

Soundscapes and acoustic ecology - origins and prospects

Dr John Levack Drever
Goldsmiths, University of London

UK Representative on the
World Forum for Acoustic Ecology
Director of UK & Ireland Soundscape Community
Email: j.drever@gold.ac.uk

For twenty-five centuries, Western knowledge has tried to look upon the world. It has failed to understand that the world is not for the beholding. It is for hearing. It is not legible, but audible.

Attali, J. (1985) *Noise: The Political Economy of Music*

Acoustic Ecology/ Soundscape Studies

- Ecology is the study of the relationship between individuals and communities and their environment. Acoustic or soundscape ecology is thus the study of the effects of the acoustic environment, or soundscape, on the physical responses or behavioural characteristics of those living within it. Its particular aim is to draw attention to imbalances which may have unhealthy or inimical effects. (Source: Barry Truax - Handbook for Acoustic Ecology CD-ROM Edition. Cambridge Street Publishing, 1999 - CSR-CDR 9901)

Soundscape

An environment of sound (or sonic environment) with emphasis on the way it is perceived and understood by the individual, or by a society. It thus depends on the relationship between the individual and any such environment.

Acoustemology

[Acoustemology explores] acoustic knowing as a centrepiece of Kaluli experience; how sounding and the sensual, bodily, experiencing of sound is a special kind of knowing, or put differently, how sonic sensibility is basic to experiential truth in the Bosavi forests. Sounds emerge from and are perceptually centred in place, not to mention sung with, to, and about places. Just as "life takes place" so does sound; thus more and more my experiential accounts of the Kaluli sound world have become acoustic studies of how senses make place and places make sense. (Feld 1994:4)

Steven Feld's *Rainforest Soundwalks: Ambiences of Bosavi, Papua New Guinea* (2001)

World Soundscape Project

- *Vancouver Soundscape* (1973)



World Soundscape Project directed by R. Murray Schafer

Five Village Soundscapes (1975)
including Dollar in Scotland.

Schizophonia

- (Greek: schizo = split; phone = voice, sound) This term of R.M. Schafer's refers to the split between an original sound and its electroacoustic reproduction. Original sounds are tied to the mechanisms which produce them. Electroacoustic sounds are copies and they may be reproduced at other times or places. Schafer employs this "nervous" word in order to dramatise the aberrational effect of this twentieth century development. (Source: Barry Truax - Handbook for Acoustic Ecology CD-ROM Edition. Cambridge Street Publishing, 1999 - CSR-CDR 9901)

- Sounds were once indexically linked to their particular times and places, sources, moments of enunciation, and human and instrumental mechanisms. Early technology for acoustic capture and reproduction fuelled a pre-existing fascination with acoustic dislocation and respatialization. Territorial expansion, imperialistic ambition, and audio technology as agent and indicator increasingly came together, culminating in the invention of the loudspeaker. Then came public-address systems, radio expansion, and after the second world war, the tape recorder, which made possible a new and unprecedented level of editing via splicing manipulation such that sounds could be endlessly altered or rearranged yet made to have the illusion of seamless, unbroken spatial and temporal contiguity. (Feld 1994:258-9)

Hi-Fi

Abbr. for high-FIDELITY, that is, a system reproducing a full audio frequency SPECTRUM (20 to 20,000 Hz) and a favourable signal-to-noise ratio. The most general use of the term is in electroacoustics, such as when applied to an amplifier or a recording.

In terms of soundscape studies, the hi-fi environment is one where all sounds may be heard clearly without being crowded or masked by other sounds and noise.

Lo-Fi

Abbr. For low-fidelity, that is, a system which reproduces less than a full frequency spectrum, and which has a poor signal-to-noise. The most general use of the term is in electroacoustics, such as when applied to an amplifier or recording.

In terms of soundscape studies, the lo-fi environment is one in which signals are overcrowded, resulting in masking and lack of clarity.

R M Schafer, took a wide brush stroke of the contemporary (i.e. 1970s) city soundscape, characterising it as *lo-fi* ("one in which signals are overcrowded, resulting in masking or lack of clarity" (Schafer 1994: 272)) in contrast to the more desirable and distinct *hi-fi* soundscape of the pre-industrial world and ever decreasing *pristine* rural environments.

Today, when the slop and spawn of the megalopolis invite a multiplication of sonic jabberware, the task of the acoustic designer in sorting out the mess and placing society again in a humanistic framework is no less difficult than that of the urbanologist and planner, but is equally necessary. (Schafer 1994: 216)

Sound Event

- A sound or sound sequence in its spatial and temporal context as part of a SOUNDSCAPE. Whereas the SOUND OBJECT is abstracted from its original context and exists only as an acoustical object for study, the sound event acquires its meaning through its social and environmental context, as well as from its own acoustic characteristics.
- Therefore, an acoustic description of the sound event includes its ambience, its relation to that ambience as well as other environmental features, ACOUSTIC SPACE and RHYTHM. Sound events may be classified according to their semantic, symbolic or structural functions or qualities

Keynote Sound

In music, keynote identifies the key or tonality of a particular composition. It provides the fundamental tone around which the composition may modulate but from which other tonalities take on a special relationship.

In soundscape studies, keynote sounds are those which are heard by a particular society continuously or frequently enough to form a background against which other sounds are perceived. Examples might be the sound of the sea for a maritime community or the sound of the internal combustion engine or HUMs in the modern city. Often keynote sounds are not consciously perceived, but they act as conditioning agents in the perception of other SOUND SIGNALs. They have accordingly been likened to the ground in the figure-ground relationship of visual perception.

Soundmark

A term derived from 'landmark' used in soundscape studies to refer to a community sound which is unique, or possesses qualities which make it specially regarded or noticed by the people in that community. Soundmarks, therefore, are of cultural and historical significance and merit preservation and protection.

Disappearing sounds

Any class or type of sound which once existed, but has since been replaced, superseded, or has otherwise ceased to be heard except as a museum artifact.

Disappearing sounds are generally those associated with social activity, although some natural species and their sounds have also become extinct. When the energy forms used in society change, many direct and indirect acoustic changes result. As travel by horse gave way to mechanized transport, the sounds of shod horsehooves, reins, sleighbells, and wagonwheels disappeared, but so did the sound of the blacksmith and wheelwright.

Sound romance

Any past or DISAPPEARING SOUND remembered nostalgically, particularly when idealized or otherwise given special importance. Whereas new sounds are often experienced as SOUND PHOBIAS, old or past sounds are often elevated to the category of sound romances in memory. Many such sounds were often regarded as unimportant when actually current; yet later, hearing them may trigger strong memories.

Sounds experienced during childhood, for instance, often become romances for the adult. After moving away from a given area, particularly one strongly linked with sound, such as a community by the ocean, to a place lacking those familiar sounds, these may also acquire a romantic or nostalgic quality. Other sounds go beyond having only personal romance qualities and are valued and preserved by a society as soundmarks.

The whistle of the steam train, for instance, has now come to symbolize the era when such trains were common. Many have now been restored and are regarded as having historical importance. In Canada, their replacements, the newer air horns, had to be designed to resemble their predecessors in order to be recognized as train whistles.

Soundwalking

- all sounds are site-specific
- all sounds are “embodied”
- synchronised, diagetie and anecdotal there is no *fringe*
- everybody is in the "best seat"

In its most immediate and everyday form a *soundwalk*, according to the sonic artist, Hildegard Westerkamp is:

... any excursion whose main purpose is listening to the environment. It is exposing our ears to every sound around us no matter where we are. (Westerkamp 1974)

Listening walk: "A listening walk is simply a walk with a concentration on listening" (Schafer 212:3).

Soundwalk: "The soundwalk is an exploration of the soundscape of a given area using a score as a guide. This might also contain ear training exercises" (Schafer 213:3).

Soundwalk as Fieldwork

In the role of a fieldwork method, a wide range of strategies to *soundwalking* has been employed since the early 1970s in the interdiscipline of soundscape studies (a.k.a. acoustic ecology) founded by R. M. Schafer. Despite its use of quantitative techniques such as collecting sound intensity levels, soundscape studies has a predisposition for attending to qualitative data; in this context a *soundscape* is understood as:

"an environment of sound (or sonic environment) with emphasis on the way it is perceived and understood by the individual, or by a society" (Truax 1999).

Soundwalk as Art Work

- Janet Cardiff's, *The Missing Voice (Case Study B)* (from June 1999 - present)
- Graeme Miller's *LINKED: A landmark in sound - an invisible art work - a walk* (from July 2003 - present).

Salzburg Soundwalk

This is a soundwalk for baritone (and friend). The bells of the inner city form the framework for a walk, providing cues to move on from one place to another, on the quarter hours. A baritone voice is required in order to play with the eigentones found in the course of the walk. An eigentone is the resonant frequency of an enclosed space, and you will find it by humming continuously up and down until the one note is found which sounds louder than all the others do. (Schafer 1977:39)

Paris Soundwalk

The *Paris Soundwalk*, located in the Louvre, eschews acoustic sounds, prompting the walker to, "LISTEN to these paintings? [...] Let the genius of their execution speed your imaginations to provide the appropriate soundtrack"(Schafer 1977:86).

Continuing the theme of contrasts, the interface of the park and the street are highlighted: "Leave the Park by the same route you came in, and note the THRESHOLD OF DISCOMFORT: the transition point where the sounds of the Park are once more buried by the sound of city traffic" (Schafer 1977:93). This is in counterpoint to the "THRESHOLD OF COMFORT" that the walker, it was anticipated, experienced on entering the park earlier.

London Soundwalk

Jets at fountain, north-central within Gardens [Queen Mary's Gardens in the centre of Regent's Park]. Consider here both kinds: water and airplanes. While considering the water jets, keep track of how many of the other kind, as well as propeller airplanes, you hear in a 10-minute period. (Schafer 1977:93)

100 Soundscape of Japan: Preserving Our Heritage (1994-7)

Japanese Environmental Protection Agency

"...in order to raise awareness of and preserve Japan's natural and cultural soundscape heritage."

Sounding Dartmoor (2000-2)

collaborators

- The Digital Crowd, Media Arts Department, University of Plymouth
- Aune Head Arts
- TESE (Touring Exhibition of Sound Environments)

process

- Sound Nominations
- Sound Walks
- Field Recording
- Sound Installation
- Website (www.sounding.org.uk)
- Database
- CD

Sound Nomination Questions

- What is your sound?
*Ponies breathing out through nostrils to say hello.
(you have to breath first & they reply)*
- Where is the sound?
Domestic or semi wild Dartmoor Ponies
- Why have you selected this sound?
*Cos it's a very nostalgic sound to me & part of living
and breathing Dartmoor*





Ximena Alacorn (De Montfort)
*An Interactive Sonic Environment based
on commuters' memory of soundscape:
a case study of the London
Underground*

Tsai-Wei Chen (Goldsmiths)
*Sonic Constellations: Taiwanese
sojourners' listening experiences in
London*

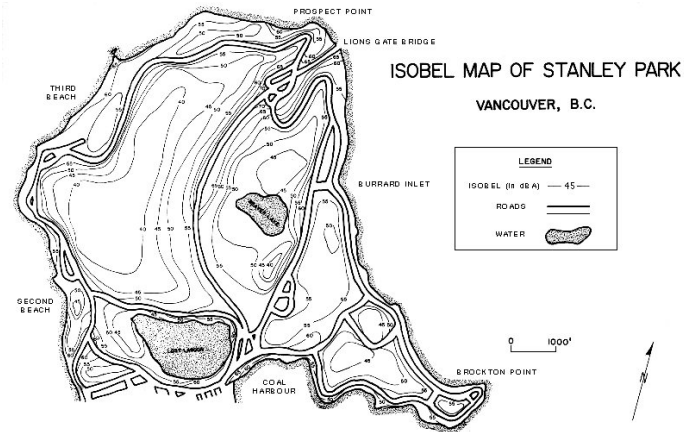
The UK and Ireland Soundscape Community

- Establish itself as a network of individuals and local groups including the United Kingdom and the Republic of Ireland who are concerned with the sonic environment (soundscape).
- Encourage the formation of smaller, regionally based and community managed soundscape groups through specific public and community projects.
- Establish and promote publicly recognised Sites of Sonic Interest or Soundmarks over the UK and Republic of Ireland.
- Promote research into acoustics within the arts, natural and social sciences, in particular the field of acoustic ecology.

- Develop strategies and promote policies towards the creation of better soundscapes in architectural design and urban planning
- Help establish and/or support regional soundscape archives within England, Ireland, Scotland & Wales.
- The UK and Ireland Soundscape Community is an affiliate organisation of the World Forum for Acoustic Ecology (WFAE) so as to present the concerns and interests of its members at an international level and to support the WFAE in its various capacities.

For more info contact: ukisc@wfae.net

Isobel map of Stanley Park, Vancouver, B.C. (from The Vancouver Soundscape, No. 2, Music of the Environment series, World Soundscape Project, 1974).



Noise Mapping

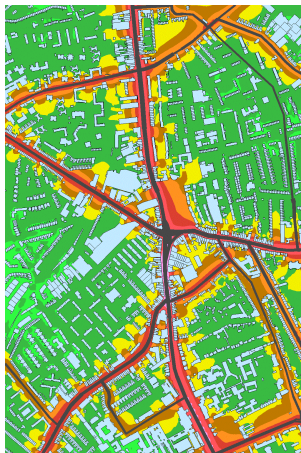
As a result of the European Environmental Noise Directive (EEND) much of the UK is currently being subject to noise mapping, by computerized calculation of sound pressure levels. Arising out of this quantitative data, it requires preparation of action plans "designed to manage... noise issues and effects, including noise reduction if necessary."

DEFRA, *European policy on environmental (or ambient) noise*.
<http://www.defra.gov.uk/environment/noise/ambient.htm>

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The London road traffic noise map
Atkins



Sound-Conscious Urban Design

"Urban designers should not just abate or mitigate noise, a sound-conscious urban designs a negative afterthought, but work consciously with sound as a positive element of good design. Sound quality can define place. Designers need to understand how sounds will behave in a space, to create soundscapes which are attractive to everyone, as well as supportive to those with special needs."

The Mayor of London's
Ambient Noise Strategy 'Sounder City' (2004)

Arup SoundLab


“The Arup SoundLab is the culmination of extensive research and development in acoustics. It brings the ability to model and optimize the acoustic environment or sound system design within existing spaces, or in the design process for new spaces, such as museums, galleries or concert halls. We can also add in existing ambient noise from the particular site or environment. This allows the artist to develop his composition around the sounds that will actually be found at the installation location. SoundLab is also used by sound artists to create 3D sound spatializations using a wide range of proprietary software and custom designed algorithms developed by Arup. It is a technically robust and powerful tool for anyone working in 3D audio or soundscape design in the internal or external environment.”

Soundscape Composition

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

Phonography/ Soundscape Composition/ Anecdotal Music

Luc Ferrari's

*Presque Rein No.1, Le lever du jour au
bord de la mer (1970)* 

Hildegard Westerkamp

- *Kits Beach Soundwalk (1989)*



Peter Cusack

Your Favorite London Sounds (198-
2001):

Mind the gap

Deptford Grid

Slam Door



Cattle Grids of Dartmoor (2001-4)



Walk music.

Movement music.

Stop - watch - listen.

Continue.

Cardew, C. (ed.) *Scratch Music* (1972)

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Atkins - London road traffic noise map
<http://www.atkinsglobal.com/aboutus/publications/features/londonnoisemap/>

Westerkamp, H. 'Soundscape Composition: Linking Inner and Outer Worlds'
<http://omroep.nl/nps/radio/supplement/99/soundscapes/westerkamp.html>

World Forum for Acoustic Ecology
<http://interact.uoregon.edu/MediaLit/wfae/home/>

The World Soundscape Project
<http://www.sfu.ca/~truax/wsp.html>

HANDBOOK FOR ACOUSTIC ECOLOGY
<http://www.sfu.ca/sonic-studio/handbook/index.html>