

The Soundscape of Modernity: Architectural Acoustics and the Culture of Listening in America, 1900–1933. *By Emily Thompson.* Cambridge, Mass.: MIT Press, 2002. ix + 500 pp. Index, notes, bibliography, illustrations. Cloth, \$44.95. ISBN 0-262-20138-0.

Reviewed by Gail Cooper

In *The Soundscape of Modernity*, Emily Thompson argues that between 1900 and 1933 the practice of architectural acoustics blended with the research and tools emerging from electroacoustic engineering to produce a dominant style of sound that was clear, direct, and nonreverberant. The suppression of ambient noise and reverberation to promote clarity, however, effectively stripped away listeners' ability to understand the context and space in which the sound was produced. This abstracted sound, Thompson proposes, was quintessentially modern, in that it represented "technical mastery over nature and the annihilation of time and space" (p. 4). She also demonstrates that it was ubiquitous, filling her book with examples of the determined construction of modern sound in auditoriums, amphitheaters, churches, radio, loudspeakers, music recordings, and motion-picture sound tracks. The cultural dominance of this ideal sound had profound consequences for building practice, as interiors were increasingly designed to make their sound systems "invisible."

Some readers will be surprised to encounter a consideration of the sound in buildings and electroacoustic sound (as heard on the radio and on movie sound tracks) within one analysis. The decision to do so was far from casual, for the book's central theme is the convergence of architectural acoustics and electroacoustic engineering. In 1900, architects were unable to produce the kind of reliably good acoustic interiors demanded of them by the new culture of listening in America, which was characterized by a heightened appreciation of classical music and religious sermons. Architects and engineers thus warmly welcomed the scientific analysis of MIT professor Wallace Sabine, developed during his consultation with the builders of Symphony Hall in Boston, and they put to use the Sabine equation, which allowed them to predict the acoustic quality of rooms. However, Sabine's grasp of acoustics was largely hypothetical, and the reader is treated to the amusing image of the venerated pioneer lugging sacks of seat cushions from building to building to aid his experiments. In their search for more precise sources of sound signals and better receiving instruments, his successors turned to electroacoustic engineers in the telephone and radio industries.

Thompson argues that the triumphant production of modern sound across this professional spectrum is the result of mutual reinforcement and shared experience, and not the

consequence of dominance by the more technically sophisticated electrical engineers. “The modern auditorium was more than a conscious or unconscious attempt to simulate architecturally the sound of electrically reproduced music, . . . [and] its origins preceded the diffusion of the [new electroacoustic] technologies. The historical development of this auditorium was the result of . . . the widespread use of sound-absorbing materials, the desire to eliminate noise and reverberation, scientific research on the intelligibility of speech and enthusiasm for outdoor sound” (pp. 248–9).

Thompson documents the concern of the new acousticians to claim the prestige of scientific practice, and she describes the inherent tensions they experienced between their pursuit of disinterested science and their immersion in the self-interested commercial world. Engineers in the radio, recording, and movie industry played an important role in acoustics that rivaled the contribution of academic scholars; at the same time, they helped launch a panoply of consumer products. A study of the cultural status of these engineers would provide a welcome supplement to our understanding of the engineering experience, which now emphasizes the relation between professionalization and science.

Indeed, an important aim of the book is to explore the tangled relations of technology and culture. Thompson argues that historians have energetically analyzed the impact of culture on the shaping of technology while neglecting to look at the ways in which technology shapes culture. Thus, she matches her scrutiny of the dominance of modern sound in the professional world with a consideration of the various paths to its cultural acceptance by listeners.

The chapter on urban noise best reflects the book’s mix of cultural and technological approaches. Technology profoundly altered the soundscape in the modern city, replacing, for example, the clatter of wagons and horses with the din of engines. “Noise” itself is a cultural construction, the author reminds us, and one on which there was no universal agreement in this era. To some urban dwellers, the sound of modern music was “noise,” while the racket of construction and modern engines represented the welcome strains of prosperity and progress. In the end, the lack of public consensus on what constituted “noise” eviscerated the enforcement of public noise ordinances, and remediation turned from the suppression of sources to the isolation of listeners, and from public policy to private solutions. This resolution also had profound consequences for modern buildings. Thompson reminds us that the Philadelphia Saving Fund Society Building was celebrated in part for addressing the dual acoustic concerns of insulating the occupant from external noise and suppressing internal noise and reverberation. By combining this modern sound esthetic with the newly heightened ability to control light and air, the building’s architects created an engineered alternative to the gritty urban environment.

Thompson's analysis is carried through six chapters that cover a number of topics: the origins of modern acoustics; the development of the profession; noise and modern culture; acoustic materials; and electroacoustics. It is ambitious in approach, well documented, and well written. Indeed, due to her practice of relegating much of the consideration of sources to extensive and colorful footnotes, she has produced a narrative style that is itself "clear and direct." In addition, the book is generously illustrated. In all respects, then, *The Soundscape of Modernity* is both important and pleasing.

Gail Cooper is associate professor of history at Lehigh University and the author of Air-Conditioning America: Engineers and the Controlled Environment, 1900–1960. Currently she is working on a history of quality control in U.S. and Japanese manufacturing.