

Infrasense

A robotic web and sound installation by Robert Saucier and KIT

Introduction

The *Infrasense* project is the first time that KIT and Robert Saucier have collaborated on a project together. Both artists however, have long histories of producing robotic sound installations and web-based installations and thus have knowledge of software's, hardware and techniques for presenting complex technology based works that have strong social political narratives.

The *Infrasense* project is a work that will travel to a number of galleries in Canada, England, Germany, USA and Northern Ireland. The Orchard Gallery in the City of Derry, Northern Ireland and The Folly Gallery in Lancaster, UK have both confirmed their acceptance and full support for exhibiting the project. We are approaching your organisation in order to propose that you become one of the partner organisations to host the installation. Each time the project travels to a new gallery/location, it will be produced as a site-specific work that changes according to spatial, political and social parameters. This is a very important consideration for the project, as it has to have site-specific relevance to function, as it should do.

Project outline

This collaborative project deals with the electronic virus cultures. From worms, back doors, Trojan horses and bugs, these are some of the more well known terms and metaphors for viral activities on the Internet, on desktops, laptops and in research and development labs around the world.

Infrasense uses the ideas of the 'Trojan horse' and the 'Bug' as two elements, which are subsequently produced as physical sculptural entities and are in turn then controlled from the Internet again. The idea then is to take concepts from the digital world, render them as physical objects and then return the control of the physical back to the digital landscape of the World Wide Web.

We will construct 9 stations, which from now on will be referred to as Trojan Horses. A Trojan horse is a type of virus that is deceptive in its intent, which is why it carries the same name as the historical horse that was given as a present, only to surprise the recipients with hidden agents of warfare. Thus we will construct 9 molded plastic and metal models of the Trojan horses (approx. 18 inches high and 24 inches in length). They shall be placed parallel to each other so that they move across a space in a straight line, backwards and forwards. They shall move very slowly however so that their movement is barely perceptible to the human eye. (The Trojan horses will be pre-programmed to move backwards and forwards across the gallery. They will not be controlled by the audience in any way). On the side of each horse there will be a speaker (acting as the metaphor for the door of the historical horse) which will utter sound and voices at a low level that are audible but not discernable as to what the voices are saying or what the sounds are.

In contrast to the slow moving Trojan horses, we will construct 3 faster moving 'Bugs' that are remote controlled in different ways. The Bugs will be made from old leads such as Scuzzy, RCA, power, USB, Firewire, quarter inch and Ethernet cables. A base will be constructed (which will hold the batteries, mechanisms etc) on wheels and hundreds of cables and leads will hang down the side of it so that they look like creatures or bugs...albeit technologically endowed ones. The Bugs will appear as if they are looking for connection with some, or any other type of technological hardware via the adaptors at the end of the leads that they are covered with. The Bugs will move faster and will be manoeuvred around the Trojan horses looking as if they are trying desperately for some way to hook up to them or discover what they are carrying.

The Bugs will have antennas that hold small powerful mini - microphones on the end of them. These microphones will pick up sound and amplify them to a speaker that shall be built into the mid section of the bugs between the leads. The antennas shall be placed at such a level so that the microphones on the end of them meet directly with the speakers on the sides of the Trojan horses. The obvious conclusion of this being that when the Bugs are directed to the sides of the Trojan horses they amplify the low level sound coming from the speakers so that they become audible in the gallery/off-site location. (Infra red sensors would automatically direct the robotic Bugs to the speaker on the side of the Trojan horses within a range of 50cm. This would happen so that the sounds emitted from the Trojan horses do actually get amplified).

Breakdown of sonic information uttered by the Trojan horses

There shall be three sets of three Trojan horses (producing nine in total) in the gallery/off-site location. Each set shall hold sound information that is gathered from a specific context. The stored sound will be held on microchips that are inside the horse (an analogy to the fact that micro chips inside the horse are now the covert agents of warfare that the warriors in the historical horse of Helen of Troy once were). The three sources or contexts from which the sound and voices are gathered are as follows:

1. The first source will be a local source and will deliver sonic information recorded from people on the street. This will entail interviewing people for 3 minutes at a time to record their sound/story about viral activities they have witnessed, been attacked by etc.
2. The second source will be a regional source and will be sonic information collected from placing a set of adverts in a regional/state newspaper, asking people to send us their stories/sounds for the promise of a small fee. Thus we will receive recordings through the postal system.
3. The third source is world - wide and entails gathering information from the World Wide Web. We will write a computer program that automatically searches the www for a specific type of information each day and delivers it back to the 'stations' so that this information can be read out by a computerised voice, or if they are sound clips that are collected, then they will be played as they are.

In this way, each set of three Trojan horses emits information and sounds about or from computer viruses, in hushed tones that can be discerned when in the gallery but not understood as they will be merely whispers. The idea being that the robotic Bugs have to be driven upto the sides of the horses so as to amplify the whispers and sounds with the microphones that will be on the end of their antennas.

Breakdown of the Bugs control mechanisms

Each of the three robotic Bugs will be controlled and manoeuvred differently in the gallery/off-site location.

1. The first Bug will be the locally controlled Bug and will be the one that is driven from inside the gallery/off-site space. It will be controlled by a RF hand held device.
2. The second robotic Bug will be hooked upto a website that we construct online for the project. The website will be a singular URL on the www and thus as a location to control the Bug from, it becomes analogous to a regionalized co-ordinate in the digital landscape of the Internet. The 'users' on the website will be able to drive the Bug in the space via a small video camera that shall be mounted on the front of it. The 'user' will subsequently be able to navigate from the ground level view of the Bug allowing a different perspective to that of the on-site controller.
3. The third robotic Bug will be pre - programmed and coded so that the vehicle will move around the space in certain directions and will thus be more random in its navigation of the gallery/off - site location. There will be no direct control over this Bugs movements by the audience.

Site - specificity

The issue of producing site -specific work has always been very important and integral to the practices of KIT and Robert Saucier. This project has been developed in a such a way that the carriers of the content – the Trojan horses and the Bugs – can carry information and content that changes each time its shows it a new location. The movement and control of the robotic elements of the project will also change each time it shows according to different audiences and the changing of programming each time. For instance, the micro controllers that direct the Trojan horse will be interchangeable and thus gives us the ability to easily alter the types of movements undertaken.

We view the *Infrasense* project as being virus like in its intentions, as the project moves parasitically from country to country, location to location. The gallery's and organisations that host and carry the project become the carriers for it. As noted before, all the electronic and digital elements of the show function as empty vehicles that carry a defined set of information and data that mutates according to the new context it finds itself in.

Web site

The web site is the location that shall be viewed by remote participants and will offer interaction with the gallery/off-site location that houses the installation. The model of interaction offered on the site will be different from the remote point and click dynamics of many remote robotic projects in that a user's interaction with the site will determine whether they partake in the construction of a virus. As the site is used as a remote location of control, it will also be used as a site that collects data on virus activities on the World Wide Web. Participants will not be certain as to whether they are contributing to a process of constructing or unleashing a virus or not. For instance we might set up a dynamic for instance which states that every time the robotic Bug is driven into a wall, then a hole is opened in the website that lets lose a virus. This then places a psychological imperative on the user that will connect his/her remote actions with in the concrete world with supposed direct action in the digital world.

Whether we would do this or not will be worked on over the next year and a half of development. If we do, we would have non-disruptive virus's programmed that merely open in e-mails for instance and would in no way damage or inflict any extra curricular work for those who opened it.

One of the interesting results of setting up a relationship between a concrete and digital space is to witness the spatial dialogue initiated between remote users of the sites and local users.

Infrasense offers a very recent model of spatial interaction, which is in its epistemological and ontological infancy. Finding new ways of understanding and interacting with space, politics and ideas is essential to developing discourses and for comprehending our changing sense of place and time in the concrete world and now in the digital world as well.

Theoretical concerns of *Infrasense*

There are a number of purposes for producing a multi -site installation. One being that the interaction between objects and actions in the two spaces of the concrete site and digital site produces questions about spatially generated meaning and perception. 'Telepistemology' was a term used by Ken Fiengold to explain the knowledge shift in late twentieth century from a book/presence based rationale to learning from a distance/absence based code of living. Thus the majority of information we gather about the world around us is taken from the TV, cable TV, the Internet, telephones and Fax machines. All of these technologies collapse distance in the classic Virillion sense. The introduction of the Internet into global culture reifies the experience of seeing, hearing, communicating and learning from a distance.

McKenzie Wark writes about a similar sense of 'Telesthesia' that is pervasive in western techno-culture. He points out that much of the information we garner from the TV and the Internet comes to us when we are in our living rooms at home. This in turn negates the foreignness, the danger and site-specific or contextual nature of that information as we receive it from the comfort of the home location. As more information is transmitted through the web and more decisions are taken on line which have very direct effect on the concrete world around us, the more we will have to understand the ramifications of remote action and consequences. Much criticism and debate surrounding the Gulf War renamed the 'Nintendo War' by Baudrillard was based around the fact that long distance bombing and espionage strategies were acted upon as if the context were a video game and there was no human cost to the decisions made in Washington. This war was the first example of surveillance, reconnaissance and action undertaken from a distance whilst watched by millions from the comfort of their homes live via CNN.

The on-line *Infrasense* users and voyeurs also sit back, body safe from harm, viewing the ensuing actions from a distance through video cameras mounted on the front of the robots. In this sense the installation will mimic the current remote sensibilities but with a different end. We wish for the users of the *Infrasense* site to risk something by being attached to the site. The threat of catching or being on a site where a virus is being developed for example, is a risk, and a dynamic that changes the usual click and move interaction of the WWW. The *Infrasense* website will become a thirdspace in some respects as it becomes an ambiguous and malleable space that offers an uncertain interaction at a possible cost to the interface you watch it from.

'ThirdSpace' is a concept used by many cultural theorists from Edward Soja (who wrote a book called *ThirdSpace*) to Homi Bhabha's notion of a space that opens the cultural hierarchy of location. Michel De Certeau talks about the thirdspace of communication and the notion of noise as a third component of all communications, which is always under the will to be silenced. Foucault's notion of heterotopia is an early

idea of a thirdspace, which can open up the duality of language and space - from the entropy of presence and absence - to the notion of existing in many locations at once.

Before the notion of thirdspace was developed into a culturally understood and debated notion, the space which Lefebvre talked about in his book *The Production Of Space* was defined by Capitalism's pulverisation into available parcels of private property. Today there is an unabashed drive to keep proposing and asking the question of how can Internet culture challenge this ideology? In an age where information has become a social lubricant and David Harvey's notion of flexible accumulation is stretched to mean more in more places in less time all the time, where, when and how can the Internet be used to construct alternative models of socially spatialised dynamics? This does not mean a social system which merely reflects the systematic metaphors of concrete property and capital (in Harvey's terms a process that drives "the urbanisation of consciousness") but instead one that treats the Internet as a place to dislocate the lessons of urban analogy. In other words using digital communication systems and the spaces they create to construct places of plausible dissent and games of resistance.

Funding and support agencies, institutions and organisations

The Orchard Gallery (City of Derry, Northern Ireland): The Orchard Gallery is the major public gallery for contemporary art in Derry and regularly shows highly respected international artists. They will be supporting the *Infrasense* project by providing a site, funding and residency to develop the site-specific portions of the work.

The Folly Gallery (Lancaster, UK): The Folly Gallery is one of the North West's leading galleries for exhibiting new media based installation. They will be applying for touring grants from the UK Arts Council, so that the project will have extra funding to travel.

University of Quebec and Montreal (Montreal, Canada): Robert Saucier is assistant director of the school of visual arts at UQAM. The University has awarded the project a \$7,000 grant as well as confirmed support and commitment for the production of the project.

Hexagram (Montreal, Canada): Robert Saucier is one of the group leaders in this new digital media research and development centre. It has been developed as a well-resourced, shared centre for staff and students from UQAM and Concordia Universities. A part of the robotic component engineering, programming and coding will be done with members of Hexagram who form the more specific group called "artificial life and robotics arts". www.hexagram.org
Hexagram have awarded a grant in excess of \$20,000 towards the project.

We will be making applications for grants to the following organisations: **The British Council, The Arts Council of England, The Daniel Langlois Foundation, Le conseil des arts et des lettres du Québec (CALQ)**

Contextual research

We have recently been researching the military's use of both sound and the virus as a weapon. What follows are several synopsis of the lesser known 'non-lethal' weapons that are being developed by the US/Canadian and English army amongst others. The use of recorded or deployed sound is a new direction for the military and the police in their attempt to control social and physical space. The use of the computer virus is also becoming a new model for modern warfare that feeds directly into the wider context of the *Infrasense* project. What follows is a small part of the research we have done on sound weapons.

Non-Lethal weapons

Sound below the hearing range (20 Hz) of a human is called infrasonic, and above human hearing rang (20 kHz) is ultrasonic. Sound waves with high amplitudes can be used as a weapon. This is not the type of sound you hear but the type of sound you would feel in an explosion - a shock wave. If you have two or more focused sound waves, they can be angled and combined at some focal point. The combining of the waves at the focal point can produce a very powerful wave. One of the focused waves modulated with information can control the result of the final wave. The final wave can be infrasonic, audible, or ultrasonic. This technology can be used to direct an audible message to a person by aiming the device at the side of the target's head, near one ear. This message can be sent to only one person in a room filled with people, or while the person is just lying in bed. The message can be sent from the same house or the house next door. The ultrasonic waves will travel through walls of a house with little loss before combining to produce the audible message. The waves passing through the walls will not damage the house in anyway. A person could be tricked into thinking that God is speaking to them, for example.

This use of ultrasonic frequencies is in line with the military description of ultrasonic 'non-lethal weapons' that reads as follows:

* Title: Parametric Difference Waves for Low Frequency Acoustic Propagation

Abstract/Benefits: Prior research indicates that an array of ultrasonic sources operated with an offset in frequency will produce infrasonic or very low frequency energy. This energy is useful because it is omni-directional, and it propagates well with little absorption. With sufficient energy, the resulting infrasonic waves can be disabling or lethal. Synetics proposes an approach toward developing infrasonic waves that can ultimately be incorporated into future man-portable small arms weapon systems. This approach utilizes modernized pneumatic technology that produces an extremely high-powered ultrasonic source. The resulting frequency generated is precisely controlled such that the desired high power infrasound frequency can be generated at the target by beating two focused ultrasonic sources.

Benefits: The potential post applications of the parametric difference wave generator include non-lethal crowd control, non-lethal self - defence units for police (taken from Army report form at <http://hometown.aol.com/ultra21753/weapon.htm>).

* A Memorandum For Convention on Conventional Weapons (CCW) in consideration to the use of Acoustic Weapons was handed to delegates on the 16th December 1999 and reads as follows:

TO: Delegates to First Annual Conference on CCW Amended Protocol II
FROM: Arms Division of Human Rights Watch
RE: Acoustic Weapons

Sonic and microwave weapons are under development. Scientists are experimenting with a variety of megaphone-like devices that emit sound waves capable of knocking over an adversary with a violent shock wave. More advanced sonic weapons cause the adversary's internal organs to vibrate, inducing a crippling nausea and severe pain. A host of military and civilian missions are being considered for acoustic weapons, including both battlefield combat and so-called military operations other than war -- urban combat, crowd control, hostage rescue, perimeter defence and physical security. There are indications that acoustic weapons are also being developed for secret "special" missions and covert operations such as counter-terrorism. Acoustic weapons are also being developed with commercialisation in mind, for civil law enforcement, border control, and internal prison use.