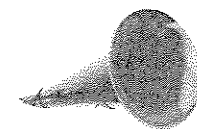


deserve much more lauding and gratitude than one can offer in the space of an acknowledgments section.

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Hello!

Here are the tales currently told: Alexander Graham Bell and Thomas Watson had their first telephone conversation in 1876. “Mr. Watson—Come here—I want to see you!” yelled Bell to Watson, and the world shook. Thomas Edison first heard his words—“Mary had a little lamb”—returned to him from the cylinder of a phonograph built by his assistants in 1878, and suddenly the human voice gained a measure of immortality. Guglielmo Marconi’s wireless telegraph conquered the English channel in 1899. Unsuspecting navy personnel first heard voices coming over their radios in 1906. Each event has been claimed as a turning point in human history. Before the invention of sound-reproduction technologies, we are told, sound withered away. It existed only as it went out of existence. Once telephones, phonographs, and radios populated our world, sound had lost a little of its ephemeral character. The voice became a little more unmoored from the body, and people’s ears could take them into the past or across vast distances.

These are powerful stories because they tell us that something happened to the nature, meaning, and practices of sound in the late nineteenth century. But they are incomplete.¹ If sound-reproduction technologies changed the way we hear, where did they come from? Many of the practices, ideas, and constructs associated with sound-reproduction technologies predated the machines themselves. The basic technology to make phonographs (and, by extension, telephones) existed for some time prior to their actual invention.² So why did sound-reproduction technologies emerge when they did and not at some other time? What preceded them that made them pos-

sible, desirable, effective, and meaningful? In what milieu did they dwell? How and why did sound-reproduction technologies take on the particular technological and cultural forms and functions that they did? To answer these questions, we move from considering simple mechanical possibility out into the social and cultural worlds from which the technologies emerged.

The Audible Past offers a history of the *possibility* of sound reproduction—the telephone, the phonograph, radio, and other related technologies. It examines the social and cultural conditions that gave rise to sound reproduction and, in turn, how those technologies crystallized and combined larger cultural currents. Sound-reproduction technologies are artifacts of vast transformations in the fundamental nature of sound, the human ear, the faculty of hearing, and practices of listening that occurred over the long nineteenth century. Capitalism, rationalism, science, colonialism, and a host of other factors—the “maelstrom” of modernity, to use Marshall Berman’s phrase—all affected constructs and practices of sound, hearing, and listening.³

As there was an Enlightenment, so too was there an “Ensoniment.” A series of conjunctures among ideas, institutions, and practices rendered the world audible in new ways and valorized new constructs of hearing and listening. Between about 1750 and 1925, sound itself became an object and a domain of thought and practice, where it had previously been conceptualized in terms of particular idealized instances like voice or music. Hearing was reconstructed as a physiological process, a kind of receptivity and capacity based on physics, biology, and mechanics. Through techniques of listening, people harnessed, modified, and shaped their powers of auditory perception in the service of rationality. In the modern age, sound and hearing were reconceptualized, objectified, imitated, transformed, reproduced, commodified, mass-produced, and industrialized. To be sure, the transformation of sound and hearing took well over a century. It is not that people woke up one day and found everything suddenly different. Changes in sound, listening, and hearing happened bit by bit, place by place, practice by practice, over a long period of time.

“The golden age of the ear never ended,” writes Alan Burdick. “It continues, occluded by the visual hegemony.”⁴ *The Audible Past* tells a story where sound, hearing, and listening are central to the cultural life of modernity, where sound, hearing, and listening are foundational to modern modes of knowledge, culture, and social organization. It provides an alter-

native to the pervasive narrative that says that, in becoming modern, Western culture moved away from a culture of hearing to a culture of seeing. There is no doubt that the philosophical literature of the Enlightenment—as well as many people’s everyday language—is littered with light and sight metaphors for truth and understanding.⁵ But, even if sight is in some ways the privileged sense in European philosophical discourse since the Enlightenment, it is fallacious to think that sight alone or in its supposed difference from hearing explains modernity.

There has always been a heady audacity to the claim that vision is the social chart of modernity. While I do not claim that listening is *the* social chart of modernity, it certainly charts a significant field of modern practice. There is always more than one map for a territory, and sound provides a particular path through history. In some cases—as this book will demonstrate—modern ways of hearing prefigured modern ways of seeing. During the Enlightenment and afterward, the sense of hearing became an object of contemplation. It was measured, objectified, isolated, and simulated. Techniques of audition developed by doctors and telegraphers were constitutive characteristics of scientific medicine and early versions of modern bureaucracy. Sound was commodified; it became something that can be bought and sold. These facts trouble the cliché that modern science and rationality were outgrowths of visual culture and visual thinking. They urge us to rethink exactly what we mean by the *privilege* of vision and images.⁶ To take seriously the role of sound and hearing in modern life is to trouble the visualist definition of *modernity*.

Today, it is understood across the human sciences that vision and visual culture are important matters. Many contemporary writers interested in various aspects of visual culture (or, more properly, visual aspects of various cultural domains)—the arts, design, landscape, media, fashion—understand their work as contributing to a core set of theoretical, cultural, and historical questions about vision and images. While writers interested in visual media have for some time gestured toward a conceptualization of *visual culture*, no such parallel construct—*sound culture* or, simply, *sound studies*—has broadly informed work on hearing or the other senses.⁷ While sound is considered as a unified intellectual problem in some science and engineering fields, it is less developed as an integrated problem in the social and cultural disciplines.

Similarly, visual concerns populate many strains of cultural theory. The question of *the gaze* haunts several schools of feminism, critical race theory,

psychoanalysis, and poststructuralism. The cultural status of *the image* and seeing occupies great minds in semiotics, film studies, several schools of literary and art-historical interpretation, architecture, and communication. While sound may interest individual scholars in these areas, it is still too often considered a parochial or specialized concern. While there are many scholars of sound active in communication, film studies, music, and other human sciences, sound is not usually a central theoretical problem for major schools of cultural theory, apart from the privilege of the voice in phenomenology and psychoanalysis and its negation in deconstruction.⁸

It would be possible to write a different book, one that explains and criticizes scholars' preference for visual objects and vision as an object of study. For now, it is enough to note that the fault lies with both cultural theorists and scholars of sound. Cultural theorists too easily accept pieties about the dominance of vision and, as a result, have elided differences between the privilege of vision and the totality of vision. Meanwhile, studies of sound tend to shy away from questions of sound culture as such (with a few notable exceptions) and prefer instead to work within other disciplinary or interdisciplinary intellectual domains. By *not* gesturing back toward a more general level of questioning, these works offer an implicitly cumulativist epistemology of the history of sound. The promise of cumulativist approaches is that one day we will have enough historical information to begin generalizing about society. The problem with this perspective is that such a remarkable day is always just over the horizon.⁹ If sound and hearing are indeed significant theoretical problems, then now is as good a time as any to begin dealing with them as broad intellectual matters.

Many authors have claimed that hearing is the neglected sense in modernity, a novel sense for analysis.¹⁰ It would perhaps be polemically acceptable at this point to lament the relative lack of scholarly work on sound as compared with images and vision, chart the pioneers, and then claim that this book will fill the gap. But the reality is somewhat different. There is a vast literature on the history and philosophy of sound; yet it remains conceptually fragmented. For the interested reader, there is a wealth of books and articles available on different aspects of sound written by scholars of communication, music, art, and culture.¹¹ But, without some kind of overarching, shared sensibility about what constitutes *the history of sound*, *sound culture*, or *sound studies*, piecing together a history of sound from the bewildering array of stories about speech, music, technology, and other sound-related practices has all the promise and appeal of piecing together a pane

of shattered glass. We know that the parts line up somehow, we know that they can connect, but we are unsure of how they actually link together. We have histories of concert audiences, telephones, speeches, sound films, soundscapes, and theories of hearing. But only rarely do the writers of histories of sound suggest how their work connects with other, related work or with larger intellectual domains. Because scholarship on sound has not consistently gestured toward more fundamental and synthetic theoretical, cultural, and historical questions, it has not been able to bring broader philosophical questions to bear on the various intellectual fields that it inhabits. The challenge, then, is to imagine sound as a problem that moves beyond its immediate empirical context. The history of sound is already connected to the larger projects of the human sciences; it is up to us to flesh out the connections.

In positing a history of sound, *The Audible Past* extends a long tradition of interpretive and critical social thought. Some authors have quoted the young Marx on the importance of sensory history: "The forming of the five senses is a labor of the entire history of the world down to the present." Marx's passage signals that the very capacity to relate to the world through one's senses is organized and learned differently in different social settings. The senses are "cultivated or brought into being." "Man himself becomes the object" to be shaped and oriented through historical and social process.¹² Before the senses are real, palpable, concrete, or available for contemplation, they are already affected and effected through the particular historical conditions that also give rise to the subject who possesses them. We can fully consider the senses as historical only if we consider society, culture, technology, and the body as themselves artifacts of human history. A truly historicist understanding of the senses—or of a particular sense—therefore requires a commitment to the constructivist and contextualist strain of social and cultural thought. Conversely, a vigorous constructivism and a vigorous contextualism require a history of the senses. It is no accident that Marx's discussion of the senses appears in a section on communism in the *Economic and Philosophic Manuscripts of 1844*. Even to begin imagining (another) society, the young Marx had to consider the historical dynamics of sensation itself. As we imagine the possibilities of social, cultural, and historical change—in the past, present, or future—it is also our task to imagine histories of the senses. It is widely accepted that "the individual observer became an object of investigation and a locus of knowledge beginning in the first few decades of the 1800s" and that, during that same

period, “the status of the observing subject was transformed.”¹³ So, too, transformations in sound, hearing, and listening were part of massive shifts in the landscapes of social and cultural life of the last three centuries.

The emergence of sound-reproduction technology in the nineteenth and twentieth centuries provides a particularly good entry into the larger history of sound. It is one of the few extant sites in the human sciences where scholars have acknowledged and contemplated the historicity of hearing. As Theodor Adorno, Walter Benjamin, and countless other writers have argued, the problem of mechanical reproduction is central to understanding the changing shape of communication in the late nineteenth and early twentieth centuries. For them, the compelling problem of sound’s reproducibility, like the reproduction of images, was its seeming abstraction from the social world even as it was manifested more dynamically within it.¹⁴ Other writers have offered even stronger claims for sound reproduction: it has been described as a “material foundation” of the changing senses of space and time at the turn of the twentieth century, part of a “perceptual revolution” in the early twentieth century. Sound technologies are said to have amplified and extended sound and our sense of hearing across time and space.¹⁵ We are told that telephony altered “the conditions of daily life”; that sound recording represented a moment when “everything suddenly changed,” a “shocking emblem of modernity”; that radio was “the most important electronic invention” of the twentieth century, transforming our perceptual habits and blurring the boundaries of private, public, commercial, and political life.¹⁶

Taken out of context or with a little hostility, claims for the historical significance of sound reproduction may seem overstated or even grandiose. D. L. LeMahieu writes that sound recording was one of “a score of new technologies thrust upon a population increasingly accustomed to mechanical miracles. In a decade when men learned to fly, the clock-sprung motor of a portable gramophone or the extended playing time of a double-sided disk hardly provoked astonishment. Indeed, what may be most remarkable was the rapidity with which technological innovations became absorbed into everyday, commonplace experience.”¹⁷ The same could be said for telephony, radio, and many other technologies. Yet LeMahieu’s more sober prose still leaves room for wonder—not at the revolutionary power of sound-reproduction technology, but at its banality. If modernity, in part, names the experience of rapid social and cultural change, then its “shocking emblems” may very well have been taken in stride by some of its people.

Because sound-reproduction technology’s role in history is so easily treated as self-evidently decisive, it makes sense to begin rewriting the history of sound by reconsidering the historical significance of sound technologies. A focus on sound-reproduction technology has an added advantage for the historian of sound: during their early years, technologies leave huge paper trails, thus making them especially rich resources for historical research. In early writings about the telephone, phonograph, and radio, we find a rich archive of reflections on the nature and meaning of sound, hearing, and listening. Douglas Kahn writes that, “as a historical object, sound cannot furnish a good story or consistent cast of characters nor can it validate any ersatz notion of progress or generational maturity. The history is scattered, fleeting, and highly mediated—it is as poor an object in any respect as sound itself.”¹⁸ Prior to the twentieth century, very little of the sonic past was physically preserved for historical analysis at a later date. So it makes sense to look instead at a particular domain of practice associated with sound. The paper trail left by sound-reproduction technologies provides one useful starting point for a history of sound.

Like an examination of the sense organs themselves, an examination of sound technologies also cuts to the core of the nature/nurture debate in thinking about the causes of and possibilities for historical change. Even the most basic mechanical workings of sound-reproduction technologies are historically shaped. As I will argue, the vibrating diaphragm that allowed telephones and phonographs to function was itself an artifact of changing understandings of human hearing. Sound-reproduction technologies are artifacts of particular practices and relations “all the way down”; they can be considered archaeologically. The history of sound technology offers a route into a field of conjunctures among material, economic, technical, ideational, practical, and environmental changes. Situated as we are amid torrential rains of capitalist development and marketing that pelt us with new digital machinery, it is both easy and tempting to forget the enduring connection between any technology and a larger cultural context. Technologies sometimes enjoy a certain level of deification in social theory and cultural history, where they come to be cast as divine actors. In “impact” narratives, technologies are mysterious beings with obscure origins that come down from the sky to “impact” human relations. Such narratives cast technologies themselves as primary agents of historical change: technological deification is the religion behind claims like “the telephone changed the way we do business,” “the phonograph changed the way we listen to music.” Impact narratives have been rightly and widely criticized

as a form of technological determinism; they spring from an impoverished notion of causality.¹⁹

At the same time, technologies are interesting precisely because they can play a significant role in people's lives. Technologies are repeatable social, cultural, and material processes crystallized into mechanisms. Often, they perform labor that had previously been done by a person. It is this process of crystallization that makes them historically interesting. Their mechanical character, the ways in which they commingle physics and culture, can tell us a great deal about the people who build and deploy them. Technologies manifest a designed mechanical agency, a set of functions cordoned off from the rest of life and delegated to them, a set of functions developed from and linked to sets of cultural practices. People design and use technologies to enhance or promote certain activities and discourage others. Technologies are associated with habits, sometimes crystallizing them and sometimes enabling them. They embody in physical form particular dispositions and tendencies. The door closer tends to close the door unless I stop it with my hand or a doorstep. The domestic radio set receives but does not broadcast unless I do a little rewiring and add a microphone. The telephone rings while I write the introduction to this book. After years of conditioning to respond to a ringing telephone, it takes some effort to ignore it and finish the sentence or paragraph. To study technologies in any meaningful sense requires a rich sense of their connection with human practice, habitat, and habit. It requires attention to the fields of combined cultural, social, and physical activity—what other authors have called *networks* or *assemblages*—from which technologies emerge and of which they are a part.²⁰

The story presented in these pages spirals out from an analysis of the mechanical and physical aspects of the technologies themselves to the techniques, practices, and institutions associated with them. At each juncture in the argument, I show how sound-reproduction technologies are shot through with the tensions, tendencies, and currents of the culture from which they emerged, right on down to their most basic mechanical functions. Our most cherished pieties about sound-reproduction technologies—for instance, that they separated sounds from their sources or that sound recording allows us to hear the voices of the dead—were not and are not innocent empirical descriptions of the technologies' impact. They were wishes that people grafted onto sound-reproduction technologies—wishes that became programs for innovation and use.

For many of their inventors and early users, sound-reproduction technologies encapsulated a whole set of beliefs about the age and place in which they lived. Sound-reproduction technologies represented the promise of science, rationality, and industry and the power of the white man to co-opt and supersede domains of life that were previously considered to be magical. For their early users, sound technologies were—in a word—modern.²¹ *Modernity* is of course a cloudy analytic category, fraught with internal contradictions and intellectual conflicts. Its difficulty probably stems from its usefulness as a heuristic term, and my use of it is deliberately heuristic. When I claim that sound-reproduction technology indexes an acoustic modernity, I do not mean quite the same thing as the subjects of my history. *The Audible Past* explores the ways in which the history of sound contributes to and develops from the “maelstrom” of modern life (to return to Berman): capitalism, colonialism, and the rise of industry; the growth and development of the sciences, changing cosmologies, massive population shifts (specifically migration and urbanization), new forms of collective and corporate power, social movements, class struggle and the rise of new middle classes, mass communication, nation-states, bureaucracy; confidence in progress, a universal abstract humanist subject, and the world market; and a reflexive contemplation of the constancy of change.²² In modern life, sound becomes a problem: an object to be contemplated, reconstructed, and manipulated, something that can be fragmented, industrialized, and bought and sold.

But *The Audible Past* is not a simple modernization narrative for sound and hearing. *Modernization* can too easily suggest a brittle kind of universalism, where the specific historical developments referenced by *modernity* are transmogrified into a set of historical stages through which all cultures must pass. In Johannes Fabian's apt phrase, the idea of modernity as modernization turns relations of space—relations between cultures—into relations of time, where the white man stands at the pinnacle of world evolution.²³ While I am not an exponent of a developmental theory of modernity, as “modernization,” it is such a central element of some discourses about sound reproduction that we will confront it more than once in the following pages. A long line of inventors, scholars, businesspeople, phonographic anthropologists, and casual users thought of themselves as partaking in a modern way of life, as living at the pinnacle of the world's progress. They believed that their epoch rode the crest of modernization's unstoppable wave. So, in addition to being a useful heuristic for describing the context

of the project as a whole, *modernity* and its conjugates are also important categories to be analyzed and carefully taken apart within this history.

The remainder of this introduction provides some conceptual background for the history that follows. The next section is an extended consideration of sound as an object of historical study: what does it mean to write a history of something so apparently natural and physical as sound and hearing? A more detailed map of the book's arguments then follows.

Rethinking Sound's Nature: Of Forests, Fallen Trees, and Phenomenologies

All this talk of modernity, history, and sound technology conjures an implied opposite: the *nature* of sound and hearing. Insofar as we treat sound as a fact of nature, writing something other than its natural history might seem like an immodest or inappropriate endeavor—at best it could aspire only to partiality. Although film scholars have been using the phrase *history of sound* for some time, it has an uneasy ring to it. After all, scholars of the visible world do not write “histories of light” (although perhaps they should), instead preferring to write histories of “visual culture,” “images,” “visuality,” and the like. Bracketing light in favor of “the visual” may be a defensive maneuver since the various visual terms conveniently bracket questions of the nature of nature. But, besides sounding good, *history of sound* already embodies a hard-to-grasp but necessary paradox of nature and culture central to everything that follows in this book. At its core, the phenomenon of sound and the history of sound rest at the in-between point of culture and nature.

It is impossible to “merely describe” the faculty of hearing in its natural state. Even to try is to pretend that language has no figurative dimension of its own. The language that we use to describe sound and hearing comes weighted down with decades or centuries of cultural baggage. Consider the careers of two adjectives associated with the ear in the English language. The term *aural* began its history in 1847 meaning “of or pertaining to the organ of hearing”; it did not appear in print denoting something “received or perceived by the ear” until 1860. Prior to that period, the term *auricular* was used to describe something “of or pertaining to the ear” or “perceived by the ear.”²⁴ This was not a mere semantic difference: *auricular* carried with it connotations of oral tradition and hearsay as well as the external features of the ear visible to the naked eye (the folded mass of skin that is often synecdochally referred to as the ear is technically either the *au-*

ricle, the *pinna*, or the *outer ear*). *Aural*, meanwhile, carried with it no connotations of oral tradition and referred specifically to the middle ear, the inner ear, and the nerves that turn vibrations into what the brain perceives as sound (as in *aural surgery*). The idea of the aural and its decidedly medical inflection is a part of the historical transformation that I describe in the following pages.

Generally, when writers invoke a binary coupling between culture and nature, it is with the idea that culture is that which changes over time and that nature is that which is permanent, timeless, and unchanging. The nature/culture binary offers a thin view of nature, a convenient straw figure for “social construction” arguments.²⁵ In the case of sound, the appeal to something static is also a trick of the language. We treat sound as a natural phenomenon exterior to people, but its very definition is anthropocentric. The physiologist Johannes Müller wrote over 150 years ago that, “without the organ of hearing with its vital endowments, there would be no such a thing as sound in the world, but merely vibrations.”²⁶ As Müller pointed out, our other senses can also perceive vibration. Sound is a very particular perception of vibrations. You can take the sound out of the human, but you can take the human out of the sound only through an exercise in imagination. Sounds are defined as that class of vibrations perceived—and, in a more exact sense, sympathetically produced—by the functioning ear when they travel through a medium that can convey changes in pressure (such as air). The numbers for the range of human hearing (which absolutely do not matter for the purposes of this study) are twenty to twenty thousand cycles per second, although in practice most adults in industrial society cannot hear either end of that range. We are thus presented with a choice in our definition: we can say either that sound is a class of vibration that *might* be heard or that it is a class of vibration that *is* heard, but, in either case, the hearing of the sound is what makes it. My point is that human beings reside at the center of any meaningful definition of sound. When the hearing of other animals comes up, it is usually contrasted with human hearing (as in “sounds that only a dog could hear”). As part of a larger physical phenomenon of vibration, sound is a product of the human senses and not a thing in the world apart from humans. Sound is a little piece of the vibrating world.

Perhaps this reads like an argument that falling trees in the forest make no sounds if there are no people there to hear them. I am aware that the squirrels would offer another interpretation. Certainly, once we establish an operational definition of sound, there may be those aspects of it that can be

identified by physicists and physiologists as universal and unchanging. By our definition of sound, the tree makes a noise whether or not anyone is there to hear it. But, even here, we are dealing in anthropocentric definitions. When a big tree falls, the vibrations extend outside the audible range. The boundary between vibration that is sound and vibration that is not-sound is not derived from any quality of the vibration in itself or the air that conveys the vibrations. Rather, the boundary between sound and not-sound is based on the understood possibilities of the faculty of hearing—whether we are talking about a person or a squirrel. Therefore, as people and squirrels change, so too will sound—by definition. Species have histories.

Sound history indexes changes in human nature and the human body—in life and in death. The very shape and functioning of technologies of sound reproduction reflected, in part, changing understandings of and relations to the nature and function of hearing. For instance, in the final chapter of this book, I discuss how Victorian writers' desire for permanence in sound recording was an extension of changing practices and understandings of preserving bodies and food following the Civil War. The connections among canning, embalming, and sound recording require that we consider practices of sound reproduction in relation to other bodily practices. In a phrase, the history of sound implies a history of the body.

Bodily experience is a product of the particular conditions of social life, not something that is given prior to it. Michel Foucault has shown that, in the eighteenth and nineteenth centuries, the body became “an object and target of power.” The modern body is the body that is “is manipulated, shaped, trained,” that “obeys, responds, becomes skillful and increases its forces.” Like a machine, it is built and rebuilt, operationalized and modified.²⁷ Beyond and before Foucault, there are scores of authors who reach similar conclusions. Already in 1801, a Dr. Jean-Marc Gaspard Itard concluded, on the basis of his interactions with a young boy found living “wild” in the woods, that audition is learned. Itard named the boy Victor. Being a wild child, Victor did not speak—and his silence led to questions about his ability to hear. Itard slammed doors, jingled keys, and made other sounds to test Victor's hearing. The boy even failed to react when Itard shot off a gun near his head. But Victor was not deaf: the young doctor surmised that the boy's hearing was just fine. Victor simply showed no interest in the same sounds as “civilized” French people.²⁸

While the younger Marx argued that the history of the senses was a core component of human history, the older Marx argued that the physical con-

ditions under which laborers “reproduced” themselves would vary from society to society—that their bodies and needs were historically determined.²⁹ The French anthropologist Marcel Mauss, one of Foucault's many influences, offered that “man's first and most natural technical object, and at the same time technical means, is his body.” What Mauss called *body techniques* were “one of the fundamental moments of history itself: education of the vision, education in walking—ascending, descending, running.”³⁰ To Mauss's list we could add the education and shaping of audition. Phenomenology always presupposes culture, power, practice, and epistemology. “Everything is knowledge, and this is the first reason why there is no ‘savage experience’: there is nothing beneath or prior to knowledge.”³¹

The history of sound provides some of the best evidence for a dynamic history of the body because it traverses the nature/culture divide: it demonstrates that the transformation of people's physical attributes is part of cultural history. For example, industrialization and urbanization decrease people's physical capacities to hear. One of the ways in which adults lose the upper range of their hearing is through encounters with loud machinery. A jackhammer here, a siren there, and the top edge of hearing begins to erode. Conflicts over what does and does not constitute environmental noise are themselves battles over what sounds are admissible in the modern landscape.³² As Nietzsche would have it, modernity is a time and place where it becomes possible for people to be measured.³³ It is also a place where the human-built environment modifies the living body.

If our goal is to describe the historical dynamism of sound or to consider sound from the vantage point of cultural theory, we must move just beyond its shifting borders—just outside sound into the vast world of things that we think of as not being about sound at all. The history of sound is at different moments strangely silent, strangely gory, strangely visual, and always contextual. This is because that elusive inside world of sound—the sonorous, the auditory, the heard, the very density of sonic experience—emerges and becomes perceptible only through its exteriors. If there is no “mere” or innocent description of sound, then there is no “mere” or innocent description of sonic experience. This book turns away from attempts to recover and describe people's interior experience of listening—an auditory past—toward the social and cultural grounds of sonic experience. The “exteriority” of sound is this book's primary object of study. If sound in itself is a variable rather than a constant, then the history of sound is of necessity an externalist and contextualist endeavor. Sound is an artifact of the messy and political human sphere.

To borrow a phrase from Michel Chion, I aim to “disengage sound thinking . . . from its naturalistic rut.”³⁴ Many theorists and historians of sound have privileged the static and transhistorical, that is, the “natural,” qualities of sound and hearing as a basis for sound history. A surprisingly large proportion of the books and articles written about sound begin with an argument that sound is in some way a “special case” for social or cultural analysis. The “special case” argument is accomplished through an appeal to the interior nature of sound: it is argued that sound’s natural or phenomenological traits require a special sensibility and special vocabulary when we approach it as an object of study. To fully appreciate the strangeness of beginning a history with a transhistorical description of human listening experience, consider how rare it is for histories of newspapers or literature to begin with naturalistic descriptions of light and phenomenologies of reading.

Sound certainly has natural dimensions, but these have been widely misinterpreted. I want to spend the next few pages considering other writers’ claims about the supposed natural characteristics of sound in order to explain how and why *The Audible Past* eschews transhistorical constructs of sound and hearing as a basis for a history of sound. Transhistorical explanations of sound’s nature can certainly be compelling and powerful, but they tend to carry with them the unacknowledged weight of a two-thousand-year-old Christian theology of listening.

Even if it comes at the beginning of a history, an appeal to the “phenomenological” truth about sound sets up experience as somehow outside the purview of historical analysis. This need not be so—phenomenology and the study of experience are not by definition opposed to historicism. For instance, Maurice Merleau-Ponty’s work has a rich sense of the historical dimensions of phenomenological experience.³⁵ But founding one’s analysis on the supposed transhistorical phenomenological characteristics of hearing is an incredibly powerful move in constructing a cultural theory of sound. Certainly, it asserts a universal human subject, but we will see that the problem is less in the universality per se than in the universalization of a set of particular religious prejudices about the role of hearing in salvation. That these religious prejudices are embedded at the very center of Western intellectual history makes them all the more intuitive, obvious, or otherwise persuasive.

To offer a gross generalization, assertions about the difference between hearing and seeing usually appear together in the form of a list.³⁶ They begin at the level of the individual human being (both physically and psy-

chologically). They move out from there to construct a cultural theory of the senses. These differences between hearing and seeing are often considered as biological, psychological, and physical facts, the implication being that they are a necessary starting point for the cultural analysis of sound. This list strikes me as a litany—and I use that term deliberately because of its theological overtones—so I will present it as a litany here:

- hearing is spherical, vision is directional;
- hearing immerses its subject, vision offers a perspective;
- sounds come to us, but vision travels to its object;
- hearing is concerned with interiors, vision is concerned with surfaces;
- hearing involves physical contact with the outside world, vision requires distance from it;
- hearing places us inside an event, seeing gives us a perspective on the event;
- hearing tends toward subjectivity, vision tends toward objectivity;
- hearing brings us into the living world, sight moves us toward atrophy and death;
- hearing is about affect, vision is about intellect;
- hearing is a primarily temporal sense, vision is a primarily spatial sense;
- hearing is a sense that immerses us in the world, vision is a sense that removes us from it.³⁷

The audiovisual litany—as I will hereafter call it—idealizes hearing (and, by extension, speech) as manifesting a kind of pure interiority. It alternately denigrates and elevates vision: as a fallen sense, vision takes us out of the world. But it also bathes us in the clear light of reason. One can also see the same kind of thinking at work in Romantic conceptualizations of music. Caryl Flinn writes that nineteenth-century Romanticism promoted the belief that “music’s immaterial nature lends it a transcendent, mystical quality, a point that then makes it quite difficult for music to speak to concrete realities. . . . Like all ‘great art’ so construed, it takes its place outside of history where it is considered timeless, universal, functionless, operating beyond the marketplace and the standard social relations of consumption and production.”³⁸ Outlining the *differences* between sight and hearing begs the prior question of what we mean when we talk about their nature. Some authors refer back to physics; others refer back to transcendental phenomenology or even cognitive psychology. In each case, those citing the litany do so to demarcate the purportedly special capacities of

each sense as the starting point for historical analysis. Instead of offering us an entry into the history of the senses, the audiovisual litany posits history as something that happens *between* the senses. As a culture moves from the dominance of one sense to that of another, it changes. The audiovisual litany renders the history of the senses as a zero-sum game, where the dominance of one sense by necessity leads to the decline of another sense. But there is no scientific basis for asserting that the use of one sense atrophies another. In addition to its specious zero-sum reasoning, the audiovisual litany carries with it a good deal of ideological baggage. Even if that were not so, it would still not be a very good empirical account of sensation or perception.

The audiovisual litany is ideological in the oldest sense of the word: it is derived from religious dogma. It is essentially a restatement of the long-standing spirit/letter distinction in Christian spiritualism. The spirit is living and life-giving—it leads to salvation. The letter is dead and inert—it leads to damnation. Spirit and letter have sensory analogues: hearing leads a soul to spirit, sight leads a soul to the letter. A theory of religious communication that posits sound as life-giving spirit can be traced back to the Gospel of John and the writings of Saint Augustine. These Christian ideas about speech and hearing can in turn be traced back to Plato's discussion of speech and writing in the *Phaedrus*.³⁹ The hearing-spirit/sight-letter framework finds its most coherent contemporary statement in the work of Walter Ong, whose later writing (especially *Orality and Literacy*) is still widely cited as an authoritative description of the phenomenology and psychology of sound. Because Ong's later work is so widely cited (usually in ignorance of the connections between his ideas on sound and his theological writings), and because he makes a positive statement of the audiovisual litany such a central part of his argument about cultural history, Ong's work warrants some consideration here.

To describe the balance sheet of the senses, Ong used the word *sensorium*, a physiological term that denoted a particular region of the brain that was thought to control all perceptual activity. *Sensorium* fell out of favor in the late nineteenth century as physiologists learned that there is no such center in the brain. Ong's use of the term should therefore be considered metaphorical. For him, the sensorium is "the entire sensory apparatus as an organizational complex," the combined balance among a fixed set of sensory capacities.

Although *Orality and Literacy* reads at times like a summary of scientific findings, Ong's earlier writings clearly state that his primary interest in the

senses is explicitly driven by theological concerns: "The question of the sensorium in the Christian economy of revelation is particularly fascinating because of the primacy which this economy accords to the word of God and thus in some mysterious way to sound itself, a primacy already suggested in the Old Testament pre-Christian [*sic*] tradition."⁴⁰ For Ong, "divine revelation itself . . . is indeed inserted in a particular sensorium, a particular mixture of the sensory activity typical of a given culture." Ong's balance-sheet history of the senses is clearly and urgently linked to the problem of how to hear the word of God in the modern age. The sonic dimension of experience is closest to divinity. Vision suggests distance and disengagement. Ong's history of the move from sound-based oral culture to sight-based literate culture is a history of "a certain silencing of God" in modern life. Ong's assertions about the difference between the world of "oral man" and the "hypertrophy of the visual" that marks the modern age parallel perfectly the spirit/letter distinction in Catholic spiritualism. It is a sophisticated and iconoclastic antimodernist Catholicism. Still, Ong argues that the audiovisual litany transcends theological differences: "Faith or no, we must all deal with the same data."⁴¹

Of course, parts of the audiovisual litany have come under heavy criticism. The work of Jacques Derrida can be read as an inversion of Ong's value system—Ong himself suggests as much.⁴² Derrida uses his well-known phrase *the metaphysics of presence* to criticize and dismantle the connections among speech, sound, voice, and presence in Western thought. Although Derrida's most celebrated critiques of presence find him tarrying with Edmund Husserl's transcendental phenomenology, Ferdinand de Saussure's semiotic theory, and Martin Heidegger's ontology, his criticisms are certainly applicable to Ong's thought as well. Ong argues for exactly the metaphysics of presence that Jacques Derrida attacks as "ontotheological," as a creeping Christian spiritualism that inhabits Western philosophy: "The living act, the life-giving act [hearing oneself speak], the *Lebendigkeit*, which animates the body of the signifier and transforms it into a meaningful expression, the soul of language, seems not to separate itself from itself, from its own self-presence."⁴³ For Derrida, the elevation of speech as the center of subjectivity and the point of access into the divine is "essential to the history of the West, therefore to metaphysics in its entirety, even when it professes to be atheist."⁴⁴ Derrida uses this position to argue for the visual side of the audiovisual litany—an emphasis on vision, writing, difference, and absence. Deconstruction inverts, inhabits, and reanimates the sound/vision binary, privileging writing over speech

and refusing both speech-based metaphysics and presence-based positive assertions.

Here, I want to make a slightly different move: the audiovisual litany carries with it the theological weight of the durable association among sound, speech, and divinity, even in its scientific guise. Rather than inverting the audiovisual litany, why not redescribe sound? Since this book is not bound by Christian doctrine, there is no law—divine or otherwise—requiring us to assume the interiority of sound and the connection between sound, subjective self-presence, and intersubjective experience. We do not need to assume that sound draws us into the world while vision separates us from it. We can reopen the question of the sources of rationality and modern ways of knowing. If history exists *within* the senses as well as *between* them, then we need not begin a history of sound with an assertion of the transhistorical dimensions of sound.

My criticism of the audiovisual litany goes far beyond the questions of essentialism or social construction, which usually degenerate into philosophical hygienics. Even if we grant the possibility of a transcendental subject of sensation, the audiovisual litany falls short on its own terms. Despite all the appeals to nature in the name of the litany, the phenomenology implied by the audiovisual litany is highly selective—it stands on shaky empirical (and transcendental) ground. As Rick Alman has argued, claims about the transhistorical and transcultural character of the senses often derive their support from culturally and historically specific evidence—limited evidence at that. In the audiovisual litany, “an apparently ontological claim about the role of sound [or vision] has been allowed to take precedence over actual analysis of sound’s functioning.”⁴⁵ Consider the purportedly unique temporal and spatial characteristics of auditory phenomenology. Ong argues that “sound is more real or existential than other sense objects, despite the fact that it is also more evanescent. Sound itself is related to present actuality rather than to past or future”; sounds exist only as they go out of existence.⁴⁶ But, strictly speaking, Ong’s claim is true for any event—any *process* that you can possibly experience—and so it is not a quality special or unique to sound. To say that ephemerality is a special quality of sound, rather than a quality endemic to any form of perceptible motion or event in time, is to engage in a very selective form of nominalism.⁴⁷ The same criticism can be made of the litany’s attribution of a “surface”-oriented spatiality to vision as opposed to an “interior” orientation to sound: it is a very selective notion of surface. Anyone who has heard fingernails on a chalkboard or footsteps in a concrete hallway (or on a wooden

floor) can recognize that listening has the potential to yield a great deal of information about surfaces very quickly. The phenomenologist Don Ihde has shown that writers who take sound as a weakly spatial sense wholly disregard “the contemporary discoveries of very complex spatial attributes to auditory experience.”⁴⁸ He demonstrates that hearing has many spatial aspects and possibilities to which we do not normally attend. We can learn a great deal about shape, surface, or texture from listening. Perhaps the biggest error of the audiovisual litany lies in its equation of hearing and listening. Listening is a directed, learned activity: it is a definite cultural practice. Listening requires hearing but is not simply reducible to hearing.

There is no “mere” or innocent description of interior auditory experience. The attempt to describe sound or the act of hearing in itself—as if the sonic dimension of human life inhabited a space prior to or outside history—strives for a false transcendence. Even phenomenologies can change. In this respect, we follow in Dr. Itard’s footsteps. Like the studious Itard, who was perplexed by the wild boy who could hear but did not speak, historians of sound must surmise that our subjects’ hearing is fine medically. But we can know their sonic world only through their efforts, expressions, and reactions. History is nothing but exteriorities. We make our past out of the artifacts, documents, memories, and other traces left behind. We can listen to recorded traces of past history, but we cannot presume to know exactly what it was like to hear at a particular time or place in the past. In the age of technological reproduction, we can sometimes experience an audible past, but we can do no more than presume the existence of an auditory past.

What Is Sound Reproduction? Plan of the Present Work

I have argued that technologies of sound reproduction provide us with a compelling entry into the history of sound, but sound-reproduction technology is not necessarily a well-bounded historical object. One could argue that ancient uses of animal horns to amplify the voice and aid the hard-of-hearing are, in a certain sense, sound-reproduction technologies. Certainly, musical instruments could have some claim to that status, as could speaking-head or piano-playing automatons and other sound-synthesis technologies from the seventeenth to the nineteenth centuries. So what is different about telephones, phonographs, radios, and other technologies commonly conjured up as “sound reproduction”? A number of writers have offered semiexperiential definitions of modern sound-reproduction technologies based on their power to separate a sound from its “source.”

Since the power to split sources and copies is the most common definition of sound-reproduction technology, it warrants some scrutiny. Pierre Schaeffer, the composer who pioneered *musique concrète*, argued that sound-reproduction technologies produced “acousmatic” sounds—sounds that one hears without seeing their source. John Corbett extends the line of thought by using an explicitly psychoanalytic framework to talk about reproduced sound in terms of visual lack: “It is the lack of the visual, endemic to recorded sound, that initiates desire in relation to the popular music object.”⁴⁹ For Corbett, our inability to see the recording leads us to want it, to attend to it. Barry Truax and R. Murray Schafer have coined the term *schizophonia* to describe the “split between an original sound and its electro-acoustic reproduction” enabled by sound-reproduction technologies.⁵⁰ The Greek prefix *schizo-* means “split” and also has a convenient connotation of “psychological aberration” for these authors. Truax and Schafer also argue that reproduction removes sound from its original context.

By my own historicization of practices and ideologies of sound, one could hypothesize a particular context where the acousmatic definition of sound reproduction holds explanatory force. Indeed, the concept of acousmatic sound may seem intuitively plausible to many people today. But that does not make it true. Recall, with Stuart Hall, that that which is most obvious is most ideological: “When people say to you ‘Of course that’s so, isn’t it?’ that ‘of course’ is the most ideological moment, because that’s the moment at which you’re least aware that you are using a particular ideological framework, and that if you used another framework the things that you are talking about would have a different meaning.”⁵¹ Acousmatic or schizophonic definitions of sound reproduction carry with them a questionable set of prior assumptions about the fundamental nature of sound, communication, and experience. Most important, they hold human experience and the human body to be categories outside history:

1. They assume that face-to-face communication and bodily presence are the yardsticks by which to measure all communicative activity. They define sound reproduction negatively, as negating or modifying an undamaged interpersonal or face-to-face copresence. For these authors, the difference between sound reproduction and interpersonal interaction is important because the former lacks some of the qualities of the latter.
2. Because they assume the primacy of face-to-face interaction, these authors assume that sound-reproduction technologies will have

a disorienting effect on the senses that are otherwise oriented or grounded in coherent bodily experience. The assumption of prior sensory coherence requires a notion of a human body that exists outside history. For instance, the claim that sound reproduction has “alienated” the voice from the human body implies that the voice and the body existed in some prior holistic, unalienated, and self-present relation. As I have already argued, phenomenological understandings of subjectivity need not privilege self-presence or reject historicism.

3. They assume that, at some time prior to the invention of sound-reproduction technologies, the body was whole, undamaged, and phenomenologically coherent. By extension, this is to argue that all modern life is disorienting, that the only subject that is whole or at peace with itself is one that is not mediated or fragmented by technology. But the idea of the body’s phenomenological unity and sanctity gains power precisely at the moment in its history that the body is being taken apart, reconstructed, and problematized—the eighteenth and nineteenth centuries. In contrast, medieval thought and practice often constructed the body as a filthy container for the soul, something to be transcended and overcome in the afterlife.
4. They assume that sound-reproduction technologies can function as neutral conduits, as instrumental rather than substantive parts of social relationships, and that sound-reproduction technologies are ontologically separate from a “source” that exists prior to and outside its affiliation with the technology. Attending to differences between “sources” and “copies” diverts our attention from processes to products; technology vanishes, leaving as its by-product a source and a sound that is separated from it.

Assertions of the primacy of face-to-face communication or interpersonal immediacy have been widely criticized on a variety of theoretical fronts, and I will not rehearse those arguments here.⁵² Treating face-to-face communication as primary also predetermines the history of sound reproduction before we even tell the story. If interpersonal interaction is the presumptively primary or “authentic” mode of communication, then sound reproduction is doomed to denigration as inauthentic, disorienting, and possibly even dangerous by virtue of its “decontextualizing” sound from its “proper” interpersonal context. But, to begin a theory and history of sound’s reproducibility, we do *not* need final, fundamental, or

transhistorical answers to questions about the relations between hearing and seeing, between technological reproduction and sensory orientation, between original and copy, and between presence and absence in communication. We can provide more robust answers to those questions by re-considering them in the course of studying sound reproduction. This history of sound begins by positing sound, hearing, and listening as historical problems rather than as constants on which to build a history.

So let us take a ride on Ockham's razor and work from a simpler definition of sound-reproduction technology, one that does not require us to posit a transcendental subject of hearing: modern technologies of sound reproduction use devices called *transducers*, which turn sound into something else and that something else back into sound. All sound-reproduction technologies work through the use of transducers. Telephones turn your voice into electricity, sending it down a phone line and turning it back into sound at the other end. Radio works on a similar principle but uses waves instead of wires. The diaphragm and stylus of a cylinder phonograph change sound through a process of inscription in tinfoil, wax, or any number of other surfaces. On playback, the stylus and diaphragm transduce the inscriptions back into sounds. Digital sound-reproduction technologies all use transducers; they simply add another level of transformation, converting electric current into a series of zeros and ones (and back again).

My definition is certainly reductive and incomplete, but it is a very instructive reduction. It offers us a useful starting point for a history of sound reproduction, especially for a history that will proceed analytically rather than chronologically. Even though transducers operate on a very simple set of physical principles, they are also cultural artifacts. This is where *The Audible Past* begins its history of sound.

Chapter 1 takes as its central exhibit the ear phonautograph, a machine for "writing" sound waves. By following around the device, its inventors, and the ideas that it operationalized, the chapter offers a genealogy of new constructs of sound and hearing. The ear phonautograph used an excised human middle ear as a transducer, and the functioning of the tympanic membrane (also known as the diaphragm or the eardrum) in the human ear was the model for the diaphragms in all subsequent sound-reproduction technologies. As a result, I call the mechanical principle behind transducers *tympanic*. The history of the isolation and reproduction of the tympanic function leads us back into the construction of sound and hearing as objects of knowledge and experimentation in the late eighteenth century and

the nineteenth. The tympanic function emerged at the intersection of modern acoustics, otology, and physiology and the pedagogy of the deaf.

The ways in which the middle ear conducts vibration may seem like a simple mechanical function, something that we feel is without history. But the tympanic function opens out into changing constructions of sound, hearing, and humanity. Sound reproduction is historical all the way down.⁵³ In acoustics, physiology, and otology, sound became a waveform whose source was essentially irrelevant; hearing became a mechanical function that could be isolated and abstracted from the other senses and the human body itself. Although these developments may on their own seem minor or merely matters of technical discovery, they mark a larger shift in the history of sound.

Prior to the nineteenth century, philosophies of sound usually considered their object through a particular, idealized instance such as speech or music. Works of grammar and logic distinguished between significant and insignificant sounds by calling all significant sounds *vox*—voice.⁵⁴ Other philosophers took music as an idealized theoretical instance of sound, leading to the analysis of pitch and harmony, all the way up to the harmony of the spheres and, for Saint Augustine, God. In contrast, the concept *frequency*—previously developed by Descartes, Mersenne, and Bernoulli—offered a way to think about sound as a form of motion or vibration. As the notion of frequency took hold in nineteenth-century physics, acoustics, otology, and physiology, these fields broke with the older philosophies of sound. Where speech or music had been the general categories through which sound was understood, they were now special cases of the general phenomenon of sound. The emergence of the tympanic function thus coincided with an inversion of the general and the specific in philosophies of sound. Sound itself became the general category, the object of knowledge, research, and practice.⁵⁵ Chapter 1 also inverts a historical commonplace: the objectification and abstraction of hearing and sound, their construction as bounded and coherent objects, was a prior condition for the construction of sound-reproduction technologies; the objectification of sound was not a simple "effect" or result of sound-reproduction technology.

While chapter 1 considers the construction of sound and hearing, chapters 2 and 3 offer histories of various practices of listening during the same period. They chronicle the development of *audile technique*, a set of practices of listening that were articulated to science, reason, and instrumentality and that encouraged the coding and rationalization of what was heard. By

articulation, I mean the process by which different phenomena with no necessary relation to one another (such as hearing and reason) are connected in meaning and/or practice.⁵⁶ For a time, hearing surpassed vision as a tool of examination, conception, and understanding in selected regions of medicine and telecommunications. Chapter 2 provides an introduction to the idea of audile technique and explores how, in the first decades of the nineteenth century, doctors moved away from listening to their patients' speech and began listening more closely to patients' bodies to distinguish signs of health and illness. As it became a symbol of the medical profession, the stethoscope signaled both virtuosic and highly technical listening skills. Chapter 3 explores how American telegraph operators from the 1840s to the 1880s and early users of sound-reproduction technologies from the 1880s to the 1920s developed other forms of audile technique. Telegraphers started listening to their machines instead of reading their printouts. In a cacophonous room, they would focus on the noise of their machine alone and take down telegraphic messages at ever-increasing speeds. Listening skill was a mark of professional distinction in sound telegraphy. Physicians' use of stethoscopes and sound telegraphers' virtuosic message taking prefaced a much wider dissemination of audile technique with the telephone, phonograph, and radio. Even today, when listeners in a music library treat the surface noise of an LP record or the hiss of a tape as "exterior" to the music on the recording, they use some of the same techniques of listening that physicians and telegraphers developed over 150 years ago.

A new practical orientation toward acoustic space developed alongside audile technique: listening became more directional and directed, more oriented toward constructs of private space and private property. The construct of acoustic space as private space in turn made it possible for sound to become a commodity. Audile technique did not occur in the collective, communal space of oral discourse and tradition (if such a space ever existed); it happened in a highly segmented, isolated, individuated acoustic space. Listening technologies that promoted the separation of hearing from the other senses and promoted these traits were especially useful. Stethoscopes and headphones allowed for the isolation of listeners in a "world of sounds" where they could focus on the various characteristics of the sounds to which they attended. Thus, as early as 1820, R. T. H. Laennec, the inventor and first popularizer of the stethoscope, could characterize listening to a patient's body without a stethoscope as *immediate*, by which he meant to connote "lacking in the proper mediation." While other techniques of listening likely developed in other contexts, chapters 2 and

3 offer a genealogy of those techniques that were central for constructing sound reproduction as we know it today.

Chapter 4 moves from the subjective to the industrial: it shows how the technologies that came to be organized as the sound media emerged from a small, industrializing field of invention that was in continuous flux from the 1870s through the 1920s. The new sound media were part of an emergent field of mass communication and mass culture that was itself organized by and oriented toward an American middle class shifting from Victorian ideals to consumerism as a way of life. Moreover, the shape of the sound media was not guaranteed at the outset. There is no necessary connection between the technology of radio and that of broadcasting; nor is there an essential connection between the technology of telephony and that of point-to-point communication. At prior moments, the telephone was a broadcast medium, and radio was a point-to-point medium. Social forms did not necessarily follow logically from technologies: those connections had to be made. Technologies had to be articulated to institutions and practices to become media. The sound media thus emerged in the tumultuous context of turn-of-the-century capitalism and colonialism.

Chapter 5 historicizes "acousmatic" understandings of sound-reproduction technologies—the idea that they separate a sound from its "source"—through examining the idea of a reproduced sound's "fidelity" to its source. Acousmatic understandings of sound reproduction (which conceptualized it as splitting copies of sounds from their ontologically separate sources) depended on three prior conditions: (1) the emergence of audile technique as a way of abstracting some reproduced sounds (such as voices or music) as worthy of attention or "interior," and others (such as static or surface noise) as "exterior" and therefore to be treated as if they did not exist; (2) the organization of sound-reproduction technologies into whole social and technical networks; and (3) the representation of these techniques and networks as purely natural, instrumental, or transparent conduits for sound.

The idea that sound-reproduction technologies separated sounds from their sources turns out to have been an elaborate commercial and cultural project. Early auditors of sound-reproduction technologies did not always assume that reproduced sound reflected an "original" at the other end. In response, manufacturers and marketers of sound-reproduction technologies felt that they had to convince audiences that the new sound media belonged to the same class of communication as face-to-face speech. While other rhetorical strategies may have been possible, this rhetoric of

equivalence allowed advertisers to render sound-reproduction technologies in familiar terms. Through an examination of the idea of sound fidelity before it denoted a quality that can be physically measured (covering the period 1878–1930), chapter 5 argues that early skeptical listeners essentially had it right: sound-reproduction technologies are inseparable from the “sources” of reproduced sound. To put it another way, the social organization of sound-reproduction technology conditioned the possibility for *both* “original” and “copy” sounds. Performers had to develop whole new performance techniques in order to produce “originals” suitable for reproduction. Even the very grounds on which the ability of sound-reproduction technologies “faithfully” to reproduce sound could be tested in laboratories had to be established. The ever-shifting figure of sound fidelity crystallized a whole set of problems around the experience of reproducibility, the aesthetics of technologically reproduced sound, and the relations between original and copy. Considering sound-reproduction technologies as articulated to particular techniques and as media forces us to trouble the supposed objectivity of acousmatic descriptions; it shows them to be historically motivated.

Chapter 6 offers a history of the audible past itself. It considers the conditions under which recordings came to be understood as historical documents, yielding insight into the past. Although early recordings were far from permanent records, early images of and overtures to sound recording’s permanence—and the newfound ability to hear “the voices of the dead”—promoted and gradually propelled technological and institutional innovation. New, innovative recording equipment and media were developed with the specific aim of producing longer-lasting recordings. In this respect, sound recording followed innovations in other major nineteenth-century industries like canning and embalming. Institutions grew that were dedicated to the collection and preservation of sound recordings. Chapter 6 argues that through the historical process of making sound recording more “permanent”—which began as nothing more than a Victorian fantasy about a machine—the historical process was itself altered. As beliefs surrounding death, the preservation of the dead body, transcendence, and temporality shaped or explained sound reproduction, sound reproduction itself became a distinctive way of relating to, understanding, and experiencing death, history, and culture.

Developmental ideas of history and culture were bound up with the political currents of American society at the turn of the twentieth century.

After decades of pursuing genocidal policies toward Native Americans, the U.S. government and other agencies began in the 1890s to employ anthropologists, who would use sound recording to “capture and store” the music and language of their native subjects. Embedded in this anthropological project were loaded conceptions of American culture as embodying a universal tendency toward “progress” that would simply engulf Native American life ways along the way. As Johannes Fabian has argued, the idea of modernity and its doctrine of progress was often taken to imply the historical superiority of “modern” civilization (generally urban, cosmopolitan, largely white, middle-class culture in the United States and Western Europe) over other cultures by casting those different (yet actually contemporaneous) cultures as if they existed in the collective past of the moderns. The military and economic domination of other cultures by the United States and Western Europe—and the larger projects of racism and colonialism—became explainable in the late nineteenth century as the product of a difference between that which is modern and that which is not (yet) modern. Relations of space become relations of time.⁵⁷ The drive to build and fill phonographic archives with the sounds of “dying” nations and cultures, the desire to make sound recordings permanent, was inextricably linked to early anthropologists’ ambivalent relations to history and their subjects. Phonography’s much-touted power to capture the voices of the dead was thus metonymically connected to the drive to dehistoricize and preserve cultures that the U.S. government had actively sought to destroy only a generation earlier. Permanence in sound recording was much more than a mechanical fact; it was a thoroughly cultural and political program. To a great degree, inventing reproducibility was about reconstructing sound and hearing and developing technologies to fit and promote these new constructs. The idea of sound recording’s permanence is a striking example of the movement from wish to practice to technological form.

A note on my approach concludes this introduction. Given the scope of my task, I offer no pretense to finality or totality in the account that I offer. *The Audible Past* is a deliberately speculative history. My intent is not to establish once and for all a small set of historical facts, although clearly facts are important to my history. Rather, this book uses history as a kind of philosophical laboratory—to learn to ask new questions about sound, technology, and culture. If all accounts of human action carry with them some concept of human nature, then we would do well to reflect on the choices that

we make in describing human nature. *The Audible Past* offers a speculative foray into moments when the many natures of sounding and hearing were objects of practice and reflection. It is not a complete statement on human nature itself, nor is my primary goal the recovery of lived experience, although certainly people's own accounts of their experiences can provide insight into the history of sound.

Like any intellectual product, this book bears the mark of its author's biases. My own distaste for the cult of Edison in phonograph historiography has led me to emphasize Berliner and Bell (who are much less fully treated in the critical historiography). The greater depth of the film and radio historiography has led me to place greater emphasis on the telephone and phonograph. In foregrounding the history of sound, I deemphasize many of the metanarratives of cultural and political history. It would be equally possible to orient a history of sound around points of change or transformation in the history of speech, music, or even industrial and other forms of environmental noise.⁵⁸ But the history of sound reproduction provides a uniquely powerful entry into the history of sound precisely because it is a history of attempts to manipulate, transform, and shape sound.

My emphasis on the very early moments of technologies and practices at times leads me to concentrate on a relatively small, elite (white, male, European or American, middle-class, able-bodied, etc.) group of people. My archival material, perhaps limited by some measures of historiography, has a distinctly American and East Coast bias. In the early years of sound-reproduction technologies, their use was heavily scattered and atomized. Each technology took decades to "diffuse" fully throughout American society and elsewhere. The emphasis on sound itself also risks a certain level of audism (a term used by scholars of deaf culture; we might best think of it as an ethnocentrism of those who hear). But these are risks worth taking.

The Audible Past focuses on hearing elites because they provide a wealth of documentation about the meaning of sound and listening—qua sound and listening—on which to build a study. As a result, I have not been very concerned with recovering the experiences of my historical subjects. Alexander Graham Bell does not need *The Audible Past* to save him from historical oblivion—and one does not need to identify with elites in order to study them. But, more important, the history of sound must move beyond recovering experience to interrogating the conditions under which that experience became possible in the first place. Experiences are themselves variables shaped by the contexts through which they then help their subjects navigate.⁵⁹

Of course the question of experience still lingers. While acknowledging the plurality of possible audible pasts, this book outlines some common bases for modern sound culture in the West—especially around practices of sound reproduction. It is doubtful that they are truly universals, but they are sufficiently general to be worth considering. There are certainly other dominant, emergent, or subjugated constructs of sound, listening, and hearing beyond the ones considered in these pages. Histories of sound could contribute to a much wider range of themes in cultural and political history than I cover in this book. As always, there are other histories to be written. We will have to write them in order to know if they fundamentally challenge my conclusions here.

This is not to succumb to the localism, cumulativism, and neopositivism that has ravaged much contemporary cultural historiography. Events or phenomena merely need to exist to carry some intellectual significance; they do not need to pass a test of universality. Sound history, however partial, must continually move between the immediate and the general, the concrete and the abstract. There is a burden of sound history, just as there is a burden of history, to borrow a phrase from Hayden White. To offer a compelling account of humanity, sound history must remain "sensitive to the more general world of thought *and* action from which it proceeds and to which it returns."⁶⁰