Ray Lucas & Richard Coyne

Chion's Acousmêtre in Transit Spaces

## INTRODUCTION

This paper presents some of the findings of the 'Inflecting Space' research project at Edinburgh university. The research is a collaboration between architecture and music, and seeks to understand the relationship of voice and space - particularly of public urban spaces.

In order to conduct this research, the team of myself, Richard Coyne (architecture), Peter Nelson (music) and Martin Parker (music) have chosen three sites of particular interest: Waterloo railway station in London, the Barras market in Glasgow and the auction house, both in Glasgow and London. The project is not limited to these sites of course, but they do form case-studies that offer some great opportunities for observing the ways in which voice alters our sense of space. Other sites have included Japanese department stores as well as some more contrived recordings of our own, such interaction with a telephone call centre and recording a reader giving voice to stock market data.

One of the key qualities we have been interested in from the outset has been the voice from elsewhere - off-screen voices in cinema, which form a model for understanding railway station announcements, mobile phone conversations, audio signage and other contemporary vocal incursions into space.

> The voice is what is really at stake in modernity, the voice as specific substance of language everywhere triumphantly pushed forward. Modern society (as has been repeated often enough) believes itself to be ushering in a civilization of the image, but what it actually establishes overall, and particularly in its leisure activities, which are massively

> spoken, is a civilization of speech. In complete contrast, Bunraku has a *limited* conception of the voice; not suppressing it, it assigns it a clearly defined function that is essentially trivial. The narrator's voice gathers together extravagant declamation, tremulous quiver, shrill feminine tones, broken intonations, tears, paroxysms of anger and lamentation, supplication and astonishment, indecent pathos, the whole concoction of emotion openly prepared at the level of this visceral, inner body of which the larynx is the mediating muscle. Barthes 1971 "A Lesson in Writing": 175-176

## METHODOLOGY - FIELD RECORDING & FILM

Our methodology for this part of the study involved looking at documentary footage of our site and contrasting that with what we have found in our field recordings. The site of Waterloo was chosen on account of a famous film by John Schlesinger called 'Terminus' from 1961. The film depicts a day in the life of the station, beginning with a suggestive shot of station staff keeping bees on the roof of the station, a clear analogy for the bustling activity below.

The film is a documentary in the mould of the pre-war British documentary film school established by John Grierson. As such, the work follows a clearly dramatic narrative despite the purely environmental recordings that form a large part of the film. This form of documentary was commonly commissioned by bodies such as the Empire Marketing Board and the General Post Office in the interwar years as a way of showing the public the inner workings of everyday work environments, as a way of demystifying and celebrating the everyday. It was relatively common in such works for a dramatic narrative to be followed - as Grierson noted the success of dramatisation in the so-called 'Yellow Press' of depression era Chicago, he felt that too dry a reportage would disenfranchise the target audience for these films.

Despite this, Terminus has at its core recordings of everyday events interspersed with dramatic events played out by actors or staged by the workers themselves. It is, of course, the presentation of everyday events that concerns our research the most here.

As well as this analysis, which is to be backed up by forthcoming research in the British Library sound archive, we have made our own recordings of the space. The manner of these recordings - and others made in Waverley Station in Edinburgh - has been through digital audio recording accompanied by digital photographs. The recordings have been made on M-Audio Microtrack recorders, which use solid state memory cards, eliminating the recording of any noise generated by the recorder itself. The recordings have been made with binaural in-ear microphones which resemble the ubiquitous personal stereo headphones. This form of recording was a research question in itself, as such recordings are quite particular, and demand certain listening conditions when replayed.

The binaural recordings are especially good for allowing a spatial sense in environmental recordings, but are best listened back on headphones again. Movement of the microphones can be disturbing to listen to, as a sensation of front, behind, left and right is given. We have conducted a series of focus group sessions with architects, sound designers, musicians, poets and film theorists to understand how different groups receive the recordings.

We have also worked with Masters students in Design and Digital Media & Sound Design that include sound designers and architects, affording them the opportunity of more creative responses to the recordings.

Our aim here is to understand the railway station, and it's vocal environment. Crucial to this understanding is the quality of voice identified by French cinema theorist Michel Chion as acousmêtre.

## CHION'S CONCEPT OF ACOUSMÊTRE

Since the arrival of synchronously recorded and exhibited sound, film makers and film theorists have sought to understand the relationship between the moving image and sound. Key contributions have been made by Sergei Eisenstein and John Grierson at the very dawn of this era. Eisenstein's early work in the field of sound is best explored in his essay 'Vertical Montage' where he extends his general theory of cinematic montage beyond the visual image and into the sonic image. This necessitates a shift in understanding, from the traditional horizontal montage over time, from one scene to the next as we are accustomed to with cinematic editing - but also *within* each frame, different parts of the image can be observed to have the tension of montage between them. To Eisenstein, it was a missed opportunity to simply use the synchronous sound track to reinforce and illustrate the images on the screen - when further artistic potential could be wrung from the juxtaposition of these elements.

The British documentary film pioneer had similar regard for sound in film, and produced one of the most consistent explorations of this notion in *Night Mail* (1936, directed by Harry Watt and Basil Wright). *Night Mail* assembled the most accomplished film-makers available to the GPO film unit at the time in order to tell that story of how mail is transported from London to Edinburgh. The film seized the opportunity to record sounds other than the actual noise made by the train moving over the tracks. The soundtrack instead consisted of commissioned works by composer Benjamin Britten and poet W H Auden. The power of the documentary is widely understood to lie in this collaboration, which gives reference to the pace of the train, but which resists the urge to simply record and play back a familiar sound.

This rupture of sound from its source is examined in some detail by Michel Chion in his works 'Audio-Vision' and 'The Voice in Cinema'.

> We can describe as acousmêtres many of the mysterious and talkative characters hidden behind curtains, in rooms or hide-outs, which the sound film has given us... Fiction films tend to grant three powers and one gift to the acousmêtre, to the voice that speaks

> over the image, but is also forever on the verge of appearing in it. First, the acousmêtre has the power of *seeing all*; second, the power of *omniscience*; and third, the *omnipotence* to act on the situation. Let us add that in many cases there is also a gift of *ubiquity*–the acousmêtre seems to be able to be anywhere he or she wishes.
>
> Chion 1994:130-131.

Acousmêtre is, then this voice from elsewhere, carrying as it does, connotations of authority and power. This voice has a longer history than that of cinema, of course, much of which is charted in Steven Connor's cultural history of ventriloquism, which identifies origins in antiquity - and again with those same qualities of power, and authority - a voice with a source that cannot be seen is taken to have the ability to see all.

This quality of voice is also found in everyday life - particularly in our example of the railway station. Early in the 20th Century development of the station typology, station management realised that purely visual information was insufficient to the purpose of directing travellers around a station. The introduction of public address systems such as Tannoys in the 1920s in places such as stations reinforces the authority represented by the disembodied voice. Nowadays, the prevalence of mobile phone communication also takes this quality of voice into the public realm on a regular basis. The urgency of this voice often taking precedent over the speaker's companions who are present in the space with them.

One particular case of the use of the Tannoy in Waterloo came to light through analysis of *Terminus*, a scene depicting the station ticket collectors at the gate between the concourse and platform. In this scene, a change in posture can be identified, as a taking of an authoritative position, much like one would take when getting the attention of a crowd to make an announcement. The ticket collector is not, however, taking this posture in order to ready himself to make an an-

nouncement. He is instead remaining silent whilst the Tannoy announces details of this journey to the station.

In this scene, the ticket collector borrows the authority of the acousmêtric voice, in order to do so, the staff adopt a certain posture to get attention, but are deploying this blanketing station voice as their own. This voice carries announcements about platform locations, delays and destinations - all information sought out by the station users. The information is trusted and the staff members know not to compete with this - and prefer to take its authority for themselves when appropriate. This observation is obviously mediated by the film-maker, but we also observed the same borrowing in the contemporary station. Observe, for example, the vicarious assurance of platform staff under Tannoy guardianship and contrast this with the agitation engendered by unscheduled announced delays and breakdowns.

Another aspect of this acousmêtric voice is the degree to which the call expects or demands a response. In traditional communication, both participants are active most of the time, either in conveying the content of the conversation or in affirming that you are paying attention with a variety of fill-in noises, agreements, and so on. The announcement is more theatrical in nature, as the listener is not expected to respond - indeed, should they reply, then they would be breaking the rules or contract of that space, taken to at least be eccentric.

> PC: I suppose in that regard I don't find any point of orientation: it's not my problem - I'm not *talking* to any of these people. Again it tends to be in intersubjective contact with somebody, if one is having a conversation - they know that you are talking to them and vice-versa. That if you don't hear something, either you say 'pardon' you signal 'pardon' or you say 'hold on' till the announcement is finished.
>
> RL: Is that maybe a similar mechanism to the one by which we don't respond to the announcer - we don't say 'thankyou'
>
> PC: Yes, because its another aspect of signage - the subject that makes it the category of signage that you are talking about is removed from intersubjectivity - there is no specific contact between an implied speaker and the subject.
>
> Transcript of Listening Session with Peter Cudmore

Anthropologist Tim Ingold reminds us of the difference in subjectivity between the visual and the aural realm, that vision separates and distances, whilst sounds are incorporated by the body, and stress relation above opposition.

> In speaking, the voice 'sounds through' from the inside to the outside; in hearing it conversely penetrates from the outside to the inside. Where vision places us *vis-á-vis* one another, 'face-to-face', leaving each of us to construct an inner representation of the other's mental state on the basis of our observations of outward appearance, voice and hearing establish the possibility of genuine intersubjectivity, of a participatory communion of self and other through shared immersion in the stream of sound. Vision in this conception, defines the self individually in *opposition* to others; hearing defines the self socially in *relation* to others. Ingold 2000: 246-7

Why cite this specifically filmic theory of voice in this instance, then? Sound design in cinema offers some of the most fully developed theories about environmental sound on offer. This research project is not about acoustic design - and in some senses opposed to or post-acoustics. One of the basic premises that the research is founded on is the shift in architecture from acoustic spaces where the extent of the voice was explicitly designed in - architectural forms such as the theatre, for example, have been usurped by large shed-like spaces where the solutions to acoustic problems are achieved technologically and electronically rather than by traditional formal design strategies. This paucity of sound design in everyday spaces has a huge impact on one of the richest aspects of our experience of architecture. Analysis of cinematic sound design equips us with some tools to analyse these aspects of voice more fully.

Indeed, the deeply encultured nature of cinema could play a role in making these aspects of voice more acceptable, and give terms of reference by which we can relate to the voice from afar.

## LISTENING EXERCISES & FOCUS GROUPS

This project deals with voice as an alternative description of space, away from the visual realm and into the sonic. The voice is a particularly important way of defining space, and in particular of defining a territory. This happens in transit spaces such as the railway station through the actions of the Tannoy, the railway staff, shops and other services, and finally the travelling public. Each of these groups defines a specific territory for itself through the use of the voice. The station announcements blanket the space, to the extent that listeners to audio recordings from the station could not identify whether or not the locus of recording was moving.

I would like to quote from some focus group sessions here, which give responses of a pair of researchers in architecture to the recordings of the environment.

> DM: To me that is partly what I felt uncomfortable about sitting listening to that - you're almost deprived of that sense of - it is such a fluid space - and either me standing as you were saying - say people come past you - making that connection between what this guy is saying and where he's going and me maybe rushing through and picking up a little bit of a conversation here and there - being deprived of that movement is almost very difficult to piece together or make some sort of relation between these things.
>
> RL: It is interesting that you say 'being deprived of the movement itself' rather than the visual element of it.
>
> DM: I have to say that I found it hard to do the visualising, somehow represent... there seemed to be some richness missing, and of course you've heard it all before, you know we've all been in those spaces - I was really struggling with that, I think that's what it was.
>
> RL: Does the fact that I was actually moving through the space make that more difficult, then? Or would a static recording have allowed you to understand the space?
>
> DM: I don't think so - you quite simply don't know.
>
> DF: In my head we were standing still, and in that case when a voice gets louder and more full, you just think someone is walking up beside you and then he's going away. In this case it could have been that you were walking and goes alongside you - then he veered off, there are different ways you can interpret your relationships - it's really interesting...
>
> Transcript of Listening Session with Dermott McMeel & Dave Fortin

Listening to this environment was contrasted with a busy Tokyo department store, which again was recorded whilst moving, but this time a repetitive call was being made by a pair of store workers acting in concert: a male and a female of contrasting physical presence and inflection, they complemented each other with one giving an attention-grabbing but highly repetitive and gratuitous call of "good morning" and "how may I help you" in a deep, booming voice whilst the woman called out in shrill tones to give more information on the products they were promoting.

> DM: I didn't notice anything else that stood out all that much - they were definitely very overpowering. And because you hear them all the way through until the very end, there was something quite comforting about that - that familiarity - something that went all the way through. Listening to it, you could constantly hear them. You felt like you were moving, but you could always hear them - always in the distance, right up until almost the very end, and there was something nice about that, you could relate to that - sort of "okay thats those guys from the beginning."
>
> RL: So that gave you a sense of movement in the space, do you think?
>
> DM: It did give me a sense of movement, but more than that - the first one: I did feel that sort of disorientation with these things sweeping in and out of you, but this one there was always that sort of reference sound. It felt very linear, but that's just I think because I could hear those people always - their voices were always there and would kind of pop up.
>
> Transcript of Listening Session with Dermott McMeel & Dave Fortin

That this bustling environment was found to be less alienating than the more familiar Waterloo Station recording, despite being busy, noisy on several levels at once, and in a language not understood by the session participants might seem a little surprising. The key here is that the sound had a source - not a *visible* source, as the participants in the session had not yet been shown photographs - but a sense of space was given by the way in which the voice carried in space, and eventually decayed. We could consider this sonic equivalent of perspective. Optical perspective obeys the inverse square law, fixed point of view, straight line geometry, occlusion and parallax, as well as being a geometric representation of infinity with regard to vanishing points. Sonic perspective also obeys the inverse square law plus reverberation, ambience, decay, a moving point of audition and binaurality.

This decay of the voice that is expected by the ear was not present in the station, the announcement pervades the whole station - not only acousmêtric but co-located through loudspeakers distributed across the station. A listener expects a sound source to be apparent, and is disturbed when it is not. Perhaps this is about ambient Vs source sound. We are disturbed when a point source sound assumes the character of ambient sound – the *ambient voice* sounds like the voice of God.

Visualising this space was one of the tasks set as part of the listening session. This is, of course, a very difficult task, especially if undertaken without knowing what a railway station concourse looks like.

> RL: Actually visualising the space - that was very difficult, then for you?
>
> DM: Yeah, I found that very... I sort of resorted - it just seemed to me, I was looking for different imagery that would somehow represent what I was trying to convey and there was nothing - it was difficult drawing anything that was going to do it justice, I just had this - it just seemed like this plain.
>
> I wouldn't say the space was coming across as something three dimensional with layers: it just seemed to be a plain in which one - something would sweep over you from one direction and then something would sweep back across from another and you just seemed to be in the middle of these things kind of sweeping - and you were moving in and out of them, they were kind of sweeping over you and then off into the distance again and something else would sweep in from another direction, and back out again - in a tidal - like way. Very, almost being swamped in these sounds.
>
> Transcript of Listening Session with Dermott McMeel & Dave Fortin

Across the station other kinds of territoriality were at work. A great many of these failed to get the attention they were seeking. One example is an information desk in the middle of the concourse that was little more than an office chair and small podium with the 'i' symbol hanging from the roof structure. This is corroborated by other interviews in which metaphors of hollow tubes, envelopment and immersion feature prominently in recordings of reverberant, ambient, non-directional sounds. The ambient noise as well as announcements and more prominent conversations drowned out this essential service, which was crowded with confused tourists and other infre-

quent station users. This displays the effect of sound design upon the space as something essential, and that our methodology of recording and analysis can inform design: positioning of sound sources, balance, sound asking, ambience, use of recorded voice and public address systems, zoning, incidental sounds. In the Schlesinger film, the acoustic resonance focuses on trains, friendly public announcements, greetings and farewells. Now the clutter of banks of trollies breaks this acoustic mood.

One of the key qualities of voice that has emerged from this study is inflection. This quality is the movement of the voice from high to low frequencies - the speed and variety of such tones used. Obviously, voices with a varied pattern of inflection are more interesting to listen to, but the quality is more complex than that. A regular pattern of inflection aids legibility greatly, and we have observed the important role of repetition in a number of different environments. We have also noted that, when in a busy environment, voices not only grab attention, but are deployed to maintain attention. In these situations, holding an even tone can be sufficient to allow a listener to 'tune in' to a particular frequency and carry on a conversation. It can be observed that two people quickly match the characteristics of their voices, and can compete with much louder voices and distractions through repetition and limiting inflection.

> All Human beings learn, however, to relate sound to distance in the act of speaking. We alter our tone of voice from soft to loud, from intimate to public, in accordance with the percieved physical and social distances between ourselves and others. The volume and phrasing of our voice as well as what we try to say are constant reminders of proximity and distance. Tuan 1977:15

We are developing tools with MAX/MSP software to analyse vocal inflection. The resulting graphs are called melograms, examples of which are shown here. Changes in sound amplitude (volume) are not a factor in these graphs. The top graph shows the frequency ranges at which the inflection is happening. The middle band charts the inflection more directly across the different

bands, and the final part of the graph shows the same information again, with the plateaus and peaks clearly represented. This bears similarity to Barthes' notion of the grain of the voice:

> It is this displacement that I want to outline, not with regard to the whole of music but simply to a part of vocal music (*lied* or *mélodie*): the very precise space (genre) of *the encounter between a language and a voice*. I shall straightaway give a name to this signifier at the level of which, I believe, the temptation of ethos can be liquidated (and thus the adjective banished): the *grain*, the grain of the voice when the latter is in a dual posture, a dual production – of language and of music. Barthes 1971 "The Grain of the Voice": 181

In conclusion, the visual and physical aspects of an environment only tell us a part of the story. The human voice is an important element in defining territory and constructing a sense of place. The architectural aspects of our study draw attention to design parameters hitherto given scant attention: the vocal equivalent of optical perspective:

sonic perspective and its dependance on mobility and vocal ambience;

the lure of the voice and its bonding, territoriality and adhesive properties;

its authority and ordering characterisation, and its grains and textures.

By deploying the voice in a variety of ways, different qualities of space are experienced by speakers and listeners. The voice is compliant in spatial functioning and organisation. Our project is establishing a methodology for further study consisting of recording, focus group sessions and analysis of inflection.

## FURTHER APPLICATIONS: DESIGNING WITH SOUND

The next step in the project has been a move towards design building upon our analysis and understanding. This has taken the form of a sound installation developed from the listening exercises. The installation is, of course, a particular form of presentation having its roots in twentieth Century conceptual art and sound art movements. As such, it is far from neutral and carries with it a great deal of conceptual baggage or apparatus.

This apparatus does not devalue its implementation of course. In much the same way as the documentary film, the installation offers us as researchers an opportunity to test and elaborate ideas in a measurable and comparative way whilst respecting the individualistic and subjective nature of the material at hand.

Our first development in this direction was entitled 'Banal Rhythms' and presented at the Rhythm conference of the music department here in Edinburgh[1]. This installation consisted of three speakers, each playing a different voice, chosen to demonstrate different forms of vocal territoriality. The first soundstation played the voice of an antiques auctioneer recorded in the environment. The commanding nature of this voice contrasted with the other recordings. The second voice was a calm, even voice reciting stock market data, and was recorded in a studio. The third occupied another space, being a recording of a telephone transaction with a colleague attempting to buy train tickets through an automated system and foreign call centre.

The room was set up simply, with four tables and questionnaires on each. The cacophony of three audio sources playing at once was of course entirely deliberate. Each desk had a questionnaire designed to ask questions regarding the relationship between sound and vision in our perception of space. This was addressed directly in terms of asking participants once again to provide a drawn or notated response to the sounds, but also through their choice of descriptive terminology.

[1] Coyne, R; Lucas, R; Parker, M. *Banal Rhythms*. Special session at Rhythm, Time and Temporal Organisation Conference, Institute for Music in Human and Social Development, University of Edinburgh.

It is interesting to note the ways in which musically trained individuals could apply traditional musical notation to situations such as these recordings.

The degree to which a soundscape was constructed by the three stations was addressed by the fourth desk. This was found to be lacking in most cases, however: the three sounds never seemed to gel together for the participants in the installation.

Part of our remit in the research project is to consider designing with sound. A simple extension of this installation allowed for fundamental questions of the possibilities for designing with sound to be addressed and posed, although the answers are somewhat elusive and shall probably remain so.

It seems natural in some ways that architects ought to design soundscapes as much as they do landscapes and cityscapes. This is not the case, however - and the architect's response to sound is often to consider acoustics. This form of engagement with sound is all about controlling sound levels so that some particular task can be undertaken without interruption or disturbance. The classic example of this is the concert hall, where the acoustic design is engineered to maximise the clarity of music played there, and to dampen down unwanted environmental noises.

Indeed, this categorisation of some sounds as *noise* is shared with the *World Soundscape Project* established by R Murray Schafer in the 1960s. This aestheticisation of the environment is similar to romantic notions of landscape as something to be observed as a whole from afar rather than engaged in actively. Our premise in this project is to consider the design of sound environments in a manner more akin to the cinematic sound designer. Sound design in cinema has more awareness of the necessity for background noise, dirty unnecessary noises, or adding colour to flawless recordings. This addition of character makes sound environments in film more convincing and more familiar. Several examples are given by Walter Murch (2001) in his sound design for films such as George Lucas's early work *THX1138* or Coppola's *Apocalypse Now*. To this end, we reject

some of the aesthetic categorisations implicit in the World Soundscape project, and adopt a position that - whilst still a response to the aesthetic - is a more holistic an open notion that does not place values as explicitly on unique versus ubiquitous sounds, accepting noise as much as sound, voice or music.

To this end, our recent installation *Vocal Ikebana* was a simple design exercise in which participants were asked to decorate a gallery space with voices. The voices were themed similarly to the *Banal Rhythms* installation, but expanded upon to include more environmental recordings. This time the room was set up with a single table, and participants asked to listen to each sound station in turn before beginning the design exercise. In gathering these responses, we gathered data about how each respondent considered the sound environment and its relation to other realms such as the visual. Once this familiarisation task was complete, the design exercise began.

Each participant was given 10 minutes to rearrange the three speakers around the room. Additional props such as furniture, plastic crates and throw rugs offered opportunities to raise the speakers, enclose them or even to muffle the sound. Participants could place the speakers anywhere in the room, in any direction and at any volume.

Certain commonalities emerged in the results. These are instructive both on how we might design a sound environment as well as in our understanding of environmental sounds. One of the first comments to make is that there is a difference between responses which were designed to be experienced by remaining static, and those that were designed for a moving listener. The involvement of the furniture was one factor in showing how a participant was thinking: using the tables and chairs suggested a static formation to be appreciated from one particular position in space. On the other hand, the other half of the participants considered the room as a place to be moved around, and their Ikebana arrangement was something to be appreciated by being *in* the environment.

Another commonality emerged, related to the above split. The degree of separation of the speakers was interesting to note. Many of the arrangements considered the sounds as separate from one another - something that relates directly to the spatial arrangement of the speakers. There were exceptions of course - and these occurred with participants who considered the soundscape to be experienced from a static position. It was much more common to mix the sounds up when this arrangement was made than when the participant was encouraged to move around the space.

> To some extent wanted each speaker to have their own space/territory in the room - but also wanted the sounds to 'overlap' appropriately and adjusted the volumes to achieve this. Wanted Sound Station 1 (auctioneer) to be dominant as I found this sound the most interesting - dominant/central position in the room and loud (volume). Wanted the experience of moving and around into these separate and overlapping 'sound spaces'.
>
> Glen Taylor, Vocal Ikebana

> To accentuate the mantra quality of the main recording on Sound Station 2 (stock data) by building an altar structure at the far point of the room. Muffling the annoying Sound Station 3 (telephone booking) recording and providing a different acoustic by sealing it inside a box. Providing additional texture using Sound Station 1 very quiet, to emphasise concentration on Sound Station 2.
>
> Sean Williams, Vocal Ikebana

Interestingly, a number of participants continued to modify their arrangement when the time was over, and in response to the questionnaire that followed. This final questionnaire asked the participants to describe their design process and to respond through drawing, diagram or notation once again. It is interesting to note that some participants tended to become more engaged with the design process only once a visual element of drawing was requested, suggesting that there is something of the visual implied in the act of design itself, that the totalising view of a space offered by drawing it is crucial to the design process.

> Still not sure if it would be the definitive one - I wanted a background (speaker 2) linear and more volume. And break the environment with number 3 on my left (for some reason I prefer the unusual sound coming from the left more than right).
>
> Not sure what to do with number 1 (specially because I didn't like it) so less volume. Also like the background on my back and towards windows.

Natalia Camelo, Vocal Ikebana

A relationship with the visual was also apparent in the placement of some speakers - which were visually dominant as well as aurally.

> And this one here (telephone transaction) - there were some very... Martin had a very strong position in that one, it was sort of the personality sitting talking. I think it deserved to be... if I had a photograph of Martin, I probably would have sat that on top of the speaker. There was a personality there, you could almost sort of sit down and feel that it was... Although you could hear the other side of the conversation, at times you know it starts, it was almost as if there was someone having a conversation - I don't know - there's that temptation to fill in the other part to see what perhaps that other part of the conversation is. So that became one person almost.
>
> Dermott McMeel, Vocal Ikebana.

Obviously, a larger sample is required to draw any hard and fast conclusions from this installation, but it remains interesting that a range of responses is emerging from the work. The arrangements made by sound designers and musically trained individuals tended towards the mobile formation with a clear separation of sounds, whilst the responses of the other larger grouping - architects - tended towards static but overlapping arrangements.

The task of this research is to establish methodologies for further research projects. This is one form of investigation which looks to question the basis of designing with sound. Potential further applications would respond to the questions raised of static versus mobile, isolated versus overlapping and the relationship with the visual.

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