

Soundscape and Abstraction: Exploring the Relationship Between Environmental Sound and Language.

Marcus Leadley

My research explores the relationship between environmental sound and language. I will briefly outline the theoretical and contextual framework within which I locate my installation practice and then provide an overview of my methodology, outline two recent events and attempt to make some early-stage assessments of the data I am collecting.

R. Murray Schafer (1994, p.7) describes the soundscape as, “any acoustic field of study. We may speak of a musical composition as a soundscape, or a radio programme as a soundscape or an acoustic environment as a soundscape.” It functions in a similar way to the term landscape from which it was adapted. A soundscape can be approached in terms of its individual acoustic features. It can be visually mapped using various techniques, and sound recordings are used for analytical and artistic purposes. If we take one step back from the soundscape we find ourselves in aural space – which is the sonic characteristic of the natural, architectural or electroacoustic environment. It is the product of distances, diffusion and reflection, topography, materials and technologies. Nested within this characteristic we have the human experience of the soundscape, all of our sound-making endeavours and forms of acoustic communication. My research suggests that our experience of aural space and the soundscape are so profoundly connected to our experience of what it is to be human that there is a direct relationship, established over millennia, between the ways in which we communicate, and the environment in which communication takes place. The research has led me to the following hypotheses:

- Without sound binding us in a dialogic relationship with our environment we would not have been able to develop inter-human sounds (i.e., language) in order to function as social beings.

And in formulating a question to focus the inquiry, we can see some areas where new knowledge might be revealed and applied:

- How might establishing and explicating a relationship between environmental sound and language further our understanding of aural awareness, cultural forms and the inter-relation between people and their environments?

The first problem we encounter is the near impossibility of pursuing a sonic relationship to a point of origin in prehistory; there is no acoustic artefact or ear-witness we can interrogate. However, cognitive science, ethnography, ecological acoustics and philosophy can provide material from which some assessments and projections may be made. In the 1960s James Gibson (1968) started testing aural perception using recording of real-world sounds rather than laboratory-generated tones. This led James Howard and James Ballast (1987, pp. 91-113), building on the work of Albert Bregman (1978) and Nancy VanDeveer (1979), in the 1980s to the conclusion that our brains separate complex environmental soundscapes into smaller, identifiable sub patterns. They also identified that either the same, or a parallel mechanism enables us to parse the sound of speech and determine its grammar, syntax and meaning. They also established the importance of rhythm and repetition for the comprehension of both environmental sound and language. Psychologist Jane Lancaster (Jay 1975, p.72), and ethnographers Janis Nuckolls (Erlmann 2004, p.p. 65 – 87) and Paul Carter (Erlmann 2004, p.p. 43 - 65) have identified the mimicry of environmental sounds as the basis of many words, especially place names – and the importance of language acquisition in the gaining of evolutionary advantage. Charles Woolfson (1982), builds on Friedrich Engels' position (2001) that language is the product of labour – especially tool making. And here I identify the part played by idiophones and onomatopoeia in languages as diverse as English, Japanese, Napo Runa of the Ecuadorean Amazon and the West African Dialect, Yoruba.

So this is area of knowledge I am trying to build on: to find out how this relationship between environmental sound and language, especially verbal communication, plays out in the modern world. One of the main problems here is that adults understand both the sound of the world around them and language at a completely intuitive, unconscious level. One might choose to work with children because they are still working their way toward understanding. However, valuable as their insights might be, they are not mature observations. So to work with adults it becomes necessary to break some of the habitual listening patterns.

So, although the sound installations I create may seem plausible at first, logical sequences of events are disrupted, indoor and outdoor locations are superimposed to challenge notions of place. Snatches of conversation create meandering narrative threads that we strain to understand - so the work contains the potential for multiple interpretations.

I was at De Montfort University in Leicester at the beginning of June 2010 for the Sound, Sight, Space and Play conference ... and at Whitstable Biennale [5] on the Kent coast on the 19th and 27th of June. The first iteration of the project in Leicester, *Urban Soundings*, addressed sound and language in the urban environment; the second, *The Sounding Shore*, in the coastal, liminal, recreation environment of the British seaside. In both cases a wireless headphone network was used to deliver an audio programme to participants, and questionnaires were used for sampling purposes. 27 completed forms were returned in Leicester and 11 from Whitstable – which reflects the different nature of the two events. An audio recorder was also left running to catch anecdotal comments and discussions of the work. Each audio programme, a montage of local sound, was prepared specifically for the site from recordings made a few weeks before the installation.

For instillation work my recording practice is informed by the methods of the World Soundscape Project, the work of the *Centre de Recherche sur l'espace Sonore et l'environnement Urbain* (CRESSON) at the University of Grenoble and the recently completed UK initiative, The Positive Soundscapes Project. The idea is to identify sounds and sounding spaces that are broadly representative of a location. In addition, I aim to capture enough language fragments from random conversations to identify what is being talked about how, and by whom. There is an ethical issue to address here and in editing all reference to specific people or incidents are removed. Out of perhaps 80 individual sound files – ranging in duration from a few seconds to around three minutes – 24 are eventually selected and loaded into a custom Max MSP patch I call Collidscope. This uses stochastic principals to control playback, combination and sound treatment decisions. Triggering itself is controlled by the onset timings of words in the performance of a text-based score. Imagine this a bit like traditional notation, except that it can play itself – or perhaps as a very elaborate software musical box. What you don't hear in the installation is the verbal content of the score: which is drawn from my spoken word practice, which is external to the PhD – and in this context is

not especially important. However, for completeness these scores are appended to this paper. More importantly, the timing of the delivery of the score is embedded in the sound work so as to generate an underlying language-like rhythm. This is an attempt to create a feedback loop: if, as I propose, language is partly structured and formulated in response to the sound of world around us, then structuring a sound environment using speech rhythms should impart a familiar and believable characteristic. It is very difficult to assess how successful this experiment is, however, subjectively, I consider the work is far more intriguing and ‘believably environmental’ than it was when I was using a simple metronome to initiate playback. And I am beginning to see participant responses that suggest an awareness of some form of underlying structure.

By presenting the sound environment remade in its original location my purpose is to encourage people to start listening with their ‘everyday ears’ – because the transition from the ‘real’ to the ‘mediated’ is less apparent due to the continuity of the aural space. When they realise the constructed nature of the work they switch to a more focused form of listening – one participant in Whitstable described this as becoming acutely aware of the sounds that usually “go in one ear and out the other”. Indeed, one thing this inquiry has revealed to me is that hearing and listening, even if related on a continuum of potential auralities, are very different things. Scientists, artist and philosophers generally agree that hearing is a passive faculty selected by evolution for its contribution to survival, location and orientation (Cox 2004, p. 74; Van DeVeer 1978, p.2; Oliveros 2005, p.7; Barthes 1991, p.246; Truax, 2001, p. 18, Cook 1999; 101 and Emmerson 2003, p. 41). However the critical thinker Roland Barthes (1991, p. 245), for example, tells us that basic listening is a deciphering: an attempt to intercept and interpret established codes. Beyond this, he identifies a modern form of listening that is about exchange – so listening and speaking are connected in the flow of significance. The philosopher Jean-Luc Nancy observes (2007, p.7) that listening is always a search for meaning. Listening, I believe, is a highly inquisitive faculty but it only reveals itself when habitual patterns and expectation are confounded. Then its evolutionary, adaptive character immediately steps forward in an attempt to work out what’s going on.

In Leicester I was also able to assess participant responses to a second audio programme: a linear soundscape composition built from the same sound recordings. The content and structure was fixed and because I made all the editing decisions its unreal elements were pre-planned and orchestrated. Sequences of events may have been easier to follow because of this, however it was still a mediated sound world so new listening practices were required. Observations were intriguing. Several people observed time as passing more slowly during the linear work and found it more immersive – while another person, however, found that time seemed to pass more quickly. Someone observed more manipulation in the linear work, which led to a questioning of materials and significance, while another suggested the works were actually identical. A preference was expressed for the Collidescope montage on the basis that it was “easier to listen to”. I note this as an interesting observation as the work presents a cut and splice soundscape that is far less true to everyday experience and more like sonic art.

So what am I discovering? Evidence is emerging of an unconscious relationship between a sound and its visual correlate: I have many reports of people looking in the perceived direction of a recorded sound. This evidences the survival aspect of hearing but also illustrates the alignment of listening toward the search for meaning highlighted by both Barthes and Nancy. Indeed, “What’s going on?” and “what’s making that sound?” were among the most frequently asked questions.

While 72% of participants in Whitstable found the work disorienting, only 37% reported the same experience in Leicester. In both cases the presence of voices or the movement of objects in the near-field aspect of the work were the triggers. These elements are less evident in the Leicester recordings – due partly to the greater levels of background noise – but also because it appears that when we are not inundated by the crowd in the urban environment we increase the ‘comfort zone’ of our own personal space to exclude close encounters.

In both Whitstable and Leicester a similar proportion of participants experienced an uncanny sensation – 44%/37% - while listening. While this was equal distributed between men and women at Whitstable, in Leicester 25% of respondents who reported this sensation were male, as compared to only 11%, female. This suggests further investigation; the benefits or

disadvantages of such an evolutionary adaption in male experience of the urban environment might have significant implications.

All participants at both events noticed the repetition in the work but very few commented directly on the rhythm – and I will be exploring this more at the next installation at the *Sounding Out 5* Conference at Bournemouth University in September. A number of people did however suggest there was a structure in the scrip-based montage. One Whitstable participant noted the repetition of wave sounds as a form of cyclic punctuation, separating series of sound events. This led her to seek typological significance in sound groupings. Here I am drawn to consider the observation of both Roland Barthes (1991) and Henri Lefebvre (2006) that the study of repetition and rhythm are integral to an understanding of time and the everyday.

When the flow of information is disrupted participant feedback suggests that content can still be unpacked: faced with confused meanings the brain extrapolates scenarios that best fit the data available – and sometimes the outcomes are very creative. Again rhythm and repetition play an important part. Nancy (2007, p. 17) highlights the importance of rhythm as that which separates the stroke of the present from linear time, giving time its time – facilitating the folding and unfolding which represents an aspect of the taking place of a “self”. This leads me toward a philosophical enquiry into the relationship between listening and self that very much engages with the core agendas of new publications by Salomé Voegelin (2010) and Brandon Labelle (2010). It also leads me toward a reading that acknowledges Daniel Dennett’s (1992) consideration of multiple-draft consciousness and a self-dialogic relationship with an internalized model of environment, which I propose, with reference to the work of Herbert Hermans (2004).

One difference between participant experience of the works at Leicester and Whitstable was the identification of humour in the latter. This was mostly located in relation to the spoken content, especially from children, or the encounters between adults and children and senior citizens. This suggests that while we may not consciously pay attention to spoken content in the soundscape we are aware of it, and it acts upon us: when the acoustic opportunity affords, it seems we are all eavesdroppers. One man, who I judged to be in his mid 60s, found

humour in the unexpected juxtaposition of sounds for which he imagined cartoon-like imagery. Several participants found the work nostalgic in as much as it reminded them of childhood and several commented that they found it deeply relaxing. This suggests that the sound of an environment plays a very significant part in mediating our mood, and establishes why some environments hold a lasting appeal.

Finally, as I move through different environments it becomes clear that the sonic character of the world sends us messages that mediate our point of engagement with other people. In Whitstable, for example, where the acoustic environment is highly conducive to human communication, we relax into behaviours and exchanges more commonly reserved for the intimate and the domestic. As social beings we are drawn to open spaces of collective engagement because our listening tells us they are safe and welcoming. Here, community supports us. As significance flows around us we are able to engage with both our inner dialogues and interpersonal relationships in ways that are more vividly human and expressive. Surrounded by less conducive sonics we close down towards introverted behaviours and extend our personal boundaries.

Appendix II – Questionnaires

A. Leicester questionnaire

Genre: (M/F).....

Age:.....

Listen to programme A for approximately 10 minutes. Please don't feel you have to concentrate fully on the audio, explore the space while listening. Before you begin, read the following three questions and complete them while you listen. Where appropriate, please be as specific as you can. (for example, write "crowd" not "people"; "double-decker bus" not "vehicle"; "woman walking fast" not "pedestrian" etc.)

When you finish, complete the questions on the other side of this page.

Then repeat the process for programme B (move the switch on the side of the headphones – you may need to adjust the volume control as well) for a further 10 minutes. The questions are identical. Thank you for your time!

Programme A

Question 1

Please list as many sounds sources as you can identify (e.g., old car, shingle beach, horse, etc)

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Question 2

What movement are you aware of? (e.g., walking fast, playing cricket, a milk float passing etc)

If the movement has an obvious function, please indicate (e.g., moving furniture, climbing a tree, trimming a hedge etc)

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Question 3

What spoken content can you identify?	Who is speaking? (e.g., old man, American woman etc)	What is the tone of the communication? (e.g., friendly, aggressive etc)	Does the communication have an obvious purpose (e.g., giving directions, work discussion, etc)	Does the communication reveal a perceived insight about the speaker? (e.g., self obsession, caring nature etc)

Programme A - questions continued over...

- Is the sound from one location or many?.....
- Is there a distinct time of day? Y/N - if yes, please specify.....
- Is the time of year or season evident? Y/N - if yes please specify.....
- Are there any unfamiliar/unnatural sounds? Y/N.....
- Is this a documentary field recording or has the sound been manipulated?.....
- Can you hear repetition in the work? Y/N.....
- Did this programme cause any of the following: (please mark appropriate box and add comment if you wish)
 - a. Disorientation [].....
 - b. An involuntary physical response leading to a search for the source of a sound []
.....
 - c. An uncanny sensation [].....
 - d. A noticeable change in your mood [].....
 - e. A tendency towards introspection [].....
 - f. Extrovert or social behaviour [].....
 - g. A specific emotional response [].....
 - h. Intellectual observation (please specify briefly if you can).....
.....
 - i. A change in your perception of time.....
.....
 - j. Other response or observation.....
.....
.....

Now move on to programme B...

Programme B

Question 1

Please list as many sounds sources as you can identify (e.g., old car, shingle beach, horse, etc)

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Question 2

What movement are you aware of? (e.g., walking fast, playing cricket, a milk float passing etc)

If the movement has an obvious function, please indicate (e.g., moving furniture, climbing a tree, trimming a hedge etc)

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Question 3

What spoken content can you identify?	Who is speaking? (e.g., old man, American woman etc)	What is the tone of the communication? (e.g., friendly, aggressive etc)	Does the communication have an obvious purpose (e.g., giving directions, work discussion, etc)	Does the communication reveal a perceived insight about the speaker? (e.g., self obsession, caring nature etc)

Programme B - questions continued over...

- Is the sound from one location or many?.....
- Is there a distinct time of day? Y/N - if yes, please specify.....
- Is the time of year or season evident? Y/N - if yes please specify.....
- Are there any unfamiliar/unnatural sounds? Y/N.....
- Is this a documentary field recording or has the sound been manipulated?.....
- Can you hear repetition in the work? Y/N.....
- Did this programme cause any of the following: (please mark appropriate box and add comment if you wish)
 - a. Disorientation [].....
 - b. An involuntary physical response leading to a search for the source of a sound []
.....
 - c. An uncanny sensation [].....
 - d. A noticeable change in your mood [].....
 - e. A tendency towards introspection [].....
 - f. Extrovert or social behaviour [].....
 - g. A specific emotional response [].....
 - h. Intellectual observation (please specify briefly if you can).....
.....
 - i. A change in your perception of time.....
.....
 - j. Other response or observation.....
.....
.....

Thank you for your time!

Marcus Leadley

Marcus.Leadley@wlv.ac.uk

B. Whitstable questionnaire

Age.....

Gender.....

- Can you identify where these sounds are from?.....
- Can you suggest the time of day? Y/N - if yes, please specify.....
- Can you name some of the sounds you heard?.....
.....
- If you heard voices, what mood were people in?.....
.....
- Could you identify what people were talking about?.....
.....
- Did you hear any unfamiliar/unnatural sounds? Y/N.....
- Were you aware of some sounds repeating? Y/N.....
- Did you find yourself looking around for the source of a sound? [].....
- Did you experience any of the following: (please mark appropriate box and add a comment if you wish)
 - a. Disorientation [].....
 - b. An uncanny feeling [].....
 - c. A noticeable change in your mood [].....
 - d. A tendency towards introspection [].....
 - e. Extrovert or social behaviour [].....
 - f. A specific emotional response [] if so, please specify
 - g. Did the time seem to pass quickly or slowly?
 - h. Did you prefer channel A or B? [] and if so, can you indicate why?
.....
 - i. Other response or observation.....
..........(please feel free to continue on the reverse of this sheet if you wish)

Thank you for your time. Your contribution to this research is greatly appreciated. For further information contact: Marcus.Leadley @wlv.ac.uk

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