



POINTS FORWARD

DIGITAL APPROACHES TO HISTORICAL ACOUSTEMOLOGIES

Replication and Reenactment

REBECCA DOWD GEOFFROY-SCHWINDEN

In Paris, on the first Wednesday of every month, air raid siren tests blare from noon to 12:10. Goose bumps cover my arms every time I hear this sound. A complex set of experiences and knowledge causes my body to respond in such a way: the historical knowledge of World War II, an understanding of the siren tests' cultural context, a personal relationship with a man who grew up in Paris during the war, my imagination of living under the threat of bombings, and my current fear of terrorism. I grew up in a small town of two thousand residents in northeastern Pennsylvania, where every night at nine a fire siren wails, sounding remarkably similar to the Parisian air raid siren. Yet this Pennsylvania siren evokes quite a different response from me. As a child, upon hearing it I would drop whatever occupied me at the moment, race to the staircase of my home, and proceed to play "race-you-upstairs" against my mother. The comforting nine o'clock whistle signaled bedtime through a combination of family tradition and local timekeeping. It still conjures in me an emotional sense of safety and love. Despite the material similarity of these two siren sounds, it is a distinct set

of historical, cultural, local, and personal meanings that grants each its discrete significance.

Humans experience sound through a complex set of physical, psychological, emotional, and affective processes. The siren sound is not merely an acoustic phenomenon; it is also a portion of my sonic knowledge, an internalized admixture of sensory experiences and subjective interpretations. As listeners bounce new sounds off past experiences to (re)create meaning, they simultaneously establish personal archives of sonic knowledge and a collective, social archive, as well. I was surprised to find that a quick Google search of “Paris air raid sirens” yields dozens of reflections on this aural experience, particularly by nonnative Parisians, who share my affective reaction to the eerie sound. This relational process of listening and hearing underlies what ethnomusicologist Steven Feld has called *acoustemologies*, or *acoustic epistemologies*: “the agency of knowing the world through sound.”¹ Feld continually highlights how sensuous local knowledge constitutes *acoustemologies*; he writes, “The world sonified is the world known, the world felt, the world performed.”² Humans know, feel, and perform the world in historically and culturally specific ways, in both individual and collective capacities.

The growth of sound studies has fueled an initiative to approach the distant past through sound. Scholarship across disciplines has begun to investigate how a sonic framework can reveal new insights into history. The first step to this research is often a material reconstruction of historical soundscapes, and scholars have turned toward digital technologies to replicate a diversity of sounds that until recently were considered lost.³ Currently, this digital methodology tends to stop at the material. Scholars of audible history have hardly experimented with the soft side of digital media, which offers promising formats to exhibit the meanings that have been attached to sounds throughout history. Digital approaches to these more subjective facets of sound might transform acoustic reconstructions from distant sonic artifacts to intimate sonic experiences, and also challenge how scholars traditionally present their primary and archival sources. Digital formats not only simulate the process by which sentient beings constitute *acoustemologies* in everyday life, but they can also uncover the methodological and theoretical implications of academic publication formats. A turn to diverse media in the presentation of audible history will encourage a vital rethinking of the performance of archival research as well as scholarly production and reception. This turn might force scholars to rethink the underlying

assumptions of their work, while also inviting broader audiences into the reenactment of historical acoustemologies.

Recording, Recovery, Replication, Reenactment

Despite its lack of sound recordings, the pre-recording-technology archive does not lack a historical record of sound.⁴ Like Eugene Smith's ever-running loft tape, brittle documents, chipped objects, and crumbling architecture uniquely capture sound as a testament to life, life that sounded even before mechanical reproduction could fully capture it. But accusations of inauthenticity and anachronism may await digital projects representing such artifacts through twenty-first-century technologies. Past debates within history and musicology, two of audible history's parent fields, forewarn such scholarly derision. A prevalent distrust of reenactment—the re-creation of historical events in the present—pervades the discipline of history, where the practice has a popular rather than critical connotation.⁵ Conversely, the field of music known as historically informed performance (HIP) uses period instruments, past performance techniques, and contemporaneous treatises to re-create in minute detail historically accurate performances of pre-recording-technology compositions. After disciplinary growing pains in the 1980s and 1990s, critics today rarely bother to condemn the authenticity of HIP scholars' research, which is generally considered, at least among musicologists, as commensurate to a historian interpreting archival documents and artifacts.⁶ Somehow, historical performance practitioners dodge the lowbrow label of musicological "reenactors." The predecessors of audible history, history and musicology, have the potential to cast a shadow over still-nascent digital approaches to the field. Although an entire subdiscipline of music is dedicated to the precise replication of historical music, the re-creation of sound more generally might amount to mere philistine reenactment. Lest we forget, the other roots of audible history, by way of sound studies, are grounded in anthropology and ethnomusicology, the two closely related disciplines that gave birth to Feld's concept of acoustemologies. The dependence of anthropology and ethnomusicology on field recordings engenders sound as a serious object of study and mode of analysis. This intellectual breakthrough is unlikely to have taken place without the possibility of recording technology, just as HIP's obsession with historically faithful performances is unlikely to have developed without the possibility

of infinitely repeatable musical recordings. Technology that has facilitated such fruitful methods should not be dismissed as somehow foreign to historical research.⁷

Nonetheless, methods of audible history that privilege recording technology inappropriately would indeed emphasize the twenty-first-century values that equate sound preservation with physical capture. Nonsonic media provide alternative modes of listening and hearing that might produce fresh perspectives and complement the points of audition located in speakers or headphones. Rather than favor any one technology to re-create so-called authentic sounds, an acknowledgment of how all technologies mediate sound—from musical notation to MP3s—will prove more generative. A critical stance toward the role of recording in audible history does not preclude digital methods; to the contrary, it calls for them. Digital methods grant diverse means of interaction with historical materials through formats that simulate how auditioning subjects acquired sonic knowledge in the past. The mobilization of diverse media in the pursuit of historical sounds will open up the possibilities of the pre-recording-technology archive, just as recording technology revolutionized research in anthropology, ethnomusicology, and musicology.

A lack of traditional sonic records such as field recordings in the archive inevitably concerns scholars of digital audible history. Earwitness accounts provide a bulk of pre-recording-technology sources, including reports of complaints about noise, writings by travelers who recount new acoustic surroundings, and descriptions of musical performances and other sonic events. Earwitnesses not only provide descriptive source material but also explanations of how people listened to and interpreted sound. Images, too, offer vital sources and interpretations of sound, depicting objects, technologies, spaces, and living beings that all contributed to the acoustics and soundscape of a particular time and place. Contemporaneous material culture and architecture contribute vital information for the recovery of soundscapes through acoustic and architectural modeling. Scholars of audible history may feel anxiety about the forms their sources take in comparison to sound recordings; even so, they boast a trove of evidence from which to recover ostensibly lost sounds.

Acoustics, Soundscapes, Audition

Similar to its textual counterpart, digital audible history scholarship tends to fall within three overlapping categories: acoustics, soundscapes, and audition. The three categories build on one another, with soundscapes serving as a vertex where scientific acoustics and subjective audition meet. Acoustics reconstruct the sound of historical spaces quite accurately with the help of acoustic and architectural modeling, while soundscapes push beyond acoustics to include the objects and beings that populate historical spaces. Audition then incorporates not only histories of listening but also histories of the corporeality of hearing and the cerebral processes by which humans attach meaning to sound.⁸ In the footsteps of R. Murray Schafer, who first articulated the concept of historical earwitness accounts, scholars have built on his work to consider the subjectivity of such sources—like my opening anecdote—and by extension, the subjectivity of the auditory.⁹ Of course, the two avenues of sounding environment and auditioning subject are rarely discrete, and the most compelling audible histories often lie at their intersection.¹⁰ The distinction between acoustic space as material and quantifiable and soundscape as listener-centric has been refined in the field of archaeoacoustics, which generally considers acoustic space as an entity that can be modeled and analyzed and soundscape as constructed, at least in part, through listeners' experiences.¹¹ Thus, although soundscapes can be partially reconstructed through acoustics, the listener's agency in the constitution of soundscapes remains crucial—an assertion that rests at the heart of Feld's definition of acoustemologies, as well. A brief review of two digital audible history projects illustrates these generalizations about the nascent field.

English professor John N. Wall led the cross-disciplinary team of researchers (from North Carolina State University; Cambridge, Massachusetts; and London) who created the Virtual Paul's Cross Project, "A Digital Re-creation of John Donne's Gunpowder Day Sermon." The team used architectural modeling and acoustic simulation software to reconstruct the performance of John Donne's Gunpowder Day sermon, which was scheduled to take place at the St. Paul's Cathedral Churchyard on November 5, 1622, but took place indoors instead due to inclement weather.¹² Using digital tools typically employed to predict how sound will interact with space, the Virtual Paul's Cross Project combines architectural, environmental, performative, and social factors to reconstruct the experience of Donne's famous speech. In addition to considering the architectural and acoustic

features of the churchyard space, project participants also worked closely with experts on seventeenth-century oration and John Donne. The project culminated with an installation at the North Carolina State campus in Raleigh, which immersed visitors in a 270-degree, wraparound image of St. Paul's Churchyard, as reconstructed by visualization software, while audio clips from twenty-one speakers broadcast what listeners might have experienced during Donne's outdoor sermons. Because the churchyard was later destroyed by fire in 1666 and the speech never took place outdoors, the project replicates the performance context as it could have been rather than as a precise replica of a sonic event from history. This approach evades the issue of historical authenticity and shifts focus instead to acoustic factors in the reception of an improvisational performance genre that existed before recording technology. The team specifically chose the Gunpowder Day sermon because it is one of the few Donne sermons to be transcribed soon after its delivery. The project goal was not to perfectly replicate a specific Donne speech but to synthesize acoustic and historical evidence toward a replication of the seventeenth-century London soundscape in which listeners experienced Donne's many sermons.

The project website offers practical, methodological, and theoretical considerations that informed the team's research, as well as sample audiovisual clips from the installation. The clips place visitors in eight different points of audition throughout the churchyard and feature varying crowd sizes from five hundred to five thousand listeners. For example, site visitors can choose to experience how the sermon would have sounded from behind the preaching station in a crowd of twelve hundred people. Along with the speech read by a specialist of seventeenth-century oration, listeners hear crowd noise, birdcalls, and dogs barking—the acoustic environment that might have surrounded Donne's performances and that would have constituted the acoustic environment of courtyard sermons. The website contextualizes this soundscape through textual descriptions of seventeenth-century sermon practices, Donne's personal style of speech delivery, and the historical and political climate of the Gunpowder Day sermon.

This project contributes an intellectually rigorous reconstruction of a historical soundscape to the field of digital audible history and achieves a variety of scholarly goals.¹³ The project creators summarize the outcomes of their endeavor as a reestablishment of the relationship between lost structures and spaces, a presentation of quantitative information that corrects interpretive earwitness accounts, a simulation of how a nonrecorded performance took place in space through time, and a demonstration of how

place and space affect both communication and performance.¹⁴ The project coordinators conclude that the final product has made “the Paul’s Cross sermon the subject of reflection precisely as a situated experience, a communal and participatory experience, unfolding interactively in real time and in a specific place, under specific conditions of weather, season, and urban environment.”¹⁵ Ideally, this would be the accomplishment of any digital audible history endeavor—to use sound as a way to historically and culturally situate a sonic experience or context for modern listeners.

The challenge remains to bring modern listeners into this experience as active earwitnesses to the courtyard sermons. Indeed, the project website admits that the installation presents only one side of an interactive historical performance, and the project’s insistence on “correcting” seventeenth-century accounts seems to distrust the experience conveyed by earwitnesses. Research on oration practices and acoustics permits an informed replica of Donne’s sermon soundscape; however, a reenactment approach to the soundscape would further guide modern listeners to consider the historical auditioning subject within the replication. The “Donne Interacting” page of the project website begins to work toward such engagement through descriptions of how Donne would have interacted with his audience, as well as how particular aspects of his speech and its acoustic context would have stimulated audience participation.¹⁶ Although the project team considers the demonstration of how the sermon unfolded “interactively” as one of its achievements, the form of the Virtual Paul’s Cross Project prompts twenty-first-century listeners to passively absorb seventeenth-century audition through textual marginalia rather than active sensory engagement.

Historian Emily Thompson’s “The Roaring Twenties: An Interactive Exploration of the Historical Soundscape of New York City” offers an example of how digital audible history scholarship might encourage modern listeners to actively engage with historical audition.¹⁷ The online project presents primary sources and archival materials about noise complaints and violations in early-twentieth-century New York City. The historical materials include everything from official noise complaints submitted to city governance to newsreels that portray the cacophonous New York City soundscape. Since recording technologies were at the cusp of booming during this period, the project also includes some contemporaneous films and sound recordings, although most materials are textual. Historical documentation of what New Yorkers considered noise—a contingent social category—situates these auditioning subjects in their historical acoustemology. In contrast to the Virtual Paul’s Cross Project, which emphasizes the replication of a sound-

scape, “The Roaring Twenties” focuses primarily on how people heard, interpreted, contributed to, and reacted to their local soundscape.

Although Thompson’s project is rooted in an era during which recording technology began to flourish, it offers insight into potential digital approaches to pre-recording-technology archives. The design of the project, produced in collaboration with web designer Scott Mahoney, offers three modes to explore the historical materials gathered by Thompson: sound, space, and time. Through the “sound” mode, visitors can sift through the materials categorically by types of sound: for example, sounds of traffic, transportation, or the home. If visitors choose to engage the materials through “space,” the documents and clips appear charted on a 1933 map of New York City. Through “time,” the materials are plotted chronologically on a timeline. Online visitors can choose their preferred mode to navigate through Thompson’s vast amount of historical materials, or they can engage the materials from a variety of perspectives—categorically, spatially, and temporally—to acclimatize themselves to the acoustemology of 1920s New York City. The materials presented in the digital project were presented in a more traditional academic format in Thompson’s book *The Soundscape of Modernity*.¹⁸ Rather than interpreting materials for a reader and presenting them in a predetermined, written format, the digital project grants visitors the agency to choose an approach and to participate in the work of historicizing sound. By implicating the visitor in both the replication and reenactment of sonic artifacts, Thompson achieves a sophisticated balance among acoustics, soundscapes, and audition that does not excessively depend on recordings. Unlike the Virtual Paul’s Cross Project, which foregrounds replication, Thompson’s approach insists upon the historicization of sound. Digital audible history here is not merely a replication of sounds but also a reanimation of historical acoustemologies. The online format grants modern listeners an opportunity to explore materials that attest to audition, mimicking the experiential, nonlinear process by which humans accrue sonic knowledge in reality. As social practices, hearing and listening are constituted across two axes—physical experience of material reality and psychological interpretation of those physical experiences.¹⁹ In dialogue, the Virtual Paul’s Cross Project and “The Roaring Twenties” exemplify how digital audible history can transform historical audition for modern listeners from a mere sonic event into a sonic experience through both replication and reenactment.

Digital Approaches to Historical Acoustemologies

My contribution to the web collection “*Provoke!*, Organs of the Soul: Sonic Networks in Eighteenth-Century Paris” takes an audition-focused approach to digital audible history.²⁰ Published on Scalar, a born-digital, open-access scholarly publishing platform, “Organs of the Soul” connects descriptions, depictions, and transcriptions of sound found in archival and primary source documents from eighteenth-century Paris through thematic narrative pathways and subject tags. Visitors can choose to follow the paths “voice,” “music,” or “sound” throughout the project, or they can browse materials by more detailed tags, such as *Encyclopédie*, Rousseau, or popular song. The project streamlines diverse media on eighteenth-century Paris available across the internet—from digitized document collections on scholarly websites such as Gallica to musical recordings and videos on social media like YouTube. Connections among these sonic artifacts aim to demonstrate how sound performed, transmitted, and created knowledge in eighteenth-century Paris. Many of the pages are narrated in my own voice to make transparent the position of historians as only one of many mediators in the construction of audible history and to bring audition from textual marginalia and into the haptic experience of the project.

By allowing sonic artifacts to interact with one another, “Organs of the Soul,” like “The Roaring Twenties,” attempts to re-create a web of sonic knowledge that would have constituted the historical acoustemology of auditioning subjects in eighteenth-century Paris. The “Organs of the Soul” paths begin with excerpts from the *Encyclopédie*, a contemporaneous publication that offers widely accepted definitions of various subjects in eighteenth-century France. To imagine the sound of a voice through eighteenth-century French ears, one must first understand how contemporaries would have defined it, and so the voice path, for example, begins with a mid-eighteenth-century French definition of voice. The project reveals how many definitions of “voice” coexisted during this period, including a firm distinction between “the people’s voice” (a consensus) versus “the public voice” (inarticulate noise of the masses). This information nuances our understanding of an earwitness account that describes a swelling public voice. Although our twenty-first-century sensibilities might interpret such a description as a positive, democratic sentiment, the *Encyclopédie* definition elucidates that the phrase actually describes popular complaints as insignificant babble.

It is challenging to convey the historical and cultural specificity of sonic experience in a way that invites audiences to actively engage with sound-

scape replicas. The siren anecdote that opens this chapter demonstrates the necessity of combining two digital approaches—on the one hand, the scientific reconstruction of acoustics and soundscapes, and on the other, contextualization of auditioning subjects within soundscapes. A problem of quietness persists in the “Organs of the Soul” project. It does not recreate as much as it attempts to describe the sonic reality of eighteenth-century Paris. Ideally, such projects would integrate the remarkable immersive and haptic achievements of historical aural augmented reality projects such as the Virtual Paul’s Cross Project with the historicization of sound found in “The Roaring Twenties.”²¹ Such projects would require teams of specialists from across disciplines that could cooperate toward sonified replication and reenactment. Shawn Graham and his cohort note that the problem with aural augmented reality projects remains how to bring visitors to hear in a historically situated way.²² Though ruptures between contemporary and historical understanding can elicit productive cognitive dissonances, “Organs of the Soul” demonstrates that the kind of information necessary to attempt historically situated listening lurks in past forms of recording technology including archival documents, musical notation, and surviving objects and architectural structures. The question becomes: How can scholars sonify this information and present it in a format that welcomes visitors into the reenactment of historical acoustemologies?

The *Projet Bretez*, an interinstitutional team of scholars and engineers across France led by musicologist Mylène Pardoën, provides the replica that complements my quest for eighteenth-century Parisian audition presented in “Organs of the Soul.”²³ A historical aural augmented reality project inspired by the experience of video games, *Bretez* reconstitutes, in great detail, a sound walk through the *Châtelet* area of 1730s Paris, and eventually the project will be installed for public view.²⁴ The team also hopes to develop the installation into an immersion room, make it accessible through virtual reality goggles, and create an application for tablets and smartphones. Project leader Pardoën identifies two goals of *Projet Bretez*: to recuperate the material dimension of sounds from the past and to create an augmented reality of quotidian sound.²⁵ At first, *Bretez* visitors hear only their own breath and footsteps, as they peruse a map of 1730s Paris, then, as they enter into the streets, their ears are filled with sounds of crowd commotion, tavern music, birds cawing, and water dripping, while they walk past exacting replicas of buildings that once stood on and around the bridges that cross the *Seine*. In the spirit of augmented reality, visitors are supposed to experience 1730s Paris not through an avatar but as themselves. Sounds for the project

were recuperated from earwitness testimonies, maps, and drawings, among other historical sources, and replicated through the use of period objects and machines. Through careful acoustic modeling work, engineers are currently developing reverberation and echoes true to the architectural spaces in which the visitor is immersed.

Historical aural augmented reality projects aim to create productive dissonances between the past and the present by presenting familiar experiences that visitors can grasp while also pushing against their modern assumptions.²⁶ The common experience of bustling city street life serves as modern listeners' entry point into this eighteenth-century simulation. As Pardoen explains, even today we are familiar with the density and collective experience of city life, and it is this common point of reference between past and present that should facilitate interaction with the project.²⁷ Despite the sound of crowds heard throughout the walk, Bretez does not visualize eighteenth-century people for both practical and intellectual reasons. The creation of numerous individuals to inhabit the project space would require a significant logistical undertaking, and a crowded virtual landscape could slow communication between servers and devices when the project ultimately becomes a tablet and smartphone application. It would also be impossible to create the physical sensation of a crowd to corroborate the sonic and visual representation. To justify this decision, Pardoen notes that people tend to walk in a city with their eyes lowered, hearing their environment while not particularly regarding it.²⁸ Thus, an attempt to block out fellow city dwellers should function as one of the commonalities between eighteenth-century and modern urban walks. Most interesting, though, Pardoen explains that if people were included in the virtual landscape, careful consideration would have to be given to how the eighteenth-century French language sounded, and the team feels that too many questions linger on this issue to confidently include discernable speech.²⁹

The Bretez team's insistence on fidelity to past sounds and its distrust of auditioning subjects resonates with the parameters of the Virtual Paul's Cross Project. While recuperating historical sounds, the Bretez team attempted to distinguish objective descriptions of sound provided by eighteenth-century earwitness accounts from the sentiments or interpretations expressed by those auditioning subjects about their sonic experiences. In addition to invisible people, scholars of eighteenth-century France will note a salient lack of bells in the Paris sound walk. On a practical level, because the project is currently meant as a prototype for museums, the team avoided the incorporation of sounds above a certain decibel level in consideration

of museum employees who would listen to the project on repeat. From an academic perspective, though, Pardoen felt that the inclusion of bells would require an explanation of the language of bells, an issue she believes would concern scholars more than museum visitors and the general public.³⁰ In essence, bells might alienate modern listeners from the commonality achieved through the concept of a city walk. If the Bretez team introduced bells into their replication, they would be forced to confront auditioning subjects, who offer the key to understanding this historical sonic marker. A similar concern motivates the two pages in “Organs of the Soul” that address the language of bells and describe both the significance of bells in eighteenth-century French communities and the revolutionary context that resulted in the confiscation of these sonic markers.³¹ Pioneering historical work by Alain Corbin has shown that bells delimited time and space in a way that was crucial to everyday French life before the revolution.³² Ideally, a digital audible history project could present the language of bells not as textual marginalia, as it is presented in “Organs of the Soul,” but within the context of a soundscape replication like *Projet Bretez*. Though Bretez shares my interest in historical audition, its conviction to faithfully excavate past sounds necessitates that emotions attached to sounds be parsed out from the recovery of sensorial experience.

When earwitness subjectivity—and perhaps even mishearing—is siphoned off during the excavation of past sounds, digital audible history projects miss an opportunity to create dialogue between historical auditioning subjects and modern listeners. To return to a previous example, the siren stories would be far less compelling without my own experience elucidating them. A desire to facilitate transhistorical communication motivated the podcasts found on the “music” path of “Organs of the Soul.”³³ The podcasts present eighteenth-century Parisian debates about the merits of French and Italian opera from various historical perspectives, including those of composers, men of letters, salon women, and the royal family. The podcasts were the result of a semester-long master’s seminar I taught titled *Quarrelling about Opera in Eighteenth-Century France*. The conception and production of the project were completely in the hands of music graduate students in my course who carefully studied academic sources on the topic. Narrators in the podcasts speak in the present tense, and so the podcasts are a type of historical reenactment presented through a twenty-first-century medium. Music illustrates well how modern listeners assume they understand a sonic experience merely because it exists in both the past and the present, even though modern ears could not possibly hear the political, social, and cul-

tural debates that underpin, for example, eighteenth-century descriptions of Italian music as spicy or French music as refined. Listeners in eighteenth-century Paris, like listeners in any time and place, experienced music within a unique context. As Bretez takes the familiar experience of collective city life as its point of entry, the podcasts employ a familiar medium to present historical arguments in an engaging, haptic form. Podcasts tune modern listeners to current news and debates, and in this case to contemporaneous issues in eighteenth-century Paris. Of course, the podcast reenactments required creative liberties—silly accents to help the listener distinguish between a complicated cast of characters, background noise to create space in the listener's mind, and invented characters to develop a straightforward and entertaining narrative. These liberties, however, do not detract from the careful academic research and debate that produced these podcasts, evinced by the traditional “footnotes” that annotate the podcasts. A modern listener can acquire from the podcasts the sonic knowledge that informed how eighteenth-century auditioning subjects in Paris experienced opera. The podcasts might be critiqued as historical fiction, but even so, they offer a solution to pulling historical acoustemologies from the textual marginalia and into modern sensory experience.

As I write this, I watch a little girl playing in a park sandbox. Her mother holds a tiny sifter, demonstrating how to strain the sand and to search for objects. On the most palpable level of experience, the child is merely playing. Developmentally, though, she is learning to use a tool, to search systematically, and to evaluate objects. The metaphor here for my vision of digital audible history is both fortuitous and striking—both academics and the public should enjoy opportunities to “get dirty” and “hold the sifter” during the digital excavation of historical acoustemologies.³⁴ Each group will take away different knowledge from the process, of course, but these audiences need not be relegated to separate sandboxes. Admittedly, institutional silos cause some roadblocks to this kind of inclusive scholarship because massive projects like Bretez, for example, require significant funding. A flow chart depicting the transdisciplinary actors and tools that make up *Projet Bretez* includes scholars from four humanistic disciplines; web developers; information scientists; experts in urban studies, geography, and archaeology; and innumerable digital platforms and providers of technological support. To successfully obtain funding for such complex projects, grant writers must often make a case for the widest possible impact. In these public iterations, academic considerations might be sidelined in the final product. This false dichotomy between the public and the academic also rests at the

heart of the authenticity and reenactment issues that I raised previously. The troubling underside of those debates assumes that the public cannot think and that academics cannot play. Digital audible history might breach this barrier and invite the public to engage more critically in the recovery of history and allow academics to immerse themselves in the reenactment of sources. Such a conceptual shift would require funding institutions to reconsider the rigid definition of audiences that is often required by grant applications. Subsequently, universities would need to reconsider the kinds of scholarship that support tenure and promotion cases.

The strength of digital audible history rests in its ability both to foreground sounds recovered from the past and to simulate knowledge carried within, around, and among sounds from a particular time and place. In the twenty-first century we cannot comprehend the word “citizenship” with eighteenth-century minds, but we can work toward an understanding of eighteenth-century conceptions of “citizenship.” Just as scholars reconstruct concepts around words before interpreting them historically, concepts around sounds must be reconstructed before we can understand how they were heard. Digital audible history should not only recover and reconstruct sounds, but, more importantly, it should also reanimate historical acoustemologies. Anxieties about inauthenticity and anachronism in digital audible history reveal how traditional academic formats like books and articles also mediate historical material, demanding that scholars confront themselves as a medium, as well. The materiality of digital formats demands reflection upon how writing has also both facilitated and obscured our insight into the past, and how archival research is a contingent practice performed within an institutionalized set of discourses that can never holistically or authoritatively represent historical experience. The challenges of digital audible history reveal the extent to which methodological and theoretical assumptions rest in the very form of scholarship. Therefore, the digital reconfiguration of sonic artifacts, which sometimes performs and reenacts archival materials, should not be considered inauthentic or anachronistic. Rather, it should be understood as an effort to engage past auditioning subjects in the present to create a new archive for the future.³⁵ One might ask what digital audible history is *for*. Digital audible history both recovers past sounds and reanimates past acoustemologies. This goal requires not only replicas, which imply a distanced, museum-like regard, but also reenactment, which implicates and engages both the scholar and her audiences in confrontations with historical acoustemologies.

NOTES

- 1 Feld, *Jazz Cosmopolitanism*, 49, and “Acoustemology.”
- 2 Feld, *Jazz Cosmopolitanism*, 131.
- 3 These methods have particularly flourished in the subfield of archaeology called archaeoacoustics. Researchers have worked toward establishing stricter methodologies; see, for example, Debertolis et al., “Research for an Archaeoacoustics Standard.” High-profile projects that have stemmed from the field include a reconstruction of the sound of Stonehenge (Till et al., *Sounds of Stonehenge*). Archaeoacoustic research has been used to develop aural augmented reality apps, which enhance modern experiences of historical or ancient sites. For example, an iPhone app developed in consultation with Till’s team displays what Stonehenge would have looked like as visitors walk around the site, and, through headphones, plays reconstructions of the stones’ echoes in various locations. Shawn Graham et al. explore recent work in the field of archaeoacoustics in “Hearing the Past.”
- 4 I specify the term “pre-recording-technology” to denote time periods for which we have no sound recordings such as vinyl records, films, tapes, compact discs, etc., within the archive. I chose this term as opposed to “pre-mechanical reproduction,” which could encompass much earlier technologies such as the printing press, barrel-pin plates, and more.
- 5 In a panel on “Embodying the Past: The Rewards and Risks of Reenactment,” convened at the 2014 annual meeting of the American Society for Eighteenth-Century Studies (fittingly held in Williamsburg, Virginia—a Mecca of living history), panelists and audience members engaged in a fruitful dialogue about the anxieties and challenges faced by eighteenth-century scholars who support or participate in reenactment as a means of academic inquiry. The discussion became a type of group therapy in which scholars “came out” as believers or participators in living history—embodying the past in the present.

Schneider’s *Performing Remains* astutely reveals the tangible historical work that reenactment, and specifically reenactments of Civil War battles, achieves. She asserts that reenactors “engage in this activity as a way of accessing what they feel the documentary evidence upon which they rely misses—that is, live experience” (10). This emphasis on live experience becomes paramount in time-based art, or historical evidence that is considered ephemeral (for example, sound or music). Schneider concludes that in its desire to preserve the ostensible purity of written archival traces, mimesis becomes debased as a means of accessing the past. Conversely, the performance of the past, of these archival traces, in the present negotiates a new archive for the future that is not solely dependent upon a monomaniacal belief in the written (silent) archive as authoritative.

- 6 For background on debates that surrounded historically informed performance practice during the 1980s and 90s in the discipline of musicology, see Butt, *Play with History*, 3–52.
- 7 Brady, *Spiral Way*.
- 8 Erlmann, *Reason and Resonance*; Johnson, *Listening in Paris*; Nancy, *Listening*; Szendy, *Listen*.
- 9 Schafer, *Soundscape*, 8–9; see also Rodaway, *Sensuous Geographies*.
- 10 Corbin, *Village Bells*; M. Smith, *Listening to Nineteenth-Century America*; M. Smith, *Hearing History*; B. Smith, *Acoustic World*; Thompson, *Soundscape of Modernity*; Rath, *How Early America Sounded*; Birdsall, *Nazi Soundscapes*; and Ochoa Gautier, *Aurality*.
- 11 The distinction between acoustic space and soundscapes is set forth in Mlekuz, “Listening to Landscapes.”
- 12 Virtual Paul’s Cross Project. Articles by Wall resulting from the project include “Transforming the Object of our Study,” “Recovering Lost Acoustic Spaces,” and “Virtual Paul’s Cross.”
- 13 I use the term “intellectually rigorous” because the Paul’s Cross team applied principles from the London Charter for the Computer-based Visualization of Cultural Heritage to acoustic realizations and modeling, although analogous standards for such acoustic projects do not yet exist. The London charter establishes “internationally recognised principles for the use of computer-based visualisation by researchers, educators and cultural heritage organisations.” The full text can be found at www.londoncharter.org (accessed November 28, 2017).
- 14 Blesser, *Spaces Speak, Are You Listening?*
- 15 Virtual Paul’s Cross Project. “Outcomes.” Accessed November 28, 2017. <http://vpcp.chass.ncsu.edu/outcomes>.
- 16 Virtual Paul’s Cross Project. “The Interactive Sermon.” Accessed November 28, 2017. <http://vpcp.chass.ncsu.edu/listen-interaction>.
- 17 Thompson, “The Roaring Twenties.”
- 18 Thompson, *Soundscape of Modernity*.
- 19 See, for example, Johnson, *Listening in Paris*; Nancy, *Listening*; and Szendy, *Listen*.
- 20 Geoffroy-Schwinden, “Organs of the Soul.”
- 21 See Graham et al., “Hearing the Past.”
- 22 Graham et al., “Hearing the Past.”
- 23 Bretez Site Officiel.
- 24 A prototype of the project on YouTube can be found through Cailloce, “Écoutez le Paris du XVIIIe siècle.”
- 25 Mylène Pardoën (principal investigator), personal communication with the author, June 21, 2016.
- 26 Graham et al., “Hearing the Past,” describe the concept as “breaks” that focus a participant’s attention. For example, when visitors experience the Bretez Project in Châtelet, they will likely be struck by the discordance between

the simulation and their modern experience of Châtelet, and in turn, this should cause visitors to focus more thoughtfully on histories of their current surroundings.

- 27 Pardoën, personal communication with the author, June 21, 2016.
- 28 Pardoën, personal communication with the author, June 21, 2016.
- 29 Pardoën personal communication with the author, June 21, 2016; and Pardoën, email message to author, June 24, 2016.
- 30 Pardoën, personal communication with the author, June 21, 2016, and Pardoën, email message to author. On the language of bells in eighteenth- and nineteenth-century France, see Corbin, *Village Bells*.
- 31 Geoffroy-Schwinden, "Organs of the Soul: Sound," 5, 6.
- 32 Corbin, *Village Bells*; also see note 10 above.
- 33 Geoffroy-Schwinden, "Organs of the Soul: Music," 2.
- 34 In an interview with Gita Manaktala, Thompson articulated a similar goal for "The Roaring Twenties." Manaktala, "Aural History on the Web."
- 35 Schneider, *Performing Remains*; also see note 5 above.

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