

Ecological Interference: Hybrid Soundscapes

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(This proposal is linked to a paper proposal for the conference)

Artwork: Hybrid Soundscape

This artwork responds to the ideas raised during a time of research and recording in 2015, it explores the way in which humans adapt to technological soundscapes but perhaps ignore how other creatures respond to new sounds in their environment. Sound and noise are subjective, they are experienced differently depending on culture, however, there is little research examining how the biophony responds to the anthrophony. This work, an immersive soundscape, intermingles this constant friction between the noise of humanity and the soundscape of nature. It uses the audio and video recordings from these two different spaces, the human voice and the sounds of technological interference to create a human/nature hybrid soundscape.

Abstract

This work is an artistic exploration of a paper submitted for this conference. The artwork examines through video and sound the impact of renewable technologies on natural soundscapes. The work is responding to two field trips taken to Iceland and the Terra Alta Region of Northern Spain in the summer of 2015. During these two trips it was found that sounds produced by two technologies, hydroelectric power station and wind turbines, produced consistent low frequency sounds audible within the natural acoustic ecology. This work uses the recordings from these two different spaces, along with my voice and the sounds of technological interference to create a human/natural soundscape. The artwork is a response to how one can both critique the soundscape of these technologies and explore concepts around adaptation to new sonic environments.

Documenting the Iceland soundscape

In June of 2015 I was part of an audio field-recording group that visited the southern region of Iceland. One of the primary goals for most of the recordists was to document the natural soundscape, hopefully absent of man-made sounds. Iceland, with its vast uninhabitable landscape and small population, less than half a million people, is considered one of the few remaining landscapes to escape the soundscape of humanity. This can mean greater opportunities for recording a clean sound. Because of its harsh environment, long dark winters, live volcanoes and arctic temperatures most areas within Iceland are uninhabitable. This means that the landscape and by definition, the soundscape, remains untouched by human sound.

Technological interference: the sound of nature harnessed

In Iceland one of the greatest uses of its natural landscape is hydroelectric power. With many vast rivers and waterfalls it is an immense natural resource. In comparison to oil or gas companies the ecological impact is minor. These power stations sit above and deep below the land, with massive engine rooms turning powerful fans, producing electricity. A visit was arranged which allowed the group to record the soundscape of the station. Inside there were four levels each going down deeper into the earth. At each level the sound became louder and on the lowest floor, where the river was harnessed the sound of the water was intense, producing a physical pressure within the ear. After several hours of recording, using contact, binaural and boom microphones, the sounds began to affect several of the recordists, with some forced to leave the building. Outside the station the sounds were faint, but beneath our feet the wave propagation produced by the turbines was travelling through the land and the river.

Before entering the station the sounds heard seemed subtle, gentle even, increasing the impression that this form of energy production must have little or no impact on the acoustic sphere. However, after travelling through the depths of the station, and experiencing the physical and audible impact of the sounds produced within, it was impossible to ignore the potential for these sounds to impact on subterranean or underwater ecosystems. Low frequency sounds have the potential to travel through objects and surfaces

(Howard & Angus, 2009) and are known to cause physical reactions (Stocker 2002). After placing a hydrophone in the river outside the station it was possible to hear the constant low rumble of the turbines as they harnessed the river.

The Terra Alta turbines July 2015

The Terra Alta region of northern Spain is a vast mountainous area. During the summer the high temperatures parch the landscape, riverbeds dry up and fallen leaves and branches quickly turn brittle. The field recordings took place primarily around the village of La Fatarella, a municipality within the region of Ribera d'Ebre in Spain. The surrounding area consists of Finca's (A piece of rural land, which typically has a farmhouse or cottage present); the landscape, though rocky and dry allows farmers to produce crops of olives, almonds, grapes and cherries. During the day crickets dominate the soundscape, only slowly disappearing as the cool of the night sets in.

In the last ten years a new sound has emerged within the surrounding region, the sounds of hundreds of wind turbines.

These technologies used for harnessing wind power now shape both the visible and audible space of this region.

During the day, from a distance, these monolithic objects seem silent as they turn with the wind; at night their presence is made visible by a ring of red lights flashing on and off to warn pilots. Up close the sound of the turbine is a constant whush, whush, changing when the wind changes. As the blades turn they also momentarily darken the landscape covering and interrupting the ecology. They sit within a vast sensory space of smells, sights and sounds, most of which have evolved over time to fit together. The only other sound to match the mechanical nature of the turbines is the repetitive chucka, chucka, chucka of the crickets. However, unlike the turbines, the crickets respond to other sounds, going silent when for example, one walks close by. Yet the contradiction of the turbine is that it too has been constructed to respond to nature, only moving when there is a wind.

Whitehouse (2015) would contend that within nature there is a call and response soundscape, where each sound fits within a bandwidth, and occupies "a distinct sonic niche" (Whitehouse 2015:57). This niche has evolved over tens of thousands of years and contain what Krause calls the biophony - the sounds of animals, plants and organism, and the geophony - environmental sounds such as wind, rain, waves etc. Yet the whush, whush of the turbine is neither calling nor responding to the soundscape of this ecology, it is the anthrophony - a human made sound. It has no particular place within the natural spectrogram. It is tapping into the wind and turned by the wind but it is not in conversation with this space. However, this form of technology is ecologically friendly. It is an attempt to change the way in which humans extract power from the land; it does not burn, visibly pollute or damage the ecosystem.

Bibliography

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Biography

O Keeffe is a lecturer in sound studies at the Lancaster Institute for the Contemporary Arts, Lancaster University. She works as a sound artist and has created work for public installation, gallery exhibition, radio, dance and theatre. She is currently working on two sound projects, which explore gender issues in sound technology, and post colonialism in Ireland and Australia.

Technical requirements

The work is an installation piece, it requires a projector and stereo speakers. It is best if the work is experienced in a darkened space.

Links to works

My [website](#) which contains my CV of work
The video I am submitting for installation is at this [link](#), it is a low quality video, the full piece is over 2 gigs.

Three examples of previous works

[Exhibition in the Leitrim Sculpture Centre 2014](#)

[Work created with community group 2015](#)

[Work created for album Metamorphosis and Praxis 2011](#)

