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# Learning from “The Sounding Object”: Sound Design in the Critical Reimagining of Museum Object Narratives

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## Introduction: Critical Sound Design

Think of the term “sound design.” What immediately and conventionally might spring to mind is sound for film or for advertising, or maybe practical considerations around the acoustics of a space. The interweaving of sound and design, however, goes far beyond this. Sound is an often underappreciated part of countless areas of design: It is integral not only to traditional audiovisual forms, such as game design, but also to furniture, product, and exhibition design. Nevertheless, sound has received limited attention within design scholarship, other than the attention received within research on architecture and the built environment.<sup>1</sup> When sound is considered as an aspect of design, it frequently has been with a view to making an object or experience sound “better,” more “pleasant,” or, as these adjectives often entail, quieter. This approach to sound ducks larger questions, such as “*what is the criteria for better?*” and “*better for whom?*”; and it also limits the potential agency of sound in design. Sound design, in an expanded sense, can open up the roles that sound has to play within design practices as a critical tool—particularly in experience and communication design. As something that is fleeting but that also is physical and spatial, felt in the body, and connected to concepts and politics of the voice, vocality, and memory, sound is suited for prompting questions, for destabilizing that which is thought to be stable, and for re-examining what we think we know.

This article elaborates on this expanded idea of sound design through an exploration of sound in a specific context, the museum. Here, it can serve as a powerful design tool for developing critical narratives. We take the case of a research-based pedagogical project, “The Sounding Object,” that brought together sound design, history, and critical museology. The project focused specifically on designed objects in museums, and on how sound design can help to generate and communicate histories of designed artifacts that center on contingency, subjectivity, embodiment, and the polyvocal.

Our approach to sound design draws on a more fine-grained, critical understanding of sound within design practices. The recent work of designer and researcher Amina Abbas-Nazari, who explores future implications of communication technologies, is an example. Her “Acoustic Ecology of an AI System” uses synthesized AI voices to “critique and contemplate the use of synthesized voices, how we design and implement them.”<sup>2</sup> Research on sound design as a critical practice includes Pedro Vieira de Oliveira’s proposition for a form of decolonized speculative design: This perspective can “craft narratives that theorize and produce new knowledge through listening practices,” inspired by the “sonic fictions” of theorist Kodwo Eshun.<sup>3</sup> We build on a conceptualization of sound design developed in the Information Experience Design (IED) Master’s program at the Royal College of Art, which was headed at the time by Kevin Walker (IED is the program that hosted the pedagogical project discussed in this article). The program’s Sound Design Pathway, which was led by Matt Lewis, “focus[ed] on sound as a social

phenomenon in theory and practice... de-coupling and re-imagining sound and design— contextualising sound within the practice of experimental design.”<sup>4</sup> In doing so, the program acknowledged the multifarious ways that sound design acts in the world (including in forms of behavioral control and warfare), thus disrupting the idea that sound might be a neutral force. This approach to sound design draws on a range of creative sonic practices, both from within and beyond the areas generally considered “design,” including those aligned with sound art. It builds on perspectives from fields and disciplines that include sound studies, as well as spatial, communication, and experience design.

## **Polyphony and Museums**

“The time of museums merely displaying silent artifacts is clearly over,” wrote historian and sound studies scholar Karin Bijsterveld in 2015.<sup>5</sup> Recent shifts in thinking around the “multisensory” museum offer great potential to explore sound in relation to the design of museum experiences. In particular, how can sound design play a role in shifting how objects are interpreted, narrativized, and interacted with? However, the modern museum in the Euro-American tradition remains entrenched in colonialist hierarchies of knowledge and the senses, and the convention of the silent, visually centered experience represents one of the ways that these models persist.<sup>6</sup>

Since 2019, the International Council of Museums (ICOM) has undergone a tumultuous process of revisiting the definition of museums, and its effects are still unpredictable. During ICOM’s general conference in Kyoto, Japan, a proposed definition was hotly debated and finally rejected, on the basis that what were seen as the museum’s traditional core values (i.e., collecting, conserving, and displaying material artifacts for purposes of research and education) were deemed to be overshadowed by aims “to contribute to human dignity and social justice, global equality and planetary wellbeing.” But perhaps what was seen as the most controversial part of this proposed definition was its initial sentence, in which museums were described as “democratizing, inclusive and polyphonic spaces for critical dialogue about the pasts and the futures.”<sup>7</sup>

In the proposed definition, polyphonic—a musical term—was felt to be most alien to museum culture. Strangely enough, critics did not object (or objected less) to the term dialogue, and even critical, whereas a critical dialogue necessarily implies some form of polyphony, in which each voice maintains its independence. In using the word polyphonic, the authors of this proposed definition probably had in mind the connected term counterpoint, used by Edward Said, where “various themes play off one another, with only a provisional privilege being given to any particular one; yet in the resulting polyphony there is concert and order, an organized interplay that derives from the themes.”<sup>8</sup>

Underlying this refusal of a “polyphonic” museum is a somewhat unconscious distrust of sound, seen as a disturbing, uncontrollable, and unstable nuisance within the silent and reverential museum space, which was created for and by the objectifying gaze. Indeed, sound—the movement of air in the form of waves—has an intrinsic instability that provides agency for discrepancy, polyvocality, dissonance, and even resistance. Brandon LaBelle writes:

Audition is lived as a process of constant agitation, a fluctuation by which we learn of the temporality and ephemerality of bodies and things. Sound is never permanent or immutable; rather, it carries the conditions of ambiguity and fluctuation, as a force of

oscillation that requires of us continual psychic labor: to find or construct meaningful points of support through the pleasures of hearing while navigating the ruptures and fragmentation the audible imparts or produces.<sup>9</sup>

Thinking about sound design in museums fits into the broader scheme of the multisensory museum, which challenges visual bias and is supported by recent findings in neuroscience. These findings reveal the collaborative—versus competitive—nature of sensorial perception, whereby, for instance, “sound facilitates visual learning.”<sup>10</sup> Yet, even multisensory current trends in museums devote only minimal attention to the sense of hearing.<sup>11</sup>

Research on sound in museums remains quite fragmentary. We have seen studies on the emergence of sound art in museums and of music exhibitions<sup>12</sup>; only recently have the acoustic properties of museum spaces or the acoustic horizons created by audio guides been discussed.<sup>13</sup> Sound in museums has begun to receive attention as an avenue for enhancing embodied learning or developing a “sense of immediacy and participation” among audiences.<sup>14</sup> A more comprehensive approach to the multifarious presence of sound in museums was published in 2019, in a special issue of *Curator: The Museum Journal*, co-edited by Eric de Visscher and Kathleen Wiens. It includes consideration of the inclusive design of sound in museums, as design researcher William Renel points to the “structural barriers posed to museum patrons when content is presented through monomodal interfaces.”<sup>15</sup> In terms of sound design’s contribution to public historical narratives, Julia T.S. Binter’s research is notable for making an early contribution to sonic agency in the context of museum decolonization. She investigates how the use of archival audio recordings of oral accounts in museum exhibitions can address colonial histories and resist the “colonial aphasia” that afflicts many European museums.<sup>16</sup>

The ongoing discourse on sound in the museum has much to offer those who communicate histories of designed objects. The communication of histories of design in both research and heritage contexts usually is confined to the textual and visual: the conventional academic publication and the silent untouchable museum object. However, some recent projects pilot multisensory and embodied epistemic approaches to research and communication. For example, design historians Sarah Cheang and Shehnaz Suterwalla have described their innovative approaches to decolonizing the fashion history curriculum through a “performative, polyvocal approach to design history”; their approach involves active explorations of positionality and processes of making as history-writing: “Through a combination of our DIY [zine making] and storytelling approaches, we developed alternative design history practices that were embodied and dialogic.”<sup>17</sup> Cheang and Suterwalla’s model shows how embodied approaches can operate hand-in-hand with critical historiographical work in design history research and pedagogy. Another example is “The Making and Knowing Project,” based at Columbia University’s Center for Science and Society, which deploys craft and laboratory practices as methods for research in the history of science and material culture. In addition, the “Encounters on the Shop Floor” research project, led by the Victoria and Albert Museum’s V&A Research Institute (VARI) in collaboration with Imperial College, explored tacit knowledge in the arts, humanities and medicine through hands-on practices. In design curation, the “The Senses: Design Beyond Vision” (2018) at New York’s Cooper Hewitt introduced stories of designed objects from angles of scent, tactility, and sound. London’s Design Museum also has invited multisensory engagement with design through “Sound in Mind: Yuri Suzuki” (2019–2020) and “Electronic: From Kraftwerk to The Chemical Brothers” (2020–2021).

Current approaches in design studies scholarship indicate the need for experimentation with the modes that public communication around designed objects can take. Contemporary design history offers the tools and approaches for understanding designed things (e.g., objects, experiences, systems, or interactions) as relational, historically contingent, and contested. How can we unsettle the object in the museum in the way that critical histories of these objects aim to do? A useful guiding question is: How can they emerge more strongly as “matters of concern”? Bruno Latour’s distinction between “matters of fact” and “matters of concern” refers to the contested and contingent nature of things that have been claimed to be facts, when viewed in terms of their “entanglements” and lived experiences.<sup>18</sup> Design scholars Leah Armstrong and Guy Julier brought up this very issue when discussing the impetus for the “Design Culture Salon” discussion series that ran at the V&A from 2012 to 2017. They write of the turn toward new ways of thinking about design beyond the “singularized object”:

As a strategizing tool, design cannot always be neatly captured in the vitrine and its evaluation does not always very easily give itself over to visual encounter alone. The latter can no longer accommodate the wider cognitive and discursive faculties design demands today. The presentation of the design object as an immutable “fact” has had to be challenged and new formats for it need to be consolidated.<sup>19</sup>

Now, as museums reassess their role following recent COVID closures, and amidst ongoing rethinking of museum narratives, as called for and invigorated by the decolonizing movement (and amidst persistent resistance to such reassessment), it is important to consider the relationships between museum display and narrative in a multimodal context, while recognizing, of course, that no single modality or design “tool” in itself offers a “solution.” Experimental sound design practices present avenues and opportunities for shifting how design histories are communicated in heritage contexts. Sound can act as a critical layer in dialogue with existing museum displays and architecture, intervening spatially, psychically, and narratively. On a practical level, sonic interventions can be implemented more quickly than can shifts in permanent displays of objects. As a result, sound in the design museum offers a particular potential for reflexivity and responsiveness to current debates, although it is not sufficient as a replacement for deeper structural changes. Moreover, sound generates a distinct form of engagement with histories. Through listening, relationships to time, space, objects, and bodies can shift in ways that engender ways of knowing that are distinct from the arm’s-length model of objectivity embedded in the silent museum.

### **The Sounding Object**

The proposition that sonic interventions in the museum can provide new ways to communicate design histories inspired “The Sounding Object,” a collaboration between the Royal College of Art (RCA) and VARI. The module was led by Emily Candela, a tutor at the RCA who is a design historian and sound practitioner, and Eric De Visscher, a curator and Andrew W. Mellon Visiting Professor at VARI, alongside designer and artist Helga Schmid. The module was part of a long-running Information Experience Design elective, Space Program, in which students experimented at the intersection of several disciplines, including spatial design and curating, under the aegis of experience design. Using the V&A’s collections as a testing ground, we explored the question: *How can sonic interventions help change whose or which story is told, reveal hidden narratives, or bring to the fore voices currently not heard in the museum?*

Building on, and pushing against, the history of reproductions in the V&A, as seen in the museum's Cast Courts, the module invited students to explore this question by “replicating” (in the broadest sense) an object from the museum as a “sounding object”—that is, an object that produces, receives, interferes with, or otherwise interacts with sound in some way, and which, in the process, reimagines the narrative in which it is displayed. Students had five weeks to weave together the practical and intellectual aims of the project. As a “studio”-focused or “practice”-focused elective, “The Sounding Object” emphasized making but was intertwined with, and informed by, discussions of museum narratives, including how the V&A is shaped by colonialist enterprise and students' own critical assessments of the “museum voice.”

The project also took place within an ongoing exploration at the V&A of the possible roles of sound in the museum. As a museum of art, design, *and* performance, the V&A has had a longstanding involvement with sound. Musical instruments were acquired even before the museum officially opened in 1857, and their musical relevance seemed to be equal to their decorative value. The museum also hosted concert series throughout the twentieth century and has recently staged blockbuster music-focused exhibitions, including *David Bowie is...* and *Pink Floyd: Their Mortal Remains*. These projects highlighted the immersive power of sound and the ways in which it can transform the museum experience. These foundations led VARI to further explore ways in which sound could be used as a tool to enhance visitor engagement and outreach to new audiences. De Visscher's professorship at VARI fostered new dialogues among museum staff members around “sonic” collections and engagement and led to two pilot projects commissioned from sound artists: *Partials*, by violist and composer Liam Byrne, explored the spatial resonances of a new, and at that time still empty, exhibition space through the interplay of low harmonics produced by viola da gamba sounds; and *Resonant Bodies*, by Caroline Devine, brings the sounds of a number of Indian classical instruments to life on the glass of their display case. The work was diffused using resonators attached to the case that made the glass surface vibrate with recordings of the sounds of the instruments—effectively acting as a giant speaker and allowing the instruments within the case to “speak” to a visitor.

Sound has been used in public heritage environments in illustrative ways through the use of archival sound, simulation, or re-enactment; in contrast, “The Sounding Object” project focused on sonic responses to objects. It deployed sound design as a way to engage critically with the historical narratives presented in the museum. We highlight here three projects that prompt reflections about how sound, as a component of design practice, can invite engagement with design histories in museums that push “beyond the singularized object.” All projects were prototyped and presented at the RCA as proposals, rather than being installed in the museum.

Karthika Sakthivel and Zhiqiang Li's *Pins & Needles* reimagines a “ragierra” (Italian for rays) headdress—a nineteenth-century silver hair ornament from Lombardy that is made of an array of decorative pins and that is on display in the V&A's jewelry gallery. This hair ornament would have been included in a bride's dowry and worn initially on her wedding day. The students “replicated” the headdress as a series of enlarged, spiky, laser-cut hair implements, which a visitor would be invited to touch, manipulate, and wear (see Figure 1). Sakthivel and Li's sonic intervention invites visitors to encounter the object from the perspective of a user by way of an embodied experience. The hair implements they created are embedded with contact microphones that amplify the sounds of their use in a deeply haptic way. These microphones transform what is normally the quiet rustling of grooming and inserting hair ornaments into loud grating noises accompanied by tactile feedback. They buzz and vibrate in a deliberately irritating fashion when they are touched, destabilizing the object. In this way, the project draws out key features of the experience of the object's use and social life, as imagined by the students: first,

the discomfort they suspect would have accompanied the experience of installing and wearing the headdress, and second, the larger histories of girls' and women's physical experiences of designed artifacts—experiences that are often under-acknowledged or highly abstract in displays of wearable objects. The physical, bodily experience that is so much a part of the history of designed objects is literally amplified in Sakthivel and Li's work. As such, it is accorded a form of sonic materiality. Sakthivel and Li wrote that, in the absence of being permitted to touch or wear a museum object, their project emerges from the question: "How would it feel to touch sound/be touched by sound instead?"<sup>20</sup>

### **Figure 1**

The students' sonic reimagination of a nineteenth-century hair ornament brings a different way of knowing into the museum. The potential of sound as a design tool here is tied to embodiment, in being "touched by sound," as Sakthivel and Li put it. The distance visitors usually have from the physical museum object is undermined, and modalities of learning and communication—beyond the visual—shift to the forefront. This kind of engagement with the historical object mounts an epistemic challenge to the hegemonic forms of knowing that structure the modernist museum in the Euro-American tradition—forms that are rooted in notions of objective distance and a hierarchy of sensory knowledge that privileges the visual.<sup>21</sup> Avoiding "a countermonopoly of the ear" and unrealistically sweeping, exclusive claims for the unique power of sound is important, but scholars in sound studies have offered useful suggestions regarding a range of attributes that might come, broadly, under the umbrella of what have been called "sonic epistemologies." They point to the ways in which modes of listening and sonic experience—as durational, immersive, vibratory, and fugitive—are particularly suited to speak to the social, the subjective, and the contingent.<sup>22</sup> These qualities—subjectivity and contingency—also are central to critical history writing and indicate ways in which sound design may offer an as-yet-underused set of tools for museum display.

Eighteenth-century European precursors to the modern museum, such as cabinets of curiosity, invited the multisensory handling of collections, albeit for a privileged few. Subsequent trends toward the "proscription of multisensory forms of engagement"—in part as an effort toward "disciplining" visitors as museums became open to a wider public in the nineteenth century—continue to inflect modern institutions that are constructed based on the European model, including the V&A.<sup>23</sup> *Buddhi from the Duplication*, by Yu Ting Chung and Jordan Edge, reverses the long-held tradition of the silent, visually focused museum display (see Figure 2). This project nearly disappears the museum object, replacing it with sound and space. Chung and Edge "replicated" a late-seventeenth-century Dutch "flower pyramid"—a stacking flower holder produced in Delft during the era of "tulip mania" and located in the V&A's "Europe 1600–1815" galleries. In Chung and Edge's spatial sound sculpture, the mass of this large and detailed earthenware object is mostly absent. Three-dimensional form is pushed to the fringes, and the upturned flower holders of the pyramid are reimagined as ceramic horns attached to speakers; these speakers are placed on a metal table, where they vibrate and emit a musical soundscape. The contemplative soundscape comprises bells, samples of Buddhist monks chanting, and flowing water. Its polyphonic form reflects a focus on the history of cultural appropriation that is inherent in its material form. The blue and white color of the original object mimics porcelain that would have been imported from China in the period, and its form appropriates that of the pagoda. The sound of water, imagined to be cycling through the pyramid structure, acknowledges the history of the pyramid's use as a vase, but the soundscape also imagines a reversal of the processes of appropriation and extraction. It evokes a return to the cultural and

religious origins of the form through sounds associated with the use of the ancient Chinese pagoda. This soundscape and the form of the piece itself are designed with spiritual experience in mind. In their approach to the dematerialized object, the students were guided by a quote from the sacred Buddhist text, *The Diamond Sutra* (868): “All that has a form is illusive and unreal.”<sup>24</sup>

### **Figure 2**

This project demonstrates the power of sound to reflect on themes of mutability and the multi-layered narratives related to the object’s history. It also accommodates subjective understandings of the object developed by the students, adding another layer of polyvocality. Although themes of cultural appropriation emerge from the flower pyramid’s display itself in the Europe galleries, the use of sound changes the way this history might be perceived. Through a durational and spatial experience of listening, it performs notions of extraction and recontextualization that the designers identified in the object’s history, presenting it to the visitor as more “matter of concern” than stable, uncontested object.

*Opus Criminale*, by Julia Brackenbury and Jack Hardiker, literally illuminates an object and a history in the museum that is easily overlooked: The designers focused on a nineteenth-century mosaic, dubbed the “Opus Criminale,” and the history of its production by female inmates of Woking Prison in Surrey, England. The mosaic was designed by Frances Moody, the designer of much of the V&A’s decoration in the late nineteenth century, and it constitutes part of the floor in one of the museum’s corridors (see Figure 3). Typically, countless museum visitors walk across this mosaic every day, and may not pay it the attention that one would an “official” museum object on display.

### **Figure 3**

Brackenbury and Hardiker’s “replica” of the mosaic imagined individual constituent tiles as listening devices that had collected narratives from the women who produced the mosaic (see Figure 4). In their prototype installation, a beam of white light shines down from the ceiling, illuminating a single mosaic tile from above. When a visitor passes through the light, it triggers sound from a directional speaker. (The project used piezoelectric ultrasonic transducers to create a “beam” of sound.) Because of the directional nature of the sound, it does not travel far, so visitors must be in close proximity to the tile and beam of light, which can create a sense of intimate listening. When they enter and move through the beam, voices offer first-person accounts of the craftswomen and prisoner’s stories. These lines are spoken by actors and are historical fictions composed by the students, based on archival research into records of English female convicts in the period.

### **Figure 4**

This project thus uses sound, as the center of a designed experience that also uses space, the mosaic tile itself, and light to communicate a history that had been absent from official museum display: the story of female craftwork and prison labor behind the mosaic. Histories of production by such so-called “non-professionals” (who, in this case, likely developed professional skill and expertise through their work on mosaics) surface infrequently in design museums, and, as Cheryl Buckley notes, women have historically been marginalized in histories of design.<sup>25</sup> In this case, the use of sound in the designed experience of the museum artifact not only communicates an unacknowledged history, giving voice to the female producer and the “non-professional” craftworkers, but also fulfills a critical historiographical role by illuminating the absence of this history from the museum. The project does not try to transform the display of the mosaic into that of a conventional museum object. Rather, sound introduces stories to the existing space, and the absence of official attribution becomes part of its experience.

## Sound Design and Technology

Like many of the designers on the course, Brackenbury and Hardiker *thought with* technology in developing directions for sound design in the multimodal communication of object narratives. The projects highlighted here often incorporate newer (or newly available) technologies that afford embodied and spatial forms of sound design, such as the responsive “beam” of sound that interacts with visitors. The contact microphones used in Sakthivel and Li’s *Pins & Needles* are a decades-old technology, but one that is now readily available in the context in which we were working. Although contemporary technologies often afforded or enabled the approach to sound design in these installations, the projects were not driven solely by “high” technology; older or low-tech approaches were used in some projects. *Buddhi from the Duplication*, for example, played sound through strategically oriented ceramic horns to create a spatial soundscape, atop a vibrating metal table.

Indeed, this use of technology in the sound design of exhibitions is both recent and historic. The earliest example of a dedicated sound system was installed at the American Museum of Natural History in 1939. As the initiators put it at the time, it was designed to broadcast “recordings of nature and natural phenomena, such as rustic and peasant music... songs and dances of African natives and the American Indian” in museum galleries.<sup>26</sup> Taking advantage of miniaturized technologies for portable audio devices, the first audio guide appeared at the Stedelijk Museum Amsterdam in 1952. Whether sound is present as part of a communal and architectural experience or relegated to the more individualized and foreclosed set of headphones, the radical revolution that transformed the world of sound through recording and broadcasting techniques has had immediate effects on museum life. What is distinctive about “The Sounding Object” projects is the way in which old and new technologies have been re/purposed in museum sound design in a new role: as alternatives to the modernist notions of an “objective” presentation of objects.

Another element of the resulting projects was the way they illuminated how objects always remain mysterious in some way. They exemplify how an object—any object—is “more than its parts, and less than its effects.”<sup>27</sup> As this philosophy of object-oriented ontology has it, we can only approach things somewhat indirectly. *Buddhi from the Duplication* serves as an effective reminder of this, as it enacts an indirect approach to a museum object through artistic means. A further potential role for sound designers working in the museum emerges: to seek new ways to communicate histories while listening for the “black noise of muffled objects hovering at the fringes of our attention.”<sup>28</sup>

## Conclusion

A productive expansion of the role of the sonic in design practices is underway. Sound design can play an important role in developing directions in communication and experience design that go beyond uncritical, exclusionary notions of pleasure or usability. The sound design practices covered here offer resonant examples. The potential role of sound design in the communication of histories can extend far beyond the purposes to which sound is usually put in heritage contexts, which are often illustration and re-enactment. The projects for “The Sounding Object” draw on embodied approaches to experience design, sound art practices, and digital storytelling. (In fact, some participating students came from the RCA’s Digital Direction MA program, which has storytelling as a focus.) Sound design practices allowed for “expanding out” from the object



to enable a relationality with the viewer and an attention to the objects' social entanglements, both past and present. The result is a set of projects that marks a way forward for using sound as a tool in the interpretation of museum objects as "matters of concern." The students' projects point to museum objects as historically contingent things that are not fully graspable through the arm's-length epistemology that structures the modern Western museum—an epistemic model in which, as philosopher Achille Mbembe writes, "the knowing subject is enclosed in itself and peeks out at a world of objects and produces supposedly objective knowledge of those objects."<sup>29</sup>

These projects also suggest directions for storytelling that are based on collaborative processes rather than top-down authorship, and that acknowledge the importance of Tim Ingold's "storied knowledge" concept:

...the things of the world *are* their stories, identified not by fixed attributes but by their paths of movement in an unfolding field of relations.... For stories do not, as a rule, come with their meanings already attached, nor do they mean the same for different people. What they mean is rather something that listeners have to discover for themselves, by placing them in the context of their own life histories.<sup>30</sup>

When sound takes part in this approach to narrative, new relations to museum objects surface. New temporalities emerge as well: Visitors attending Caroline Devine's sound installation at the V&A commented that "the longer we heard, the more we looked." Likewise, the students' work for "The Sounding Object" generated ideas not only about the potential of sound design to help reimagine narratives around museum objects, but also about the ways in which sound design can invite different ways of knowing, understanding, and relating to objects in the museum. Sound and listening are shaped by contingency, positionality, and the fleeting nature of time, like history itself. In the words of Salomé Voegelin, "[s]ound narrates, outlines and fills, but it is always ephemeral and doubtful."<sup>31</sup>

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<sup>1</sup> Koray Tahiroglu, Oguzhan Özcan, and Antti Ikonen, "Sound in New Media and Design Studies," *Design Issues* 30, no. 2 (Spring 2014): 56–66.

<sup>2</sup> Amina Abbas-Nazari, "Acoustic Ecology of an AI System," 2020, <https://attune.researchandwaves.net/acoustic-ecology-of-an-ai-system.html> (accessed March 25, 2021).

<sup>3</sup> Pedro J. S. Vieira de Oliveira, "Design at the Earview: Decolonizing Speculative Design Through Sonic Fiction," *Design Issues* 32, no. 2 (Spring 2016): 51; and Kodwo Eshun, *More Brilliant Than the Sun: Adventures in Sonic Fiction* (London: Quartet Books, 1998).

<sup>4</sup> "Curriculum," (web page), Information Experience Design MA, Royal College of Art, <https://www.rca.ac.uk/degree-programmes/information-experience-design-ma/?tab=yes#curriculum> (accessed August 25, 2020).

<sup>5</sup> Karin Bijsterveld, "Ears-on Exhibitions: Sound in the History Museum," *The Public Historian* 37, no. 4 (November 2015): 78.

<sup>6</sup> Constance Classen and David Howes, "The Museum as Sensescape: Western Sensibilities and Indigenous Artefacts," in *Sensible Objects: Colonialism, Museums, and Material Culture*, ed. Elizabeth Edwards et al., (Oxford: Berg, 2006), 199–222.

<sup>7</sup> "ICOM announces the alternative museum definition that will be subject to a vote," ICOM, July 25, 2019, <https://icom.museum/en/news/icom-announces-the-alternative-museum-definition-that-will-be-subject-to-a-vote/> (accessed April 13, 2021).

<sup>8</sup> Edward Said, *Culture and Imperialism* (New York: Vintage Books, 1993), 59–60. Said's use of this essentially Western musical concept has been debated as not appropriate to frame the kind of postcolonial thinking that Said was then establishing. He did use the term heterophony on various occasions—a term more frequently used to describe non-Western counterpoint. See Wouter Capitain, "From Counterpoint to Heterophony and Back Again:

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Reading Edward Said's Drafts for *Culture and Imperialism*," *Journal of Musicological Research* (July 2020). DOI: 10.1080/01411896.2020.1787793.

<sup>9</sup> Brandon La Belle, *Sonic Agency: Sound and Emergent Forms of Resistance* (London: Goldsmiths Press, 2018), 38.

<sup>10</sup> Aaron Seitz et al., "Sound Facilitates Visual Learning," *Current Biology* 16, no. 14 (2006): 1422–27

<sup>11</sup> See, e.g., Constance Classen, *The Museum of the Senses: Experiencing Art and Collections* (London: Bloomsbury, 2017); and Nina Levent and Alvaro Pascual-Leone, eds., *The Multisensory Museum: Cross-Disciplinary Perspectives on Touch, Sound, Smell, Memory, and Space* (Lanham, MD: Rowman & Littlefield, 2014).

<sup>12</sup> For the former, see, e.g., Douglas Kahn, *Noise Water Meat: A History of Sound in the Arts* (Cambridge, MA: MIT Press, 2001); Alan Licht, *Sound Art: Beyond Music, Between Categories* (New York: Rizzoli, 2007); and Christopher Cox, *Sonic Flux: Sound, Art and Metaphysics* (Chicago: University of Chicago Press, 2018). For the latter, see, e.g., Sarah Baker et al., "The Sound of Music Heritage: Curating Popular Music in Music Museums and Exhibitions," *International Journal of Heritage Studies* 22, no. 1 (2016), 70–81; Alcina Cortez, "Reflections on the Challenges of Exhibiting Popular Music at the Beginning of the 21st Century Through a Case Study of 'A Magia do Vinil,'" *Popular Music* 36, no. 3 (2017), 370–92; and Charles Fairchild, "Understanding the Exhibitionary Characteristics of Popular Music Museums," *Museum & Society* 15, no. 1 (2017), 87–99.

<sup>13</sup> Salome Voegelin, *Sonic Possible Worlds: Hearing the Continuum of Sound* (New York: Bloomsbury, 2014); and Holger Schulze, "The Corporeality of Listening: Experiencing Soundscapes on Audio Guides" in *Soundscapes of the Urban Past: Staged Sound as Mediated Cultural Heritage*, ed. Karin Bijsterveld (Bielefeld: Transcript Verlag, 2013), 195–208.

<sup>14</sup> Nikos Bubaris, "Sound in Museums – Museums in Sound," *Museum Management and Curatorship* 29, no. 4 (2014), 393. See also S. Wyatt, "Music in the Museum: Intangible Influences," *Music in Art: International Journal of Music Iconography* 39, no. ½ (2014), 267–80.

<sup>15</sup> William Renel, "Sonic Accessibility: Increasing Social Equity Through the Inclusive Design of Sound in Museums and Heritage Sites," *Curator: The Museum Journal* 62, issue 3 (2019): 387.

<sup>16</sup> Julia T.S. Binter, "Unruly Voices in the Museum: Multisensory Engagement with Disquieting Histories," *The Senses and Society* 9, no. 3 (2014): 343. Binter cites Ann Laura Stoler, "Colonial Aphasia: Race and Disabled Histories in France," *Public Culture* 22, no. 1 (2011): 124.

<sup>17</sup> Sarah Cheang and Shehnaz Suterwalla, "Decolonizing the Curriculum? Transformation, Emotion, and Positionality in Teaching," *Fashion Theory* 24, no. 6 (2020): 13–4.

<sup>18</sup> Bruno Latour, "A Cautious Prometheus? A Few Steps Toward a Philosophy of Design (with Special Attention to Peter Sloterdijk)," in *Networks of Design: Proceedings of the 2008 Annual International Conference of the Design History Society*, ed. Fiona Hackney, Jonathn Glynne, and Viv Minto (Boca Raton: Universal Publishers, 2009), 2.

<sup>19</sup> Leah Armstrong and Guy Julier, "Interactions in the Museum: Design Culture Salons at The Victoria and Albert Museum," in *Design Objects and the Museum*, ed. Liz Farrelly and Joanna Weddell (London: Bloomsbury, 2016), 159.

<sup>20</sup> Karthika Sakthivel and Zhiqiang Li, "Project Description," unpublished paper, Royal College of Art, London, October 2018.

<sup>21</sup> Edwards et al., "Introduction," in *Sensible Objects: Colonialism, Museums, and Material Culture*, ed. Elizabeth Edwards et al., (Oxford: Berg, 2006), 1–31.)

<sup>22</sup> See, e.g., Marcel Cobussen et al., "Editorial: Towards New Sonic Epistemologies," *Journal of Sonic Studies* 4 (2018), <https://www.researchcatalogue.net/view/266013/266014/0/0> (accessed November 19, 2020); and Salomé Voegelin, "Ethics of Listening," *Journal of Sonic Studies* 2, no. 1 (May 2012), (accessed June 9, 2022)

<sup>23</sup> Edwards et al., *Sensible Objects* 18–19.

<sup>24</sup> "The Diamond Sutra: Chapter 5," *Diamond Sutra—A New Translation*, trans. Alex Johnson, <https://diamond-sutra.com/read-the-diamond-sutra-here/diamond-sutra-chapter-5/> (accessed May 3, 2021).

<sup>25</sup> Cheryl Buckley, "Made in Patriarchy II: Researching (or Re-Searching) Women and Design," *Design Issues* 36, no. 1 (Winter 2020): 19–29.

<sup>26</sup> American Museum of Natural History, Press Release, April 10, 1939, AMNH Archives, cited in Craig Eley, "Making Them Talk': Animals, Sound and Museums," *Antennae* 27 (Winter 2013): 15.

<sup>27</sup> Graham Harman, *Object-Oriented Ontology. A New Theory of Everything* (London: Penguin, 2018): 100.

<sup>28</sup> Ian Bogost, *Alien Phenomenology, or What It's like to Be a Thing* (Minneapolis: University of Minnesota Press, 2012), 32–33, cited in Lisa S. Banu, "Black Noise: Design Lessons from Roasted Green Chiles, Udon Noodles, and Pound Cake," *The Journal of Speculative Philosophy* 28, no. 1 (2014): 21.

<sup>29</sup> Achille Mbembe, "Decolonizing Knowledge and the Question of the Archive," in *Decolonizing: The Curriculum, the Museum, and the Mind*, ed. Marquard Smith (Vilnius: Vilnius Academy of Arts Press, 2020), 58.

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<sup>30</sup> Tim Ingold, *Being Alive: Essays on Movement, Knowledge and Description* (London: Routledge: 2011), 160–62.

<sup>31</sup> Voegelin, *Listening to Noise and Silence: Towards a Philosophy of Sound Art* (New York: Continuum, 2010), 5.