TECHNO-INTUITION: NOTES ON USING SOUND TO RELATE TO OUR ENVIRONMENT.

Yolande Harris

www.yolandeharris.net

ORCIM (ORPHEUS RESEARCH CENTRE IN MUSIC), ORPHEUS INSTITUTE, GHENT

Abstract

Techno-Intuition embraces the combined roles of mental, physical, and technological processes in building relationships to one's environment through sound. It recognizes parallels between technological methods of making the inaudible audible and more esoteric techniques for revealing aspects of the unconscious. In many cases, relationships to environment drawn through sound are profoundly bound up with technology. In order to hear, collect, transform, study, analyze, and intervene through sound, special instruments must be designed. Such a hearing-through-technology raises questions as to how these instruments enable as well as inhibit certain forms of knowledge. These questions are addressed through examples from practitioners, including the author, who actively research the area between technology, intuition and the sonic environment. I consider an expanded notion of 'instrument' that emphasizes context and the environment it is placed in. Blending the (technological) instrument with (non-technological) intuition through physical practice, listening, and experimentation, promotes an attitude to both instrument development and artistic production that, by being more attuned to and aware of context, is potentially more sustainable and sensitive to environment.

Charging the Space Between Technology, Intuition, Sound, and the Environment

'Techno-intuition' recognizes the implicit coexistence between the creation of meaning and the technologies we use to sense and know (and navigate through) our environment. In many cases, relationships to environment drawn through sound are profoundly bound up with technology. In order to hear, collect, transform, study, analyze and intervene through sound, special instruments must be designed. Such a hearing-through-technology raises questions as to how these instruments enable as well as inhibit certain forms of knowledge.

As a practicing artist working with sound, I explore such a merging between corporeal and technological modes of perception. In these notes on techno-intuition I consider an expanded notion of 'instrument' that emphasizes context and the environment it is placed in – by context I refer to an understanding of one's place as an element within the larger environmental system. Blending the (technological) instrument with (non-technological) intuition through physical practice, listening, and experimentation, promotes an attitude to both instrument development and artistic production that, by being more attuned to and aware of context, is potentially more sustainable and sensitive to environment.

My examples involve sound as a medium that facilitates, expands, and articulates relationships between interacting elements of complex ecologies. This paper addresses these main topics: 1) the transformation of instrument from object to environment; 2) walking, sailing, and swimming as embodied ways of exploring techno-intuition in the environment; and 3) making the inaudible audible and exploring the sonic unconscious. I will map these ideas through examples from practitioners, including myself, who actively research the area between technology, intuition, and the sonic environment.

Instruments in the Environment

I think of a musical instrument in terms of energy and sonic vibration, and am particularly interested in the impact of instruments and sound technology on ways of listening and understanding environmental context. Conceptually, my own instrument design is based on facilitating techno-intuition by absorbing technologies into an intuitive way of moving through one's environment. The journal paper 'Inside-Out Instrument' (Harris 2006), describes the reconfiguration of the traditional relationship between a musician's instrument, body and technology. Since the development of the loudspeaker and electronic sound technology, sound is commonly detached from the source of the performer's body and instrument, in effect becoming dispersed in a space surrounding the musician. In this work, the traditionally intimate relationship between body, instrument, and sound production, is turned inside-out so that the instrument can in effect be inhabited rather than held. The *Video-Organ* and *Video-Walker* were instruments I designed to allow the dynamic placing of image and sound in various architectural and environmental contexts (Bongers and Harris, 2002). My *Satellite Sounders* sonified GPS data in order to provoke a re-experience of navigation and a renewed sense of embodied location in environment. This work strives "towards a hybrid between these two ways of knowing, between navigation through technology and intuitive embodied navigation – a techno-intuition" (Harris and Dekker, 2009).

Recent research into ship navigation and submarine cartography offer further examples that support a conception of an intuitive relationship between the body, instrument, and environment. Although not specifically concerned with sound, cognitive scientist Edwin Hutchins investigates group collaboration in coastal navigation on a large ship. His research emphasizes the importance and abilities of complex group interactions to develop that absorb technological interfaces when relating to one another within ever-changing environmental surroundings (Hutchins, 1995). Anthropologist Stefan Helmreich describes similar intuitive collaborations between scientists immersed in a varied soundscape of navigational aids, background music and verbal communications as they map the sea-bed in research submarine Alvin (Helmreich, 2007).

From this perspective a more expansive notion of instrument can be developed. By extending our sensory and cognitive capabilities through instruments, often in group collaboration, one can imagine the emergence of an environmental or even "submarine cyborg" (Helmreich, 2007: 627) that can experience extreme and uninhabitable environments, such as deep sea, through the extensions of technology. And by extending our perception beyond the human audible range - by making the otherwise inaudible, audible - we can, for example, learn much about the central role of sound in underwater ecologies. Alvin Lucier's *Quasimodo, the Great Lover* (1970) and *Vespers* (1968), the first inspired by the humpback whale's ability to send sound over very long distances, and the second inspired by bat's ultrasound capabilities, explore not simply the sounds themselves, but the processes by which such sounds act within the environments they inhabit. Learning more about how other species use sounds within their habitats may inspire ideas on techno-intuitive approaches for our own interaction within the environment.

Walking, Swimming, Sailing

Walking, swimming, and sailing relate one physically and mentally to the space and medium being moved through. *Swim* (2011) is an installation made up of single channel video and stereo sound. Recording from an ocean swimmers viewpoint, I capture the rhythm of breathing and physical motion as the sound and image alternate between above and below water, cutting through the surface, exploring the physicality of sound through a direct involvement with environment. The "constellation" of body-imagination-world is an experiential, first-person relationship to environment generated by walking (or swimming) through it (Solnit, 2001: 291). How can technologies expand, complement, and question such experiential relationships to the environment rather than alienate them? Could this be a way to generate techno-intuitive relationships to our environments?

Presented perhaps most emblematically in Richard Long's *A Line Made by Walking* (1967), this constellation is also a key to the 'sound walks' by R. Murray Schafer and Hildegard Westerkamp of the Acoustic Ecology group beginning in the 1970's, and subsequent generations of sound artists such as Christina Kubisch's *Electrical Walks* (2003) which make inaudible electromagnetic fields audible via a headphone instrument. In particular, Westerkamp concentrates on heightened listening to environmental sounds within the environment and to identifying group behaviors that develop out of this state of awareness when being guided predominantly by sound rather than sight. Through walking participants explore these everyday sound worlds, activating the constellation of body-imagination-world (Westerkamp, 2010).

Walking as a means of embodied experience of movement in environment has featured prominently in my own work since *Walk for an Absent Public* (1995). I also have explored other forms of motion, such as sailing and swimming. For example, *Symphony no.2: Sargasso Sail across the Bermuda Triangle* (1997), involved a week long sail through the mysterious location notorious for ships lost at sea. Compared with walking, sailing demands a more immersive, inhabited relationship between the body, instrument and environment. The boat is an extension of the sailor - in effect an instrument - and the art of sailing combines the ability to control this instrument with complex, unpredictable, and ever-changing environmental factors. These experiences laid the foundation for further experiments with the environment and, in particular, the importance of interacting with navigation technologies to build meaning via movement through an environment.

An Intuitive Navigator *Sun Run Sun: Satellite Sounders*

Traditional techniques of ocean navigation involve observation of the sun, moon and stars, weather, wave, and current direction. Historical instruments like the astrolabe and sextant could be used to calculate position in an otherwise unidentifiable seascape. Current GPS satellite navigation systems use the same basic principle of triangulation, but connect to orbiting satellites, greatly increasing accuracy, while diminishing traditional navigation skills based on observation of the environment. My work examines these different forms of navigation from a subjective, first-person perspective, asking the questions: what does it mean to navigate? What are the bodily experiences of finding one's way? And how do different modes of navigation shape our understanding of the environment we are moving through?

Rethinking walking in terms of a technological relationship to environment, I created *Taking Soundings* (2007-8) and *Sun Run Sun* (2008-9), which explore historical, contemporary, and animal navigations through sound. These projects created GPS sonifications, maps, installations, performances, and the Satellite Sounders, custom electronic instruments, designed to explore /enhance techno-intuition by conflating utilitarian applications of GPS with artistic sonic interpretations. Curator Annet Dekker contrasts *Sun Run Sun* with many locative media practices using current mobile technologies that "evolve around an interest in new tools, and without questioning them … asserting the aesthetics of the consumer market and affirming the control society." She refers to the *Satellite Sounders* as "an intuitive navigator" that "provides people with new experiences not just of space but also of body and mind. Affect of place is constituted here through technology; its relation to the body in movement is what makes its affect felt" (Dekker, 2010: 3). Media theorist Susana Zaragoza discusses *Sun Run Sun* as provoking knowledge gained through a qualitative, embodied experience of place. "In fact, a different sensitivity to one's immediate surroundings and one's position on Earth arises … A performative practice is necessary in order to understand this new logic of our current calculative world" (Zaragoza, 2010).

Field Recording and the *Displaced Sound Walks*

Field recordings often aim to audibly 'represent' environments that may be otherwise inaccessible to the listener, and in doing so neglect complex layering of spaces and times inherent in recording and replaying sounds. My *Displaced Sound Walks* (Leipzig Contemporary Art Museum, 2012) furthers the process of hyper-aware listening while walking, described above. Using a collaborative, workshop-like creative process, I play with prerecording the ambient sounds of predetermined routes. A visitor to the exhibition listens to these recordings on headphones while physically retracing the same path.

The meaning generated by a sound or 'field' recording differs dramatically depending on its placement in both place and time. If I walk down the street I listen primarily to sounds that facilitate my movement and navigation of space, working in combination with the other senses. If I play a sound recording of that same walk back to myself in a quiet space I listen in a different way, without the need to process and interpret sounds immediately for action, motion,

and understanding of my environment. However, if I play that same recording back to myself while making the same walk at a later time, I am confronted by a disjunction between my listening and my environment; my intuitions based on sonic cues conflict with the visual evidence I see before me. For example, I may recognize the road, but not see the car that I hear pass by me. I see someone walking towards me, but the footsteps are out of sync with the sound I am hearing. Through this experience I became consciously aware of my listening process and the function of hearing in orientation, movement, time, and being in that place. In her analysis of the work media theorist Marta Colpani describes perceptual shifts that generate an enhanced bodily awareness, "…mak[ing] the participant extremely aware of the functioning of his body when feeling and perceiving reality" (Colpani, 2010). The first *Displaced Sound Walks* (Orpheus Institute, Ghent, 2010) provoked diverse reactions in the five participants, ranging from paranoia, to indifference, to a heightened awareness of environment and sensory perception.

Making the Inaudible Audible and the Unconscious Conscious

Techno-Intuition embraces the role of mental processes in building relationships to one's environment through sound. It recognizes parallels between technological methods of making the inaudible audible and more esoteric techniques for revealing aspects of the unconscious, such as Pauline Oliveros' Deep Listening techniques (Oliveros, 2005). It joins these to expand our perceptual and cognitive capacities when listening to and making music or when interacting with the environment. Recognizing such a 'sonic unconscious' also has clear parallels with the treatment of inaudible sounds, in terms of how we bring what we cannot physically experience into our conscious understanding. The dual process of making the inaudible audible and of tuning in to the unconscious mind of dream states (and folding it into the waking conscious mind) is central to my approach to techno-intuition.

I addressed these issues in a solo show of combined installations and performances from my *Scorescapes* series in the Sonic Unconscious program at Issue Project Room, New York in 2012. The underwater sounds in *Fishing for Sound* (2010) include insect, fish, dolphin, and man-made sounds of engines, depth finders, and anchors collected by a simple underwater microphone. Listening via a hydrophone to the soundscape beneath the apparently idyllic surface of the video of a turquoise sea, brings into consciousness elements of the environment we otherwise would not see or hear. The electronic sounds of sonified GPS data resonate with the accompanying video looking through the viewfinder of a sextant on board a boat. All these connect in the mind, where a clicking sound moving from left to right once per second refers to EMDR treatments (Eye-Movement Desensitization and Reprocessing - a technique used in psychotherapy for treating Post-Traumatic Stress Disorder) which use sound to help a patient navigate through associations and memories. *Fishing for Sound* creates a sea of spatial connections between these disparate spatial phenomena - underwater, in the mind, and from outer-space - weaving sounds from marine environments, psychotherapy, and sonified navigation satellites. Common to each of these is a mass of background noise - of environment, memory, and information - where listening is like fishing for sounds.

Concluding thoughts

Techno-intuition builds on this approach to involvement, not only by direct physical interaction, but by a level of commitment to listening, using a first person perspective and multi-sensory video and sound, to draw one in to sound worlds that are unfamiliar. This kind of approach can, I believe, move us closer to redefining the role of composers, sound artists, and sonic ecologists as activators of a sustainable attitude towards the sonic environment, one that is less passive than the genre of field recording and more immersed and committed to the environment.

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Bio

Yolande Harris' artistic research projects *Scorescapes* (2009-2011) and *Sun Run Sun: On Sonic Navigations* (2008-2009) explore how sound relates humans and their technologies to the environment. Yolande holds a Ph.D (Leiden University, 2011); was Sound Art Fellow (Academy of Media Arts Cologne 2006); Artistic Researcher (Jan van Eyck Academie 2003-5); has an M.Phil. (University of Cambridge, 2000); and a B.A. in Music (Dartington College of Arts,1997). Her installations, performances and lectures are presented internationally in the context of visual art exhibitions, music venues, media art festivals and fellowships.