), letting the tape run to its conclusion.

## The Full Teaching Program

By the late 1970s, the format of today’s teaching program was in place, though refinements and extensions continue to be added. First, it was becoming increasingly difficult to cover both the acoustic and electroacoustic aspects of communication in a single semester course. Studio work in particular was very difficult to incorporate because of the specialized techniques and instruction that is required, not to mention the long hours of studio time needed to finish projects. Another sound related course had been introduced in 1976, taught by former CBC documentary producer Imbert Orchard. His expertise in field recording, interviewing, and the production of “aural history” documentaries was legendary on Canada’s West Coast, whose regional histories had been the subject of his many productions. Equipped with Uher tape recorders and a reel-to-reel tape editing workshop, this course introduced students to a form of sound production closely related to that of soundscape work, what Orchard called the “document in sound.”

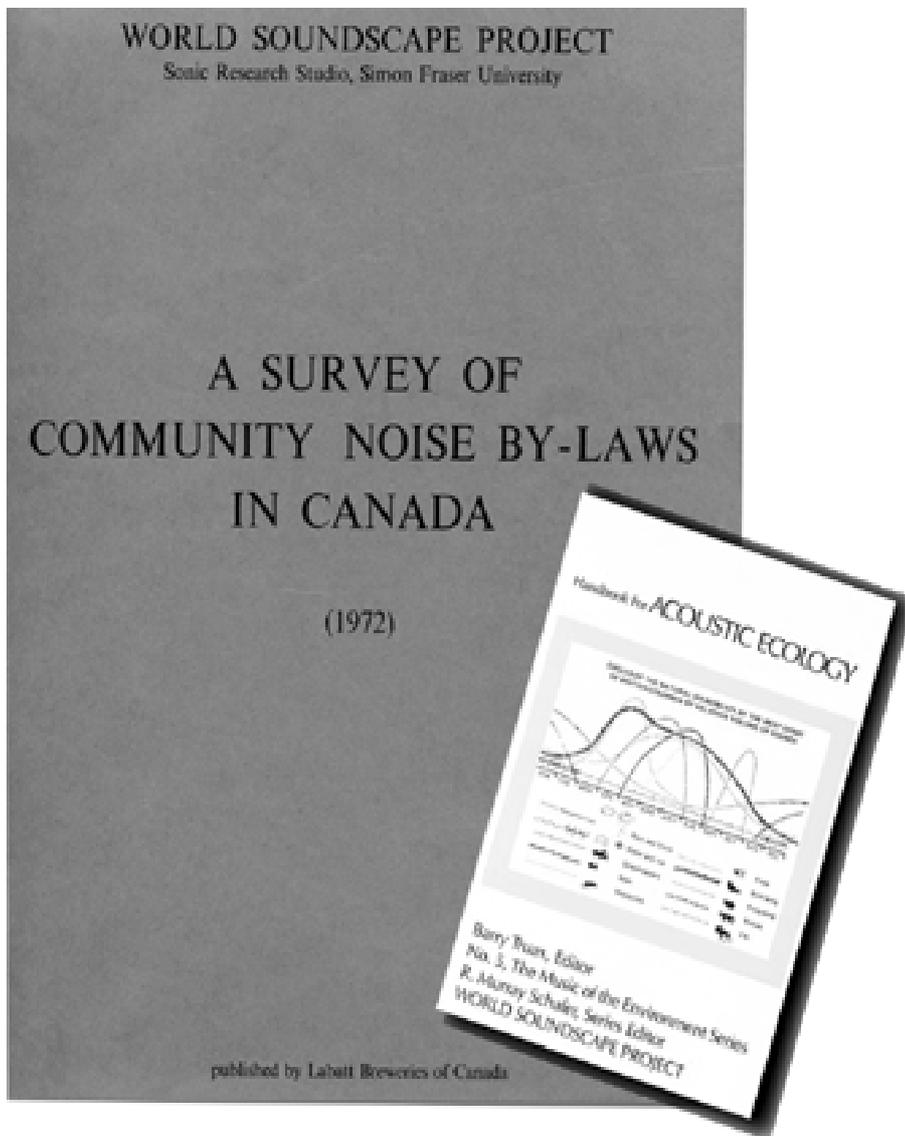
When Orchard left, I created two new courses in electroacoustic communication (CMNS 258 and 358) which concentrate on the social, environmental and media impacts of audio technology, and provided a more rational and progressive instruction in studio production. This freed the acoustic based courses (renumbered as CMNS 259 and 359) to deal more extensively with soundscape topics such as listening, voice, the acoustic community, noise, and acoustic design. In fact, both sets of courses deal

with the impact of technology, with the contrasting yet overlapping implications of noise and audio, respectively. These themes neatly fit the overall direction of the renamed School of Communication when it moved into the Faculty of Applied Sciences on the dissolution of the Faculty of Interdisciplinary Studies. The School positioned itself as an applied social science with the “social impact of technology” as its overarching theme, a theme for which acoustic and electroacoustic communication has many pertinent examples.

The introductory electroacoustic communication course, also in the lecture/tutorial format, reflects the School’s ideal of theory combined with practice. In the audio area, both technical schools and even other Schools of Communication, often separate applied work from anything other than audio theory. However, within a social science milieu, the interplay between analysis and production is incredibly fruitful. For instance, the audio designer, in addition to technical knowledge, needs to have perceptual abilities and imagination, as well as an awareness of the social context, including political economy, within which that technology is inextricably embedded. Likewise, the models and concepts found in communication theory need to be complemented by “real world” experience. Media analysis is a case in point: analyzing what production choices have been made can be complemented by making these choices oneself. Such an interplay of theory and practice gives greater depth both to the understanding of mass media, as well as what constitutes alternative practice.

The lecture content of this introductory electroacoustic course found its way into the second half of my book, *Acoustic Communication*, first published in 1984, and recently revised as a second edition in 2001 (see review page 42). It presents the transition from acoustic to electroacoustic communication in the 20th century as creating a fundamental shift, not merely an extension, with digital technology taking that shift to yet another level. The listener becomes a consumer, and the acoustic community becomes a market. The balance between the local and the global changes dramatically, and the model of the geographical centre complemented by the margins is replaced by the model of the mass media as a “mainstream” which marginalizes alternative practices. Teaching in this area is both exciting and challenging, if only because we are all caught in the midst of ongoing technological change, the implications of which are coloured by both fear and hype. However, this volatile situation gives the subject an “edge” of urgency and no end of contemporary examples for debate. The course has also provided the opportunity for introducing students to non-mainstream applications of audio, such as experimental video and film, electroacoustic and computer music, text-sound composition, and soundscape composition.

Student work in this course begins with an “electroacoustic survey” in place of the earplug commentary. Students are asked to observe their exposure to electroacoustic sound, both electrically produced and electronically reproduced, during a weekday and weekend day. The results between 1979 and 1993 have been compiled and appear in my book (Truax, 2001, p. 172). They show that even an “introductory” student comes with a lifetime of exposure to electroacoustic sound, estimated at over 55 hours per week. One of the tasks of the course is to elucidate that experience and its effects. Besides an essay on media analysis, student work involves practical audio production. The three applied projects are a field recording exercise, an editing project, and a final documentary, aural history project, text-sound piece, or soundscape composition. Field recording equipment over the years has migrated from mono and stereo Uher reel-to-reel machines, to the Walkman Professional cassette recorders, to the current brands of MiniDisc recorders. However, partly to deal



In summary, the two “streams” of courses, acoustic and electroacoustic, at the 200 and 300 level, which lead to individualized Directed Study or field work at the 400 level, complemented by their graduate level equivalents, form a tightly focused but broadly based program of study in the field of acoustic communication. What seems at first a “fringe” area becomes, for those who wish to pursue it in depth, a multi-faceted field with tentacles of implication across the entire range of academic, professional and artistic endeavour. In my opinion, the growing field of Communication Studies provides the best intellectual foundation for this study, particularly when framed as an applied social science which studies the production and exchange of information. In turn, the impact of technology via noise and audio provides Communication Studies with excellent case examples of the more general theme of technological change. Beyond this, and possibly most importantly for members of the World Forum for Acoustic Ecology (WFAE), models of acoustic ecology in general, and the acoustic community in particular, offer insight into both what technology has invaded and disrupted, as well as how a better functioning “community” as mediated by technology might be designed. The mutual engagement should continue to be beneficial to all concerned.

Not surprisingly, our students, now many generations of them, have come from a wide variety of backgrounds and proceeded to an even wider range of professions and activities. Some who have passed through the courses in the early days have become well known in the arts, such as composers John Oswald, Jean Piché, and Paul Dolden, filmmakers Charles Wilkinson and Peg Campbell, as well as many others. Still others are active within the acoustic ecology movement, but countless more, many of whose faces have become a blur to me, have gone into every imaginable profession. I am always delighted to hear from them from time to time, such as the former student who claimed I saved her life because she had been able to hear the whistle of a train that was about to run into her car in a foreign country. Less dramatic but equally rewarding are reports from those who have found an aural orientation to their lives a benefit and inspiration.

### Current Directions

Fortunately, the teaching program, though stable in its course structure, is far from static and continues to evolve. The most obvious pressures and opportunities come from the growth of technology, particularly in the digital domain. Ironically, the Internet which so far has made relatively little use of sound for academic purposes, provides some significant opportunities for both the study and practice of acoustic communication. First is the connection of like-minded (or “ear minded”) people on the acoustic ecology listserv. Any subscriber can quickly consult with a few hundred others around the world on any topic of interest, or share information. In addition, the WFAE website provides an

with the numbers of students, production work still includes both analog tape and digital workstations, the latter used for editing and multi-track assembly. The upper level continuation of this course is strictly production oriented in the Sonic Research Studio, again including both analog and digital methodology side by side, leading to multi-track and recently, octophonic sound design using Richmond Sound Design’s AudioBox.

The second aspect of the course expansion was the introduction of a graduate level course in Acoustic Communication (CMNS 859), starting in the spring of 1977, and offered approximately once every two years since. This course has attracted a small but ardent group of graduate students from not only the School of Communication, but also from the MFA program in the School for the Contemporary Arts (to which I am also appointed), as well as occasional students from such diverse departments as Geography, Philosophy, Computing Science, Kinesiology, and those under Special Arrangements (i.e. interdisciplinary projects). The course follows the same ideal of the combination of theory and practice, though given the brevity of the 13 week semester, applied projects or field work are generally left to a separate Directed Study course. The course meets twice a week, once to cover the theory of acoustic and electroacoustic communication, emphasizing the research literature relevant to it across the humanities and social sciences. The second meeting covers research topics in acoustics, psychoacoustics, environmental acoustics, and electroacoustics, with selected applications in speech acoustics, audiology, noise measurement and audio.

invaluable repository of relevant information and links.

Paradoxically, the introductory course in acoustic communication (CMNS 259), which does not depend on audio technology for production work, has been an ideal candidate for a Distance Education version using the Internet to facilitate an online "tutorial." The course material was originally prepared and taught by Susan Frykberg in 1997. Since she left SFU, the tutor marker for the course has been Robert MacNevin who has both streamlined the administration of the course and revised the Study Guide to bring it up to date and incorporate the *Handbook* CD-ROM. The course is offered twice a year (spring and summer) while the campus version is offered once (fall). Unlike the campus version, the Distance Education version allows students to be located wherever they can access the Internet. Although most tend to be locally based SFU students, there have been several cases where a student is living or traveling further afield, and in fact, such diversity of location, and hence soundscapes, is a benefit to the online discussions by bringing in a wider range of social and aural experience. Several contributions from students of this course have appeared in the *Soundscape* journal.

Sound examples, which are a mainstay of the lectures on campus, are provided to the Distance Education students on 3 CDs which are distributed with the course material. The CDs are: (1) *The Vancouver Soundscape* 1973 recordings, reissued from the original vinyl; (2) a selection of "world soundscapes", examples of "voices of persuasion", cross-cultural voices, disappearing sounds and Hildegard Westerkamp's composition *Kits Beach Soundwalk*; (3) Barry Truax's radio program from the "Soundscapes of Canada" series of WSP documents entitled *Six Themes of the Soundscape*, plus two excerpts from a documentary on noise by former communication student Kevin Bolster.

Understanding acoustic communication, and hence acoustic ecology, inevitably requires knowledge gleaned from the specific disciplines which study sound from various perspectives. It was clear from the early WSP research that a "dictionary" needed to be compiled with terminology and definitions drawn from all of these disciplines. The result is the *Handbook for Acoustic Ecology*, which I have edited (many times over). In dealing with the interdisciplinary nature of this terminology, it became clear in the 1970s that the concept of "hypertext", as introduced by Ted Nelson at that time, was ideally suited for this enterprise. In its simplest form, hypertext is a way of linking one text with another, whether print, sound or graphics, in other words, a form of cross-reference. Therefore, the *Handbook*, even in its earliest typewritten form, made systematic use of both cross-referencing (see, see also, compare) and a print version of the "link" (now familiar to Internet users) as a capitalized term corresponding to the linked entry (e.g. SOUNDMARK). After 20 years, the *Handbook* is now a CD-ROM where these links are active and take the user instantly to the referenced material. Sound examples are also integrated into this new version.

The other approach to the interdisciplinary aspect of the material has been an attempt to trace similar concepts across disciplines. These have included both the analytical parameters of sound (specifically magnitude and vibration) and the various stages of transmission from the source to a medium, propagation through the medium, and interaction between sounds. Analogous concepts found in acoustics (both theoretical and applied), psychoacoustics, electroacoustics, music, and soundscape studies were studied. In the book, this classification scheme took the form of a chart (Truax, 1978, p. xii, xiii), supplemented later by a list of all *Handbook* terms which pertained to each subcategory. In the CD-ROM, this scheme forms a "thematic search index" where each category and subcategory is presented with an ex-

planatory text and active links to the appropriate terms. The visual background pattern of each entry reflects the "parent" discipline, making it clear when one switches discipline. This CD-ROM has proved invaluable for the Distance Education version of the introductory course, where it is not possible to illustrate these concepts in a studio environment. The interdisciplinary scheme also forms the basis of how this material is presented systematically in the upper level course's lab over an entire semester. Showing how traditional scientific disciplines deal with sound as energy and signal transfer also clarifies the essential difference with an information-based communicational model. Therefore the study of this knowledge sheds light on how that knowledge has been constructed, itself a communicational issue.

## Conclusion

Over the course of nearly 30 years, the teaching program in acoustic communication at SFU has gone from supporting around 50 course enrollments a year to more than 175 such enrollments, including the Distance Education students. Presumably, with more equipment to support the electroacoustic side, an even greater number could be accommodated. University administrators like to think in such terms - though compared to other more popular areas these figures are small - but numbers alone are a poor criterion for assessing the importance of this teaching program. Unfortunately it remains fairly unique within Schools of Communication, the notable exception being the Department of Communication at Concordia, in Montreal, where Andra McCartney is developing similar courses. Part of the reason for the slow spread of the concept is the lack of instructors trained in an interdisciplinary manner where a combination of social science, artistic, and technical background is needed. In fact, combinations of any two of these areas are increasingly common: music and technology with electroacoustic training (my path), social science and technology with media production, arts and social science with critical theorists, for instance. In some cases, the missing third area can be added through individual initiative. In any case, the social need is undeniable as the issues surrounding the acoustic environment, audio consumerism, and technologically mediated forms of communication (with or without sound), continue to proliferate. If our students graduate with an increased awareness and set of skills to deal with these issues, and if in turn they exert an influence on others, the social benefit will increase exponentially.

## Website references:

The detailed course outlines for all of the courses mentioned in this article may be found at: [www.sfu.ca/sonic-studio/srs](http://www.sfu.ca/sonic-studio/srs). The Distance Education version of Acoustic Dimensions of Communication may be found at: [www.sfu.ca/cde/courses/cmns/cmns259.htm](http://www.sfu.ca/cde/courses/cmns/cmns259.htm). Other information on the author's work may be found at [www.sfu.ca/~truax](http://www.sfu.ca/~truax)

**Barry Truax** is a Professor in both the School of Communication and the School for the Contemporary Arts at Simon Fraser University where he teaches courses in acoustic communication and electroacoustic music. He has worked with the World Soundscape Project, editing its *Handbook for Acoustic Ecology*, and has published a book *Acoustic Communication* dealing with all aspects of sound and technology. As a composer, Truax is best known for his work with the PODX computer music system which he has used for tape solo works and those which combine tape with live performers or computer graphics.

# *Bringing Soundscapes Into the Everyday Classroom*

by Michael Cumberland

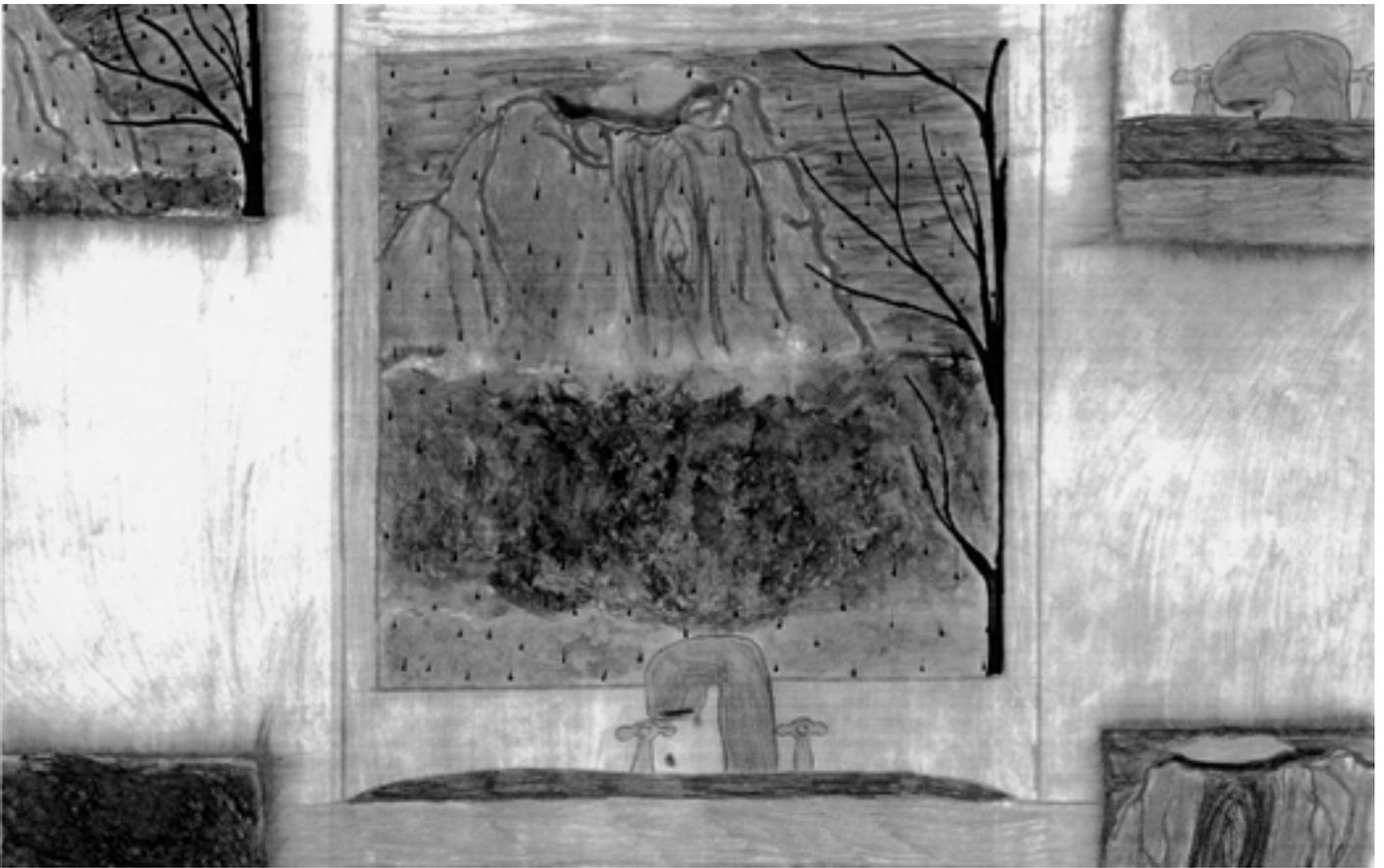


Figure 2: The Ganaraska River. Original size: 20" x32"

Every day the twenty-first century student is bombarded with noise—from the media, the environment, technology and far beyond that of even the later twentieth century. In the small-town Canadian classroom where I currently teach music to 300 middle-school students I see these societal trends resulting in poor listening skills. Students, and indeed all of us, need help in deepening our ability to listen and to hear. In my own classroom I accomplish this using soundscape education, sound ecology and the teachings of R. Murray Schafer. It should be noted that although this paper focuses on experiences with the eleven to fourteen year-old age groups, these methods have been used with success from early elementary years to later high-school age years.

I introduce my classes by saying that students will be doing one of the most difficult tasks—they will be learning to listen.

Relating listening to students' everyday lives and interpersonal relationships with family and peers is an important way to begin. I ask if anyone knows another student or adult who cuts them off when they talk—many hands go up. Then I ask if they know anyone who always has a better tale to tell and “one-ups” their own story—more hands go up. When I ask if those guilty are students, hands go up, fingers point, and whispering fills the classroom. When I ask if those guilty are adults, many more hands go up.

The stage is set for discussion and the students want to talk. I get comments like: “My mum never listens”, “My boyfriend always has something better to say and never wants to hear my side

of the story". When I ask what this means the reply is, "They never listen." "Do you ever treat your friends or family that way?" I ask. Usually most hands slowly go up. The classroom is quiet now. I return to my first comment: "Today you will be doing one of the most difficult tasks you have ever done—you will listen." Now, even the most obstreperous of thirteen year olds is rapt with attention.

I ask for a volunteer to come up front. I whisper in the student's ear asking him or her to time one minute—after I have spoken to the class—and to tell the class when the minute is completed.<sup>1</sup> To the rest of the students I say we are going to sit silently for one minute and just listen. Having made sure windows or doors are open to allow for as many sounds as possible to be heard in the classroom I then say no more. I nod to the volunteer to commence timing. Sometimes there are giggles, but I have found the students pickup on my seriousness and act accordingly. When the minute is up I quietly ask the class, including the timer, to write down the words, Listening List #1, and quietly write down every sound heard. I make my own list, either written or mental.

This done, I ask for more volunteers, this time to tell the class what they heard. Students may give a response like: "I heard a foot tapping". I reply, "Great, when did the foot tap and how many times?" They are usually a little taken aback and often reply, "I don't know—I guess I wasn't listening." Then another student raises a hand and says, "I know, halfway through and three times." A keenly listening teacher will be able to corroborate the information. Under the title we can now write: halfway through the minute a foot tapped three times.

The students get the idea and when I ask for a second and third item I begin to get more detail. A teacher will notice that no matter how closely one listens to a soundscape, in the time lapse of listening and writing it is very difficult to remember all the details. Thus, having many ears to listen greatly helps in obtaining fuller details.

After a few minutes the students have created an ample list of sounds heard in their classroom soundscape. What follows is a list created by one of my classes in mid-September of this year. Listening List #1, in the classroom:

- two seagull cries at the beginning of the minute;
- 25 steps in the hallway outside the classroom;
- in the middle a student was whispering, "he told us to be quiet—not silent;" this occurred twice, and was followed by giggling;
- three-quarters of the way through a student yawned;
- the entire time the wall clock ticked;
- near the end a foot was tapping 10 - 15 times;
- the entire time there was a quiet computer buzzing;
- the entire time people were breathing.

Remembering to ask for detail such as number of times a sound was heard, and when it was heard is important as eventually the students will be creating a language(music) to record the sounds as symbols. This leads to much discussion as to whether or not they were aware of all the sounds in their class environment. For example, the hum of the computer is normally not noticed; yet when we listened, it was found to be a B-flat. Certainly there are obvious sounds, but how many of the less obvious did we notice—like breathing.

A student may say, "Giggling doesn't count. It wasn't one of the sounds—they did it on purpose." A debate ensues as to whether or not the sound counts. I guide the opposing students to ask themselves why it should not count. It was a sound, it was made and we heard it—what is wrong with a sound made by a person?

When the student thinks about it, there is usually no good reason not to include the sound. For some reason sounds such as tapping feet and a person shuffling his feet seem to have legitimacy, whereas giggling, hiccups, burps, and flatulence seem to have less legitimacy. This always creates a lively discussion as to whether humans are part of nature or stand outside it.

At this time I discuss the concept of soundscape and I refer to R. Murray Schafer's *The Tuning of the World*.

Soundscape: The sonic environment. Technically, any portion of the sonic environment regarded as a field of study. The term may refer to actual environments, or to abstract constructions such as musical compositions and tape montages, particularly when considered as an environment.<sup>2</sup>

Students are then dismissed with an assignment to do their own listening list, in their own favourite environment, and to be prepared to discuss this.

In the next class we talk about why they chose their location, what they heard, including pleasant or unpleasant sounds, and then we compare these soundscapes. Most students are very curious about this unusual kind of homework and love to relate their own thoughts. Many chose natural or quiet settings for their locations.

This elicits the overall topic of ecology, and the teacher can relate the preservation of lands and landscapes to correspondingly pleasant soundscapes. Although often neglected they make up a vital part of a person's experience. All students agree that the juxtaposition of an unpleasant soundscape upon a beautiful landscape would make the experience an unpleasant one. Here a simple imagining exercise, with students' eyes closed, helps to clarify the point: imagine a beautiful wilderness lake, surrounded by trees, with the early morning mist rising from it; chainsaws and heavy trucks are roaring nearby. I have even prepared some students to imitate these sounds and on my cue to create the cacophony which destroys the quiet exercise. The point is easily demonstrated and students can relate to it immediately.

At this time, I may also relate my own experiences traveling and recording with my alphorn in varying locations in the world, telling the students about the beautiful sounds, including echoes, I have experienced. I express the hope that someday sound preserves will be established to help maintain the natural sonic beauty of locations. Students usually think this is an interesting idea.

After our discussion we make our second listening list. We change the sonic environment, or soundscape. The teacher must have decided on an appropriate outdoor location. Beside our school is a small nature preserve with seating, and pergolas for shade. It is an ideal place for students to sit quietly and listen while comparing and contrasting the soundscape. After listening for one minute I ask them to write Listening List #2. Underneath the title, they are to list what they have heard. This time there is usually much more detail in their observations. From the same class that created the first listening list, here is their second one:

- for the entire time there were cricket chirps;
- there was a constant low rumble from Highway 401—a major four-lane highway about one kilometre north;
- there was wind in the beech, maple, and white pine trees;
- three times, students were heard playing on a nearby field;
- at the end a student whispered, "don't push me";
- at the end three loud metal bangs were heard from an open door in the nearby high-school auto shop.

Returning to the classroom we begin our discussion and comparison of the two different soundscapes. Here I adapt exercises 1, 2, and 3 from R. Murray Schafer's, *A Sound Education*. Students' are to assign the letters N for a nature sound, H for a

## Sound Symbols Emporium - Class 75 Soundscape Composition

### Sounds- Orchestration

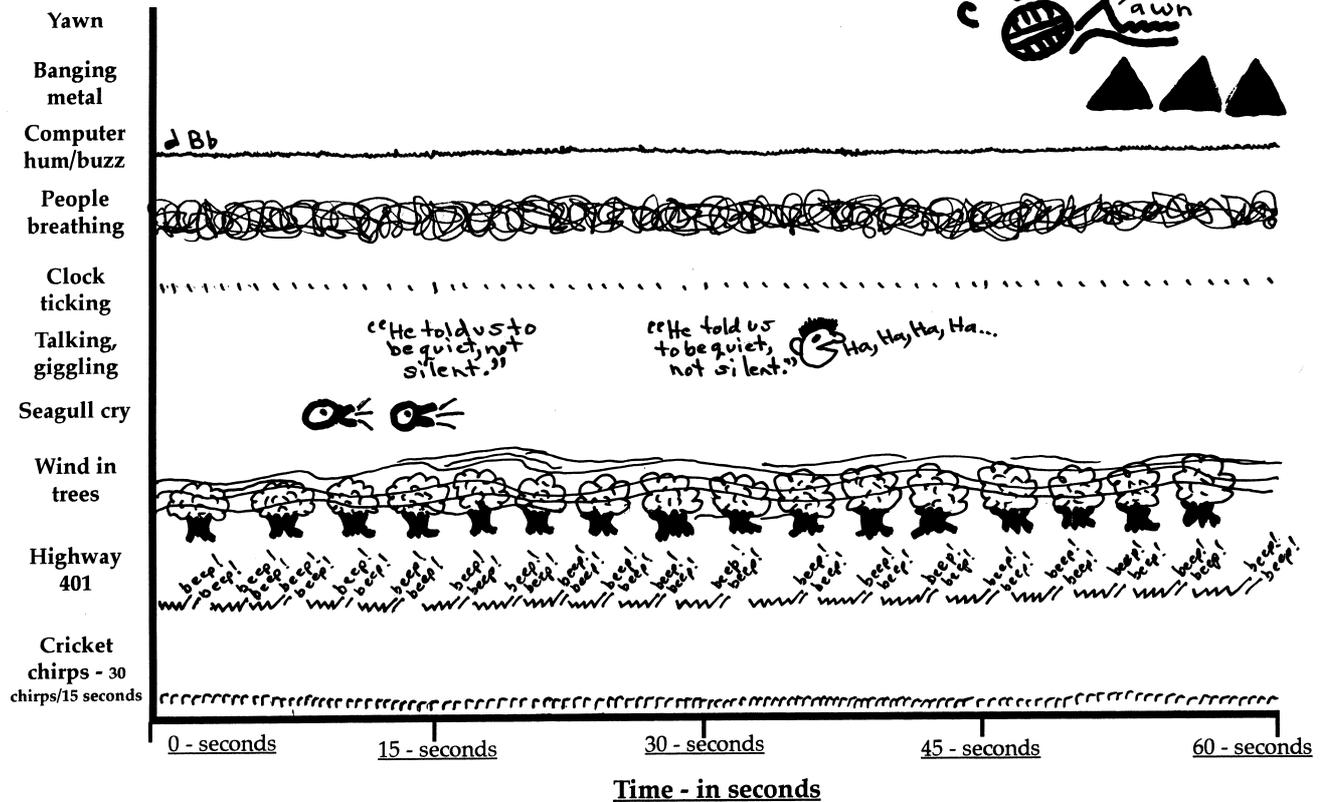


Figure 1: Sound Symbols Emporium. Original size: 24" x 36"

human sound, and T for a technological or machine sound. Then, in a different colour pen, they are to assign the letters U for a unique sound (one that was heard only once), R for a repetitive sound, and C for a continuous sound.<sup>3</sup>

A third list may also be created from having a class do a sound-walk as a follow-up unit. This develops a different set of listening skills. We usually walk through the nature preserve as well as past a busy street. Again, I use R. Murray Schafer's book, *A Sound Education*, following exercises 4, 6, and particularly, 13.

Then, as a class, we begin the creative task of graphing our sounds. I ask for two sounds from each category (N,H,T and U,R,and C) thereby using about a dozen sounds in all. It is my experience that when Listening List #1 and Listening List #2 are combined there are an adequate number of choices from which the students may chose in order to complete the task. This also introduces a creative element. No longer are the students completely replicating a soundscape, but are beginning to make compositional choices when placing elements in the graph. Figure 1 is an example of a class-created soundscape graph. Though the teacher acts as facilitator it is important to understand that the choices and creation of the symbols must be student generated to give them ownership of the results. The vertical axis is used for the instrumentation/orchestration and the horizontal axis for the time—1 minute divided into four 15 second sections.

Beginning to put the symbolic representation of sounds onto paper is the difficult part of this exercise. Here, the teacher would be well advised to preview Schafer's *The Tuning of The World*,

Chapters 8 and 9, as well as "The Composer in the Classroom", "Ear Cleaning" and "When Words Sing" from *The Thinking Ear* where Schafer describes converting sounds into written symbols. This material provides a large body of ideas from which to represent sounds accurately. Any teacher could carry out this technique with minimal knowledge of music.

Little prompting of students is needed. The class analyses the sounds and their constituent elements. We look for duration, if needed, referring back to the symbols U, R, and C; dynamic, or loudness of the sound; pitch, whether perceived as high or low; tempo, or the speed of the sound; tone colour; rhythm; and relation of each sound to the whole of the soundscape and its texture amongst the whole.

Classes often produce pictorial representations of sounds—the sound of wind through the trees may be represented by a picture of a tree with curvy lines going across and past the tree (see Figure 1). This is a simple idea; it works and students can understand it. Other times students may create onomatopoeic vocalizations of sounds—the buzzing of a fly or bee may be represented by the letters "bzzzzzzz." A discussion may ensue regarding the nature and origin of sounds in language. Next, I will give them two minutes to come up with a representation of their favourite sound on the list.

After doing these exercises for six years I have found that they are a time of a thousand discoveries. I could never hope to produce these things through a Socratic method of questions and answers. It is a time of creative discovery for me, the teacher, as much as for the students, and I am always continually amazed at

the solutions each class comes up with for solving what is basically the same problem. The intriguing and beautiful part of using the surrounding soundscapes—whether in a class, outside seated, or doing a soundwalk—is that the soundscape is never the same from hour to hour, day to day, and season to season. This is what makes the assignment magical for both the teacher and the student.

After the graph is completed volunteers are requested to produce a vocal rendition of the soundscape chart. We strive for accuracy of sound relating to written symbols, and experiment to see who can accomplish this vocalization best, whether it is a cricket chirp or an automobile changing gears. Sometimes classes are filled with hilarity as students discover their own vocal capabilities. It takes a couple of rehearsals before the class feels the task has been accomplished with much accuracy.

I then have the students produce a second version using Orff instruments such as xylophones, and metalophones. They really enjoy this kind of experimentation.

If the teacher can record the two versions and compare them with a recording of the original soundscape it leads to tremendous discussions. This is a perfect place for debate about the nature of music, the intention of music, and the legitimacy of music created from soundscapes. Are the two versions accurate representations of what we originally heard? How do our versions compare with music heard in settings such as a shopping mall, concert hall, and outdoors?

Students can then further develop their new skills. In groups of between two and four they create a short soundscape composition to demonstrate a musical story (a program) and use material from a soundscape of their choice. Beginning music students use binary (AB) and ternary (ABA) forms; while more advanced students use theme-and-variation (V, V1, V2, V3), and rondo form (ABACA).<sup>4</sup> The teacher must be prepared to guide initial problem solving within groups, but once on their way students thrive on the opportunity to create.

What follows are two examples developed from this unit. The first composition is of various states of water. The idea for this came about from Schafer's "When Words Sing", in *The Thinking Ear*, in the section regarding choric textures.

Exercise 1. Using voices [this group used percussion instruments as well as voices] create a choric texture to suggest mist; to suggest rain; to suggest a stream; a waterfall; a river; an ocean. Compose a piece of "water music" by looping this itinerary of water sounds.<sup>5</sup>

The Ganaraska River flows through the centre of the town of Port Hope in Southern Ontario and is a very prominent geographic, social, and soundscape feature of the town. In the hills on either side of the river its sound is discernible, especially during the spring floods, when the river roars and groans with massive chunks of ice making their way downstream.

A group of four students decided to record a couple of minutes of the sound of the river on a portable tape deck and use the result as the focal point of their composition. As an introduction to the theme they used vocalizations and onomatopoeic sounds of water dripping through a tap; they added to these the sounds from a rain-stick, to demonstrate rain. These moved into the recording of the Ganaraska River. The texture was increased with percussive sounds to create the sound of small waterfalls and the eventual leading of the river to Lake Ontario—and finally crashing waves on the shoreline, created by a wave drum. The pictorial score is given in Figure 2. In each corner of the score are one of the variations of the sound of water, while in the centre is the total sonic event played simultaneously. The original score is completed beautifully with watercolour paints and pastels.

The second student composition uses the sounds of a train as the main focal point. Trains have a long history in the town of Port Hope. At one point there were four train lines using Port Hope as a major terminus for goods on Lake Ontario going to the United States and to northern Ontario. There are two main lines still extant in the town, which has a population of roughly 12,500. Day and night, trains are in the soundscape.

This composition uses an incident in which a wayward cow was hit by a train. It uses the rondo form to create a light-hearted rendition of the event. See Figure 3.

The students took some creative licence, therefore the composition is based upon both actual and imagined sounds from the soundscape and passengers went on an unforgettable train journey. The A section begins with the conductor's whistle and the call, "All aboard." Next, the sound of the passengers' feet are heard climbing up the steps into the train. This is followed by the sounds of a floor-tom and a rain-stick, cleverly accelerating in tempo and imitating the sounds of engine pistons and steam being released as the train embarks upon its journey. At the same time a recorder sounds, bending its note upwards in imitation of the train whistle. As the train arrives at its first imaginary stop the B section commences and we hear the question frequently asked: "Are we there?" The sound of the steam and thundering pistons are heard once more, followed by the whistle blowing, a deceleration, a railroad crossing signal, and then another stop. The A section is repeated. In the C section we again hear the accelerating train, but suddenly this is interrupted by many vigorous blasts of the train whistle. The engineer hysterically calls out "Cow!" The cow "moos" in vain and chaos on the tracks ensues. Passengers get off the train to have a look as an ambulance arrives to help the cow. (A recorder playing a descending major third conjures up the sonic imagery of the ambulance siren.) In the final return of the A section the passengers embark upon the train again and the train travels into the distance and quietly disappears into the sonic horizon. When the piece was performed students, parents and a superintendent of education loved it.

Each one of the student compositions is recorded on a DAT recorder. This allows for future analysis and class discussion about the soundscape represented. Often discussions ensue about the accuracy of representation of the particular soundscape and how much creative, or compositional liberty has taken place.

At the end of this unit there are about seventy student soundscape compositions. From these a concert, using the best student compositions, is arranged and performed for the public. The purpose of this concert is two-fold. Firstly, students are able to publicly demonstrate their knowledge, skills, and appreciation for a deeper listening of their sonic environment through a creative soundscape composition. Secondly, it helps to heighten soundscape and sound ecology awareness in the community in general and in the next generation of decision makers.

Since I initiated this program about 1,000 students have participated. I have also used some of this pedagogy and the sound ecology writings of R. Murray Schafer to speak to the local town council on soundscape and noise abatement issues. Some of my students have been present in the audience. Given time, some students may play a part in municipal politics and have political power.

At the outset I stated that it was my purpose to help students develop their listening skills. I believe this program is successful in two ways. Firstly, I can relate to its positive effects from my own personal experience of soundscape listening over the past eighteen years with R. Murray Schafer. Secondly, when listening is the prime activity for students and teacher—a different, possibly new, social situation results. It is radically different from the forced listening which is so prevalent in schools and the teacher-

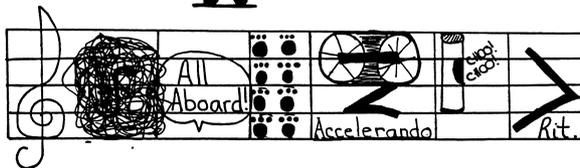
# Chaos on the Tracks! **ABACA** (Rondo)

Rory - Drum (Train)  
 Laura - Rainstick, Cymbal, (Train)  
 Dom - Block Set, Voice (Footsteps, Train, Ticker)  
 Alexander - Recorder (Train whistle, Ambulance)  
 Kristi - Horn, F. Cymbals, Voice (Horn, Conductor, Lady Car Signal, Train)

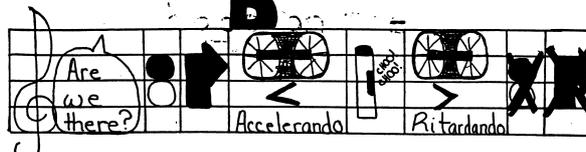
## 4 Elements Used

- 1) Dynamics (i.e. when train is close; forte, when far - piano, coming & going; Crescendo & D.
- 2) Tempo (i.e. getting ready for crash; accelerando)
- 3) Form (Rondo: ABACA.)
- 4) Texture (We all play at once & separately)

### **A**



### **B**



::: A



### **C**



::: A



Time: 2:30 - 3:00 minutes

student hierarchy. Here students are not being forced to listen; they want to.

R. Murray Schafer's works and teachings are needed in the everyday classroom today. They deal with concepts that are understandable for all ages and can be undertaken with minimal background knowledge and equipment from the teacher. Over the long-term many generations will become not only better listeners but also more sensitive decision makers. The main ingredients needed from the teacher are confidence, caring, and enthusiasm.

Nothing is more important than raising a generation well—teaching our children the best values, the noblest ideals, and the highest levels of integrity. When we, as communities of learners, do this, we entrust the future to good.

Any questions or further elaboration of curriculum issues, details for assignments, classroom management technique for large numbers of students and evaluation explanations for the classroom may be addressed to: Michael Cumberland, 347 Lakeshore Road, Port Hope, Ontario L1A 1R2, Canada. Fax: (905)885-9177, e-mail: dunain@eagle.ca

**Michael Cumberland** teaches at Dr. M.S. Hawkins Sr. P.S. in Ontario. He freelances on tuba and alphorn and has traveled extensively in Canada, the United States and Europe recording unique natural soundscapes and echoes with his alphorn. His field studies regarding the "natural pitch-resonance properties" of the alphorn were presented at the Sound Escape International Conference in June of 2000. He received his Bachelor of Music Degree in Performance from The University of Toronto and his Master of Music Degree in Performance from the University of British Columbia. He continued his studies at McGill University and most recently in Switzerland.

#### Endnotes:

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2. Schafer, R. Murray. *The Tuning of The World*. Toronto: McClland and Stewart, 1977, p. 274-75.
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- Schafer, R. Murray. Interview by Michael Cumberland. Indian River, Ontario, Canada, September 20, 2001.

Figure 3: Chaos on the Tracks, Railroad composition.

# Teaching Acoustic Ecology: An International Overview

By Gary Ferrington

College or university instruction related to acoustic ecology is difficult to find. Without an established curriculum in this emerging field, it is often the responsibility of individual teachers to integrate acoustic ecology concepts and principles into existing courses.

A course survey was recently posted on the WFAE Acoustic Ecology listserv. Respondents were asked to outline the learning goals, objectives, activities, and student responses to instruction in acoustic ecology. The following is a summary of the material collected from the online survey as well as other contributions. It illustrates a diversity of on-going efforts by educators who believe studies in acoustic ecology are important.

## Burg Giebichenstein, Halle, Germany Hochschule für Kunst und Design School of Art and Design

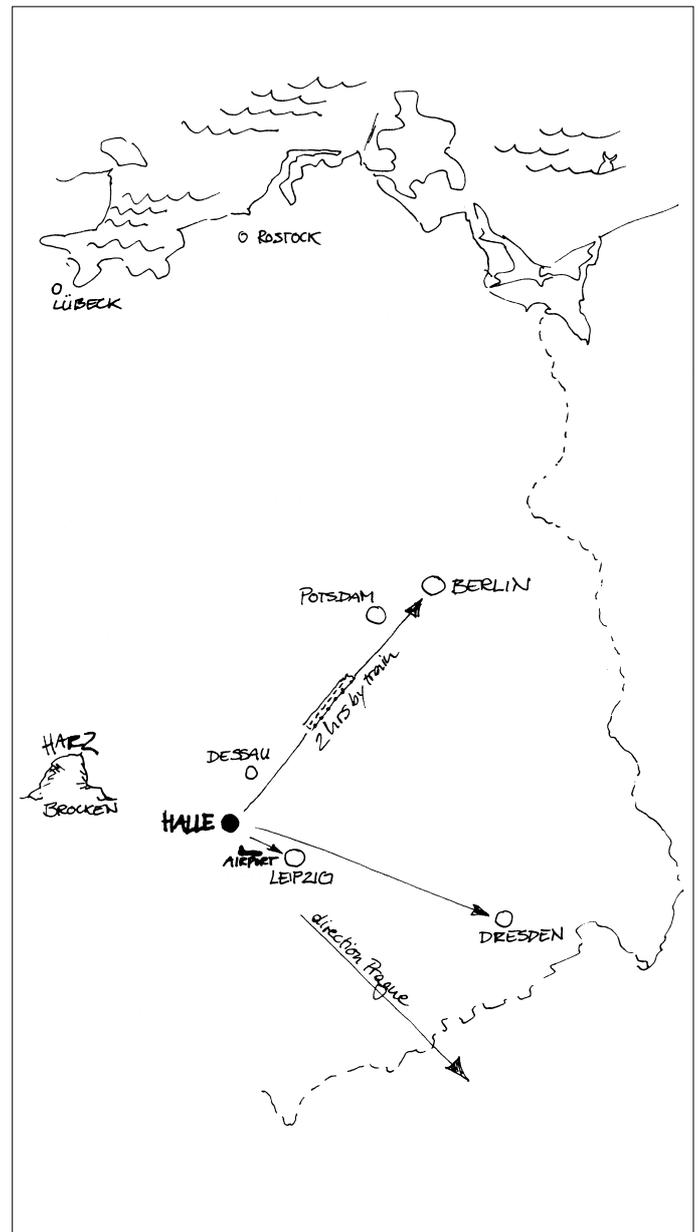
Dr. Peter Luckner, associate professor, and head of the “multisensual design” project research group at Burg Giebichenstein, college of art and design, is teaching a course focused on acoustic and olfactory matters in an interdisciplinary context.

The acoustic content consists of two main themes: the aesthetics of sound design and acoustic ecology. The objective of the course is to improve, broaden, and intensify the acoustic education of industrial designers. Similar aspects of olfactory design and olfactory ecology will complete the course when it is fully implemented in April, 2002.

Students learn about acoustic and olfactory components as features and characteristics of architectural spaces, objects, and processes. This knowledge is applied in various basic and advanced projects, such as the design of exposition stands and halls at trade fairs that include conversation corners and sale presentation spaces.

Course activities include the study of acoustics and auditory perception. Ear cleaning and training activities facilitate the development of attentive listening. Students also learn about architectural acoustics and the various moods sound creates in a variety of spaces. Discussion focuses on urban sound design and on the creation of “acusticons” (audio symbols for leading people through an environment).

Industrial sound is also investigated including the acoustic properties of tools, equipment, machines and vehicles. Students



Map showing location of Halle, NE Germany  
Reprinted from Burg Giebichenstein Student Guide

record and assess soundscape environments and look at the effects of sound on public health.

A part of the curriculum involves students working with the manipulation and control of sound in the studio as they study sound art and electronic music.

Course feedback suggests that students are highly motivated. They point out their new perception of sound and music, in terms of its construction and potential for design purposes in particular. Some comment on their increased awareness of soft sounds and noise in their environment. They greatly appreciate the opportunity to experiment with different materials and with electroacoustic equipment to produce sounds.

## City University, London, United Kingdom

Kendall Wrightson is a visiting lecturer at City University and has offered the acoustic ecology sessions for the past two years. These sessions include three, two-hour acoustic ecology sessions to students studying for a Post-Graduate Diploma or Masters of Science Degree in Music Information Technology at City University, London.

Students, upon completing the course of instruction, are able to describe and articulate the major issues and the terminology used by acoustic ecologists. They debate the major issues raised in acoustic communication theory and in acoustic ecology as well as issues related to information with respect to individuals and the environment. As part of the learning process, students investigate a theme relating to acoustic ecology such as sound as a psychological barrier, acoustic design, and so forth.

There are only three sessions. The first two are lecture based with listening exercises, audio examples and discussions. The third session is a group tutorial that focuses on students' essay topic ideas.

Students say that they think about sound in a very different way as a result of these three sessions. They note that sound becomes tangible and personal. Students have also reported that their relationship with sound—and with themselves—has changed.

## University of Iowa, Iowa City, Iowa, United States

Leighton Pierce teaches a one semester course titled *Film and Video Production: Sound Design*. This is as an intermediate production course for undergraduate and graduate students in the Cinema and Comparative Literature Department at the University of Iowa. While not an acoustic ecology course per se, Pierce posits that to create meaningful sound constructions in films and videos, we must first understand the meanings of sound in our various daily lives.

In Pierce's course, students learn to hear the world with greater attention and understanding. Such understanding facilitates student sound recording and the construction of sounds into meaningful soundscapes for film, video, or as audio works. As a result of this study students are able to theorize about sound in the world and film and learn to talk about sound media in detail.

The curriculum begins with a 30 - 45 minute soundwalk. The students take notes but cannot talk with one another. During this first session they are assigned a listening journal activity and are asked to bring in sound memories for discussion.

A follow-up session discusses the sound walk and journal notes. Pierce uses the student remarks as a way to talk about acoustics, psychoacoustics, and ways of categorizing sound based on their acoustic attributes and on their social and psychological functions.

The technology of recording is covered including how microphones function differently than ears. A recording activity helps them understand the various pick-up patterns of microphones

and the difficulty in capturing sound. Related to this learning is an assignment in which they are to construct a soundscape. The goal of this task contains four aspects:

1. Learn skills in basic quality recording techniques.
2. Learn how to use ProTools software for sound editing.
3. Learn transitions between sounds and sound spaces.
4. Learn to relate their world listening experiences to the process of constructing meaningful soundscapes.

Later, teams of two students each must record and then digitize a single 15 second fragment each of a:

1. Domestic interior ambience
2. Machine sound with its on and off
3. Nonverbal vocal sound
4. Sound using a mechanical eggbeater
5. Public exterior ambience
6. An optional sound of individual choice

All of these sounds are put into a common computer desktop folder. Each student makes a soundscape using only this material.

Other student projects include:

1. A short sound-to-image project with a synced sound track to short Lumiere films.
2. Readings and presentations from Michel Chion's book *Audio - Vision*. (Columbia University Press, NY, 1994)
3. A final project of students personal choice—either a soundscape or a soundtrack to a video/film.
4. A field trip to the anechoic chamber on campus.

Pierce reports that students love the course. Though they enjoy learning skills such as ProTools and recording techniques, they are most thankful for the gift of listening. The listening journals and exercises are the most commented on and memorable activities in the semester course evaluations. This is highly satisfying to Pierce since he believes that listening skills are more durable and deep than technical ones.

## Concordia University, Montréal, Quebec, Canada

Professor Andra McCartney teaches a third year Communication Analysis of Environment seminar/practicum course at Concordia University in Montréal. Even though this course is not specifically focused on acoustic ecology, it is certainly related. The course engages students in general and detailed analysis of various information complexes: museums, galleries, exhibitions, country-sides, landscapes, city streets, highways, department stores, churches, and others. Student analyses are conducted from the standpoint of information values used to influence prospective audiences of films, television programmes, or exhibition and theatre visitors. The basic values of light, space, sound, picture, words and exhibit structures are explored through individual student projects in real locations.

Students have to choose a place in Montréal, study it throughout the term, then write a report on it. Students are encouraged to observe how people, machines, animals move through the observational space, and utilize it. Attention is given to patterns of activity. Students are introduced to soundscape research, film location research and interpretive writing as strategies to produce their reports.

According to McCartney this is a very popular course. Student response has been quite enthusiastic. Some have spoken of the course changing their attitude towards the concept of place.

## Simon Fraser University, Burnaby, British Columbia, Canada

Simon Fraser University (SFU) offers both on-campus and off-campus courses related to acoustic ecology (see Truax article in this issue, p.11)

*Acoustic Dimensions of Communication* (CMNS 259) is a course offered via Simon Fraser University's Distance Education, and administered through the Communications Department at SFU, under the supervision of Barry Truax. The course material was originally prepared by Susan Frykberg in 1997. Since 1998, Robert MacNevin has served as tutor marker and has both streamlined the administration of the course and revised the Study Guide—in part to integrate the use of the *Handbook for Acoustic Ecology* CD-ROM as a valuable teaching tool.

*Acoustic Dimensions of Communication* is designed to develop the student's perception and understanding of sound and its behaviour in the interpersonal, social, and environmental fields. The acoustic and psychoacoustic bases of sound are introduced, with emphasis on listening, the soundscape, sound and community, noise pollution, the science of sound, the human voice, acoustic design, and the sonic imagination. The course strives to teach listening skills, while providing students with the tools necessary for the analysis of sound and its behaviour within a variety of soundscapes.

The reading and listening assignments, and exercises, are designed to foster aural acuity, and to help the student develop the ability to articulate aural experience in writing. Ideally, students will react to their new-found aural acuity, interact with each other and the ideas of the course, and learn to question and evaluate their position within the contemporary aural landscape.

Students are required to submit eight assignments via mail or fax over the duration of the course (13 weeks), and to participate in four ongoing E-mail Tutorials, which focus on themes explored through the other course work. The written work for the course is aimed at students developing acute listening skills, and then articulating these new skills in writing. As the course progresses, it is hoped that a demonstrated comprehension of course concepts, and the accurate use of acoustic and aural language, will emerge. The overall level of articulation is stressed, and *the Handbook for Acoustic Ecology* provides students with a set of linguistic and conceptual tools for honing the meaning of acoustic terminology. Students are also encouraged to make use of the valuable resources available through the WFAE website, and several contributions from CMNS 259 students have been published in *Soundscape*.

The assignments include: four Sound Journals, which consist of students' descriptions of aural experience written from a subjective point of view, exploring their own voice; four E-mail

Tutorials, designed to facilitate an ongoing dialogue between the students (sometimes from quite far afield); three longer written assignments, including a Soundscape Monitoring Project, a Noise Pollution Project, and a Final Essay Project; and a Terminology Quiz, which reviews the wide range of sound terminology used in the course.

MacNevin notes that it is interesting to observe the emerging listening skills of the students, as they turn their full attention to a vital area of human experience that is commonly taken for granted, if not ignored—listening. What does emerge at first, of course, is an increased awareness of the almost ubiquitous presence of human-made noise. Sometimes (but not always) this new awareness is accompanied by an increased appreciation for quiet, or naturally balanced soundscapes. Often, especially toward the beginning of the course, there is a layer of denial that must be penetrated before a fuller understanding of the deleterious effects of noise is attained, especially with the younger students. Some students feel somewhat “cursed” by aural acuity, once they have become more aware. Ultimately, however, many students appear to come away from the course with an appreciation for the value of a balanced soundscape, an understanding of their own roll in trying to help facilitate improvements to the soundscape, and a working understanding of the steps that might be taken to bring this about—essentially through education of the public, and improved sound (or soundscape) design.



Photograph by Raina Kim

## Deep Listening Certificate Pauline Oliveros Foundation, USA

The Deep Listening Certificate Program established 1995 is a venture of the Pauline Oliveros Foundation intended to further develop the work in Deep Listening for creative work and teaching. The program consists of three week-long training retreats, with two year long projects relating to one's special interest between each retreat. Additional work at home includes reading, writing, composing listening exercises, and keeping sound and movement awareness journals.

Upon completion of the program an assessment for certification by Pauline Oliveros, Heloise Gold and Ione is also required. Successful completion of the Three-Year Certificate Program qualifies the certificate holder to lead Deep Listening Workshops with mentoring available from the retreat instructors and is a prerequisite for admission to the Apprentice Program.

The practice of Deep Listening continually unfolds over time as a multi-dimensional process. Observing this process is a big part of the learning. Having a year in between each retreat creates the opportunity to practice and experience development of listening skills. It is possible to experience and sustain a substantial shift in perception through practice.

There are two principle goals of the Deep Listening Certificate program. One is the ability to organize an effective workshop curriculum based upon the training provided by the certificate program. The second is to develop the facilitator skills that will help others develop their own listening skills whatever their focus in life might be.

## **Rizvi College of Architecture, Bombay, India**

*[Ed. note: Mr. H. Masud Taj, a Bombay architect, sent the author a packet of material in early 1999 that outlined his course at the Rizvi College of Architecture, focusing on acoustic ecology. He has since moved to Canada and as a result the course is no longer taught in Bombay. However, we feel that the ideas outlined below—although general—may inspire other instructors of architecture to make sound a larger priority in their courses.]*

The course introduction notes that, "As conscious designers of built environments and inadvertent creators of acoustic spaces, architects have an impact on the acoustic ecology. Hence the objective of the course is to make the students of architecture aurally literate. The course, *Sound and Self: Speaking, Listening, and Designing*, examines not only the technical aspects of acoustics but also the history of problems and dreams. It attempts to impart in the student-participants sensitivity and self-awareness of their roles as: emitters of sound (speakers); receivers of sound (listeners); and designers of sound (architects)."

Taj notes that the course explores the use of sound and silences as an element of architecture based upon an understanding of the basic principles of acoustics. Instruction focuses on investigating the personal, cultural, social and sacred aspects of sound.

There are two central themes around which the course was designed. One was to fuse technical knowledge of acoustics with the intuitive insights of an aural poet to bring about a more holistic understanding of sound. It presumes that to have acquired knowledge is to have gained in self-awareness. Two, to change the method of teaching by fostering team-learning and delegating more power to the students. The teacher becomes a facilitator and the students participants.

Course instruction includes lectures with audio recordings, slide talks and videos. There are also soundwalks and site visits.

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Detailed course information can be obtained at:  
<http://www.sfu.ca/cde/courses/cmns/cmns259.htm>.  
Registration and Admissions Information is available from the  
Centre for Distance Education website at:  
<http://www.sfu.ca/cde/reg.htm>  
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#### **Deep Listening Certificate - Pauline Oliveros Foundation - USA**

Certificate Program: <http://www.deeplisting.org/training>  
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# Stockholm Soundscape Project

## New Directions in Music Education

By Robin McGinley

### Introduction – Tales from an Accelerated Culture

*“The modern environment today produces many new sounds. For example, the mobile phone I just bought gives off a lot of sound/sound effects. When birds hear these sounds they can’t tell whether they are coming from nature or from IT, and they start to imitate these strange sounds. Why do we have to manufacture such sound, which is really a ‘noise’ in nature? This is what I think about whenever I sit with my mobile telephone!!”*

– Extract from a student Sound Journal, September 2000.

The challenges facing today’s experimental music educator are increasingly different from those of any other period. With the proliferation of information technology and mass communications media and the ease of access to the Internet, computer games, mobile phones and hundreds of TV channels broadcasting around the clock, the outlook of the student body in any hyper-developed Western country is changing radically.

Many students today are computer-literate and able to handle more information at a higher rate, and for the most part they listen to music through means of electroacoustic reproduction. This situation is, of course, a mixed blessing—the fact that access to more information seldom equals better quality information (improved signal-to-noise ratio) needs no qualification.

What follows are notes towards the documentation of a practical project, with the principal intention of finding ways of extending and developing new approaches to creativity within the framework of a secondary music curriculum. The concept was to take techniques and methodologies developed by the acoustic ecology community and use them directly (in the first instance) with secondary school students.

As an experimental music educator, much of my work has involved encouraging groups (in schools, colleges, and in the community) to realize some of their potential as composers and performers. This project not only raised students’ awareness regarding the operation of (and problems facing) their acoustic environment, but also actively promoted imaginative problem-solving and creative responses to information received from the world outside.

I might add that although this project deals with some acoustic ecology issues, it is not intended as a meditation on the aims of acoustic ecology. It is my opinion that without direct intervention (within areas such as education) Acoustic Ecology becomes some kind of social science concept, or at best a pious hope. For



Sound Map 3: by Usha Jeswani, Autumn 2000

too long soundscape studies have been almost the sole province of academic research departments. By engaging in this work, younger students take these issues away from the classroom and out into life. Furthermore, the quality and diversity of the work produced for this project showed me that the students involved saw the value of the assignments and enjoyed doing them.

### The Stockholm Soundscape Project at Engelska Skolan Söder

The project was conceived for, and executed by, sixty 15 year-old students at Engelska Skolan Söder (The English School) in Stockholm over a period of about six weeks in autumn 2000. It encompassed a number of strategies and techniques broadly addressing key areas and concerns of acoustic ecology. The aims that were central to the creation of the project can be grouped under four premises, which will be referred to throughout this document. They are as follows:

**Awareness**—The general aim was to raise the students’ awareness of their sound environment, while discussing related factors such as noise pollution legislation (and those responsible for making such laws). Basic acoustic and psycho-acoustic properties, together with elementary sound recording techniques were also discussed, laying the foundation for a multi-disciplinary approach to the work.

**Research and Documentation**—The assignments that the students were asked to complete were based around the concept of

research and documentation of the soundscape of Stockholm throughout the duration of the project.

This brought the focus of the students' work very much into the present tense. There were no books to consult, or historical facts to remember. Furthermore, the work was contingent on the actions of the students themselves, thus introducing direct, experiential learning, which is the approach best suited to an artistic subject like music. Many techniques were attempted, some of which are outlined below.

**Listening Skills**—Most of the students in the group would traditionally probably be described as non-musicians, whose listening habits mostly involve popular music of US/UK/Swedish origin. By engaging in this work, their aural perception not only began to include the sounds around them (for the first time in the case of some students), but also offered a gateway into the sometimes 'difficult' soundworlds of contemporary and experimental music.

**Creativity**—The British composer and community arts activist Trevor Wishart recently described creativity as 'transcending your limitations in some way by the use of your imagination.' (Stollery, p.31), and it is a definition such as this that should be kept in mind when considering this project.

All the assignments were devised to provoke a creative response in the participants. The instructions and guidelines were formulated in such a way as to give the students considerable autonomy and allow them to explore their own thoughts, ideas, solutions and discoveries. Discovery is of key importance in the creative process, and through engagement with creative issues it was hoped that students would learn something about themselves and the world around them.

## The work

To begin with the students were shown a large satellite photograph of Stockholm and they agreed that from a distance of several hundred miles the city would seem rather silent, but that down where we were the situation was quite different. Following preliminary discussions about some of the basic concerns of acoustic ecology (the current state of the sound environment, the increased noise levels of the modern world and so on), the project was delivered through the following four assignments:

### 1. Sound Journal

In a primarily visual culture it is clear that many students do not fully take into consideration the amount or significance of the information they receive aurally. The sound journal was therefore an exercise designed to introduce the concepts of appraisal and documentation of the sonic environment.

Each student in the project was asked to keep a sound journal for five days, in which they were to identify and react to the sounds they heard around them. The work was to be carried out in any location of the student's choice, in the street, on the bus or train, at home etc., thus giving a representation of sound descriptions and reflections throughout an average school week.

The instructions given to the students beforehand were purposely slight and lacking in detail, thereby giving each individual considerable freedom in terms of the form, detail and style of the document. The idea was for each student to find his/her own style for the somewhat difficult task of describing his/her experiences of sound, experiences that cannot always be easily expressed in words. The basic concepts of the assignment were outlined (as above), and several examples of sound journals from the World Forum for Acoustic Ecology website exemplifying different styles and approaches were presented. There were no detailed directives or illustrated stylistic examples, and the assign-

ment was written entirely outside of the classroom, as homework. The situation was analogous to a piece of experimental or indeterminate music where much creative autonomy and choice is given to the performer, and the results were as diversified and unique as the personalities that had created them.

The following examples are a selection of excerpts from the sound journals that the students kept over the course of one week during August 2000.

#### Coming to a screeching halt—Veronica Atterham (9A)

I was waiting for my train, half-listening to the multitudes of conversation around me. Someone was yelling at the other end of the platform, but the words were drowned in the sound of an incoming train. Another person with hard soles was making a clip-clop, almost "horse-walking" noise as she hurried towards the escalators. She was talking into her mobile phone, her free fingers snapping impatiently. A group of teenagers were toying around near the edge. They were babbling loudly and laughing even louder. And from further down the tunnel came the unmistakable sound of an approaching train. It screeched. The old metal track whined. The motor roared tiredly. From the speakers someone tried to say something in a shy, un-hearable mumble. It was easily drowned by the other sounds. The train blew into the platform area; its brakes screaming shrilly. People stepped up and moved towards the white line.

The wind caused from the train blew around, pushing at people, ripping at clothes and paper, but not strong enough to do damage. The train's brakes screeched, a sound growing louder and shriller every second. The tracks whined, and the wind blew. Finally, the train came to a screeching halt. The sudden quiet was soon broken by the "ppshshhhh" of the opening doors. Then the people started moving again. Noise fills the subway.

#### Tuesday, August 29<sup>th</sup> "On the bus"—Linda (9A)

Wow, I never really thought about it, but the bus is a really noisy place. When I first got on, and started thinking about what I can hear I was shocked. I couldn't believe that I had been on this bus every morning for 2 years and never noticed all of the sounds. People are almost shouting, trying to be heard over all the noise. Every now and then the bus driver picks up the mike and says, "Next stop, Huddinge". On the seat next to me is a young boy listening to his CD player. It is so loud, even I can hear it. The most obvious sound is that of the engine. Outside the window cars are roaring by. After every stop the bell rings again, because somebody wants to get off. Finally my stop, it was really nice to get off that noisy bus.

#### Thursday, August 31<sup>st</sup>, Stockholm, "the sounds of conversation and traffic"—Christoffer Brenning (9C)

Being able to communicate and to carry out a conversation is an important part in our everyday lives. When you're standing in a public area what do you hear? The sound of chatter. Whenever we go out it's not unlikely that we will hear the sound of people talking to one another. When I was sitting on the bus today, like many other days, I heard this noise of several groups of people carrying out conversations. When I heard it I interpreted it as a blur of different frequencies from the different voices made by the different people. If you listen carefully you can distinguish one voice from the others and make out words. Naturally, this depends on the quantity of people that are talking. If there are few people then of course you can tell their voices apart, but if you're listening to twenty or so it can become very difficult. Of course, this particular noise can be heard in almost any public area, like a store, a school, a restaurant etc. In a way, listening to

the traffic in the street is a lot like listening to a conversation. There are different frequencies from different cars making different noises at the same time.

### Thursday, August 31<sup>st</sup> —Mona (9C)

Boom, boom. Can't this noise ever stop? Tick, tock. Boom, boom. I can never sleep. I can never think and I can never concentrate. That sound keeps on booming (actually it ticks, but sounds like a boom, because it's so loud). The booming sound keeps on going on and on for 24 hours and seven days a week, without any rest. (Well, I could take the batteries out, but then I won't come to school on time). Tick, tick. Boom, tick, boom, boom. Every time the clock ticks, it sounds like the whole world is falling into a black hole, and it can never stop falling.

### Tuesday, August 29<sup>th</sup>, Lightning and Thunder!—Mikaela Navotny (9B)

Lightning . . . a rustle of leaves, the cracking sound of raindrops as they hit the ground . . . and then from nowhere the vigorous sound of thunder . . . I shrank, though I've heard the sound so many times before, I couldn't help it. Alone in my house (or I heard the tripping sound of cat's claws on the floor, so the cats were home). I turned on the radio . . . bzzzbzzz . . . no, just another guy playing guitar on some miserable tape recording (switched off). Once again, I heard the powerful sound of thunder, it sounded like someone beating on a big drum. From my window I saw more lightning. Now it was close, perhaps right above me. But I'm not scared of thunder, I just dislike the thought of being alone. I hear my own feet walking across the floor and it feels as if the thunder and I are in competition, one trying to make itself heard above the other. I heard the creaking sound from a door pushed open. My cat Nadia is coming into my room. She is probably a little bit nervous as well. But now we're two, and then we're okay.

I was very impressed by the scope and quality of the work produced, much of which demonstrated a depth of engagement with the soundscape that I had perhaps not expected to find in the first attempts at such an exercise. Many of the students wrote about the sonic contexts that constituted their daily existence with a fluency and competence that had developed over years of interacting with sound at a number of emotional levels. It seemed, however, that until they had been directly asked to think and write about such experiences, many had not realized the extent to which sound was a significant factor in their lives, and several of the entries included references to such a realization.

Another notable occurrence was the number of different

literary styles and techniques the students utilized when discussing sonic situations (often within the same document). Some chose straightforward lists of sounds with very little contextual information, others were more inclined to longer sections of descriptive prose, effectively delineating sound, emotion and context. Still others broke into poetry or verse, and there were a number of examples of detailed time measurements relating to the duration over which an entry had been written. Some even found it necessary to devise simple pictorial systems to portray parameters such as dynamic level, timbral quality or spatial orientation.

The results of studies such as this would appear to have a number of possible applications beyond the discipline of music, and these documents could equally be read and analysed from the point of view of social studies, or communications and information science. Of primary importance, however, was the original educational aim to encourage students to engage on a very direct level with the sounds around them, thus attempting the challenging task of effectively freezing a moment in time, distilling an experience or an emotion, and documenting in words something as ever-changing, restless and dynamic as a soundscape.

## 2. Sound Map

The instructions for this activity were designed to be as simple as possible, delineating very little apart from the basic concepts of the activity. Once again, the reasoning behind this was to provoke a creative response in the student and get him/her to engage with the exercise on a deeper level rather than simply following instructions.

In an appendix to R. Murray Schafer's landmark text on soundscape studies *The Tuning of the World* (1977) there are a number of examples of what are described as sound maps (Schafer, pp. 264-267) under the heading "sample sound notation systems". These were shown to the students, and even



Sound Map 1: by Veronique Flis (9B), Autumn 2000

though many of them are based on precise sound-level measurements and complex scientific processes (which was not necessarily the point of this exercise), they gave a number of effective examples of how the assignment could be tackled.

Like the sound journal, this assignment challenged the students to investigate and then document a sound environment, or sound event of their choice, the difference being that whereas the first assignment had involved documentation through prose, this one involved the presentation of a three-dimensional sonic space through the two-dimensional space of the page. The skeletal instructions accompanying the sound map examples are included below in full,

and were again designed as a kind of text-score, allowing maximum opportunity for creativity and the use of sonic imagination.

Make a SOUND MAP of an area or location of your choice.

- A SOUND MAP shows two things:
  - a) A geographical location or place.
  - b) The sounds that have been heard in that location.
- There are many different ways of creating a SOUND MAP. There are a few different examples included here. You may want to use one of these methods or invent a method of your own.
- Your SOUND MAP should be on one side of A4 or A3 paper.
- There is no wrong way to make a SOUND MAP.

### 3. Field Recordings and Interviews

The third phase of the project brought together the themes of research and documentation common to the other two phases, and took them out of the classroom in the form of field trips. Each of the four classes chose a location in the Greater Stockholm area and carried out two activities in it. The first was to make recordings of various sounds in that location, and the second was to approach members of the public on the street and ask a number of prepared questions about their listening experiences that day (up to and including the time of the interview).

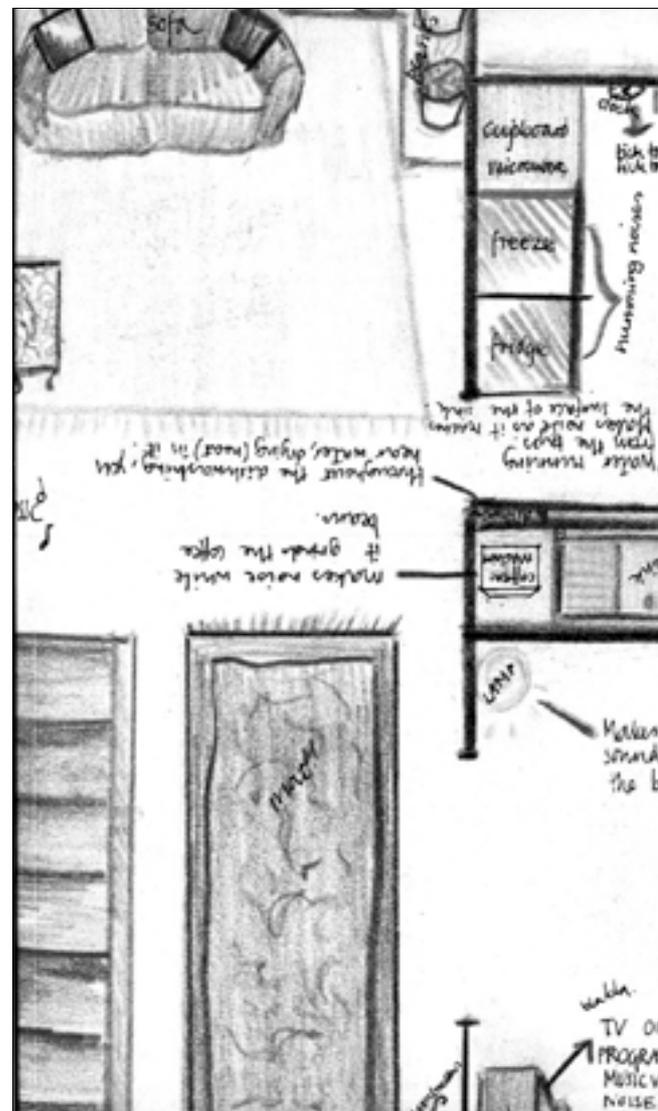
The students' choices of location turned out to be very different from one another, with each location offering its own unique sonic characteristics. One group chose Kungsträdgården, a large public square with fountains, benches and cafés near the Royal Palace, while another group chose Hötorget, a market square in the centre of the city. A third group chose to exploit the fact that central Stockholm is built on an archipelago of fourteen islands and voted to carry out the assignment on the Slussen-Djugården ferry. The last group chose to record in the precincts of Farsta Centrum, a large, modern suburban shopping mall.

Each class was split into two groups, each group being responsible for one task. The sound recordists were asked to find sounds which they felt were in some way representative of that location, and make close-miked digital recordings of them lasting several seconds. In a similar fashion to the previous assignments, they were making a document of their experiences of the soundscape, this time through the medium of sound itself.

The interviews with members of the public passing through the chosen location were of a slightly unusual type. Acknowledging the fact that these project assignments were to be carried out in the 'present tense', many of the questions asked focussed on what the interviewees were listening to while the interview was being conducted.

I explained to the students that both the questions and the responses were to be recorded in much the same way as a location interview conducted by a radio journalist. The resulting recorded documents thus consist of two people discussing a soundscape that can be heard around them, and are more interesting because they are self-referential. For example, on one recording a helicopter can be heard passing overhead as a passerby is asked if he/she is listening to any particular sounds at that point. He/she of course answered that he/she was listening to the helicopter, which is proof that such an exercise concentrates the listening abilities of those approached.

Many of the students seemed slightly disappointed that the questions they asked received only the briefest of answers. I explained that the point of the exercise was to raise awareness, and that the people they approached might go back to work, or wherever they had come from, and tell others about the experience they had had. It is certainly something one might recount to colleagues: being accosted in the street during one's coffee break by a group of



Sound Map 2: by Fanny Magnusson, Autumn 2000

fifteen-year-olds armed with microphones and recording equipment, and asking strange questions about the sound environment!

### 4. Conclusion: Where Next?

The preceding sections detailed some experimental work regarding the use of acoustic ecology strategies in a classroom setting, with assignments intended not only to raise awareness of important socio-acoustic matters, but also to foster creative interaction with the local soundscape. These experiences suggest a number of educational initiatives that could further develop the work presented here, and assist with the future propagation of acoustic ecology issues. In this final section I shall briefly discuss these initiatives and how they might facilitate the progress of the concerns of the present document.

There is a great need for more soundscape-oriented activity and awareness within the music education sector, both at primary and secondary levels, and also within higher education (including student music teachers) and extra-mural community contexts. A way of beginning to address this need is the setting up of a greater number of workshops (covering all the levels indicated above), to present approaches towards the exploration of the sound environment by music educators.

The term 'workshop' in this context is defined as the devising of situations where anyone may participate in acts of creativity regardless of his/her ability or experience. As stated earlier,



# “With the Calm, Comes Silence”

By Gregg Wagstaff

The whistle of the wind by my ear,  
The wind blowing against the trees,  
Trees “swish”. Sound is heard,  
Forcing us back. Stopping you hard,  
The wind pushing the sea - CRASH! against the rocks,  
Moving clouds, in the air,  
*With the calm, comes silence.*

Alasdair Smith (aged 10)



In the *Soundscape Journal* (Volume 1, Number 1, Spring 2000, p.19), I wrote from the Isles of Harris and Lewis in Scotland’s remote Outer Hebrides, describing something of its people and places, and the soundscape work I was embarking on there. At that time, the *Touring Exhibition of Sound Environments* (TESE) was in its early stages. Our guiding aims were to, “describe and document the social, cultural and natural make up of the islands through their soundscape” and, most importantly, to involve the local people in the process. Spring 2002—and many months later the project in the islands is now coming towards an end, with final preparations being made for exhibition in April and May.<sup>1</sup> Various parts to the project have evolved during this time. In this article, I will relate some of the exercises involving a class of primary school children from Cross in Ness, on the Isle of Lewis, and give voice to some of the sound poetry and sound journals that they produced. [My text here is intended to be purely descriptive and not analytical].

My ideas were met enthusiastically by Mrs. Gordon, the Headteacher of Cross Primary School. I had proposed to take a couple of classes which would engage the children in listening *to* and thinking *about* their soundscape. I was introduced to Mrs. Gibson, who taught a class of thirteen 8-12 year olds. We further discussed ways in which we could involve the children in listening oriented exercises.

In the first of these exercises (May 3<sup>rd</sup>, 2001), the class were played different soundscape recordings from around the world, including one I had recorded locally. They were asked to listen carefully to each one and write down their responses to the following questions: *What is it I am hearing? Where do I think this is? How does it make me feel? What do I think this place looks like?* For example, a recording of the slow melodic song of the Australian Pied Butcherbird was played.<sup>2</sup> Responses were; *“A bird tweeting in a wood. Makes me feel calm. I think it looks like a rainforest.”* / *“Somebody playing a whistle. In a wood with birds singing. It makes me feel happy.”* I played an older recording (from Finland) of a cow being milked by hand into a metal pale.<sup>3</sup> Although this process was common on the Isles of Harris and Lewis 40 years ago, it is not a sound familiar to the young ears of the class. (In fact, I heard of only two cases on the islands where you might still hear this). Many commented that it sounded like a sawing sound; *“A workshop. I can hear tools. It makes me feel dark and gloomy. A Blackhouse.”*<sup>4</sup> *Small and loud.”* / *“Metal scratching against metal.”*

There was one girl in the class who guessed all the five sounds I played correctly. Her response to a recording of a market in Delhi<sup>5</sup> was very perceptive, *“People on a bus or people trying to sell something. It makes me feel as though there are lots of people around me. I think it is a town in India. I think the place looks bright.”* The point of this exercise was not to ‘test’ the children but to open and focus their ears and their imagination. It also helped to ‘break the ice’, allowing them to tell me things and me to understand something of their individual sound experiences.

Following this, the class went outside into the playground and surrounding fields for a listening and sound mapping exercise. Each pupil was asked to find a place to sit apart from one another. Each had been given a sheet of paper with a large circle on it. In the centre of the circle was a dot. As they sat and listened, the children were asked to imagine that they were at the centre of the circle and that the circle represented the soundscape around them. They were asked to write down, draw or notate in whatever way they wanted all the sounds they heard and the direction from which they were coming. For example, sounds in the distance would go to the outside of the circle (*acoustic horizon*), closer sounds toward the middle. Sounds could be heard relative to any point inside of the circle. (I should also note that the class had previously been asked to orientate their maps in the same direction by aligning them with a familiar landmark, in this case the Butt of Lewis lighthouse. In this way it is possible to see any correlation of sound events between the maps). Children used a variety of notation methods. Some drew their soundscape using little pictograms; sheep, birds, a car. Of those that wrote down the sounds, one boy used strings of words from different directions in which one could observe a simple temporal sequence and repetitions of the sounds occurring—‘sheep, lamb, bird, bird’. In another example, arrows were also used to show where the sound moved from and to (like a car). In the case of ‘wind’, the arrow widely encircled the listener.



Photography by Gregg Wagstaff

The final exercise was a group ‘mind mapping’ exercise, performed indoors on a large square of paper. Each person, including Mrs. Gibson and myself, was given a different coloured pen to use. To begin, one pupil was asked to draw a circle in the middle of the square into which they wrote their school, their class, where they were and the date. Next, each of us drew our own circle, into which we wrote our name, age and where we lived. This was connected to the central circle. From our own circles, each member of the group then wrote a list of the sounds that they heard during a normal day, from waking to sleeping. These lists radiated outwards like a sound journey and also grew to include pictures. Other circles were added from which more lists grew; ‘*sounds I like*’, ‘*sounds I dislike*’, ‘*sounds I don’t hear anymore*’—the only rules being that they grew from your own circle and were in your own colour, making it easier to distinguish later who had written what. After the basic principle had been established, the exercise became self-sufficient and the children started adding their own circles and lists, e.g. ‘*sounds I heard on holiday*’. The process was collective, participatory and creative, resulting in a final a conceptual map, which is a document of that process and at the same time, a visual artwork that explores various individual sound worlds.

At the end of the first productive day I asked the class to keep their own sound diary and to each write a piece of sound poetry for my return. Whilst I was off of the island this brief was continued by Mrs. Gibson who led her class on a little listening walk and kept their ears ‘open’. On my return visit (June 6<sup>th</sup>, 2001), each pupil came to their library to read me their sound poem and diary.

Birds in the sky —“tweet-tweet”,  
Butterflies flapping their wings,  
a cold breeze passes by.

Ina Fergusson (aged 10)

“...Bus grunts and snorts starting on our run home. Choir sings high then low, words coming to life in tune, makes me sleepy. Pencil squeaks over paper, a rubber taps in a beat, desperate to remove a stain. I feel frustrated hearing it. ‘Whirr’—the ball swings round. ‘Crack’—the ball hits the bat. Happy. Radio sings over the whirring car engine, voices desperate to drown out the ‘vroom’. T.V. blasts endless voices, mindless. Grass blows gently whispering in the wind. Children laugh harshly in croaking cruel voices. T.V. blasts putting me into a heavy daze, with just a buzz left in my ear. Man chats to shop girl, the strong voice drones in my ear. Heather crunches underfoot, letting out a long breath at every step. Plover shrieks to its mate, “intruders about!” Psalms are sung like a quiet choir singing slightly out of tune...”

Excerpt from Lily Greenall’s Sound Diary (aged 10)

I was delighted by their efforts. Everyone was recorded and their work now forms part of the CD publication accompanying the TESE exhibition. The children have also agreed to perform their works at the opening of the exhibition in Ness. I am grateful to Mhari Gibson for the opportunity to work with the class and for her support, especially in the production of the poems and diaries. I am pleased that she also agreed to write something about her experience of this process, which follows here. Finally, this wouldn’t have been possible without the enthusiasm and creativity of the class – thank you all.

#### Mhari Gibson.

My class recently had the opportunity to put their aural skills to the test in an informal two-day sound workshop by Gregg Wagstaff. The first day consisted of a series of activities which both engaged the children’s attention and illustrated to them that there is more to listening than meets the ear! On the second day (some weeks later) Mr. Wagstaff recorded poems the class had written



these subjects. In 1998, Gregg set up the *Touring Exhibition of Sound Environments* (TESE) which he continues to direct. He is currently co-editing a book on *Soundscape and Methods* with Dr. Helmi Järviluoma from the University of Turku in Finland to be published in 2002. Along with similarly ear-minded individuals, he co-founded the UK and Ireland Soundscape Community (UKISC) and is a director on the board of the World Forum for Acoustic Ecology (WFAE). [earminded@ecosse.net](mailto:earminded@ecosse.net)

**Footnotes:**

1. A 3CD and booklet accompanies the exhibition and will be available from April 2002. The CDs will contain all the Cross School Sound Poems (spoken by the children), the Ness Sound Portrait (produced by a local group), Machair Soundwalks, and Soundscapes of Harris and Lewis. The booklet will describe and document various aspects of the project and include colour photos showing the species of flowers described on the walks. For further details, contact information and prices please see page 51 of the Journal.
2. *Music From Nature*, Terra Nova compilation (TN9701). Produced by David Rothenberg. Track 1. Recorded by David Lumsdaine.
3. Provided by Petri Kuljuntausta, Charm of Sound, P.O.Box 35, Fin-00131 Helsinki Finland. Recorded in 1957 in Vihti, a small village near Helsinki. Recordist unknown.
4. A Blackhouse is the name given to a thatched dwelling once common to the islands in the 19th century, comprising of a house in one end and a byre at the other. It is so called because of it's smokey and dim interior.
5. Recorded by Hildegard Westerkamp, 1997.

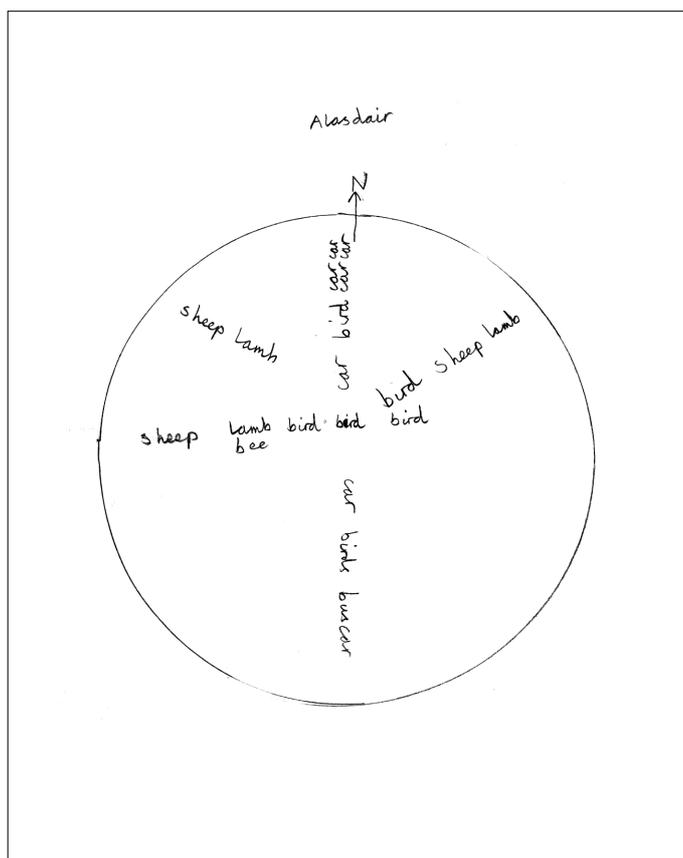
as a result of the first day's activities and personal diaries they kept.

The two activities which I felt particularly captured their imaginations were firstly a guessing of pre-recorded sounds from around the world and secondly a more interactive sound mapping activity. During the guessing game, a whole variety of incorrect responses from most people (myself included!) demonstrated for the class how carefully you really have to listen in order to identify different sounds. Some of the sounds featured in this activity were also a listening 'window on the world', a valuable activity in itself for my class, many of whom have limited experience of travel. The sound mapping activity was perhaps a more conventional task as it called on visual skills, which are used more in the class as well as in day to day life. While the mapping was a massive interactive group activity, I felt the end result was also gratifying for each individual as they were able to create a unique personal sound pathway in their own colour amidst all the others. I was truly amazed at some of the poetry produced by the class after the initial input. The structure of a Haiku was new for the entire class, but they have managed to produce some thought-provoking material using their ideas and feelings recorded in their sound diaries.

Personally, the concept of a soundscape in its own right was something new for me. The landscape is simply so powerful here on the island that it seems to take over all else. What I have concluded since working with Gregg is that I should not take any of these things in isolation. The visual aspects of the landscape have accompanying sounds and even smells, which of course make their own impact if you simply take the time to enjoy them.... to watch the sea, rough or calm, is wonderful but it has added pleasure when you are able to savour the sound of the waves and the heady smell of the sea air.

Through these activities, my class have once again proved that for young minds such as these, the sky is the limit creativity-wise. They have been introduced to the notion of a soundscape and have embraced the challenge of formulating it into the most speculative poetry. I think they have gained an awareness of how we can be affected by sound and how sounds shape our everyday lives. It has been an enlightening and rewarding process.

**Gregg Wagstaff** lives in Fife, Scotland. He works as a freelance Sound Artist / Designer. His research is largely involved in the field of Soundscape Studies, Social Ecology and Community Art, and he is undertaking a part-time Musicological Ph.D. around



# The Concept of Soundscape and Music Education in Japan

## Re-examining the Imposition of European Musical Epistemology

By Tadahiko Imada, Ph.D.

[Ed Note: In Japan a large variety of soundscape activities have been developed within many fields such as environmental education, social education, and so on, which most recently also includes music education. The following article focuses mostly on the latter, music education.]

Michel Foucault (1966) says, “if we study thought as an archaeologist studies buried cities, we can see that Man was born yesterday, and that he soon may die,” (Reader, 1987: p. 7). Foucault clarifies that the Western people in the twentieth century are still “the prisoner of a determined system” (Ardagh, 1980: p. 538) of the nineteenth century, bourgeois-humanist. Post-modernism in art was begun as an antithesis to a preconceived idea of Western art including its aesthetics in the twentieth century. This movement proposes several goals, as follows: a) anti-human-centrism, b) anti-Euro-centrism, b) anti-ethno-centrism, and anti-logo-centrism, to develop a new definition of art. Traditional Western music education based on Platonic ethos and Aristotelian mimesis has also exerted great influence on Japanese music education. Today there is an urgent need to bring contemporary discourses to the clinic of Japanese music education.

In this article, I describe new types of music education in Japan to contribute to that discourse. The initial idea was carried out during a workshop in the “Exploratorium Exhibition,” at the Science and Technology Hall in Tokyo, sponsored by Science and Technology Hall, Sony Education Encouragement Foundation and Asahi Newspaper Publishing Co. It was held in August and September 1989. The workshop was based on the concept of *soundscape* as evolved by the Canadian composer R. Murray Schafer in the early seventies at Simon Fraser University in Burnaby, Canada.

### I. The Workshop “Sound Orientation”

The original “Exploratorium” is a science museum in San Francisco that offers visitors “participatory style”. That is to say, all visitors are allowed to interact with the exhibits. (This was the model utilized in the Tokyo Technology Hall.)

The purpose of one workshop, “Sound Orientation”, in which I worked as an instructor, was to study “sound” from a variety of aspects. One such way was to examine the kinds of sounds existing around participants and how they are interrelated. It was a comparison of just how “music” and “noise” differ from one another, or to become aware of how similar they can be. The workshop was also designed to encourage participants to examine traditional *Japanese* aural sensibilities through the activities

of re-discovering daily sounds that are heard in city spaces. The outline of the workshop, “Sound Orientation” is as follows:

1) The participants listened to a recording of *Fantasie for Horns*, composed by the Canadian composer Hildegard Westerkamp. *Fantasie for Horns* is constructed from a variety of foghorns found in Vancouver. I wanted the participants to understand music composed without using any conventional *musical* instrumentation.

2) The participants listened to all the sounds in the room for one minute, and then answered questions about the kinds of sounds they heard.

3) Participants were divided into a couple of groups, each with an adult guide. They then left the workshop and searched the entire Exploratorium for the most interesting sound, for them individually, and then they recorded that sound on tape, to be compared later with what others had heard.

4) The participants also listened to a live performance of the voice of soprano Kano Shibata, essentially in the context of Western music, with my accompaniment from a synthesizer, of a small, improvisatory-like piece that I had composed for the workshop, utilizing a twelve note scale. Then, they listened to my own tape music work: *Spirit Sings*. It is a work in which environmental sounds and a soprano were collaged. I wanted the participants to experience a work in which there was a mixture of music and environmental sound (noise).

5) I composed some works using a soprano, synthesizer and sounds, that were previously taped by the participants. That is to say, I collaged audio sources in order to teach the participants how they could easily compose by themselves.

I believe that we cannot perform any music without first paying attention and carefully listening to the various sounds. For a long time, music education has emphasized *playing* musical instruments and *singing* songs. However, it is my view that we should pay more attention to *listening* activities rather than performing activities. A receptiveness to music as sound should become a principle aspect of music education. Such a workshop could lead to more detailed plans and further an educational movement based on the concepts of *soundscape*.

## II. The Tokyo Soundscape Project

We listen in different ways to different things. This is a very important aspect for the concept of *soundscape*. Soundscape is an idea of perceiving various sounds—from the sounds of nature on Earth to the artificial sounds found in cities, or “music”—as total “scenery.” Soundscape is a method of research that not only conceives of sounds as physical vibration, but is concerned with the defined quality of sounds people are hearing, and what their intrinsic *values* are in relation to such particular qualities.

With a Toyota Foundation Research Grant, I did co-operative research of the Tokyo soundscape from 1986 to 1988. Specifically, we attempted to decode the Tokyo soundscape using an “Interview Survey” (interviewing people in the surveying areas about their values).

One example are the values concerning the sound of the bells at Nicoli Temple, a Russian Orthodox Church Temple, from people in the town of Kanda, in Tokyo. This is a daily sound that people hear in Kanda. We collected a variety of expressed values concerning Nicoli Temple from informants. This is an example of one such listening activity.

### Question:

“Explain in words your impressions of the sound of the bells.”

### Answers:

“I wish you every happiness.”

“It was a signal of evening in my childhood.”

“I don’t like it, because it reminds me of when I was poor.”

“I wish to marry as soon as possible.”

“It is not noisy. I have very fond memories of it.”

(Imada, 1991: pp. 214-215)

This survey represents a basic stage in soundscape research and it is presumably hard to understand the relationship between this interview and art. However, performing art in the twentieth century should allow for discovering other means of evaluating the *art experience* in everyday life. One way might be to make it possible to understand such an *interview* as art.

Currently, the sound of bells at Nicoli Temple cannot be heard every morning and evening because of several exterior (*political*) reasons (e.g., sound pollution). People can listen to them once a week for a Sunday service only. However, when we did our interview, several local senior citizens said, “I am experiencing listening to the bells every morning and evening.” Afterwards we let them know about the current situation, and then they said, “Oh my goodness, I didn’t remember that. I really believed I was still hearing them twice per day.” This experience is a kind of “communal auditory hallucination.” I believe that the Japanese people still listen to environmental sounds as a *total* soundscape rather than as each single sound. Moreover, this project is closely related to my concepts of music education, as I outlined above from the workshops at the Exploratorium.

Murray Schafer and I published a book titled *A Little Sound Education* (Tokyo: Shunjusha, 1996). We believe that the concept of soundscape has a possibility of being a natural cultural exchange not only between the East and West. We tried to release music from the Western modern thought patterns such as *logo-centrism*, *metaphysics* and *rationalism* to those of a chaotic physical acoustic space. Such an exchange of verbal or aural messages is an important aspect in the concept of soundscape.

There are a multitude of sounds in nature. Humans often use sound to give someone a message. Since the history of the human race began, we have partially used sounds like animals. Animals cry to tell their companions of danger. Sound evolved as a means

of human communication. We can often guess meanings through vocal sounds. When we say “you,” we can express many messages, (e.g., love or anger) through intonation and rhythm. In fact, voice sounds can potentially convey more information than the written word. We can sense the state of human minds and feelings by intonations and rhythms. As applies to a single word, we need to understand grammar to enable us to properly use it. That is to say, the grammar is applied to phrases and sentences rather than single words to form meaning. However, we can use vocal sounds without understanding the grammar. A baby can express many feelings using only voice sound, its intonation, intensity and rhythm. “The cry of the baby is an unmistakable acoustical signal to the mother about its current needs; the loudness and high frequency characteristics of the cry ensure that the message gets through. Abnormalities in the cry have been shown to reveal internal problems that may not have been diagnosed by other means (Oswald & Peltzman, 1974),” (Truax, 1984, p. 30). These elements (intonation, intensity and rhythm of sound) are a baby’s first signals.

Such ingredients have developed as essential components of music. We use instruments as tools to make sounds. The origin of “trombone” is the Greek trombos which means a conch shell. The origins of the oboe and clarinet are in the reed pipe. In the case of the horn, it means just the horn of an animal. The origin of the violin is a bow. That is to say, modern musical instruments originate from our earthly materials.

We say, utau for “sing” in Japanese. The origin of this word is uttaeru or uchiau. Uттаeru is equivalent to the English “complain” or “explain,” and uchiau is “interaction.” In other words, uttaeru means performers, and uchiau means close to the audience. People sang to explain or to *communicate* with a god in ancient Japan.

I’ve learned that musicology, as a particular *Western* academic field, has advanced music as a fine art (i.e. classical music), and musicologists discriminated against certain musical forms that were more based upon mundane, daily life activities (e.g., folk music). Musicological distinction is not always clear. For example, the minuet originated as a functional musical form to accompany a particular dance ritual, but later changed to a more sophisticated musical *style*. As fine art, it became known as the “Minuet,” part of the classical symphony. These two kinds of music, folk music and classical music, interacted with each other; as a result, a variety of musical cultures were created in each era.

Daily life is filled with many sounds, but people are often unaware of the existence of sound when it is so deeply integrated into that life. If you are in a soundproof chamber where you can hear nothing, you will be attacked by an inexplicable disquiet. You hear sounds from inside your body, (e.g., heart beating, stomach sounds, swallowing, cracking of bones and ringing in the ears) whereas you are usually unaware of the existence of these sounds. Thereafter, you will probably want to go where such sounds are balanced more within typical daily settings. Normally, whenever you hear your heart beating strongly, your health condition is probably not so good. That is to say, sounds play an important part in our lives like a kind of radar.

There are no answers that music teachers can give academic marks for to the questions raised in *A Little Sound Education*. The American composer John Cage (1972) suggested a similar comment as Schafer’s concept: “What interests me far more than anything that happens is the fact of how it would be if nothing were happening. Now I want the things that happen to not erase the spirit that is already there without anything happening. Now this thing that I mean when I say not anything is happening is what I call silence, that is to say a state of affairs free of intention, because we always have sounds, for instance.” With regard to Schafer’s concept of soundscape, I believe that “silence” is also the most important word.

## Final Thought

European music is autonomous, based on metaphysics from the nineteenth century that has been believed and taken for granted for at least a century (Said, 1991, xvi). Many music teachers in Japan have focused on interpreting such musical value of what some call the “aesthetic experience” and have complete blind faith in the “power and glory” of Western music.

Osamu Nishida (2001, p. 90) on this subject writes:

In the 1980s, *environmental sounds* had already been used for music classrooms in Japan. Yoshio Hoshino (1993) was one of the most important figures in terms of creative music education in Japan. However, many music teachers misunderstood what Hoshino really intended to do. “Creative” music education has not yet been assimilated into Japanese music education. The principle thought of Japanese music education is still deeply involved with superficial Western music practices, and research for a re-examination of the historical influence from the West upon Japanese music education has just recently started.

My attention is more focused on philosophical changes rather than on aural consciousness. We Japanese music teachers need an exteriority, something not reliant upon European logo-centrism. The concept of soundscape is definitely playing an important role in this regard.

The concept of metaphysics, however, has been de-constructed by structuralist and post-structuralist theories proposed by such thinkers as J. Derrida, M. Foucault, J. Baudrillard and R. Barthes in the twentieth century. Parallels can be observed between modern language theory and some twentieth century musical practices. Western classical music simultaneously entered a period where familiar sonic practices like melody and harmony have been abandoned. In the twentieth century, one can find similar post-structuralist views on music and music education. The concept of soundscape is certainly one example.

Semiotics by Barthes extends Saussurian linguistic theory to analyze socio-cultural phenomena as the structure of meaning. Semiotics assumes that language is not merely a tool for communication but also for creating any other communicative apparatus including music, advertising, foods, material objects, clothes and so on.

What I believe is important for today’s music education is to discover how one can reach the stage in which *critical listening* can be taught. A philosophical intensity in the concept of soundscape is required to make it useful as an exterior tool for the analysis of what is actually happening in a contemporary social context. It is my opinion that the concept of soundscape should be more deeply involved in both structuralism and post-structuralism, which take into consideration a) cultural studies, b) post-colonial studies, and c) gender studies for music education. Otherwise I think that the concept of soundscape will become absorbed by the established educational system as a *safe* and a *manageable* tool in the long run. In order to clarify the issues outlined here, a critical analysis of the concept of soundscape, with reference to structuralism and post-structuralism is urgently needed to make a space in music education that incorporates the notion of sound as a cultural phenomenon.

Regarding acoustic ecology: as Schafer says, the home territory of soundscape studies will be the middle ground between science, society and the arts. From that I am simply taking “soundscape” as my working concept. How can we possibly differentiate method and practice clearly, (acoustic ecology and soundscape)? Therefore, I presume parallels can be observed be-

tween “structuralist/poststructuralist” theories and the concept of soundscape.

In the 1980s, when the concept of soundscape was first introduced in Japanese classrooms, it probably made an impact on music teachers as an external perspective, particularly those who had problems relating to literacy and technique. Teachers were surely sceptical of their achievements with one or two hours of work a week. However, if they were to maintain the practice of soundscape as a substitution for the teaching of European harmony and solfège, sooner or later a severe problem would make itself apparent: namely, a kind of nostalgic and ecological precept derived from European and North American perspectives. I think that any external perspective is neither universal nor neutral but very much cultural, historical and contextual.

The imposition of European musical epistemology on Japan has continued for over one hundred years. *Soundscape* is useful as a concept in Japanese music education, in that it can show us how to simply listen to sounds critically and socio-culturally. Simultaneously, this concept should also be re-examined by post-colonial theory, based on post-structuralism, to avoid being utilized by any invisible political power.

Upon the integration, in Japanese music education, of this “sound revealing process” through the concepts of soundscape and post-structuralism, Japanese music teachers should probably start creating their own methodology (rather than acoustic ecology) as another exteriority. That would go beyond only a simple adaptation of Derrida’s or Schafer’s concepts, as the West views sounds and cultures. This is my point, and it is one which has never been made in Japanese music education.

**Tadahiko Imada** is an associate professor in the Faculty of Education at the University of Hirosaki in Hirosaki, Aomori, Japan, teaching music education based on cultural studies and post-structuralism. He holds his Ph.D. from the University of British Columbia, as well as a M.A. from Simon Fraser University both in Vancouver, Canada. Dr. Imada is a member of the Board of Directors of the Soundscape Association of Japan. His publications have appeared in many academic journals in North America, Australia, Sweden, Korea and Japan. Prior to joining the faculty at Hirosaki University, he was a research fellow at the Centre for Advanced Studies in Music Education, the University of Surrey Roehampton in London, United Kingdom.

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# *Sound Reflections: The influence of acoustic ecology on classroom composition*

By Jonathan Savage and Mike Challis

## **Starting Points**

In the United Kingdom soundscape and acoustic ecology approaches to composition are under-researched and utilised by classroom practitioners. Yet these approaches bridge the gap between the demands of the formal curriculum and the personal values and experiences that pupils bring with them to the classroom. The projects outlined in this paper show that such a creative approach to curriculum planning gives students the opportunity to reflect sonically on physical places, their own and others' environments in powerful and authentic ways, while the innovative use of technologies in the classroom gives all students a voice for these expressions, regardless of 'traditional' musical ability or skill. Furthermore, these projects implement technological and pedagogical strategies that enable "our young people not only to have the opportunity to become soundscape researchers, but [also] soundscape designers" (McGinley 2001, 73).

It was against this backdrop that two innovative projects were completed at Debenham High School, a rural Suffolk comprehensive school of 450 pupils aged between 11 and 16. The pedagogical and compositional dimensions of these projects - *Dunwich Revisited* and *Reflecting Others* - have both been described elsewhere (Savage and Challis 2001a & b). The purpose of this short article is not to revisit these ideas but rather to investigate and comment on the positive influence of acoustic ecology within classroom composition.

## **Project Descriptions • Dunwich Revisited**

Dunwich's eventful and fantastic history has been a rich source of inspiration for composers, poets, artists and choreographers. During the early part of the second millennium it was a major port on the east coast of Suffolk, enjoying considerable wealth and prosperity. But due to a number of environmental changes, Dunwich lost its place as a premier port. Its prosperity declined and the city itself eroded. Over the next few hundred years most of the city was subsumed beneath the sea. Early last century, All Saints Church gradually fell from the top of the cliffs into the sea (see Figure 1).

The project involved the whole of the lower school (approximately 280 pupils) and the Year 10 music group (a group of 15 pupils). Pictures, writings, photographs and other resources were assembled on a large wall display, providing a range of environmental stimuli centred on the theme of Dunwich. A number of pupils had visited Dunwich itself and recounted to the various classes their recollections of it as a place. Other resources included the pupils' own experiences of walking along the Suffolk coast, which has a distinct raw beauty of its own. These environmental stimuli reflected the two states of Dunwich; firstly, the ambience

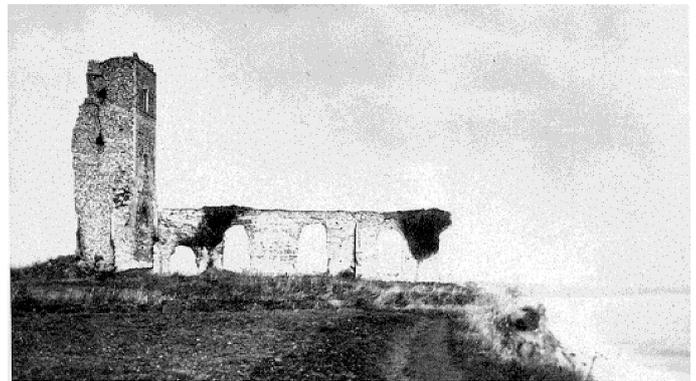


Figure 1: All Saints Church, Dunwich © Dunwich Museum.

Figure 3: Prison corridor through bars.

of the sea, wind and reed beds and, secondly, the occupation of this environment by humankind.

Pupils drew on a number of these materials as they began to express their feelings about Dunwich in musical ideas. In the first lesson, pupils were played Mike Challis' piece *Dunwich*. This piece charts the changing landscape of Dunwich through its ternary structure. Its environmental sounds, including the sound of the sea and the wind whistling in the reed beds, are combined with medieval instruments and dance tunes and paint an evocative picture of the town's gradual evolution and dissolution. Pupils reflected on the music in a number of ways, drawing from it a range of emotional, aesthetic and intellectual experiences relating to their view of Dunwich. They also looked at choreographic notes and illustrations from Pamela Harding-Challis, for whose dance *State of the Sea* the music was written. These notes showed the direct influence of the environment on her work :

"It is about time, change and the relentless pressure of the elements. The sea, Dunwich Heath and the photographic remains of All Saints Church are all sources of inspiration."

Using vocal sounds, instruments and sound processors, the pupils designed 108 musical responses to the environmental stimuli. Sound processors provided a way for pupils to develop, extend and refine a range of sounds throughout the project. Pupils made significant references to the impact of these processors, including a number of comments related to how they used various effect parameters to recreate appropriate atmospheres: "It makes things less plain. When you just sung it all alone it sounded really weird and plain, lifeless really. When you have the echoes it makes it sound eerie and it adds a kind of feeling and a depth to it." (Year 8 girl)

The musical responses were tremendously varied. Many of them used a variety of environmental sounds, such as the sound of a local stream, recorded on a portable minidisc, or peals of church bells faded with sounds of the sea. Other pupils explored the sound of Gregorian chant, picking up on the large number of churches in the town of Dunwich. Using a sound processor with a small amount of reverberation, a group of five Year 8 girls composed the following words, together with a melody and a basic accompaniment, which represented the occupation of the natural environment by humankind:

"A new world is coming and we don't know  
Just where we're going next.

A new world is coming and we don't know  
Just where we're going next.

The old world is gone,  
And never to be found,  
The past is in the past,  
The past is in the past.

Say your prayers and say good-bye,  
Say your prayers and say good-bye,  
Say good-bye."

The wide variety of inspirational material enabled pupils to draw together and cross-reference ideas from diverse sources. Composition functioned as a metaphor for the putting together, organising and layering of ideas from a wide variety of experiences and domains, many of these not directly from the musical field. As a result pupils began to identify with the place very strongly. One Year 10 girl commented that the range of material "gave you a picture in your mind of what Dunwich would have looked like."

A final concert hall piece was then created, based on some of the most popular musical ideas drawn from the work done by individual classes. A number of these ideas clearly made an impact on the pupils, who felt they best represented the place and history of Dunwich as they perceived it. The piece linked the separate musical ideas produced by various groups of pupils together within the overarching ternary structure provided by Mike Challis' original piece. It was performed in the concert hall at Snape Maltings, just a few miles away from Dunwich. For many pupils this was the highlight of the project. Not only were they able to perform in a professional concert venue, but they were able to perform 'their piece' to the assembled audience: "I enjoyed the scale of the place and atmosphere. It was nice to see people enjoying your creation and it made you feel you had achieved something that was worthwhile."

## Reflecting Others

*Reflecting Others* used the actual sounds (and images) of two contrasting environments as raw material. This digital arts project was a collaboration between the school, an arts agency and a high

security unit of young offenders at a local prison. The principal technologies used in the project were digital video and audio software on iMac computers, digital video cameras and minidisc recorders. Fig. 2 illustrates the project's main stages.

At the heart of the *Reflecting Others* project was a process of reflection with digital media. Young people's ability to reflect on their own lives and the lives of others inspired creative responses.

It used sonic and visual material taken from the pupils' and young offenders' actual environments, inspired by reflections on three starting points: self-identity, community and environment. Early project work included getting pupils and young offenders to consider and interpret each of these words in light of their personal experiences. Subsequent work included a range of creative writing tasks designed to get pupils and young offenders to think about each other, their likes, dislikes, hopes and dreams. These narratives and poems were stored on hard disks and then swapped. Pupils and young offenders watched and listened to the material collected by the other group. A number of things became particularly interesting at this point.

Firstly, pupils were clearly shocked by some of the sounds and images from inside a real prison, such as the audio and visual references to bars, gates slamming and keys jangling.

The Year 10 group were very interested in the sonic material. Small things, like the variety of young offenders' accents, were picked out as being of significant interest. The material content of some of the words and phrases was commented on. One prisoner read, with obvious difficulty, a piece of narrative prose that he had written. Year 10 pupils received this with quiet and sombre appreciation.

The audio material collected by the young offenders showed the more resonant acoustics of the prison environment. The constant noise of the air conditioning was a feature. Prisons are seldom quiet during the day but the young offenders commented how eerily quiet the prison is at night.

The young offenders viewed the pupils as "little rich kids." They also found their accents interesting, commenting on how plump they sounded in comparison to their own. Another factor was that the only contact that young offenders have with the opposite sex, apart from family visits, is with female professionals. At first the images of girls from the school were treated as sexual objects in much the same way as the young offenders would regard their posters in their cells. With time, however, and especially after listening to the audio recordings of girls and their lives and environment, the young offenders began to refer to the girls more as people. It was as if the sound made them into real people, due more respect, rather than visual objects to be lusted after.

Pupils' attitudes towards the young offenders also changed during the project. Many began to empathise with them: "By the looks of things it looks worse than I thought 'cos I expected they would be able to go outside and do more normal activities like we do. But they're trapped in there never seeing proper sunlight, trapped between walls, bars, gates and doors, trapped in Hollesley Bay for so many years and never going outside. They're looking at the same things day in, day out for years. I think this is wrong. And one boy's poem about the prison backed this up. No crime deserves to do this to a child." (Year 9 boy)

In some areas there were similar responses from the two groups. Examples of sonic and visual themes explored by both groups included

- sports hall games, including basketball, badminton and squash;
- sounds of the cafeteria or lunch hall;
- weight and fitness rooms;
- recorded CD extracts of popular dance music.

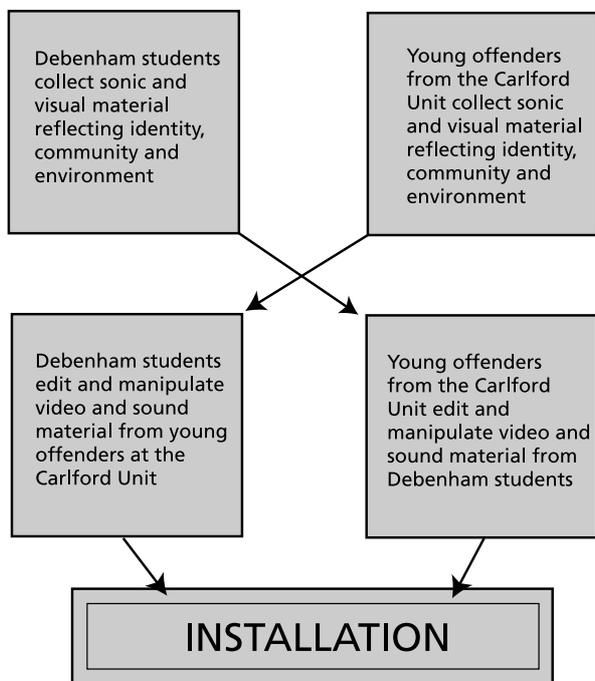


Figure 2: Exchange of Material and Information

However there were stark differences in their respective environments. The young offenders inhabit an internal space, with hardly any view of the outside world in which they are seldom allowed to spend time. The pupils collected a much broader range of environmental material.

These materials were then built up into an installation, with each group creatively editing and manipulating the material of the other environment. The installation consisted of a black box that people could freely walk into. Inside it, there was a video screen and stereo speakers playing a synchronised 24 minute sound and video piece. Two additional speakers played a third and fourth sound track from random CDs consisting of additional recorded material interspersed with long silences. Mirrors were placed within the structure so that the installation could be viewed and heard from many angles, creating a multi-faceted experience. The main sound and video track was made up of several sonic pieces created by the pupils and young offenders and edited together by pupils in the school. The video was then laid onto the sound by a video artist using video clips made by the pupils and young offenders. The installation made quite an impression on all who visited it during its time in school, at the prison and whilst on public display at Snape Maltings Concert Hall during the Aldeburgh Festival and Snape Proms.

Pupils generally enjoyed the project. The evaluation that we carried out showed that much of the work with the various technologies was significantly different from anything that they had done before. It was challenging in a technical sense but allowed them enough personal freedom to make important creative choices about the audio and video material. In the case of the young offenders, the installation was run on an “open day”, the first one to happen at the prison. Inmates and visitors were free to view the work at any time and for as long as they wished. The young offenders repeatedly dragged visitors into the installation to show them what they had created and to try to spot themselves in the video or hear themselves in the sound track. There was a definite sense of ownership of the material and a sense that the whole was better than the sum of its parts.

## Conclusion

Soundscape and acoustic ecology approaches are important to us pedagogically. As we have noticed in our work, the technologies on which they draw can democratise musical practice when used in an appropriate way. But there is another equally vital reason for using these approaches. In these projects we explored a range of technologies that allow environments to be ‘brought inside’ the classroom, to be considered and reflected on and used as a source of musical expression. Whether this is a geographical or social environment, individual or collaborative reflections can lead to an increasing sense of environmental awareness. In *Reflecting Others*, pupils and young offenders were clearly moved in their understanding of the other group as they worked throughout the project. This came about through their sharing of each other’s environments and communities and their respective views of each other’s identities. While there was no actual discussion (verbal or written) between the two groups, just the sharing of carefully chosen sound and images was enough for each group to comprehend and appreciate the other in a deeper and more meaningful way. In other words, “Music is the pretext – life is the text” (Kushner, 1999).

To sum up, there is a need to redefine models of classroom composition for the 21st century and transform them within the digital age. New technologies will not do this on their own. Creative approaches to composition are vital. These projects clearly show that acoustic ecology provides one such approach. And, most importantly, it can be used to build a model of classroom composition that engages our pupils in a richer and more meaningful way with life itself.

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**Mike Challis** graduated from the University of East Anglia with a MMus in Electroacoustic Composition in 1997. His compositions for dance and video include Sharp Intake of Breath (ID Dance Company), The Great Rain (Laban Guild) and Arboretum, for which he received an Honourable Mention in the 1997 Stockholm Electroacoustic Music Competition. His works have been performed at the Norwich Festival, the Gowan Arts Centre and St Marks in the Bowery (New York City), Snape Maltings and the Royal Albert Hall. E-mail: mike.challis@macunlimited.net

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# *Acoustic Ecology and Environmental Studies:*

## *A new academic home for the teaching of ecoacoustics*

By Gary Ferrington

**I**t is my intention to initiate an on-going dialogue about acoustic ecology education. To begin that discussion I suggest that it is time to broaden the pedagogy of our field to include the social, economic, political, and cultural implications of soundscape studies and placing such effort within the interdisciplinary field of environmental studies. Such a refocusing of the academic mission of acoustic ecology will bring more attention to the concerns of acoustic ecologists and the growing body of research often overlooked by the scientific community.

### **Environmental Studies and Acoustic Ecology**

The field of acoustic ecology has been defined by the World Forum for Acoustic Ecology (WFAE) as an area of education, research and practice that focuses on the scientific, social, and cultural aspects of natural and human made sound environments. This includes monitoring and evaluating actions affecting and altering the quality of the sonic world and working for change where needed. It is a field just as interested in the relationship between dolphins and whales, or insects and birds as it is in the relationship between humans and other living organisms. Acoustic ecology focuses on the complexity of the natural world and sees humans as one element in the mix.

The study of acoustic ecology has yet to find a solid academic base that fully investigates the interdisciplinary importance of soundscape research. I suggest that the field of environmental studies may provide a welcoming home for acoustic ecology education.

Environmental studies is an academic area that crosses the boundaries of traditional disciplines including the sciences, social sciences, humanities, management, policy, design, and law. It challenges students to look at the relationship between humans and their environment from a new interdisciplinary perspective.

For many years the study of acoustic ecology has been the domain of music education. It is those who study and make music that found the early work of Canadian composer and educator R. Murray Schafer of particular interest. Schafer was one of the first to give form and definition to the field of acoustic ecology in his book, *The Tuning of the World*. Subsequent publications by Schafer provided examples of pedagogic techniques for the integration of soundscape studies into the music education curriculum.

Since the publication of *The Tuning of the World* in 1977, professionals outside of music have found Schafer's ideas of in-

terest. Architects, urban designers, geographers, sociologists, health educators, and others have begun to think about the application of his principles to their own work. It was Schafer who envisioned the need for an interdisciplinary approach to the study of the soundscape. The field of environmental studies provides an established and interdisciplinary base upon which to facilitate a broadened approach to the study of acoustic ecology.

Even a single course on acoustic ecology placed within the context of an environmental studies program would encourage students to develop a greater understanding of the natural world from an ecoacoustic perspective. It would engage students in devising policies and behaviors that address soundscape problems within the context of environmental and ecological research. The adding of ecoacoustics to the environmental studies curriculum would enrich both fields and may promote a rethinking of basic cultural premises, and ways of structuring knowledge related to both.

### **An Ecoacoustic Curriculum**

Central to the curriculum of acoustic ecology is auditory scene analysis. This requires skills in attentive listening, specialized evaluation techniques, and methods and strategies for responding to ecological issues of which sound is an important aspect.

The need for the development of attentive listening is well articulated in the literature of acoustic ecology. Music educators have been especially effective in developing pedagogical techniques for improving the listening skills of students. But there is much that can be learned from related fields that would enhance a student's knowledge about hearing and critical listening. Psychoacoustics and bioacoustics are two areas of study that would contribute to such an understanding.

Psychoacoustics is the study of human hearing. Research in this field strives to learn how hearing works and how the brain processes sounds entering the ear. Such study is important in understanding how sounds are perceived and is important in addressing issues related to noise. For example, an industrial setting requiring the design of a safety signal that could be heard over the ambient sound field and yet not add to fatigue or distraction would require a scientific knowledge of human hearing and listening in such a soundscape.

Of particular concern to many in acoustic ecology is the relationship between human-made noise and animal communication.

# Book Reviews

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Bioacoustics offers insight into acoustic communication within a species and between acoustic niches of other species. Such study includes animal sound production, auditory anatomy and function, and the effects of human-made and environmental sound on animals.

The study of acoustic ecology requires the ability to articulate, understand, and respond to critical social, political, cultural and scientific issues involving sound in natural and human made acoustic environments. Students would be encouraged, using the interdisciplinary approach pursued in environmental studies, to develop a working knowledge of the nature and scope of the forces underlying soundscape issues; the various approaches used to bring such environmental issues to the public's attention, and the methods and approaches possible to solve them.

Noise pollution, as an example, is both a social and economic concern related to health and safety. The litigation arising from the expansion of airports, the construction of freeways and other sound producing projects takes time and money that add to overall costs. Science, politics, and social factors all play a part in solving these sound-related issues.

Cultural values are also central to ecoacoustics. Archeologists and others can help students understand the cultural soundscapes of the past. Comparative studies of contemporary soundscapes add to the understanding of how societies value and make use of sound as part of the social fabric today. And determining how to preserve cultural soundscapes and the rehabilitation of those suffering from sound pollution or other issues is of important social value. Such action-oriented research requires individuals with knowledge of how to research issues from multiple perspectives and disciplines.

Environmental studies provide an interdisciplinary set of strategies for problem solving. As a practitioner a student might focus on one or more related areas such as, public planning and development, ethics or philosophy, environmental law and justice, international environmental issues, or social theory and the environment. Such an approach provides an opportunity to examine comparative philosophies and methodologies from a diversity of fields. Being able to look at soundscape issues from a variety of viewpoints may lead to the posing of alternative and innovative solutions.

At the very least the integration of acoustic ecology into an environmental study program will provide many liberal arts students with an introduction to the importance of sound as an integral part of ecology and the habitat of life.

## Summary

I have attempted in this short paper to suggest that acoustic ecologists might find an academic home in the field of environmental studies. This home would provide a broad interdisciplinary approach to the study of soundscape issues. It would facilitate the World Forum for Acoustic Ecology's stated mission to focus education and research on the scientific, social, and cultural aspects of natural and human made sound environments. The field of environmental studies provides an inclusive curriculum in which the emerging area of acoustic ecology can be taught, studied and practised.

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## Sound Sculpture

Intersections in Sound and Sculpture in Australian Artworks

Author: Ros Bandt

Publisher: Fine Art Publishing, Sydney, Australia

Price: US\$ 44.00

Reviewed by Harold Clark

Craftsman House, Fine Art Publishing has produced a gorgeous 160 page, well-laid out form that anyone would be proud to mount on the coffee table. The book's sleek marine green glow, tasteful use of graphics, watermarks, and strap-in (author Bandt's) audio CD inside of the back cover, is clearly artwork in itself.

Supported by an Australian Research Council grant, hosted by Monash University's music department (really thinking outside of the box), Visual Arts Board and New Media Arts Board of the Australian Council, the materials presented throughout this compendium of so-called "Sound Sculpture" are rich, diverse, and extensive documentation of (primarily) Australian sound art. 'Australian' appears often to remind us of the context in which this collection is to be viewed.

The academic author, Dr. Ros Bandt, informs us that unlike other western cultures, Australia is isolated, one-of-a-kind, with cultural and geographic divisions that cut out and define distinctly separate contexts in which space, sound and musical art co-exist. Aboriginal acoustical space is defined by millennia of oral traditions coupled with vast geography. By contrast, coastal city-dweller perceptual modalities share a context with European literate culture and more limited geographical clusters of habitation.

While Bandt outlines the unique nature of Australian soundspace, she goes on to point out how “connected” Australia is to the rest of the world through technology, thus paving the way for this new art to belong to the ‘global village’ context. Implying Australian sound works presented are thus transecting many boundaries, their creators uniquely conscious of them, Bandt sets the scene for how we may view and hear them.

In reviewing the works and writings of this book, I thought it important to see the ‘context’ of the institutions from which the writing and many of the works have also been shaped, namely “*art school*”. Performance art, found object art, minimalism, installation art, pulse-pattern sound, etc. have evolved particular modal styles from within art school institutions throughout Australia, the U.K., and to some extent, Western Europe for nearly 50 years. To know these works aware of such a context is to exercise a tool by which to perceive an extension of this language and artistic mannerism.

Paging through the sections of the book—I Place As Acoustic Space, II Sonic Objects, III Time and Motion; IV Human Engagement; V Installations; VI Spatial - Sound Design and Spatial Music—there is an overwhelming feeling of literary dominance through the descriptive documentation of the works. Most sound artists’ works are captured in small (almost thumbnail-like) images with references made to CD tracks. It is a must to follow the reading and viewing with the attached CD! In fact, such is the complexity of description that one wonders why this entire work was not rather published on CD-ROM, whereby a more interactive oral transmission of the works could have been mixed between narration and audible examples of the works. Even if only for increasing the image size, detail and complexity of these sound objects on one’s computer screen from a CD-ROM, could the entire effect of Ros Bandt’s work have become much more engaging than written text and stingy photos. (Some of the major works do have good quality, full page and double page photography).

The issue I have with *Sound Sculpture*, (Intersections in sound and sculpture in Australian artworks), is that a majority of the works shown are not “sculptural” or have such an artistically-minimized sculptural quality as to be highly questionable. There is a crisis of definition in this vocabulary. The act of physically carving, shaping, molding into forms, standing out, shaping in relief, having elevations in the surface, molding of the earth’s surface, I do not find at all relevant in most of the works presented. When I imagine sculpture, *archetypes* in physical form is what I see; great humanized shapes of physical forms imbued with inspiration. This is more than just found objects; rather the craft of one who has released a physical form into our perception. Many of the works are simply “found or adapted objects” sharing about as much sculptural value as an iMac.

Dr. Bandt defines sculpture as: “the execution of forms, figures or designs in relief or in the round.” That is like saying all music is sound, a reduction of meaning in the term.

Indeed, there are many excellent representations of “*sound sculpture*” covered throughout this book. Works such as Laurence & Foley “Edge of the Trees” nature/history sound sculpture in an urban setting of the Museum of Sydney, Judy Lorraine’s “Sounding Apertures” with tuned thongaphon drums in amphitheatre walls one can play on the way to the Bard. Nigel Helyer’s “Siren Song”; interactive and movable structures with elaborate sensing electronics contained inside; or “The Harmony Garden” by Stephanie Outridge-Field, Tim Woodcock, and Michael Whelan, a beautifully conceived resonating musical playground, are stunning examples of “sound sculpture.”

Then there are pieces that could be called “*new musical instruments*” rather than sound sculpture. Pieces that are playable or

that one interacts with which have the archetypal form of a musical instrument rather than the form of a sounding art object. This is exemplified by Garry Greenwood’s “Suspended Harmonic” (looking like something you’d play from Africa), Jonathan Laurence’s “Carillion”, something any percussion section would envy having, or Rodney Berry’s “Rotary Zithers”, an auto zither that would captivate any schoolroom class and one of the most wonderful sounding tracks on the CD!

Perhaps one of the more eloquent works of sound sculpture is Nigel Helyer’s Ding-Dong-Dang. This work, installed in South Korea, consists of beautifully framed gigantic bells that, in their construction, draw together the heavenly sacred bell tones and the anguish of the furnaces from the early industrial revolution. The bells are morphed between Asiatic sacred forms and the furnaces or Bessemer converters of early British factories.

The late Australian composer Percy Grainger was managed into this book with his large “Free Music Machine”, constructed of 1950’s oscillators and punched paper rolls to guide its electro-mechanical resonating heart. While this work qualifies as an experiment, it precedes many of the other experimental works found in this book which utilize raw speaker components, circuit boards, and a host of “found objects” such as car parts, sea shells, headphones, TV monitors, all coupled with designed spaces, which is what I think the point of this book truly is all about, namely “sound design.” Ros Bandt often refers to the importance of how a work is perceived within a particular space and time.

Producing an acoustical gesture with sound-generating devices in a space and time is the form of sound design. It is environmental, may augment, detract and/or collide with the given social, physical, and political surroundings.

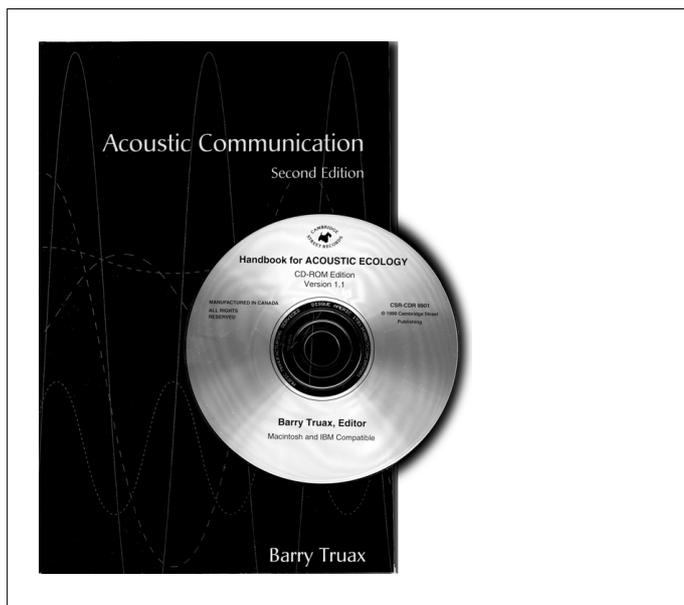
One very striking example of this is Paul Carter’s “Named in the Margin” and takes place in an Australian prisoner museum. Hanging hammocks, in which prisoners from the motherland were exiled to sleep, are made interactive within a jail where remnants and memories of prisoner’s lives vocally-surround the participant—a reminder of the former colony’s founding fathers’ lives.

On the other hand, hi-fi enthusiast Joyce Hinterding’s “Electrical Storm” (in which her work, fabricating specialized electrostatic speakers, generates large lightning-like electrical arc discharges), creating an environment charged with fear and frenzy. Her other work presented, “Cloud”, is an array of custom mounted electrostatic speakers carefully placed within an acoustical context that defines the ultimate room-acoustic subtlety. Each of these art pieces are *object installations*, interesting works in sound design.

In conclusion, this book and CD are filled with variety and substance, and certainly stimulate the imagination. Although the title should be appended to reflect the nature of what lies within, this is an excellent reference book for any student, art collector, or resource centre with an interest in late 20<sup>th</sup> Century conceptual sound art. Most of the examples represented are from the early 1990’s with a few pages featuring Ros Bandt’s own works. Impressively complete (with excellent reference appendices), it makes a significant and comprehensive contribution towards our understanding of the Australian sound art genre.

**Harold Clark** is a composer, educator, broadcaster, sound designer, and former co-founder of the NSEM studio in Oslo, Norway. Harold’s music has been performed throughout Scandinavia, the UK, Central Europe, New Zealand and South Africa and he has lectured widely at various institutions. He is currently editing his new book *Steps to an Ecology of Contemporary Music*. and lives with his wife in Vancouver, Canada.

# Book Reviews (continued)



**Acoustic Communication** [2nd Edition] (2001)

Author: Barry Truax

Ablex Publishing, Westport, Connecticut.

ISBN: 1-56750-537-6 <http://www.ablexbooks.com>

Reviewed by Kendall Wrightson

Launch your web browser, take a trip to the “Google”<sup>1</sup> search engine, type in “Acoustic Ecology” and press return. The top three hits will point you to the *World Forum for Acoustic Ecology*<sup>2</sup>, this journal<sup>3</sup> and to the *The Sonic Research Studio, School of Communication, Simon Fraser University*<sup>4</sup>, a page maintained by Professor Barry Truax.

As a member of the original *World Soundscape Project* (WSP)—an educational and research group established by R. Murray Schafer at Simon Fraser University (SFU) during the late 1960s and early 1970s—Barry Truax has been working in and around the interdiscipline of acoustic ecology for over thirty years. His two most significant contributions to the subject are the *Handbook of Acoustic Ecology* (1978) and *Acoustic Communication* (1984). These two volumes—and R. Murray Schafer’s *The Tuning of the World* (1977)<sup>5</sup>—constitute the entire library of published books relating directly to acoustic ecology. It is, therefore, welcome news that the most recent textbook relating to ecoacoustics is no longer seventeen years old, as this year sees the publication of an updated, second edition of *Acoustic Communication*, reviewed here.

For Truax, the major changes occurring between editions are firstly a massive leap in technology and secondly, a large number of relevant publications many of which are mentioned in the updated text. Truax has also taken the opportunity to include a CD ROM with the second edition. This disc contains all the descriptions from the *Handbook of Acoustic Ecology* in html (web page) format—over 500 terms from the fields of acoustics, psychoacoustics, environmental acoustics, electroacoustics, mu-

sic, linguistics, audiology, and soundscape studies. The CD represents an incredible resource with many entries containing detailed graphics. The CD also includes over 150 sound clips and relevant examples are listed at the end of each chapter.

As with his 1984 original, Truax takes the philosophy—and the soundscape descriptions—introduced in Schafer’s inspirational *The Tuning of the World* framing these within a coherent, communicational model in which to analyse soundscape phenomena.

The relatively new academic discipline of Communication focuses upon *information*; “. . . how it is created, shared, distributed, consumed and used”—to quote SFU’s School of Communication web site<sup>6</sup>. The first chapter contrasts the energy exchange/signal processing model used in acoustics with the communicational approach. The latter places the emphasis upon the *information* in sound, its meaning for the listener and the interlocking behaviour of sound as a system of relationships. The contrast between the “energy transfer” and the communication approaches highlights the major change of mindset required not only of educationalists like myself (whose knowledge of sound has been learned via a signal processing model), but also for environmental acousticians, legislators and even the general public. For all of these groups, sound tends to be treated as an isolated object in the environment and the individual—the listener—becomes a human sound level meter whose sole relationship to sound is a function of its intensity.

In reaction to this statement, environmental acousticians will point to the various sound intensity/pressure scales that attempt to factor in location—or type—of sound, human physiology (our sensitivity to the certain parts of the frequency spectrum) and psychology (scales that take into account subjective reactions such as “annoyance”).<sup>7</sup>

While these scales have their uses, there is more—much more—to our relationship with sound and the environment *through* sound, just as there is far more to our relationships with ourselves and with each other than could ever be described in a library full of novels, science and psychology text books.

An example of the sophistication of our relationship with sound appears in Chapter 2 (entitled *The Listener*). Here Truax notes how an accurate recording of a sound event is often less successful in evoking a sound memory than a “skilful simulation that simplifies and idealises it” (p30). I can vouch for this; when working on a play that required the sound of a WW2 air raid siren, a BBC recording of the real thing was rejected by the author (who lived through the event) in favour of a synthesised version that had her trembling as soon as she heard it. Chapter 2 also examines modes of listening—background listening, listening “in search” and “in readiness”—and the soundscape terminology that first saw publication in *The Tuning of the World* (keynotes, sound signals, etc.).

Chapter 3 concentrates on the human voice and on human soundmaking covering language, the acoustic structure of dialogue, the techniques of acoustic persuasion and the concept that the human voice reflects the whole person. In this chapter, as in all chapters, Truax makes extensive reference to the literature that informs his research.

In Chapter 4 Truax develops a more theoretical survey of what he describes as the three major systems of acoustic communication—speech, music and the soundscape. These, he suggests, form a continuum and he makes a case for the significance of ordering them as listed above before developing a model that relates *sound* and *meaning* via *structure*. “At the most basic level of each system [speech, music and the soundscape]” he notes, “we find that sound is in some way ‘organised’ and that through the structure of this organisation, meaning can be inferred.” (p55). The organisational

structures—such as syntax and paralinguistic structures (in language), compositional rules (in music) and elements of the sound environment and their context (in soundscapes)—require a level of competence from the listener. This leads Truax to postulate a “soundscape competence”, just as others have described linguistic and musical competence.

As with speech and music, our ability to decode the structures of—and infer meaning from—the soundscape is a skill that can be taught and developed. Unfortunately, the listener faces a significant challenge in what should be a natural evolution of soundscape competence as s/he grows up in today’s (acoustic) communities: the relationship between the individual and the soundscape is damaged; the balance of the acoustic ecosystem has been upset. The information-rich, “hi-fi” environments of pre-industrial times have, for many of us, been replaced by loud, low-information, bass-heavy sound-walls in many of the environments we experience day-to-day. Where some pre-industrial communities could be characterised by their unique soundscapes, contemporary city soundscapes the world over feature the same “keynote” sound—traffic.

The current state of many acoustic communities and the isolation and alienation that, Truax suggests, the “lo-fi” soundscape engenders is discussed in Chapters 5 and 6. These draw upon the work of the World Soundscape Project (WSP), the first group to analyse acoustic communities and the first to define environmental characteristics that promote effective communication; i.e. to frame the issue positively (How can we improve communication?) rather than negatively (How can we reduce noise pollution?).

Chapters 5 & 6 (the *Acoustic Community* and *Noise & the Urban Soundscape* respectively) also offer the evidence that soundscape competence has been significantly eroded. Soundscape pollution erodes soundscape competence which in turn creates soundscape pollution. . . a spiral of dysfunction. The spiral has led to what Truax describes as an “ideology of noise”—an ingrained way of thinking about noise problems that is so entrenched it prevents a solution from ever being found.

It is to solutions that Truax turns in Chapter 7 to close Part I of the book. Noting that the majority of the literature discussing noise pollution deals with *symptoms* (i.e. the effects of noise), it is no great surprise that the solutions offered to combat the problem are effectively acoustic sticking plasters—limits to sound levels and exposure times, baffles, double glazing, ear defenders, and “acoustic perfume” (using one sound to cover up another). Truax is more concerned with the *causes* of noise pollution—for example the lack of awareness of how sound functions within the community and a diminishing soundscape competence.

This lack of awareness breeds generations of product designers who have little or no awareness of the potential of sound in product design. For many designers, sound is a non-issue unless its level is likely to breach legally enforced limits. Truax argues that if designers had a better knowledge of soundscape issues, they might consider the sound of their device in the context of its contribution to—and place within—the soundscape. Such “acoustic design” puts into practice Schafer’s philosophy that we are responsible for the world soundscape; we are its composers.

The effect of technology on the world soundscape, particularly since the industrial revolution, has been profound. An analysis of this impact is the subject of the second part of *Acoustic Communication*. Here, Truax notes two main technologies contributing to the changing patterns of acoustic communication—electroacoustics and electromagnetic broadcasting (e.g. radio). The former refers to any sound that exists as an electrical signal.

An electroacoustic signal may be generated electronically (such as a mobile phone ring tone) or it may have been originally acoustic (a variation in the pressure of a medium, air for example) transformed into an electrical representation via a microphone.

Electroacoustic recordings make sound into an object which can be bought, sold and copied. Live or recorded sound can be broadcast—as electromagnetic radio signals—over a far wider area than is possible even with electroacoustic amplification. With electromagnetic propagation of electroacoustic signals, the soundscape of a living room can be almost identical across a continent. Chapter 8 explores this “objectification” and commoditisation of sound and broaches the psychological effects of the *virtual* soundscapes created by electroacoustic and broadcast technologies. There are some big questions to be considered here, for example: What are the effects upon individuals, society and the soundscape when we choose to replace the natural sonic environment with a virtual or “schizophonic” soundscape?

This question is addressed in Chapter 10, which focuses upon the way in which listening processes, listening habits and our new level of control over the soundscape have changed thanks to technology. In order to better describe these ideas, Truax uses Chapter 9 to explain electroacoustic concepts and processes such as signal dynamics, frequency response, oscillators, etc. The accompanying CD ROM will prove useful for readers approaching these concepts for the first time, thanks to its many sound examples.

As with most technological innovation, electroacoustic and radio technologies offer incredible benefits but also raise significant issues about the way in which we choose to use them. Chapter 10 makes this point in describing how high quality recordings make possible an incredibly focussed form of analytical listening. On the other hand, the same technology can be utilised to create a “sound drug” and develop distracted listening habits that erode our ability to be psychologically present.

Truax devotes Chapter 11 to a detailed case study of audio media—radio. Describing the relationships between the form and content of radio broadcasting (its limited dynamic range, programming, styles of vocal presentation and so forth), Truax describes the techniques used to maintain audience attention and that promote distracted listening. The level of manipulation through sound in radio broadcasts, particularly in commercial radio, is likely to surprise you. “Don’t touch that dial . . .”

The commoditisation of sound receives further attention in Chapter 12—*The Acoustic Community as a Market*. Here Truax describes the implications of the increasingly ubiquitous “moozak”—the acoustic perfume from which many of us believe we may never escape. The chapter closes with a brief discussion of the impact of electroacoustic technology on community design.

The final two chapters describe positive uses of electroacoustic technology such as sound documentation and soundscape archives. However, the main focus here is electroacoustic composition (including composition using pre-recorded soundscapes). For those interested or involved in the genre, Truax—a notable practitioner—has a lot to offer including a vastly expanded and updated discography. For this reader, however, these chapters do not provide a satisfying conclusion to the issues raised previously. One might have expected chapters subtitled “regaining control” to consider methods of tackling the causes of unbalanced soundscapes. To be fair to Professor Truax, communication, like acoustic ecology, is an interdiscipline, and with two interdisciplines to deal with the range of available threads and themes is vast. It is therefore appropriate that the final chapters reflect their author’s particular interests—Truax describes himself as an *Electroacoustic*

*Composer* first and *Acoustic Communication Researcher* second<sup>8</sup>.

*Acoustic Communication* is an invaluable text book for those involved in social science in general and communication studies in particular. However, Truax is aware that since the first edition; "... communication professionals ... continue to ignore perceptually based approaches"; and "the theme of technology's impact on communication is seldom informed by any sense of how communication functioned aurally prior to that impact." Perhaps, Truax wonders, "... they are all overwhelmed by the information society (p xii).

For those involved in one of the audio-related disciplines, *Acoustic Communication* offers a radical way to approach sound that will promote a broader and deeper understanding of sound and the relationships between sound, the listener and the environment. (These disciplines will also find the accompanying CD ROM extremely useful as a reference and teaching resource.)

My sincere hope is that this book might find its way into a large number of libraries and institutions of learning; the message of this work—and of the acoustic ecology movement—needs far greater exposure if our relationship with the world and with each other—through sound—is to improve.

The issues Truax raised in the 1984 remain substantially the same; "How do we reinvigorate the listener's interaction with the environment through listening; how do we design our soundscapes on a functional, human scale and how do we distinguish the net gain offered by technology from its hype and oppressive aspects?" (p xii).

The last question is harder to tackle; the impact of electroacoustic and electromagnetic technology is set to change the soundscape—and our relationships with it—still further as the two technologies collide courtesy of a new generation of mobile, wireless audio/visual devices. With these new gizmos (and the new audio/video distribution paradigms they utilise), the individual will be able to listen to any sound—any recording, any radio station—anywhere, anytime.

There will of course be real benefits afforded by these devices, but the potential for increased and sustained isolation not only from the sonic environment, but also from the visual environment—in effect reality itself—could impact society in ways we can only begin to imagine. But that's the subject of another book yet to be written.

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#### Endnotes:

1. <http://www.google.com/>
2. <http://interact.uoregon.edu/MediaLit/WFAE/home/index.html>
3. <http://interact.uoregon.edu/MediaLit/WFAE/journal>
4. <http://www.sfu.ca/sonic-studio/>
5. republished in 1994 as *The Soundscape*, Destiny Books, Rochester, Vermont.
6. <http://www.sfu.ca/communication/about/history/index.html>
7. The CD ROM offers descriptions of several of these, including Composite Noise Rating, Noise and Number Index, Noise Criterion, Noise Exposure Forecast, Noise Exposure Forecast, Noise Rating, Perceived Noise Level, Preferred Noise Criterion and Traffic Noise index.
8. <http://www.sfu.ca/~truax/>

## Available Soon:

*Sonic Geography Imagined and Remembered* is a collection of ten essays on the relationship between acoustic ecology and culture inspired by the international conference Sound Escape, held at Trent University in 2000. The book reflects the productive tension currently charging the interdisciplinary field of acoustic ecology, between the ethnographic and empirical work first initiated by the World Soundscape Project (in 1970), and an emerging cultural critique.

*Sonic Geography Imagined and Remembered* will be published this spring by Penumbra Press, under the auspices of the Frost Centre for Canadian Studies and Native Studies at Trent University. The collection is edited and introduced by Ellen Waterman, who is Assistant Professor in the Cultural Studies Program at Trent University. *Sonic Geography...* includes essays by both scholars and artists from 8 countries, and is organized in five sections.

### Introduction: Mapping Sonic Geographies

by Ellen Waterman

#### Section One: Empirical and Cultural Ethnographies

Memory and Acoustic Environments: Five European Villages Revisited, by Helmi Järviuoma (Ethnomusicologist, Finland).

What Difference Does Difference Make? Sonic Cleansing and the Search for the Uncontaminated Other in Toronto's Cuban Music Scene, by Brigido Galvan (Ethnomusicologist, Canada).

#### Section Two: Sound Design and the Museum

Electroacoustic Soundscapes: Aesthetic and Functional Design, by Nigel Frayne (Sound Designer, Australia).

A Reclamation of Sonic Geography of Mount Tateyama, by Keiko Torigoe (Sound Designer, Japan).

#### Section Three: Radiomakers

Location Location Location: a Scrap of a Map of Mannlicher Carcano, by Doug Harvey (Art Critic/Audio Artist, U.S.A.).

Radio & Aural Destabilization #6: Memories of Physical Locations and Ethereal Dislocations, by Bart Plantenga (Pirate Radio DJ, writer, Netherlands).

#### Section Four: Composing the Soundscape

Sonic Spaces of Poland: the Atlas of Symbols, by Lidia Zielinska (Composer, Poland).

Going Upcountry: Electroacoustic Composition between Documentary and Abstraction, Technology and Tradition, by John Wynne (Composer/Ethnographer, England).

**Section Five: The Ethics of Acoustic Ecology and Art Engagement with Sound**, by Gayle Young (Composer, Instrument Inventor, Canada).

The Local and Global "Language" of Environmental Sound, by Hildegard Westerkamp (Composer, Canada).

Anyone interested in more information, or in book orders can contact:

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# Sound Journals



Gabriel Guzman

larly liked to return home the same way. The air was moist and sometimes even foggy. I would wait until all the other students had left the area and then I would walk home slowly. It was very quiet. I would stop and stand still, listening to the silence. After all the noise at school it was a mysterious feeling to be in silence. It seemed as if I would emerge from the woods and arrive in a totally different place. Perhaps there was a little bit of fear in the experience. But still—it felt good and I enjoyed it.

## A Lecture Hall

by Angela Walstedt

## The Classroom Soundscape

*Ed. Note: The sounds of the classroom are for many readers a distant memory. The following excerpts from two student sound journals may stimulate our own memories of classroom soundscapes which we experienced during our early formative years. These excerpts from student journals were originally written as part of an assignment for Acoustic Dimensions of Communication, CMNS 259, available through Distance Education, Simon Fraser University, Burnaby, B.C., Canada: [http://interact.uoregon.edu/medialit/wfae/curriculum/acdcom\\_3.html](http://interact.uoregon.edu/medialit/wfae/curriculum/acdcom_3.html)*

### Quiet Children, Please.

by Shiho Serizawa

When I was a child in grade one or two, the teacher suggested an interesting game for us to play when we gathered on the floor and waited for some event to start. I do not remember what the game was called but the rules were pretty simple—be quiet and still. The teacher would pick the first student who was doing the best job at being quiet. Then this student would stand in front and choose the next student to come forward as he or she went back to sit. This would go on until whatever it was for which we were waiting, was ready to begin. It was a very simple attempt by the teacher to keep the students quiet. Everybody enjoyed the game and was trying hard to be the one to be picked. Since we were all very young, there was never a complete silence. But it was as silent as children can be. Nobody talked. It was quiet. Yet you could feel the excitement. It was not a silence with inner calmness. I could almost hear the loud inner voices saying, “pick me!”

### On Walking Home from School.

by Shiho Serizawa

When I was in grade eight or nine, I used to walk to school through the woods. And in the afternoons after it had rained, I particu-

Sitting in the packed lecture hall, the sounds from the students flood into my ears, above which the professor gives his monotone, lifeless speech. The room feels stale with sound—with the hum from the air vents and the constant hushed scratching of pens on paper, as everyone tries to capture the professor’s words frantically. Indistinguishable whispers of real things float from everywhere and nowhere at the same time, of weekend plans, ex-girlfriends and “what was that he said?” Almost in unison there is a flutter of page turns and then the harsh unexpected bark of someone coughing nearby. There is impatience in the air with knuckles cracking and feet shuffling and it builds up as the clock nears twenty past the hour—the end of class—so much so that the professor’s last few statements are rendered unimportant as pens are recapped and papers shoved into bags. This way, once the okay has been given, the students can flee the room quickly.

### Reaching the Back Row through Silence.

by Shiho Serizawa

There is an interesting way silence is used in classrooms by the lecturers. I was sitting in a lecture with about a hundred other students. The lecture had started but some people were still talking in the back as always, and they were annoying. Suddenly the lecturer stopped talking. I looked up from my note taking. She was just standing in the front staring at the back of the classroom. People who had been listening to the lecture noticed the sudden silence and, like me, all stopped writing and looked up. The whole classroom became very quiet as the sound of pens and pencils stopped. Everybody first looked at the lecturer and then in the direction in which she was staring. After a while the group in the back noticed that their voices were really standing out in the silent classroom. They finally stopped talking. The lecturer said thank you, and then resumed the lecture. As she started talking, the sounds of note taking gradually filled the classroom again.

## Projekt Hörstunde/Project Listening Hour

by Ulrike Heuer

[Ed. Note: the following is a proposal that was written as a way to initiate a programme of listening in an Elementary School in Bad Iburg, a small town in North Germany and that I thought worthwhile translating for our readers. As I write, the programme is in its second year and is very successful. More and more children want to participate in the weekly Hörstunde. It was initiated by the author—a parent—in response to the recognition that there is an urgent need for such an experience. At the time she was not familiar with existing educational soundscape work, but developed activities with the children entirely in its spirit, simply because she herself listened in depth to the situation as it is. HW]

### Background

Observations of daily life—in Germany at least—show that the ability and willingness to listen is generally disappearing in today's society. Visual and acoustic overload dominate every day life not only for children. Generally, people's ability to learn and to be open to information is affected negatively. Complaints about lack of attention and respect towards each other are multiplying in schools, at home, and in the work place.

One of the most important premisses for human communication is listening. Every conversation, every idea exchange assumes that people are willing and able to listen. Language-based communication makes social discourse as well as conflict resolution possible. Intensive listening to sounds and music can delight, increase our sense of well-being and strengthen our emotional balance.

Today's sound environment for children is inflationary: overloaded senses have been closed down. Too many stimuli affect children's ears, cause inner imbalances and restlessness. Many children find it hard to draw or paint from their own imagination or simply to be in silence. They hardly ever experience listening without simultaneous visual input or to listen in more subtle ways. In addition, many children know listening only as a duty, as pressure.

But after all, conscious listening is important for one's own consciousness: How am I listened to, how am I being perceived? What is important, what is unimportant for me?

The general neglect of our sense of hear-

ing is even more puzzling, when one understands the ear's capacities. The ear is faster, is more sensitive, more exact, and less vulnerable to misunderstandings than the eye ("The ear measures, the eye estimates"—*ed. note: so goes a German saying*). We possess only one sense organ which reaches its full size long before we are born: the inner ear. And with most dying people, hearing is the last sense that closes down.

All this makes it worthwhile to practise concentrated listening and to learn hearing with new ears.

### Pedagogical Thoughts:

In the *Listening Hours* I want to awaken children's curiosity towards more subtle listening experiences. I am not asking of the children that they *must* or *should* listen, but I want to encourage in them a *desire* to listen. A space will be created in which much time and attention is given to our thoughts and our listening experiences.

With a variety of listening exercises it is hoped that the ear will open up towards more subtle sounds. The aim is that the acoustic environment is perceived more consciously, that the children's ability to differentiate is heightened and an inner sound memory is developed.

Children will be encouraged to find their place inside a story, a factual context, an event or to imagine themselves to be someone else. Through listening and soundmaking avenues open themselves to the children, so that they learn to perceive themselves and others more clearly. Group work stimulates their fantasie and imagination and strengthens social togetherness.

### How It Works:

Participation is voluntary! The *Listening Hours* are geared towards Grade 2 students. Children sign up each time for a 6-8 week course. Gatherings happen in small groups of circa 12 children. To cover expenses (for books and materials) each child pays 1 DM or 50 EURO per gathering. Depending on school schedules *Listening Hour* is conducted either before or after regular classes. Every gathering is a unified whole not connected to the regular school curriculum.

At the beginning of every gathering, children are presented with a sound from their daily life and are asked to identify it. Every class has a theme, for example, the ear, body sounds, signal sounds and so on. The theme is experienced and discussed through short radio dra-

mas, stories, songs, poems or more. Afterwards there are games, crafts, puzzles, etc.

Children's requests or wishes are taken into account and fun to participate is a priority.

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**Ulrike Heuer** was born in Germany in 1960, is married and has two children, aged 5 and 8. She studied European Ethnology, Archeology and Pedagogy. In her publications and exhibits she has focused on cultural history themes. Since the birth of her children her involvement has shifted towards the areas of listening, story-telling and reading. Project *Listening Hour* emerged out of daily life observations in schools and is a voluntary parent contribution for children in Grade 2.

### Additional educational resources (in German)

- <http://www.bzga.de>  
Here you can find teaching materials and sound examples, as well as educational commentary, up-to-date information and further links. To order a hearing test CD go to: <http://www.sonicshop.de/DE/Plugs/Hoertest-CD.htm>
- <http://www.ganzohrsein.de>  
GanzOhrSein (ToBeAllEar), a project for the encouragement of hearing and listening in schools.
- <http://www.hr.online.de/zuhoren/>  
This website contains materials for *Hörclubs an Grundschulen* (Listening Clubs in Elementary Schools) a programme initiated by the Hessischer Rundfunk (Hessian Radio) after the 1997 Symposium *Ganz Ohr* (All Ear).
- *Lärm und Gesundheit—Materialien für Grundschulen, 1. bis 4. Klasse* (Noise and Health—Materials for Elementary Schools, Grades 1-4). 144 Pages and CD ROM. Bestell-Nr: 20 390 000 Bundeszentrale für Gesundheitliche Aufklärung, Schulreferat Postfach 91 01 52 51071 Köln, Germany
- "Hören—Zuhören," Theme of Hearing and Listening in *Sache—Wort—Zahl, Lehren und Lernen in der Grundschule*. Heft Nr. 43, Januar 2002, Aulis Verlag Deubner. E-Mail: [zeitschriften@aulis.de](mailto:zeitschriften@aulis.de)
- "Forschung, Hören und Zuhören," (Research Hearing and Listening) in *Grundschulverband Aktuell*, Heft Nr. 76, IV. Quartal, Nov. 2001.

## Sound Pedagogy in Sweden

A Report by Henrik Karlsson

### Design

Sometimes chance creates miracles... Two years ago, Christina Nilsson-Dag at Svensk Form (The Swedish Society for Craft and Design) heard me talk on the radio, and noted in particular my statement that we actually do not have any sound designers in Sweden.

It inspired her to form a working group and later to curate the first Swedish (Scandinavian, even European for that matter) exhibition on sound design, called *DesignSounds*. It opened in Stockholm in March 2001, toured to Copenhagen and other cities during the summer, and was re-opened in Gothenburg in March last year.

The exhibition was a great success and made Svensk Form very happy—a new audience of young, music loving designers emerged. A seminar on sound and design with Heleen Engelen (Philips, The Netherlands) as one of the keynote speakers also attracted a new audience. The result is that Sound Design programmes will now be available at a few Swedish universities as an experiment.

As a follow-up, Svensk Form inaugurated a new award, the *Golden Cricket*, inspired by the French award *L'oreille d'or* (The Golden Ear). The first prize was awarded to Ulrika Mårtensson for her sound insulating textiles, her graduation project from the Design College (Konstfack). A special issue of the periodical "Form" in Swedish and English covered most of the themes of the exhibition.

### Loud Music

*Ljuv musik och öronproppar—om hörsel, musik och hörselskador* (Sweet Music and Ear Plugs—About Hearing, Music and Hearing Damage) is an elementary textbook in Swedish on hearing and music, published in July 2001 by Prevent in Stockholm, which is owned by the Swedish Employers Association and the big labour unions. The text was produced by the Royal Academy of Music with the help of a medical doctor (Åke Ytterlind) and two audiologists (Stig Arlinger and Björn Hagerman). A book of this kind is much needed not only for music audiences in general, but increasingly also for music students and musicians of all genres. Levels of 120 dB have been measured in symphony orchestras and we are now facing the absurd situation where both musicians and listeners will appear in concerts with yellow ear plugs.



The book covers basic facts about the ear and hearing damage, especially tinnitus and hyperacusis; it can serve as a small handbook on acoustics and psychoacoustics, ending with a checklist or good advice for everybody involved in musical performances. Interviews with a pop singer, a disc jockey, a violinist and an audiologist present personal case studies. The authors are also unmasking some of the myths circulating about loud music, like "music that you love will never hurt your ears", or "harmful sounds are forbidden by the law".

### Network for Sound Education

A new organisation called Artists and Musicians Against Tinnitus (AMMOT) has started a 2-year educational project for disc jockeys, musicians, music teachers, and technical staff, to increase awareness about loud music and hearing damage. Since the members are experienced singers and musicians they are very familiar with the practical situations at dance clubs, restaurants and other venues, as well as sound technology and performance con-

tracts. AMMOT has already produced a 15 minute video on loud music, called "*Hördudu?!?*" (Hey, Listen!) and will engage music teacher Robin McGinley and his school class at The English School in Stockholm as an experiment in practical pedagogy for teenagers.

### Sound Art

The Swedish copyright society STIM has published the first comprehensive book on contemporary Swedish sound art (author: Teddy Hultberg). The book is in English, presenting biographies of 17 composers and their music on 2 CDs and can be ordered from STIM/Svensk Musik, Box 27327, SE-102 54 Stockholm, Sweden.

**Henrik Karlsson** is assistant professor in musicology at the University of Gothenburg. He was the research secretary at the Royal Swedish Academy of Music until 2001 and founded the Sound Council as a network for Swedish soundscape interests.

## Scientists Hear Sound of Creation in Big-Bang Echo

According to the authors of this article, scientists have detected the sound of creation. They have picked up echoes of the “big bang”, the explosive event thought to have signaled the birth of the universe 12-14 billion years ago. The echoes are the remnants of huge acoustic waves that surged through the white-hot plasma gases generated in the big bang. Physicists have suggested that such waves shaped the modern universe by concentrating matter in some areas and removing it from others—creating the structure we see today in which stars are concentrated into galaxies separated by huge voids. Until now there had been no real evidence.

An international team of scientists surveyed the sky over Antarctica using a 3,500 lbs telescope suspended from a balloon to measure fluctuations in the microwave radiation left behind by the acoustic waves. The balloon circumnavigated the Antarctic for 10 days at a height of nearly 37 kilometres.

The Times article notes that Sir Martin Rees, the astronomer royal, said the research proved that sound waves had shaped the universe. “If they had not been there the universe would have been filled with nothing more than an evenly distributed diluted gas,” he said. Concluding, Rees said: “The research also adds weight to the strangest idea of all: that our universe, far from being unique, is one of an infinite number of universes.”

Source: *UK Sunday Times*, April 29, 2001.

## Call Centres Face Test Case Over ‘Shock’ Injuries

With more than 200,000 Australians employed in call centres, occupational health and safety experts say acoustics could well be the new industrial compensation battle ground of the future. The union movement has commissioned a labor law firm to prepare a test case aimed at exposing a debilitating new workplace condition known as “acoustic shock”.

Acoustic shock—described as a sudden loud, piercing noise that may cause nausea, dizziness, ringing in the ear, and face and neck pain—has come to notice after successful litigation in the United States and Britain.

Neill Johanson, executive director of architects Reid Campbell, said unresolved acoustic problems at call centres had increased staff turnover by 50 per cent, costing the industry up to \$500 million a day. “Call centres looking to reduce costs associated with high staff turnover should start by examining their work environment from the inside out. Businesses need to look at the synergy between physical elements like ceilings and work stations, and human elements such as the style of management and training in order to provide a better acoustic environment,” he said. Source: *The Age*, Melbourne, Australia, Monday, September 10, 2001.

## Fair Crack of the Whip Wins

“It is a moment etched in the Australian psyche. A lone rider gallops to the centre of the Olympic stadium and cracks a bullwhip to herald the opening ceremony of the Sydney 2000 Games. What is not so widely known is that the almighty crack did not come from the whip.” A sound specialist, Steve Logan, working for a Sydney-based digital and audio company, Fairlight, generated it high in the stands. It had taken technicians several months of pre-recording sound for the event, and it was the audio master that provided cues for action in the stadium.

“Fairlight also did the sound for the closing ceremony. Now the US network NBC has contracted Fairlight to provide audio services for the next three Olympic events.” Source: *The Age*, Melbourne, Australia, Monday, September 10, 2001.

## Scientists Tune In To Sounds of the Sea

CNN reports that scientists have placed a hydrophone array system off the coast of California to listen to ocean sounds. Oceans can be quite loud with earthquakes, landslides, and whales, dolphins, and fish—all part of the marine soundscape.

CNN quotes National Oceanic and Atmospheric Administration oceanographer Chris Fox as saying, “We’re particularly interested in blue whales, the largest animals ever, which are highly endangered. We’ve determined that they have a migratory path up and down the Pacific Coast. The data will help scientists follow the migration of blue whales off the West Coast”, he said. The article notes that marine biologists expect to hear other sounds bouncing around the watery depths, like landslides and earthquakes, sometimes thousands of miles away on the other side of the Pacific Ocean basin. Source: CNN Science and Technology, September 7, 2001.

## Purr-fect Way to Bolster Bones

This article suggests that “...injured cats—wild and domestic—purr because it helps their bones and organs to heal and grow stronger, say researchers who have analysed the purring of different feline species.” The article notes that exposure to similar sound frequencies is known to improve bone density in humans. “The scientists, from the Fauna Communications Research Institute in North Carolina, USA, found that between 27 and 44 Hertz was the dominant frequency for a house cat, and 20-50 Hertz for the puma, ocelot, cheetah and caracal. This reinforces studies confirming that exposure to frequencies of 20-50 Hertz strengthens human bones and helps them to grow.” Other scientific teams are researching whether “sound treatment” could be used to halt osteoporosis and even renew bone growth in post-menopausal women.” Source: *The Age*, Melbourne, Australia, Monday, March 19, 2001.

## US Natural Parks and Over Flight Sound Legislation

In an issue of *National Parks Magazine* attention was paid to the need to protect natural soundscapes. An article titled “Scenic Air Tours Threaten Tetons” summarizes legislation sponsored by Sen. Craig Thomas (R-Wyo) that would preempt over flights at Yellowstone and Grand Teton National Parks. Quoting Steve Bosak, NPCA’s over flights program manager, “The Thomas bill will protect the natural soundscapes of these crown-jewel parks.” The article concludes “groups have asked the U.S. Court of Appeals for the District of Columbia Circuit for an emergency order to stop the flights, saying they would cause irreparable harm to the park’s natural quiet and wildlife.” Source: *National Parks Magazine*, US, July/August 2001, pp 21/22.

## Vancouver, B.C. Wants to Crack Down on Noisy Leaf Blowers.

The city of Vancouver is cracking down on “acoustic public enemy number one—gas-powered leaf blowers.” Vancouver’s chief environmental health officer is recommending immediate restrictions on the hours when leaf blowers can be used. Nick Losito also wants a new, more stringent noise standard that would have to be met by the end of 2002.

Losito says complaints have been rising steadily about leaf blowers and he recommends a compromise between banning leaf blowers altogether, and learning to live with the status quo. He has suggested that the city ban the use of these tools on Sundays and holidays, and to restrict leaf blowing to match business hours on weekdays and Saturdays within 50 meters of residential homes.

Losito recommends that by the end of 2002, the city set a new maximum noise standard of 65 decibels. The current maximum is 77 decibels. Leaf blowers now being used by commercial landscapers and the Vancouver Park board—with the exception of newer, quieter models—register in the high 70s. Fred Halldorson, president of the 600-member B.C. Landscape and Nursery Association, points out, however, that it is not so much the decibel noise that makes people angry. It’s the blowers’ “whiny” tone. Halldorson and park board representatives say the city’s proposal is a good compromise with which they can live. Source: *The Vancouver Sun*, Vancouver, Canada, Fall 2001.

## Sonic Womb

An ultrasound scan relies on sound frequencies too high to be heard, but a new study finds that it can raise a racket in the womb by vibrating internal organs—in particular, the fetal ear. Volumes can reach up to 100 decibels in utero, as loud as a subway train. An unborn baby would perceive this sound as a high pitched tone or chord, although the noise would be more akin to a finger tap near the ear than a shriek cutting the air. The finding may explain why babies

wiggle more during ultrasound scans than when resting undisturbed. The authors noted, however, that their study does not suggest a risk to the child. In fact, because the clatter is sharply confined to a pencil-point swath, a fetus should be able to twist out of earshot. The researchers, from the Mayo Foundation in Rochester, Minn., USA, presented their findings to the Acoustical Society of America. Source: *Scientific American*, February, 2002.

### Silencing Stonehenge

Stonehenge has been an international archaeological attraction that today no longer sits remotely on a vast open plain. With a major highway passing within feet of the northern stones and another to the south, the once quiet site has become the center of traffic sound where guides often have to shout in order to be heard. The British Government, after decades of criticism, has found the money to restore silence to Stonehenge. Work will begin in 2002 to tunnel road traffic under the monument. From news source.

### Sound Wall Not Effective

The Oregon Department of Transportation built a 5,000 foot-long wall for \$1.87 million along a stretch of Interstate 105 to separate nearby residents from freeway traffic. Although the wall reduces traffic noise by 9 to 12 decibels, much of the noise carries over the wall. According to Pat Sullivan, chairwoman of a local neighborhood group, "... we've got people who can finally talk in their back yard—but now can't talk in their front yard." Pressure is now on the state to build a 4-foot-tall concrete "tire barrier" or guardrail along the freeway shoulder that could help reduce the noise further. Source: *Eugene Register Guard*.

### Venezuela Noise War

According to the Associated Press, the opponents and supporters of Venezuela's president Hugo Chavez are conducting an "earsplitting" duel in which the sound of banging pots and pans is played against firecrackers and the sound of blaring TV sets. Frustrated by the sluggish economy, the protesters make noise during the President's televised speeches, some of which can last up to five hours in length. People lean out of windows banging on pots and pans. Supporters of the President answer by turning their TV sets at full volume and set off firecrackers. So far there are no winners in the noise competition although some believe that the sound of fireworks overwhelms the banging of kitchen utensils. One thing both sides agree on is that there are few restful nights when the President speaks to the nation. Source: AP

### Military Drills Bother Neighbors

A Municipal Court judge will soon let neighbors of a military-style charter school in Eugene, Oregon know if he will have the

school change its outdoor drills for its 130 students. The sound of blowing whistles, shouted commands, and students chanting cadence has disturbed many neighbors during the 25 minute drills.

An attorney for the academy indicates that the noise generated should be weighed in the context of other normal city noises that occur throughout the day. The city ordinance prohibits only noise that "annoys or disturbs a reasonable person of normal sensibilities." The attorney suggests that the sound of the drills is part of the normal mix of city sound. The Judge will need to decide the case on his assessment of what is offensive to a person of "normal sensibilities."

As enrollment has increased so has the noise at the school. This has generated numerous complaints to city officials. Residents claim that at its peak, the sound of the drills overpowers all traffic noise. Neighbors indicate they have had to close windows, doors, and turn up music to mask the sound. A ruling will be made in the near future. Source: *Eugene Register Guard*.

### Developing an Ear for Nature's Untuned Orchestra (excerpts)

James Gorman, in a recent New York Times article, noted that a number of new resources make exploring the jungles of Africa or the bird song of morning possible for many who otherwise live in urban environments filled with radio, car, industrial and other noises blocking out the natural world.

A new CD, called *The Diversity of Animal Sounds*, is a compilation from the Macaulay Library of Natural Sounds at the Cornell Lab of Ornithology in Ithaca, New York. According to John Fitzpatrick, the head of the Cornell Lab, the disc had originated as a banquet favor for a meeting of ornithologists. It was so well received that the lab decided to work on it and sell it to the public.

The Macaulay Library of Natural Sounds at the Cornell Lab of Ornithology ([birds.cornell.edu](http://birds.cornell.edu)) has the largest collection of natural sounds in the world, with more than 150,000 recordings. Another vast collection is the wildlife section of the British Library's national sound archive ([bl.uk/collections/sound-archive/wild.html](http://bl.uk/collections/sound-archive/wild.html)), with more than 130,000 recordings.

The Nature Sounds Society's site ([naturesounds.org](http://naturesounds.org)) has a variety of sounds and links to a number of other sites. For a wide-ranging catalog of books and CDs by many people on sound and soundscapes, as well as audio samples, try [earhear.com](http://earhear.com).

Two CD compilations have come out from the radio show *The Pulse of the Planet*, produced by Jim Metzner ([www.pulseplanet.com](http://www.pulseplanet.com)). The show can be heard on more than 300 radio stations in the US and the CDs can be ordered on the Web site.

*Birding by Ear* (Houghton Mifflin), a field guide intended to train the ear to identify birds by their calls, is widely available for \$21. Source: *New York Times*, January 25, 2002.



Photograph by Hildegard WesterKamp

### Musical Pillars,

The Vittala Temple in Hampi, Karnataka, is one of three World Heritage Monuments in South India. Although it was never finished or consecrated, the incredible sculptural work is of the highest standard and is the pinnacle of Vijayanagar art. The outer pillars, as shown here, are known as the musical pillars as they reverberate when tapped, although this practice is being actively discouraged as the pillars are somewhat the worse for wear. Source: Lonely Planet, 1996.

### Mapping UK Noise Levels

Michael McCarthy Environmental Editor, [Independent.co.uk](http://Independent.co.uk), reports that noise levels over all 50,363 square miles of England is to be mapped in one of the biggest exercises of its kind. And for some people, noise mitigation measures may eventually be the result.

Noise meters will be located throughout the country and mapping done by computer using the Ordnance Survey. Additional input from local authorities will facilitate a calculation of noise in most every location. The survey is to be completed by the summer of 2004.

Source: [Independent.co.uk](http://Independent.co.uk) (<http://news.independent.co.uk/uk/environment/story.jsp?story=251159>) March 4, 2002.

# Resources

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## EDUCATIONAL RESOURCES

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### Board Game with Cassette:

#### Animal Soundtracks

Children's learning-to-listen type educational products are not easily found on today's toy store shelf. However, *Animal Soundtracks by Living and Learning* is one game parents can find that has special appeal for kids ages 4-8.

Living and Learning is a UK-based company that has been producing educational materials for use in schools and homes for many years. Its emphasis is on developing products that stress educational value and enjoyment.

*Animal Soundtracks* includes 4 lotto boards, 30 coloured tokens, and an audio cassette. Children listen to animal sounds and then match each to the picture of an animal on a lotto board. Each board has nine images from which to choose the appropriate one. As each sound is identified the child places a colored token on the picture. The first person to identify all the animals is the winner. Four children can play at one time.

The cassette tape is recorded on both sides. Each side contains the same 60 animal sound sequences in a different order. The tape can be started at any point on either side. A small six-page guide provides descriptive information about each of the 30 animals represented in the game. *Animal Soundtracks* is a fun product, which children can use at home or in the car. It can be found in toy stores that sell imported products or on the Internet at a retail price of about \$15.00.

### Web Site: Sounds All Around Us

Elementary teachers looking for learning activities related to soundscape education will find the *Sounds All Around Us* web site a useful resource. It is provided by Learn.co.uk, a division of Guardian Educational Interactive, LTD.

The site comprises six lessons on the topic of sound and hearing designed for Year 1 students. Completing all the activities can take nearly an hour and a half, or they can be divided into two separate lessons. There are four specific learning objectives: children will

- identify a range of familiar sounds
- match sounds to their sources
- describe sounds using a range of appropriate vocabulary
- group sounds according to whether they are loud or quiet

In the process of mastering these objectives students should learn that there are many different sound sources; explore sounds using their sense of hearing; make observations about sounds by listening carefully; that there are many ways of describing sounds; and that sound can be loud and quiet. Educators will find the *Sounds All Around Us* web site at: <http://www.learn.co.uk/primarylessons/ks1/sounds1/intro.htm>

### Web Site: I Love What I Hear!

This teachers guide for grades three through

six is part of the US Department of Health and Human Services - National Institutes of Health outreach program. It is suggested that the activities could be adapted for younger or older children as well. The activities are of value in helping children build an awareness of the importance of hearing and the problems of noise-induced hearing loss. They also explore the science of sound and the value of attentive listening. The site includes instructions on how to conduct a listening walk and other activities that encourage examining issues related to noise pollution. The web site is located at: <http://www.nidcd.nih.gov/health/kids/teachers/index.htm>

### Web Site: Wise Ears!

*Wise Ears!* is a national campaign in the US to prevent noise-induced hearing loss. The National Institute on Deafness and Other Communication Disorders (NIDCD), in partnership with other organizations are engaged in this educational effort. The objectives of the coalition are to:

1. Increase awareness about noise-induced hearing loss (NIHL) among all audiences, e.g., workers, employees, health professionals, teachers, parents, children, entertainment industry, unions, industry, state and local government workers, and the general public.
2. Motivate all audiences to take action against NIHL by understanding the problem and its solutions, e.g., understanding that everyone is at risk for NIHL; expanding the availability of hearing protection devices; advocating changes in the workplace; developing hearing loss prevention programs. This web site has a lot of educational material for children and adult learners related to hearing, hearing loss, and noise in our environment. The web site is located at: <http://www.nidcd.nih.gov/health/wise/index.htm>

### Curriculum Guide: Sound Adventures

The thirty-six page *Sound Adventures* curriculum guide with accompanying audio cassette was written to provide teachers of German with a series of learning activities based upon the development of listening skills and the principles of acoustic ecology.

Although the guide outlines a curriculum with lesson plans and classroom projects related to German language instruction, teachers in other curricular areas will find many of the activities useful. The instructional objectives, in addition to the development of language skills, include: enhancing listening skills; becoming aware of and communicating about the sound environment; becoming aware of acoustic ecology, getting to know and to appreciate other cultures via sound; enhancing imagination; and enhancing creativity and self-expression. All of these can easily be integrated into other subject areas.

Student activities include listening exercises; soundwalks; and the keeping of sound journals. Students also document soundscapes using field tape recorders. There is even the suggestion that students exchange recordings with schools located in another country.

The accompanying audio cassette includes an excerpt from Jim Metzner's radio Program "Sound Memories", featuring apples, trains and a breakfast (among other memories). There is also a clip in which the listener is invited to a Mexican wedding. Other sound adventures explore the Oktoberfest in Munich and a subtropical night in the swamps of South Florida. The cassette also includes a soundwalk with Hildegard Westerkamp and Susie Kozawa through downtown Seattle in 1996, and student-produced materials such as a listening experience in Eggenfelden, a small town in Bavaria, Germany.

*The Sound Adventures* curriculum guide contains plenty of material to get new teachers started in acoustic ecology, regardless of their main subject.

*Sound Adventures* was written and prepared by Gudrun Hommel-Ingram, Gretchen LaTurner, Robert Mann, and Ulrike Tietze. Educators should contact:

Teachers of German (AATG).  
112 Haddontowne Court #104  
Cherry Hill, NJ 08034-3668  
Phone: 856-795-5553  
Email: [headquarters@aatg.org](mailto:headquarters@aatg.org)  
Webpage: [www.aatg.org](http://www.aatg.org)

### Web Site: Kid's Ear Page

This section of the World Forum for Acoustic Ecology's web site aims to encourage children to listen to all the sounds around them. It includes activities to sharpen their listening skills and help develop an understanding of sounds and their meanings. It includes articles about listening to sounds in a child's home, community, and the environment beyond. The site also provides activities that will help children to "fine tune" their listening skills as well as explore the world soundscapes of animals, people, cities, and nature. The *Kid's Ear Page* is located at: <http://interact.uoregon.edu/medialit/wfae/curriculum/kid/menu.html>

### CD-ROM: OpenEar

Proscenia Interactive, an association of pro-social independent media producers, is in the process of developing a CD-ROM for children on attentive listening. The disc, expected for release in late 2002, contains a variety of games, readings, and other interactive adventures that facilitate learning about human made and natural soundscapes. For more information see:

<http://www.proscenia.net>

## BOOKS

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### Experimental Sound and Radio

Edited by Allen S. Weiss  
MIT PRESS, USA, November 2000  
160 pp., 59 illus., ISBN 0-262-73130-4  
Price \$19.95/£13.95 (PAPER)  
Order by e-mail: [mitpress-orders@mit.edu](mailto:mitpress-orders@mit.edu)  
Order by mail: The MIT Press

Five Cambridge Center  
Cambridge, MA 02142-1493, USA  
Art making and criticism have focused mainly on the visual media. This book, which originally appeared as a special issue of *TDR/The Drama Review*, explores the myriad aesthetic, cultural, and experimental possibilities of radiophony and sound art. Taking the approach that there is no single entity that constitutes "radio," but rather a multitude of radios, the essays explore various aspects of its apparatus, practice, forms, and utopias. The approaches include historical, political, popular cultural, archeological, semiotic, and feminist. Topics include the formal properties of radiophony, the disembodiment of the radiophonic voice, aesthetic implications of psychopathology, gender differences in broadcast musical voices and in narrative radio, erotic fantasy, and radio as an electronic memento mori. The book includes a new piece by Allen Weiss on the origins of sound recording. Contributors: John Corbett, Tony Dove, René Farabet, Richard Foreman, Rev. Dwight Frizzell, Mary Louise Hill, G. X. Jupitter-Larsen, Douglas Kahn, Terri Kapsalis, Alexandra L. M. Keller, Lou Mallozzi, Jay Mandeville, Christof Migone, Joe Milutis, Kaye Mortley, Mark S. Roberts, Susan Stone, Allen S. Weiss, Gregory Whitehead, David Williams, Ellen Zweig. Source: website

#### **The World and the Wild**

Edited by David Rothenberg and Marta Ulvaeus  
The University of Arizona Press, 2001  
Tucson, AZ, 520 621 1441 USA  
www.uapress.arizona.edu  
ISBN 0-8165-2063-1  
\$19.95 paperback

The editors of the award-winning environmental cultural journal *Terra Nova* have expanded a special issue of the magazine into the first anthology to consider wilderness as a global, not just American, issue. This book aims to argue against a truism of environmentalism: that the idea of wilderness is a northern, colonialist conceit that has no place in the environmental plans of newly developing nations. Our contributors, many of them from third world or southern nations themselves, argue the opposite: that wilderness, albeit in often different forms, has an important place in any society's environmental thought and policy. But the idea of wilderness must evolve, to include the perspectives and problems of developing nations. These essays show paths toward this evolution.

*The World and the Wild* is the first anthology to consider wilderness as a global concern, and is an excellent place to start a discussion on the topic in classroom or in the field. Classic debates in global conservation policy are introduced and contrasted: Can nature be honestly restored to a pristine state by human action? Does the preservation of wilderness always put people second behind animals and plants? Can local and indigenous people be trusted to watch over their own wild homes and resources? Or is policing by internationally sanctioned authorities required?

With contributions both evocative and pragmatic, this collection breaks new ground in global environmentalism. Our contributors and their stories come from all over the

planet: Nepal, Brazil, Chile, the Phillipines, Mexico, Kenya, South Africa, India, as well as the United States. Source: promotional flyer

#### **Touring Exhibition of Sound Environments (TESE)**

A 48 page colour booklet including 3 CDs is available. It was produced to accompany the Touring Exhibition of Sound Environments (TESE). This includes:



CD 1—Sounds of Harris & Lewis  
CD 2—Sound Poems and Portrait  
CD 3—Machair Soundwalks

Price: £25 GBP + postage  
£20 GBP for WFAE members.  
For more details contact:  
tese@earminded.org

(See also p. 30 of this journal: an article by Gregg Wagstaff where he writes about his soundscape work with a class of children on the island of Lewis—the same children that can be heard on the CDs.)

#### **Sudden Music: Improvisation, Sound, Nature**

Author: David Rothenberg  
The University of Georgia Press, 2002  
Athens, Georgia 30602 USA  
ISBN 0-8203-2318-7  
\$29.95 including audio CD

"Music," said Zen patriarch Hui Neng, "is a means of rapid transformation." It takes us home to a natural world that functions outside of logic where harmony and dissonance, tension and release work in surprising ways. Weaving memoir, travelogue, and philosophical reflection, *Sudden Music* presents a musical way of knowing that can closely engage us with the world and open us to its spontaneity.

Improvisation is everywhere, says David Rothenberg, and his book is a testament to its creative, surprising power. Linking in original ways the improvised in nature, composition, and instrumentation, Rothenberg touches on a wide range of music traditions, from Reb Nachman's stories to John Cage's aleatory. Writing not as a critic but as a practicing musician, Rothenberg draws on his own extensive travels to Scandinavia, India, and Nepal to describe from close observation the improvisational traditions that inform and inspire his own art.

The accompanying audio disc features eleven original compositions by Rothenberg, none of

which have been previously released on CD. *Sudden Music* will help all readers experience the world as a musical place, full of wonderful events that come out of nowhere to create a strange and rhythmic harmony. David Rothenberg is a philosopher, musician, and writer and is an associate professor of philosophy at the New Jersey Institute of Technology. Source: promotional flyer

Additional Titles Received

#### **Listening to Nineteenth Century America**

Author: Mark M. Smith  
University of North Carolina Press, 2001  
Chapel Hill and London  
ISBN: 080782657X

#### **COMPACT DISCS**

#### **Caratinga: Soundscapes from Brazil's Atlantic Rainforest**

by Douglas Quin  
EarthEar  
www.earthear.com

This CD, co-produced by Conservation International and EarthEar, presents lush, neotropical soundscapes from the Caratinga Biological Station in Brazil's disappearing Atlantic Rainforest. Its nine extended tracks of natural soundscapes explore the rich acoustic ecology of the area, including intimate portraits of the daily lives of primates, focusing on the endangered muriqui (or woolly spider monkey), and also featuring howler monkeys, capuchin monkeys, mar-mosets, tree frogs, and many birds, creating a sonic overview of the cycle of day and night in the forest. The CD begins with a morning chorus of bird song along a small creek, then moves into the forest for visits with each of the three main species of primates. An especially unique segment observes the mating activities of the White-bearded Manakin, a small bird which engages in an extraordinary aerial display, including several calls and popping and snapping sounds from its wings. An afternoon storm gives way to an especially engaging evening frog chorus to end the disc. Half the revenue received from sales of this disc will be sent directly to the Caratinga Biological station, to support the important work being done there to study and protect this endangered habitat and soundscape. Source: website

#### **Grooved Whale**

by Lisa Walker  
EarthEar  
www.earthear.com

Here's a wholly new approach to making music for and from whale songs. Walker plays violin into underwater landscapes, and the resulting recordings are wonderfully rich raw material for her studio-based compositions. Aquatic canyon walls and open spaces create a cathedral-like presence for her sound, and she builds the pieces around especially interesting and well-recorded whale songs. She adds electronics ranging from spacy to funky, and while the overall tone is embracingly atmospheric, she avoids new-age clichés, using her classical training to

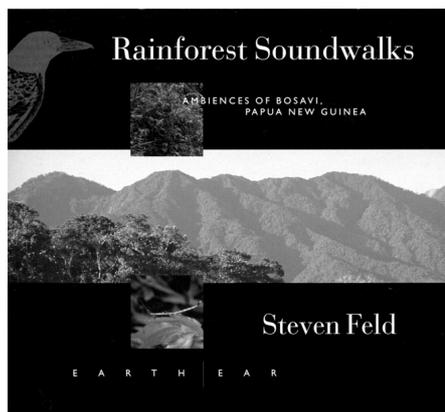
forge a musical response to the whales that has a delightfully lyrical musical complexity. Walker has spent years pursuing three complementary paths: classical music training, cutting edge media technology, and field research in Alaska. She brings these diverse gifts together here in a way that will appeal to listeners across the soundscape spectrum. Source: website

### Rainforest Soundwalks: Ambiences of Bosavi, Papua New Guinea

by Steven Feld

EarthEar

Website: [www.earthear.com](http://www.earthear.com)



Ten years after his groundbreaking *Voices of the Rainforest* (Ryko/The World) became one of the best-selling CDs in the history of both environmental sound and traditional world music, Steven Feld returns with this long-awaited purely environmental sound follow-up. With stunning depth of field and gradually shifting sonic focus, it is a sublime blend of pure natural voices, subtle studio mixing, and rich spirit. Feld offers four distinct audio immersions that explore the ways in which the voice of the forest changes during the course of a day. From a pre-dawn butcherbird solo of extraordinary virtuosity (which the liner notes reveal was perhaps a message from a departed friend), through a mid-morning soundscape highlighted by the rhythmic maraca-like rattling of cicada, to an evening ambience of ringing insects and frogs, the sound worlds conjured up by Feld draw us into the acoustic ecology of the Bosavi forest with unprecedented depth and clarity.

This CD offers a fascinating blend of documentary and sound art, as Feld shapes his academic studies of the anthropology of sound into a subtle composition that becomes an echo of the magic that's kept him coming back to his Bosavi home for a quarter century. Two to four stereo recordings are layered in subtle ways to forge a slowly shifting panorama of sound. By centering the pieces on quieter times of day, when individual voices can be more easily heard, Feld highlights the never-ceasing interplay between birds, insects, amphibians, and the lush vegetation, which the local people so poetically experience as the "lift-up-over-sounding" of the forest itself.

This CD is being released as a partnership between EarthEar and the Bosavi People's Fund, established by Steve Feld to administer royalties from *Voices of the Rainforest*. EarthEar and the Bosavi People's Fund are

splitting all revenues from sales of *Rainforest Soundwalks* equally. Once manufacturing costs are recouped, the BPF monies will go to Bosavi for the benefit of its people and land. Source: website

### Sounding Soundscape Composition

Curated by John Levack Drever

Sonic Arts Network

The Jerwood Space, 171 Union Street

London SE1 0LN, UK

Fax : 00 44 20 7928 7338

<http://www.sonicartsnetwork.org>

This compilation of soundscape compositions curated by John Levack Drever explores work that re-connects reproduced sound back to its autochthonous context; work that strives to establish a dialogue between the sounds and the sites from which they were extrapolated; work that explores and underlines aspects of place, culture and identity in relation to sound; work with perhaps a Green agenda in the face of imminent ecological catastrophe; work that seeks to comprehend and explore further our everyday auditory experience. Derived from field recordings with varying degrees of manipulation, its nine tracks feature the very different compositional approaches of Thomas Gerwin, Gregg Wagstaff, Dallas Simpson, Scott Smallwood, John Levack Drever, José Luis Carles, Gabriele Proy and Werner Cee. Extensive programme notes and a paper on the characteristics of soundscapes by Drever himself round off this adventurous sonic overview of current trends in soundscape composition.

### Tall Grasses

Composer : John Hudak

Digital Narcis

[dnarcis@nifty.com](mailto:dnarcis@nifty.com)

American sound artist John Hudak crafts minimalist recordings based on the repetition of sounds below the usual threshold of hearing, sounds that are filtered out or considered non-musical. These sounds are recorded, deconstructed and processed, their rhythms and textures being the basis for aural manipulations. Past releases of his include *Highway* and *Brooklyn Bridge*, which weave poetic tapestries of sound from traffic recordings. His latest CD *Tall Grasses* is a work based on recordings made in a field of grass in upstate New York on a windy day, with contact microphones buried just below the surface of the soil.

Source: website

### La Fonderie.Paccard

Eric La Casa & Slavek Kwi

Website: [www.collectifetcie.fr](http://www.collectifetcie.fr)

French composer, sound and installation artist Eric La Casa has been investigating the field of sound for the past ten years. His compositions include *Les Pierres du Seuil*, one of the five prize-winning works selected by an international jury for the Soundscapes befor(e 2000 festival (Amsterdam, November 1999). His new release *La Fonderie.Paccard* is based on ten hours of recordings carried out in a bell foundry in Annecy, France. La Casa used some of these sounds to compose a piece. He then sent all

the unused sounds to composer/improvisor Slavek Kwi, who produced a very different piece, also featured on the CD. La Casa and Kwi then collaborated on a third piece based on the remaining sounds. Source: website

### L-Fields

Michael Prime

[http://www.sonoris.org/labels/m\\_prime.html](http://www.sonoris.org/labels/m_prime.html)

Michael Prime is a French musician who has released his new album, *L-Fields*. This CD consists entirely of "bioelectric recordings of living plants". Prime first connected electrodes to three plants in the wild. The bioelectric characteristics of each plant was directed to a battery powered oscillator and the sounds the oscillator made were recorded. Prime then mixed the sounds of each plant with the ambient sounds of the environment in which the plant was growing. There are three tracks each 15 to 20 minutes in length. Each is unique. Discover Magazine, which has reviewed the disc, notes: "Both have...a loping, ethereal quality quite unlike even the ambient electronic experiments or New Age nature sound tracks they may at first seem to resemble. Sometimes the sounds are like the moaning of a theremin, at other times the roar of an airplane or the whistling of the wind." Source: website

### The Big Picture, A sound-collage journey from Japan to London

Mike Willox

Sargasso

PO Box 10565

London N1 8SR UK

Website: <http://www.sargasso.com>

Sargasso CD distributed worldwide by <<http://www.cdemusic.org>>

Mike Willox's debut solo album was sparked off by a tour in Japan where he collected local urban sounds and atmospheres from the streets of Tokyo, Yokohama, Osaka, creating a rich sonic diary. Back in London in his Loungescape studios he created a unique musical sound-collage, blending in other sounds from more personal sources. Willox seamlessly goes from electronica ambiances to sounds of pianos being tuned, and from jazz musicians jamming to the heartbeat of his unborn daughter Sapphire. Although made up of individual tracks, *The Big Picture* is meant to be heard as a continuous sonic journey.

The track 'Buzz' was selected in July 2000 by the BBC's 'Mixing It' programme as part of their nationwide New Composers search. The son of world-class jazz wind-player Roy Willox, Mike is a skilled jazz pianist himself who in the last few years has become a prominent producer and re-mixer of recording projects for Transglobal Underground, Temple of Sound and Rizwan-Muazzin Qawwali (Real World), The Big Chill and others.

Drawing from a wide range of musical sources, *The Big Picture* reflects Willox's insight in sound manipulation which never loses sight of the emotional content of the material. The result is a far-reaching and often humorous exploration of cultures and moods, continuously challenging the listener's perceptions. Source: Sargasso website

# Announcements

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## Formation of an American Society for Acoustic Ecology

Jim Cummings would like to hear from individuals who are interested in the possible formation of an American Society for Acoustic Ecology—eventually a U.S. affiliate of the WFAE. Early thoughts about the mission of such an association have focused on developing an educational and information effort in the United States. It is also possible that such a professional organization might develop a panel of experts that could comment on public lands management plans, urban sound policies, or other sound environment issues.

Contact:

Jim Cummings:

Tel: +1 888-356-4918

E-Mail: [jim@acousticecology.org](mailto:jim@acousticecology.org)

## Call for Articles

*Reconstruction* is currently soliciting articles, review essays, reviews, and multimedia/hypertext projects for its Summer 2002 special issue, "Auto/bio/geography: Considering Space and Identity." The focus of this issue is the various overlaps between life and its locale. Submissions are encouraged from a variety of perspectives, including, but not limited to: geography, cultural studies, folklore, architecture, history, sociology, psychology, communications, music, political science, semiotics, theology, art history, queer theory, literature, criminology, urban planning, gender studies, etc. Both theoretical and empirical approaches are welcomed.

*Reconstruction* is an innovative culture studies journal dedicated to fostering an intellectual community composed of scholars and their audience, granting them all the opportunity and ability to share thoughts and opinions on the most important and influential work in contemporary interdisciplinary studies.

Submissions must be received by June 17 to be considered for publication on July 15. All submissions and submission queries should be directed to: [submissions@reconstruction.ws](mailto:submissions@reconstruction.ws).

## EVENTS

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### International Symposium on Sound Design

Groupe Audition de la Société Française d'Acoustique (SFA)  
Paris, France  
20-21 March, 2002

This two-day event will include a variety of papers: composer and sound designer Murray Schafer will give a lecture on the perception of sound. Stephen McAdams (Senior Research Scientist, Ircam-CNRS, Paris) will give a paper on sound quality. Ute Jekosch (Assistant Professor at Ruhr-

Universität Bochum, Institute of Communication Acoustics, Germany) will discuss the semiotics of sound. James A. Ballas (Engineering Research Psychologist, Naval Research Laboratory (NRL), Washington DC) will address the topic of sound identification. Further information, including the full programme, may be found at: <http://www.confsl.ia.espci.fr/ds2002>

### Giving Voice

Wales' International Festival of the Voice  
Aberystwyth and Cardiff  
April 1-11, 2002

*Giving Voice* is a ten-day exploration of 'The Voice Politic'—politics, voice and society, stirring up debate and discussion alongside an inspiring mix of poetry, story-telling, rap, folk, world and traditional music and theatre. Join us for an uplifting compendium of voice workshops, performances and lecture-demonstrations reflecting voices from Africa, Asia, the Middle East, America and Europe. Download Brochure from our web site: [www.givingvoice.org.uk](http://www.givingvoice.org.uk)

Contact: Daniel Rebbeck <[dr@ABER.AC.UK](mailto:dr@ABER.AC.UK)>

### MAXIS Presents:

A Festival of Sound and Experimental Music  
Sheffield Hallam University, Sheffield, England, UK  
April 12-14, 2002

Keynote/Works By Invitation/Open Call—Innovative, Alternative and X-disciplinary approaches in Sound—People, Process, Product and Place.  
Format: Lectures, Workshops, Exhibition, Live Performance, Academic Papers, Project Reports, New Products, Machinations, Installation, Film.  
Fees: Weekend Festival Ticket (with publication) £75.00 (UK Pounds Sterling)  
Website: [www.maxis.org.uk](http://www.maxis.org.uk)

### Sound of the City

International Association for the Study of Popular Music  
**IASPM-Canada Conference**  
McGill University, Montreal, Canada  
May 10-12, 2002

The 2002 IASPM-Canada conference explores the complex relationship between the city and sounds of all kinds. Sound and the city are intimately linked. Certain sounds can play a defining part in city life. Whether it is the cliched sound of a saxophone emanating from a fire escape, the cacophony of car sound systems providing the soundtrack to street cruising, an escape into silent cafés, or the hypnotic pulse of dance clubs, the city is charged with both noise and music. All conference participants are required to be members of IASPM. Please see our website for details on how to join: <http://www.iaspm.ca>

### Musica urbana:

#### il problema dell'inquinamento musicale

*Music in Urban Spaces:*

*The Problem of Musical Pollution*

An International Conference of Soundscape Studies. With the support of the World Forum for Acoustic Ecology  
Bologna University, Department of Music and Performing Arts  
May 17-19, 2002

The first of its kind in Italy, this conference is part of an interdisciplinary and long-term research project which was started in January 2001, by the Cultural Association "Il Saggiatore musicale" and by the Music and Performing Arts Department of Bologna University. The project, promoted by the chair of History of Music—Faculty of Literature and Philosophy, Prof. Giuseppina La Face Bianconi, includes a four-year seminar offered to students at Bologna University, and this convention in May 2002.

The research project is based in the field of soundscape studies, and develops the concept of "acoustic ecology" by examining the relationship between music, human being, culture, and environment. Participants such as musicologists, lawyers, economists, doctors, engineers, communication experts, politicians, public administrators and ecologists, will gather to analyse the phenomenon of musical pollution and to discuss possibilities for change.

Contact information:

Dr. Carla Cuomo  
c/o Dipartimento di Musica e Spettacolo  
via Barberia 4,  
40123 Bologna, Italy  
tel. +39 - 051 2092038 / 051 6448695;  
fax +39 - 051 2092001;  
E-mail: [cuomo@mail.muspe.unibo.it](mailto:cuomo@mail.muspe.unibo.it)  
[www.muspe.unibo.it/period/saggmus](http://www.muspe.unibo.it/period/saggmus)

### Sound Symposium 2002

International Festival of New Music & the Arts  
July 5-13, 2002

For more information please contact:  
P.O. Box 23232, St. John's, Newfoundland  
A1B 5J9 Canada  
Website: <http://www.sound.nf.ca>

### Sounding Out

Staffordshire University, UK  
July 11-13, 2002

An international Symposium of invited speakers, including leading practitioners and academics, exploring the art and practices of SOUND. Here is an opportunity to investigate the new practices and understandings of sound, emerging from the convergence of radio, film, television, video, and new media. Organised by the Staffordshire University Department of Media, Journalism and Cultural Studies with Sound Journal and its editor, Alan Beck.

# Announcements

For further information, please contact:  
Professor Christine Gledhill  
Tel: + 44 1782-294585  
E-mail: C.A.Gledhill@staffs.ac.uk  
Website: <http://mcs.staffs.ac.uk/sound/conference.htm>

**Music, Environmental Design, and the Choreography of Space"**  
Baden-Baden, Germany  
July 31-August 3

Proposals are invited for the 4th Symposium on Systems Research in the Arts, to be held in conjunction with the 14th International Conference on Systems Research, Informatics, and Cybernetics, July 31-August 3 in Baden-Baden, Germany. The study of systems within the scope of traditional arts-related theory, or the application of general systems methodologies to the analysis of music, architecture, interior design, dance, theatre, and the visual arts are areas of particular interest.

Proposals for presentations/papers of approximately 200 words should be submitted by April 7, 2002 for evaluation. Please submit proposals electronically in Microsoft Word format to James Rhodes, Shorter College, USA ([jrhodes@shorter.edu](mailto:jrhodes@shorter.edu)) and Jane Lily, University of Georgia, USA ([lilyj@arches.uga.edu](mailto:lilyj@arches.uga.edu)).

For more complete contact information and details about the symposium, please visit the Arts Symposium home page at <http://www.jcrhodes.net/2002> and the IAS home page at <http://www.ias.edu>.

## Deep Listening Retreat

with Pauline Oliveros—Composer  
Heloise Gold—T'ai Chi/Movement  
Ione—Author/psychotherapist  
at Rudi's Big Indian Center  
Up State New York, US  
August 7-13, 2002

*The Deep Listening Retreat* is for ear minded people: musicians and artists interested in expanding their understanding of sound and it's effects on the body and mind; those interested in enhancing the depth of their meditation practice through listening; teachers who want to encourage appreciation for listening in their students; people interested in well being, relaxation excitement and connection with others and the environment. For more information concerning the Three Year Certificate Program or the Five Year Apprentice Program consult the Deep Listening web site or contact: Pauline Oliveros Foundation, Inc.  
PO Box 1956 Kingston NY 12402, USA  
Tel: +1 845 338-5984  
Fax: +1 845 338-5986  
E-mail: [paulineo@deeplisting.org](mailto:paulineo@deeplisting.org) or [pof@deeplisting.org](mailto:pof@deeplisting.org)  
<http://www.deeplisting.org/>  
Register on line:  
<http://www.deeplisting.org/training/registration.html>

## ISMA

International Conference on Noise and Vibration Engineering Conference  
Leuven, Belgium  
September 16-18, 2002.

ISMA 2002 is part of a sequence of annual courses and biennial international conferences on structural dynamics, modal analysis and noise and vibration. The last event was organised in September 2000 and was attended by more than 350 people, 240 papers were presented and full conference proceedings were published. The conference is organised by the division PMA of the K.U.Leuven. <http://www.isma-isaac.be>

## VIII MusicMedicine Symposium 2002

of the International Society for Music in Medicine—ISMM, in conjunction with the First International Congress on Music in Medicine, Therapy and Counseling  
November 21—24, 2002

The Conference will present an overview of achievements in the field, state of the art research & applications of Music in Medicine, Therapy and Counseling. Standards and definitions will also be discussed.

For further information please write to:  
Dr. Ralph Spintge  
Executive Director, ISMM  
Sportskrankenhaus Hellersen  
Paulmannshoerster 17  
D-58515 Luedenscheid  
Germany  
Fax: +49 2351 363035

## RADIO

### Pulse of the Planet new website.

Jim Metzner has recently announced that his *Pulse of the Planet* website has a new address: <<http://www.pulseplanet.com>> Metzner notes that he will soon be able to archive many of his radio programs online in the MP3 audio format. He also announced that the CD portion of the now out-of-print *Pulse of the Planet* CD/book, published by the Nature Company, will soon be released and can be ordered on the new web site.

### Radio Soundscapes.

Individuals interested in the creation of radio soundscapes will enjoy exploring Alan Beck's *Radio Hub* website at <http://www.ukc.ac.uk/sdfva/radio/index.html>. In an age when radio is primarily a medium for music and informational broadcasts, it is refreshing to find someone studying radio potential as an acoustic art form. This site collects together Beck's academic work on radio. Alan Beck is a professor in the University of Kent's Department Of Drama, in the UK.

## QUOTES

Wherever we are, what we hear is mostly noise. When we ignore it, it disturbs us. When we listen to it, we find it fascinating. The sound of a truck at fifty miles per hour. Static between the stations. Rain. We want to capture and control these sounds, to use them not as sound effects, but as musical instruments.

John Cage

In many of the poems and texts of the era of romanticism (and even afterwards) the word silence is connected to the activity of listening. Through the entrance door of silence we enter an acoustic paradise populated by humming bees, postilions' horns echoing through the valley, small rivers, flying beetles, chirping crickets, whistling leaves and murmuring creeks. Silence evokes an acoustic image of the natural environment.

Christina Kubisch

It's the quality, the significance, the impact of a sound or image that can make notions shift, reveal connections unnoticed before, effect a change in the mind.

Paul Panhuysen

I prefer never knowing when you are gonna hear something, when you are gonna see something.

Morton Feldman

The twentieth century is, among other things, the Age of Noise. Physical noise, mental noise and noise of desire—we hold history's record for all of them. And no wonder; for all the resources of our almost miraculous technology have been thrown into the current assault against silence.

Aldous Huxley

Hearing is an involuntary physical act that happens through our primary sense organ when sound waves impinge upon the ear. Everyone with healthy ears can hear. Listening takes cultivation and evolves through one's lifetime.

Pauline Oliveros

Sound exists as a phenomenal presence involved in and determining the shape of the world. It partially defines our perceptual, emotional, spiritual and psychological spaces; and contributes to our understanding of ourselves, our environment, and our relationship to each other.

Brandon LaBelle and  
Steve Roden

# World Forum for Acoustic Ecology

## Membership Information

**JOIN OR RENEW NOW! PLEASE CHOOSE THE APPROPRIATE AFFILIATE BELOW.**

As a member of an affiliate organization you will automatically become a member of the WFAE. If you are not near a convenient affiliate organization, or if you relocate frequently, you can join the WFAE directly as an affiliated individual. Financial members of the WFAE receive a subscription to *Soundscape-The Journal of Acoustic Ecology*. A Membership Form and a sample article from *Soundscape* are available for download in PDF format on the WFAE website: <http://interact.uoregon.edu/MediaLit/WFAEHomePage>

### Donations Are Welcome!

Additional donations (in CDN \$ and US \$, to the below WFAE address) will be gratefully accepted. Donations will be used toward the production costs for *Soundscape*, and to help subsidize those who cannot afford membership, or who come from countries with disadvantageous exchange rates.

#### **Australian Forum for Acoustic Ecology (AFAE)**

Individual fee: A\$40 — Institutional fee: A\$95  
Please send a cheque or money order in Australian Funds to:

Australian Forum for Acoustic Ecology (AFAE)  
P.O. Box 268,  
Fairfield, Victoria 3078  
AUSTRALIA

#### **Canadian Association for Sound Ecology (CASE)**

##### **Association Canadienne pour l'Écologie Sonore (ACÉS)**

Individual: Cdn \$35 — Student/Étudiant: Cdn \$20 (with a copy of your current student ID). Please send a cheque or money order in Canadian funds to:

Canadian Association for Sound Ecology (CASE)  
Association Canadienne pour l'Écologie Sonore (ACÉS)  
c/o Musicworks  
401 Richmond Street West, Suite 361, Toronto, ON  
M5V 3A8, Canada

#### **Forum Klanglandschaft (FKL)**

Austria, Germany, Italy, Switzerland

FEES:	Normal	Studierende	Gönner	Institutionen
EURO	20	13	40	50
CHF	35	25	70	85

*Austria:* CA Creditanstalt, 6218 2061 531, BLZ 11000, lautend auf "FKL"

*Germany:* Mittelbrandenburgische Sparkasse Potsdam, 350 300 4032, BLZ 160 500 00

*Italy:* Conto corrente postale nr. 100 075 08 Firenze, intestato a Albert Mayr, con l'indicazione della causale "iscrizionale FKL/WFAE"

*Switzerland:* Postcheckkonto 40-551632-1

#### **Suomen Akustisen Ekologian Seura (Finnish Society for Acoustic Ecology—FSAE)**

Individual fee: 120 FIM — Student fee: 80 FIM. Please pay to the bank account in Finnish Funds: Osuuspankki 571113-218325

Suomen Akustisen Ekologian Seura  
c/o FT Helmi Järviluoma  
Musiikkintiede, Turun yliopisto  
20014 Turku, Finland

#### **UK and Ireland Soundscape Community (UKISC)**

Individual fee: £20 GBP — Institution: £50 GBP

Concessions: £10 GBP

Cheques should be made payable to the UK and Ireland Soundscape Community and sent to:

John Levack Drever  
Flat 1, 17 Queens Crescent Exeter, Devon  
EX4 6AY  
UK  
E-mail: [johndrever@MOOSE.CO.UK](mailto:johndrever@MOOSE.CO.UK)  
<http://www.dartington.ac.uk/>

#### **WFAE Affiliated Individual Membership**

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Please send US cheques, international money orders, or travellers cheques made out to the WFAE. Do not send drafts, as bank charges are very high! Mail to:

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Victoria, 3078  
AUSTRALIA

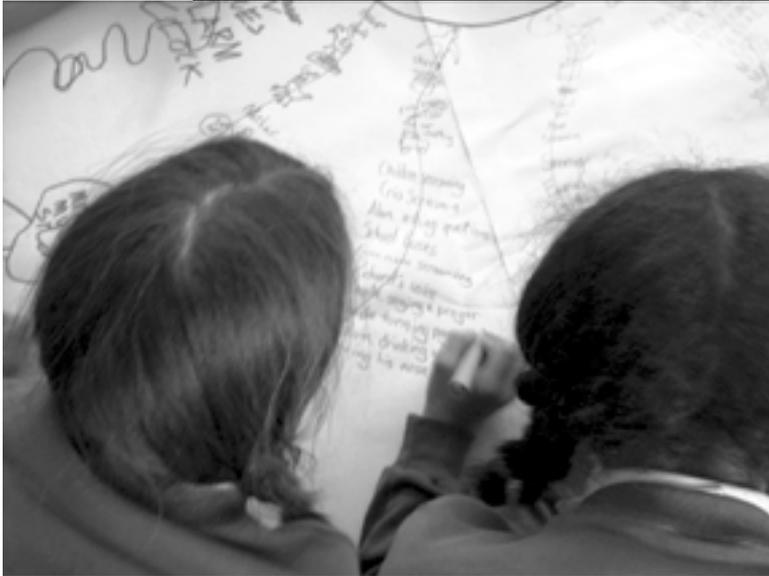
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Birds in the sky –“tweet-tweet”,  
Butterflies flapping their wings,  
a cold breeze passes by.

Ina Fergusson (aged 10)