Sounding Interiors: Daydream, Imagination, and the Auscultation of Domestic Space

By Andrew Czink

Auscultation is the process medical doctors use to listen to the interior spaces of the body with a stethoscope and by knocking and tapping on the body's exterior. The ambiance of interior domestic spaces is not only determined by surfaces and light, but also by their aural architecture (Blesser & Salter 2007). Each room's unique configuration of surfaces and objects colours all sounds introduced into the space in a unique way. Acoustic feedback can be used to sonically embody or actualize the normally silent resonant frequencies of any room. Auscultation of my own domestic space was achieved by creating feedback with an amplifier and microphone, and by virtually introducing recordings of music into these spaces using the digital signal processing (DSP) technique of convolution. Recordings of these sounds were the basis of my soundscape composition *Resounding Reverie,* which embodies and investigates the place of the imagination and reverie within the aural architecture of a domestic space.

By sounding the frequencies of domestic space, aural architecture becomes a more tactile, haptic experience, which may set the tone for daydreaming's interior spaces of the self, and the movement of the imagination. The temporality of space is highlighted and made manifest through the performativity of both the recording process and that of daydreaming. Drawing from De Certeau's ideas of place and space, Bourdieu's notion of habitus, Heidegger's dwelling, Bachelard's image and daydream, and Blesser and Salter's aural architecture, a position is developed investigating the relationships between the home, the performativity of architectural space, imagination, supra-rational knowledge, and the soundscape of domestic spaces.

Architecture is typically represented visually: often with photographic images devoid of signs of habitation. This is not surprising as we live in a culture that privileges the visual to the detriment of the other senses. Focused vision tends to distance us from the objects that we observe. What we see is always 'out there,' away from us, always other and distant. We lose our sense of intimacy with things when we emphasize the visual at the expense of the experiential. Juhani Pallasmaa states in his book *The Eyes of the Skin: Architecture and the Senses* that

> the gradually growing hegemony of the eye seems to be parallel with the development of Western ego-consciousness and the gradually increasing separation of the self and the world; vision separates us from the world whereas the other senses unite us with it. (25)

Our experience of architecture, and our environment in general, is an embodied one. Pallasmaa again points out that "an architectural work is not experienced as a collection of isolated visual pictures, but in its fully embodied material…presence." (44) Visual representations of architecture are representations of geometrical space abstracted from inhabited space. "A house that has been experienced is not an inert box. Inhabited space transcends geometrical space." (Bachelard 1994, 47) This notion is echoed by others: De Certeau's "space [as] a practiced place," (1984, 117), Bourdieau's 'habitus' as a "spatial acting out of place (2005, 300) and Heidegger's notion of dwelling poetically, all recognize the primacy of space as a fully embodied experience, and one that cannot be reduced to a rationalized vision.

The aural architecture of interior spaces is a major determinant of the character or ambiance of any space. All interior spaces have numerous resonant frequencies based on their geometry. When a sound wave is the exact length (and whole number multiples) of opposing surfaces in a space they become naturally amplified as they reflect back on themselves repeatedly. To actually hear the resonant frequencies of interiors requires sound to be introduced into the space. Frequencies in the introduced sound that are common with the room's resonant frequencies will be amplified, while others will be attenuated, thus colouring the sound. The process of applying a room's resonance characteristics to other sounds can be achieved through convolution of an impulse response recording of the space with the sound to be processed. When this is reiterated repeatedly the resonant frequencies become increasingly amplified until they 'overtake' the introduced sound: the resonant frequencies become louder than the introduced sound transforming that sound into a completely different percept. Creating acoustic feedback with an amplifier and a microphone only produces tones at the various resonant frequencies of the space. As one moves around the space with a microphone in this situation, the tones change as the location of the microphone changes in relation to the geometries of the room. One is able to 'perform' the room's resonances. The passive acoustic resonance becomes active and actualized in an alternative take on the soundscape.

Attuning ourselves to the passive acoustics of a space, to the ambiance of a space, requires an intentional sensitivity to the more intimate and haptic experience of listening. Our experience of sound bridges the near and far. We feel sound as well as hear it: Sound touches us in an intimate way. Sound has a strongly tactile aspect, particularly with lower frequencies, which we feel as much as we hear.

The aural architecture of built spaces is a major determinant of our sense of self in relation to the world. "To enter and come to inhabit a place fully means to redraw the limits of our bodily existence to include that place - to come to incorporate it and to live it henceforth as ground of revelation rather than as panorama." (Jager 2000, 220) In a sense the architecture becomes a part of us as our selves 'tune' into the resonance of the space. Bachelard uses sonic metaphors to elaborate on his notion of poetic image. He says that

> …through the brilliance of an image, the distant past resounds with echoes, and it is hard to know at what depth these echoes will reverberate and die away.…It is in reverberation…that I think we find the real measure of the being of a poetic image. In this reverberation, the poetic image will have a sonority of being. (Bachelard 1994, xvi)

Bachelard seems to be getting at a more palpable sense of materiality for the poetic image than just that of cognitive understanding. He seems to be reaching for a sense of the image as a supra-rational and embodied result of the human imagination at work. This resonates with notions put forward in evolutionary theory and cognitive neuroscience. Eric Clarke suggests that the perceptual system 'resonates' to environmental stimulus and that "perception is a *self*-tuning process" (2005, 18–19). This process of the self's resonance with its environment is seen by Clarke not as a passive process but rather that "it is a perceiving organism's active, exploratory engagement with its environment" (19). The self and the environment are mutually constituting.

Bachelard sees this relationship between self and environment as being rooted in the acoustic. "Images are born directly from the murmuring voice - to which one listens in speaking nature" (quoted in Kearney 1998, 108). Bachelard is pursuing the supra-rational again here: getting at the 'sense' that is beyond or before sense in its more common cognitive guise. The receptive posture of listening and tuning in to the ambiance of interiors is fundamental to generating meaning that is not simply cognitive. This receptivity is at the root of Bachelard's notion of the daydream, of reverie: "…all imagination must learn again how to dream…" (quoted in Kearney 1998, 109) In daydreaming our intentional being is decentered, allowing memory, thought, and environment, to flow and generate unique creative images. Daydreaming is a deterritorialization of intentional cognitive thought processes: the nomadic thought of Deleuze and Guattari. "Nomadic thought…is not a matter of making long journeys around the world…[rather] it could happen without stepping outside one's apartment" (Ballantyne 2007, 38). This is the space where memory and reality may interact allowing for the "ever-recurring creative moment…a refrain…[that] addresses itself to a deeper singing" (52–53). Imagination doesn't reject the real word, rather "it mobilizes its potencies of transformation…[where] reverie designates imagination as a constant re-creation of reality…[and is] the purest expression of human freedom" (Kearney 1998, 101).

Daydreaming and imagination as spaces of becoming rather than being are explored in my piece *Resounding Reverie,* through performative interaction with my personal domestic space and processing of music that I have experienced throughout the years in the intimacy of my homes from childhood onwards. Three initial recordings of feedback were made in my home (see appendices A and B). Three main spaces of the main floor of my home (kitchen, den, and living room) were explored with a microphone producing feedback with an amplifier. Two procedures were followed here: firstly by exploring all the geometries of the space with the microphone, and secondly, by following common typical spatial trajectories through those rooms (for example: moving from the kitchen island, to stove to sink as one would while cooking). The variety of frequencies produced was astonishing to me. These three recordings were edited into smaller musical motives and rearranged in order. A polyphony was created by combining several motives simultaneously, as if several people, each with their own microphone, were moving through the space at the same time.

Three recordings of music were also incorporated into the composition: excerpts from the *Adagietto* of Mahler's Fifth Symphony, the *Lacrimosa* from Mozart's *Requiem,* and my own piano composition *Mind's Rose.* These pieces all have deep, long-term significance to me. I have fallen into states of reverie repeatedly while listening to, or playing, these pieces of music over many years. All of these recordings were 'placed' into the acoustics of my home through convolution with an impulse response (IR) of my living room (see appendix A) These recordings are never heard 'as is,' but rather always affected by the resonance of my home: sometimes reiterated so often as to be unidentifiable (listen to tracks 5–15 of the audio examples for an example of this process with the Mahler recording). When the resonance of reiterated convolution processes take over the original material then the direct connection between those frequencies and that of the feedback recordings can be heard clearly. This process is suggestive of the changes in attention while falling in and out of daydreams, where sounds become clear for a brief moment and then meld with the general ambiance of the space and other sounds.

The piece begins with the 'melodies' and 'motives' of the feedback recordings beginning initially with the kitchen, moving through the den, and into the living room of my home. There is a transition period where resonant frequencies produced by convolving a feedback recording with the pre-recorded compositions moves to the Mahler, Czink, and Mozart compositions as placed in my home's spaces. The recordings move seamlessly between heavily resonated to almost un-resonated versions into a final gesture with the Mozart excerpt transformed into an 'endless' sustain through resonance. The sound begins in a small and somewhat intimate way, becoming increasingly full and resonant, to the point where it completely fills the acoustic space. The movement from articulated motives and melodies to full resonant textures evokes the process of fully conscious attention falling into moments of reverie. The overall ambiance along with our various practices construct the space we find ourselves daydreaming within. This is at the core of Heidegger's notion of dwelling, which he characterizes as the "relationship between man and space" (157). This is a dynamic, ongoing, unresolvable relationship: according to Heidegger we must "ever learn to dwell" (161). Dwelling as practice, then: as Bourdieu's habitus being defined as systems "which generate and organize practices …without presupposing a conscious aiming at ends or an express mastery of the operations necessary in order to attain them" (53). Auditory practices of listening and sound-making are performative practices that constitute a habitus as an ongoing structuring of our relationships to space and place. *Resounding Reverie* articulates my domestic space (and potentially others'), allowing dwelling to occur. The auscultation of space via feedback processes and other soundmaking practices promotes an ambience for daydream and the free undirected flow of imagination. The agency of the architectural interior and of the self in its becoming are conjoined (or convolved!) in the imaginative space of reverie.

Appendix A
Technical procedures

Feedback was created using a TOA Keyboard amplifier and Shure SM58 microphone.

Feedback and Impulse Response (IR) recordings were made using a Sound Devices 702T Field Recorder and Shure VP-88 stereo microphone at 24 bit, 44.1Khz resolution.

Recordings were edited, processed and convolved in Peak Pro 6 XT.

An IR recording is a recording of a very short (approximately 100ms) broadband burst. In this case bursting balloons were used to produce the impulse. When a sound file is convolved with an IR the time and frequency characteristics of the space the IR was recorded in, are applied to the sound file. In general terms the sound file is 'placed' into the reverberant space of the IR.

Convolution is a mathematically simple but computationally intensive process whereby two sound files' spectra are multiplied together. This results in a 'natural' amplification of frequencies that are common to both sound files. So, the resonant frequencies of the room colour the processed sound. In the reiterative process used here the room resonances gradually 'take over' the frequencies of the processed music. This is a digital version of what Alvin Lucier did in his piece I Am Sitting in a Room, where he played his voice as reproduced through speakers into a room and re-recorded it repeatedly

until the room resonance was the dominant sound and his words were unintelligible. Only some of the inflection and timing remained in the sound.

Resounding Reverie was assembled and mixed in Logic Pro 7 and mastered in Peak Pro 6XT and Ozone 3 software.

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