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# The language of aural space: environmental sound, being and experience

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I am a research student at the School of Art and Design, Wolverhampton University and my PhD explores the hypothesis that our understanding of environmental sound is moving beyond its consideration as object or event towards a new model, sound as language. I argue that this partly reflects a shift in perspective as a consequence of the transition from early 20th century modernist viewpoints – as expressed through grand narratives, the rule of scientific rationalism, and taxonomic classification – to a more pluralistic, relational and interactional model in step with postmodern cultural practices. I have also identified work in soundscape studies, acoustic communication, psychology, linguistics, ecological acoustics and philosophy that supports the emergence of a language-like model for environmental sound. Building on the ideas of Roland Barthes, listening is related to the flow of significance and remains associated with speaking. My inquiry explores and deepens the conceptualisation of speaking to include all aspects of human communication and action, establishing a dialogue between the natural world and human presence as expressed through its sounding aspects. A language-like model is further supported by study, specifically in linguistics and ethnography, which suggests that the comprehension of individual sonic elements within the soundscape and the relationships between sounds in terms of cause, effect and consequence – sequential patterning in time – created the fundamental conditions from which language developed.

While my research is interdisciplinary I locate my practice within the field of soundscape studies as conceptualised in the late 1960s by R. Murray Schafer[1] at Simon Fraser University in Vancouver. The practical methods I use are field recording, soundwalking and soundscape composition. For the purpose of taking the study forward for a contemporary relevance, I also draw widely and adapt methods from other forms of sonic art, explore the creative use of software and develop internet based solutions for content dissemination and public engagement with research. In the summer of 2008 I developed a project called *The Sounding Shore* as part of Whitstable Biennale's satellite programme and the practice-led approach to research developed has become part of the methodological framework of my PhD.

Whitstable is a small town on the Kent coast about 5 miles from Canterbury. Unlike neighbouring Herne Bay, which changed considerably under the aegis of Victorian tourism, Whitstable remains a working port and dredging for oysters continues to this day. A cast iron harbour, built in 1832, helps define the character of the town. So too does a quayside fish market and a seafront where the gardens of weather-boarded houses back directly onto a shingle beach. There's no promenade as such and no major roads near the beach so the area has a unique sonic character, which I felt would make an ideal study.

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My initial approach to the Biennale organisers was very simple: an installation based on recorded sound from the walk between the Old Neptune public house and the harbour (about a mile) which could be presented on the beach, using wireless headphones. Why a headphones network? Something that has interested me for a long time is the difference between hearing and listening. The use of headphones suggested itself initially as an answer to one of my early questions: how might the playback of location-specific recordings *in situ* be used to encourages a real time perceptual change from hearing to listening? The use of headphones also creates a controllable acoustic experience for working in outdoor locations.

I made a number of visits to Whitstable and recorded walks along the coast and studies of what Schafer calls keynote sounds and soundmarks[2] The first are sounds that are heard frequently enough to form a background against which other sounds are perceived. Examples include the sea, the pervasive sound of tennis near the seafront courts and electrical equipment near the harbour. The second classification consists of sounds that possess qualities that make them specially regarded or noticed by the people in that community, such as the hauling of anchor chains, footsteps on the shingle beach or the local ice cream van. In addition I recorded more generally representative sound events of the type a community might overlook: water running fast beneath a drain cover or a squeaking pub door. I edited down the recordings and isolated sections, roughly between three seconds and three minutes, which I felt fulfilled the roles of representative, expressive and sensed aspects of the location. These classes are adapted from those developed at the *Centre de recherche sur l'espace sonore et l'environnement urbain* (CRESSON)[3] at the University of Grenoble. They provide a useful cross-check with Schafer's classifications to ensure the environment is fully documented. Representative sounds are familiar to all: the overall sound of the beach or quayside; expressive sounds are associated with personal experiences such as a garden, alley or other arbitrary place and sensed sounds convey a specific sense of place, such as the interior of The Old Neptune or Whitstable Fish Market. For about six years I have been using a website as a means of self-publishing sound work and I set up a new section for this project. I also produced a twelve-minute linear soundscape composition using Pro Tools, as a sonic *précis* of the location, to highlight its diversity and richness. All the audio material was uploaded to the website along with photographic documentation and some commentary. My idea was that people should experience these aspects before the installation – which represented a third level of treatment of the same sound material.

With the field recordings and composition I used a minimum of sonic treatment because my purpose was to re-present the everyday. With the beach installation however I wanted to observe the effects of changing the speed, duration and repetition of sounds. I was also keen to relinquish direct control over the recorded soundscape in order to avoid a musical aesthetic entering the frame so I decided to randomise the playback of sound files. Using Max/MSP I programmed a simple patch with four, four voice sound file players, a random number generator and a metronome for triggering. This proved too chaotic and mechanical so I reintroduced a level of artistic control, in the form of loose metrical rhythm and playback delays, by using the onset timings of certain words in a text-based score to control triggering. This gave the patch a constrained level of performative indeterminacy.

The work was installed on the 22nd June 2008 and I invigilated in order to gather feedback. Approximately thirty people participated. By balancing the recorded sound level with the ambient level the transition from the real to the mediated experience was almost seamless. I expected people to move about and explore the beach while listening but this wasn't generally the case; by far the most common response to the installation was a move from an outward focus to a more introspective attitude. This generally happened between thirty seconds and a minute into the experience, around the point when a

participant realized they were listening to recorded, not live, sound. I should make it clear that I deliberately didn't introduce the work as recorded – simply as the "sound of Whitstable". One comment in particular, "it's about listening to the sounds you don't normally hear", seemed to sum up my objective rather succinctly. Roland Barthes,[4] Pierre Schaeffer,[5] Barry Truax[6] and Jean-François Augoyard[7] have all proposed different forms of listening but there is general agreement[8] that hearing is a faculty selected by evolution for its contribution to survival and orientation. Hearing is habitual, passive, often unconscious but always vigilant. So I read the response to an installation which partially disrupts the logical sequence of events and renders some sounds unfamiliar as an example of the transition from what Truax calls *listening in search* to *listening in readiness*: from the background processing of familiar sounds without conscious attention to the focused search for detail and information. Certainly, "what's going on?" and "what's making that sound?" were questions I was asked on several occasions. Indeed, the focus on the source of the sound rather than its acoustic properties supports James Ballas and James Howard's observations[9] that recognition is always directed towards meaning. Terms like 'weird' or 'spooky' were used by a couple of participants and the commingling of the familiar and the unfamiliar is something to which Freud ascribes the ability to summon the uncanny in his essay, *Das Unheimliche*.[10]

Children experienced the work differently to adults. By far the most common response was a search for visual correlates to sound. One little girl, turning frantically on her heels, asked "where's the doggy?" Her mother's answer, "he's in the computer" and the child's acceptance of this fact struck me as deeply indicative of the times we inhabit – how the separation of sound and source and the real and the virtual are ubiquitous cultural norms, learnt pretty well as soon as one can learn anything. The installation highlighted for me the absolute role of hearing as the focussing device that directs attention – not just serving the needs of survival but engaging with centres of longing, enthusiasm, interest and excitement.

On average, people stayed with the experience for between three and six minutes. One person, on finding out about the written score became intrigued by the idea that the work might be about "the gaps between words". Another, to whom I explained the random nature of playback, said the work reminded her of an ancient Greek saying about a river never being the same twice. Plutarch[11] reports Heraclitus as saying "you cannot step into the same river twice." Mapping this idea onto the installation reveals a potential trajectory toward Nietzsche, discussion of the eternal return and toward Heidegger, modern existentialism and postmodern cultural theory. After the event I developed the website further to include photographic documentation of the installation, sound recordings and a brief review of the Max patch. This remains online as a permanent archive and it can be visited at www.marcusleadley.com.

While the *Sounding Shore* made an assessment of the research potential possible, the feedback was entirely anecdotal and a more rigorous framework for testing aspects of sonic perception, comprehension and understanding is required. The laboratory-based techniques of James Gibson,[12] Nancy VanDeveer,[13] James Ballas and James Howard[14] in the field of ecological acoustics, concerning the interrogation or meaningful non-speech sounds, have been highly influential. Here, we see the first attempts at testing perception using real-world sounds, groups of participants and statistical methods. This work, which was carried out during the 1960s, 70s and 80s, helped established the degree to which agents, materials and processes can be identified from environmental sound. It also established a number of similarities between the perceptual processing of speech and environmental sound: the similar patterning of semantic interpretation for different participants; the potential for native and proscribed grammars for the purpose of content recognition; the problematic nature of both speech and sound homonyms and the

importance of devices such as rhythm and repetition for recognition. Soundscape studies itself has an established methodology which includes the use of surveys, questionnaires and interviews, as evidenced by the World Soundscape Project's European *Five Villages Soundscapes*[15](1975), *Kanda Soundscape Project* in Tokyo[16] (1986) and the *TESE* project on the Scottish Islands of Harris and Lewis[17] (1999). Combining strategies from psychology and soundscape studies with the possibilities afforded by portable digital sound recording, processing and presentation equipment and the aesthetics of sound art and compositional practice, provides a powerful set of complementary tools for investigating aural perception in real world settings. Psychology can tell us what may usefully be tested and how, social science methods can provide detailed information about locations, expectations, understandings and experiences and artistic practice delivers the raw and developed materials needed for the exploration. To my knowledge the nearest equivalent methodology is that of The Positive Soundscape Project[18] which is a current collaboration between the University of Salford Acoustics Research Centre, Warwick University Manufacturing Group, London College of Communication and Manchester Metropolitan University. This combines urban soundwalking practice with perceptual lab tests in acoustically neutral environments, Peter Cusack's *Favourite Sounds* project and a soundscape sequencer, which allows participants to structure their own 'ideal' urban soundscape. The project produced its final report in September 2009 and I am in the process of incorporating these results into my own study.

So, to sum up, the programme I have planned for 2010 will feature a series of research installations based on field recordings and soundscape compositions. These will share the same direct relationship to place as the *Sounding Shore*. The next phase will see the same material deliberately separated from its location and recontextualised using 8-channel diffusion techniques in the concert or gallery environment. In both cases in-depth interviews and general questionnaires will be used to collect experiential and perceptual information. The third phase of the research will see the same sonic materials redeveloped into a set of sonic experiments to be administered via a project website. In order to achieve an appropriate degree of scientific rigour WebExp2, a Java tool kit for designing and conducting online psychology experiments will be used. This is being developed at The University of Edinburgh School of Informatics.[19] Experiments are designed around a sequential stimulus/response 'questionnaire' model and stereo audio is supported. For this phase additional sound material from other parts of the world will be added to the resource pool so that participants will also be responding to materials that are not automatically recognizable by cultural cues. The object here is to assess the degree of soundscape content awareness and understanding when familiar aspects are absent.

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