

Soundscapes: Toward a Sounded Anthropology

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Abstract

A generation of scholars in multiple disciplines has investigated sound in ways that are productive for anthropologists. We introduce the concept of soundscape as a modality for integrating this work into an anthropological approach. We trace its history as a response to the technological mediations and listening practices emergent in modernity and note its absence in the anthropological literature. We then trace the history of technology that gave rise to anthropological recording practices, film sound techniques, and experimental sound art, noting productive interweavings of these threads. After considering ethnographies that explore relationships between sound, personhood, aesthetics, history, and ideology, we question sound's supposed ephemerality as a reason for the discipline's inattention. We conclude with a call for an anthropology that more seriously engages with its own history as a sounded discipline and moves forward in ways that incorporate the social and cultural sounded world more fully.

INTRODUCTION

In 2004 Feld commented in *American Ethnologist*, “Until the sound recorder is presented and taught as a technology of creative and analytic mediation, which requires craft and editing and articulation just like writing, little will happen of an interesting sort in the anthropology of sound” (Feld & Brenneis 2004, p. 471). What would a sounded anthropology be? How might the discipline of anthropology develop if its practitioners stopped thinking of the field recording only as a source of data for the written work that then ensues and rather thought of the recording itself as a meaningful form? What if discussions of recording moved beyond inquiries about the state of the art in recording technology to how best to present and represent the sonorous enculturated worlds inhabited by people?

A generation of scholars in various disciplines has been asking questions about sound, listening, the voice, and the ear (Erlmann 2004, Feld et al. 2004, Finnegan 2002, Kruth & Stobart 2000, Nancy 2007) in ways that make such reflection in anthropology both possible and possibly productive. Prominent among these questions is Clifford’s provocative jibe, echoed by Erlmann (2004), “but what of the ethnographic ear?” (Clifford 1986, p. 12). We propose that an alertness toward sound and sound recording and production is useful to anthropology at large. First we outline and contextualize genealogies of the theoretically generative concept of soundscape. Then we review emerging ethnographic work on sound and sound recording through which the relevance of the soundscape concept to anthropology is made explicit. At the same time, this ethnography refines theory about soundscape, even if it does not all make use of the term. In combination, soundscape theory and ethnographies of sound prompt us to call for an aural reflexive turn in the discipline and offer tools with which to do it. We build on the model of Canadian composer R. Murray Schafer (1994 [1977]), which we contend has advantages for anthropologists. He frames the soundscape as

a publicly circulating entity that is a produced effect of social practices, politics, and ideologies while also being implicated in the shaping of those practices, politics, and ideologies. Soundscape opens possibilities for anthropologists to think about the enculturated nature of sound, the techniques available for collecting and thinking about sound, and the material spaces of performance and ceremony that are used or constructed for the purpose of propagating sound.

FROM SOUND TO SOUNDSCAPE

The history of the soundscape concept is intimately linked to histories of mediation and to changing technologies that make particular kinds of listening possible. It is inseparable from the critical encounter with sound that these changes themselves enable. Indeed, after World War II a number of concepts for thinking about sound emerged simultaneously. Each responded to recording technology by addressing sound’s intimate connections to contexts of time and place. Following Latour (1993), we infer from these overlapping concerns that the invention of sound machines was part of a collection of epistemological practices of purification of sound, which sought to abstract sound from its immediate surroundings while noting its connectivity to place.

We trace the term soundscape to Schafer (1994 [1977]), who brought it into wide circulation when he called for “a total appreciation of the acoustic environment” (p. 4). Soundscape was somewhat analogous to landscape insofar as it attempted to contain everything to which the ear was exposed in a given sonic setting. Like “landscape,” as well, the term contains the contradictory forces of the natural and the cultural, the fortuitous and the composed, the improvised and the deliberately produced. Similarly, as landscape is constituted by cultural histories, ideologies, and practices of seeing, soundscape implicates listening as a cultural practice.

Schafer’s concern with the noise pollution of modern technology dictated the form of his presentation: The soundscape moves

historically from natural to rural to town to city and thence through the industrial and electric revolutions, becoming ever louder and less tuned to a human(ist) scale. In its historical movement from “hi-fi” to “lo-fi” soundscapes, this presentation masks the ways in which the concept of soundscape is itself anchored in a form of listening that became possible only through the development of technological forms of mediation and recording.

Schafer’s initial engagement with the concept thus emerged out of a somewhat romantic materialist environmentalism, and his presentation performs a recurrent worry about technology’s dismantling of the natural soundscape. This concern manifested in two ways: First, Schafer often returned to a discussion of technology’s ability to drown out the human scale of the natural soundscape—“noise” is represented as the enemy of “sound”; second, his desire for the holism of the soundscape led him to critique the ways in which sound recordings could time- and place-shift the sources of a sound’s natural context—from a specific “here” and “now” of natural occurrence to a multiplicity of “heres” and “nows” through the aegis of mediation. For this sundering of sound and scape, Schafer coined a second term, *schizophonia*. As a result of Schafer’s concern with noise pollution and the composition of the emerging city soundscape, one place that the concept has found a fertile home is in urban studies (Arquette 2004, Atkinson 2007, Gidlof-Gunnarsson & Öhrström 2007).

The concept overlaps and layers with a more widely circulating academic discourse about sound, under such rubrics as “sound studies” and “anthropology of sound” and in scholarly attention to listening. Some of this work uses the term *soundscape* and other attendant concepts developed by Schafer in detailed form or dedicates one chapter to the concept (Picker 2003, Smith 1999). Other work appropriates the term but not the wide-ranging approach to the public sphere and to cultural histories that characterize Schafer’s understanding of sound and culture. Still other important work approaches the sonic from within studies

of science, technology, and communication (Bijsterveld 2008, Sterne 2003, Thompson 2002).

Soundscape studies has had particular traction in Scandinavia, where radio documentary, sound art, and interdisciplinary scholarship have intersected in formative ways (Järviuoma 2004). With some exceptions, however (Feld 1990 [1982], Helmreich 2007, Rice 2008, Ridington 1988), the soundscape concept has circulated more widely outside of anthropology than within it and more widely outside of North America than within it. This failure to take root could be in part because Schafer’s neologism was broadly contemporaneous with the publication of Spivak’s translation of Derrida’s *Of Grammatology* (1976), which heralded a disciplinary turn away from voice and sound as presence toward a focus on textuality and inscription. Another reason may be the loose way in which the term has sometimes circulated. Some music scholars have employed “soundscape,” either explicitly (Shelemay 2006) or implicitly (Dudley 2002, Jones 2003, Manuel 1994), as a new cover term for “the context in which music occurs” but without exploring the sonic aspects of that context that the soundscape concept can activate. Others, especially in the realm of popular music studies (Albiez 2003, Kronengold 2005), use the term to refer to the internal sonic or tonal texture of a musical performance or ensemble, a usage that overlaps with the way electroacoustic composers have used the term (Truax 2008, Westerkamp 2002). These uses invite an unfortunate reductive approach to both ethnography and the theory of the soundscape and limit the possibilities for a cross-fertilization of music studies and anthropology of sound. Yet the notion of soundscape may find more traction in the anthropological mainstream now than in past decades. The return to the body, the senses, and embodiment as areas of anthropological research and sources of local knowledge, along with Appadurai’s (1990) framing of modernity and the global cultural economy as an intertwined collection of “-scapes,” raises the profile of sound and soundscape as productive arenas for research.

In language and music studies, work that picks up on Bakhtinian notions of dialogism, polyphony, and the chronotope presents the voice as an utterance shaped and sounded in relation to other voices and to situated events (Inoue 2006, Silverstein 2005). Recent work on the acoustic dimensions of voice and the politics of time (Cavarero 2005, Grosz 2004), as well as studies on orality and remediation, further mobilizes questions about context and vocal sound. Together, these approaches bring attention to the linguistic transformation of speech acts when recontextualized to new media (Bauman 2010). This, along with work that decenters a Eurocentric approach to the relation between media and mediation (García Canclini 2005, Martín-Barbero 2001, Shohat & Stam 2003), identifies the aural as imbricated in theory and politics and, thereby, as critical to the ethnographic endeavor.

TECHNOLOGIES OF SONIC INSCRIPTION AND EXPERIENCE

New forms of technological mediation in the late nineteenth century helped constitute a particular modern(ist) engagement with sound, intensified cultural practices of listening (Connor 2004, Kahn 1992), and prompted shifts in practices of signification. Some of the earliest audio recordings included oratory, storytelling, and other verbal arts that until then had been performed face to face. The introduction of the new medium, in part, changed the modes of performing these genres. On the one hand, recording demanded that performance practices adapt to the art and technologies of recording, which led to distinctions between studio and live performances. On the other hand, live performance was itself transformed by the new access to playback (Katz 2004). These shifts can be seen linguistically and socially in a newly emergent focus on prosody, new practices of indexicality, new modes of eliciting audience response, and new contextualization cues for hypothetical audiences. This remediation of oral genres reconstituted those genres and their relationships to time

and space (Bauman 2010, Bauman & Feather 2004). At once futurist and nostalgic, sound recording also shifted the felt nature of memory, time, and place, disrupting the naturalized chronotope of live performance and producing an epistemological divide between face-to-face and mediated communication in a way that the invention of the telephone had not. Sound recording as well promised to bring the fullness of performed vocal and sonic presence of the past to future generations, and as a technology of memory, sound recording was quickly incorporated into the idea of the archive. The archival impetus still strongly undergirds anthropological field methodology with sound, configured anew by issues around new forms of electronic access, the emerging dominance of digital technology, and questions of ethics, informed consent, and cultural property rights to control archival collections (Christen 2006, Fabian 2008, Kelty et al. 2008). But recording as archival documentation is not the only effect of the development of inscriptive technologies for sound. Considerations of the adjacent and overlapping histories of motion picture sound, studio recording, and experimental sound art also contribute to the emergence of the concept of soundscape and to anthropology's productive engagement with it.

Sterne (2003) challenges the technological determinism of many histories of sound and listening, arguing that such inventions were themselves made possible because of an antecedent early-nineteenth-century interest in the ear, listening, deafness, and acoustics in fields such as medicine, psychoacoustics, and physiology. Gitelman (1999) demonstrates further that the idea of "new technologies" of sound reproduction is far from new. Before the invention of sound machines, the inscription of sound resulting from listening practices took place through "legible representations of aural experience" (p. 15): inscriptive practices that involved musical notation and words about sound and aural perception. Gitelman challenges readers to recognize the ways in which technologies of the legible made and continue to make sound circulation possible. Thus the

problem that Schafer frames as schizophrenia is not in fact determined by the emergence of sound recording technology. One could argue that the gramophone changed the stakes, but still the existence of recordings forced researchers in the areas of music, language, and other sounded cultural practices to rethink already existing scriptural procedures of notation and transcription (Rehding 2005). Likewise, the thin line between the Edison cylinders and the piano arrangements of nonwestern musical forms created by early ethnomusicologists (Troutman 2009) attested to the dialogic relationship between sound and sight.

Recent scholarly trends demonstrate recognition of these historical practices of legible aural inscription. These include the search for traces of the aural and practices of listening in literatures of different historical periods (Connor 2004, Picker 2003), for the sound of the voice in its written modes (Smith 1999), and for the trace left by different genres of inscription on the critical work of music making (Szendy 2008). Together with critical work on the philosophical grammar of vocality and writing (Cavarero 2005, Derrida 1976), the study of discourses and practices surrounding the invention of sound machines (Brady 1999, Sterne 2003), and the search for how specific historical periods predating the emergence of mechanical sound reproduction sounded (Johnson 1995, Rath 2003, Smith 2004b), this work on auditory history enables scholars to confront the presumption of western ocularcentrism. The dilemma that emerges is whether alternative sensorial histories have always been there as “subterranean histories” (Hirschkind 2006) at the margins of a mainstream history dominated by visuality or if the resounding of such histories gives rise in effect to a radically different temporal cartography: that “an auditory rather than a predominantly visual approach to the past produces a different cultural history” (Johnson 2005, p. 259).

Historians working in the realm of sound (Connor 2000, Corbin 1998, B. Johnson 2005, J. Johnson 1995, Schmidt 2000, Smith 1999), often “strongly drawn to epochs and subjects

that *precede* sound recording” (Thomas 2007, p. 107; emphasis in original), have made us aware that an ocularcentric history is based on an erasure of the place of the ear in constituting knowledges and different practices crucial to modernity. Anthropologists working with sound, however (Feld 1996a,b; Hirschkind 2006; Meintjes 2004), question the epistemic foundation of histories that claim an ocularcentricity of modernity through fieldwork that explores the acoustic construction of knowledge.

SOUND IN FILM

Soundscape and its companion concepts appeared in conjunction with a number of alternative approaches to thinking about questions of sound, culture, place, history, acoustic space, and technology. One of the key terms from these alternative traditions is the idea of “acousmatic” sound associated with experimental composer Pierre Schaeffer and the *musique concrète* movement in France (Schaeffer 1966). Thinking of sound on tape as itself a “sound object” (*l'objet sonore*), that is, an entity independent of its acoustic origin, Schaeffer framed this relationship between the sound object and its missing source as acousmatic, borrowed from Pythagorean philosophy but which in its modern coinage referred to sounds “of which the cause is invisible” (Chion 1983, p. 18). The term shares ground with schizophrenia, but without the sense of anxiety about the separation of sounds from their naturally occurring contexts that marks Murray Schafer’s work.

Discussions of film sound that focus on the acousmatic enter the purview of anthropology because they strongly implicate relationships of sound, place, and space. Even prior to the commercial success of the Vitaphone process (Lastra 2000, pp. 92–122), musical accompaniment was usually heard in the theaters that exhibited so-called “silent” films, and the traces of the presence of musicians on the film set can be seen in the rhythmic coordination of movements of the actors on the screen in the finished film (C. Abbate, manuscript in

preparation). Film editing was often analogized as musical, however problematic the analogy may be. Conversely, A. Monchick (manuscript in preparation) argues that musical composition in Germany between the World Wars was broadly influenced by montage and other tropes of cinematic technique.

Given the ways in which filmmaking influenced ideologies of sound and hearing, sound film studies promise a rich area of engagement for anthropologists considering sound, space, context, listening, technology, and aesthetic production. The historical development of synchronized sound in motion pictures (Crafton 1997) was partially constituted by the technological apparatus that enabled filmmakers to separate production of the visual narrative from that of the aural narrative. This process made possible the production of soundtracks that took full advantage of the recording studio's ability to enhance the listener's experience of attending to and focusing on particular sounds and even particular features of sounds. Recent film scholarship has witnessed an explosion of literature on the soundtrack (Altman 2007, Buhler et al. 2009, Chion 1994, Donnelly 2001, Goldmark et al. 2007, Kassabian 2000). Much of this work continues to concentrate on the role of music in the experience of film viewership, exploring, for example, the nature of diegetic and nondiegetic music in film, that is, the question of whether the source of a musical sound is in the story and meant for the characters or in the score and meant for the audience. Chion (1994) has challenged scholars to think of film as an audio-visual experience and to understand sound in film as synergistic with vision. Chion's emphasis on acousmatic sound acknowledges the mediated means by which filmmakers use the soundtrack to (re)create the material reality in which the film takes place.

Growing attention to the produced nature of the aural experience of film is echoed by a terminological move from film sound to sound design in articulating how soundtracks are constructed, and construed, as more than the musical score that accompanies the narrative arc of a film (Beck & Grajeda 2008,

Sider 2003). A number of film scholars have therefore avoided using "soundtrack" in favor of "soundscape," a term in film studies traced more often to Stilwell (2001) than to Schafer. Stilwell's framing of soundscape is intended to prod scholars to think holistically about film soundtracks, not only as the music that accompanies the sequence of scenes in a film, but as a complex layering of dialogue, music, and sound effects that together helps to anchor the viewer's experience of the film.

SOUND ARTS, SOUND RECORDING, SOUNDSCAPE

Strongly influenced by *musique concrète* and Schaeffer's twinned notions of the sound object and acousmatics, as well as other postwar experimental music traditions in Europe and the United States (LaBelle 2006), sound art is another refraction of relationships between sound, space, technology, expression, and culture that emerged in tandem with the idea of the soundscape. A number of electroacoustic composers associate their work directly with Schafer's concepts (Truax 2008, Westerkamp 2002). Architects, visual and performance artists, music composers, documentary recordists, and scholars have all written about sound art, sound installations, and recorded soundscapes, often in the same collected volumes (Carlyle 2007, Drobnick 2004, Gray & Yan 2007, Licht 2007, Rudi 2009; also see *Soundscape: The Journal of Acoustic Ecology*). The in situ ethnographic field recording has also served as a precedent for some sound art in ways that intersect directly with anthropological interests and with framings of the soundscape (see Kahn 1999, pp. 101–22).

As a social science, however, anthropology's engagement with sound has, for the most part, been different from that within the arts and humanities. Despite exceptions such as "deep listening," (Becker 2004, Oliveros 2005), anthropology has largely treated the work of sound artists as tangential to its enterprise. Anthropologists' disregard is returned in kind by sound artists who often dismiss

ethnographic field recordings for their rudimentary production techniques and their largely archival impetus. Zhang (2007), for example, criticizes field recordings as low-fi and academic rather than commercial and as preservationist rather than creative in impulse, arguing for the creative license to manipulate what he records. Such rhetorical stances, however, limit the ways in which sound art can be considered as a form of ethnographic argument as well as creative material for social analysts to think with. It limits, as well, the ways that sound artists might treat ethnography as making a contribution to artistic work, especially with regard to representing alternative positions of audition.

Soundscape composition reveals and sometimes replicates a limitation of Schafer's soundscape concept—its assumption that sound is only a matter of the vibrations of the source, leaving undertheorized the social, ideological, or political positionalities of listeners. Documentary sound art and soundscape composition take on the challenge of representing sound in a social or environmental context. Some projects add environmental sounds. Others blend music into environmental recordings (Cradick 1993, Cusack 2003, Sarno 1995). Still other sound artists are concerned primarily with expressing their own aesthetic or politics. Lockwood's *A Sound Map of the Danube* (2008) and DeLaurentis's activist *Our Streets!* (2006) are affective and carefully observed and heard, but the listening position of these multivocal soundscapes is solely that of the composer/recordingist. Documentary sound art centered on musical expression sometimes blends environmental sounds into the representation of musical performances. In his *Voices of the Rainforest* (1991a), by contrast, Feld was less interested in providing listeners with a sense of "Kaluli music in context" than in shaping a representation of a Kaluli way of listening, dialogically mixed with Kaluli artists and listeners. Thus, it differs from many recordings framed as musical soundscapes, whether by sound artists or by scholars.

Although anthropological or ethnomusical field recording has continued to have an archival focus on documenting expressive forms

in performance, recent work has expanded the goals of documenting music, oratory, storytelling, language elicitation, or the like by situating the expressive arts within an acoustic environment in which listeners are active social participants. Earlier literature gestures in this direction. Turnbull's classic *Mbuti Pygmies of the Ituri Rainforest* (Turnbull & Chapman 1992 [1957]) is an early foray in this direction. Influenced by Turnbull, Guillaume & Surgue (1982) produced a recording that attempted to offer listeners "an impression of what life among the Aka 'sounds like.'" But Feld's Kaluli recordings and his discussion of them (1991b) especially challenged ethnographers to rethink the aural representation of culture. Influenced in part by Rouch's film playback and feedback experiments in the 1950s, 1960s, and 1970s, Feld has produced experimental collaborative projects (Annan & Feld 2008, Ryan & Feld 2007) that blur the boundaries between documentary, ethnographic, and compositional work, raising questions about the premise of these distinctions in the first place and theorizing the aesthetics of recordings (see Feld 2000, Feld & Brenneis 2004, Zemp 1996).

Except for linguistic anthropology and ethnomusicology, anthropological training has tended to invest little in learning to work with sound recording and editing technologies, in developing techniques of interpretation for acoustic "texts," and in refining ethnographic language to articulate the poetics of sonic forms. In producing recordings, however, field recordingists make decisions behind which lie histories of ideas about what needs to be made audible. For example, they must consider how to bridge the seeming divide between representing local soundscapes in their own terms (however the ethnographer might understand this) and translating local performances into terms that are legible in foreign markets and other listening contexts (the classroom, the archive, or the lecture, for example). The best field recordings are those in which the recordingist has paid close attention to these questions, their quality due in part to the way the researchers have been guided through

their research by deep and nuanced listening. Such recordings are derived as well from extensive ethnographic knowledge and consultation about the sounds recorded, combined with concerns on the part of the recordist with the politics and poetics of representation. These recordings are themselves statements: creative, interpretive, empirical, hermeneutic, analytical texts rendered in acoustic form. The recordings of Turnbull (Turnbull & Chapman 1992[1957]), Arom & Renaud (1990 [1975]), and Berliner (1995 [1973]), for example, have enjoyed as sustained a life as have their monographs. (See also Zemp 1990 [1974].)

ETHNOGRAPHIES OF SOUND AND THE SOUNDSCAPE

Recording the Rainforest

In the late 1970s through the 1980s, with Turnbull (1961) as a precursor, music ethnographers working in rainforest societies made a vital contribution to globalizing soundscape studies (Basso 1985, Feld 1990 [1982], Roseman 1991, Seeger 1987). The dense rainforest canopy was a sensorially exceptional ecological environment in which one could hear further than one could see. With this emphasis on acoustic experience, their ethnographies showed social worlds to be at once imbricated in spiritually, ecologically, and sonically dense environments. Working in the shadows of structuralism, using Turnerian approaches to ritual as performance, and taking art to be a component of symbolic action, these studies sought an understanding of social coherence. For them, the interrelationship between the arts played a role in producing a sense of communality. Studies of music in these places demonstrated how sound structure as social structure blurred the distinctions between nature and culture and between musical and acoustic analysis. Their focus on the idea of coherence—as social, sounded, and symbolic—combined with detailed ethnographic research to reveal that the soundscape was dense with significance, led them to a particularly cohesive sense of how such significance operated—a co-

hesion that was modified in these authors' own later work (Feld 1996a, 2000; Seeger 2003), as well as work in other aural environments.

Recording Cosmopolitanism and Struggle

The holistic approaches to sound, history, environment, and place of these rainforest ethnographies provided the inspiration for successive work on aurality in metropolitan, ambient, and cosmopolitan environments and in places in which forms of social struggle made coherence itself difficult to find. Scholars taking an ethnographic approach to sonic practices in urban environments (Wallach 2008), zones of conflict (White 2008), or virtual communities (Bennett & Peterson 2004), for example, focus on the contemporary encounter between sound in performance and the means of production, reproduction, and consumption. Studies that examine the ways that sound technologies are embroiled in the shaping of sonic aesthetics, whether through manipulation of musical instruments (Berger & Fales 2005), technologies of distribution (Sutton 1996), mediated devotional practices (Hirschkind 2006, Lee 1999), or patterns of circulation and reception (Novak 2008, Solomon 2009) also call attention to the ways in which listening is space- and place-specific, as well as to the multiple ways of listening to the acoustic components of sound. Work that highlights megacities as products of voyages and circulation and the daily movements of people within them has led to ethnographies of emplaced auditory landscapes and media usage, leading to an understanding of media and the construction of the urban landscape as mutually constitutive of each other (García Canclini et al. 1996, Gray 2007, Hansen 2006, Hirschkind 2006, Sakakeeny 2010).

Studio Production and Listening Practices

Key to much of the work that puts sound into a more contested framework is a willingness to grapple with multiple dimensions of sound that are manipulable in the recording process and that have become part of the palette of

expressive resources used by recording artists, sound engineers, and producers: timbre (or sound color), spatialization (via use of echo or reverberation as well as stereo-field or surround-sound manipulation), ambience, and distortion. Space in particular has received a great deal of attention because it is a highly constructed artifact of the mediations inherent in production and listening practices. Thus running parallel to the concept of the soundscape is that of the sound stage, a three-dimensional recorded representation of a space from which performance emerges (Moylan 2002). Recordings have always included some representation of the space of performance, ranging from close-miked recordings, which seek to create the artifice that the performance is occurring outside of any physical space whatsoever (Brady 1999), to the classical concert-hall recording approaches, which seek to position the listener as an “ideal ear” (or ears) in an audience (Chanan 1995), to spaces that are invented, imaginary, or in which the spatial features are themselves part of the composer’s (or producer’s) compositional palette (Blessner & Salter 2007, Doyle 2005, Porcello 2005, Zak 2001).

Other work has emphasized the role of mediating technologies in the politics of aesthetics in music. Ethnographers working directly in recording studios have attended to negotiations involving musicians, engineers, producers, and other interests in the production of recordings (Bates 2008, Meintjes 2003). Music scholars increasingly listen to music with an ear to the sound engineering practices that underpin the recording (Katz 2004, Porcello 2005), and an increasing number of sound engineers and producers have sought to theorize the recording process (Moylan 2002). Others have looked at the intersection of sound production and communities of listeners or consumers (Fikentscher 2003, Wong 2003).

New Forms of Place in the Global Economy

A fourth engagement with soundscape, mediation, and culture ethnographically traces

the cultural productivity of formally dislocated sounds, positing a creative and cultural productivity to various schizophrenic moments in the production of new forms of identity, performance, and memory. The globalizing music industry (Burnett 1996, Taylor 1997) and the circulation of new technologies of production have bequeathed a preponderance of new forms of emplacement for music and sound, including hip hop in Japan (Condry 2006), new forms of reggae in Jamaica (Veal 2007), country music in Native American communities (Samuels 2004) as well as other new forms of Native American musical identities (Browner 2009, Lassiter et al. 2002), the global circulation of hip hop (Alim et al. 2008), and new forms of musical expression in exile (Diehl 2002). This topic has become central to ethnomusicology, but covering the complete scope of its emerging literature is beyond the range of this article. We note, however, the legacy of the chronotope implicit in ethnographies that probe the relationship between time, place, and personhood through the voice (Fox 2004, Samuels 2004, Webster 2009, Weidman 2006). Grappling with the means of understanding an auditory intimacy while maintaining a sense of socially, geographically, and historically emplaced relationships, this work explores shifting constitutions of personhood as registered in the voice in the modern global ecumene.

Most of this work continues to be in dialogue with the politics of schizophrenic emplacement as crucial to the political understanding of sonic production, finding new social meanings in the tensions heard in sounds that are or are not “naturally” associated with the new places in which they are found. In recent extensions of this scholarship, work attentive to the politics of place and time further displaces the relation between sound and place as the central node of political concern by an attention to sound and the politics of circulation (Lemos & Castro 2008, Novak 2008, Ochoa & Botero 2009).

This reworking of place is partly a product of decentering the politics of production and circulation to different critical domains: the

coming of age of a generation for whom global consumption of media products is not necessarily seen as oppositional to their local appropriation in certain parts of the world, which decenters place as the arbiter of authenticity or signification (Novak 2008); the appropriation of technology for uses that question the historical divide between the religious and the secular, thus displacing technology as the exclusive scientific-secular domain of emplacement (Hirschkind 2006, Larkin 2008); the politics of sound production and circulation increasing as a contested legal terrain that blurs the line between copyright laws, illegal forms of appropriation (generally glossed as “piracy”), and the emergence of new juridical regimes of circulation that recognize alternative modes of production (creative commons, social commons, free software, etc.) (Lemos & Castro 2008, Ochoa & Botero 2009); and the questioning of the politics of circulation by indigenous groups who increasingly contest ideas of copyright and free circulation in efforts to develop their own politics of circulation of cultural objects (Christen 2009).

THE SONIC, THE SPATIAL, THE MATERIAL, THE EPHEMERAL

Scholars and composers have long suggested that one of the difficulties posed by sounds, as compared with images, is the inability to extract sounds from their temporal constraints. Sound recording allows for the temporal dislocation of a sound from its time and place of origin, but does not facilitate the ability to do the auditory equivalent of sustaining the gaze on an image for as long or as short as one desires. Thus even though sounds can be reproduced and replayed, sound is often considered to have, by its nature, a kind of temporality that the visual may not share.

This way of thinking about the temporality of sound has often led to an essentialization of sound as ephemeral, or at least elusive. One can see the material remains of Pompeii or Mesa Verde, for instance, and describe with some accuracy their architecture, spatial and material

properties, etc.; but one can only imagine, infer, or at best indirectly reconstruct what they sounded like. Witmore’s (2006) discussion of developing techniques in archaeological mapping implies that methods of visual inscription enhanced the idea of the permanence of visual objects, whereas methods of sound inscription, ironically, underscored the impermanence of sonic objects. The salvage ethnography work of early anthropologists was similarly predicated on a premise that loss of sound producers (the last speakers of native languages or performers of expressive genres) without recording them was to lose those sounds forever (Brady 1999, Ames 2003).

Compelling and provocative research by sound scholars in a number of disciplines has demonstrated the ways that the most permanent productions of material culture are associated with and shaped by the so-called intangibility of sound. Exploring the ways in which spaces of sonic performance both shape and are shaped by ideologies of proper aural practices and listening, this work covers a range of built, modified, and natural spaces used for sonorous practices, including painted Paleolithic caves (Reznikoff 2006), churches and cathedrals (Wright 1989), concert halls (Thompson 2002), and theater spaces (Arms & Crawford 1995, B. Smith 1999). As Sterne’s essay on the Mall of America (1997) shows, even in a material structure distinctly nonsonorous in purpose, we ought not ignore its role as an ambient sounding environment.

The soundscape concept provides some response to the ephemerality dilemma by offering a means to materialize sounds, their interrelations, and their circulation, much as Urban (1991) argues for the materiality of discourse. Yet the soundscape tends to be theorized as strongly geographic, leaving the complexities of sound’s temporality largely unexplored. Time in much soundscape work tends to mean diurnal time or historical time rather than duration. This definition, along with the neglect of the socially and culturally positioned listener, weakens the engagement of soundscape with politics and power. A similar limitation results

from the absence of the human voice in most soundscape work. In Schafer's chronicle of the soundscape, the human voice is progressively drowned out by modernity, the pleasant cries of street vendors replaced by the cold amplitude of machinery. This inattentiveness to the voice prevents Schafer's own history from including such well-known events in the histories of European languages as The Great Vowel Shift in English, the ascendancy of *langue d'oïl* over *langue d'oc* in France, or any number of standardizations revealing power and ideology at the level of sound—including a great deal of contemporary work in linguistics and linguistic anthropology on the politics of language revitalization. Recent work on the voice from a number of disciplines (Cavarero 2005, Feld et al. 2004, Fox 2004, Levin 2006, Urciuoli 1996) offers ways to integrate the human voice into the soundscape in ways that help anthropologists interrogate the historicized and ideological relations of bodies to their physical and cultural surroundings.

CONCLUSION: SOUNDED ANTHROPOLOGY

In speaking of a sounded anthropology, we are not proposing a break from the discipline as it has been framed. We are attempting to incorporate into the current work and profile of the discipline an acknowledgment that anthropology's history of entwinement with histories of technology, aesthetics, and mediation has led it to a critique of representation in the visual field while largely neglecting issues of sound, recording, and listening.

Histories of inscription and studies of orality and the voice and of recording provide anthropologists theoretical tools with which to reexamine their own disciplinary history as also a sounded one, with the sounded component of the discipline as more than simply a methodological means toward the end of accurate written analysis. These same rapidly growing bodies of literature also offer guidance on how to listen to compositional form, sound design, and acoustic properties as

artful and social, making distinctly possible the development of a sounded anthropology.

The rich literature on inscription combined with the idea of the soundscape and with patterns of globalization—the distribution of particular sounds, their audibility, and their value—reminds us that configurations of sound have political implications for a public, which is always a cosmopolitan listening public. Disciplinarity, coloniality, and the cultural politics of globalization are epistemologically linked (Ochoa 2006). The postcolonial move that draws sounded ways of knowing and thinking closer into the center of anthropology recognizes the politics of aurality. Such a move can partner anthropology about sound with anthropology in sound. Critical discussion of field recordings, soundscape recordings, and sound art projects as ethnographic endeavors along with the rapidly expanding literature on studio production practices, circulation processes, ethnographies of listening, the poetics of the voice, and the politics of globalization in relation to expressive culture offers anthropology a possible path toward a reflexive aural turn. Treating recordings as integral components of a sounded anthropology and equal partners in a theoretical conversation stands to refine and advance that conversation.

Were anthropology to consider its critical deafness to its own use of sound technology, to processes of acoustic mediation, and to the potential of sounded aesthetics as ethnography, anthropology might more productively engage with the artifacts of its own early history, and ethnographers could bring aural sensibilities to the worlds inhabited by the people with whom they work and consider those sounded worlds as more than performance genres to be extracted from their contexts. Finally, anthropologists would be reminded that recordings of those extracted performances themselves are interpretive statements. As constructions of the events recorded, they are not simply abstractions.

What, then, of the ethnographic ear? Clifford's call will continue to resonate until anthropologists attend to the soundscape and the politics of aurality. It is our hope that by

tracing the genealogies and histories of the concept of the soundscape we will promote such attention and enable anthropologists and

other scholars of culture to engage the full potential of sound—and in sound—for the theoretical project of anthropology.

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LITERATURE CITED

- Albiez S. 2003. Know history!: John Lydon, cultural capital and the prog/punk dialectic. *Pop. Music* 22:357–74
- Alim S, Ibrahim A, Pennycook A. 2008. *Global Linguistic Flows: Hip Hop Cultures, Youth Identities, and the Politics of Language*. London: Routledge
- Altman R. 2007. *Silent Film Sound*. New York: Columbia Univ. Press
- Ames E. 2003. The sound of evolution. *Modernism/Modernity* 10(2):297–325
- Annan NO, Feld S. 2008. *Bufo Variations*. Santa Fe: Voxlox. CD
- Appadurai A. 1990. Disjuncture and difference in the global cultural economy. *Theory Cult. Soc.* 7:295–310
- Arquette S. 2004. Sounds like city. *Theory Cult. Soc.* 21(1):159–68
- Arms RG, Crawford BE. 1995. Resonant cavities in the history of architectural acoustics. *Technol. Cult.* 36(1):104–35
- Arom S, Renaud P. 1990 [1975]. *Cameroon: Baka Pygmy Music/Cameroun: La Musique des Pygmées Baka*. Ivry-sur-Seine: Auvidis CD 8029
- Atkinson R. 2007. Ecology of sound: the sonic order of urban space. *Urban Stud.* 44(10):1905–17
- Basso EB. 1985. *A Musical View of the Universe: Kalapalo Myth and Ritual Performances*. Philadelphia: Univ. Penn. Press
- Bates E. 2008. *Social interactions, musical arrangement, and the production of digital audio in Istanbul recording studios*. PhD diss. Univ. Calif., Berkeley
- Bauman R. 2010. The remediation of storytelling: narrative performance on early commercial sound recordings. In *Telling Stories: Building Bridges Among Language, Narrative, Identity, Interaction, Society and Culture*. Rep. Georgetown Univ. Round Table Discuss. Lang. Ling., 2008, ed. A De Fina, D Schiffrin, pp. 23–43. Washington, DC: Georgetown Univ. Press
- Bauman R, Feaster P. 2004. Oratorical footing in a new medium: recordings of presidential campaign speeches, 1896–1912. *Proc. Annu. Symp. Lang. Soc., 11th, Austin, April 11–13, 2003. Tex. Ling. Forum* 47:1–19
- Beck J, Grajeda T. 2008. *Lowering the Boom: Critical Studies in Film Sound*. Urbana: Univ. Ill. Press
- Becker J. 2004. *Deep Listening: Music, Emotion, and Trancing*. Bloomington: Indiana Univ. Press
- Bennett A, Peterson RA, eds. 2004. *Music Scenes: Local, Translocal, and Virtual*. Nashville, TN: Vanderbilt Univ. Press
- Berger HM, Fales C. 2005. “Heaviness” in the perception of heavy metal guitar timbres: the match of perceptual and acoustic features over time. See Greene & Porcello 2005, pp. 181–97
- Berliner P. 1995 [1973]. *Zimbabwe: The Soul of Mbira*. Nonesuch Explorer Ser. CD 72054–2. New York: Nonesuch Records

- Bijsterveld K. 2008. *Mechanical Sound: Technology, Culture and Public Problems of Noise in the Twentieth Century*. Cambridge, MA: MIT Press
- Blessner B, Salter R. 2007. *Spaces Speak, Are you Listening? Experiencing Aural Architecture*. Cambridge, MA: MIT Press
- Brady E. 1999. *A Spiral Way: How the Phonograph Changed Ethnography*. Jackson: Univ. Press Miss.
- Browner T, ed. 2009. *Music of the First Nations: Tradition and Innovation in Native North American Music*. Urbana: Univ. Ill. Press
- Buhler J, Neumeyer D, Deemer R. 2009. *Hearing the Movies: Music and Sound in Film History*. New York: Oxford Univ. Press
- Burnett R. 1996. *The Global Jukebox: The International Music Industry*. London: Routledge
- Carlyle A, ed. 2007. *Autumn Leaves: Sound and the Environment in Artistic Practice*. Paris: Double Entendre
- Cavareno A. 2005. *For More than One Voice: Toward a Philosophy of Vocal Expression*. Stanford, CA: Stanford Univ. Press
- Chanan M. 1995. *Repeated Takes: A Short History of Recording and its Effects on Music*. New York: Verso
- Chion M. 1983. *Guide des Objets Sonores: Pierre Schaeffer et al. Recherche Musicale*. Paris: Buchet/Chastel, Inst. Natl. Commu. Audiovisuelle
- Chion M. 1994. *Audio-Vision: Sound on Screen*. New York: Columbia Univ. Press
- Christen K. 2006. Ara Irititja: protecting the past, accessing the future—indigenous memories in a digital age. *Mus. Anthropol.* 29(1):56–60
- Christen KA. 2009. *Aboriginal Business: Alliances in a Remote Australian Town*. Santa Fe: Sch. Adv. Res. Press
- Clifford J. 1986. Introduction: partial truths. In *Writing Culture: The Poetics and Politics of Ethnography*, ed. J Clifford, GE Marcus, pp. 1–26. Berkeley: Univ. Calif. Press
- Condry I. 2006. *Hip-Hop Japan: Rap and the Paths of Cultural Globalization*. Durham, NC: Duke Univ. Press
- Connor S. 2000. *Dumbstruck: A Cultural History of Ventriloquism*. New York: Oxford Univ. Press
- Connor S. 2004. Sound and the self. See Smith 2004a, pp. 54–68
- Corbin A. 1998. *Village Bells: Sound and Meaning in the 19th-Century French Countryside*. New York: Columbia Univ. Press
- Cradick M. 1993. *Heart of the Forest: The Music of the Baka Forest People of Southeast Cameroon*. Salem, MA: Hannibal Rec., CD HNCD 1378
- Crafton D. 1997. *The Talkies: American Cinema's Transition to Sound, 1926–1931*. New York: Scribner
- Cusack P. 2003. *Baikal Ice: Spring*. Thornton Heath, UK: ReR. CD PC2
- Delaurentis C. 2006. Our streets. In *On Interpreting the Soundscape*, curated by P Cusack. *Leonardo Music J.* Cambridge, MA: MIT Press. Vol. 16, LMJ16 CD
- Derrida J. 1997 [1976]. *Of Grammatology*, transl. GC Spivak. Baltimore, MD: Johns Hopkins Univ. Press. Correct. ed. From French
- Diehl K. 2002. *Echoes from Dharamsala: Music in the Life of a Tibetan Refugee Community*. Berkeley: Univ. Calif. Press
- Donnelly K, ed. 2001. *Film Music: Critical Approaches*. London: Continuum
- Doyle P. 2005. *Echo and Reverb: Fabricating Space in Popular Music Recording, 1900–1960, Music /Culture*. Middletown, CT: Wesleyan Univ. Press
- Drobnick J. 2004. Listening awry. In *Aural Cultures*, ed. J Drobnick, pp. 9–18. Banff: XYZ Books
- Dudley S. 2002. Dropping the bomb: steelband performance and meaning in 1960s Trinidad. *Ethnomusicology* 46(1):135–64
- Erlmann V. 2004. But what of the ethnographic ear? Anthropology, sound, and the senses. In *Hearing Cultures: Essays on Sound, Listening and Modernity*, ed. V Erlmann, pp. 1–20. Oxford: Berg
- Fabian J. 2008. *Ethnography as Commentary: Writing from the Virtual Archive*. Durham, NC: Duke Univ. Press
- Feld S. 1990 [1982]. *Sound and Sentiment: Birds, Weeping, Poetics, and Song in Kaluli Expression*. Philadelphia: Univ. Penn. Press
- Feld S. 1991a. *Voices of the Rainforest: A Day In The Life Of The Kaluli People*. Salem, MA: Rykodisc. CD 10173
- Feld S. 1991b. Voices of the rainforest: politics of music. *Public Cult.* 4(1):131–40
- Feld S. 1996a. Pygmy pop, a genealogy of schizophonic mimesis. *Yearb. Trad. Music* 28:1–35
- Feld S. 1996b. Waterfalls of song: an acoustemology of place resounding in Bosavi, Papua New Guinea. In *Senses of Place*, ed. S Feld, KH Basso, pp. 91–136. Santa Fe, NM: Sch. Am. Res. Press

- Feld S. 2000. A sweet lullaby for world music. *Public Cult.* 12(1):145–71
- Feld S, Brenneis D. 2004. Doing anthropology in sound. *Am. Ethnol.* 41(4):461–74
- Feld S, Fox AA, Porcello T, Samuels D. 2004. Vocal anthropology: from the music of language to the language of song. In *A Companion to Linguistic Anthropology*, ed. A Duranti, pp. 321–45. Malden, MA: Blackwell
- Fikentscher K. 2003. There's not a problem I can't fix 'cause I can do it in the mix: on the performative technology of the 12-inch vinyl. In *Music and Technoculture*, ed. RTA Lysloff, LC Gay Jr. pp. 290–315. Middletown, CT: Wesleyan Univ. Press
- Finnegan R. 2002. The sounding world and its creation. In *Communicating: The Multiple Modes of Human Interconnection*, pp. 59–91. London: Routledge
- Fox AA. 2004. *Real Country: Music and Language in Working-Class Culture*. Durham, NC: Duke Univ. Press
- García Canclini N. 2005. *Antropología urbana en México*. México City: Consejo Nac. Cult. Artes, Univ. Autónoma Metrop., Fondo Cult. Econ.
- García Canclini N, Castellanos A, Mantecón AR. 1996. *La Ciudad de Los Viajeros: Travesías e Imaginarios Urbanos, México 1940–2000*. México City: Univ. Autónoma Metrop., Unidad Iztapalapa, Grijalbo
- Gidlof-Gunnarsson A, Öhrström E. 2007. Noise and well-being in urban residential environments: the potential role of perceived availability to nearby green areas. *Landsc. Urban Plan.* 83(2–3):115–26
- Gitelman L. 1999. *Scripts, Grooves and Writing Machines: Representing Technology in the Edison Era*. Stanford, CA: Stanford Univ. Press
- Goldmark D, Kramer L, Leppert R, eds. 2007. *Beyond the Soundtrack: Representing Music in Cinema*. Berkeley: Univ. Calif. Press
- Gray L, Yan J, eds. 2007. *Sound and the City*. London: Br. Council
- Gray LE. 2007. Memories of empire, mythologies of the soul: fado performance and the shaping of saudade. *Ethnomusicology* 53(1):106–30
- Greene PD, Porcello T, eds. 2005. *Wired for Sound: Engineering and Technologies in Sonic Cultures*. Middletown, CT: Wesleyan Univ. Press
- Grosz E. 2004. *The Nick of Time, Politics, Evolution and the Untimely*. Durham, NC: Duke Univ. Press
- Guillaume H, Surgue B. 1982. *Chasseurs Pygmées*. Paris: Off. Rech. Sci. Tech. Outre-Mer (ORSTOM), Soc. Etud. Ling. Anthropol. France (SELAF), CETO 795
- Hansen TB. 2006. Sounds of freedom: music, taxis, and racial imagination in urban South Africa. *Public Cult.* 18(1):185–208
- Helmreich S. 2007. An anthropologist underwater: immersive soundscapes, submarine cyborgs, and transductive ethnography. *Am. Ethnol.* 34(4):621–41
- Hirschkind C. 2006. *The Ethical Soundscape: Cassette Sermons and Islamic Counterpublics*. New York: Columbia Univ. Press
- Inoue M. 2006. *Vicarious Language: Gender and Linguistic Modernity in Japan*. Berkeley: Univ. Calif. Press
- Järviluoma H. 2004. On the fringes of musical inquiry: soundscape research. *Finn. Music Q.* 1:30–35
- Johnson B. 2005. Hamlet: voice, music, sound. *Pop. Music* 24(2):257–67
- Johnson J. 1995. *Listening in Paris: A Cultural History*. Berkeley: Univ. Calif. Press
- Jones S. 2003. Reading between the lines: reflections on the massive “Anthology of Folk Music of the Chinese Peoples.” *Ethnomusicology* 47(3):287–337
- Kahn D. 1992. Histories of sound once removed. In *Wireless Imagination: Sound, Radio and the Avant Garde*, ed. D Kahn, G Whitehead, pp. 1–30. Cambridge, MA: MIT Press
- Kahn D. 1999. *Noise, Water, Meat: A History of Sound in the Arts*. Cambridge, MA: MIT Press
- Kassabian A. 2000. *Hearing Film: Tracking Identifications in Contemporary Hollywood Film Music*. London: Routledge
- Katz M. 2004. *Capturing Sound: How Technology Has Changed Music*. Berkeley: Univ. Calif. Press
- Kelty CM, Fischer MMJ, Golub A, Jackson JB, Christen K, et al. 2008. Anthropology of/in circulation: the future of open access and scholarly societies. *Cult. Anthropol.* 23(3):559–88
- Kronengold C. 2005. Accidents, hooks and theory. *Pop. Music* 24:382–97
- Kruth P, Stobart H, eds. 2000. *Sound. Darwin College Lectures*. Cambridge, UK: Cambridge Univ. Press
- LaBelle B, ed. 2006. *Background Noise: Perspectives on Sound Art*. New York: Continuum
- Larkin B. 2008. *Signal and Noise: Media, Infrastructure, and Urban Culture in Nigeria*. Durham, NC: Duke Univ. Press

- Lassiter LE, Ellis C, Kotay R. 2002. *The Jesus Road: Kiowas, Christianity, and Indian Hymns*. Lincoln: Univ. Neb. Press
- Lastra J. 2000. *Sound Technology and the American Cinema*. New York: Columbia Univ. Press
- Latour B. 1993. *We Have Never Been Modern*. New York/London: Harvester Wheatsheaf
- Lee TS. 1999. Technology and the production of Islamic space: the call to prayer in Singapore. *Ethnomusicology* 43(1):86–100
- Lemos R, Castro O. 2008. *Tecnobrega: Pará Reinventing the Music Business*. Rio de Janeiro: Aeroplano Ed.
- Levin T. 2006. *Where Rivers and Mountains Sing: Sound, Music, and Nomadism in Tuva and Beyond*. Bloomington: Indiana Univ. Press
- Licht A. 2007. *Sound Art: Beyond Music, Between Categories*. New York: Rizzoli
- Lockwood A. 2008. *A Sound Map of the Danube*. New York: Lovely Music. 3 CD set. LCD2083
- Manuel P. 1994. Puerto Rican music and cultural identity: creative appropriation of Cuban sources from Danza to Salsa. *Ethnomusicology* 38(2):249–80
- Martín-Barbero J. 2001. *Al Sur de la Modernidad: Comunicación, Globalización y Multiculturalidad*. Pittsburgh: Inst. Int. Lit. Iberoamericana, Univ. Pittsburgh
- Meintjes L. 2003. *Sound of Africa!: Making Music Zulu in a South African Studio*. Durham, NC: Duke Univ. Press
- Meintjes L. 2004. Shoot the sergeant, shatter the mountain: the production of masculinity in Zulu ngoma song and dance in postapartheid South Africa. *Ethnomusicol. Forum* 13(3):173–201
- Moylan W. 2002. *The Art of Recording: The Creative Resources of Music Production and Audio*. New York: Van Nostrand Reinhold
- Nancy J-L. 2007. *Listening*, transl. C Mandell. New York: Fordham Univ. Press. From French
- Novak D. 2008. 2.5 by 6 meters of space: Japanese music coffeehouses and experimental practices of listening. *Pop. Music* 27:15–34
- Ochoa AM, Botero C. 2009. Notes on practices of musical exchange in Colombia. *Pop. Comm. on Lat. Am.* 7(3):158–68
- Ochoa Gautier AM. 2006. Sonic transculturation, epistemologies of purification and the aural public sphere in Latin America. *Soc. Ident.* 12(6):803–25
- Oliveros P. 2005. *Deep Listening: A Composer's Sound Practice*. Lincoln, NE/Kingston, NY: iUniverse/Deep Listening
- Picker JM. 2003. *Victorian Soundscapes*. New York: Oxford Univ. Press
- Porcello T. 2005. Music mediated as live in Austin; sound, technology, and recording practice. See Greene & Porcello 2005, pp. 103–17
- Rath RC. 2003. *How Early America Sounded*. Ithaca/London: Cornell Univ. Press
- Rehding A. 2005. Wax cylinder revolutions. *Music Q.* 88(1):123–50
- Reznikoff I. 2006. The evidence of the use of sound resonance from Palaeolithic to Medieval times. In *Archaeoacoustics*, ed. C Scarre, G Lawson, pp. 77–84. Cambridge, UK: Cambridge Univ. Press
- Rice T. 2008. “Beautiful murmurs”: stethoscopic listening and acoustic objectification. *Senses Soc.* 3(3):293–306
- Ridington R. 1988. Why baby why: Howard Broomfield's documentation of the Dunne-Za soundscape. *Can. J. Nat. Stud.* 8(2):251–74
- Roseman M. 1991. *Healing Sounds from the Malaysian Rainforest: Temiar Music and Medicine*. Berkeley: Univ. Calif. Press
- Rudi J, ed. 2009. *Sound Art*. Spec. issue of *Org. Sound*, Vol. 14, No. 1
- Ryan V, Feld S. 2007. *The Castaways Project*. Santa Fe: VoxLox. CD, DVD 207
- Sakakeeny M. 2010. “Under the bridge”: an orientation to soundscapes in New Orleans. *Ethnomusicology* 54(1):1–27
- Samuels D. 2004. *Putting a Song on Top of It: Expression and Identity on the San Carlos Apache Reservation*. Tucson: Univ. Ariz. Press
- Sarno L. 1995. *Bayaka: The Extraordinary Music of the Babenzele Pygmies and Sounds of Their Forest Home*. Roslyn, NY: Ellipsis Arts. CD 3490
- Schaeffer P. 1966. *Traité des Objets Musicaux, Essai Interdisciplines*. Paris: Ed. Seuil
- Schafer RM. 1994 [1977]. *The Soundscape: Our Sonic Environment and the Tuning of the World*. Rochester, VT: Destiny

- Schmidt LE. 2000. *Hearing Things: Religion, Illusion and the American Enlightenment*. Cambridge, MA: Harvard Univ. Press
- Seeger A. 1987. *Why Suya Sing: A Musical Anthropology of an Amazonian People*. Cambridge/New York: Cambridge Univ. Press
- Seeger A. 2003. Globalization from a local perspective in Brazil: the Suyá Indians and *música sertaneja*. In *Musical Cultures of Latin America, Global Effects, Past and Present. Selected Reports in Ethnomusicology*, ed. S Loza, 11:121–28. Los Angeles: Ethnomusicology
- Shelemay KK. 2006. *Soundscapes: Exploring Music in a Changing World*. New York: Norton. 2nd ed.
- Shohat E, Stam R. 2003. *Multiculturalism, Postcoloniality and Transnational Media*. New Brunswick, NJ: Rutgers Univ. Press
- Sider L, ed. 2003. *Soundscape: The School of Sound Lectures, 1998–2001*. London: Wallflower
- Silverstein M. 2005. Axes of evals: token versus type interdiscursivity. *J. Ling. Anthropol.* 15(1):6–22
- Smith B. 1999. *The Acoustic World of Early Modern England: Attending to the O-Factor*. Chicago: Univ. Chicago Press
- Smith MM, ed. 2004a. *Hearing History: A Reader*. Athens/London: Univ. Ga. Press
- Smith MM. 2004b. Introduction. Onward to audible pasts. See Smith 2004a, pp. ix–xxii
- Solomon T. 2009. Berlin-Frankfurt-Istanbul: Turkish hip-hop in motion. *Eur. J. Cult. Stud.* 12(3):305–27
- Sterne J. 1997. Sounds like the Mall of America: programmed music and the architectonics of commercial space. *Ethnomusicology* 41(1):22–50
- Sterne J. 2003. *The Audible Past. Cultural Origins of Sound Reproduction*. Durham/London: Duke Univ. Press
- Stilwell R. 2001. Sound and empathy: subjectivity, gender and the cinematic soundscape. See Donnelly 2001, pp. 167–87
- Sutton RA. 1996. Interpreting electronic sound technology in the contemporary Javanese soundscape. *Ethnomusicology* 40(2):249–68
- Szendy P. 2008. *Listening, A History of our Ears*. New York: Fordham Univ. Press
- Taylor T. 1997. *Global Pop: Global Music, Global Markets*. London: Routledge
- Thomas M. 2007. The rush to record: transmitting the sound of Aboriginal culture. *J. Aust. Stud.* 90:107–21
- Thompson E. 2002. *The Soundscape of Modernity: Architectural Acoustics and the Culture of Listening in America, 1900–1933*. Cambridge, MA: MIT Press
- Troutman JW. 2009. *Indian Blues: American Indians and the Politics of Music, 1879–1934*. Norman: Univ. Okla. Press
- Truax B. 2008. Soundscape composition as global music: electroacoustic music as soundscape. *Org. Sound* 13(2):103–9
- Turnbull C, Chapman FS. 1992 [1957]. *Mbuti pygmies of the Ituri rainforest*. Washington, DC: Smithsonian. Folkways CD 40401
- Turnbull CM. 1961. *The Forest People*. New York: Simon and Schuster
- Urban G. 1991. *A Discourse-Centered Approach to Culture: Native South American Myths and Rituals*. Austin: Univ. Tex. Press
- Urciuoli B. 1996. *Exposing Prejudice: Puerto Rican Experiences of Language, Race, and Class*. Boulder, CO: Westview
- Veal M. 2007. *Dub: Soundscapes and Shattered Songs in Jamaican Reggae*. Middletown, CT: Wesleyan Univ. Press
- Wallach J. 2008. *Modern Noise, Fluid Genres: Popular Music in Indonesia, 1997–2001*. Madison: Univ. Wis. Press
- Webster A. 2009. *Explorations in Navajo Poetry and Poetics*. Albuquerque: Univ. N. M. Press
- Weidman A. 2006. *Singing the Classical, Voicing the Modern: The Postcolonial Politics of Music in South India*. Durham: Duke Univ. Press
- Westerkamp H. 2002. Linking soundscape composition and acoustic ecology. *Org. Sound* 7(1):51–56
- White BW. 2008. *Rbumba Rules: The Politics of Dance Music in Mobutu's Zaire*. Durham, NC: Duke Univ. Press
- Witmore C. 2006. Vision, media, noise and the percolation of time: symmetrical approaches to the mediation of the material world. *J. Mat. Cult.* 11(3):267–92
- Wong DA. 2003. *Speak it Louder: Asian Americans Making Music*. New York: Routledge
- Wright C. 1989. *Music and Ceremony at Notre Dame of Paris, 500–1550*. New York: Cambridge Univ. Press

- Zak A. 2001. *The Poetics of Rock: Cutting Tracks, Making Records*. Berkeley: Univ. Calif. Press
- Zemp H. 1990 [1974]. *Polyphonies des Îles Salomon/Polyphonies of the Solomon Islands*. France: Chant du monde, Distribution Harmonia Mundi. CD LDX 274 663
- Zemp H. 1996. The/an ethnomusicologist and the record business. *Yearb. Trad. Music* 28:36–56
- Zhang X. 2007. Let your ears grow like weed. See Gray & Yan 2007, pp. 35–38
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RELATED RESOURCES

Following the invention of sound-recording technologies, sound archives were foundational to the history of anthropology, ethnomusicology, folkloristics, and linguistics. They remain important for work in and through sound and culture, along with a recent generation of Web sites offering access to natural, musical, linguistic, historical, and other archival collections of the sonorous world. Following is a list of some of the collections available online.

ARCHIVES OF INDIGENOUS LANGUAGE AND CULTURE

- Archive of Indigenous Languages of Latin America. <http://www.ailla.utexas.org/site/welcome.html>
- Australian National Film and Sound Archives. <http://www.nfsa.gov.au/>
- British Library Sound Archive. <http://www.bl.uk/nsa>
- International Library of African Music. <http://www.ru.ac.za/ilam>
- Mukurtu Wumpurrarni-Kari Archive. <http://www.mukurtuarchive.org/>
- Plateau People's Web Portal. <http://plateauportal.wsulibs.wsu.edu/html/ppp/index.php>
-

ONLINE SOUNDSCAPES

- Archive Sonoro. http://www.archivosonoro.org/paisajes_sonoros/
- Helmi Järviluoma's Acoustic Environments in Change project (an updating of Murray Schafer's 1975 Five European Villages project). <http://www.6villages.tpu.fi>
- World Soundscape Project at Simon Fraser University. <http://www.sfu.ca/~truax/wsp.html>
-

ACOUSTIC ECOLOGY WEB SITES

- Cornell University's Macaulay Library of Natural Sounds. <http://macaulaylibrary.org/index.do>
- The Owl Project at the MIT media lab. <http://owlproject.media.mit.edu/>
- World Forum for Acoustic Ecology (featuring the journal *Soundscape*). <http://interact.uoregon.edu/MediaLit/wfae/home/>
-

SOUND MAPS OF VARIOUS CITIES

- Montreal sound map. <http://cessa.music.concordia.ca/soundmap/en/>
- New Orleans sound map. <http://www.opensoundneworleans.com/core/>
- New York sound map. <http://fm.hunter.cuny.edu/nysae/nysoundmap/soundseeker.html>
- Tony's Schwartz's seminal recordings of the NYC streetscape. <http://www.tonyschwartz.org/#audio>



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