

## **BODY DEGREE ZERO-INTERACTIVE PERFORMANCE**

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### Description

Two participants are wired to various bioelectrical sensors ranging from electrodes that track brain waves to sensors attached to the skin which record galvanic skin responses. The sensors track the participants' activity and bioelectrical output and visualize this in real-time in the form of synthesized and manipulated images which are back projected onto two large screens in front of the participants.

Accompanying the images are sounds generated from the activity of the participants. Local environmental conditions are monitored and streamed into the system where they modify the participants' data. As the resultant mix becomes more and more complex and its characteristics more and more an amalgam of the three data entities, it becomes increasingly uncertain as to what is being represented, and exactly what space this new recombinant form demands as the participants' identities are lost in the ensuing environmental data storm.

Using EEG electrodes connected to a PC via a Mindset24 EEG system,, and custom EKG sensors connected to a Macintosh computer via Teleo hardware, evoked potentials are translated into sounds and forms using, respectively, specially designed data acquisition modules in EONReality, and MAX/MSP/Jitter The sounds and images produced are of two kinds: those that are limited in interpretation and clearly indexed to bio-activity and those that are polysemous and open to interpretation.

The visualization is a combination of abstract generated forms and found imagery. The frequency, amplitude, and percentage differences between samples of incoming data are mapped to forms moving in computer 3-space. The data is used to change the position, scale, shape and physics of simple primitive meshes where each vertex of the mesh starts at 0, 0, 0, and the object has no velocity, mass or other property. The incoming data is visualized as spikes, amoeba-like blobs and particles that indicate the degree of activity of the participants. Random numbers create noise in the system creating errant and misleading signs. Some visualizations are easily identified: the throbbing of a shape is a beating heart, the increase in particle production is a rise in GSR. Others are suggestive rather than indicative: taking the form of erratic, distorted, cinematic or historical images which are streamed into the space or mapped onto primitives, or of shapes morphing from one form to another too rapidly to comprehend. Similarly, sounds are generated in real-time using a software synthesizer, and are an index of peak voltages, frequency and percentage differences. Data is mapped to harmonicity - values close to whole numbers are harmonious while fractional values produce inharmonic timbres. Data sampled over longer periods is mapped to the spatial properties of the sounds and images: the degree of movement and orientation of objects, images and sounds varying proportionally with respect to the general dynamism of the participants. As data from the participants indicates a rise or fall in bio-activity, so texts and images relating to corresponding highs and lows in the film are sent to the screens.

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**Invisible World is an installation that draws its content from the context within which it is placed.**

Based on principles of Electronic Voice Phenomenon (EVP) the work uses video and audio noise as a malleable medium to suggest a means to replay traumatic events recorded in the material of the architecture of the installation site.

## Invisible World

The work investigates the characteristics of specific sites by evoking memories potentially embedded within the electrical atmosphere and physical material of the location. This work suggests that there is a complex relationship between physical sites and the viewer that goes unnoticed in everyday life. The bio-electric body is in constant interaction with electromagnetic fields that surround it, and the movement of these fields activates changes within the body. In terms of Generative Art the installation clearly demonstrates the possible employment of latent and undeveloped sources of energy in the urban environment which can be transformed into innovative configurations.

Scientists have suggested that electromagnetic fields can cause hallucinations and visions in individuals. Such visions might be the result of induced electrical currents and distorted fields in the visual cortex being transformed directly into images in the brain, just as transcranial magnetic stimulation of the brain's language centres has been seen to damp or produce disembodied voices or out of body experiences. New advances in technology make it possible to induce and observe these phenomena, compelling us to recognize the power of technology to create new worlds.

“Residual haunting is thought by some to be a replayed haunting in which no intelligent ghost, spirit, or other entity is directly involved. Much like a video tape, residual hauntings are playbacks of auditory, visual, olfactory, and other sensory phenomenon which are attributed to a traumatic event, life-altering event, or a common event of a person or place, like an echo of past events. Residual hauntings often center on moments of intense emotion: someone's beheading, a great battle, a murder, or even a celebration. Paranormal researchers theorize that residual hauntings are the result of discharged personal energy of a person or group of people being imprinted on the surrounding environment, most commonly at or just after death.” (Wikipedia)

This project uses ideas about residual haunting and Stone Tape theories to suggest that our world is a conflation of time and space. The Stone Tape theory is a popular possibility for parapsychologists to explain ghostly events. It is an example of our ongoing sense that there is an invisible world that surrounds us, and that the experience of this world does not rely on the perception of visible external data, but, rather, everything is perceived in the mind.

## EVP

Electronic Voice Phenomenon is the recording of errant noises or voices that have no explainable or physical source of origin. These recordings are made when the recorder is alone, or under controlled circumstances.

It has been argued that the voices are simply subjective interpretations - that we tend to hear voices in random patterns of sound, in the way we recognize forms in random visual patterns. For others, the voices are genuinely mysterious, opening up the possibility of communication with the dead.

This installation uses the ideas inherent in EVP to examine ways in which we construct the world through pareidolia, (a psychological phenomenon involving a vague and random stimulus - often an image or sound - being perceived as significant), apophenia (the seeing of connections where there are none) and the gestalt effect (the recognition of pattern and form).

Using techniques of EVP the installation sets up an environment in which participants can listen to noises generated from apparently silent spaces.

The Installation

In this installation internal noise from a CCD in a light tight box is mapped to audio by sampling pixels in a Quicktime matrix and using the values to manipulate white noise.

Software looks for similarity between the noise and a very large set of spectrograms of spoken words. When two are congruent enough the results are spoken by the computer and projected into the space.

Software pans across and zooms and changes the blur, brightness and contrast of the camera noise, as it looks for hidden images. These are standard EVP strategies for teasing images and sounds from visual and audio noise.

The context of the installation, its location, architecture and history, ultimately establishes the narrative.

For plan of the installation and documentation of previous exhibition please go to the Invisible World link:

[http://www.ucalgary.ca/~einbrain/Invisible\\_World/invis.html](http://www.ucalgary.ca/~einbrain/Invisible_World/invis.html)

[http://www.ucalgary.ca/~einbrain/Invisible\\_World/rosariob.mov](http://www.ucalgary.ca/~einbrain/Invisible_World/rosariob.mov)