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Joyce Hinterding is a cross media artist living and working in Sydney Australia. Her work "Aeriology" was exhibited at the V2 in Rotterdam in May this year. We met in Amsterdam to discuss her thoughts on her use of sound and electricity in her installation works.

JB: Have you always worked with sound? What made you decide to do so?

Joyce Hinterding:

I have been working with sound for about ten years. My interest in sound began with a fascination in the phenomenon sympathetic resonance: the ability for one vibrating body to activate another. It is an interest in 'this that exists between things', rather than 'things' that characterised my initial approach to sound. A concern with the dynamic nature of the world, the relationships between things.

My early work was with acoustics objects that were designed to either resonate or to re-enforce specific frequencies. Later this interest in acoustic amplification developed into an interest in electronics, firstly with electronic amplification, then with electronic sound production, synthesis, feedback and eventually the auditory bi-products of our electromagnetic environment. To understand the electromagnetic landscape I started to look at radio, light and transmissions of all different descriptions.

JB: This electronic landscape that you mention, how far does that reach? What exactly do you mean by it?

Joyce Hinterding: In my opinion sound is like a hieroglyphics for vibration, it is a way of understanding vibration at a physical level. Sound is movement and changes in air pressure and you experience it quite directly. Terms like harmonics and resonance are very easy to understand at a sonic level, because they have direct physical effects on us and the things around us. When working with the electro-magnetic, you are working with dematerialised activity, so working with,

understanding and developing work concerned with mass-less activity is slightly harder.

To do this I began to look at antennas, objects that resonate to electromagnetic activity . The first antenna I built was a VLF (Very Low Frequency) antenna (a loop antenna). The loop antenna listens to, or resonates in sympathy to the VLF range of the radio spectrum. This section of the spectrum is so noisy that it is really only used to transmit a global navigational signal called the Omega tracking signal. But the noise in this frequency range is very interesting, consisting mainly of quite beautiful pinging and popping sounds. These sounds are created by the broad spectrum radio frequency bursts produced by lightning and solar flare activity. Most of the sounds or noise in this section of the radio spectrum is a product of natural atmospheric electrical activity.

So the VLF range is only a section of the ambient electromagnetic environment we live in and I use the term electromagnetic landscape to look at the local transmission environments. This is of course different wherever you go, so if you listen to the VLF antenna in the middle of a city, you really cannot hear much except for a big 50 hertz hum. This was the main sound that could be heard at the V2 installation. So the strongest element in the local city electromagnetic landscape at the VLF end of the spectrum is the sound radiating of our electrical system. But if you go somewhere away from electrical powerlines you will hear a whole range of other sounds. The same happens if you listen to some other section of the spectrum such as the UHF (Ultra high frequency) end of the spectrum.

JB: Does it have a special meaning to you?

Joyce Hinterding: Yes it does. The work that was in the Sydney biennale was called "Electrical Storms". This was a work that listened to the sound, of electrical activity, which is not produced by us. I was interested in the general conception that we have authored electricity, like it is our invention, and that we tend to have problems with the idea that there is an electrical presence in the body, or that there is a natural electrical environment as well.

(our interview is interrupted by a very strange religious group starting a loud praying session just outside our window, on the Nieuwmarkt in Amsterdam)

Joyce Hinterding: It is very funny. I have recordings of my VLF antenna in New York City and there I discovered a religious group transmitting down in the VLF range. So I collected some wonderful

recordings of religious discussions mixed up with massive amounts of background mains electricity humming. (60hz because it was in America)

JB: So, actually what this work does is remind us that electricity is a natural source. It makes me think of how in some digital art or other electronic art there is this emphasis on the body to remind us that we are not ephemeral beings but that we have a very physical basis. It seems to me that you are doing this exact same thing for the most vital part of electronic arts, showing that its material is not as vapour as it often seems.

Joyce Hinterding:

Mmm, well.. for that particular work, "Electrical Storms", which is a work that precedes "Aeriology". But this work here now is not so much about listening to the electrical environment that we did or did not create, but about the energy in the background electromagnetic environment. The antenna at the V2, is constructed from 26 kilometres of .6 millimetre magnet wire, (the type of wire that is used for winding electric motors and electromagnets for the back of televisions, very common wire). The six and a half meter high coil, is a broad band detuned antenna that resonates to a range of radio frequencies related to its length, dimensions, and physical qualities. But it is also like a classic everyday transformer, transforming electric activity in the room and the surrounding atmosphere into electrical activity in the wire. "Aeriology" is my exploration of antenna as aerial capacitor. It is playing with the idea of antenna as alternative power source. So it is quite different to the earlier work "Electrical storms" because it is a kind of gathering machine, gathering energy out of the air and evidencing it. In this work the electromagnetic activity/energy evidences itself is as sound. The antenna generates enough energy to amplify the signal sufficiently to drive speakers and it does so without any other amplification equipment. This is quite significant to me, as it speaks of a simple technology, that utilises fundamental physics principles that relate form and materiality to activity. It explores technology in a very different way to mainstream thought: not looking so much for efficiency but simply possibility. What interests me here is this kind of molecular and particle functionality in sculptural objects.

JB: For me of course, as a radio maker working with the ether mostly, your work is very interesting. It seems to me that your work, as in contrast to what we do as broadcasters, is very located. People can only experience what you want them to experience when they are really close to your work. Do you ever feel the need to work with these energy fields, this spectrum that you work with, at a wider range, to have it

reach further?

Joyce Hinterding: My work does have a translation into recorded and broadcast media. I have processed a lot of the sounds that I have been collecting and these sound works have been included on compilation CD's for Australian Sound art and played on radio. I have also been involved with an online group in Australia called "Nervous Objects". We are eleven people from all over Australia. We worked together on a sensor driven website which was a webproject for ISEA in Chicago last year called "Lingua Elettrica". We also worked collectively on a real Audio performance work for an event that took place in Adelaide called "Foldback". So for me it is a natural part of the work to develop the documentation of the auditory components in my installation works into media that can be played on the radio or the net.

JB: I was wondering if you make different works for CD, radio and the net?

Joyce Hinterding: The recorded sound works come from my experiences with the physical works. I like to mix the elements of the work together in different ways playing around with context for example using the raw recordings of the surrounding environment and mixing them back in with the sounds being generated by the installation. For example I made a sound work called "Summer" which used the sound of the VLF antenna mixed with the sound of a thunderstorm . So there is a sound work that listens to the same natural electrical activity inside of wires and outside in the air.

"Aeriology" is also a larger study in its own way. A look at the idea of the aerial, at the idea of 'the air', what is inhabiting the air, what happens with an aerial, how it functions, what it does, where it ruptures, what the possibilities are... If I was to develop this work for radio, I would take the same kind of approach. It is based in experimentation. I might bring different things that I have collected in the process of researching "Aeriology". Not specifically from the work. Maybe recordings from the work, maybe recordings that have been manipulated, maybe not, depending on the context of either the work that is for the net, or for broadcast.

JB: How do you feel about ordinary aerials for radio and television stations?

Joyce Hinterding: I love them. They are my big fascination. I really do think that everything is an antenna and that everything is in vibration. Aeriology has been about looking at this larger idea of an antenna and vibration in all shapes and sizes. The wonderful understanding of an FM antenna, or understanding the two meter band

of radio, is absolutely fascinating to me.

JB: Do you think net.radio in this sense is reductive?

Joyce Hinterding: No, not at all. I participated in one performance across Australia for an event in Adelaide with eight people, doing a remote RealAudio sound performance work. The feedback loop we managed to generate across Australia was very exiting. I think that net.radio is a lot of fun. I don't particularly feel a need to stick an antenna down in there (laughs). I am as interested in sound in its own right, in sound as music and all the qualities of sound, as I am with sound in connection to objects or installations. A work I did two years ago in Germany which may have been seen as a work who's primary concern was electricity was very much a sound work. Twenty four high voltage generators that produced twenty five thousand volt sparks were situated 110 meters in the air in the ceiling of the gasometer in Oberhausen. The sound that the work generated was due to molecules travelling faster than the speed of sound, arcs of electricity jumping an air gap making small sonic booms, (big cracks). The documentation/recordings I have of this work live in their own right.

There is a crossover field. I don't feel locked into one particular way of thinking or one particular type of work. I mean, the antenna that is at the V2 is incredibly beautiful. The optical phenomena that is created by the very thin wires is extraordinarily beautiful is the reason why it now exists for the third time. It was first created in New Zealand, as a part of an international Artist in residence program at Artspace in Auckland. It was then exhibited in Artspace in Sydney as "I_TONE aeriology" and now this is the third time and probably the last. It is the largest one at six and a half meters high and I can understand why people want to see it. There is a wonderful crossover between aesthetics and invisible activity, interior activity evidenced as sound and the secret language of measuring equipment.

JB: Plans for future projects... standard question. Do you have them?

Joyce Hinterding: At the moment I am working on two projects. One is with my partner David Haines. We are working on a project where we will use the transmissions from the polar orbiting satellites, the weather satellites to edit a 3D video/animation installation work. We are aiming to begin this work in a lighthouse on the most southern tip of Tasmania, Australia and then bring the system to Europe, collecting and processing our work in the different transmission environments. The second work is a rework of my solar powered lightning generators, a video installation work based in a notion of television

that burns the air.

JB: As to other natural phenomena, did you also study the way some animals use vibration (sonar)?

Joyce Hinterding: I have never had the opportunity to record anything like that, or use anything like that. It would be quite nice. All though I am hoping that Tasmania kind of opens up a lot of possibilities, because of the CSIRO (Commonwealth Scientific and Industrial Research Organization) Antarctic research facility is down there. They do a very small amount of work with the magnetosphere, measuring vibrations in the magnetosphere and I am very interested in them. The magnetosphere is an active sphere defined by the magnetic lines that rap around the earth from the poles and they are strummed like guitar strings by solar winds. We have been talking with the scientists who have been working on Antarctica. We would like to go there, but now it looks like most of the data is being sent to Tasmania, so... perfect.

<http://homepages.ihug.co.nz/~phys/space/volt.htm>

<http://www.imago.com.au/luminoska/>

<http://imago.com.au/nervous/joyce/index.htm>

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