Other Acoustics/ Brandon LaBelle
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'If a work of architecture speaks only of contemporary trends and sophisticated visions without triggering vibrations in its place, this work is not anchored in its site, and I miss the specific gravity of the ground it stands on.'[1]

The relation of sound and space brings forward a variety of possibilities as well as tensions. Such dynamic may at times spark the imagination with a sense of wonder and fantasy, while often leaving the route toward pragmatic realizations occluded. While acoustics most readily applies to the making of sonic architectures, and which no doubt contributes important elements to crafting space, it also generally limits its view toward pragmatic goals. My interest here is to explore sound and architecture as an extended aesthetic project that in turn raises questions pertaining to spatial experience and imagination. To do so it seems important to initially understand sound on multiple levels – physical, social, psychological – to open up ways it may come to converse with architecture.

What is sound already doing?

Initially, sound unfolds as a dynamic relation between an inside and an outside. This physical movement immediately occurs at the level of the ear – without closure, the ear radically permits the intrusion of the exterior onto the interior of the body, as well as lending direction and orientation through proximity, the stereo-field, movement, refraction, etc. As a spatial proposition, this mingling between inside and outside creates a sense of immediacy, granting a flexible relation to questions of spatiality. We can extend this by appreciating how sound originates from a source and travels toward a distance. Resulting from a series of material frictions arising from a given object or body, sound propagates, thereby leaving behind the original object or body. In this way, it immediately crosses a number of boundaries, of the object itself, of given spatial separations between rooms or related divisions, and finally, of the separation between object (source) and subject (ear).

Secondly, to add onto this initial spatial proposition, sound is also carrying messages. It functions as a communicational medium. As a physical and spatial movement, sound carries a collection of information related to the conditions of the original object or body, and the related environment. Importantly, this information also grants animation to things: by stemming from an object or body, sound signals that movement is occurring, and more so, that life is happening. Many spiritual traditions understand sound as the voice of objects, of nature, of animals, etc., and the world as an audible chorus whose multiple voices are continually speaking. Sound comes to radically suggest or announce *presence* (even as recorded material).

Lastly, sound is also a significant social material. It affords a general sense of sharing, and in doing so it potentializes relationships with emotional and psychological charge. In granting or suggesting presence, sound immediately charges the environment with a sense of relation, functioning as an emotive medium. To return to the observation that sound stems from the friction of an object or body, carrying information across borders and between inside and outside, such passing and movement is physically shaped

by the contours of the event of its occurrence – sound, as many artists and performers subconsciously understand, delivers psycho-social force by operating as a *performative* medium.

Architecture

Following such thinking, sound seems to support notions of event-architecture, participatory productions, and related performative aspects of space. Questions of the immaterial and evanescent find support through an auditory materiality, and can be looped through spatial thinking that sees in the built environment a vital perspective onto the experiential. Yet sound may suggest such a link by also posing particular tensions. For sound, in aiding in the sense of spatial borders also disrupts their clarity through its continual movement, oscillation and vibration. As a communicative medium sound carries information that is inherently temporal and evanescent – it can only communicate by always already disappearing. It thus supplies communication with a vital medium while unsettling signification with mishearing. And finally, sound participates in the making of communities while also exceeding the limits of shared values (noise). Static form, the division of interior and exterior, and logics of rational space can be seen to gain degrees of performative nuance and materiality through the dynamic range of sonority, which guarantees a continual differential force.

Bernard Tschumi elaborates on the event of architecture through the theme of 'violence' stating, 'Bodies carve all sorts of new and unexpected spaces, through fluid or erratic motions. Architecture, then, is only an organism engaged in constant intercourse with users, whose bodies rush against the carefully established rules of architectural thought.'[2] The movement of the body intrudes on the spatial features of architecture, expressing an element of duration and inhabitation in relation to formal design. Such may also be said of sound, as its event-oriented nature lends a dynamic material to the contours of the built. As Juhani Pallasmaa proposes, sound gives to architecture a sense of lived time, a register and medium for the movements of temporal exchanges, sharing, and experience.[3] In turn, it may provide a flexible means to be emotional, to share beyond the strictly rational, and to shape relational experiences with a degree of immediacy.

Paul Carter, in his insightful article 'Ambiguous Traces, Mishearing, and Auditory Space', gives a compelling examination of the auditory and acts of listening through the theme of 'ambiguity'.[4] Claiming that listening, as a communicational device, incorporates the pleasures and potentiality inherent to ambiguity, Carter stakes out a productive territory in which mishearing and listening become openings onto a rich process of sharing. For Carter, the ambiguous carries a dynamic sense of the erotic, as it grants degrees of flexibility and surprise to semantic meaning. I would like to hold onto Carter's notion of productive ambiguity in teasing out the relation of sound and architecture. For if we claim that sound and architecture may have something to give to the other beyond the strictly acoustical, it may be on the level of making ambiguous the strictly functional or spatial program of architecture while also contouring the audible with degrees of material logic and spatial rigor. What interests me here is to suggest that if architecture is to work with sound in ways that go beyond either acoustical fitting or the placement of loudspeakers in designed spaces (the music model) it would benefit by dropping many of its assumptions and taking sound on its own terms, which may generate something not resembling much of architecture as we see it.[5]

Sound Art

I would like to continue by way of sound art as a particular cultural practice that often fuse sound and space and in doing so give expression to imaginative spatial productions. Generally, we can appreciate sound art as a practice that carries or performs understandings of sound (as I have tried to map out), using sound to create physical, communicational and social material while also appreciating how sound may disturb existing patterns of behaviour or thinking.

Historically, we can understand that sound art also bridges the gap between music and the visual arts, which greatly contributes to its aesthetic vocabulary. It does this in a number of ways – by drawing upon the acoustical and sensorial properties of sound; by extending the notion of the musical instrument to that of environmental geographies; by developing relational strategies that bring listening to the fore; and by staging social and participatory actions through the perspective of the auditory.

Following such themes, we can understand how sound art unites musical ideas related to composition, performance and sonic materiality with artistic notions of conceptual, environmental and social relations. The early works of both John Cage and Pierre Schaeffer can be highlighted here as setting the scene for sound to be mobilized for opening up musical languages. For Cage, sound and by extension listening lead to a renewed sense of musical strategies and modes of appreciating music in a spirit of democratic and anarchic sociality: sound was used as a musical *and* social project so as to generate forms of integration with everyday life and surrounding space. In contrast, the work of Schaeffer and *musique concréte* sought to shape sound into isolated material objects, generating compositions that activated the ear in quasi-scientific ways. Producing elaborate analyses of sonic materiality, the relation of sound and space, and aspects of psychoacoustics, Schaeffer worked through sound as a building material.

The development of sound art brings together this legacy of experimental music practice concerned with material and embodied emphasis, while also drawing upon artistic practices based on staging temporal and spatial events related to social practice and public environments (as can be seen in the work of Fluxus and Actionism, along with early conceptual art and performance projects). I might suggest that in the intermedial practice of sound art, art brings to music aspects of critical thinking developed over the last 40 years, whereas music brings to art degrees of sensitivity to the experiences of listening, auditive sharing, and the instrumentation of electronics and performance. We might say that sound art generally musicalizes environments as a means to detune our ears toward a broader field of hearing. Through such work, questions of space and architecture feature prominently, functioning as continual input into the project of sound art.

Vibration

To detail this expanded view on sound and architecture, I'd like to take up the theme of vibration.[6] Vibration may be understood to disrupt notions of acoustical fidelity – acousticians are generally bent on eliminating vibration as a form of intrusion onto sound signalling as well as a potential hazard to the stability of buildings. Vibration may then act as a productive counter-sonority to the acoustical sense of space, opening up to rethinking what is proper to architecture. In addition, vibration lends a dynamic sonic

attribute that, in exceeding certain limits extends listening to a deeper and fuller embodied presence and tactility. As Douglas Kahn points out, 'The constant deflection, deference, and relationality found in figures of vibration had very important consequences for the status of bodies and objects within space...Vibrations through their veritable movement generated a structured space and situated bodies and objects in that space. This process of situating did not outwardly transform the bodies or objects themselves, however, it just placed them in an ever-dependent relation within a larger system.'[7]

Vibration functions as a spatial device put to use within sound art for the purpose of drawing out an extensive corporeal relation to surrounding space, and as Kahn points to, is suggestive of relationality and interconnectedness. It radically unites sound and space in a complex intermingling that places the body in an immersive position. Vibration may be said to create what Jean-Francois Augoyard and the researchers at Cresson call a 'metabolic effect' and which Björn Hellström refers to as 'a space where all its constituent elements are in transition, and where the space simultaneously is perceived as being the same over time. It is, thus a paradoxical situation since the receiver perceives the space as a distinct whole, but not its constituent elements.'[8]

Vibration reveals a spatial contour that overrides the visual geometry of architecture, instead seeing in space linkages and relations that often pass through walls and floors (and at times may overwhelm the listener). The field recording work of Toshiya Tsunoda captures such linkages, and renders an evocative sonic picture of existing environments. The works from his *Solid Vibration* CD highlight how vibration phenomena not only extend the listening ear to that of tactility, to a feeling body, but also how materials such as concrete, asphalt, fencing, doors and other solid forms are sensitive resonating objects. For example, track 8 is the recording of a scrap of iron located in the industrial yards of Yokohama port in Japan (where all of the works on the CD were recorded). Using sensors placed directly on the iron object, the recording captures vibrations occurring from a number of sources, such as vessels anchored on the outskirts of the bay, and is heard as a stable humming sound.

Throughout the work Tsunoda seeks to record the environment of the port by focusing exclusively on vibrations, revealing direct relations between an object in one part of the bay and another at a distance, where the one produces a set of sound frequencies while the other resonates in response, making the two a spatial duet. Through tuning into the vibratory linkages surrounding a given environment, the artist gives us not only an entry point into a sonic underworld, but a spatial theory that may come to supplement notions of event-architecture. According to vibratory phenomena then, buildings and environments are tuned and detuned by the interactions, frictions, mechanics and general movements of immediate surroundings which at times far exceed our expectations and which index a general economy of exchanges between subjects and objects.

In addition, the work of Icelandic artist Finnbogi Pétursson harnesses much of the phenomena of vibration in artistic projects, staging sensory productions that often operate on the threshold of perception. Creating installations that utilize sub-sonic frequencies, often below 10Hz, and situating them in relation to found or constructed spaces, the works utilize the acoustics of space so as to situate a visitor within an overall sonic and perceptual effect. His installation project, *Water-Earth*, is exemplary. Filling a portion of

a space with water, creating a pool to about one-meter height with light sources submerged below the water, the work produces a series of ripples generated by vibration produced from four speakers mounted in the space. The effect is to envelope the space in sonic and visual movement, with ripples reflecting onto the surfaces of the space in a continually expanding yet uniform formation that seems to dissolve the separation of the given materials – vibration, light, water and space congeal into a single generative experience, that, like Tsunoda's recording projects, grants sensorial perspectives that incorporates one into a surprising interconnectedness.

Concluding

In Steen Eiler Rasmussen's *Experiencing Architecture*, the author draws upon musical composition as a metaphor for a number of perspectives onto appreciating architecture, underscoring the communicative dynamic of the built environment.[9] Since its writing in 1959, much has changed both in music and architecture, and the metaphoric relation Rasmussen utilized seems to find more dramatic expression and ultimate realization in today's culture. Perceptual, experiential, evanescent, durational and relational dynamics that define and choreograph the ongoing exchange of people and places, earlier expounded by Maurice Merleau-Ponty as the 'prose of the world', takes on weight within digital paradigms that place emphasis on interconnectedness. With the introduction of digital tools, sound and architecture find continual integration that no doubt will continue to produce a bolder auditory culture wed to policies surrounding urban development and design. What sound may aid in defining are modes of building that remain in tune with the often ambiguous yet concrete material and immaterial exchanges taking place in everyday life.

(1)Peter Zumthor, *Thinking Architecture* (Zürich,1998), 37.
(2)Bernard Tschumi, *Architecture and Disjunction* (Cambridge, MA, 1996), 123.
(3)See Juhani Pallasmaa, *The Eyes of the Skin: Architecture and the Senses* (Sussex, UK: Wiley, 2007).
(4)Paul Carter, in *Hearing Cultures*, ed. Veit Erlmann, (Oxford, 2004), 43-64.
(5)In a recent workshop I conducted at the Bartlett School of Architecture, I asked students to produce physical models based on an audio recording of a specific home environment. Through the process questions of translation and representation were explored, resulting in a series of models that displayed both the difficulties in grappling with sonic representation in visual and spatial form as well as the general process it takes to begin to approach sound as specific phenomena. Such tensions are ultimately a positive input into imagining spatial form and function.
(6)Vibration is but one among many themes or perspectives to be used in unpacking the dynamics of sounds and spaces. Rhythm has also been explored, as in works by Henri Lefebvre and Steen Eiler Rasmussen, as a means for mapping the events and composition of architecture. See Henri Lefebvre, *Rhythmnanalysis* (London) and Steen Eiler Rasmussen, *Experiencing Architecture* (Cambridge, MA, 1961).
(7)Douglas Kahn, *Wireless Imagination* (Cambridge, MA, 1992),15.
(8)Björn Hellström, *Noise Design* (Göteborg, 2003), 110.
(9) 'It is not enough to *see* architecture; you must experience it. You must observe how it was designed for a special purpose and how it was attuned to the entire concept and rhythm of a specific era.' Rasmussen's sense of the rhythmical hinges space, time and experience together, interlocking architecture with the experiential and using rhythm to bridge the divide between observing and feeling. Steen Eiler Rasmussen, *Experiencing Architecture*, 33.