LISTENING AND THE LISTENING ROOM -DAVID CUNNINGHAM

The Listening Room is a series of installation works which in some way ask those present to listen to the space they're in. The work can confront people with an ambiguous space which is often part of a fairly rich soundfield. This text is structured around discussion and writing which relate to The Listening Room. My own statements on the work have tended towards the minimal; on previous occasions I haven't felt the need to describe the implications of the work, generally believing that the structure speaks for itself.

The installation consists of a microphone connected to a noise gate, amplifier and speakers in a highly reverberant room. The system is arranged in such a way that when the microphone and loudspeaker begin to feed back the amplitude of the sound causes the noise gate to cut off the signal. The feedback notes resonate through the space accentuated by the long reverberation time of the gallery. As the sound falls below the threshold of the noise gate the system switches back on and the process continues.
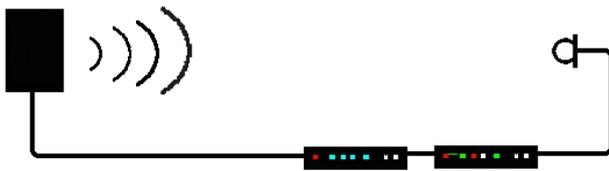
The available pitches of the sound are primarily determined by the distance between the wall, floor and ceiling surfaces in the space, and by the location of the system; by the time it takes a sound to travel and be reflected in three dimensions, not a simple equation.

The system allows the resonant frequencies of the gallery to become audible. This process is modulated by very slight acoustic changes as people move around the room, by ambient sound, by humidity, by anything that causes air to move. Although people in the gallery have a significant effect on the sound of the system I have refrained from terminology such as 'interactive'; cause and effect within the system is not immediately recognisable or quantifiable.

The work could be considered to be a sculpture in the sense that there is a consistent structure which is moderated by conditions of the space, just like a sculpture catching different patterns of light at different times of day or in differing locations. However, The Listening Room has a musical function and unlike much other time-based work is responsive to musicological analysis. It creates a slowly shifting series of chords based on a fundamental which is always a resonant frequency or a harmonic of the room modulated as described above.

My approach to this work has been essentially experimental, to initiate a process and let it flow, the nature of the process thereafter determining the structure of the work. This involves consideration of the structure of the work: which elements are prescribed, which are variables, how these variables will interact and feed back into

the main consideration, which is that the work is a situation which organises itself dependent on its own structural organisation.

For myself the most important quality is that it is a situation which is physically referential both to external contexts and to its own structure.

With 'The Listening Room' I tried to make a place where people listen very hard to the space they're in - the interesting thing is how you can ask someone listen to their surroundings.

I like to sit out on the roof of my flat in the middle of London and listen to the rich aural ecology of the city. It's a relief from the focused listening of the recording studio. This city has evolved or degenerated to the point where the soundscape has a natural complexity, something that human instincts make our ears very comfortable with. An analogy of this pleasure would be with looking at a tree - you don't look at every branch and leaf individually but they're all there if you want to look closer, you can enjoy a very different sense of ordering (in comparison to a man-made artefact) just by recognising the generality of tree and the variations of the generality and the specific. The idea of trying to work with natural complexity in a musical situation interested and frustrated me for a long time until I realised that I'd been working with it for a long time. In sound, natural complexity is acoustic reflection, resonance, air moving in space and the generation of harmonics.

SOUNDS IN AIR

I realised when I did The Listening Room that there's a connection with the first record of mine that most people know about: 'Money' by The Flying Lizards (Virgin Records 1979) was renowned for its extraordinary drum sound. The drum was in a big reverberant room with concrete wall and my microphone cable was a bit short so I recorded the drum with the microphone three or four metres away as I remember. You're not hearing the drum on the record, you're hearing the drum in that acoustically very complex space. Later, working with Michael Nyman, when we got the budget to work in a couple of particularly nice sounding studios (the old Pye/PRT studio 1 or Abbey Road 2), I became very interested in using what I like to describe as the air moving around in the room by pulling the microphones back from the instruments. This was helped by the way his music has a relationship both to the contemporary studio and to a classical convention and we could explore both kinds of recording. The end product of this is not so obvious on Michael's records because I couldn't over-ride the more pragmatic musical and cultural functions of his music. I do, however, see The Listening Room emerging over the years through all that work.

There's a story I heard, that when Jimi Hendrix was first recording in London he brought all his onstage amplification into the studio, a wall of Marshall cabinets, a tremendous volume. The engineer put a microphone somewhere near the speakers and it just overloaded. So this engineer, being an intelligent and responsive person, didn't ask Hendrix to turn down; he simply moved the microphone to the other side of the studio so that those early records, The Wind Cries Mary and so on, have that beautiful dense sound, the sound of many cubic metres of air moving around in a

room. That sound and that engineer's decision has been a major influence on a lot of my work.

Hendrix and feedback is very much a part of our musical vocabulary now, a very familiar sound for anyone who hears pop music. I was interested in taking that and removing it from the context of a high-volume music and seeing what other possibilities there were in this vocabulary.

With The Listening Room I wanted people to listen to the space and I also wanted people to be able to moderate the sound in the space, not necessarily by making a noise but by moving through the space when the gallery was fairly empty and hearing the effect of interrupting the sound with the body. Some of the results of that are really striking, there were some points in the room where, just by being there, you could produce a long series of bass pulses within the system. The volume had to be at a human scale.

VISIBLE MACHINES

The structure of the work necessitates that the machines are aware of their own process. I'm using the term 'aware' to describe the action of something that is basically an on/off switch incorporated into a simple feedback loop, and that's a fairly undisciplined use of the word. Whether that's listening or not begs the question that artificial intelligence researchers are always asking about much more complex machines. However, I do like the idea of the process listening to itself, it's rather a sentimental idea in some ways but it also relates to what could be described as making visible the physical properties of the equipment. Perhaps the title leads the listener to that question. In this case the title contextualises the work in the world of documentation and contemporary art listings. The thing had to have a name to serve those functions and it's not a bad name for it. I wanted to try the most minimal focusing of a very open situation which left the viewer or listener to explore and edit the experience for themselves but gently guide them within certain parameters.

Working in a studio with, for example, a singer who is wearing headphones, if the situation calls for it I'll give them some odd foldback mix on their headphones, echo or delay on their voice to change the way they sing, make them very loud so that they sing very quietly, techniques like that. The feedback involved in this kind of process is a loop. The difference with The Listening Room is that I tried to make it a public loop rather than some internal process that was only possible in a recording studio.

The loop for me is just another process. You could have a people loop -the performance group Station House Opera is a good example of that, where an act triggers another act and you end up with a process that reveals itself as some ordered structure over a period of time. Station House is a loop of time, people, space; the feedback process is there and the loop is maybe conceptual, the repetition is being modulated by context, history, previous repetitions and so on - allowing it to generate new possibilities within itself, a system working along cybernetic principles, maximal output from minimal input.

INTERACTIVITY AND TECHNOLOGY

At the development stage of The Listening Room I was anti-tape. I wanted to work with what I see as interactive technology, something that expands or focuses human perceptions in a fairly open way. And I was getting irritated by the CD-Rom computer crowd who were claiming interactivity as their word and undervaluing it in the process. I didn't want to impose something external on the space, a recording of somewhere else. I had always said I wouldn't use tape playback in a gallery situation. I hated the idea of going into a gallery and hearing a tape played back; there's a recording industry devoted to playbacks and putting a tape in a gallery generally has not differentiated itself in any significant way from that industrial process. I wanted to figure out a way to use sound to activate a space without using pre-recorded material. I didn't want to impose something external on the situation.

I wanted to expose the space itself and I wanted to look at what happens if you magnify the sound of this room. The technology I used was the only technology I could think of that would begin to do that. For instance, there were two feedback frequencies as I was using two independent amplifier and speaker systems working off the same microphone. One system was biased towards high frequencies and the other towards low frequencies to make a chord of a high note and a low note. These frequencies are related to the resonant frequencies of the room as defined by the geometry of the room. When I first set it up at the Chisenhale gallery I had the microphone and speakers in a different position and the result was very odd, I discovered that the south wall of the Chisenhale is a stud wall, and that the low frequency was going straight through it, giving me the resonant frequency of the whole shell of the building rather than the visible space of the gallery. The feedback notes were out of tune to my western ear (I suspect it would sound wrong to an eastern ear as well, it was an interval that wasn't microtonally interesting in any particular way) and the idea that the room you were hearing was different to the room you were seeing was not something I wanted to explore in this particular situation.

It struck me that a human being may react to some discontinuity between what is seen and what is heard on an unconscious level, that there are more biological factors at work which inform us about the space we're in on more than one level of sense, that a disparity between a space and its apparent sound might have some effect on the inner ear akin to the balance mechanism, instinctual stuff - going back to some early human mechanism that tells you that the wall at the back of the cave has no echo which means that there's a very big animal there which will eat you.

WHAT IS NOT MUSIC?

I was also concerned with making something with music in it. The feedback frequencies created a proper chord, in tune with itself and fundamentally related to the physical space. I've called it `a continuous piece of music'.

If forced to I'd divide my experience of the condition of music up into these rough categories: there is music that it is actually possible to package and sell as a

recording, as a commodity, a variable which is contingent on fashion; and the other music is what happens when you walk down the street and hear cars screeching, children playing, things that are part of the dynamic of a situation, which goes beyond the sonic in its organisational structure, which you can't record and sell but you might try and record it for your own pleasure -you maybe enjoy it but it's something that is there all the time. I was hoping to make something of that experience. I remember coming from a Portsmouth Sinfonia rehearsal and witnessing a car crash. Having had my ears opened by the Sinfonia I was witness to an intensely musical experience of metal on metal and little bits rattling on the road surface. It taught me that I should be listening a bit more to all those collisions of noises that we all live with. It's not all that different to The Listening Room because that piece is part of an ongoing process of listening for me.

Working in recording studios with machines and processes it's important to remember that I'm often in the situation of being the listener to my music without having been involved in any kind of conventional performance or physically holding a musical instrument to make that work. There's some music on the CD 'Water' that is played by a tape loop of some melodic material and some silences. The same loop is played at two different speeds and overlaid against itself. It demonstrates that pitch is a function of time and manages to be a fairly enjoyable piece of music at the same time. When I recorded it I remember hearing the shape of the music evolve in real time in front of me with no interference from me, all I had to do was hold the loop on a tape recorder and allow the process I'd initiated to run its course. I was terribly excited at hearing this piece of mine for the first time.

At that point I was a listener, not a musician or composer. That suggests that the naming and categorising of those activities should include the listener or viewer as part of the process.

IN THE GALLERY

For a musician like myself, generally working with recorded sound rather than performance, the opportunity to make work in a gallery is a rare chance to explore something which would be impossible in other contexts. I think the nature of what I do has to make it as formal as it is, my theoretical and historical grasp of visual art is undoubtedly better than my formal musicology, so I knew what I was doing and the context I was doing it in. It is more muted in its relationship to gallery space than the more radical nature of work by, for example, Kerry Trengove or Stuart Brisley, I'd like to think of it as more akin to the work of Bethan Huws or 'Black', a more recent Stuart Brisley work, still very destructive towards the idea of the artwork as object but in a very subtle way, qualified by history and expectation. I'm inclined to think that all this work has performed a similar function in differing historical contexts.

I did a workshop in the old sound studio at the Slade School of Art many years ago, and rather than pedantically explain the conventions of a recording studio, I tried to explore the relationship of each piece of equipment to the next part of the audio chain. Part of this process involved making what I suppose was an early version of The Listening Room, with microphone feedback and a tape delay, the tape stretched

between two tape recorders. Afterwards, one of the students described what I was doing as 'sculptural'; she was struck by the physical manipulation of the materials, primarily the physical manipulation of the tape, but also the physicality of the space, the air in the room. Later, teaching at Middlesex University, I was involved in a sculpture seminar where I spent a long time talking about the way the work was deliberately lit with photographic lights and moving slightly in the air as it was suspended from the ceiling. I talked about this work as a time-based work, because of its relationship to light and time and also because I was becoming worried about orthodoxies of video and hi-tech electronic media within the time-based areas in art colleges. (It was a rather odd place to have that particular concern because the Fine Art course at Middlesex has no problem transgressing those artificial boundaries between disciplines.) So I started thinking about the corollary to what I had been saying, looking at my own work in terms of formal sculptural concerns. The Listening Room has a consistent structure moderated by conditions of the space it is in. That's a fair description of sculpture as far as I'm concerned. I admire Bruce McLean's use of the word to describe almost any manifestation of his work in any medium. I've always been a bit doubtful about the formal idea of sculpture.

The Listening Room was first shown in public at the Chisenhale Gallery, 64 Chisenhale Road, London E3 5QZ, 15-17th September 1994. The Chisenhale Gallery is supported by the London Arts Board.

An interview recorded during The Listening Room installation appears on Audio Arts, Volume 14 number 3. Audio Arts, 6 Briarwood Road, London SW4 9PX, UK.

A recorded version of the work was released on the compilation CD Silence (a tribute to John Cage), catalogue number 36CD-NO20, released by Wacoal Art Center, 5-6-23 Minami-Aoyama, Minato-Ku, Tokyo 107. This is currently out of catalogue. The recorded version was constructed from overlays of four separate recordings of a version of the work installed at Newham Leisure Centre in East London.

The CD 'Water ', catalogue number piano 510 will be re-released in 2003

A large version of The Listening Room was created for the Biennale of Sydney in September 1998.