

Embodied Sound: Aural Architectures and the Body

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This article examines two sound installations distributed on CD: Maryanne Amacher's Sound Characters (Making the Third Ear) (1999) and Bernhard Leitner's KOPFRÄUME (HEADSCAPES) (2003). The author undertakes an embodied reception of these works, experimenting with new models of listening and analysis that take into consideration aspects of the built environment, social spaces and imaginary architectures as these are perceived at the intersection of sound, space and the body. Conceptualizations of space, place and embodiment are engaged; and definitions for sound installation and 'situated sonic practices' are offered. The analysis ultimately reveals how the complex, dynamic networks of sound, space, place and embodiment can be understood to produce and constitute one another.

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Then the whole body will become an ear, and all sounds will come to you, the known and the unknown, the sweet, the sad, and the urgent. (Shafer, 2003, p. 71)

Since the late 1960s, when a tradition of sound installation first blossomed on a large scale in and between music and visual arts arenas,¹ composers and artists have variously conceived of the human body as a resonant space, one in which aural structures can develop. Many have designed sound works that are not only heard by the ears, but produced at a particular intersection of bodies, sounds and technologies. In Laurie Anderson's *Handphone Table* (1978), for example, sound is conducted through listeners' bones, transmitting a barely audible recording directly into their bodies. With head in hands and elbows acting as entry-points for sound, listeners simultaneously hear, feel and embody a stirring line by a seventeenth-century love poet: 'Now I in you without a body move'.²

Sound works designed for the body tend to bear a strong sense of ritual, conjoining physical spaces with their metaphysical complements. An encounter of real and

imagined spaces, wrought in the body, produces alternating fields of vibration—at times beating positively to create an augmented awareness of self, spirit and surrounding; at other times clashing to reveal the limits of the body: that it is socially determined and determining; that it is an instrument of control; that, ultimately, it fails the user.

Wanting to explore the intersection of sound, space and sensation as it occurs between my body, its surroundings and its imaginary points, I performed an ‘embodied listening’ of two body-based sound installations. Both works were designed, in part, for what Laurie Anderson (2003, p. 113) regards as ‘the most intimate sound space’: the head. With *KOPFRÄUME (HEADSCAPES)*, the Austrian architect and installation artist Bernhard Leitner (2003) presents a ‘three-dimensional sculptural work exhibited on audio CD. HEADSCAPES do not represent exterior space, but were conceived and created specifically for the interior of the head’. Conceiving of the head as a hollow volume in which aural geometries can be constructed, Leitner (2003) proposes ‘contemplating the interior, however unfathomable it may be’.

Working within a similar paradigm, but using an altogether different approach, the American composer and installation artist Maryanne Amacher’s CD *Sound Characters (Making the Third Ear)* is designed in parts to vibrate the ‘inner ear’. Several tracks contain a ‘third-ear music’, which resonates inside the skull and is distinct from the music that emanates from loudspeakers. The CD also contains two-channel, re-mastered excerpts of multi-channel, site-specific sound installations in which ‘the rooms themselves become speakers, producing sound which is felt throughout the body as well as heard’ (Amacher, 1999).

Composing for the body raises a number of critical issues. Transferring the listening point from the ears to the tissues of the body—a tangle of information, memories, and physical and psychic relationships—requires new models of aural reception and analysis. How does the body get mapped out as a score or sound stage? How do these mappings privilege certain bodies and kinds of relationships between bodies and spaces? How does a situated, embodied listening inform and disrupt traditional models of hearing and describing sound?

In my reception of Amacher’s and Leitner’s embodied sound works, I draw on Donna Haraway’s (1991) notion of an ‘embodied objectivity’, introduced as a way to re-focus the relationship of the (female) body to scientific methods, historically positioned as the neutral and objective work of (male) actors. Haraway’s vision of an embodied objectivity, while aimed at dislodging the tropes of scientism, resonates loudly in humanities fields. It does this by challenging the (normalized) neutral, disembodied and implicitly objective stance traditionally taken by historians and critics towards their subjects. When the listening and viewing body is deleted from the written text, readers are left with the pale impression of the ‘impartial’ mind. By including the body in the reception and analysis of a work, authors (including myself) cannot avoid or avert self-representation. An embodied reception reveals the body’s biases, tendencies and aims—in other words, its history.

Feminist and transcolonial critique has likewise challenged such conceptual dichotomies as the spirit/body and mind/body binaries, historically used to imagine the body of the Other (with respect to Western man) and the female as polluted, subordinate to the virgin territories of the unfettered mind/spirit (Hayles, 1993; see also Dyer, 1997). Along the way it has re-positioned the body as a site of knowledge and even of historical action. 'If the personal is political', writes Joan Nestle (1987, p. 10), embellishing on a popular feminist slogan of the 1970s, 'then the very personal is historical'. In reviving the corporeal with respect to sonic experience, we cross the boundary from the impartial to the very personal, reclaiming that marginalized space as a space of significance.

Sound Installation and Situated Sonic Practices

[S]pace is not a reflection of society, it is its expression. ... Spatial forms and processes are formed by the dynamics of the overall social structure. ... Furthermore, social processes influence space by acting on the built environment inherited from previous socio-spatial structures. Indeed, *space is crystallized time*. (Castells, 2000, p. 441; emphasis in original)

Sound installation is an art form in which properties of space and place are explored through an interface with sound. Sound installations may be site-specific, non-site-specific or mobile; they may include performance or recording elements; and they may be networked across multiple and hybrid (real, imagined and virtual) spaces and times.³ In contrast to traditional musical practices that emphasize temporal aspects of sound, sound installation highlights the relationship of sound to spatial forms, whether these are physical forms, social forms, imaginary spaces or otherwise. Sound installation thus necessitates analytical tools for dealing with sound that also deal primarily with spatial forms.

Until the 1970s, the term 'space' was used almost exclusively to describe physical forms as outlined by the axioms of Euclidean geometry. With *The Production of Space*, the French Marxist philosopher Henri Lefebvre (1974) helped launch a notion of spatiality that included in its scope the body, action and the constructed environment. Arguing that space is produced within a dialectic relationship between social action and 'spatialization', Lefebvre showed that space is a socially and politically constructed, and not an absolute or naturally occurring phenomenon. The term is increasingly used to refer to deterritorialized forms as in the 'space of flows' (e.g., of media, capital and bodies) that interact within a network of globalized structures and routes (Castells, 2000, p. 442). Place, on the other hand, is used to describe localized, territorialized phenomena such as 'rooted' cultural forms, identities and actions.

Place is the resonance of a specific location that is known and familiar. It is temporal and spatial, personal and political. A layered location replete with human histories and memories, place has width as well as depth. It is about connections, what surrounds it, what formed it, what happened there, what will happen there. (Lippard, 1997, p. 7)

In defining space and place, I draw on these and other conceptualizations that posit space/place as provisional and contested fields of relations, imagining these to be heterotopic, uneven, non-synchronous, unpredictable and asymmetric constructions (Foucault, 1986; see also Massey, 1994; Wilson & Dissanayake, 1996). I consider space to be the *multiple and hybrid settings*—whether physical, cultural, social, personal or political—of production; while I imagine place as *the moment-to-moment relationships between different elements of a network* (i.e., ‘topology’). Place focuses the particular, the situational and the momentary, and is therefore always in flux and subject to change. Space, on the other hand, is used to describe more general and sedentary forms of organization. However, because space and place produce one another, there is an ongoing interplay between the particular and the general, the momentary and the lingering. In my formulation, identity and place are understood to be mutually productive: identities can be mapped out in terms of real and imagined distances (e.g., to memories, experiences, other bodies) that are brought to bear in moment-to-moment situations that connect particular constellations of distances (bodies and identities) in place.

It would be useful to consider sound installation—which engages the complex, reflexive dynamics of space and place—within a more general field of ‘situated sonic practices’. Situated sonic practices include all musical/sonic practices that highlight space- and place-based aspects of sonic experience. Situated sonic practices take into consideration not only aspects of the built environment, architectures and social spaces, but also the temporal dimension of space as expressed through memory and history. They thus privilege contested modes of knowledge such as ‘the experience of sound’ and other embodied objectivities and ‘situated knowledges’ (Haraway, 1991). In developing analytical approaches for considering situated sonic practices, including sound installation, it is critical to consider notions of gender, race, class and sexuality—social constructs that have been shown to be principal determinants of space, place and identity (Massey, 1994; see also Barton, 2001).

Situated and Embodied Listening: *Sound Characters* (*Making the Third Ear*) and *HEADSCAPES*

In approaching Amacher’s and Leitner’s CDs, both examples of situated sound works, I experiment with new models of listening and reception that privilege sonic-spatial forms. I develop an ‘ontological’ model for considering sound, borrowing from Jacques Derrida’s notion of ontotopology as ‘an axiomatics linking indissociably the ontological value of present-being (*on*) to its *situation*, to the stable and presentable determination of a locality, the *topos* of territory, native soil, city, body in general’ (Derrida, 1994, p. 82). In other words, I consider sound as it functions within an ontology of the multiple, dynamic networks that contribute to the production of space and place. Using this model, I engage a ‘situated listening’, revealing the *particular, contingent situations of hearing as these occur within specific listening environments*. My analysis focuses not only on what is being heard, but *where* and *how* it is being heard. In undertaking an ‘embodied reception’, I further explore

how my situated body functions in relation to other bodies within social, physical and psychic networks; revealing, in the process, how space, place, sound and embodiment can be understood to produce and constitute one another.

Situated and embodied listening can be undertaken with respect to any sound or music since sound is always contingent upon its surroundings. I use *Sound Characters (Making the Third Ear)* and *HEADSCAPES* as examples primarily because they highlight sonic-spatial relationships and are specifically intended to be listened to in situated and body-based contexts. My particular approach towards listening-as-performance fits well with Amacher's stated desire to 'create a kind of music where the listener actually has vivid experiences of contributing to [the] sonic dimension' (Amacher, quoted in Oteri, 2004). In my analysis, I expand Amacher's model to include listener contributions to social-spatial forms and dimensions as well.

Listening Rituals and the Technologies of Listening

While we tend to think of installation works—of any media—as inhabiting large spaces like entire gallery floors or wide outdoor locations, the term 'installation', when attached to an art world signifier like 'site-specific', simply means that a work is meant to be experienced in relation to a space, whether this happens to be a particular space or not, and whether this space is large or not. Audio recordings are almost always produced outside the installation genre. Most recordings, and in particular CDs, are experienced in multiple and myriad spaces—intimate and private spaces like the home, the computer or the portable player; shared and public spaces like a car or nightclub; and concert halls or other conspicuously art-oriented spaces. In these different locations, the same CDs are interchangeably listened to with headphones, proscenium-style (as in the typical concert setting) or using a surround-sound arrangement. In most situations, not much thought is given to the way the listening environment and the technologies of listening affect what is being heard, outside of optimizing listening conditions.

The conceptual and technological difficulties in designing sound installations for the particular—and wildly varying—spaces of the human body, then, are coupled with the challenge of changing audiences' habits of listening and sound consumption. With embodied sound works, audiences must learn to *feel* sound as much as listen to it in the traditional ways. An embodied listening, what the musicologist Andra McCartney (2004, p. 179) has called 'full-bodied hearing', puts the entire body on equal ground with the ears. Listeners must turn their sonic gaze inwards, and in the process re-imagine their bodies as sites within which sounds can resonate, rather than as neutral, unengaged receivers. With body-based sound works distributed on CD, audiences must additionally alter their relationship to a technological artifact that is pervasive and inspires well-worn habits of listening.

Problematizing the relationship between the listener and the technologies of listening is the first step in what becomes a ritualistic mode of listening with *HEADSCAPES* and *Sound Characters*, both of which come with instructions. Leitner's CD is 'for earphones only' and 'should be listened to at moderate volume', with a

lower volume specified for certain tracks (7 and 13) and a higher one for others (4, 8, 9, 15) (Leitner, 2003). Amacher's CD is explicitly *not* for earphones. Tracks 1, 4, 5 and 6 contain third ear music in which 'ears act as instruments and emit sounds as well as receive them' (Amacher, 1999). She describes the way these 'otoacoustic emissions' might function:

When played at the right sound level, which is quite high and exciting, the tones in this music will cause your ears to act as neurophonic instruments that will seem to be issuing directly from your head. In concert my audiences discover music streaming out from their head, popping out of their ears, growing inside of them and growing out of them, meeting and converging with the tones in the room. ... Tones dance in the immediate space of their body, around them like a sonic wrap, cascade inside ears, and out to space in front of their eyes, mixing and converging with the sound in the room. (Amacher, 1999)

The 'third ear music' tracks cannot be experienced with headphones since they 'preclude physical interactions with the space' (Amacher, 1999). They must be listened to using a physical, space-based arrangement of speakers set at a high volume.

Amacher describes her compositional process as scientific, rooted in experiential, observational approaches towards developing sounds in relation to 'perceptual geographies' that link bodies and architectural spaces. Tracks 3, 4 and 7 on the CD are excerpts from Amacher's *Music for Sound-Joined Rooms* installation series, which she began to produce in 1980. These are large-scale multi-channel, multi-room pieces that combine music with architecturally staged visual sets. Aural and visual cues give clues to stories that are discovered by moving around connected rooms in which 'structure-borne' sounds, which develop primarily in relation to architectural spaces, are privileged over 'airborne' sounds. The CD versions of Amacher's installations are two-channel remastered excerpts of music that was originally intended to be heard in specific locations and architectures. In consuming this music on CD, the listener undertakes a conscious transference of spaces, choosing new settings for previously specifically situated sounds, and thus altering the way in which those sounds develop and are received.

Sound Characters (Making the Third Ear)

The first step I take in my encounter with Amacher's and Leitner's CDs is considering where and how to play them. I decide to listen to Amacher's in my car, which has a 6.1 surround speaker system that can handle the volume required of her music. On a weekday afternoon in early October I drive a couple of miles north of San Diego to a beachside parking lot and park facing the ocean. It is a busy beach in an upper-class town. Military planes perform unintelligible exercises over two dozen surfers who are also in uniform, and who obey a different but, for me, equally unintelligible set of codes. Both these groups and codes of behavior determine the spatialization of social forms in this place, and thus contribute to the production of a space; what Lefebvre considered to be a product of the body, social action and spatialization.

I put on the first track of Amacher's CD, 'Head Rhythm 1', keeping the windows shut but setting the volume at a high level. I hear the third ear music right away. Piercing synthesized pitches sound in my head and out of it with a dislocating alacrity, a rapid sequence set in a permanent loop. Despite the many repetitions, the sequence is impossible to hear as a linear chronology of tones because of the distribution of the pitches in a physical space, and because of the coupling of that space with the space of my body. I have little room for movement or even interpretation in my listening body, which is stunned by the sheer power of the sound, forced to submit to the authority of its pulse.

The second half of the first track on *Sound Characters* is called 'Plaything 1', and it contains massive planes of sound that are continuously peeled back to reveal others, jump-cutting between multiple evocative, filmic sound scenes. Dense, synthesized swells sound simultaneously at different speeds, frequencies and dynamic levels, testing the body's limits of hearing in terms of range and complexity. In the quieter moments, I notice a sympathetic response in my body, which breathes in sync with the swells. The sound space is not the left-right stereo field I typically encounter in my car, but four-dimensional, with the added dimensions of depth and motion. Sounds are moving up and down, left and right, in vertical, horizontal and diagonal motions, towards the front and back of the car, in dynamic waves whose speed of motion sets my imaginary body traveling down their path.

'Head Rhythm 1' and 'Plaything 1' are machinic, and beget a Haraway-esque cyborg sensibility in me. My surroundings seem suddenly old, anachronistic in relation to the space of the sound, which is now the dominant space in this particular complex of spaces and forces the physical space around me to relate to *it*. A sense of self-consciousness develops when I see that the young couples parked next to me notice that I am parked alone with alien-music blasting out of my car. There is a tense, tangible gulf between us, as the different spaces we bring to this scene intersect and challenge one another.

When the third track, 'VM3 from "the Levi-Montalcini Variations"', an excerpt from Amacher's installation *Synaptic Island* (1992) comes on, I block out my social surroundings and immediately feel the points of connection between my body and the body of the car. Both are shaking, joined in the common field of vibration. I move to the back of the car, and listen lying down. Automatically and unintentionally I feel like I have assumed the position of a kidnap victim; I am a woman lying down in the back seat of a parked car, alone and awake with no discernible purpose. I realize that the way my body is positioned informs and instructs my sense of self—giving me clues as to who I am and how I (should) feel.

In 'VM3', lush, pronounced, nearly tonal chords shade an undercurrent of non-pitched swells, breathing and beating in a long progression of waves. In this overabundant sound field, all the parts of my body act like antennas, turned on and receiving sound, changing my psychic image of myself. Just as Risset tones (also known as 'Shepard-Risset tones') give the impression of an infinite glissando, this twenty-minute long track has what seems to be an infinitely long fade-out. As one body of

sound disappears, another imperceptibly takes over and begins to fade as well, creating an aural image of an eternal disappearance. In a moment of synesthetic coincidence, the ships at the horizon—a physical place whose location is relative to the dimensions of the human body—appear to be suspended in a permanent state of disappearing.

Overall, I would characterize this listening ritual as a somewhat violent act, setting aggressively loud, strange sounds upon a scene where privileged people go to commune with the nature they forgot about in their oversized trucks and SUVs. Set to Amacher's soundtrack, a typical macho surfing and social scene became the stage for a strange psychodrama starring alien-callers, kidnap victims, eternally sinking ships and killer-bee helicopters that lurk guardedly over sun-streaked objects of American lust. This transformation of space reveals Amacher's status as a foreigner, an outsider, a social intruder who invades and challenges rigidly settled physical and psychic territories. By bringing Amacher's music into this place, with its particular complex of social and physical dimensions and codes for relationships between bodies within these, I have disrupted it and produced an altogether new place. This is, in a practical sense, the power that exists in cultivating an awareness of one's body in its relation to an environment. Receiving sound, what one installation artist considers 'the interface between body and space', is one method through which to access this power (Bosshard, 2002, p. 98).

HEADSCAPES

In contrast to *Sound Characters*, which reveals the listening body both in relation to itself as well as to external architectures, Bernhard Leitner's *HEADSCAPES* exclusively engages the inner spaces of the listener. Leitner began his investigations into body-space and sound-space relationships in the 1970s (Leitner, n.d.). His early installations were forays into 'acoustic-haptic' spaces, defined by the movement of sounds and listeners within architectural settings. Leitner's early works include *Sound Tube* (1971), in which a listener walks through an elaborate, immersive speaker construction, and *Sound Chair* (1976), in which a listener lies down on a mobile chair fashioned with speakers, becoming the literal connective tissue between dynamic architectural and aural designs. Leitner explains his initial interest in sound-body spaces:

It became clear to me rather quickly that I hear a sound that goes under me with the soles of my feet, that I hear with the skullcap, that—and this was really decisive—that the boundaries of sound spaces can also go through the body. . . . [Sound] is in it and the boundary can pass through the body. Space can extend into the body. This is one of the most interesting aspects of my work with acoustics, that entirely new concepts of space open up through extended hearing, through bodily hearing. (Schulz, 2002, p. 82)

Like Amacher, Leitner takes a scientific approach in preparing installations, doing empirical research by measuring his perception of sonic objects including moving sound points, lines and spaces, testing their speed, directionality, angle of projection and so on, against the boundaries of his listening body.

With *HEADSCAPES*, Leitner reduces the sound-space to the interior space of the head. He imagines this space as an empty volume, a 'globe-like container' (Leitner, 2003) in which sounds can bounce from point to point, eke out solid and staggered lines, stretch in time from surface to surface. Donning the requisite headphones, the listener can take these sculptures (there are sixteen short tracks on the CD with names like 'LF_C38' and 'VAR_10B') anywhere the head can go. I listened to *HEADSCAPES* in multiple, diverse locations: on the road, in busy public places like the gym and a restaurant, and at home. Using my iPOD, I wore studio headphones that blocked out almost all external sounds, so that even the noisiest locations could serve as a backdrop to this work.

The first sounds on the CD are a rhythmic knocking that maps out the head space, tapping along the curved axes of its spherical surfaces. The noise floor is constantly shifting and sounds that the head naturally makes are included in the soundspace, like the barely audible sound we make when we swallow our own spit. These add to a general sensibility of 'real fiction' in this work. Its fictiveness is highlighted when discernibly synthetic, electronic sounds sweep in fragmented gestures across the headspace ('VAR_10B'), while its realness comes through in tracks like 'HT + 10PM', where subtle foot-dragging noises are measured in space against a distant ambulance alarm. This is an example of how physical and metaphysical spaces, or real and imagined ones, can co-exist at the intersection of sound, space and the body.

It is difficult to relate to the uninitiated listener how unsettling it can be to perceive your own head as an architectural space that has particular definite dimensions, reflective qualities and resonant properties. *HEADSCAPES* makes audible the private, secret chambers of the head, previously reserved for the mysterious workings of the soul and the all-too-familiar sounds of the inner voice. Remarkably, it uses short fragments of sound to directly challenge the body's habits of perceiving itself, its tendencies to imagine itself in static and pre-conceived ways. Hearing my own head as a finite domain, a mappable space where sounds can exist and disappear, made me face the possibility that my body may, in actuality, *really be* finite; limited; a space like other spaces, with things moving in and out of it, living and dying in it, with or without my permission, extending, or limiting its lifespan.

Apart from this, the hardest part of encountering *HEADSCAPES* for me was simply *remembering* to listen. As the sound space merged with my interior head space, I would forget that I was listening to a sculpture and not merely the sounds of my own subconscious, amplified by the sparse but complex, stealthy sequences of sound. Listening became a serious effort in applied concentration. Now, when I think about my own head, I cannot help but imagine it as the globe-like container Leitner revealed it to be, and not the mess of tissue and activity it once was.

In the materiality of art, the possible is inherent, always, already. It is the body, though, which is needed to materialize this possibility, and it is within the body, and through the body, that this actualization occurs. To this end it is the (active) materiality of art. In the body the art inhabits the possibility of its own becoming. (Wooley, 2005, p. 40)

Sound-bodies in Becoming

My description of Amacher's and Leitner's sound installations diverges in fundamental ways from traditional musical analysis. It does not comprise a map of the works or descriptions of sounds and relationships between sounds. Rather, it focuses on my situated and embodied experience of sounds as they inform the realization of my body in relation to itself and to other bodies—social, physical and imaginary ones—that make up complex and unpredictable networks of space and place. 'The body', writes Judith Butler (1988, p. 521), 'is an historical idea and a set of possibilities to be realized. ... [It is] a continual and incessant *materializing* of possibilities'. Realizing the body through its interface with sound and space opens new possibilities of becoming for the body, stretching its old limits and creating new ones. Where sound, body and space meet, new dimensions of, and sensitivities towards, environments can be engaged, and our relationship to these and to ourselves and each other within these can be re-imagined and transformed.

Notes

- [1] The American percussionist-turned-installation-artist Max Neuhaus coined the term 'sound installation' in 1968 to describe 'sound works without a beginning or an end, where the sounds [are] placed in space rather than in time' (Neuhaus, 1994, p. 42).
- [2] In Laurie Anderson's *Handphone Table* (1978), a pine table conceals a playback system of wires connected to nodes in which seated listeners place their elbows, receiving sound through them. Listeners become an embodiment of Anderson herself, who was similarly positioned 'somewhere between concentration and depression' when she conceived this piece. The text is by seventeenth-century English metaphysical love poet George Herbert.
- [3] The designation 'site-specific' means that a work is intended to be shown in a specific location, e.g., a particular room or exhibition space, or a specific outdoor location. While all sound works are necessarily site-related, many can be exhibited in multiple, diverse sites—and are therefore not considered to be site-specific (for more on site-specific sound, see LaBelle, 2004).

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