# 2

# THE ACOUSTIC MEDIATION OF VOICE, SELF, AND OTHERS

One. I am seated in the Walt Disney Concert Hall, in Los Angeles. On the stage, Meredith Monk and Vocal Ensemble move around, singing lines. The last phrases are sung as the performers slowly lie down, flat, on the floor. It looks out of place—nothing more than several people deciding to lie down on the Disney Hall stage. Nothing in my previous concert-going experience has prepared me for how to approach or interpret this. I feel uncomfortable. The vocal lines sound simple—that is, undeveloped. I feel as unprepared to make sense of these sounds as I do to watch the unfolding scene. I wonder why I have this profound feeling of inability to deal with this event. Having experienced *Songs of Ascension* five times in two previous locations, why is the experience of the piece in this location so radically different?

Two. I am at Union Station, again in Los Angeles. Through headphones I hear Christopher Cerrone's *Invisible Cities*, featuring an eleven-member orchestra and up to eight voices. While the music is performed live in the station, the audience never inhabits, in person, an acoustic space in which all the voices and instruments sound at once. When I am close to a singer who is singing, I feel once removed from the performer, as I hear his or her voice with more strength and presence from the headphone signal than from the acoustic transmission. As I allow the carefully curated acoustics in the headphones to pull me into the piece's sound-designed world, I feel distanced from the site.

Why does a site-specific piece makes me feel more disconnected from the live singers than any other live performance I have experienced in the past?

Like chapter 1, this chapter deals with musical experiences that I wanted, at first, to dismiss on an aesthetic basis, yet the conundrums they offered lay beyond aesthetic preference. By trying to understand why what we recognize as the same piece of music could have such different effects in different halls, and by investigating the gap between the sense of presence in an acoustic performance and a microphone-and-headphone-mediated rendition of a piece, I learned more about what constitutes the figure of sound: I finally understood that acoustics offers more to us than delivering optimal sound and optimizing sound. I learned that acoustic and spatial specificity also take part in giving form to the figure of sound. That is, the figure of sound is made up not only of naturalized notions about pitch relations and a limited set of behaviors in limited material conditions (air). Our notion of the figure of sound is also bound up with a naturalized acoustic identity (including parameters such as reverberation and clarity, which I will discuss further below), location, and distance between the sound source and the listeners.

Acoustic mediation of sound and habituations to it are not limited to informing and shaping our sense of music. Rather, they profoundly mediate our experience of self and others. Acoustic mediation of sound profoundly influences the ways we assign meaning to self and others, and the ways in which we conceive of our own and others' positions and relationships. I wish to offer tools with which to analyze the acoustic mediation of self and others—hence contributing to understanding how the politics of difference is structured.[1] By considering the listening choices the aforementioned two operas offer, this chapter provides the second stepping-stone toward the book's final questions: How are ontologies and epistemologies of voices acoustically mediated? How does the acoustic rendering of voices play into formations of subjectivity and intersubjectivity? Moreover, how does that mediation influence, limit, and invite certain experiences of other and self? To consider these questions, we will first consider the ways in which the acoustic is normalized into the figure of sound.

In this chapter, then, I explicate the ways in which acoustics has been standardized in public concert and opera halls—to which the way notes were standardized according to the tempered scale might offer a loose parallel. I discuss how the figure of sound, including its expected aspects of space and relationships in spatial terms, is experientially reified through the building of spaces and the development of other acoustic determinacies, intellectualized through

concepts and vocabulary, and reconfirmed and ossified through experiences guided by these ideas. While music—and sound, more generally—has always been experienced in a variety of spatial-acoustic configurations, because of the privileged status of the repertoire played in the symphony hall and the elevated status of the concert-hall listening experience, it is the kinds of sound and music that are played in that acoustic condition that formed the basis for the listening, discourse, vocabulary, and concepts that we use to make sense of music today. I show that by eschewing such notions, the aforementioned productions of *Songs of Ascension* and *Invisible Cities* offer audience members a choice of listening and relational stances. It is the existence of that choice that I wish to point to in this chapter.

## "Berlin Stinks"

The history of concert-hall acoustics in itself is beyond the scope of this book.[2] However, drawing on robust research from musicology, architecture, and architectural acoustics, I offer a few key moments. I chose these moments to exemplify how nonmusical, nonsonorous dimensions were key to the constraints placed on the acoustic conditions of public concert venues; the formation of, and consequent commitment to, an acoustic sensibility; and the formalization of today's acoustic norm. I also chose these moments to exemplify the construction that led us toward a unified Western understanding of good acoustics. While I mainly discuss halls and acoustic conditions, it is important to bear in mind that these experiential repetitions of music that is sounded—the sound's specific acoustic conditions—are inseparable from the ways in which people and critics heard the music, and that the acoustic condition is inseparable from what is otherwise experienced, articulated, and conceptualized regarding the sound. Moreover, as sound is heard, impressions articulated, and concepts formed, these concepts themselves direct further impressions of music and limit our thinking about others.

The acoustic dimension of the figure of sound can begin simply as a practical question involving the optimal acoustic for a particular repertoire. Then, through repetition, the experience and standard concepts used to describe those acoustic phenomena and experiences burrow into our perceptual repertoire, and further language is formed around these experiences. In turn, these linguistic, conceptual, and perceptual frames inform expectations and further experiences—in short, they lay the groundwork for the acoustic dimension of the figure of sound. (I will return to the specifics of the conventions related

to the figure of sound's acoustic dimension, a concept that will be developed throughout this chapter.)

By the spatial-relational and acoustic dimension of the figure of sound, I mean simply that the framework within which we imagine sound, and that we subsequently fit around the sounds to which we are exposed in daily life, is not limited to pitch and its duration (and/or to rhythm and meter). Included in our practices of sound is an acoustic dimension—which may be simply described as the length of the reverb and the sense of clarity (which I will discuss at much greater length below). Unlike pitch and duration, however, the spatial-relational and acoustic dimensions are noticed and called out only when they are nonnormative. That is, when a sound is too close, dry, wet, or uneven or exposes an unusual nonnormative feature—for example, a whispering arch—we become conscious of it and can overlay it with a particular meaning. Again, when a sound adheres to the normative spatial-relational and acoustic aspect of the figure of sound, we do not notice it. What is the process by which select sounds become naturalized?

The spatial-relational and acoustic dimensions of sound are naturalized within distinct sonic, performative, and listening practices. The music I will discuss in this chapter, and indeed in the entire book, is heard and conceptualized within the framework of Western classical music. As such, the spatial-relational and acoustic dimensions of this music's figure of sound have been formed partly through public concert practices. Historically, concert music was performed outdoors or in existing enclosed venues such as churches, theaters, or palace rooms.[3] The York Buildings, the first public hall with the explicit purpose of housing performances of music, was erected in 1678 London.[4] While this hall could seat an audience of two hundred, the later Hanover Square Rooms, where twelve concerts featuring Haydn in performance were presented in 1791, accommodated 900. As the orchestra grew in size, and the concert was transformed into a public format, demand arose for additional halls sized to fit increased audience capacity.

The first dedicated concert halls were constructed in the eighteenth century in Oxford, London, Hanover, and Leipzig. The sheer size necessary to hold the growing audiences and the desire to also offer a view of the orchestra led to seating plans and overall shapes that created "uneven acoustic results." (With its horseshoe shape, the Royal Albert Hall in London is often mentioned as a famous example of less than optimal acoustics.)[5] At the beginning of the eighteenth century, with the spread of concert music as entertainment throughout the continent, concert halls were built in Berlin, Vienna, Stockholm, and else-

where.[6] And while, to a large extent, the acoustics of the halls were the main concern, additional criteria such as sight lines from the audience to the stage and between certain segments of the audience, linguistic clarity, and audience capacity were also important in defining the concert hall's overall configuration.

Therefore, while the criteria that shaped the building of the halls—including shape and size, sight lines, and seating arrangements—were not all acoustic concerns per se, the acoustic criteria were adjusted to also support other criteria. For example, explicit public concert utility concerns constituted a huge break from previous indoor settings of music. In other words, while previous indoor concert settings were explicitly exclusive, the public concert setting was explicitly inclusive and hence required a larger number of seats.[7] And while moving from privately organized to public events, viewing of the stage and seating arrangements was not detached from power, since relations and social distinctions were still performed through the construction and patronage of these buildings. Therefore, while not limited to royalty and their private guests, the new concerts featured many of the same or similar seating arrangements and concerns as earlier private functions had.

To meet demands regarding audience capacity, sight line to the performers and select public figures, and acoustic conditions, large concert halls were increasingly modeled on the parallelepipedic form of drawing rooms and Protestant churches.[8] So common was this form that it became the first referenced acoustic model, known as the shoebox. Within the shoebox, the orchestra is placed in one of the short ends of the box, facing inward, and the audience is placed directly in front of the orchestra, facing it. In other words, a triangle of (1) concern for audience capacity, (2) audiences mainly seated in front of the orchestra, and (3) acoustic concerns drive the general design of the hall.

In addition, concerns arose regarding the overall sonority of the music, giving rise to linguistic criteria. The 1778 horseshoe design of Milan's La Scala was copied throughout major cities in Europe and beyond, because the "relatively short reverberation time (1.2 seconds) allowed composers a unique creative privilege: to write opera with one kind of acoustics in mind."[9] Operatic repertoire's acoustic requirements were distinguished from orchestral requirements. To preserve the intelligibility of the libretto, sung at sometimes extremely high musical speed, the reverberation time needed to be relatively short. This would allow for the free sounding of one syllable without allowing the previous syllables' reverberation to mask it.[10] This design gave us examples such as the Naples San Carlo, Paris Garnier, London Royal Opera, Vienna Staatsoper, Munich Staatsoper, and Philadelphia Academy of Music. In these

houses, the acoustics is guided by the need for audiences to hear the works in their native tongue. In contrast, where audiences traditionally hear operas in the original setting and with subtitles, the need to hear each syllable unhampered is less important, and, consequently, the reverberation can be more "attuned to the music than to following the libretto."[11] Once these halls were created and housed performers, those performers, the composers, and audiences adopted the sound of the halls as the norm that defined good sound. This led to a self-perpetuating cycle.

Composers write music for the kinds of acoustic spaces they know. As a result, the kind of sound that is considered good is reinforced, and the kind of sound that is considered natural is conventionalized. As Thurston Dart notes, "even a superficial study shows that early composers were very aware of the effect on their music of the surroundings in which it was to be performed, and that they deliberately shaped their music accordingly." He goes on to divide musical acoustics into "resonant," "room," and "outdoor" and offers, as examples, plainsong along with the harmonic styles of Léonin and Pérotin—pointing to the latter's style, even more specifically, as shaped for the exact acoustic space of the cathedral of Notre Dame in Paris. In contrast, *ars nova*'s intricate rhythms and harmonies were composed with less resonant acoustics in mind. Dart offers brass consorts by Matthew Locke as examples of music written for outdoor acoustics, pointing out that a composer's style is distinguished by the acoustic for which the music is intended.[12]

Natural sound, then, is the hallmark of a naturalized spatial-relational acoustic. We hear reports that musicians develop intimate familiarity and relationships with a particular acoustic. That is, when music is written for a particular acoustic, and the acoustic condition in which a musician plays conforms to the dominant acoustic paradigm, expectations of what is a good or bad—or normal or abnormal—acoustic are reinforced, creating a limited range of acceptance for acoustic divergence. For instance, as Robert Fink has noted, we can witness strong values around so-called natural acoustics, expressed in a rather explicit manner, in the discussions about Los Angeles's Walt Disney Concert Hall. In broad strokes, the debate focused on the seemingly irreconcilable needs for an urban development project with an innovatively shaped hall and democratic seating that would not divide patrons into obvious patterns based on price tags. Because—for musicians such as Sidney Weiss, the Los Angeles Philharmonic's concertmaster—the hall was "an instrument, like his violin, and its primary function was to enable the musicians on stage to play beautifully," familiar acoustic condition was imperative.[13] In response to inquiries regarding new music's possible acoustic needs, the conduc-

tor Zubin Mehta explicitly discounted the possibility, "appealing several times to a repertoire-independent ideal of 'natural' sound which he called a 'normal good room acoustic' or a 'good-sounding hall.'" Summarizing the year-long and passionate discussion, Fink notes that putting "30 years of playing experience behind 'the classical hall, the rectangular hall,' . . . Weiss, like 90% of his colleagues, just wanted some kind of shoebox to play in."[14] In other words, behind the desire for the shoebox, training in and the naturalization of acoustics are at work. Additionally, in Mehta's comment we can discern the sentiment that sound is just sound ("pure sound") and, by extension, music or compositions that fail to work well with the dominant acoustics constitute bad music rather than being mismatched with the acoustic condition.[15] The problem was ultimately solved through, to paraphrase Fink's description, a box with a wrapper.

Evidence of the strong and established sensory complex built, and values established, around acoustics has been poignantly summarized by Clifford Siskin and William Warner, who noted: "Enlightenment is an event in the history of mediation."[16] Acoustically, modern and contemporary sound has been increasingly unified around the two-second reverberation. Weiss's and Mehta's very specific preferences and concerns about the acoustics created through the process of limited acoustic mediation of music exemplify the formation of and membership in an acoustic community in which audiences also partake. Thus, in a classical music context, the generally accepted mid-frequency-occupied reverberation time for concert halls runs from 1.8 to 2.1 seconds. However, we can observe closely defined acoustic communities formed around particular concert halls—for example, Boston's Symphony Hall, with a reverberation time of 1.59 to 1.95 seconds; Vienna's Grosser Musikvereinssaal, with a time of 1.80 to 2.20 seconds; and New York City's Carnegie Hall, with a time of 1.57 to 2.12 seconds.[17]

Acoustic communities are bound together by shared evaluatory standards of acoustic conventions. However, to a member of a given acoustic community, acoustic conventions are simply recognized as natural or good sound. The acoustician Christopher Jaffe has observed that these musical-acoustic communities are "fiercely partisan regarding the quality of sound produced in their respective halls." From the example of the "explosive reaction of the New York musical community" to a "very minor physical change" to Carnegie Hall in 1966, Jaffe argues that a "narrower" "band for acceptable listening criteria" can develop within a community that is "acutely aware of the environmental characteristics of a specific space."[18] In other words, even though we have discussed acoustics from the onset of public concert culture, since Carnegie Hall

opened only in 1891 and we can assume that the audience members who were upset over the changed acoustic had attended concerts at Carnegie Hall for an estimated maximum time of sixty years, the acoustic aspect of the figure of sound does not necessarily take long to establish.

In short, various competing demands have given rise to a particular configuration of audiences in relation to orchestras. For example, the demand that the performers be seen from the front gave rise to the convention that the orchestra is always in front of an audience that is facing them. As a result, the audience hears the music from a static position ahead of it, with sound moving only between left, right, and positions in between, according to which instrumental groups are playing. Paid numbered seats led to audiences always hearing music from the same relative space (the orchestra or balconies). The concept of the musical work gave rise to attitudes about careful and reverent intellectual listening and, in these attitudes' prosaic expression, to the convention that one does not move around the space or, say, dance during the concert. Together, these conventions limited the experience of music—and it was these limited concert-going experiences that gave rise to the spatial-relational and acoustic components of the figure of sound. Los Angeles's attempts to combine the criteria that emerged with the public concert hall with the concerns that an acoustic community (musicians, conductors, and audiences) have internalized clearly articulate the ossification of the acoustic figure of sound.[19]

### Fine Tone Quality

This internalized figure of sound is conceptualized and verbalized in concert hall acoustics as "good acoustic" that allows for "clarity," "fullness of tone," and "fine tonal quality."[20] In the formulation of Leo Beranek, the "dean" of concert hall acoustics, fine tone quality is "the faithful transmission of the sounds from the instrument without any added (or subtracted) sounds, distortion, or shift of source."[21] Through interviews and research Beranek has defined a number of terms that form the shared language of musicians, concert patrons, and literature on concert and opera hall acoustics—although, as he acknowledges, these groups do not necessarily agree on them all.[22] Additionally, he has distilled his terms by systematically measuring the acoustics of fifty-four concert halls in sixteen nations (primarily created for Western classical music).[23] The result of "studied compromise," the list shows acoustical aspects that, over time, have come to be valued in relation to Western music performed in a closed space.[24] Furthermore, the spaces that Beranek considered, and that gave

rise to his list, are concert halls and opera houses that seat more than 700 people—in other words, halls with a certain size requirement.[25]

1. Reverberation and fullness of tone
2. Direct sound, early sound, reverberant sound
3. Early decay time (EDT) (also early reverberation time)
4. Speed of successive tones
5. Definition (or clarity)
6. Resonance, including "Intimacy or Presence and Initial-Time-Delay Gap Liveness and Mid-Frequencies," "Spaciousness," and warmth
7. Listener envelopment
8. Strength of sound and loudness
9. Timbre and tone color
10. Acoustical glare
11. Brilliance
12. Balance
13. Blend
14. Ensemble
15. Immediacy of response (attack)
16. Texture
17. Echoes
18. Dynamic range and background noise level
19. Detriments to tone quality
20. Uniformity of sound in audience areas

Beranek has visually represented these aspects in a useful relational list (see figure 2.1).

Beranek's list shows acoustic phenomena communicated through a combination of scientific, musical, and architectural concepts and vocabulary. Jaffe provides an "Architectural Acoustic Translation System" moving distinctly among these three domains.[26] For example, what a musical conceptual system articulates as "Presence, brilliance, definition, transparency" is expressed in scientific terminology as "Arrival time of mid- and high-frequency reflections." In architectural vocabulary, these concepts would be expressed as "Location of boundary surfaces"; "Geometry of the hall"; "Audience to performer relationship"; "Relationship of the audience to reflective surfaces"; "Design of inner reflector systems."[27] Beranek's and Jaffe's shared goal is to develop a vocabulary that can capture and communicate concepts, so that the acoustics within the concert hall environment can be controlled to match the figure of sound. While Beranek is the first to acknowledge that his terms are not universally

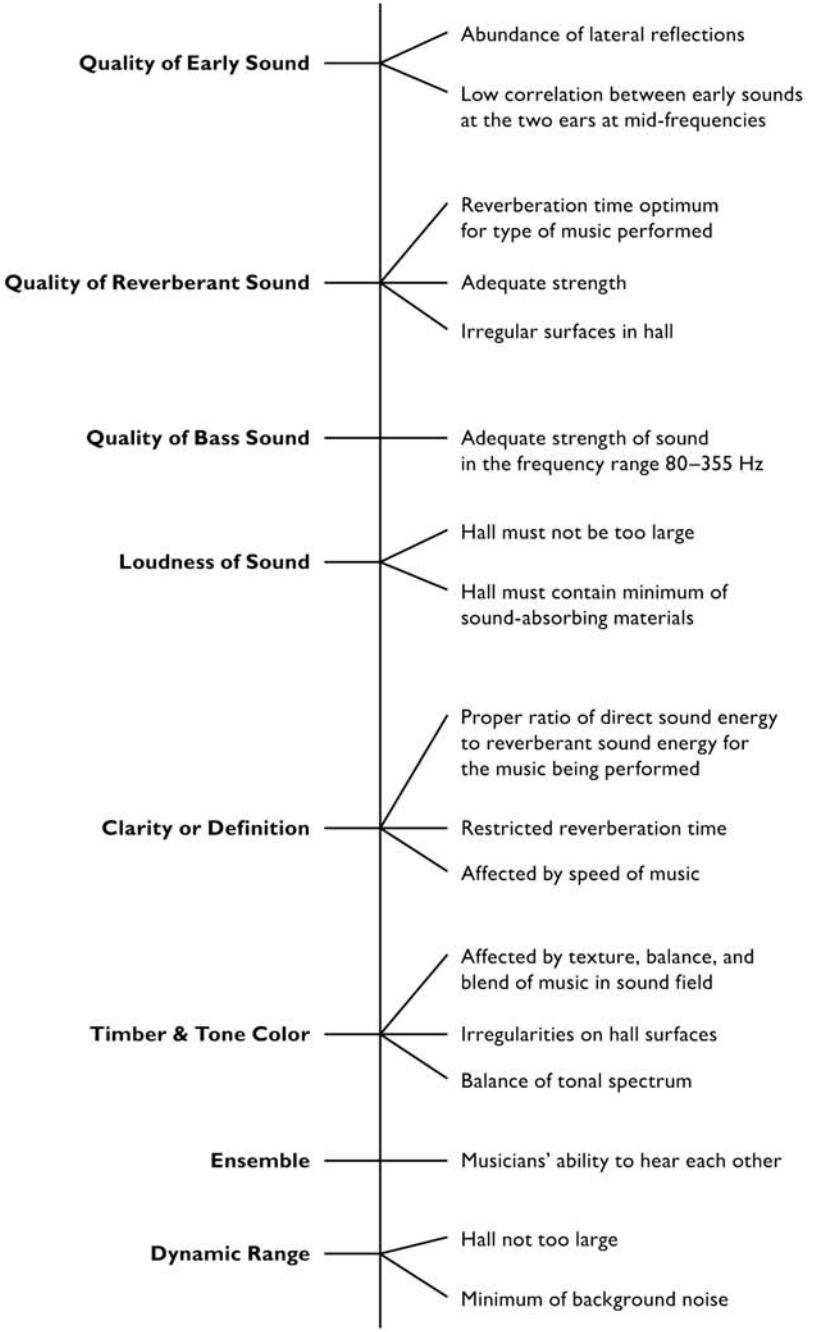


FIGURE 2.1 • This chart, created by Leo Beranek, shows the "interrelations between the audible factors of music and the acoustical factors of the halls in which the music is performed" (*Concert Halls and Opera Houses*, 34).

used and understood, centuries-old architectural and acoustic traditions have been internalized by audiences in cultures participating in these acoustic traditions.[28] Thus, while most audiences would use only a few of the nineteen terms and would be largely unfamiliar with the scientific terminology used to describe the acoustical phenomena, they nevertheless unconsciously evaluate most of the concepts as simply good sound versus bad sound.

The psychoacoustics of the ideal shoebox or natural sound constitute an interesting combination of a sense of directionality and clarity and a feeling of being surrounded by the sound. The result is a feeling of being immersed in a sound (rather than observing it from the outside or at a distance), yet the sound does not deteriorate into indistinctness. Fink summarizes the translation of this feeling into the scientific realm: "Both of these psycho-acoustic phenomena are linked to sound reflections which reach a listener from the side; *early lateral reflections* occur in the first 24–80 milliseconds, hitting the ears slightly out of phase to give a sense of what acousticians call *auditory source width*. Slightly later lateral reflections then contribute to a feeling of *listener envelopment*, and a more general bouncing around of sound waves from all sides finally creates the sonic 'bloom' of *reverberation*."[29]

While the acoustics of concert halls seemingly developed purely to serve musical needs, the concert experience that centers on public concert culture and the traditions built around this relatively new social form were also intimately tied to the conventions and traditions involved in visually based performances such as theater and dance. Thus, not only opera but even symphony halls have, to a large extent, adopted the visual frame provided around dance or theater.[30] As a result, the collective inner ear that we have developed to listen to music is tied to the visual/sonic image or situation of statically facing the orchestra while seeing and hearing the instruments in front of us, with the sound moving between our left and right: a static spatial-relational dynamic in relation to sound. Before recording technology this positioning mediated the majority of musical experience, and even with the advent of recording, stereo speakers re-created this relationship. Thus, this sonic/visual/visceral combination is inseparable from the sound, and sound is experienced within this spatial-relational acoustic package.[31]

Thus, in addition to air and normalized concert hall acoustics, we can add a third dimension to what constitutes the figure of sound. Because of the seating, which is pretty much constant, we develop a two-dimensional spatial relation to sound and its conceptualization. That is, there is a static relationship between the sound source and the listener. In other words, as audience members in a concert hall, we are generally seated in the same relationship to the music

as our colisteners are. It is this relationship that is conceptualized and verbalized into discourse, and normalized to the extent that it goes unquestioned. Furthermore, the norm of sitting statically with the head facing forward also diminishes our acuity in hearing and sensing music as it takes place within three-dimensional space. The static, two-dimensional dynamic resulting from sitting in the same place for an entire concert, or even for multiple concert seasons—a peculiar dimension of the Western classical concert tradition—offers one possible acoustic dimension of that music. However, that two-dimensional acoustic dimension is naturalized. It is continuously affirmed and strengthened through sound production, reproduction, language, concepts, and historically and culturally informed perception of sound.[32]

In summary, we have been trained to feel that a reverberation time of about two seconds is normal. The naturalization of acoustics causes us to automatically (1) correct for gaps, (2) psychoacoustically auto-overcompensate, or (3) develop deaf ears and simply fail to hear any deviation. If we cannot carry out any of the above processes, we may believe the sound to be aesthetically erroneous, somehow wrong. Altogether, the process of naturalization and our listening within it creates a particular physical experience of good sound (the feeling that equates to the idea in the figure of sound). The ultimate outcome is that natural sound or sound that "stinks" becomes a screen to filter out, remove, or devalue all other sounds, leaving us with a limited concept of conventional aestheticized sound as stable, in front of us, moving between left and right, and having about a two-second reverberation.[33]

I will now examine two productions that break with the naturalized notion of acoustic-spatial relations. It is precisely because our sense of self, others, and our position in relation to the world is partially informed by acoustic-spatial relations that it is important to understand how common acoustic presentations affect both the music presented within them and how we hear it. Moreover, by examining any naturalized notions of acoustics, we also examine the ways in which the self, the other, and any possible relationships between them are naturalized.

## Meredith Monk

Like Juliana Snapper's underwater opera, Meredith Monk's music escapes conventional analysis. As the *Washington Post*'s Anne Midgette puts it, "some dismiss [Monk's] music as simple or simplistic, but it is simple in the way that a tree is simple, with its hundreds of rings, its branches, its disparate leaves."[34] When, two decades ago, I first experienced a piece by Meredith Monk and

Ensemble, I was deeply affected, but I could not capture what it was about the concert that moved me. Considering it through concepts and vocabulary I knew from dance and music, I felt that the choreography was simple, and I could not articulate what exactly about the music captivated or had an impact on me. In fact, in many ways my reactions to Monk resembled my original reaction to Snapper's underwater opera project: for a long time I was not capable of understanding what was interesting about it, yet it continued to preoccupy me.

One reason for my baffled incomprehension might be that Monk's artistic work and expression are not limited by the traditional division between dance, theater, and music, a quality that has certainly met with challenges. While this topic is too large to discuss here, given the goals of this book, I will mention that Monk struggled greatly with national funding agencies, such as the National Endowment for the Arts, as it was unclear into which artistic category her work fell.[35] Thus, while Monk's music has been read thoughtfully from choreographic, theatrical, and operatic perspectives, in what follows I will posit that there is a different, multisensory way to understand her work. More specifically, I will suggest that if we limit our understanding of her work to one sense, that understanding will be greatly diminished. In other words, I will suggest that reading her music within the traditional acoustic aspect of the figure of sound limits our access to the artistic experience of the thick event. Specifically, considering Monk's work from a multisensorial perspective encourages inquiry into the way in which spatial-material relationships between sound-producing, listening bodies and the spatial-acoustic structures these relationships are organized within contribute to sound's affect.

Born into a family of musicians and educated at Sarah Lawrence College, Monk had become recognized for her work as a dancer and choreographer by the 1960s. However, even in her earliest solo efforts in downtown New York, she combined movement with images, music, and vocalizations.[36] In a quest to "make my voice move the way the body moves," Monk explored alternative ways of vocalizing.[37] She came to so-called extended vocal techniques through her own vocal experiments, her background in classical and folk music, and her experience as an "interdisciplinary performer."[38] With Laurie Anderson and Pauline Oliveros, Monk is often named as one of three female pioneers who have shaped the sound of American music. Over the years her work has been interpreted as choreography in which the dancers sing, opera in which the singers act and move around, and postdramatic theater with nonverbal vocalizing.

A major component of and resource for her subsequent portfolio, which so far spans four decades, was her establishment in 1968 of the nonprofit House Foundation, a moderately staffed organization that supports, produces, promotes, and maintains her work as a legacy. The House Foundation has produced a variety of work, from Monk's solo efforts to her operas and films, including the documentary *Inner Voice* (2008).[39] In 1978, Monk founded Meredith Monk & Vocal Ensemble. As the House Foundation preserves her work in institutional memory, the ensemble not only performs it but, since the music is not in notated form (with a few exceptions when it was transcribed much later), the members of the Vocal Ensemble hold, carry, and guard it within their bodies.[40] Although the core membership of the Vocal Ensemble has changed over the years, former members remain very much part of the life of the repertoire by teaching it and sometimes returning for select performances.

Not only do the Vocal Ensemble's members learn, memorize, and hold the repertoire within and with their bodies, but the compositions are also adjusted through, and in collaboration with, the bodies of these specific singers. Following is how some of Monk's longtime collaborators and performers describe the process.

Theo Bleckmann, a longtime key Vocal Ensemble singer, feels that working with Monk's music led him to singing from "muscle memory. A discipline I had never experienced before," because it was a process of "memorizing so deeply internally. Let go, just do it."[41] Allison Sniffin—who sings, plays the keyboard, co-arranges pieces, and has transcribed the few pieces that are now available in score form[42]—notes the creative relationship between Monk, the ostensible composer, and the performers: because "Meredith seemed to be okay with people finding themselves through her works," "I as a performer feel more and more free to put in sort of crazy ideas" rather than simply having to be "faithful to the first improvisation she did." As a result, "we do a lot of that work in collaboration."[43]

The soprano Katie Geissinger reflects on the roles and importance of individual singers in the formation and cohesion of the ensemble: "What I realized was that she was picking me for me, and not for skills that were put on, inhabited by me. And that has really helped me."[44] The process described by these three key performers is akin to a site-specific piece: it would not be the same were it to be performed with and through the body and voice of another singer. Correct execution of sound or movement does not constitute the piece; instead, the piece lives and exists through a particular person's materiality and life story. And it is through the challenges of the piece that vocal aspects the

performer has not previously had a chance to explore are engaged. In other words, both performer and composition gain invaluable and unique material from one another and contribute uniquely to each other.

### *Songs of Ascension*

Having followed Monk's career since attending the concert mentioned above, in 2008 I finally understood what intrigued me about her works: the issue of compositional and performative spatial specificity, which she contemplates throughout her oeuvre. In addition to composing within the parameters of sound and time, Monk also composes for the spatially specific relationship between the sounds, as well as in terms of the sounds' overall relationship to the space. Reflecting on Paul Celan's poetry about the songs of ascent, a series of psalms sung by ancient pilgrims as they climbed a holy mountain via a series of steps, Monk created a movement, light, voice, string quartet, and percussion piece that embodied the energies and dynamics of the circumventional and vertical movement axes. Hence, *Songs of Ascension* (2008) was a response to questions Monk asked herself: "What did the songs of ascent sound like? What did the voices sound like?"[45] She found this practice, and the general idea of reaching upward—emphasized in several spiritual practices—fascinating.

As Monk was working on *Songs of Ascension*, the visual and installation artist Ann Hamilton invited her to sing at the opening for one of her sculptures. The sculpture in question was an eight-story work in the form of a tower with a stair, situated in the private sculpture garden of the Oliver ranch in Geyserville, California (see figure 2.2).[46] Monk describes the experience: "We're on parallel staircases, but we can never reach each other." The stair, modeled on a double helix, creates the illusion that you can touch the people on the other side. Similarly, there was a relationship between closeness and distance, in that "the audience couldn't see the entire thing [the performers], but you could hear the whole thing [the music]." Furthermore, Monk notes that "the acoustical situation in that tower was so unique and, you know, to be able to even hear each other was so interesting." In terms of performer placement, Monk was "trying to work with that very extreme, like sometimes something would come from way down at the bottom, and the rest of the performers would be way up at the top and one performer would be way down at the bottom."[47]

Hamilton's tower became not only the first of many memorable performance spaces to host Meredith Monk & Vocal Ensemble, but, with its ascending architecture and weaving stairways, it became *Songs of Ascension's* physical and compositional touchstone.

FIGURE 2.2 • Meredith Monk's *Songs of Ascension* performed inside the sculptural tower created by Ann Hamilton, Oliver Ranch, Geyserville, California (photo by Maria Mikheyenko).

After the concert at the tower, the piece was brought into a number of new performance contexts. In each new setting, *Songs of Ascension* was mounted in response to the space. As a touring art show is uniquely laid out and configured for a new situation, Monk adjusts the piece spatially in response to a given hall. By *mounted*, then, I mean not that the piece is just brought inside the space as a static object, the same each time independent of the space, but instead that it is configured for, and according to, the specific space. While the overall choreography among the singers is retained, necessary adjustments are made in response to new spatial conditions. In this way, the piece is as much about reconstructing and creating a sculptural space as it is about the particular notes that are sung. Hence, when entering a new performance setting, Monk asks what the space tells her. She then remounts the piece as needed, with the aim of offering an immersive, circular experience for the audience in venues quite different from the first performance in the double-helix tower.

Monk thinks about the process of creating *Songs of Ascension* as a return to her ideas about site specificity, which she nurtured during the 1960s. As she mounts the piece in different settings, I hear her choreographic and spatial adjustments as reorchestrations that respond to the space through the music. Through this process she not only throws the space into relief, but she also allows the space to call forth a new aspect of the composition. *Songs of Ascension* has been brought to such diverse places as the Great Hall at Dartington College of Arts, Devon, England (May 13, 2008); the Memorial Auditorium at the Stanford University, Palo Alto, California (October 18, 2008; see figure 2.3); the McGuire Theater in the Walker Art Center, Minneapolis, Minnesota (June 12–14, 2008); the REDCAT Theater in Los Angeles, California (October 29–November 2, 2008); the Harvey Theater at the Brooklyn Academy of Music, in New York (October 21–25, 2009); the Walt Disney Concert Hall in Los Angeles (April 11, 2010; see figure 2.5); and the Solomon R. Guggenheim Museum in New York City (March 5, 2009; see figure 2.4). The piece has been transposed into spaces that included black box theaters; traditional concert halls; elevated stages; performance spaces on the floor; and three-dimensional spaces, where the performers move not only in the two traditional directionalities—stage front and back and stage left and right—but also move vertically. In the majority of these spaces the audience was seated in one place and position in relation to the piece throughout its duration.

The sonic particularity of each performance space derives in part from its unique architectural, material, and spatial-relational properties. However, much technical work on concert hall acoustics aims to unify or homogenize the sonic experience from each seat in the house, undermining the facts that

seats in different sections exhibit different physical and spatial relations to each sound source, and each sound source relates in its own way to the hall in general. In contrast, by making considerable choreographic (or acoustic-relational, as I see it) and sonic adjustments—which I have termed reorchestration or transposition—to *Songs of Ascension* each time it is performed in a new space, Monk recognizes and responds to the spatial and relational specificity of each situation, and indeed of each encounter that takes place during singing, listening, sound, and music.

Hence, in the same way that Monk composes not only for, say, a soprano voice but for a specific person in her ensemble, *Songs of Ascension* was created for a specific spatial-acoustic situation. As a result, when it is performed in a different spatial-relational situation, we could make the analogy that Monk has a different set of instruments available and so needs to reorchestrate the work. In other words, the piece would lose its identity if it were not adjusted to the spatial-relational dynamic between the various performers and their overall relationship to the hall. This shows us that, in each remounting of the piece, Monk must respond to the dynamism of the hall. Acoustics is such a crucial part of sound's identity that Monk has to respond to the specific acoustic conditions of each new performance space.

Similarly, Emily Thompson's extensive aural history of early twentieth-century science and engineering demonstrates that how we think about natural sound or just sound has, in fact, been carefully manufactured through isolation and abstraction from its original acoustic context. Indeed, Thompson points to an underlying commitment to an idea of sound that "had little to say about the places in which it was produced or consumed."[48] Indeed, by 1932, innovations in electrical engineering and acoustic design were used to strip sound of the actual sound of space. Sound of space was now an element that could be "added electronically to any sound signal in any proportions; it no longer had any relationship to the physical space of the architectural constructions."[49] In the construction of concert halls, extrasonic concerns influenced the architectural layout—and the acoustic design needed to compensate to hold the notion of (metaphorically speaking) pure sound in place. Essentially, concert hall design is a numbers game in which money and prestige fight against the laws of acoustics, architectural aesthetics, and seating politics. How can we maximize the ticket revenue for each performance? Who gets to sit where, and for what price? Presenting music in spaces of commerce—that is, concert halls with purchased seating—has pinned us to the mast (echoing the previous chapter, I again invoke Max Horkheimer and Theodor Adorno's critical imagery).[50] Concert hall acoustics attempts to create the ideal sound from

FIGURE 2.3–2.4 • Above, top: Rehearsal of Meredith Monk's *Songs of Ascension* at Stanford University (photo by Maria Mikheyenko). Above: Performance of Meredith Monk's *Songs of Ascension* at the Solomon R. Guggenheim Museum (photo courtesy of Stephanie Berger/The New York Times/Redux).

FIGURE 2.5 • Performance of excerpts from Meredith Monk's *Songs of Ascension* at the Walt Disney Concert Hall (photo by Axel Koester).

every seat, working to erase sonic spatial specificity in favor of predictability, consistency, and profit. In contrast, Monk's twenty-first-century operatic work on sound in, through, and as space shows us the irrationality of the proposition that we can sense and relate to sound divorced from its spatial characteristics.

Based on the different events I attended, I hear *Songs of Ascension*'s performances as falling into two different experiential types. In the first type, as discussed in detail above, Monk remounted the piece in new halls, and within those configurations, each new iteration took on a slightly expanded identity compared to the first performance situation. I believe that Monk's spatial reconfiguration shows us the spatial-acoustic specificity of sound. Through her remounting of *Songs of Ascension*, Monk attempts to denaturalize the idiosyncratic spatial specificity that the economy surrounding Western concert halls strives to mask. In the second type of experience, Monk was not able to retain *Songs of Ascension*'s pitch-time-space dynamic. While she made acoustic-relational adjustments for this performance, *Songs of Ascension* seemed very different in its Walt Disney Concert Hall incarnation—very small and disconnected from the space and situation. Compared to my past experiences of the piece, this one sounded off to me. However, because—based on past experiences—I doubted whatever I thought about this performance of the piece, I began to doubt the concert hall. Yet I had also had experiences in which this hall sounded good. This led me to consider the intersection between the piece and the concert hall. Indeed, Monk not only challenges the figure of sound, but she also makes us aware of it by composing outside the established spatial-relational acoustic norms.

Yet I wonder whether it is also partly Monk's continued presentation of her work in spaces where three-dimensional dimensions are explicitly considered that has created an acoustic community able to hear her work with that sensibility, making the gap clear rather than automatically failing her work within these idealized spaces. On some levels, Monk's devoted audience has developed a familiarity with and an appreciation of an alternative sonic system—which is, of course, simply another figure of sound. And with that alternative sensory-sonorous familiarity comes the ability to comprehend and accept both two- and three-dimensional acoustics and their dynamic relationship to each other. That is, rather than praising or dismissing Monk's music as superb or inferior, her audience can sense that it is placed in its native acoustic environment (rather than sensing that it requires three-dimensional acoustics but has been placed in a two-dimensional acoustic space). This allows for a kind of evaluation that takes place not on a positive-negative scale, but rather through the understanding that any positive or negative perceptions have to do with

the alignment or misalignment between the acoustic dimension for which the music was written and that within which it is played out. In this way, Monk's music raises questions about the relationship between the sound and the system of the figure of sound. The question suggested by such a position is: Is this right?

Rather than considering Monk's inability to retain *Songs of Ascension*'s pitch-time-space dynamic in the Walt Disney Concert Hall performance as a failure, I believe it shows us a crucial facet of the acoustic aspect of the figure of sound, and the way that the space within which we hear music inextricably participates in forming the figure of sound as well as our experience of that figure—a facet rarely allowed to come forward. As the intense discussions about the building of the Disney Hall illustrated, classical musicians rarely play outside the context of normal, beautiful acoustics. And the particular music played in rarefied concert halls rarely requires different acoustics. The relationship between singers and compositions may be viewed as parallel to the relationship between compositions and halls. In the same way that the singers in the Vocal Ensemble found themselves stretched and challenged by the compositions, the compositions are highlighted and the performers' specificity is brought into being, new aspects of the compositions come forth in new spatial-acoustic settings, and aspects of the hall are redefined as it sounds material that is not written directly for the acoustic ideal it embodies.

So while we could read Monk's performance as a composition written for specific acoustic conditions inserted into inappropriate acoustic conditions, I believe there is much more to glean from this story. Through realizing that the piece sounds better or worse depending on the hall and its flexibility in terms of performer-and-audience spatial configurations, and that the Disney Hall sounds sometimes better and sometimes worse depending on the music it reveberates, the careful listener realizes the extent to which the encultured and sensorially spatial-acoustic aspects of the figure of sound are deeply engrained. They are so engrained that, rather than considering the dynamic relationship between music and its acoustic conditions, listeners often fail the music or the concert hall. This process is poignantly captured in Frank Gehry's summary of the acoustician Minoru Nagata's assessment: "Berlin stinks!"[51]

It is, in part, by investigating music from a multisensory perspective that we may account for dimensions of music that are known but frequently overlooked by analysis. As we can recall from chapter 1, viewing Snapper's work through this lens illuminates the fact that sound does not exist in a vacuum but rather is always already in transmission; its character therefore arises from the material particularities of each transmission. Applying the multisensorial per-

spective to Monk's work highlights the notion that a sound's affect depends on the spatial relationship between the sound, listening bodies, other sounds, and the larger situational canvas on which these relationships take place.

### *Invisible Cities*

Another production of an operatic piece that opened my senses to additional aspects of the figure of sound took place five years after I first attended a performance of *Songs of Ascension*.[52] Opening on October 19, 2013, this was a production presented as "an invisible opera for wireless headphones." I concentrate here on the production of the piece rather than on the content and music of the opera, *Invisible Cities* (based on its namesake, Italo Calvino's 1972 novel), composed by Christopher Cerrone. The opera company The Industry and the dance company the LA Dance Project, both located in Los Angeles, mounted the production.

Founded in 2011, and with *Invisible Cities* marking its second major production, The Industry has already made an impact on Los Angeles's new music and opera scene. Its dynamic director, Yuval Sharon, was formerly director of VOX: Showcasing American Composers, the New York Opera's new opera program, and he has directed or codirected traditional and new opera at venues including the San Francisco and Los Angeles Operas.[53] Thus far, The Industry's work has been marked by an intense engagement with issues related to the continuing transformation of the Los Angeles region and Southern California in general. Part incubator for emerging talents, part collaborator with established artists, its productions are marked by experimentation and engagement with emerging technologies, with the goal of breaking the bounds of the proscenium.

During an interview with KCET, a Los Angeles television station that did an hour-long documentary on the production of *Invisible Cities*, Sharon commented that its concept resulted from a challenge by the sound designer E. Martin Gimenez, who dared Sharon to consider "an opera for headphones."[54] Using microphones, sound design, and headphones in the context of live opera performance is not a casual technical decision. It is a philosophical and, some would say, moral decision, as historically and fundamentally, opera owes its very sonority and existence to a feat of acoustic virtuosity. Singers' voices are pitted against the sounds of the orchestra and challenged to rise above them to reach the audience. All singers can rely on is their decades of training and the acoustic condition of the house. In this context, the unamplified power of singers' voices is part of the fetish that defines the art form.[55]

Sharon took on Gimenez's challenge. To take the concept to its fullest, Sharon realized, he wanted to set the opera in a public space, a situation that would "blur" the line "between everyday life and art."[56] On first blush, that setting and mediation of the piece share characteristics with silent disco and the Metropolitan Opera's high-definition video transmission, *Live in HD*. As in silent disco events, the audience would inhabit two spaces: the physical space and the space provided by the sound emitted from the headphones.[57] However, unlike some silent disco gatherings in which people bring their own music and the primary sharing takes place through listening and dancing together (to different music), the audiences of *Invisible Cities* shared not only the music, as in the Metropolitan Opera's high-definition video simulcast, but also a live performed music, albeit primarily experienced via headphones.[58]

For Gimenez, whose original challenge to Sharon initiated the opera-for-headphones endeavor, "sound design is as much a character as the music."[59] Studying the libretto, Gimenez designs the sound to communicate the drama, just as the director and lighting and costume designers do. To Gimenez, the "sound design is going to be as much of a character in the piece as the text, as the singers, as the dancers." For the sound design for *Invisible Cities*, Gimenez was thinking in cinematic terms. He explains his thinking process about the sound design for the opening: "Kublai Khan [is] alone in this Palace." The libretto begins: "There is a time of emptiness that comes over everything."[60] Taking on the challenge of conveying the character of "emptiness" in this scene, Gimenez asked himself: "How can I create [the camera's] close-up to a very wide angle" in sonorous terms?[61]

The solution was to render the voice "bone-dry for that first line. . . . And then sonically, over the first line, over a minute," Gimenez explains, "we kind of sonically pan out, and this cathedral reverb slowly fades in and you kind of realize 'Oh, wait. He's all alone in this vast space.'"[62] Acknowledging that because traditional "opera is based on hearing things unamplified in a beautiful room," while *Invisible Cities* goes "to the extreme opposite," Gimenez reflects that, under his design, "each movement, each line kind of has a sonic character [related] to that." He asks rhetorically, "How do we achieve that sonic character?" Answering his own question, he says: "Using ambient mics [*sic*]. Using a lot of fake reverb within our console. That will help us to determine, dramaturgically, the goal within each scene." Using microphones and digitally determining the voices' reverb and placement in space shifts the aesthetic premise and value, traditionally bound up with singers' ability to both ride the room's acoustic and train for years to gain the vocal power necessary to match an orchestra and fill a space the size of an opera house. What you gain in a digi-

tally controlled situation, in Gimenez's opinion, is dynamic range in the lower end (for example, the ability to communicate in a whisper) and the ability to change the reverb and sound placement, and hence imbue these parameters with meaning. As the production's tagline quoting Calvino says, "It is not the voice that commands the story: it is the ear."[63] As I discuss below, with the opera sound designed and delivered via headphones, the ear cannot detect spatial specificity and, hence, cannot lead the audience to the opera's actions. Perhaps the ears referred to are Gimenez's and Sharon's, and their offering of what they are hearing through production and design?

In response to these conceptual frames, the production is set in Los Angeles's historic and iconic Union Station, which most people have seen as a backdrop for such movies as *Blade Runner*, *Pearl Harbor*, *The Hustler*, and *The Dark Knight Rises*.[64] It was therefore in these worlds—fantasies that, in Los Angeles and around the world, are often given value and allowed substantial room in people's emotional lives—that the opera was set. Additionally, because Union Station is nestled between downtown, Little Tokyo, and the Flower and Fashion Districts and barely out of the shadow of the neighboring Los Angeles Central Jail, multiple layers of the city are already invoked and activated for and by audience members before and after their arrival.[65]

My description of the 2013 production of *Invisible Cities*, which follows, is based on my attendance at two performances (the first time with headphones and the second without them), and on my engagements with performance recordings and video documentation footage, interviews with the producers from a television documentary about the opera, and press and media coverage. In general terms, the piece consisted of solos, duets, trios, and ensembles. From my vantage points as an audience member, the activity moved from the general position of the South Patio to the North Patio and then into different locations in the main waiting hall and main entrance area (see figure 2.6). Some performers also started singing in one of the Patios and then moved into the building while singing. Voices that sounded together on the headphones were not always singers singing physically together, and, for one person attending only one performance, it was challenging to get an overview of all the voices' physical placement within the space.[66]

### Experiencing Sharon's and Gimenez's Production of *Invisible Cities*

On the evening of the performance, audience members arrive at the station like other commuters: by train, metro, car, bus, bike, or on foot. But after the audience members make their way through the walkways that lead from park-

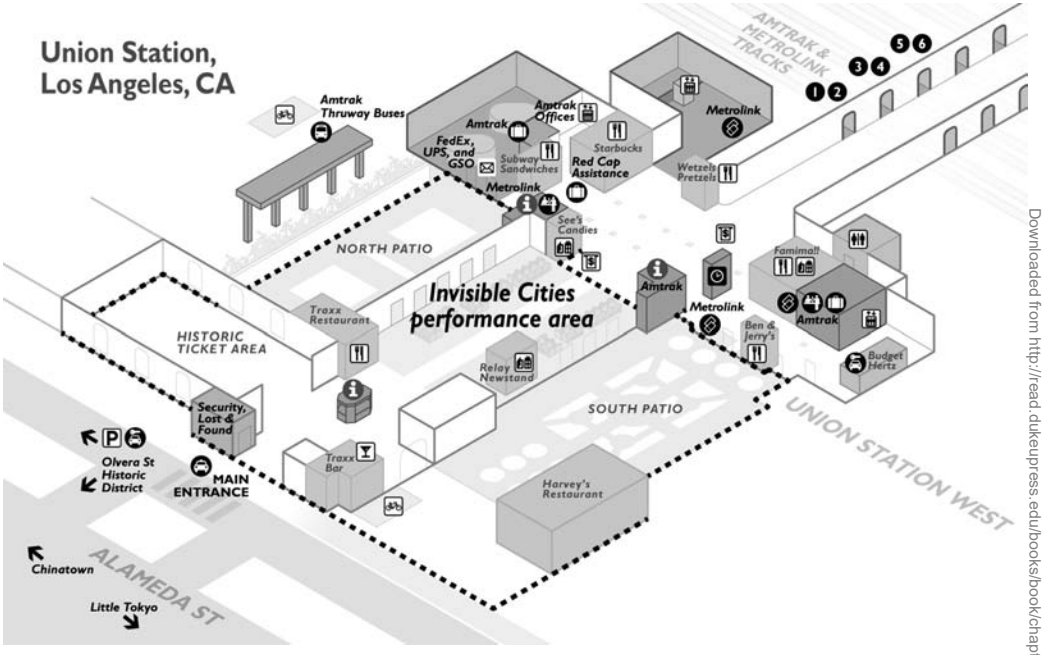


FIGURE 2.6 • Map of Union Station, Los Angeles, California (drawing by April Lee).

ing garages and train tracks, or from one of the two main entrances, and reach the main waiting hall, nothing looks or feels different from any other evening at the station. The only minor change is that the historic ticket lobby, which is normally closed to the public, is open for those with tickets to the performance. Ticket holders pick up a set of headphones at the original ticket counters. While activity in this area of the complex is not part of the station's daily life, commuters are already familiar with the area's popularity as a location for special events and filming. Indeed, the performance that is about to start is not noticeable.

As curtain time nears, ushers in everyday clothes, wearing small pins marking their affiliation with the event, direct audience members to the Harvey House Restaurant, the iconic venue that has not been in general operation since 1967 (see figure 2.7). On the restaurant's main floor, cleared of tables, the chamber orchestra is installed. People crowd around the edges and into the restaurant booths along the walls. Sharon welcomes the audience and offers basic instructions, mostly precautions regarding cohabitation with the station's regular occupants. The event starts when the orchestra begins the overture.[67]

FIGURE 2.7 • The overture of Christopher Cerrone's *Invisible Cities* played in the Harvey House Restaurant, Union Station (photo courtesy of The Industry).

Audience members stay for a while, watching and listening to the orchestra, before leaving the space of their own accord. After exiting the restaurant, where the orchestra was both heard and seen and the sound was fairly similar with or without headphones, each audience member's experience of the opera takes a unique path. That is, for each audience member, the opera unfolds according to his or her specific sonic, visual, and spatial experience. Accordingly, I will now adopt a first-person narrative, reflecting one iteration of the opera as it took place from a single perspective.

Leaving the Harvey House Restaurant, I am led directly into the enclosed South Patio. I see some people with headphones forming clusters and moving around together, while others move alone. At first there is only orchestral music coming from the headphones, with the vague hum and bustle of the station pressing in, and sirens filtering in from a distance. As soon as I hear a voice in the headphones, my inclination is to go and find its source. It is when I hear sounds that I do not see, when I cannot tell immediately even from which general direction they come, that I begin to sense the gap between the acoustic and sonic world surrounding me and the omnisonorous sound world offered through the headphones.[68] Since the acoustic cues conveyed by the

mixed music do not reflect the music's placement in the physical space and acoustic character of the station, I find myself relying on visual cues such as gatherings of small crowds to seek out singers' locations. I assume audiences have gathered around the activity I hear.

The first performers I see are dancers in the South Patio, dancing in spotlights lighting up the garden (see figure 2.8). As everyone who was in the Harvey House Restaurant during the overture has to move through this area, it is so crowded that I move into the main waiting hall, heading from there toward the areas that lead to the gates and tracks. Before I even make it to those areas, two friendly people whose pins identify them as ushers emerge to let me know that the performance space ends at the edge of the waiting area. From that point until the finale, I move between the North Patio, the main waiting hall, and the area near the main entrance (on the Alameda Street side). In this way, audience members are subtly directed through and dispersed throughout the space, drawn to particular areas by an activity or away from others by ushers.

The overall concept of an invisible opera emerges not only from the performers' engagement in the everyday activities of the hall, such as sitting down in the waiting area and reading a paper or cleaning the floors, but also because the performers are, both for rehearsals and performances, situated among the station's everyday patrons—both travelers and those who use the building for shelter (see figure 2.9). It is only when they break into operatic-style song that the singers identify themselves (people frequenting the station sometimes sing as well!). In some ways, the line between the dancers and the patrons is arguably less distinct than that between the singers and the patrons. Many of the patrons are highly creative in dress and movement, and before I begin to notice repeated dance vignettes and recognize specific dancers, my occasional difficulty in identifying them illuminates the blurring of the line between everyday life and performance and the emerging and receding of this particular performance. And, perhaps as importantly, seeking out performance or heightened moments throws everyday life into relief as performance or as art.

Wearing the headphones distinguishes audience members from the station's everyday patrons. In contrast, the singers are indistinguishable from the patrons in terms of appearance. I find myself playing a silent guessing game, wondering whether a particular extravagant-looking person is part of the cast. As the different singers start to sing throughout the performance, I realize that some of them wear everyday clothes while others are more theatrically marked. However, some of the people who act, move, and appear theatrical in the station are not part of the cast. Again, while there is no obvious distinc-

FIGURES 2.8–2.9 • Above, top: Dancers in Union Station's South Patio during a performance of Christopher Cerrone's *Invisible Cities* (photo courtesy of The Industry). Above: On-site rehearsal of Christopher Cerrone's *Invisible Cities* (photo by Dana Ross).

tion in appearance—some nonperformers are more theatrical in outfit, body language, or vocality—as an audience member I begin to distinguish between those voices that are mediated through the headphones and those that are not.

With the ominous headphone sound following me, I wander around, having to constantly decide whether or not to move toward the areas where I see that other people wearing headphones have gathered (figure 2.10). While sound is normally the cue to move toward a performance, with the curated sound in the headphones—which is the same for every audience member regardless of his or her physical relation to the sound source—sound is no longer a cue. Instead, a sonorous space is created in terms of the opera's voices and orchestral sounds. Their sound design puts them in relation to one another, but they remain outside the usual physical and spatial relation to the audience members.

For patrons of Union Station, only the singers' acoustic voices are audible. The singers wear tiny lavalier microphones and in-ear earphones. The orchestra and vocal sounds are mixed live and returned to both performers and audience. While the orchestral musicians can see the conductor at all times, for the singers the earpiece carries their only cue. As noted earlier, audience members wearing headsets are exposed predominantly to the designed mix of operatic voices and orchestra. While volume can be adjusted individually, the headsets also function by default as light sound mufflers, generally limiting the sounds of the station's activity to those that pierce through during loudspeaker announcements.[69] I frequently see audience members taking off their headsets, as I do myself at times.[70] Sometimes people remove their headphones to share the sound with a friend or passerby. At other times, it looks like audience members simply remove their headphones for a while to take in the acoustic sound.[71]

I also observe that this operatic performance in a public space carries with it an invisible and amorphous separation between audience and performers, yet barriers are broken down between the audience and station patrons. The audience keeps a respectful physical distance from the performers yet feels complete license to observe them. At the same time, their common reference point—the opera—contributes to partially breaking down the invisible barrier that often exists between strangers in a public space. I observe more conversations and interactions between strangers than on an average day at Union Station or in another public space. Throughout the piece, the performers inhabit all the different public areas of the main hall and the two courtyards. Only the very last scene separates both performers and audience from the patrons' bustle, moving performers and audience into the original ticket lobby that is normally not used. (I will discuss this scene in more detail below, but it is

FIGURE 2.10 • Performance of Christopher Cerrone's *Invisible Cities*, main hall of Union Station (photo courtesy of The Industry).

useful to first discuss the composer's and director's decisions to use amplified sound, headphones, and sound design.)

While the production of the piece encourages the audience to engage with the acoustic world offered through sound design, *Invisible Cities* cannot fully mask, or offer a clear sense of, the acoustics of the hall.[72] By creating tension between two simultaneous acoustic worlds, the production exposes naturalized acoustics as part of the figure of sound. The opera's climactic ending—in which, for the first time, all of the singers and dancers are gathered in the same space—illuminates the two simultaneous acoustic worlds and hence the gap between them. Throughout the opera, the singers' voices have been mixed by Gimenez and presented to the headphone-wearing audience as a single sonic mix, while the audience may see none, one, or only a few of the singers. Because of the gap between what is experienced live and what is heard through the headphones, the music presented via the headphones can feel in many instances like a moment of listening to recorded music in a different sonorous situation. However, because during the ending the audience can see all of the singers they hear, this illusion is not sustained. This moment marks the first time the singers' acoustic realm merges with the material realm—that is, the audience members see what they hear. But while some sense of stability may be provided by the parallel between the number of performers seen and heard, the gap between the two acoustic realms—the sound design and the live acoustic of the ticket hall—may arguably be more unsettling.

This also means that, during this last scene, the audience can alternate between listening with headphones and listening without them. The difference in acoustics creates an opportunity to compare the two experiences and either reject the headphone or live experience as inferior (failing to match the figure of sound) or accept the headphone or live experience as valid (whether as the figure of sound or as something else that is just as useful as—or even more useful than—the standard idea of sound). In this way, the simultaneous physical inhabitation of one acoustic space and aural inhabitation of another shows the power of sound's acoustic space and context, while laying bare the acoustics of the voices as they sound in the train hall. We may recall that the shared acoustic space offered by the headphones "creates a bond between you and the other headphone-wearing audience members."[73] In the last scene, the two simultaneous acoustic worlds rub up against each other, showing us how much they form the sound as we hear it. In other words, the acoustic, spatial-relational world is inextricably bound up with the figure of sound.

As is the case with sounds' transmission through air and bodies, we are not often party to the way in which a spatial-relational acoustic is naturalized. Be-

cause we cannot help but hear sound within an acoustic wrapping, it is difficult to gain the insight offered by the mismatching of actual acoustic space and the acoustic space offered up through headphones, as created through the production of *Invisible Cities*.[74] And, as in the previous chapter, this situation initially made me cringe because I first heard it through the first option described above. Therefore, while my initial reaction was that it was a pity the production had used headphones, the hypercontrolled acoustic in the otherwise nonoperatically attuned structure and the readily available option to experience both (by wearing or removing the headphones) turned out to be a wonderful place from which not only to discuss the hypermediated acoustic nature of sound and music, but also to understand the situational-relational and acoustic aspect of the figure of sound.

### Accoustics and Listeners' Choice

But if acoustics is a naturalized part of the figure of sound, would that not imply that we cannot hear outside the naturalized—and, by definition, that we cannot attain the distance necessary to sense that it is indeed naturalized? That is, does a naturalized acoustic imply that we are enclosed in it, and that we do not have options when listening? *Songs of Ascension* and *Invisible Cities* negotiate this issue by being simultaneously inside and outside. In other words, they are not so foreign that they are dismissed as complete anomalies. To me, the interesting thing about the productions discussed in this chapter is that they, in very different ways, work within the model of the figure of sound while also resisting it. By composing without the constraints of the two-dimensional model of the musical work and music making, Monk resists the two-dimensional naturalized notion. However, by also allowing the work to be presented in halls that specifically accommodate and promote the two-dimensional figure of sound, Monk exposes the acoustic condition of these halls, a condition that is simply understood as normal. Under these conditions, "musicians can play without undue effort, and without the annoying adjustments of balance that are all too essential in many of our concert halls today."[75] Thus, audiences must decide whether or not to simply judge that the piece is poor. *Songs of Ascension*'s presence in the hall does two things: it points to the figure of sound by showing that we hear and make sense of music through it; and it allows us to become conscious of the measurements with which we evaluate the hall as a vehicle for delivering that figure of sound.

By providing a sonorous envelope and an acoustic landscape that are familiar to us in opera (and also film, since the acoustic conditions in *Invisible Cities*

changed throughout as they would do in a film, but not in an opera house) within an entirely different acoustic condition—a train station where we are sometimes in earshot of the singer and sometimes not, and nearly always outside of the orchestra's live sound range—*Invisible Cities* offered an entirely different window into the ways in which the acoustic condition is written into the figure of sound. To put it another way, *Songs of Ascension* brought a three-dimensional piece into a two-dimensional concert hall acoustic, while *Invisible Cities* brought concert hall acoustics into a live, idiosyncratic acoustic space that was vastly different in its physical and acoustic relationship to the operatic performance. In this way, *Invisible Cities* is an extreme example of the acoustic dimension of the figure of sound, as it is played out digitally. While this acoustic is extreme—or, arguably, postacoustic in being aided by microphones, mixers, digital reverb, and headphones—it is only a heightened version of what is otherwise designed for and manifested within the acoustics of concert and opera halls.

To me, then, what is important about these works is that they present in-between points that do not reject the normative acoustic world, but rather are outside it enough to allow us to sense what is naturalized. By putting the naturalized and denaturalized dimensions together, they embrace, deal with, or play within the gap, allowing us to sense it (which something that exists comfortably within a naturalized acoustic does not allow us to do). In the same way, despite the strength of the spatial-relational and acoustic aspect of the figure of sound, *Songs of Ascension* and *Invisible Cities* show us that there are ways of playing within the acoustic norms just so—just enough to venture only slightly outside. The effect of an experience that exists largely within the norm is not so unexpected that it will be discarded or disregarded. It is precisely through refraining from leaving the naturalized dimension dramatically, and thus remaining within what is considered as opera or music, that these productions offer the potential to experience the naturalization.

## Conclusion

This chapter has offered insights into two aspects of sound and perception of sound—the acoustic element and the spatial-relational element of sound—both of which are inextricably bound up in the figure of sound. From this we may conclude that, at any given time and context, we cannot but hear and make meaning with sound and music as they unfold within or challenge acoustic and spatial-relational norms. Through *Songs of Ascension*, Monk shows us that sound is naturalized in spatial-relational acoustic terms. Through the

Union Station production of Cerrone's *Invisible Cities*, Sharon and Gimenez show us that at least two overlapping acoustic systems can more than coexist. That is, in the same way that air has become the naturalized medium through which sound is transmitted, the spatial-relational and acoustic norms of concert halls contribute to the constitution of the figure of sound. As I discussed in chapter 1, we hold a concept of the pitch A (440 hertz) sounded for one quarter-note in the tempo of sixty, or andante, specifically as it is sounded when transmitted through air. Additionally, included in the concept of that pitch in a normalized mode is directionality (it is sounded in front of us) and acoustics (with approximately two seconds of reverberation, and meeting all of the other acoustic criteria discussed above). Moreover, the sound is probably relatively stable in its relationship to the person who imagines it—that is, neither the person nor the sound moves relative to each other. In summary, expectations and norms are set not only about distinct sounds, the work, and its performance, but also about the acoustic conditions in which the work is presented and experienced.

Such standardization perpetuates itself, and variation is understood as anomaly: composers know music within this acoustic and write for these conditions. Similarly, audiences have internalized sound and music within such acoustic parameters and, as the above vignettes exemplify, feel a sense of disconnection and wrongness when these conditions are not met. While the acoustic conditions discussed in this chapter arose from a particular and limited musical culture and experience, it is this musical culture (and the specific experience it offers) that has come to dominate language and concepts about, and epistemologies of music within, Western culture. That is, while Western culture's music—and thus the acoustic experiences it offers—is far from limited to the specific acoustic condition discussed here, it is this precise acoustic condition that we have used to set the acoustic norm. As a result, other acoustic conditions (even those that resist the norm) have primarily been understood in (negative) relation to it.

I want to stress that, for denaturalization to take place, a listener must experience and actively participate in it. *Songs of Ascension* reveals the relational acoustic dimension of the figure of sound, opening up the possibility for understanding that how we evaluate sound is based on listening within systems. I aim to change the question "Is this sound good or bad (or right or wrong)?" to a different question: "Which system is this sound created within, and which system is it experienced within that makes it appear good or bad (or right or wrong)?" The realization of *Invisible Cities* in Union Station, however, nudges the question one step further. Instead of asking "Is it right?" or "Does it seem

right?," the production returns to the primary question: "What is it?" If asked honestly, this shift not only opens up the possibility of understanding an additional sonic or acoustic system. Because the new question is not directed toward the identity of the sound, it is not tied to a known listening system or dimension—which allows for a different mode of listening to opera and voice.

As I have discussed, the spatial-relational aspects of the figure of sound are naturalized through reifying practices in architecture, acoustics, composition, concert programming, and musician and audience pedagogies. Because of this deep reinforcement, moving the intellect is not enough. For sound and music to be denaturalized physically and experientially, we need to diversify and enrich our sensory abilities, giving ourselves a wider range and depth of sensitivity to that which we refer to as sound and music. It is precisely because the work takes place in the sensory dimension before it is used as a basis for meaning making that deflation of the figure cannot take place through intellectual power only.

Recall my initial reaction of discomfort and embarrassment about the music because it sounded so awkward. By examining this phenomenon further, I came to understand that the awkwardness was due to my encultured listening to the two pieces.[76] Rather than dismissing the pieces and the particular performances, by considering them more closely I was able to understand that my first perception that the music was lacking (was wrong) was not about the music per se. Instead, I was sensing the gap between the acoustic aspect of the figure of sound, which I had internalized, and what was sounded.

It is precisely because they differ only slightly from pieces that would fit squarely within the naturalized mode that *Songs of Ascension* and *Invisible Cities* can expose the norms as norms only. Because the pieces remain within the frame of the normative acoustic configuration of sound, audiences can still accept them as normative music (whether judging them good or bad). As a listener who felt discomfort and embarrassment, then, I was presented with a decision point: to engage through the unfamiliar, nonnormative spatial-relational and acoustic aspects of sound that were actually present, or to dismiss the situation because it did not fit into known models. It is because *Songs of Ascension* and *Invisible Cities* violate, yet work within, naturalized acoustic norms that, when experiencing these productions, we are given a choice of how to respond to these situations.

In sum, then, *Songs of Ascension* and *Invisible Cities* poignantly offer a choice that is always already present. Given a sonic experience that could potentially expand our understanding of music, will we hear it nonnormatively as an opportunity to expand, or will we reject the challenge to our experience as wrong,

closing our senses and minds to what is there? Do we accept sound (and our perception of it) in its (and our) specific (and sometimes unexpected) material, positional, and acoustical unfolding? Above all, we are not only confronted with these specific pieces in seemingly anomalous acoustic situations, but—at any acoustic moment—we are faced with a decision point: will I reify, and hence reinvest power in, the concept and perceptual schema of sound, rather than questioning it by negating an experience that did not adhere to the figure of sound? Or will I invest in the experience and realize that there is something other than what the figure of sound suggests? In other words, when confronted with these types of anomalous acoustic experiences, will I explore or reject them? And, ultimately, since the world—and our own relationship to it—is partly formed through the normative spatial-relational and acoustic mediation that we have internalized, do we explore or reject anomalous encounters with other human beings?

In the end, it comes down to developing an awareness of the seeming anomalies before we can even notice that we have a choice between accepting or rejecting what have been deemed nonnormative sonic experiences. Our awareness of that choice is the linchpin not only of this chapter, but also of the overall arguments of this book. In this chapter, then, we have examined some examples of the lived pedagogy and practice that lie at the heart of each such decision point. Essentially, I argue that what might look on the surface like an aesthetic appraisal is actually a choice made by a body trained in spatial-relational acoustics and encultured to orient itself to the figure of sound. Of course, this choice is crucial not because of its acoustic concreteness, but because it carries consequences for our overall relationship to the world. To put it another way, following the trails of experiential conundrums and decision points, *Songs of Ascension* and *Invisible Cities* offer vivid examples of the ways in which the world—and the figure of sound—is rendered through acoustic mediation, and the degree to which we have internalized this rendering. We will now move on to the third naturalized area of voice, listening, and to the music this book considers: sound itself.