

Voices in the museum: Exploring soundscapes in curatorial practices

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ABSTRACT

The semiotics of curating is a theoretical approach that focuses on constructing, communicating, and interpreting signs, symbols, and meanings in museum exhibitions. With the increasing prevalence of digital technologies, curators are tasked with balancing different technologies, encompassing visual, sound, and multimodal experiences. In this perspective, the paper examines the role of sound as a semiotic dimension within exhibition contexts, analyzing how it functions as a potent signifier and enriching the interpretation of curated spaces with exhibited artefacts. This study explores the semiotic dimensions of soundscapes by analyzing examples from an exhibition at GAM Turin, Italy, the Nelson Atkins Museum of Art, Kansas City, USA, and the work of Nicholas Party at the Montreal Museum of Fine Arts, Canada. It will study how sonic elements such as music, language, and ambient noises intersect with cultural contexts to create layered, polyphonic interpretations of exhibited artefacts. I will finally discuss the potential of sound as a powerful medium for conveying meaning, evoking affective responses, and immersive engagement of the public.

ARTICLE INFO:

Volume: **10**Issue: **02**Winter **2024**ISSN: **2459-2943**DOI: **10.18680/hss.2024.0024**Pages: **111-133**Lic.: **CC BY-NC-ND 4.0**

KEYWORDS:

Curatorial practice

Soundscapes

Multimodal exhibitions

Cultural Interpretation

Introduction

The semiotics of curating investigates the construction, communication, and interpretation of signs and symbols within exhibitions and museums. By observing ‘from above’ how the elements composing an exhibition or a collection are organized, this approach analyses the mechanisms by which the visual and textual elements intersect in creating meaning (Lorente 2016; Pezzini 2021).

In recent years, the integration of technologies, virtual experience, and immersive environments has broadened the scope of curatorial semiotics to incorporate various sensory dimensions, thereby underlining the need for a more complex theoretical framing of curatorial practices. From this perspective, sound can be seen as a crucial semiotic resource that contributes to the meaning-making processes and is a signifier capable of enriching the interpretative skills of visitors: music, spoken language, ambient sounds, and immersive soundscapes involve visual and spatial elements, resulting in a multi-layered, polyphonic interpretation of exhibited artefacts.

This article explores the role of sound in curatorial practices, focusing on how it is meant to shape the visitors' experiences. It analyses the use of sound across three settings: a museum exhibition, a permanent collection, and a contemporary art installation to examine its semiotic dimensions and the ability to evoke emotional responses, convey meaning, and enhance visitor engagement with cultural artefacts. I consider the case studies as prototypical. I will not address specific art forms that involve sound, as this research focuses on curatorial practices and uses sonority as a signifier. Needless to say, the work of artists or artists-curators equally offers significant opportunities for investigation, but it will not be examined in this article.

Current trends

The practice of curating has long been associated with the visual arrangement of cultural artefacts (Dziekan 2016). By curating, we interpret a pattern within the museum space that allows visitors to create a narrative and develop an interpretative frame for the exhibits. The museum content is mediated to the public in a sort of 'outward semiotic gesture' that arranges the exhibits to educate and entertain the public. The curator's gesture may be visible and acknowledgeable or 'transparent,' i.e., hidden and apparently irrelevant whatever the approach. The museum space is arranged around selected concepts that make it readable, i.e., a text (Zunzunegui 2003: 18-36).

In recent years, to attract more visitors and meet the needs of a public immersed in media, visual culture, and hyperconsumerism, museums have developed strategies to enhance the entertaining aim of exhibitions and ease or, at times, lessen the educational function. As the boundaries of curatorial practices also expand in response to technological advancements, there is a growing use of multimodal communication in the exhibition space to entertain in all categories of museums, art or science, etc. (Pierroux 2024; Smart 2024; Diamantopoulou et al. 2024). Multimodality in curatorial practices integrates digital technologies, flexible spatial designs and devices that enhance the information and narrative of a collection by expanding how

the object is observed, decoded, appreciated and evaluated. As a result, visitors develop their knowledge more personally and independently by resorting to previous knowledge or ideas and competencies that may not be related to the exhibit but are activated by the curator's 'invisible hand.'¹ The availability of web content relies on the visitor's ability to navigate, explore, and interact, shaping the interpretive framework of the experience. As users move into a virtual gallery, they interpret the icon on-screen, i.e., the virtual museum, *as if* interacting with a real space. Similarly, self-guided tours employ hyperlinks, concise textual descriptions, and high-resolution images to facilitate navigation across key art movements or historical contexts. For example, each mode of communication, written descriptions, visual imagery, and structure convey specific information. Thus, when combined, these elements create a cohesive and immersive experience.²

These innovations respond to the evolving expectations of audiences and the need for a more significant commitment to the cultural contexts surrounding what is offered by the museum. Diverse channels are believed to establish a network of ideas that are more appealing and functional to contemporary sensitivity (Kassem 2022). Moreover, issues regarding the inclusion of visitors with special needs are also improved using technology, which further links museums to the expectations of contemporary society (Fotiadi 2024). In this perspective, exhibition spaces are transforming, with culturally hybrid and performative characteristics becoming increasingly prevalent. These qualities require the adaptability of collections, the coexistence of diverse channels, and the complexity of mediation, as testified by the debate about decolonization (Tso and Lau 2019; Rauber 2022; Nikolaou 2024).

¹ One might consider The National Gallery (London), which offers VR tours in presence and 360° virtual ones for home exploration of the collections, online activities for children and catalogues. The rooms are reproduced on screen, and each item can be experienced by a very detailed closeup visualization of the exhibit, and a description (label) read aloud at will something that may not match the typical behaviour of a visitor who does not perceive minute details as the work of art is distanced or may not hire an audioguide or a guided tour. Another interesting example is provided by *The Stories* section of the Rijksmuseum website features a diverse array of narratives that bring attention to important historical and artistic figures, as well as notable cultural artefacts. For example The interactive page on *The Love Letter* at the Rijksmuseum invites users to explore Johannes Vermeer's painting through a combination of high-resolution images, detailed close-ups, and interpretive storytelling. The platform allows viewers to zoom in on minute details of the artwork, such as pigment particles, offering insights into Vermeer's techniques. <https://www.rijksmuseum.nl/en/stories/story/love-letter>

² For example, the 'sonified painting' section on the mobile app of the National Gallery integrates auditory elements with visual analysis. In Gossaert's *The Adoration of the Kings*, the surface of the painting is divided into specific scenes or semiotic areas, that focus on key details, enriched through a combination of narrated text and ambient sounds. Meanwhile, the surrounding sounds, such as the soft clink of metal from the kings' crowns or the distant hum of the crowd gathered in reverence, deepen the immersion, situating the viewer in the scene's royal and sacred atmosphere. By offering a multisensory experience, the app guides the viewer's perception and invites a deeper exploration of the painting's historical and cultural layers. Visit <https://jubilee.moyosaspaces.com/>; and <https://www.nationalgallery.org.uk/visiting/virtual-tours/sensing-the-unseen-at-home>; this video comments on the project and reactions of the public to this experience that was planned in the aftermath of the pandemic <https://youtu.be/AazsXDiDbEo>

Because of the public's new needs, exhibitions have a contained museum life and an extended inside and outside communicative space dimension; with online content, visitors can pre-visit or re-visit an exhibition in the virtual space: the time of the visit is personal and discontinuous. For example, immersive technology and the realization of virtual museums such as the Bassin des Lumières in Bordeaux, France, are indicative of a broader trend in exhibition design, whereby the concept of experience is accorded more significant importance rather than the object itself, which is magnified enlarged, strained in its dimensions as the container of the experience, in other words, the building, the architecture surrounding the object is 'multiplied' in size and motion and the visit is a personal experience.³ This evolution necessitates the development of new interpretations that can accommodate the complexities inherent to modern exhibition spaces that move the senses (Sharji et al. 2020).

A brief literature overview

To describe an interpretative semiotic frame of the sense dimension in museums, I will sum up some key issues by surveying past research. The integration of sound into curatorial practices has attracted considerable attention within the field of museum studies, primarily through conceptualizing the museum as a 'sound space' or 'soundscape' as a parallel to the growing importance of immersive museums and visual communication. This approach acknowledges that museums, traditionally regarded as primarily visual spaces, also possess rich auditory dimensions that significantly contribute to the visitor experience. The concept of 'soundscape' originated from the field of acoustic ecology and was popularised by R. Murray Schafer in his seminal work *The Soundscape: Our Sonic Environment and the Tuning of the World* (1977). Schafer defines soundscape as the acoustic environment, encompassing all the sounds surrounding them in a particular setting (3-13). In museums, soundscape describes all the sounds within an exhibition space. This term encompasses intentional auditory elements, such as music, narration, sound effects, and incidental noises, including footsteps, conversations, and ambient sounds from outside the

³ The *Bassin des Lumières* occupies a wartime submarine base, a structure laden with historical and ideological significance. Its monumental concrete walls, imposing dimensions, and industrial design evoke the militaristic past, serving as physical signs of wartime Europe. These architectural elements constitute a text that communicates narratives of conflict, resilience, and transformation. On the other hand, the usage of the space and the spatial arrangement of famous paintings expanded on the wall creates an environment where visitors are dwarfed, emphasizing both the scale of history and the naïveté in repurposing the space for artistic expression. On the other hand the message conveys an 'art wins all' action that contradicts the original purpose of the building <https://www.bassins-lumieres.com/fr>

exhibition area. In other words, the term soundscape is used to describe a multi-layered auditory environment that contributes to the sensory experience of the museum. In particular, audioguides provide technical support for integrating words (narrative/ description/ storytelling) and sounds (background/ tridimensional setting). Sounds can be selected and arranged to create specific atmospheres and enhance the interpretative experience of the exhibits. Such soundscapes are designed to evoke emotional responses, reinforce the thematic narrative of an exhibition, and immerse visitors in a specific time, place, or culture. For example, a historical exhibition might comprise a soundscape incorporating the music of a corresponding era, the ambience of a marketplace, and recorded oral histories, collectively facilitating a sense of being transported to that period (Yraola 2024).⁴

In contrast to soundscapes, which focus on the thematic and content coherence of auditory elements, soundspace prioritizes the spatial relationships between sounds and their physical or virtual environments. Designing a soundspace means studying the acoustics of the exhibition area, including factors such as reverberation, sound diffusion, and the placement of speakers or other sound sources. In other words, soundspace describes the spatial aspect of sound within a given environment. This term encompasses how sound is distributed, perceived, and interacts with the physical dimensions of the museum space. This concept is grounded in acoustics and spatial theory, which examines how sound is positioned within a physical or virtual environment and how it influences the perception of space (Gallagher 2024). In practice, the soundspace is defined by how sound interacts with the architectural features of the exhibition area. These interactions may manifest as resonances, echoes, or fading and are tailored to the design of the space in question. In particular, art installations or performances may use sounds that integrate the experience and the surrounding space in the art project. In other cases, the configuration of the sound space is foregrounded to influence the appreciation of the exhibition, directing attention to specific artefacts or sections of the exhibit through the use of auditory cues. For example, a soundspace may incorporate directional audio, guiding visitors through a linear narrative path as audio descriptions. Alternatively, it may employ spatialized sound effects, creating the impression of being surrounded by the sonic environment, thus enhancing the immersive experience (Perego 2023; Hutchinson 2023; Privitera et al. 2024).

⁴ One may consider these two examples: this one from Musei Capitolini, Rome which is an audioguide for children which animates the experience with a cartoon-like tale <https://www.museicapitolini.org/en/node/1002146> or the Cutty Sark audio guides that provide the audiotour, and the soundscape as a distinct resource, being the latter a solo independent enjoyment of the environment to leave to the imagination to fill in the experience created by composers and artists <https://www.rmg.co.uk/cutty-sark/attractions/cutty-sark-audio-guides/soundscape>

The concept of soundscape was also investigated by scholars such as Bruce R. Smith (1999), who proposed that sound, like visual elements, is fundamental in shaping the spatial and sensory dynamics of an environment that can be reconstructed from a historical perspective. Observing literature, drama, and music in Early Modern England suggested that soundscapes are not merely background noise but are integral to how spaces are perceived and experienced, influencing the audience's atmosphere and emotional responses. All contributors to the volume *Hearing Cultures, Essays On Sounds, Listening And Modernity*, edited by Veit Erlam in 2004, also found traces of soundscapes in literary texts. However, sound is always mediated by words that describe it rather than a direct perception. In practice, the sound dimension is formed by a sense of sound, and evokes the affective dimension. Instead, hearing implies a direct activation of the emotions and all the physical sensations involved in it.

In this perspective, Michael Bull and Les Back (2003) provided a more comprehensive view and evaluated the complexities of words and sounds in semiotic systems. The authors contended that soundscapes contribute to meaning-making by superimposing additional interpretative possibilities onto visual displays. This perspective was further developed by Karin Bijsterveld and Trevor Pinch (2012), who emphasized the significance of sound in shaping social and cultural meanings within museum spaces.

In their discussion, Bijsterveld and Pinch address how curators can use sound to facilitate interpretation, evoke memories, and construct immersive experiences that transcend the visual plane. Similarly, Jonathan Sterne (2012) proposed that sound in museums conveys information and shapes the affective atmosphere, influencing how visitors connect with the artefacts and the narratives they represent.

From this perspective, Suzanne MacLeod (2013) also proposed that designed soundscapes augment the narrative coherence of exhibitions, thus integrating the sound into the narrative as a textual cohesive device linking, highlighting, correlating, or separating through perception. From this perspective, sound is a narrative instrument and a spatial component that influences the visitor's exhibition experience. Sound also serves as a guiding tool, drawing visitors' attention and influencing how they interpret the material on display.

The table below presents the key points collected from the contributions discussed. In particular, it lists the usage of sound in the museum environment and the qualitative relationships that sounds establish with the listener.

Table 1. The Use of Sound in Museums

<p>Signs (Auditory Elements in Museum Spaces)</p> <ul style="list-style-type: none"> Ambient Sounds (e.g., rustling leaves, distant machinery hum) Narrative Voiceovers (e.g., guides, character voices) Music and Soundtracks (e.g., classical, thematic, or contemporary music) Interactive Sound Cues (e.g., user-triggered sounds) Sound Effects (e.g., environmental sounds like rain, urban noise, birdsong)
<p>Signifiers (The Sensory Input/Audible Cues)</p> <ul style="list-style-type: none"> Frequency (high/low pitch, tonal qualities) Amplitude (volume, intensity) Duration/Temporal Structure (rhythm, pace, time-based patterns) Spatiality/Directionality (source of sound, its perceived location in space) Reverberation/Acoustic Properties (echoes, resonance in exhibition space)
<p>Signified (Cultural or Contextual Meanings Evoked)</p> <ul style="list-style-type: none"> Historical context (e.g., sounds of past environments, period-appropriate music) Cultural Symbols (e.g., folk music representing ethnic traditions) Emotional Responses (e.g., serenity from calm soundscapes, tension from dissonant music) Symbolic Association (e.g., church bells signifying spirituality, birdsong implying nature) Narrative Elements (e.g., a voiceover narrating historical events, reinforcing the story of the exhibit)
<p>Interpretants (Visitor's Cognitive/Emotional Interpretation)</p> <ul style="list-style-type: none"> Interpretive Engagement (guiding how visitors interpret the objects/artworks) Emotional Connection (enhancing personal and collective resonance with exhibits) Cognitive Understanding (clarifying the context of the exhibit through auditory reinforcement) Atmospheric immersion (creating an environmental ambience that envelops visitors) Behavioural Cues (influencing how visitors move through the space when to pause, reflect, or transition)

In sum, sound within an exhibition can help echo and reinforce its thematic content, creating a lasting auditory experience. Soundscapes reflect and amplify the exhibition's thematic content, creating a more cohesive and immersive experience. Sound can introduce alternative interpretations, generate layers of meaning within an exhibition, and stimulate the emergence of multiple interpretations through the strategic deployment of contrasting or unconventional sound choices (Sterne 2012). However, one other aspect must be considered: the contribution of auditory acoustic studies.

Suggestions from perceptual and auditory acoustic studies

The selection and design of sound in museum spaces imply understanding how humans perceive and process auditory information. Research from perceptual psychology and auditory neuroscience suggests a context for creating immersive and meaningful auditory experiences based on the physiology of acoustic perception. The human auditory system is susceptible to specific sound characteristics like frequency, amplitude, and temporal structure. These factors play a role in influencing how sounds are perceived and interpreted within a particular context (Bem 2023; Lin and Lang 2024).

In his work on auditory scene analysis, well before the pervasive presence of media-modified communication in Western culture, Albert Bregman (1990) clarified how the brain categorizes sounds into perceptual streams, directing the focus towards specific auditory elements while simultaneously filtering out others. Hence, to create an engaging and non-intrusive auditory environment, sounds must complement the visual and spatial aspects of the exhibition, taking care to avoid causing sensory overload. For example, ambient sounds characterized by low-frequency tones, such as the hum of distant machinery or the rustling of leaves, can create a subtle backdrop that enhances the atmosphere without dominating the visitor's attention. Such sounds are less likely to impede visitors' cognitive processing of visual information, ensuring a coherent and immersive exhibition experience. Conversely, more prominent auditory elements, such as music or spoken narration, must be carefully timed and spatially located to guide attention and reinforce key messages within the exhibition. Research conducted by Norman Weinberger (2004) in the field of auditory neuroscience also indicated that music, particularly when synchronized with the thematic content of an exhibition, could evoke emotional responses and enhance memory retention. Incorporating culturally or thematically related music can enhance visitor engagement with the exhibits, thereby facilitating a more memorable and meaningful experience (Hodges and Thaut 2019; Vuust et al. 2022).

As previously stated, the concept of the soundscape forefronts both natural and constructed environments when devising auditory experiences. Using environmental sounds, such as birdsong, water flow, urban noise, and recordings of native wildlife or ambient forest sounds, can facilitate an immersive experience for visitors, situating them within the depicted ecosystems and creating a sense of (fake) authenticity and context. Such sounds may also be balanced with the other auditory stimuli, so the spatial configuration of sound within an exhibition space represents a crucial element in optimizing the aural experience. In relation to this, the findings of Trevor Cox (2014a) in the field of architectural acoustic showed the importance of contemplating the acoustic properties of the physical environment when devising sound installations. The perception of sound is subject to significant alteration by the specific characteristics of the materials, room shapes, and sizes involved. These

aspects affect the clarity, directionality, and reverberation of sound. These acoustic properties must be considered when positioning speakers or designing sound installations. For example, in an ample, reverberant space, sounds with long decay times may become indistinct, rendering speech or intricate music challenging to comprehend. In such instances, Cox proposes the utilization of directional speakers or acoustic treatments to regulate reverberation and guarantee the clarity and intelligibility of the auditory experience. Alternatively, curators may employ localized sound sources in smaller, more intimate exhibition spaces to create a focused auditory experience, thereby directing visitors' attention towards specific artifacts or narrative elements (Cox 2014b).⁵

Furthermore, spatial sound design can be employed to create immersive experiences through techniques such as binaural audio and 3D soundscapes. These technologies simulate how sound is perceived within a three-dimensional space, thereby enhancing the sense of presence and immersion. As observed by neuroscientists Olaf Lippold and colleagues (2019), the utilization of spatial audio techniques can markedly enhance the realism of virtual and augmented reality exhibits, thereby facilitating a more engaging and interactive experience for visitors (Anuar et al. 2024; Grgurić and Luttenberger 2024). Furthermore, while digital tools, such as location-aware audio guides or binaural soundscapes, offer significant possibilities to transform visitor experiences, they also raise questions about their use's unintended consequences. For instance, integrating sensory stimuli, such as sound or scent, may overwhelm audiences, detracting from the contemplative engagement many museums seek to foster. Successful applications must balance innovation and curatorial intent, ensuring that technologies are employed to deepen interpretation rather than merely as a spectacle.⁶

The table below (table 2) summarizes what I have outlined, providing functional insights into the semiotic dimensions. It represents a comprehensive overview of how sound operates in museum settings, which I will illustrate by examining the case studies in the following paragraphs.

⁵ Contemporary art museums frequently emphasize experimentation and integrating auditory elements as a key aspect of their identity. This allows for greater autonomy for artists, enabling the fusion of soundscapes and visual art into unified multisensory experiences. In contrast, permanent collections prioritize cultural heritage preservation, with soundscapes employed to enhance thematic coherence or contextualize historical artefacts. This is typically guided by curatorial oversight; in this perspective, sound strategies must align with the institutional objectives and audience expectations.

⁶ Evaluating the distinction between artist-driven and curator-driven approaches is important to gain insight into collaborative exhibitions. In artist-driven projects, sound is often regarded as an integral part of the creative process, integrated seamlessly into the work's conceptual framework. In contrast, curator-driven initiatives may adopt a more external perspective, utilizing auditory elements to support broader narratives or interpretative goals. These differing roles influence the methodologies and outcomes of sound integration.

Table 2. Summary of the semiotic functions of sound in museums

Aspect	Description	Semiotic Function
Human Auditory Perception	Influenced by frequency, amplitude, and temporal structure; perceptual streams focus attention and filter sounds.	Rhetorical (Guides focus through perceptual streams, potentially enhancing narrative or thematic understanding).
Auditory Scene Design	Complement visual and spatial elements	Iconic (Mimicking real-life sounds, e.g., rustling leaves).
	Low-frequency ambient sounds create subtle backdrops (e.g., rustling leaves).	Indexical (Pointing to a context, e.g., natural settings).
	Prominent sounds (e.g., music, narration) require timing and spatial placement to guide attention.	Rhetorical (Narrative or informative role, e.g., narration guiding experience).
Acoustic Properties	Room materials, shapes, and sizes alter sound perception.	Indexical (Pointing to the physical characteristics of the space).
	Use acoustic treatments or directional speakers to manage reverberation and ensure clarity in large spaces.	Rhetorical (Improving the intelligibility of narrative elements).
	Employ localized sound sources in small spaces for focused auditory experiences.	Rhetorical (Focusing attention on specific artefacts or narratives).
Advanced Sound Techniques	3D soundscapes enhance immersion.	Iconic (Reproducing realistic spatial soundscapes, e.g., 3D environments).
	Spatial audio techniques improve realism in virtual and augmented reality exhibits.	Rhetorical (Enhancing narrative and interactive engagement).
Music in Exhibitions	Evokes emotional responses and may enhance memory retention.	Symbolic (Symbolizing themes through music, e.g., evoking transcendence with a classical score).
	Culturally and thematically aligned music.	Symbolic (Abstract meaning tied to cultural or thematic content).
Environmental Soundscapes	Utilize natural and constructed sounds (e.g., birdsong, urban noise) for authenticity and context.	Iconic (Mimicking the environment, e.g., birdsong or marine sounds).
	Balance environmental sounds with other stimuli.	Indexical (Contextual grounding for exhibits, e.g., situating visitors in depicted ecosystems).
	Immerse visitors within ecosystems or depicted scenes.	Rhetorical (Enhancing narrative immersion).

Table 2. Summary of the semiotic functions of sound in museums

Aspect	Description	Semiotic Function
Art vs. Heritage Exhibitions	Experimentation with sound.	Symbolic (Abstract artistic expression, aligning soundscapes with conceptual themes).
	Use soundscapes for thematic coherence.	Indexical (Rooting soundscapes in historical or cultural context).
Artist vs. Curator Approaches	Artist-driven: Sound integrated as part of the creative process.	Symbolic (Sound as part of the creative and conceptual framework).
	Curator-driven: Sound used to support narratives or interpretative goals.	Rhetorical (Supporting thematic and educational narratives).

Case study: Sound and silence in the exhibition at GAM Turin

The exhibition *Silenzio/Suono - Sound/Silence* at the Galleria Civica d'Arte Moderna e Contemporanea (GAM) in Turin (June 2024 – March 2025), curated by Elena Volpato, explored the intricate interplay between sound and silence within contemporary art.⁷ By focusing on experimental music and poetry, this exhibition emphasizes that sound, or its deliberate absence, is not merely an auditory experience but an integral aspect of visual experimentation that evokes a wide range of emotions and interpretations in its audience. The collection showcases 471 artists' records featuring a wall array of record covers, many artist-designed, creating a visual narrative that complements the auditory experience. Visitors are invited to listen to audio tracks and consult documents from the collection, either within the exhibition space or in the enhanced video library. This setup allows for an immersive experience where the auditory and visual elements coalesce, creating a holistic encounter with art, poetry, and music.

⁷ <https://www.gamtorino.it/it/evento/silenziosuono-soundsilence/>

The collection witnesses the evolution of sound and poetry within the canon, beginning with early Futurist sound experiments by pioneers like Filippo Tommaso Marinetti and Luigi Russolo. Their dynamic declamations and musical executions laid the groundwork for a tradition of artistic sound experimentation. Dadaism is represented by Richard Huelsenbeck, Kurt Schwitters, Tristan Tzara, Hugo Ball, and Raoul Hausmann, as they further pushed the boundaries of sound as an artistic medium. Their phono-poems, composed of syllables in asemantic relationships, challenged conventional notions of language and meaning, presenting sound as an abstract yet compelling artistic expression. Moreover, sound experimentation in the 1960s marked a central moment in the arts, characterized by a radical departure from conventional music and a deep exploration of the boundaries between sound, noise, and silence. This era was guided by a spirit of innovation and a desire to challenge traditional perceptions of what constituted music and art. The 1960s also saw the rise of electronic music and the use of new technologies in sound creation. The advent of synthesizers and tape manipulation techniques opened new possibilities for artists to explore. In this context, artists such as Nam June Paik and Yoko Ono, whose works were made available, comprised an interdisciplinary approach that blurred the lines between sound, visual art, and performance. Everyday objects and unconventional instruments in their performances created sound art that was as much about the process and experience as the final auditory result.

Although the recordings may be complemented by a video or the availability of the vinyl cover text or the original video of the performance, for the most part, the audience listens to the recording as they are, i.e., by selecting a recorded track on a computer. In other words, the visual-performative elements that would typically integrate the acoustic experience of an experimental poem are not available; therefore, the experience forefronts the auditory dimension, minimizing distractions and favoring individual interpretation rather than a collective immersion in a typical museum room. Since the exhibition is conceived as a 'solo act of interpretation,' three sound performances were set up as a balancing or contrasting 'action' and are still available on the museum website. These events are prototypical of what experimental poetry is as they entail ideas of community and communal sharing of emotions focused on the moment of the performative act, an open space where the actions take place along with the use of computers and other technical devices that generate and modulate the sonority of the event. The clash between these performances and the 'isolated' tracks of the exhibition shows a tension between two modes of engaging with sound and poetry: one rooted in the immediacy and communal nature of live performance and the other centered on solitary, contemplative listening. This duality highlights a curatorial dialogue between the transient, ephemeral quality of live acts and the permanence of the recorded items. While live performances cultivate a sense of shared temporality and collective emotional resonance, recordings allow for introspective engagement, encouraging individual meaning-making removed from the context of a performative audience.

This juxtaposition invites a broader reflection on the semiotic dimensions of sound-based art in the museum space. The exhibition challenges visitors to navigate the relationship between presence and absence, immediacy and mediation, by presenting live and recorded elements. The live performances, relying on communal energy and spontaneous interaction, contrast starkly with the isolated act of listening to recordings, which privileges subjective interpretation and the intimate construction of meaning.⁸ All in all, what sets this exhibition apart is that an archive is turned into an experience that is freely offered to visitors in constructing their experience. The basic design of *Silenzio/Suono* allowed visitors to understand the exhibition at their own pace, selecting their listening patterns according to their interests and curiosities. This autonomy in engagement was a distinctive aspect of the exhibition, which encouraged a personalized process of meaning-making led by the visitor's intrinsic motivations.



Figure 1. The *Silenzio/Suono - Sound/Silence* exhibition, Galleria Civica d'Arte Moderna e Contemporanea (GAM), Turin (June 2024 – March 2025)

⁸ Performers were: Riccardo Baruzzi and Elena Busni providing an interpretation of Leonardo da Vinci's *Treatise on Painting*, combining sonic effects and performance art. Francesco Cavaliere interprets a storytelling performance using a glass sculpture inspired by marine flora and archetypal human unconsciousness. Jacopo Benassi interpreted + *Untitled Noise*, a deconstructed, spoken-word performance involving audience interaction and photographic documentation. Recordings of the performances are available at <https://www.gamtorino.it/it/evento/silenzio-suono-soundsilence/#module-5>

Case study: The role of sound in enhancing visitor experience at the Nelson-Atkins Museum of Art

The Nelson-Atkins Museum of Art in Kansas City, Missouri, provides an example of how sound can be integrated into the visitor experience, enhancing the interpretation and emotional engagement with artworks. This integration is achieved through a collaboration with Art Processors, a creative technology company specializing in developing immersive and interactive experiences.⁹

The project 'A Beautiful Disruption: Experiencing the Bloch Galleries' represents a pioneering approach to redefining museum visitor experiences. By blending historical interpretation with dynamic, immersive technologies, this project challenges conventional modes of engagement with art, offering a multisensory, emotionally driven journey that prioritizes human connection over a more traditional didactic approach. As mentioned in this article, social connection and communal healing have become central to public engagement in cultural spaces, especially in the post-pandemic era, and many institutions are asked to act as cultural hubs within local communities. The emphasis on connecting people is thus crucial, and it receives funding and support, stimulating the experimentation of new technologies and approaches.

The project draws upon existing technological infrastructure, including programmable lighting and speaker systems, to craft an interactive, 'eyes-up' experience. Unlike traditional audio tours that rely on passive information consumption, this approach invites visitors to navigate the space, guided by dynamic lighting and thematic audio narratives that explore the relationships between the Impressionist artists featured in the gallery. In doing so, the museum moves beyond static interpretation, encouraging personal connections to the artworks through the lens of shared human experiences.

Crucially, the project reflects a shift from cognitive understanding to emotional engagement, turning the visit into a social experience. This reframing positions the museum as a space for dialogue and interaction rather than solely dedicated to transmitting knowledge. Removing conventional interpretive tools such as wall labels further reinforces this shift, allowing for a more open-ended, visitor-driven experience that creates a sense of community. In other words, the conceptual foundation of 'A Beautiful Disruption' lies in exploring the personal relationships between the Impressionist artists, using their correspondence as a narrative framework. The inclusion of personal stories points to the human dimension of the artistic process, connecting the struggles of these 19th-century figures to contemporary experiences of doubt, criticism, and perseverance. By centering on these universal emotions, the exhibition seeks to bridge the past and the present, making the artworks more relatable and accessible to the modern audience.

⁹ <https://www.artprocessors.net/projects/nelson-atkins-museum-of-art>

Immersive sound design and programmable lighting also shape the visit. The wireless network of LED lights, installed initially during the 2017 renovation of the Bloch Galleries, is used to its full theatrical potential, choreographed to synchronize with the script and audio narrative. This interplay between sound, light, and space creates a visually stimulating and emotionally evocative environment. The organization of these sensory elements fosters a more comprehensive experience, where the spatial and atmospheric qualities of the gallery become integral to the storytelling.¹⁰

Emily Thompson, in *The Soundscape of Modernity* (2002), maintained that soundscapes can ground an audience in a particular time and place, thereby facilitating a more nuanced comprehension and appreciation of the visual elements and that this is rooted in contemporary culture being a socially motivated collective, shared act (Thompson 2002). By providing auditory cues that evoke the setting or origin of the artworks, the Nelson-Atkins Museum enriches the visitor's sensory experience. It deepens their connection to the art, facilitating more engagement with the historical and cultural contexts. Audio guide systems designed to be responsive to the visitor's movements and interactions within the museum space create a customized experience that can vary from person to person in line with research in auditory perception and cognitive psychology, which suggests that tailored auditory experiences can significantly enhance engagement and memory retention (Goldstein 2010a). As visitors approach specific artworks or exhibits, the audio guide evokes soundscapes or narratives that provide additional context or interpretation. The Nelson-Atkins Museum of Art has been keen on experimenting with sound. Already in 2019, Christina Butera, for example, explored the concept of creating a soundtrack for the museum's sculptures. Drawing inspiration from her daily walks through the sculpture park, Butera developed 'Suite for the Passersby,' a composition that engages directly with the museum's outdoor art. The project, deeply rooted in the Kansas City cultural landscape, reflects Butera's intent to merge environmental context with musical expression, highlighting the significance of location-based soundscapes in contemporary composition.

The resulting work, presented as a smartphone app, used GPS technology to trigger specific musical pieces as users approach different sculptures. The composition was divided into seven parts, each linked to a particular sculpture and performed by solo instruments, voices, and electronics. This interactive format allowed for manipulating instrumental timbre in ways that transcend traditional acoustic capabilities, offering a dynamic and immersive auditory experience. Furthermore, Butera integrated natural sounds, such as bird calls and children's voices, to connect the music with its physical surroundings and the listener.

¹⁰ <https://nelson-atkins.org/nelson-atkins-at-home/listen-at-home/#sound-inspired-by-visual-art>

Designed without a fixed sequence, a continuous audio experience adapted to the user's movement through the sculpture park. This structure challenged traditional notions of musical form, requiring the composition to be flexible enough to transition smoothly between different sections depending on the user's path. By ensuring that each location could accommodate multiple transitions, Butera created a composition that was both site-specific and uniquely personalized for each listener. The work covers key areas of the sculpture garden, offering a comprehensive exploration of the space through sound while inviting users to interact with the art in an innovative, multisensory manner.¹¹

The integration of sound with storytelling constructs a multisensory narrative experience that informs visitors and engages them emotionally. This exemplifies how sound as a narrative tool conveys complex ideas and emotions in a manner that is both accessible and compelling. The success of these projects indicates a broader trend in museum curation towards creating multisensory experiences that engage visitors on multiple levels. This is consistent with the findings of auditory neuroscience, which suggest that multisensory experiences can enhance memory formation and emotional response by engaging multiple sensory pathways in the brain (Poirier et al. 2005). In other words, sound enhances the immediate experience and contributes to a more enduring impression on visitors, rendering the museum experience more meaningful and memorable.



Figure 2. *A Beautiful Disruption: Experiencing the Bloch Galleries* by The Nelson-Atkins Museum of Art and the Art Processors

¹¹ https://www.youtube.com/watch?v=4MZ_mjDf2Uk

Case study: Integrating music and visual art in *L'Heure Mauve* at the Montreal Museum of Fine Arts

The *L'Heure Mauve* exhibition by Nicolas Party at the Montreal Museum of Fine Arts (MMFA in 2022) integrates music into the visual art experience to create a multi-sensory environment. By pairing atmospheric paintings with an original soundtrack composed by Quebec singer-songwriter Pierre Lapointe, the exhibition demonstrates how music can act as both a complement and counterpoint to visual art, enriching the emotional dimension of artworks. With their haunting melodies and subtle harmonies, Lapointe's compositions reflect the soft purples, eerie landscapes, and surreal figures in Party's work, intensifying the exhibition's ambience and guiding the viewer's emotional journey through the space.

Portraits, still lifes, wooded landscapes, and ancient ruins represent the primary themes that have consistently occupied the Party's pictorial and sculptural production. These themes are presented within impressive settings, including wall paintings and trompe-l'œil, which activate a new reading of the work and enhance the brilliant colors and simple forms.

Party's work is inspired by the 1921 painting 'L'Heure Mauve,' created by the Canadian Symbolist painter Oszkar Leduc. This inspiration is reflected in the exhibition's title. Party's work explores the diverse conceptualizations of the relationship between humanity and the natural world as depicted throughout art history. The result is a natural environment in a state of constant transformation. It is a place of hazards and disasters, a domain to be subdued, and an area strewn with the remnants of ancient civilizations or voids where human traces are absent. Nature then becomes the setting of the Anthropocene, where the connection with human beings has become irremediable and where the passage of time and finiteness give way to feelings of melancholy.

Visitors were encouraged to bring a pair of earphones and a smartphone to experience the exhibition's accompanying soundtrack, created by Quebec-based musician Pierre Lapointe.¹² Lapointe's musical compositions can be listened to by scanning the various QR codes in each exhibition room. The soundtrack, comprising 14 songs, features previously unheard material and reinterpretations of classic songs.

The thematic alignment between the visual and auditory components in *L'Heure Mauve* shows the capacity of music to amplify the emotional engagement of visitors. Cognitive psychology research, such as that by Juslin and Västfjäll (2008), confirms that music evokes strong emotional responses, which can influence the perception and

¹² <https://pierrelapointe.bandcamp.com/album/lheure-mauve>

interpretation of visual stimuli. Lapointe's soundtrack thus enhances the multisensory experience by deepening the connection between the viewer and Party's paintings. The tonal shifts in the music, which oscillate between serene and meditative to tense and dissonant, mirror the changing atmospheres of the artworks, stimulating corresponding emotional responses from the audience.

The integration of music into the exhibition does more than complement the visual elements. It also functions as a narrative device, guiding visitors through the space and creating a temporal framework. As Duncan (1995) suggests, the rhythmic structure of music can establish a sense of progression, encouraging a more personal and introspective engagement with the artwork. The soundtrack evokes specific emotions and sets the pace of the visitor's movement, transforming the exhibition into a coherent sensory experience where sound and vision are in constant dialogue.

L'Heure Mauve creates an immersive environment beyond traditional art exhibitions by exploring the relationship between sound and vision. This case study illustrates how music can serve as a curatorial tool, enhancing visual art's interpretive depth and emotional impact. The exhibition's success indicates that integrating music and other auditory elements is central to enriching the visitor experience.



Figure 3. 'Head' by Nicholas Party, part of *L'Heure Mauve*, Montreal Museum of Fine Arts (MMFA), March-October 2022

Conclusion

A soundscape grounds the visitor in a specific time or place, reinforcing the temporal and thematic setting of the exhibit. The sound directly relates to what is being visually or thematically presented, making it an effective tool for immersing visitors in a specific historical or environmental context. Incorporating sounds into the exhibition space creates immersion by mingling with the exhibit's atmosphere, strengthening the exhibit's authenticity, and offering visitors an emotional or sensory connection to the subject matter. Specially composed music in an art exhibit might evoke concepts like timelessness, spirituality, or the contrast between past and present. This function plays a significant role in shaping the emotional and intellectual interpretation of the exhibit, using sound to engage visitors on a more conceptual level. The flexibility of the symbolic function allows for a more profound, more complex interplay between sound and meaning. Still, it also requires curation to avoid ambiguity or confusion in its intended message.

Soundscapes that narrate history or dramatize key moments, such as voiceovers or sound effects, are examples of how sound can direct the visitor's engagement with the exhibit's storyline. This function is often the most explicit in its intentions, aiming to inform or lead the visitor through the exhibit in a structured way.

The incorporation of sound into curatorial practices, as evidenced by the case studies of *Silenzio/Suono - Sound/Silence* at GAM Turin, the interactive soundscapes at the Nelson-Atkins Museum, and the auditory-visual fusion in *L'Heure Mauve* at the Montreal Museum of Fine Arts, provides insights into the evolving role of sound in enhancing the museum experience. These examples illustrate how sound, in its various forms, can transcend traditional roles to become a crucial element in shaping visitor engagement with art.

The *Silenzio/Suono* project at the GAM Turin illustrates how sound can reframe the interpretation of visual art from a historical perspective. Sound is a significant aspect of 20th-century experimental art that cannot be excluded from the visual.

The integration of soundscapes, including both ambient noises and composed pieces, into the exhibition space challenges the visual-centric nature of traditional museum spaces by adding layers of meaning and context to the exhibited artefacts (Truax 2001).

Background sounds can affect emotional responses and cognitive processing during art viewings. The integration of personalized soundscapes through Art Processors' technology in the soundscapes at the Nelson-Atkins Museum exemplifies how auditory elements can be tailored to the specific experiences of individual visitors. The utilization of location-aware audio guides, calibrated to adapt to a visitor's position within the museum, facilitates the creation of a personalized auditory environment that links with the visitor's journey through the space, personalizing the

experience (Goldstein 2010b). In other words, sound can transform an art space into a more immersive environment, enabling visitors to engage with the artwork's physical and conceptual dimensions (LaBelle 2010; 2015). Furthermore, the audio guides' interactive nature encourages visitors to engage with the exhibits more actively, creating immersive and interactive experiences that encourage visitors to become co-creators in their museum experience (Simon 2010). The *L'Heure Mauve* exhibition at the Montreal Museum of Fine Arts illustrates how music can serve as a narrative and atmospheric tool that complements and enhances visual art. Pierre Lapointe's composition, specifically created for this exhibition, interacts with Nicolas Party's paintings to create a cohesive sensory experience. The alignment of music with visual themes allows for a deeper emotional engagement, demonstrating how sound can enhance the interpretive intensity of visual art (Hegarty 2007). Further innovation in using sound in museums and developing technology will create immersive and responsive environments that are visually engaging and rich in sensory and emotional depth. In conclusion, integrating sound into exhibitions represents a significant advancement in curatorial practices, offering new opportunities to enhance visitor engagement and deepen the interpretative experience.

References

- Anuar, FN Khairul, et al. 2024. A Conceptual Framework for Immersive Acoustic Auralisation: Investigating the Key Attributes. *Journal of Physics: Conference Series*. Bristol: IOP Publishing.
- Bem, Milena Jonas. 2023. *Effects of Sounds on the Visitors' Experience in Museums*. Master's thesis, Rensselaer Polytechnic Institute, New York.
- Bijsterveld, K., van Dijck, J. (eds.) 2009. *Sound Souvenirs: Audio Technologies, Memory, and Cultural Practices*. Amsterdam: Amsterdam University Press.
- Bijsterveld, Karin, and Trevor Pinch (eds.) 2012. *The Oxford Handbook of Sound Studies*. Oxford: Oxford University Press.
- Bregman, Albert S. 1994. *Auditory Scene Analysis: The Perceptual Organization of Sound*. Cambridge, MA: MIT Press.
- Bull, Michael, and Les Back (eds.) 2003. *The Auditory Culture Reader*. London: Bloomsbury.
- Cox, Trevor 2014a. The acoustics of architecturally significant spaces. In: *Sound: A very short introduction*. Oxford: Oxford University Press, 76-92.
- Cox, Trevor 2014b. *The Sound Book: The Science of the Sonic Wonders of the World*. London: Norton & Co.

- Diamantopoulou, Sophia, Dimitra Christidou, and Jennifer Blunden 2024. Multimodality and Museums: Innovative Research Methods and Interpretive Frameworks. *Multimodality & Society*.
- Duncan, Carol 1995. *Civilizing Rituals: Inside Public Art Museums*. London: Routledge.
- Dziekan, Vince 2016. Cultural Curating and the Practices of Light: Speculating Diffractively. *Curator: The Museum Journal* 59(2):177-193. doi:10.1111/CURA.12156.
- Fotiadi, Sevasti Eva 2024. Multisensory Technologies for Inclusive Exhibition Spaces: Disability Access Meets Artistic and Curatorial Research. *Multimodal Technologies and Interaction* 8(8): 74.
- Gallagher, Michael 2016. Sound as Affect: Difference, Power and Spatiality. *Emotion, Space and Society* 20: 42-48.
- Goldstein, David 2010a. *Cognitive Psychology of Auditory Perception*. 2nd ed. London: Psychology Press.
- Goldstein, E. Bruce 2010b. *Sensation and Perception*. Belmont, CA: Wadsworth Publishing.
- Grgurić, Diana, and Lidija Runko Luttenberger (eds.) 2024. *Aural Experience and Soundscape Management*. Boca Raton, FL: CRC Press.
- Hegarty, Paul 2007. *Noise/Music: A History*. New York: Bloomsbury Academic.
- Hodges, Donald, and Michael Thaut (eds.) 2019. *The Oxford Handbook of Music and the Brain*. Oxford: Oxford University Press.
- Hutchinson, R., and A. F. Eardley 2023. 'I Felt I Was Right There with Them': The Impact of Sound-Enriched Audio Description on Experiencing and Remembering Artworks, for Blind and Sighted Museum Audiences. *Museum Management and Curatorship* 1-18.
- Juslin, Patrik N., and Daniel Västfjäll 2008. Emotional Responses to Music: The Need to Consider Underlying Mechanisms. *Behavioral and Brain Sciences* 31(5): 559-575.
- Kassem, A. 2022. Hybrid and Performative Spaces: Towards a New Analytical Lens. *Interiority* 5 (2): 217-236.
- LaBelle, Brandon 2010. *Acoustic Territories: Sound Culture and Everyday Life*. New York: Continuum.
- LaBelle, Brandon 2015. *Background Noise: Perspectives on Sound Art*. New York: Bloomsbury.
- Lin, Lin, and Lang Lu 2024. Research on the Design of Multisensory Interactive Experiences in Museums Based on Embodied Cognition. In: *Proceedings of the International Conference on Human-Computer Interaction*. Cham: Springer, 204-211.
- Lippold, Olaf, John H. Groh, Ralf Schneider, and Andreas S. J. Linden 2019. Neural Correlates of Spatial Hearing: The Role of Binaural Cues in Sound Localization and Distance Perception. *Trends in Cognitive Sciences* 23(6):456-469.

- Lorente, J. Pedro 2016. *The Museums of Contemporary Art: Notion and Development*. New York: Routledge.
- MacLeod, Suzanne 2013. *Museum Making: Narratives, Architectures, Exhibitions*. New York: Routledge.
- Montreal Museum of Fine Arts 2023. *L'Heure Mauve* Exhibition Overview. Montreal Museum of Fine Arts. Retrieved September 4, 2024 <https://www.mbam.qc.ca/en/exhibitions/nicolas-party-lheure-mauve/>
- Nikolaou, Polina 2024. Museums and the Post-Digital: Revisiting Challenges in the Digital Transformation of Museums. *Heritage* 7(3):1784-1800.
- Perego, Elisa 2023. *Audio Description for the Arts: A Linguistic Perspective*. London: Taylor & Francis.
- Pezzini, Isabella 2021. *Modelli Semiotici per lo Studio del Museo*. Bologna: Esculapio.
- Pierroux, Palmyre 2024. Innovating Visitor Research within Museums: Concepts, Tools and Practices. *Multimodality & Society*.
- Poirier, M., Foucher, J. R., and Dautel, J. P. 2005. Multisensory Integration and Memory Formation. *Journal of Neuroscience* 25(11): 2728-2737.
- Privitera, Alessandro Giuseppe, Federico Fontana, and Michele Geronazzo 2024. The Role of Audio in Immersive Storytelling: A Systematic Review in Cultural Heritage. *Multimedia Tools and Applications* 1-39.
- Schafer, R. Murray 1994. *The Soundscape: Our Sonic Environment and the Tuning of the World*. Rochester, VT: Destiny Books.
- Sharji, Elyna Amir, et al. 2020. Designing a Framework for Multimedia Galleries. In: *International Conference of Innovation in Media and Visual Design (IMDES 2020)*. Dodrecht: Atlantis Press, 227-231.
- Simon, Nina 2010. *The Participatory Museum*. Santa Cruz, CA: Museum 2.0.
- Smart, Jennifer 2024. *Sound in Art: Museum Audio in the Age of Ubiquitous Music*. PhD thesis, Northwestern University, Illinois, USA.
- Smith, Bruce R. 1999. *The Acoustic World of Early Modern England: Attending to the O-Factor*. Chicago: University of Chicago Press.
- Sterne, Jonathan (ed.) 2012. *The Sound Studies Reader*. New York: Routledge.
- Thompson, Emily Ann 2002. *The Soundscape of Modernity: Architectural Acoustics and the Culture of Listening in America, 1900-1933*. Cambridge, MA: MIT Press.
- Truax, Barry 2001. *Acoustic Communication*. Westport, CT: Greenwood Publishing Group.
- Tso, A. W. B., and Lau, J. M. Y. 2019. Visitors' perception of a multimodal exhibition: A case study at the Hong Kong Heritage Museum. *Digital humanities and new ways of teaching*, 177-193. *Art Processors. Nelson-Atkins Museum of Art: Case Study. Art Processors*, 2021. <https://www.artprocessors.net/projects/nelson-atkins-museum-of-art>.

- Vuust, P., Heggli, O.A., Friston, K.J. et al. 2022. Music in the brain. *Nat Rev Neurosci* 23: 287-305.
- Weinberger, Norman M. 2004. Music and the Auditory System. In: Isabelle Peretz and Robert J. Zatorre (eds.) *The Cognitive Neuroscience of Music*. Oxford: Oxford University Press, 42-56.
- Yraola, Dayang Magdalena Nirvana T. 2024. Exhibit Curation for Sounds. *Humanities Diliman* 21(1).
- Zunzunegui, Santos 2003. *Metamorfosis de la Mirada: Museo y Semiótica*. Valencia: Universitat de València.

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