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# Multimedia

Emily Thompson

**The Soundscape of Modernity: Architectural Acoustics and the Culture of Listening in America, 1900–1933**

Cambridge, Mass.: MIT Press, 2002, ix + 500 pp., 116 illus. \$49.95 (cloth), ISBN 0-262-20138-0; 2004, \$27.95 (paper), ISBN 0-262-70106-5

Brandon LaBelle and Steve Roden, editors

**Site of Sound: Of Architecture and the Ear**

Los Angeles: Errant Bodies Press, in association with Smart Art Press, 1999, 168 pp., CD. \$20 (paper), ISBN 0965557022

Often, when I am walking near my home in New York City, I run into a man who lives on the floor above mine. I do not bother saying hello. He is completely blind, and not particularly friendly, but this is not what prevents me from greeting him. Rather, it is the fact that his giant headphones, audibly blaring symphonic music, effectively cut him off from any possibility of casual human contact. Still, although we rarely speak, I have always wondered about my neighbor's unique relationship to space, sound, and architecture. How does he experience the world? How does he make sense of the city and its buildings? His highly customized sensorium does not seem to limit his mobility. He moves about with ease, relying only on the rolling rubber ball on the tip of his cane. I have come to regard this highly sensitive apparatus as a tactile substitute for the sound and sociability of the city. A gramophone needle translating the grooves and ridges of the sidewalk into meaningful reverberations, it is an

instrument that maximizes the blind man's freedom, allowing him to navigate the chaotic space of downtown Manhattan without the help or hindrance of well-meaning strangers.

I thought about this man a number of times while preparing the present review. The compact disc that accompanies the book *Site of Sound* features pieces composed from the sounds of disparate spaces, inviting the listener to put together a mental blueprint of a variety of places, using only the ambiguous cues of recorded sound. The pieces on the disc document space through odd noises: refrigerators humming, finger joints cracking, vocal ramblings, papers rustling and—both majestic and kitschy—the eerie notes of the stalactite organ in Luray Caverns in California. I listened to the disc on headphones while walking through a strange city, and it was an illuminating experience of sensory disjuncture. Sounds were hard to locate—were they in the street or on the disc? Were they sirens or merely the oscillators of a modular synthesizer? Although nothing like the experience of my blind neighbor, it was an opportunity for spatial remapping through sensory dislocation that reminded me of his preferred mode of urban navigation.

The blind man with a Walkman appears to me as a quintessentially modern figure now, after reading *The Soundscape of Modernity*, Emily Thompson's wonderful cultural history of acoustic research and design in the early twentieth century. Enveloped in a private soundscape, isolated from urban cacophony, and reading the information etched into the metropolis as an abstract series of vibrations, the man's experience of mobility embodies some of the multiple

ways that modern acoustical science has reconfigured the relationship between space and sound. As Thompson narrates it, this relationship takes the form of increasing detachment and mediation. She writes clearly and compellingly of the combined efforts of architects, physicists, sound engineers, and performers to create new kinds of auditory spaces, ones in which the physical vibrations of sound in its medium could be isolated, calculated, manipulated, and, finally, controlled. My neighbor's use of electronically reproduced music and reverberating materials to move independently through social space is an individualized application of complex ideas about how to isolate sounds, spaces, and listeners—ideas that entered the modern episteme, along with several other conceptual-technological hybrids, in 1895.

The tale of modern acoustic design, which begins with Harvard University physicist Wallace Sabine's pioneering efforts to calculate and eventually reduce the reverberation times associated with particular auditoria, does not progress inevitably from an imperfect to a more perfect state of knowledge. Thompson is to be credited for ensuring that we understand Sabine's experiments, which she describes in a narrative redolent with Victorian details (the ivy-league gentleman's disdain for commercial profit, the watchful solicitations of an anxious mother, the experimental value of seat cushions), in the context of the period's empirical norms. Sabine, we learn, worked at a time when the impulse to understand sonic properties in visual terms, the intellectual pressures of neoclassicism, and the disciplining reactions of accrued taste together shaped the

direction of acoustic research. In this context, Sabine's work does not end up appearing merely as primitive attempts to achieve a state of purity that was later perfected by true modernism. (This would be difficult to do given, as Thompson points out, the legendarily poor acoustics associated with the International Style.) Breakthroughs in architectural acoustics, in the author's view, are not self-evident movements toward faultlessness, but rather reflect ongoing efforts to equate precision of measurement and materials research with such unmeasurable and subjective states as fidelity and "noise reduction." By refusing to take for granted received ideas about what "good acoustics" entail, Thompson compellingly argues that acoustic design in twentieth-century architecture is another dimension of modernity's voracious longing for the total conquest of space.

This argument is most clearly demonstrated in a chapter on the development of acoustic materials. The process of constructing acoustically manipulable interiors, like other forms of technological development in this period, was a search for enlightenment carried out in the name of such industrial-age ideals as efficiency, standardizability, and reproducibility. Thompson's text is particularly good at showing us the contradictory ways that these ideals have been implemented. Rooms are silenced with one technology, only to be given new acoustic signatures with another. When scientists and architects rewrite the acoustic principles of building design, it is not because of advances in the pure investigation of form and materials, but rather because they are engaged in ongoing dialogue with pioneers in the electronic reproduction and amplification of sound. This fascinating historical nexus between sound recording and architecture is explored in detail in a chapter on electroacoustic design for auditoriums. Elegantly noting the modern fan-shaped auditorium's debt to gramophone design (256), Thompson reminds us that "efficient transmission" was the goal of both electroacoustical

engineers and auditorium designers. Mechanical reproduction changed the reception and staging of live performance even in situations where neither recording nor electronic amplification are directly involved.

In such discussions, *The Soundscape of Modernity* adds new dimensions to Benjaminian hypotheses on art and aura. Rich explorations of the shifting understanding of liveness, and deadness, as acoustic ideals intersperse the book's accounts of successive efforts to visualize sound, culminating in the conception of sound as a process of vibrations that can be translated into a *signal*. Thompson demonstrates that the spaceless, and ideally noise-free, electronic sound states inaugurated with the telephone line and the gramophone shaped the perception of appropriate behavior of sound (and sound-producing entities) in space. When, at the end of the book, she takes us to Rockefeller Center and the total manipulation of sound through space promised in its studios and in the Radio City Music Hall—a manipulation that compromised the visual spectacles it was supposed to support—the Promethean implications are clear. With the onset of the depression and war, the singular ideals of detached listening associated with modernity's soundscape fall victim to "a new questioning of . . . unbounded technological enthusiasm" (315). Although a coda taking us through the decades following World War II heralds the rise of new, pluralistic acoustical paradigms, Thompson has succeeded in showing us the limits of mastery in the realm of architectural sound.

Only one, highly ambitious, chapter falters in the book's otherwise sure-footed path through the multiple social and scientific contexts that shaped the modern "culture of listening." This is chapter four, which examines the rise of the concept of "noise" across a range of sites, from progressive-era urban reform to audiology to modern music. The broad scope of this chapter means that certain aspects of the emergence of noise receive only cursory examination (jazz in particular gets short shrift), and some

connections are left unexplored or rendered primarily in suggestive verbal transitions. For example, we move quickly from urban noise to radio in one topic sentence: "While the noise of traffic had gradually crept up on listeners over the course of a decade or more, a new noise that announced its presence far more abruptly was the amplified output of electroacoustic speakers" (149). Yet on balance, the benefits of this chapter's broad-ranging, survey approach far outweigh such moments. Other seemingly breezy transitions are successful in pulling together disparate cultural strands: "Just as Luigi Russolo and Edgard Varèse heard music in the mechanical din of the modern city, the engineer Leon Theremin . . . heard music in the feedback squeal of radio" (152). Moreover, this chapter excels in its use of some truly sensational visual artifacts as illustrations.

Ultimately, in this chapter and elsewhere, most notably the section of chapter six on the contributions of motion picture sound engineers, Thompson achieves an impressive synthesis of secondary literature and primary materials, one that demonstrates the value of integrative methods. I know of no other book that so carefully and thoughtfully brings together the insights of so many different fields (science studies, cultural history, film and broadcasting studies, and musicology, to name only the major disciplines) while constructing a sophisticated survey of over three decades of scientific research. That Thompson also manages to tell a fascinating story of science and technology suggests that architectural historians whose interests lie primarily in materials science, or in the research agendas that shaped particular industries and firms, will find this book rewarding. (The same is true for those whose interests lie elsewhere—the section on the development of acoustic tile is, somewhat surprisingly, a page-turner.) But more substantially, she achieves through the best kind of interdisciplinary research an account of how sensory and aesthetic paradigms emerge, becoming seemingly natural and self-

evident in the accelerated time spans of modernity.

It is important to note the subtitle of this book, as it introduces the term that I see as the book's crowning achievement. This is its use of creative and resourceful materials to flesh out the concept of a "culture of *listening*." Listening, we discover, is both a mode of empirical investigation and a cultural process, and its history is distinct from the visualized knowledge associated with ocularcentrist modernity. If it is now commonplace to accept the structuralist premise that formal and historical forces promote certain "ways of seeing," then it is about time we started to think about "ways of hearing" too. This insight is old news for acousticians, sound engineers, and others involved in the sound arts. In bringing it to the attention of cultural historians and critics in other fields, Thompson is breaking important new ground.

This interest in the physical processes and cultural conventions that shape the act of listening connects Thompson's historiographic project with the preoccupations displayed in the edited collection *Site of Sound*, an anthology of writings by sound artists and experimental composers on the topic of "architecture and the ear." Included with the book is a compact disc of works by some of the authors. The disc alone is worth the modest cover price of the book, and I highly recommend it for anyone interested in the range and scope of methods in audio art.

Like the researchers who populate Thompson's book, many of the artists represented in *Site of Sound* are themselves conducting acoustic experiments. Reading the two volumes together, it was impossible not to think about the debt that the conceptualist and minimalist currents of experimental music from the 1960s owe to the early-twentieth-century pioneers of acoustical science. The work of John Cage is one obvious branch of this family tree, although two works by Alvin Lucier offer equally important examples of artists' continuing preoccupation with the architectural dynamics of sound. The first is *Vespers*

(1969), in which performers explore a darkened space using hand-held echolocation devices. The second is *I Am Sitting in a Room* (1970), which uses successive generations of Lucier's tape-recorded speech to discover the resonant frequencies of a room. Although Lucier is mentioned only once, in the essay by Santa Fe sound artist David Dunn, his influence and that of other spatially focused sound artists, from Morton Feldman to Gordon Monaghan, is clearly evident throughout the book, particularly in writings devoted to the sonic sensorium.

Although the book's primary readership is likely critics and practitioners who are invested in sound art, architectural historians will be very interested to read the brief interview with Pierre Koenig conducted by one of the co-editors of the volume. Steve Roden, the interviewer, contacted the architect to discuss "sound, music and architecture" after seeing photographs of the huge music room, filled with vinyl recordings of experimental and avant-garde music, in Koenig's private residence. Koenig, who claims that he "learned a lot about architecture by reading 'The Poetics of Music' by Stravinsky" (128), has interesting insights on the relationship between experimental music composition and the work of the architect. He is a generous interviewee, and in six pages we learn a surprising amount about his somewhat idiosyncratic relationship to sound and music. Asked about whether he finds himself attracted to particular sounds, he seems taken aback—"no one has ever asked me that question before and I guess that I never thought of it but I do" (130). Incredibly, it turns out that Koenig collects recorded sounds to listen to by himself, including some that are hard to imagine playing on the stereo while making dinner: "I just purchased the engine sounds of a Messerschmidt 109G which produces the most awesome man-made noise in the world" (130).

Undoubtedly the most fascinating part of the exchange is Koenig's description of the acoustic design of his living space. It is particularly enlightening in

the context of Thompson's history. As she notes, the perception of what constituted "good" acoustics changed substantially over the course of the twentieth century. Some auditoriums that were designed to be entirely "dead," with all of the reverberations eliminated, have now been redesigned to admit a more "natural" and "live" sound, occasionally through the unpublicized use of electronics. Koenig designed his entire house "with music in mind," although his sense of what that entails seems to conform more closely to early-twentieth-century acoustic conventions, aesthetically bound to the conquest of reverberation, than the contemporary norm. "The ceiling . . . is set at a height that breaks up most middle frequencies and has an absorbent pattern [and] there are spaces on both sides of the three story atrium that absorb sound." The result is a space for live performance "without any reflection at all" and in which performers can play at very high volume with no reverberation (131–32).

Koenig's home, planned for music in all locations, and acoustically designed to accommodate a live performance, raises the question of the history of acoustic design and domestic architecture. It is a question that extends beyond the purview of Thompson's study, but it is one of several points at which the juxtaposition of her historical study with the insights of artists and architects contained in *Site of Sound* indicates other directions for research and inquiry. Specifically, it made me wonder about the acoustic conventions and presuppositions encoded in the current technofantasy of the "smart" or "wired" house, a fantasy that seems to have been realized in Bill Gates's hi-tech domicile.<sup>1</sup> One component of this vision is the possibility that each resident (or, more accurately "user") of the smart house can customize it to his or her own needs simply by punching in a personal identification number. But while it is easy to tailor environmental elements like art, decor, music, and ambient lighting, the possibility of a constantly changing *acoustic* space does not seem to form part of the

smart house ideal. Bricks and mortar, in the end, continue to constrain our individual pathways through domestic "cultures of listening." In acoustic terms at least, the smart house experience remains actual, rather than virtual. Perhaps that is just as well.

If Thompson's book tells us about the evolution of acoustic "norms" in twentieth-century modernity, one of the strengths of *Site of Sound* is that it introduces us to the eclectic range of acoustic experiences that can occur in architectural space. The book and CD are produced by artists rather than technicians, and they display a refreshing disregard for "correct" and "incorrect" acoustic properties. In this respect, the anthology demonstrates the value of challenging the notion of an acoustic "norm," and reflects this in the diversity of works represented. Some involve the spoken word and the subjective perceptions of the performer, as in Steve Peter's work for radio, *Sight Specifics: Santa Fe*. Others are indebted to physics. Toshiya Tsunoda, whose piece *Standardization* is perhaps the most minimal track on the disc, focuses his investigations on stationary sine waves in different spaces, exploring their relationship to different listening positions. Michael Brewster, a sound sculptor, describes his work in a sensory language that deftly gets to the heart of sound's specificity in relation to both site and vision: "The sounds I choose are usually three to nine feet long, and very full and rounded" (104). Some essays in the book are also scores. Dunn, offering

a score for purposeful listening that is visually compelling although virtually impossible to perform as written, tells us that he seeks to "extend important implications in the work of Cage and Feldman through composing internal states of awareness that delineate non-linear time structures" (81). Dunn is not the only author in this collection to consider the utopian possibilities of purposive listening states. Hildegard Westerkamp, a founder of the World Forum for Acoustic Ecology, rails against the colonization of space with Muzak and exhorts her readers to seek out "sonic samples from around the world" that disturb "our cushioned and comfortable North American ears" (20). Westerkamp implies that architectural interiors imprison listeners when she commands us to "listen to your ears. Open the door of the building in which you live, step out and listen" (*ibid.*).

Westerkamp is one of several artists whose contribution to the volume is a manifesto for environmental sound. Her New Age-ish invocations of non-Western traditions are valuable testimonies to the continued relevance of Cagean ideals, but they risk seeming naive when compared with the more conceptualist offerings of artists such as Moniek Darge, Alison Knowles, and Minoru Sato. This is only one of the ways in which *Site of Sound* is an uneven volume. The product of a small independent press, it could use some copyediting. Some of the writing is obscurantist, and certain essays (most notably those by

Jalal Toufic and Giancarlo Toniutti) will seem life-threatening to readers with jargon allergies. Moreover, a number of essays make glaring historical errors. Apparently unaware of prior forms of sound recording and storage, Achim Wollscheid asserts: "Since the arrival of the magnetic tape the sound event can be separated from its source" (7). But these kinds of shortcomings are common among books by artists published by small presses. Ultimately, they should not deter people interested in how artists think about the environmental dimensions of sound from picking up a copy of *Site of Sound*. It is beautifully designed by Alex Louie. And there are some first-rate essays: Christina Kubisch's discussion of her installation piece *Über die Stille 1997*; the Koenig interview; Jake Tilson's "noise violation kit"; and all of the essays by the artists associated with the Japanese collective, or "label," WtK. Together with the compact disc, this volume offers a useful entry point into the diverse perspectives of artists for whom sound and architecture are materials for immersive investigation.

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#### Note

1. For a detailed discussion of the smart house in the context of the history of capitalism, see Fiona Allon, "An Ontology of Everyday Control: Flows, Meditation and Private Space," in Nick Couldry and Anna McCarthy, eds., *Media/Space: Place, Scale and Culture in a Media Age* (London and New York, 2004).