

# space

Sound and space—however one defines these terms—are phenomenologically and ontologically intertwined. Sounds, after all, are always in motion; they emanate, radiate, reflect, canalize, get blocked, leak out, and so on. This intimate link between sound and space holds true whether one conceives of sound as inextricably linked to the perceptual faculty of hearing or as a “vibration of a certain frequency in a material medium” (Friedner and Helmreich 2012: 77–78).<sup>1</sup> From a hearing-centered standpoint, sound is inherently spatial because the process of audition attaches a spatial “narrative” to each sound (Altman 1992: 19); from a vibration-centered standpoint, sound does not exist without its propagation in space (Henriques 2010).

One need only imagine sound or space without the other term to realize their intimate relationship. Imagine sound without space, vibrating everywhere and nowhere. The idea is otherworldly, belonging to the realms of religion, mysticism, and aesthetics. It is the Voice of God speaking directly to the “heart” or “spiritual ear” (Bauman 1983; Ihde 2007 [1976]; Saeed 2012), the dharmic *Om* and Sufi *Hu* that enable worshipers to “[forget] all earthly distinctions and differences, and [reach] that goal of truth in which all the Blessed Ones of God unite” (Beck 1993; Inayat Khan 1996: 72). Religious communities have always sought to capture the experience of nonspatial sound through meditation and trance, and by harnessing the despatializing effect of physical reverberation for spiritual transcendence (Blessner and Salter 2007). The goal of a direct, spaceless connection between a sound and its internal reception has also emerged through the use of the electroacoustic loudspeaker to effect a “sonic dominance” (Henriques 2003) that envelops and invades the body, dissolving the subject. Amplified sound at high volume and close proximity is used to just this effect in subcultural and experimental music scenes like Japanese Noise (Novak 2013) and Jamaican dancehall (Henriques 2003, 2011) and in

forms of military interrogation and torture that employ sonic dominance as a form of violence (Bayoumi 2005; Cusick 2013). These despatialized sonic experiences reaffirm sound's fundamental spatiality not only in their extramundane character but also in their ironic reliance on particular sonic-spatial phenomena like reverberation. Hence, the despatializing reverberations of a grand cathedral stand as an icon—or “earcon”—of a particular kind of architectural space (Blessner and Salter 2007: 83).

Now imagine space without sound—space imbued with absolute, undifferentiated silence. It is perhaps a less mystical idea than that of non-spatial sound. Silence exists in modes of abstract thought outside of the spiritual, including mathematics, theoretical physics, and architectural planning, and is a feature of the known physical universe (sound cannot exist in a vacuum). Moreover, silent, if not exactly *soundless*, space is an everyday experience for the profoundly deaf.<sup>2</sup> But for hearing people, *soundless* space—evoked in such common experiences as viewing “calm and lifeless” tableaux “through binoculars or on the television screen with the sound turned off” (Tuan 1977: 16)—is as otherworldly as nonspatial sound and similarly implicated in spiritual practice. At least within the realms of human experience and the social, then, sound is constitutive of space, just as space is constitutive of sound.

The decade following the publication of Raymond Williams's *Keywords* (1983) saw *space* emerge as a new keyword that Williams “would surely have included” (Harvey 2006: 270). Space rose to the fore in poststructuralist concerns with relationality and the situated nature of knowledge, following the realization among Marxist and critical theorists that the emerging post-Fordist, globalized era necessitated a “demystification of spatiality and its veiled instrumentality of power” (Soja 1989: 61). Channeling Williams, David Harvey calls space “one of the most complicated words in our language” (2006: 270). Leaving aside its endless metaphorical uses, the word references a range of concepts that philosophers and physicists have long understood as ontologically incommensurable. Space may either be conceived as a kind of framework in which entities are situated or as an effect of the relations between entities, “the universal power enabling them to be connected” (Merleau-Ponty 1958: 284). The former conception, known as *absolute space*, has also been revised as *relative space* in relation to the non-Euclidean geographies of Einstein and others. For Harvey, all these apparently incompatible ontologies of space have analytical purchase on the social world, each corresponding to a particular human engagement with

physical world. Henri Lefebvre (1991) offers another multifarious model of social space, describing it as a product of the relations between physical form (the *perceived*), instrumental knowledge (the *conceived*), and symbolic practice (the *lived*).

The increasing recognition of the intimate links between sound and space may be attributed to a confluence of scientific and technological developments in the latter half of the twentieth century, including the development of traveling-wave models of auditory perception and the rise of multichannel audio recording and playback. But the spatiality of sound and sonorous nature of space were rarely recognized in Western thought before the “spatial turn.” Frustration at this particular historical deafness comes through in some of the early touchstone works of sound studies. Philosopher Don Ihde, for example, stresses the need to transcend the description of auditory experience as purely temporal; a tradition so powerful, he suggests, that it delayed the discovery of animal echolocation for centuries (2007 [1976]: 58–59). In a similar vein, musical philosopher Victor Zuckerkandl worked to slough off the conception, proffered by Schopenhauer and other Romantics, of “music as a purely temporal art” (1956: 336).

It is difficult to identify any work of sound studies that does not deal in some way with space, if only by implicitly incorporating epistemological and ontological commitments with respect to the spatiality of sound. But it is possible to identify certain modalities of space, or spatialities, that have emerged at the center of the field. I describe five such spatialities here: *phenomenal field*, *the virtual*, *ecology*, *territory*, and *circulation*.<sup>3</sup>

## Spatialities of Sound

### PHENOMENAL FIELD

Edmund Carpenter and Marshall McLuhan introduced the term “acoustic space” (sometimes “auditory space” in Carpenter’s work) in the 1950s to refer to the supposed “boundless, directionless, horizonless” sensory world and related “mentality” of pre- and nonliterate cultures, and perhaps literate Westerners in a media saturated world (McLuhan 1960; see also *inter alia* McLuhan 2004). The idea, further developed in Walter Ong’s *Orality and Literacy* (1982) and the writings of music composer R. Murray Schafer (see below), reproduced a set of reductive binary oppositions between the visual and the auditory, positing the former as analytical and the latter as emotional (later critiqued by Feld 1996; Ingold 2000: 248–249; Sterne 2003, 2011).

In contrast, Don Ihde's *Listening and Voice* (2007 [1976]) approaches the question of how sound mediates human perceptions and understandings of physical space by combining Edmund Husserl's phenomenological perspectives with his own investigations of auditory experience. Ihde painstakingly deconstructs the supposed "weakness" of the spatiality of hearing, describing an auditory field that is "bidimensional," being both spherical and directional. At the same time, he rejects any simple opposition between the modalities of hearing and seeing, even in the service of "antivisualism"—a move that has reverberated in the anthropology of the senses.

#### THE VIRTUAL

An obvious weakness in Ihde's otherwise essential phenomenological account of sound and space is his lack of attention to how the history of "spatialization" practices in audio production has informed modern epistemologies of sound (Born 2013: 14). The use of spatial cues—sonic gestures that simulate "the position of sound sources in the environment and the volume of the space in which a listener is located" (Clarke 2013: 94)—goes back to the earliest days of recorded music and film soundtracks, predating the development of stereophony. Spatial effects produced through reverberation and microphone placement had become a rich site for aesthetic innovation in popular music as early as the 1920s (Doyle 2005). The propagation of multichannel stereophony in the post-World War II period then added another layer of spatiality to an already richly spatial art of audio production, transforming production aesthetics and home listening technologies in popular music (Zak 2001: 148–149; Dockray and Moore 2010) and fostering a rich array of approaches to electroacoustic music, marked by "multiple-speaker projection techniques, spatial simulation methods, and custom-built architectural installations" (Ouzounian 2007; Valiquet 2012: 406).

A literature on sociotechnical practices of sound reproduction, much of it explicitly aligned with sound studies, explores the production of virtual sonic worlds and their complex interrelations with physical and social spaces. Various works on audio engineering explore the recording studio as a laboratory-like setting in which sounds and human actors are "isolated" in order to be reconfigured in a sonic spacetime (Hennion 1989; Meintjes 2003; Porcello 2004, 2005; Théberge 2004). In addition to outlining the technological production of recorded musical space, this

work speaks to the mutual mediation of aesthetic and social space. Louise Meintjes's ethnography of Zulu popular music production, for example, explores struggles over sound in the "seemingly neutral political ground" of the recording studio as intimately bound up with racial and class politics, thereby offering an ear on the quotidian reality of late capitalist, late apartheid South Africa (Meintjes 2003: 9).

Sound studies scholarship also investigates virtual sonic spaces outside of the recording studio. In his studies of personal stereo and MP3 player use in cities, Michael Bull explores how users "create a privatized sound world, which is in harmony with their mood, orientation and surroundings, enabling them to re-spatialize urban experience through a process of solipsistic aestheticization" (Bull 2010: 57–58; see also 2000, 2008). Meanwhile, sound-oriented studies of "new media" explore how the omnidirectional and haptic characteristics of sound are mobilized to foster experiences of "immersion" (Dyson 2009; Grimshaw 2011).

#### ECOLOGY

*Ecology* refers to an environment—often the environment, the "natural world"—as a space of relations. The notion of "acoustic ecology" as an object or mode of inquiry has for half a century been tethered to the term *soundscape*, first popularized by R. Murray Schafer and his World Soundscape Project during the late 1960s and early 1970s. Schafer conceptualized the soundscape as an increasingly "polluted" global environment of humanly perceived sounds that composers and music teachers should work to understand, and ultimately to transform. Inspired by McLuhan's conception of art as "an instrument of discovery and perception" (McLuhan, quoted in Cavell 2003: 185) and John Cage's definition of music as "sounds around us, whether we're in or out of concert halls" (quoted in Schafer 1969: 57), Schafer founded the World Soundscape Project with the aim of assessing sonic environments through rigorous audio documentation and analysis of recorded "soundscapes."

The idea of taking a composer's ear to the environment spawned a variety of approaches to mapping and analyzing inhabited environments, natural ecosystems, and interactions between humans and their environments (see e.g. Wrightson 2000; Atkinson 2007; Pijanowski et al. 2011). Schaferian soundscape-related concepts have also been operationalized in sociocultural analysis, particularly in ethnomusicology. Schafer's notion of "schizophonia," or the anxiety-generating "split between an original sound

and its electroacoustical transmission or reproduction” (1977: 90), has proven useful for opening up questions about the dynamics of authenticity and ownership in recorded music (Feld 1994; Moehn 2005), and concepts like “soundmark” and “acoustic community” (Truax 2001) provide ways of thinking about the relationships between emplacement and social orientation, particularly in contexts of social struggle and transformation (Lee 1999; Sakakeeny 2010).

But Schafer’s *soundscape* is deeply problematic as a central figure for sound studies. Not only is it grounded in normative ideas of which sounds “matter” and which do not, it groans under the weight of the irony that it is born of the very modern technologies of sound reproduction that Schafer decries as sources of “lo-fi” “pollution” (Helmreich 2010). Even the term’s greatest strength—the fact that it “evokes a whole complex set of ideas, preferences, practices, scientific properties, legal frameworks, social orders, and sounds”—is also a weakness insofar as it diminishes the term’s heuristic value (Kelman 2010: 228).

Other scholars have sought to describe the interrelations of sound, space, and the social in different ways, often with limited or no engagement with Schafer’s term. Sterne (1997), for example, approaches programmed music in commercial space as an “architectonics” with attendant modes of listening. Alain Corbin (1998) uses *auditory landscape*, which emphasizes sensory experience and its discursive framing, in his history of church bells in the French countryside. Emily Thompson similarly redefines *soundscape* as “simultaneously a physical environment and a way of perceiving that environment” (2002: 1). Drawing on Schafer but taking a radical turn toward emplacement, Steven Feld (1996) coins the term *acoustemology* (acoustics + epistemology) to describe a way of knowing place in and through the sonic environment. At once a subject-centered approach to ecology and an ecological approach to the subject, *acoustemology* attends to “local conditions of acoustic sensation, knowledge, and imagination embodied in the culturally particular sense of place” (Feld 1996: 91; see also ACOUSTEMOLOGY).

Place might be described as another modality of space but is in truth its own keyword. It is a human engagement with the world that stands apart from, and indeed *prior to*, space. Abstract conceptions of space, time, and spacetime are, in a sense, purified versions of the contextual, contingent, messy experience of place (Casey 1996, 1998). Sound-oriented approaches to place have become an important domain of recent ethnomusicology,

which shows how music and sound are crucial in place-making and the poetics of place (see e.g. Stokes 1994; Solomon 2000; Fox 2004; Sakakeeny 2010; Gray 2011; Eisenberg 2012, 2013).

#### TERRITORY

*Territory*, a spatial figure that has received significant attention in sound studies, is about boundary making, enclosure, and the production of interiority and exteriority. Deleuze and Guattari (1987) expound on the intimate link between sound and territory in a discussion of the home as a “milieu”: “Sonorous or vocal components are very important: a wall of sound, or at least a wall with some sonic bricks in it” (311). Sonic practices territorialize by virtue of combining physical vibration with bodily sensation and culturally conditioned meanings. This is particularly audible in the sonorous enactments of publicity and privacy in inhabited spaces, as scholars of sound have shown in relation to the city (Picker 2003; LaBelle 2010), the car (Bull 2003), the office (Dibben and Haake 2013), the hospital (Rice 2013), and perhaps most powerfully Islam, which mediates the public/private distinction in relation to the sacred, and the sacred in relation to sound (Hirschkind 2006; Bohlman 2013; Eisenberg 2013).

#### CIRCULATION

The movement of mediated sounds, especially commercially recorded music, reveals how understandings, if not the very natures, of place and territory have changed in the era of intensified globalization. Connell and Gibson (2003) suggest that mediated music is crosscut by opposing dynamics of “fixity” and “fluidity,” which shift and change in relation to technological and legal regimes. Nowhere is this more evident than in the case of commercial “world music,” whose aesthetics, power dynamics, and complex interrelations with ethnic and national imaginaries reveal globalization’s “increasingly complicated pluralities, uneven experiences, and consolidated powers” (Feld 2000: 146; see also Meintjes 1990, 2003; Guilbault 1993; Taylor 1997; Stokes 2004; Ochoa Gautier 2006).

Paul Gilroy (1993) offers another powerful approach to global musical circulation in his formulation of the “Black Atlantic” as a space of transnational, diasporic connection and consciousness grounded in what Alexander G. Weheliye (2005) aptly terms a “sonic Afro-modernity.” Gilroy’s provocative description of black music in commercial circulation as a mode of nonrepresentational “metacommunication” across diasporic

spacetime has been enormously influential and lays the groundwork for recent discussions of phonographic aurality (Weheliye 2005) and cosmopolitan acoustemology (Feld 2012 [1982]).

David Novak's ethnography of transnational underground Noise music introduces a new approach to sonic circulation with the heuristic of "feedback," which he develops in dialogue with the rich anthropological literature on circulation. Feedback—defined as "circulation as an experimental force, which is compelled to go out of control" (2013: 18)—works as both an aesthetic and a cultural logic in Noise. The sounds of Noise, constituted through the technological effect of positive feedback, emerged and are sustained by practices of sounding and listening constituted in contingent and experimental feedback loops connecting Japan and North America.

Noise's feedback loops comprehend two different sonic spatialities—the global circulation of sounds and individual experiences of immersion in sound: "To close the distances of global circulation," Novak argues, "listeners and performers alike become deeply invested in the personal embodiment of sound" (2013: 22). Here we have a powerful example of how sound can serve as a medium through which spatialities articulate or interfere with each other. I will close with an example from my own research in coastal Kenya (Eisenberg 2009, 2010, 2012, 2013) to consider how sound studies might lend a more attentive ear to the interactions of discrete sonic spatialities.

### **Sound, Space, and Citizenship on the Kenyan Coast**

In my research on "cultural citizenship" (social belonging in relation to the nation-state) among marginalized Muslim communities of the Kenyan coast, I employ methods of "participant-audition" to investigate social identification and boundary making in the public spaces of an iconic Muslim Old Town located within Kenya's heterogeneous port city of Mombasa. This task calls for attention to sonic spatialities not only as multiple but also as overlapping and mutually mediating.

A key focus of my research is Mombasa Old Town's quotidian "Islamic soundscape" of electrically amplified muezzin calls and sermons, which marks the neighborhood as a space apart from the surrounding city. Old Town's Islamic soundscape is clearly a territorializing force, fostering an affectively and symbolically significant divide between old and new—and

Muslim and Christian—Mombasa. It is also the basis of an acoustic ecology and attendant acoustemology of place. Pious Muslims on the Kenyan coast, as elsewhere, receive its constituent elements through cultivated bodily techniques. On hearing the call to prayer, for example, women reflexively replace their headscarves, and everyone halts conversations and other noisy activities; many vocalize prescribed verbal responses quietly to themselves. Such “ethical practices” (Hirschkind 2006) continually enact the “public” spaces of Mombasa Old Town as, effectively, “private,” in the Islamic sense of bearing “sanctity—reserve—respect” (El Guindi 1999: 77–96). This sets the terms for an everyday spatial politics whereby Old Town’s Muslim residents constantly effect a sonorous “communitarian privacy” that stands in tension with Kenya’s broadly liberal-democratic understanding of urban space (Eisenberg 2010, 2013).

Layered atop the sonorous spatial practices and politics surrounding the Islamic soundscape in Mombasa Old Town, another kind of soundscape introduces another kind of sonic spatiality, that of popular media circulation. Through musical practices, sonic artifacts of transnational circulation enter into the same public spaces that vibrate with the Islamic soundscape, supplying raw semiotic materials for a different way of imagining one’s place in the world. Take, for example, the soundtrack of Arab pop (Nancy Ajram, Amr Diab) and arabesque American hip-hop (tracks produced by Timbaland and Scott Storch) that emanates daily from a popular juice bar and the vehicles of middle-class youth in Old Town’s lively Kibokoni district (Eisenberg 2012: 567–569). Exemplifying David Novak’s idea of listening as a form of circulation (Novak 2008, 2013), public engagements with these sounds in the spaces of Mombasa Old Town make audible a “discrepant cosmopolitanism” (Clifford 1994; Feld 2012 [1982]) that speaks back to the Black Atlantic cosmopolitanism that prevails among urban youth in noncoastal Kenya. If this cosmopolitanism becomes a cosmopolitics, it does so partly by virtue of its acoustic-ecological and acoustemological contexts (the latter being one of multiplicity and disjuncture). That is to say, the Islamic soundscape and its attendant struggles over the meanings of public space lend Kibokoni’s transnational popular music soundtrack a political timbre it might not have otherwise had. And Kibokoni’s transnational popular music soundtrack also inflects the Islamic soundscape and attendant struggles, if in more subtle ways.

Spatial practices and politics need not be studied with an overriding emphasis on sound. But it is worth recognizing how sound, as an

ethnographic object, enables one to analytically separate, and then reconnect, the “perceived, conceived, and lived” spatialities that Lefebvre (1991) enjoins us to keep always visible and audible in any analysis of space and social relations. As a phenomenon that exists at once within and beyond perceiving subjects, sound cannot but reveal social space as an artifact of material practices complexly interwoven with semiotic processes and the “imaginings, fears, emotions, psychologies, fantasies and dreams” that human beings bring to everything (Harvey 2006: 279; see also Lefebvre 1991).

## Notes

1. In philosophy and sound studies alike, one finds multiple, competing ontologies of sound, which mostly seem to turn on the question of location—that is, of whether sound resides in the listening subject, the sounding object, the air (or other material medium) between them, or somewhere else entirely (Sterne 2012b; Casati and Dokic 2012).

2. The distinction I am making between silence and soundlessness here is based on a definition of silence as a lack of audible sound. According to a vibration-centered ontology of sound, the silent experiential world of the profoundly deaf is not soundless (see DEAFNESS; Friedner and Helmreich 2012).

3. The term *phenomenal field* comes from Merleau-Ponty (1958).

## References

- Altman, Rick. 1992. “The Material Heterogeneity of Recorded Sound.” In *Sound Theory, Sound Practice*, ed. Rick Altman, 15–31. New York: Routledge.
- Atkinson, Rowland. 2007. Ecology of Sound: The Sonic Order of Urban Space. *Urban Studies* 44(10): 1905–1917.
- Attali, Jacques. 1985. *Noise: The Political Economy of Music*. Trans. Brian Massumi. Minneapolis: University of Minnesota Press.
- Bauman, Richard. 1983. *Let Your Words Be Few: Symbolism of Speaking and Silence among Seventeenth-Century Quakers*. Cambridge: Cambridge University Press.
- Bayoumi, Moustafa. 2005, December 26. “Disco Inferno.” *Nation*, available at [www.thenation.com/article/disco-inferno?page=0,0](http://www.thenation.com/article/disco-inferno?page=0,0), accessed December 21, 2013.
- Beck, Guy L. 1993. *Sonic Theology: Hinduism and Sacred Sound*. Columbia: University of South Carolina Press.
- Blessner, Barry, and Linda-Ruth Salter. 2007. *Spaces Speak, Are You Listening?: Experiencing Aural Architecture*. Cambridge, MA: MIT Press.
- Bohman, Philip V. 2013. “Music Inside Out: Sounding Public Religion in a Post-Secular Europe.” In *Music, Sound and Space: Transformations of Public and Private Experience*, ed. Georgina Born, 205–223. Cambridge: Cambridge University Press.
- Born, Georgina. 2011. “Music and the Materialisation of Identities.” *Journal of Material Culture* 16(4): 376–388.

- Born, Georgina. 2013. Introduction to *Music, Sound and Space: Transformations of Public and Private Experience*, ed. Georgina Born, 1–70. Cambridge: Cambridge University Press.
- Bull, Michael. 2000. *Sounding Out the City: Personal Stereos and the Management of Everyday Life*. Oxford: Berg.
- Bull, Michael. 2003. "Soundscapes of the Car." In *The Auditory Culture Reader*, ed. Michael Bull and Les Back, 357–374. Oxford: Berg.
- Bull, Michael. 2008. *Sound Moves: Ipod Culture and Urban Experience*. New York: Routledge.
- Bull, Michael. 2010. "Ipod: A Personalized Sound World for Its Consumers." *Revista Comunicar* 17(34): 55–63.
- Casati, Roberto, and Jerome Dokic. 2012. "Sounds." In *The Stanford Encyclopedia of Philosophy*, ed. Edward N. Zalta, available at <http://plato.stanford.edu/archives/win2012/entries/sounds/>, accessed September 26, 2014.
- Casey, Edward S. 1996. "How to Get from Space to Place in a Fairly Short Stretch of Time: Philosophical Prolegomena." In *Senses of Place*, ed. Steven Feld and Keith H. Basso, 13–52. Santa Fe: School of American Research Press.
- Casey, Edward S. 1998. *The Fate of Place: A Philosophical History*. Berkeley: University of California Press.
- Cavell, Richard. 2003. *McLuhan in Space: A Cultural Geography*. Toronto: University of Toronto Press.
- Chion, Michel. 1994. *Audio-Vision: Sound on Screen*. Trans. and ed. Claudia Gorbman. New York: Columbia University Press.
- Clarke, Eric F. 2013. "Music, Space and Subjectivity." In *Music, Sound and Space: Transformations of Public and Private Experience*, ed. Georgina Born, 90–110. Cambridge: Cambridge University Press.
- Clifford, James. 1994. "Diasporas." *Cultural Anthropology* 9(3): 302–338.
- Connell, John, and Chris Gibson. 2003. *Sound Tracks: Popular Music, Identity and Place*. London: Routledge.
- Corbin, Alain. 1998. *Village Bells: Sound and Meaning in the Nineteenth-Century French Countryside*. New York: Columbia University Press.
- Cusick, Suzanne G. 2013. "Toward an Acoustemology of Detention in the 'Global War on Terror'." In *Music, Sound and Space: Transformations of Public and Private Experience*, ed. Georgina Born, 275–291. Cambridge: Cambridge University Press.
- Deleuze, Gilles, and Félix Guattari. 1987. *A Thousand Plateaus: Capitalism and Schizophrenia*. Trans. Brian Massumi. Minneapolis: University of Minnesota Press.
- Dibben, Nicola, and Anneli B. Haake. 2013. "Music and the Construction of Space in Office-Based Work Settings." In *Music, Sound and Space: Transformations of Public and Private Experience*, ed. Georgina Born, 151–168. Cambridge: Cambridge University Press.
- Dockwray, Ruth, and Allan F. Moore. 2010. "Configuring the Sound-Box 1965–72." *Popular Music* 29(2): 181–197.
- Doyle, Peter. 2005. *Echo and Reverb: Fabricating Space in Popular Music, 1900–1960*. Middletown: Wesleyan University Press.
- Dyson, Frances. 2009. *Sounding New Media: Immersion and Embodiment in the Arts and Culture*. Berkeley: University of California Press.
- Eisenberg, Andrew J. 2009. "The Resonance of Place: Vocalizing Swahili Ethnicity in Mombasa, Kenya." Ph.D. diss., Columbia University.

- Eisenberg, Andrew J. 2010. "Toward an Acoustemology of Muslim Citizenship in Kenya." *Anthropology News* 51 (9, December): 6.
- Eisenberg, Andrew J. 2012. "Hip-Hop and Cultural Citizenship on Kenya's 'Swahili Coast.'" *Africa* 82 (4): 556–578.
- Eisenberg, Andrew J. 2013. "Islam, Sound, and Space: Acoustemology and Muslim Citizenship on the Kenyan Coast." In *Music, Sound, and Space: Transformations of Public and Private Experience*, ed. Georgina Born, 186–202. Cambridge: Cambridge University Press.
- Elden, Stuart. 2005. "Missing the Point: Globalization, Deterritorialization and the Space of the World." *Transactions of the Institute of British Geographers* 30(1): 8–19.
- Emmerson, Simon. 1998. "Aural Landscape: Musical Space." *Organised Sound* 3(2): 135–140.
- Erlmann, Veit. 2010. *Reason and Resonance: A History of Modern Aurality*. Cambridge, MA: Zone Books.
- Feld, Steven. 1994. "From Schizophonia to Schismogenesis: On the Discourses and Commodification Practices of 'World Music' and 'World Beat.'" In *Music Grooves*, by Charles Keil and Steven Feld, 257–289. Chicago: University of Chicago Press.
- Feld, Steven. 1996. "Waterfalls of Song: An Acoustemology of Place Resounding in Bosavi, Papua New Guinea." In *Senses of Place*, ed. Steven Feld and Keith H. Basso, 91–135. Santa Fe: School of American Research.
- Feld, Steven. 2000. "A Sweet Lullaby for World Music." *Public Culture* 12 (1): 145–171.
- Feld, Steven. 2001. *Rainforest Soundwalks: Ambiances of Bosavi Papua New Guinea*. CD. EarthEar.
- Feld, Steven. 2012. *Jazz Cosmopolitanism in Accra: Five Musical Years in Ghana*. Durham: Duke University Press.
- Fox, Aaron A. 2004. *Real Country: Music and Language in Working Class Culture*. Durham: Duke University Press.
- Friedner, Michele, and Stefan Helmreich. 2012. "Sound Studies Meets Deaf Studies." *The Senses and Society* 7(1): 72–86.
- Gilroy, Paul. 1993. *The Black Atlantic: Modernity and Double Consciousness*. Cambridge, MA: Harvard University Press.
- Goodman, Steve. 2010. *Sonic Warfare: Sound, Affect, and the Ecology of Fear*. Cambridge, MA: MIT Press.
- Gray, Lila Ellen. 2011. "Fado's City." *Anthropology and Humanism* 36(2): 141–163.
- Grimshaw, Mark. 2011. "Sound and Player Immersion in Digital Games." In *The Oxford Handbook of Sound Studies*, ed. Trevor Pinch and Karin Bijsterveld, 347–366. New York: Oxford University Press.
- Guilbault, Jocelyne. 1993. *Zouk: World Music in the West Indies*. Chicago: University of Chicago Press.
- Harvey, David. 2006. "Space as a Keyword." In *David Harvey: A Critical Reader*, 270–294. Oxford: Blackwell.
- Helmreich, Stefan. 2010. "Listening against Soundscapes." *Anthropology News* 51(9): 10.
- Hennion, Antoine. 1989. "An Intermediary between Production and Consumption: The Producer of Popular Music." *Science, Technology and Human Values* 14(4): 400.
- Henriques, Julian. 2003. "Sonic Dominance and the Reggae Sound System Session." In *The Auditory Culture Reader*, ed. Michael Bull and Les Back, 451–480. Oxford: Berg.

- Henriques, Julian. 2010. "The Vibrations of Affect and Their Propagation on a Night Out on Kingston's Dancehall Scene." *Body and Society* 16(1): 57–89.
- Henriques, Julian. 2011. *Sonic Bodies: Reggae Sound Systems, Performance Techniques and Ways of Knowing*. London: Continuum.
- Hirschkind, Charles. 2006. *The Ethical Soundscape: Cassette Sermons and Islamic Counterpublics*. New York: Columbia University Press.
- Ihde, Don. 2007 [1976]. *Listening and Voice: Phenomenologies of Sound*. 2nd ed. Albany: State University of New York Press.
- Inayat Khan, Hidayat. 1996. *The Mysticism of Sound and Music*. Boston: Shambhala.
- Ingold, Tim. 2000. "Stop, Look and Listen! Vision, Hearing and Human Movement." In *The Perception of the Environment: Essays in Livelihood, Dwelling and Skill*, 243–287. London: Psychology Press.
- Kelman, Ari Y. 2010. "Rethinking the Soundscape: A Critical Genealogy of a Key Term in Sound Studies." *Senses and Society* 5(2): 212–234.
- LaBelle, Brandon. 2010. *Acoustic Territories: Sound Culture and Everyday Life*. London: Continuum.
- Lee, Tong Soon. 1999. "Technology and the Production of Islamic Space: The Call to Prayer in Singapore." *Ethnomusicology* 43(1): 86–100.
- Lefebvre, Henri. 1991. *The Production of Space*. Trans. Donald Nicholson-Smith. Oxford: Blackwell.
- Massey, Doreen. 1991. "A Global Sense of Place." In *Space, Place, and Gender*, 146–156. Minneapolis: University of Minnesota Press.
- McLuhan, Marshall. 1960. "Five Sovereign Fingers Taxed the Breath." In *Explorations in Communication: An Anthology*, ed. Marshall McLuhan and Edmund Snow Carpenter, 65–70. Boston: Beacon Press.
- McLuhan, Marshall. 2004. "Visual and Acoustic Space." In *Audio Culture*, ed. Christoph Cox and Daniel Warner, 67–72. New York: Continuum.
- Meintjes, Louise. 1990. "Paul Simon's *Graceland*, South Africa, and Mediation of Musical Meaning." *Ethnomusicology* 34(1): 37–74.
- Meintjes, Louise. 2003. *Sound of Africa!: Making Music Zulu in a South African Studio*. Durham: Duke University Press.
- Merleau-Ponty, Maurice. 1958. *Phenomenology of Perception*. Trans. Colin Smith. London: Routledge.
- Moehn, Fredrick J. 2005. "'The Disc Is Not the Avenue': Schismogenetic Mimesis in Samba Recording." In *Wired for Sound: Engineering and Technologies in Sonic Cultures*, ed. Paul D. Greene and Thomas Porcello, 47–83. Middletown: Wesleyan University Press.
- Morgan, Robert P. 1980. "Musical Time/Musical Space." *Critical Inquiry* 6(3): 527–538.
- Novak, David. 2008. "2.5 × 6 Metres of Space: Japanese Music Coffeehouses and Experimental Practices of Listening." *Popular Music* 27(1): 15.
- Novak, David. 2013. *Japanoise: Music at the Edge of Circulation*. Durham: Duke University Press.
- Ochoa Gautier, Ana Maria. 2006. "Sonic Transculturation, Epistemologies of Purification and the Aural Public Sphere in Latin America." *Social Identities* 12(6): 803–825.
- Ong, Walter J. 2002. *Orality and Literacy: The Technologizing of the Word*. 2nd ed. London: Routledge.

- Ouzounian, Gascia. 2007. "Visualizing Acoustic Space." *Circuit: Musiques Contemporaines* 17(3): 45–56.
- Picker, John M. 2003. *Victorian Soundscapes*. New York: Oxford University Press.
- Pijanowski, Bryan C., Luis J. Villanueva-Rivera, Sarah L. Dumyahn, Almo Farina, Bernie L. Krause, Brian M. Napoletano, Stuart H. Gage, and Nadia Pieretti. 2011. "Soundscape Ecology: The Science of Sound in the Landscape." *BioScience* 61(3): 203–216.
- Porcello, Thomas. 2004. "Speaking of Sound: Language and the Professionalization of Sound-Recording Engineers." *Social Studies of Science* 34(5): 733–758.
- Porcello, Thomas. 2005. "Music Mediated as Live in Austin: Sound, Technology, and Recording Practice." In *Wired for Sound: Engineering and Technologies in Sonic Cultures*, ed. Paul D. Greene and Thomas Porcello, 103–117. Middletown: Wesleyan University Press.
- Rice, Tom. 2013. "Broadcasting the Body: The 'Private' Made 'Public' in Hospital Soundscapes." In *Music, Sound and Space: Transformations of Public and Private Experience*, ed. Georgina Born, 169–185. Cambridge: Cambridge University Press.
- Saeed, Abdullah. 2012. *The Qur'an: An Introduction*. London: Routledge.
- Sakakeeny, Matt. 2010. "Under the Bridge: An Orientation to Soundscapes in New Orleans." *Ethnomusicology* 54(1): 1–27.
- Schafer, R. Murray. 1969. *The New Soundscape: A Handbook for the Modern Music Teacher*. Scarborough, Ontario: Berandol Music.
- Schafer, R. Murray. 1977. *The Tuning of the World*. New York: Knopf.
- Smalley, Denis. 2007. "Space-Form and the Acousmatic Image." *Organised Sound* 12(1): 35–58.
- Soja, Edward W. 1989. *Postmodern Geographies: The Reassertion of Space in Critical Social Theory*. New York: Verso.
- Solomon, Thomas. 2000. "Dueling Landscapes: Singing Places and Identities in Highland Bolivia." *Ethnomusicology* 44(2): 257–280.
- Southworth, Michael. 1969. "The Sonic Environment of Cities." *Environment and Behavior* 1(1): 49–70.
- Sterne, Jonathan. 1997. "Sounds Like the Mall of America: Programmed Music and the Architectonics of Commercial Space." *Ethnomusicology* 41(1): 22–50.
- Sterne, Jonathan. 2003. *The Audible Past: Cultural Origins of Sound Reproduction*. Durham: Duke University Press.
- Sterne, Jonathan. 2011. "The Theology of Sound: A Critique of Orality." *Canadian Journal of Communication* 36(2): 207–225.
- Sterne, Jonathan. 2012a. "Part II: Space, Sites, Scapes." In *The Sound Studies Reader*, ed. Jonathan Sterne. New York: Routledge.
- Sterne, Jonathan. 2012b. "Sonic Imaginations." In *The Sound Studies Reader*, ed. Jonathan Sterne, 1–18. New York: Routledge.
- Stokes, Martin, ed. 1994. *Ethnicity, Identity, and Music: The Musical Construction of Place*. Oxford: Berg.
- Stokes, Martin. 2004. "Music and the Global Order." *Annual Review of Anthropology* 33: 47–72.
- Taylor, Timothy D. 1997. *Global Pop: World Music, World Markets*. London: Routledge.
- Théberge, Paul. 2004. "The Network Studio: Historical and Technological Paths to a New Ideal in Music Making." *Social Studies of Science* 34(5): 759–781.

- Thompson, Emily. 2002. *The Soundscape of Modernity: Architectural Acoustics and the Culture of Listening in America, 1900–1933*. Cambridge, MA: MIT Press.
- Truax, Barry. 2001. *Acoustic Communication*. Oxford: Greenwood Publishing Group.
- Tsing, Anna. 2000. The Global Situation. *Cultural Anthropology* 15(3): 327–360.
- Tuan, Yi-fu. 1977. *Space and Place: The Perspective of Experience*. Minneapolis: University of Minnesota Press.
- Valiquet, Patrick. 2012. “The Spatialisation of Stereophony: Taking Positions in Post-war Electroacoustic Music.” *International Review of the Aesthetics and Sociology of Music* 43: 403–421.
- Weheliye, Alexander G. 2005. *Phonographies: Grooves in Sonic Afro-Modernity*. Durham: Duke University Press.
- Williams, Raymond. 1983. *Keywords: A Vocabulary of Culture and Society*. 2nd ed. New York: Oxford University Press.
- Wishart, Trevor. 1986. “Sound Symbols and Landscapes.” In *The Language of Electroacoustic Music*, ed. Simon Emmerson, 41–60. London: Macmillan Press.
- Wrightson, Kendall. 2000. “An Introduction to Acoustic Ecology.” *Soundscape: The Journal of Acoustic Ecology* 1(1): 10–13.
- Zak, Albin. 2001. *The Poetics of Rock: Cutting Tracks, Making Records*. Berkeley: University of California Press.
- Zuckerandl, Victor. 1956. *Sound and Symbol*. New York: Pantheon Books.