

Electromagnetic Landscape – In-between Signal, Noise and Environment

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Abstract

Electromagnetic Landscape demonstrates in direct, tangible and immediate ways effects of the disruption of the familiar. An ubiquitous technological medium, FM radio, is turned into an alien and unfamiliar one. Audience participation, the environment, radio signals and noise create a site-specific, ragged sonic landscape. The work exhibits intrinsic, non-trivial, emerging behaviour, cyclic or wave-like, which converges and ebbs. It varies its sonic and visual display through a dynamic interaction of light sources, fog and light sensors. The system maintains a fluxing state of ambivalence between proximity and distance, engagement and rejection, curiosity and annoyance; it slips in and out of participants' control.

Keywords

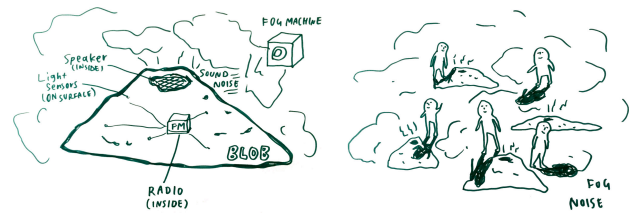
Radio, environment, noise, participation, disruption, alienation, installation

Description

The *Electromagnetic Landscape* installation consists of five shiny, hard and alien-looking thin resin/fibreglass black blobs which sit in different places on the floor in a dark indoor room (Figures 1–2). The irregular shaped blobs look semi-volcanic. Each blob is 20–70cm high and 20–50cm across and has a crater on top. The craters are taken up by large diameter loudspeakers with central, strong, upward-pointing light-sources. The blobs are equipped with FM radios (hidden under the speakers), light sensors (in the crater rims) and small fog machines.

Participants control the radios by (un-) covering the light sensors. Light from the blobs is reflected by e.g. people's hands, arms and pieces of clothing, by the fog emitted from the blobs and the ceiling of the room. The more light the sensors detect, the louder the radios play, the higher their FM frequency, and the brighter the lights (it uses a similar technical basis as the authors' previous *EL-O* installation (Figures 3–4)¹). Fog machine(s) are used periodically (for

approximately one minute every 20 minutes) and independent of participant action to maintain an alien atmosphere and provide cyclically changing lighting conditions.



Figures 1 and 2. Sketches of the installation

The landscape is experienced as louder and more dense with information the more people are present in the installation and interact with it. Participants can enjoy or endure a collage of music, speech and noise or try to tune several blobs into the same radio station. But the system is quite unstable and hard to control. There are influences outside of the participants' control, e.g. the room's ambient brightness, outside brightness (if the room has windows or open/glass doors) and fog eruptions.

The installation's systemic behaviour is site-specific (i.e. lighting conditions, FM reception) and time-dependent (e.g. radio program schedule, fog). The *Electromagnetic Landscape* can only be experienced as a process, and only by people who are present and engaged in creating it. All system (re-) action is created in real time, during and through participant intervention. The system exhibits intrinsic, non-trivial, emerging behaviour, cyclic or wave-like (such as chain reactions and feedback loops), which converges and ebbs.

Rationale

The work demonstrates in a participatory and immediate way effects of the disruption of the familiar. It makes an ubiquitous technological artifact appear unfamiliar – a way

¹ Shown at Wundergrund Festival, Copenhagen, Oct 24–Nov 1, 2014; Digital Interactive Art Space (DIAS), Copenhagen, Sep 25–Oct 26, 2014; Hitparaden 2 – International Festival for Performance Kunst, Copenhagen, September 18–21, 2014; for a

to make apparent as well as question modes of automated perception (Brecht 1964:192).

The installation plays off the participants' expectations, predictions, experience and actions. The system maintains an instable state of ambivalence between proximity and distance, engagement and reflection, comfort and disorientation, known and unknown, attraction and rejection, curiosity and annoyance; its systemic expression includes elements of dissonance as well as of convergence. The effect is oscillation, tuning out *and* in, into noise *and* signal.

The installation looks and feels like a strange place on a different planet. As a visual metaphor, the landscape rejects a mimetic display: The work is realized as an alien, foreign, formless and abstract landscape – a kind of non-landscape, or anti-landscape, which is out-of-tune with everyday experience.



Figures 3 and 4. *EL-O*, first version, Wundergrund performance and DIAS installation

Interaction and Experience

Brecht's *A-effect* turns 'the object of which one is to be made aware, to which one's attention is to be drawn, from something ordinary, familiar, immediately accessible, into something peculiar, striking and unexpected.' (Brecht 1964:143) *Electromagnetic Landscape* uses alienation as a tool to invite reflection, investigation and critique. The idea of alienation appears to run counter to mimetic fidelity: The medial display becomes grainy and intransparent when it acts as its noisy self, and interferes with the signal. The piece shows how elements of medium-specific noise (Fetveit 2013) can be used as an aesthetic translation of the alienation-effect. In the work, alienation is taken not as a position towards its originality or truth (which would be fake), but as a method towards audience engagement.

The work is intended to open spaces instead of closing them, and to confront participants with rather than comfort them with a technology in a surprising way. Participants 'get [...] irritated with the everyday, 'self-evident', universally accepted occurrence' (Brecht 1964:140). The work playfully challenges the audience and plays with its expectations. Participants can respond to the challenge, play with and explore the system's behaviour.

The A-effect is extended: The interaction corresponds to the conceptual position of ambivalence; the audience is engaged in an oscillating performance. It is both, participating in forming the landscape and in observing it. Participants are continuously in control of some aspects of the

system, but other parts slip in and out of their control or constantly lie outside of it.

Audience participation, the environment and radio signals and noise create an emerging, site-specific and ragged sonic landscape. The engagement with the medium relies on and is intersected by presence, movement and touch in the space. The participation creates what is experienced in terms of light and soundscape: Unique auditive and visual patterns emerge and disappear, sometimes in unobtrusive, often in disruptive ways. The process is in-flux; wave-like oscillation, up and down, on and off. The participation of the audience on location carries and initiates the action. The interaction happens between participants, blobs, audio signals, space, light sources and fog.

Related Works

Electromagnetic Landscape questions communication media as a channel for only communication, information and signal. The project is concerned with what the audio-visual expressions people experience in the piece have to offer in terms of noise or non-communication.

In 'Signal-Rausch-Abstand' from 1988 (signal-to-noise ratio) German media historian, Friedrich Kittler writes about the materiality of communication systems. He focuses on how materiality is linked to the phenomena of noise and shows how noise is a fundamental element in understanding communication technologies – or systems of information as Melle Jan Kromhout writes in his introduction to the text (2012:5). Kittler scrutinizes the statistical formalization of communication by mathematician Claude Shannon who argues that communication is in the presence of noise; that noise is alongside the information/signal.

Kittler discusses Shannon's argument that sets out to show that the maximum communication of information turns into a statistical improbability, because the information becomes very hard to separate from noise. Kittler tests Shannon's theory and makes a statistical experiment using letters in random order: 'XFCML RXKHRJFFJUJ [...]' (Kittler 1988:346) – but due to the choice and placement of the letters according to their probable occurrence, Kittler's experiment generates English-ish words that in his eyes resemble the words in James Joyce's *Finnigans Wake*: 'IN NO IST LAT WHEY CRACTICT [...]' (ibid.).

Kittler states that this experiment is an attack on writers by noise ('Diese frontale Attacke auf englische Schriftsteller oder auch Teufel führt selbstredend das Rauschen [...]') (Kittler 1988:347) – that shows noise is part of the signal. Communication channels emit noise, and signals mimic (where possible) disturbances ('Signale üben tunlichst Mimikry an Störungen' (Kittler 1988:344–345)). Statistically, signals emit noise (Kromhout 2012:4). Engineers might equate information with signal, but Kittler includes noise in his notion of information and proposes an inseparable crosslinking of signal and noise, and of noise and matter. Kittler (1988:345) calls it 'thermal noise' and explains it as the noise that all matter (or materiality) emits

when heated. As Kromhout (2012:5) clarifies, '[o]ne could say it is noise which ties information to its materiality'.

Works such as *Radio Dada* (2008) by Rosa Menkman and Extraboy and *Electromagnetic Landscape* can be said to connect to Kittler's statement that noise is always also part of signal or information in communication media. For example, *Radio Dada* exhibits the glitch and noise of media as part of Menkman's and Extraboy's investigation of the aesthetic possibilities of the materiality of those specific media, radio and computer. *Radio Dada* articulates visual noise as a pixilation of the images due to feedback loops and format conversions in different programs. Menkman (2011:17) explicitly refers to Kittler in her Glitch Manifesto: 'The only resolution to the problem of non-communication was to incorporate it within the system'.

The noise aesthetics and visual formlessness in *Electromagnetic Landscape* also relate to Kittler's theory of signal and noise; and the project also aims to explore how noise is a fundamental element in understanding communication technologies. Specifically, *Electromagnetic Landscape* explores radio as a communication technology and as an aesthetic technology. The (non-) landscape with blobs in different sizes and shapes creates a visual frame that supports the experience of the noise. The real-time audiovisual experience of patterns of light and shadow, signal and noise, creates a site-specific environment, and an estranged experience of the potential of place, that is oscillating in-between noise and signal, shape and form. The sound of interference and evanescence vibrate and hold a tension until the next signal comes through from a radio station somewhere in the aerial landscape.

The interest in aesthetic possibilities in noise as something that is always also part of signal or information in communication media, can be found in avant-garde experiments in the Dadaist movement in the time of World War I. In Dadaism the investigation of media – not only as devices/channels for communication, but also of non-communication and aesthetic experience – can be seen in Kurt Schwitter's poetry and collages, in Raoul Hausmann's photomontages as well as in Anna Höch's collages. The interest in noise as an aesthetic experience also connects to Italian futurist Luigi Russolo's manifesto *The Art of Noises* (*L'arte dei Rumori*) from 1913, where noise from the urban environment and technology is seen as something with specific aesthetic qualities.

Sound and media theorist Douglas Kahn builds on Kittler's work and argues that one should not explore the communication system in itself, but focus at the relationship between media and the environment. 'Modern telecommunications began with message devices that resonated with and received signals from the larger energetic environment. It was with these devices and within these environments that the aesthetic trade in the Aelectrosonic began [...].' (Kahn 2013:22)

Electromagnetic Landscape investigates the aelectrosonic as defined by Kahn. The project also draws on artistic investigations of electromagnetic environments as can be found in works such as *Electrical Walks* (started in 2004)

by Christina Kubisch, *Trilogy for Night and Radio: Radiotelegraph/Night Fall/Relay* (2014) by Anna Friz and Konrad Korabiewski and *Simple Forces* (2013) by Joyce Hinderting. In Simon Penny's *Lo Yo Yo* (1988) the electromagnetic information that permeates the installation space is made audible – the installation displays the received signals from the energetic environment – showing how the space, that is, the air in the space, is full of electromagnetic signals. Works such as *Imaginary Landscape no. 4* (1951) by John Cage, or Nam June Paik's *Random Access Music* (1957/78) also experiment with the relationship between randomness, signal and noise as an interactive and site-specific audiovisual aesthetic.

Kahn (2013:6) proposes that media should not be understood 'under a sign of technology and as a procession of the historical development of technological/instrumental devices' but as something aelectrosonic – as media that have 'a footing in nature'. This indicates that noise is not only an expression of media, but also an expression of the environment – as one might be able to hear in *Lo Yo Yo*, *Night Fall* and *Electromagnetic Landscape*. The question of the relationship between signal and noise is reformatted and extended to investigate the role aesthetics play in people's engagement with and understanding of communication media as signal, noise and environment.

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