

**SPACE, SOUND AND MUSIC:  
USING EMBODIED EXPERIENCES OF SPACE TO PRODUCE MULTIPLE AND  
INTERCONNECTING EXPERIENCES OF SPACE IN ACOUSMATIC MUSIC**

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**PAPER ABSTRACT:**

Many different spaces coexist and interconnect for any listener to music played over speakers or other means where there is no visible source of the sound. These spaces could include the physical space of the concert hall, a representation of space conceived in the perceived knowledge of the social practice of people getting together to listen to music in groups; the social space of the listeners; the virtual space of the piece of acousmatic music; the representation of perceived, conceived or lived space in the piece; as well as the representational space of the sound work and the mental space the individual listener inhabits while listening, a space that is possibly unique to sonic experience.

In this paper I shall discuss how these spaces are produced and coexist; how our embodied experiences of space can be used to produce new means of representation and new forms of expression through the production of space in sound works; and investigate spatial mimesis as a new area of discourse in sonic art.

These developments will be discussed in the light of the specific history of the use of space in electronic and electroacoustic music composition.

221 words

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Acousmatic listening has been described as  
"a situation where one hears a sound without seeing its cause"

(Chion 1994: 32).

However acousmatic music is more than music which is played over loudspeakers with no other visible source of sound. Features of acousmatic music may include the use of recorded sounds derived from real life or sounds which do not exist in the acoustic world and it may include sounds that the listener recognises or thinks that they recognise as to their source or may fail to. Those sounds may be heard from a completely different sonic perspective from that normally encountered in the real world and these sounds may be combined with others that they could not possibly exist alongside in real life. The sounds may be organised according to many different schemes or purposes, for example musical, narrative, or documentary and acousmatic sound works may be played in a number of settings or stored in a number of recorded formats. Acousmatic music is played over loudspeakers and as such always involves a composed or musical production of space. Acousmatic sound or music work can combine the lyricism and abstraction of music with its direct emotional appeal with narrative, documentary or factual approaches. It has the power to refer to, remind of and suggest things outside itself. Acousmatic music does not present 'fixed images' but, at best, allows the imagination to build pictures, atmospheres and moods based on the representational and abstracted elements as outlined above.

"Acousmatic art is the art of mental representation triggered by sound "

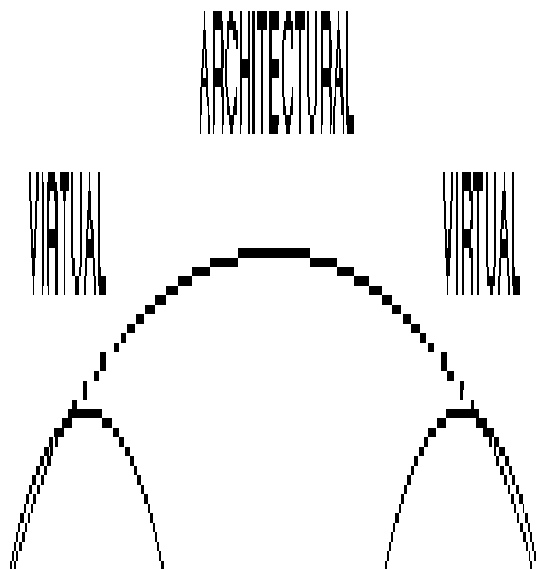
(Dhomont 'Is there a Quebec sound' Organised Sound. Vol 1 issue 1.)

My own interest in acousmatic sound composition is to make work that is expressive of aspects of my own experience particularly through the musical production of space and

my primary interest has been in the use of space and motion as forms of expression in acousmatic music.

The creation, performance and reception of an acousmatic work involves the production of a number of interlocking or related spaces including the composer or sound artist's representations of their experiences of space expressed in or through the sound work. These may be strictly realistic or may be partially or wholly abstracted from reality. When an acousmatic work is performed, particularly in a public listening space, it inhabits an architectural space upon which it imposes this representation of the composer's experience of space. The concert hall is also a social and communal space where people gather together to listen. In the performance of the work each listener or member of the audience will inhabit their own space as they are experiencing the sound work. In many acousmatic works the space of the performance provides a link between the representations of the composer's experiences and the mental representations of each listener which are informed by their own history and experiences.

This production of related spaces is possibly unique to the sonic experience and the ability to combine it with a very rich variety of sound material is unique to acousmatic music.



Although music has, throughout history, often incorporated space as a compositional element in addition to the usual parameters of melody, harmony, rhythm and texture, it is only with the onset of music mediated by loudspeakers that the movement and positioning of sound has become easier and more widespread. Some of these compositional uses of space could be said to be deliberately mimetic of experiences that we have of kinds of space outside music. I shall refer to this as spatial mimesis. Spatial mimesis in an acousmatic composition results in the positioning and movement of sound in the virtual space between the loudspeakers in a way that is based on, reminiscent of or represents different aspects of our perceived, conceived and lived experiences of space.

Stockhausen's *Gesang der Jünglinge* is a famously cited example of the compositional use of space. In playback it utilises five groups of loudspeakers surrounding the audience, of this, Stockhausen says

“ The speed of the sound, by which one sound jumps from one speaker to another, now became as important as pitch once was. And I began to think in intervals of space, just as I think in intervals of pitches or durations.”

(Cott, 1974: 87)

Stockhausen is drawing on experiences of mathematical space, of two or three dimensional geometric or mathematical models and patterns. In sound this might manifest itself as a spatial motif, in which spatial elements, phrases or patterns, are used to articulate sound objects in distinct positions in space or with a distinct motion path so that the *position* of each part of a musical phrase is as important as the rhythm, melody or any other aspects of it.

Other sound artists and composers are producing work which calls on experience of the space of enclosures or architectural space, built and natural, located and non located, public and private, urban and otherwise. These social spaces are often highly significant, on a personal level, to individuals, or on a social level, to a whole society, or sector of society. Much of our experience of architectural space is gathered through the aural space related to it. Sound recordings made in existing architectural spaces, by sound artists such as Jake Tilson have captured the aural features and thus some of the architectural and social aspects of those spaces. Other composers have made compositional use of the acoustic qualities of a physical or architectural space by allowing sound to behave in a particular way in that space. In *I am Sitting in a Room* by Alvin Lucier, the architecture of a room is used as a resonator for a piece of spoken text which is projected into the room and recorded, over and over again, with the additional room resonances building up every time the text is looped back into the room.

There is also a substantial body of sound work that concentrates on capturing and releasing recordings of specific or located natural places. In focusing the listening attention on the aural qualities of a place which is normally taken for granted then the other unique qualities of that place also become apparent. These recordings may be presented unmodified as recorded, or modified in some way, by means of studio processing or a textual commentary (for example *Kits Beach Soundwalk (1989)* by Hildegard Westerkamp). Another aesthetic motivation might be to provide a historical document of place in a time of fast changing natural environments for a multitude of reasons from the archival to the political. Examples of this can be found in the work done by sound artists working in the field of acoustic ecology who have made work particularly relating to Vancouver and its environs and other natural soundscapes. (*The Vancouver Soundscape 1973 and Soundscape Vancouver 1996*).

There are of course many other kinds of space that we experience outside of sound that can be represented in sound works. Antiphonal music is primarily compositionally based on social spatial mimesis particularly of conversation. Visual spatial mimesis might suggest the kind of points of perspective, or points of view, of an observer, that is usually associated with the visual experience of space, the watchful eye thus becomes the watchful ear. Our experiences of physical space as mediated by touch or haptic space gives us a connectedness to objects and textural detail. The language of touch or texture is similar to that which we apply to texture, density and mass in sound. Sound work mimetic of our aural experience of space can be found in the work of Cage and many others who work with whatever sounds can be heard or captured at any given moment without making 'editorial' choices. There are many other examples of kinds of mimesis.

My own concerns have been with using physical and mental embodied experiences of space to produce compositional space and motion in my work. I would like to illustrate this with reference to two works *Nesting Stones* and *Invisible Crowds*.

The sound world of *Nesting Stones* is largely derived from my daughter, just as she was learning to speak, and from myself. The sounds used are mainly non verbal; cries,

laughs, breaths and some words.

The use of space in the piece is informed by aspects of my experience of the child / parent relationship and include feelings of both claustrophobia and mutual dependence as well as observations of the child's growing sense of self, the ever widening boundaries of the child's perceived world and sense of inhabited space and of the perpetual movement, restlessness and curiosity of children and the changeability of their emotions. The physical and mental motion mimesis in *Nesting Stones* is based on both bodily experienced gesture and mental states and observed movement and emotion. These experiences and observations of space and motion are formed into spatial templates which are used as organising structures throughout the piece with the aim of adding to the already expressive nature of the sound material.

Some examples of these are given below and are a mixture of specific experiences and observations of space and motion, what they are expressive of and the spatial templates that are used in the piece.

Mental motion mimesis derived from lived emotional experiences:

- aloneness and isolation
- the drive to communicate
- perpetual motion
- the changing and revaluation of my personal liberty
- moving on
- enclosing
- soothing
- smothering
- massing
- closing in

Physical motion mimesis: observed motion

- running away
- restlessness
- exploring
- expanding her world
- moving on
- all over the place

Physical motion mimesis: experienced motion

- embracing and encircling
- pulling in opposite directions
- letting go
- perpetual motion
- moving together
- moving apart

The main *features* of motion mimesis in *Nesting Stones* are:

- dissonance and harmony
- reflection or call and response
- episodic
- cause and effect
- changes of speed and tempo
- energetic

*Play extract*

*Talk specifically about extract.*

In *Invisible Crowds* the experiences of space that I have drawn on are those of physical and mental aloneness, solitude and interruption and physical and mental overcrowding, all of which can be welcome or unwelcome. Compositionally, material is spatially organised according to templates derived from these experienced mental states with particular regard to texture and density.

*Invisible Crowds* opens with a kind of meditative state, metaphorically, a 'one track mind' cleared of all thoughts. Throughout the opening the smooth single pitched chime is joined by others, at times these patterns of thought are disturbed by more texturally spiky thoughts occurring and interrupting, some slowly dawning, some passing almost as soon as they occur. Eventually the smooth sounds are interrupted by waves of more jangling, less meditative, patterns until the speeding up bell sound starts to be an alarm which wakes the subject out of reverie. The 'warning bell sounding in my head' triggers another state of mind, more fractured with small varied fragments of thought appearing from all around and beginning to coalesce into a more cohesive whole. At times it sounds literally as if the "penny drops", at other times various external sources serve to interrupt and take over. The piece moves on to a more complex and less spatially specific section, but I would like to play the opening as described.

*Play extract*

In this paper I have described a compositional use of space that is mimetic of spatial experiences outside sound and have talked of my specific interest in expressing embodied physical and mental experiences of space. The compositional language that is developing is, of course, more complex than this and contains more variable elements but I hope that this short paper but goes some of the way towards explaining how using real world experiences of space to inform the production of space in an acousmatic work may interconnect with the experiences of space of the listener and establish spatial mimesis as a new area of discourse in sonic art.