



# A Museum Without Labels

## Using Multisensory Elements to Interpret Objects

By Sarah Rosenkrans

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<http://advisor.museumsandheritage.com/features/audience-development-putting-visitors-at-the-heart-of-the-museum/>

**Title: A Museum Without Labels: Using Multisensory Elements to Interpret Objects**

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Museum Exhibition Planning + Design

The University of the Arts

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A thesis submitted to The University of the Arts in partial fulfillment of the requirements for the master of fine arts degree.

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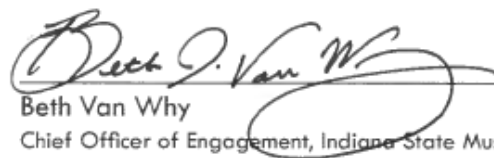
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## Abstract

Multisensory elements can be used by local history museums to provide object interpretation for diverse audiences without a reliance on language. This study explored the benefits multisensory elements can create in a museum setting as well as the different interpretation narratives each of the five senses can create.

Multisensory elements can interpret an object by creating context for it. Through the engagement of all the senses visitors can explore the object's purpose, how it was used, and the setting that would historically surround it without the reliance on words. This can especially benefit secondary language speakers and individuals with disabilities. Incorporation of multisensory elements can greatly enhance the museum experience for visitors, but also create challenges. Key challenges include protection of the artifact, cost of human resources and technology, and maintenance of the exhibit. Suggestions for future research in multisensory elements in museums include empirical research on impact by audience type (i.e., language, age, disabilities), collection of case studies, and identification of low cost multisensory options.

## Thank Yous

This thesis would not have been completed without the help of a whole host of fantastic people. Special thanks goes to:

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# Preface



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## Preface

The development of this thesis took some twists and turns as it evolved into its final form. It began with an interest in serving multilingual audiences and ended with a focus on how multisensory elements can enhance the museum experience and provide interpretation for visitors without a reliance on language.

As a summer intern at Spark!Lab, a hands-on invention space targeting children 6-12 in the National Museum of American History, the author witnessed the need to serve a multilingual audience. In addition to the local population of secondary language speakers, the museum received many international visitors, due in part to its location in Washington D.C. Many of the volunteer facilitators at Spark!Lab only speak English, so in order

to help secondary language speakers (as well as visitors with disabilities, pre-literate children, and all visitors) they created pictorial labels. These pictorial labels simplified the written instruction into a series of three to five pictures that illustrated how to complete the activity. These instructions were heavily used by a variety of visitors, especially when facilitators were delayed in helping them think through the activity.

These pictorial labels inspired the author to try to find a way to provide access to exhibition content that did not rely on language and could be understood by all museum visitors. This search ultimately led me to the study multisensory elements. Multisensory elements target multiple or all of the body's senses and can be used to provide information and context about an exhibition's themes and content. The study of multisensory elements can take many different directions, so needing to choose one the author decided to focus on how they can be used to provide interpretation in local history museums for people who speak a secondary language. These specifications were chosen for a couple of reasons. As will be discussed in greater detail in the audience segments section of this

thesis, the demographics of the population of the United States is changing to include more and more secondary language speakers. Museums, especially local history museums whose mission is to serve the local community and tell its stories, need to find ways to serve all sections of this changing population and the author believes that multisensory elements might be one option to do so.

After research began, this focus began to fade. Through a series of interviews, observations, and published articles (which will be discussed in other sections of the thesis), it was realized that the inclusion of multisensory elements can improve the museum experience for all visitors, including but not limited to people with disabilities, children, and secondary language speakers. In an interview with Ellysheva Zeira, the Education Associate for Access and Food Programs at the Lower East Side Tenement Museum, she stated

“...originally, we used multisensory elements to help two populations: visitors who are blind or have low vision and students, but as time went on we realized that when you touch something or hear something or smell something it reinforces information...They can help people with disabilities of all kinds. They can

help English speakers of other languages. It is really about providing pathways to make sure that the content that we provide is meaningful...”

Other interviewees and survey responders echoed this sentiment.

As the target audience of this thesis expanded to include all museum visitors, the focus changed to its final iteration: examining how multisensory elements can connect to historical objects and enhance their interpretation without the use of words. Using multisensory elements to provide interpretation and context for objects is becoming more common throughout the museum field. Museum personnel just need to be made aware or reminded of their benefits and uses. For example, in an interview with Kevin Schott, Education Programs Manager at the Penn Museum in Philadelphia, he stated that when he discussed the possibility of incorporating tactile replicas into the new Middle East Galleries (something he already did in several of his programs), the designers responded favorably to the idea and there are now touchable elements within the exhibits. This thesis attempts to record the types of stories and themes museums are currently telling (and

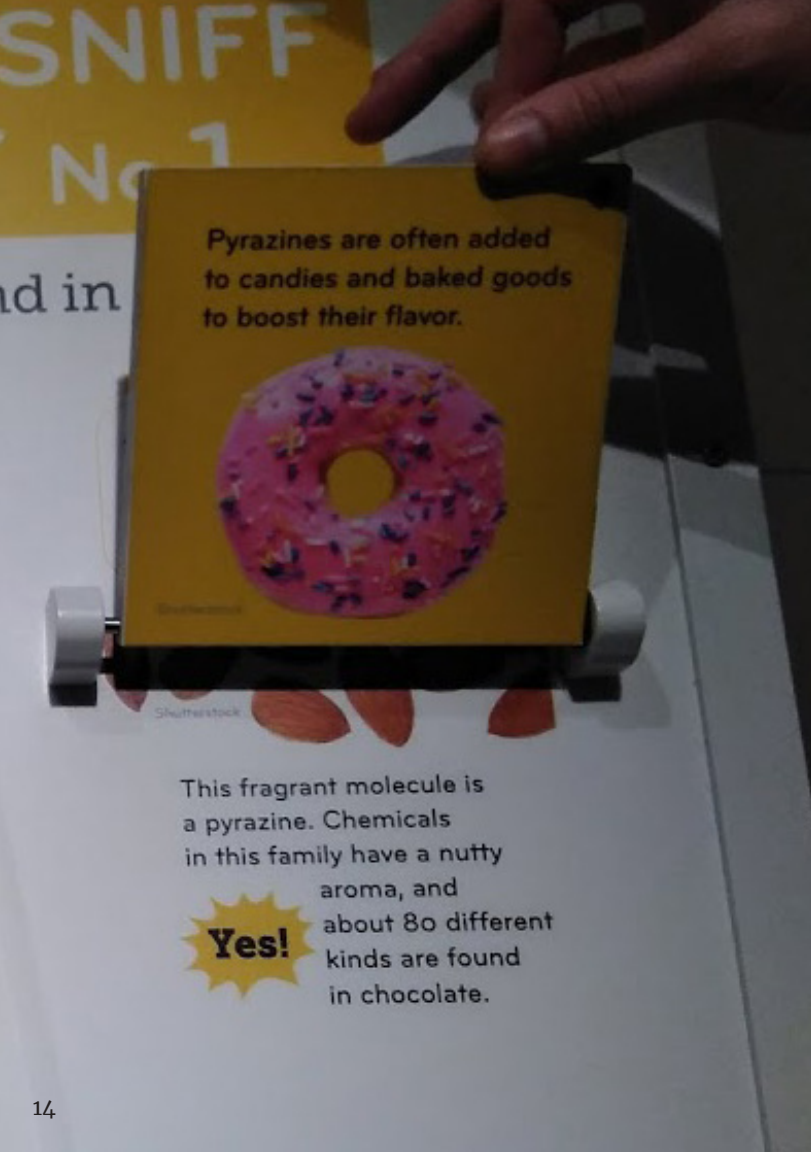
could be told) through the uses of multisensory elements in order to provide other institutions with a starting point of how multisensory elements can be integrated into their exhibitions to enhance the museum experience for their visitors.

# Introduction

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## Introduction

This thesis explores how multisensory elements can be used by local history museums to provide object interpretation for diverse audiences without a reliance on language. A brief survey of their museum mission and vision statements will show that local history museums exist to share and collect the history of an area within their community. For example, the Philadelphia History Museum at the Atwater Kent's mission statement reads, "The Philadelphia History Museum (PHM) engages Philadelphians and regional visitors with its extraordinary collections that reflect Philadelphia's rich history and the diversity of its people and their neighborhoods through exhibitions, educational programs and technology that explore the past to better understand the present." However, with changing



populations and growing awareness of various peoples' needs, many local museums now find themselves working to serve a very diverse population.

Multisensory elements provide an opportunity to potentially engage the majority of museum visitors. When asked who benefits through the use of multisensory elements, one survey respondent answered, "Anyone and Everyone!" multisensory elements can help create an exhibit that caters to most learning styles, especially when paired with traditional didactic labels,. There is also a wide variety of technologies that can be used to create these experiences, which allows almost every museum regardless of budgets and space allowance to utilize multisensory elements.

## Nomenclature

**Multisensory Interpretation** strives to involve all the senses visitors possess in order to provide a more complete understanding of the object, subject, and/or narrative.

A **Secondary Language** for the purpose of this thesis is any language that the museum labels are not in. Since most museums in the United States are written in English, this thesis will treat all other languages as secondary languages unless otherwise stated.

**Multisensory Elements** are experiences within an exhibition that target more than one of the senses.

A **Local History Museum** is a museum that is dedicated to exploring local history. They tend to be smaller institutions with little staff and low budgets.



**Current Use of Multisensory Elements**





## Multisensory Elements in History Museums

Although museums have acknowledged the benefits of multisensory elements for a while, institutions that are largely object based, such as local history museums, have been slower to add them to their exhibitions, than more hands-on institutions like science centers.<sup>1</sup> Through personal experience, the author has found that traditionally history museums tend to fall into two categories when it comes to multisensory elements: few to no multisensory elements or many in one area.

Many history museums only have a few multisensory elements or none at all. These museums often have fascinating content, but because most of the interpretation is presented in a didactic fashion through written language, not all visitors are engaged. Some visitors

with disabilities or who are unable to read have no method of interpretation within the typical experience of the exhibit. The rarity of multisensory elements in the institutions could be caused by a variety of reasons including a lack of money, time, and institutional priority.

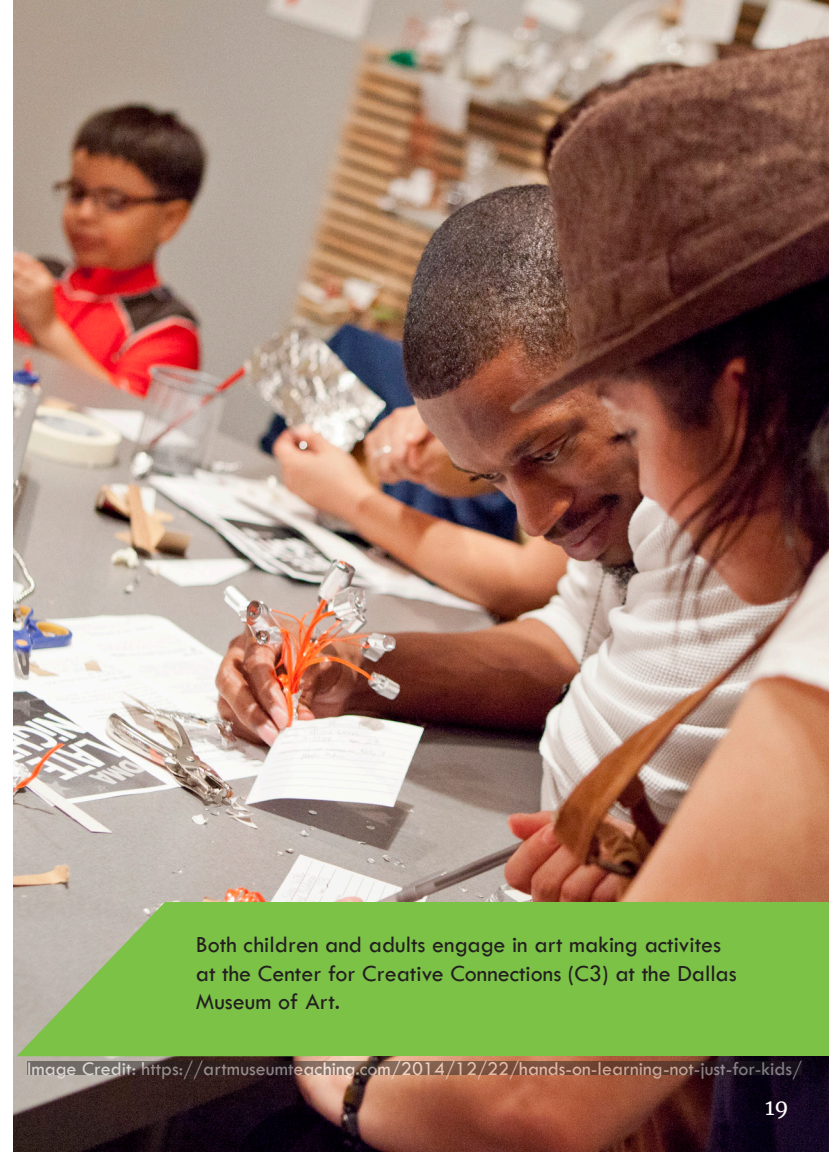
In 2016, the Library Company of Philadelphia, a “research library concentrating on American society and culture from the 17th through the 19th centuries” that has a small rotating exhibition space, opened the exhibit *Common Touch: The Art of the Senses in the History of the Blind*.<sup>2</sup> The exhibit had many multisensory elements because the guest curator and artist, Teresa Jaynes, felt strongly that these elements were needed to support the content. Erica Piola, the project manager, Associate Curator of Prints & Photographs, and Director Visual Culture Program at the Library Company, felt the same, but knew the institution probably would not include similar elements in future exhibits. When asked why in an interview, she stated, “its timing, its funding, its staff...[as] the curator working on the exhibition your time is still spent working on the other parts of your job...maybe it’s a copout...I’m still cataloging, I’m providing reference, I’m designing a paper...not

necessarily a paper related to the exhibition.” She went on to say that the institution does support these efforts to be more accessible, but needs reminding that they are important and should be considered.<sup>3</sup>

The other option many history museums often opt for is putting all or most of their multisensory elements into a single isolated area, inadvertently disconnecting the sensory experience from the objects and sometimes even the stories the exhibits are trying to tell. One online survey respondent stated, “...I also don’t enjoy separating multisensory elements into their own space. Integrating them in with traditional interpretation methods is more effective and visitor friendly.” Often times these separate areas are maker-spaces and/or places targeting children. For example, Spark!Lab at the National Museum of American History or imagiNATIONS Activity Center at the National Museum of the American Indian are great for kids, but often leave the parents with nothing to do. The parents are usually not discouraged from doing the activity, but neither are they encouraged to do so. Typically, the space is designed for kids, which makes the children feel welcome, but sometimes discourages the adults from participating. As a result

when visiting with kids, they usually end up watching or if they are attentive, helping facilitate the activity, but it does not have to be this way.<sup>4</sup> People have different learning styles, some of which require hands-on and/or multisensory experiences. This learning preference does not simply go away when children become adults. In an interview with Ellysheva Zeira, the Education Associate for Access and Food Programs at the Lower East Side Tenement Museum, stated, “tactile learners in school are tactile learners as adults.”<sup>5</sup> If a museum wants a separate interactive space, why not make it for both adults and children to enjoy? For example, the Center for Creative Connections (C3) at the Dallas Museum of Art creates activities “to accompany works of art” and allows visitors to “make personal connections.” The center encourages adults to participate and as a result they make up half their visitorship.<sup>6</sup>

These separate multisensory interactive spaces tend to be fairly popular, evidenced by the crowds of noisy people as they wait in line, do the interactives, and discuss the outcomes. Visitors can learn a lot about the subject through their own experiences and many of the interactives do not require knowledge of the language



Both children and adults engage in art making activities at the Center for Creative Connections (C3) at the Dallas Museum of Art.

Image Credit: <https://artmuseumteaching.com/2014/12/22/hands-on-learning-not-just-for-kids/>

to complete. However, these spaces also sometimes feel isolated or disconnected from the rest of the museum and tend to contain few to no objects. As a result, visitors do not tend to connect their experiences within the spaces to the objects, which creates a missed opportunity for object-based institutions.

For example, in the White Tower in the Tower of London there is an exhibit displaying suits of armor and weaponry throughout the ages with numerous objects, but no interactive exhibits until you reach the last room. Among several other interactives, there is one that allows visitors to experience the sensory deprivation of wearing a medieval helmet. As visitors place their heads into the helmet, they noticed the lack of vision and noise. No words are necessary to understand this experience, it is purely sensory. After enjoying this experience, the visitors exit the exhibit without any additional knowledge about the relationship to other exhibits. In the author's opinion, placing the interactive next to the suits of armor would have made the objects more relatable as the interactive provides a shared experience to a person from the past. Wearing the helmet could have made the visitor look at the remaining suits of armor

with fresh eyes.

A few hands-on spaces do contain objects. Spark!Lab for example, has an "object wall" filled with inventions connected to the three yearly themes of the space, but for the most part the wall is ignored. Staff are trying to change this, but visitors, especially children, are more interested in doing the activities. While visitors are enjoying and using the space, they may not be connecting to the idea that everyday objects are inventions, which is one of the goals of the object wall and space.<sup>7</sup>

Many historic places, where the space is the object, have issues making the space accessible because often times the building and landscape cannot be changed very much. In many cases, the furnishings are historic and cannot be touched without causing damage to the artifact. Adding multisensory elements to these places can help create a more accessible experience as well as bring to life the people who lived in and used the space. Colonial Williamsburg embraces this concept by fully recreating a colonial town on the brink of war with Great Britain. The houses have costumed interpreters, rooms are set similar to how they would have been historically, and music and other sounds fill the rooms when it is

appropriate. The historic site also has live occupational demonstrations, such as cooking, blacksmithing, and weaving. These demonstrations fully immerse the visitors in the scene. Visitors get to see the tools of the trade in action (and sometimes use them), smell the materials and environment (e.g. burning wood and baking food), and hear the interpreters and noises associated with the job. Other historic places do not strive for this complete historic immersion, but are still able to use multisensory elements to engage visitors.

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- 1 Mark Walhimer, "Science Centers Leading the Way," Museum Planner, July 17, 2013, Accessed March 1, 2018. <https://museumplanner.org/science-centers-leading-the-way/>.
  - 2 About LCP." The Library Company of Philadelphia. 2017. Accessed April 15, 2018. <http://librarycompany.org/about-lcp/>.
  - 3 Erika Piola, Interview by Sarah Rosenkrans, March 27, 2017.
  - 4 Knowledge of how adults interact in hands-on spaces is based on conversations and experience gained through a summer internship at Spark!Lab in 2017.
  - 5 Ellysheva Zira, Interview by Sarah Rosenkrans, March 17, 2017.
  - 6 Jessica Fuentes, "Hands-On Learning: Not Just for Kids," Art Museum Teaching, December 22, 2014, Accessed March 15, 2018.
  - 7 Knowledge of how Spark!Lab's visitors interact with the objects in the space is gained from a summer internship there, where the author prototyped designs aimed at encouraging more visitors to interact with the object wall.



Costumed interpreters at Colonial Williamsburg discuss the occupation of weaving, conduct demonstrations, and allow visitors to help in the process by tying knots.

Image Credit: Sarah Rosenkrans

## Benefits of Multisensory Elements

## Benefits of Multisensory Elements

In the introduction to *The Multisensory Museum*, Nina Levent and Alvaro Pascual-Leone discuss that whether or not it is designed to be so, every museum experience is multisensory. They state, “museums need to consider the combined and complex interactions between visual, auditory, olfactory, spatial, and other aspects of the visitors’ experience.”<sup>1</sup> From the moment a visitor enters the museum, they are taking in the sights, smells, and sounds of a place. They take notice of where people are gathered, what they are talking about, and the smells of the cafeteria, bathroom, and peoples’ perfumes. Instead of filling the museum with these accidental sensory elements, museums should curate them to better support the overall atmosphere of the museum and the themes of



the exhibits within it.

In fact, modern neuroscience suggests the brain uses multiple senses to understand a situation and complete tasks. Ladan Shams and Aaron R. Seitz, psychologists at the University of California Los Angeles and the University of California Riverside, state in their article “Benefits of multisensory learning” that “the human brain has evolved to develop, learn and operate optimally in multisensory environments.”<sup>2</sup> Multisensory elements are particularly effective at creating emotional responses because our senses, especially the sense of smell, are connected to our memories. Levent and Pascual-Leone cited Jan Mark, the “brilliant British children’s author,” who wrote, “Everything you have ever heard, smelled, tasted, or touched is in there [your head]. Most of it has been pushed to the back...but an enormous amount is still there when you need it.”<sup>3</sup> Levent and Pascual-Leone called this the “museum of the mind.” Multisensory elements can help your brain recall these memories and the emotions connected to them.

Incorporating multisensory elements into museum exhibitions is not a new concept. Early museums allowed, even encouraged, the handling of the objects. Visitors to

these early museums could touch, smell, and maybe even taste the artifacts.<sup>4</sup> There are many benefits to using multisensory elements within a museum space, including explaining the unexplainable, supporting multiple styles of learning and creating learning opportunities for specific audience segments such as children, people with disabilities, and people who speak a secondary language.



## Explaining What Words Can Not

Multisensory elements can express abstract concepts and ideas that museum visitors may otherwise have trouble understanding. For example, aspects of culture such as music, dance, art, and cuisine. Unless visitors have some experience in these fields or cultures, words spoken or written will not help them understand. The picture generated by their imagination would not be as complete as actually hearing the music, watching the dance, seeing the artwork, or tasting the dish. Another example would be trying to explain snow to someone who has never seen it. While words such as cold, white, wet clearly describe snow, nothing can replace the experience of holding and throwing a snowball. It should be noted that museums have the unique opportunity to not only recreate these hard to explain experiences, but to also interpret them. What is the meaning and cultural symbolism behind a dance that visitors might not inherently recognize? What societal influences inspired the artist? This interpretation is what allows museums to provide context to the visitor's experience, which is something visitors would not necessarily get if they were to watch a performance on the street or stumble upon an image on the internet.



The exhibit *The Art of American Dance* explored the influence of dance on American artists. The videos provided examples of the dance styles so visitors can better see the influence on the art

Image Credit: Crystal Bridges. <https://crystalbridges.org/blog/dance-historian-thomas-de-frantz-on-the-art-of-american-dance/>

## Multiple Learning Styles

People learn and explore museums in different ways. Howard Gardner, a developmental psychologist, studied how people learn and introduced his multiple intelligence model in 1983.<sup>5</sup> In it, he identified seven different intelligences, all of which have different preferences when it comes to learning. For example, people with an affinity for visual-spatial intelligence learn best through visual aids such as charts, photographs, and video. Bodily-kinesthetic learners on the other hand prefer to be taught with hands-on learning and role playing. People with a high interpersonal intelligence prefer to work with other people to learn, talking it out, or working as a team to achieve a goal.<sup>6</sup> All the intelligences have a different need. Gardner argued, “the broad spectrum of students-and perhaps the society as a whole-would be better served if disciplines could be presented in a number of ways.”<sup>7</sup>

Others have also argued that people learn in different ways. John Falk, Founder and Co-Director of the Institute for Learning Innovation and Sea Grant Professor of Free-Choice Learning at Oregon Sate University, is “known internationally for his expertise on free-choice

learning,” which occurs in museum settings.<sup>8</sup> After numerous studies he identified five types of museum visitors based on their motivations for visiting: explorers, facilitators, professionals/hobbyists, experience seekers, and rechargers. Falk found that “these identity-related motivations directly relate to key outcomes in the museum setting, such as how visitors behave and interact with the setting and importantly, how they make meaning of the experience once they leave.”<sup>9</sup> In other words a visitor’s motivation for visiting the museum affects how they experience the museum and what learning outcomes they take away with them. He states that a visitor’s motivations can change from visit to visit, so it is important to provide opportunities to cater to all visitor motivations. In Falk’s article “Understanding Museum Visitors’ Motivations and Learning” he concludes that “the ‘one size fits all’ experiences provided for visitors by most museums...do not work equally well for all visitors all the time. The content may be just right for some, and totally miss the mark for others.”<sup>10</sup>

Multisensory elements have the ability to present information in ways that connect to multiple types of visitors and learners. If done properly the different

technologies and methods can be blended and layered together, so that some aspect resonates with everybody. By doing so museums could better help all visitors learn in a way that is most effective and comfortable for them.



Image Credit: <https://www.fieldmuseum.org/support/volunteer/public-floor-volunteers>

## Specific Audience Segments

Although multisensory elements can improve the museum experience for all visitors, often times museums utilize them to enhance the experience for specific audience segments. For example, one survey respondent stated, “originally intended for low vision visitors, we find that all visitors benefit from the interactive nature of the multisensory elements.” Below are some examples of why and how some institutions are using multisensory elements to improve the museum experience for people with disabilities, children, and secondary language speakers.

### People with Disabilities

Museums are now aware of the need to create inclusive experiences for existing audience segments who have traditionally not been able to fully enjoy the museum experience, such as people with disabilities. According to the U.S. Census Bureau, 1 in 5 people in the United States reported having a disability in 2010.<sup>11</sup> That is around 56.7 million people. With such a significant portion of the population represented in this category it is important to design exhibits that are accessible. Several sets of guidelines, including the ADA Standards for Accessible Design and the Smithsonian Guidelines

of Accessible Exhibition Design, have been produced to improve museum accessibility. Designing for people with disabilities not only helps those visitors, but also typically improves the experience for all visitors. In a TED Talk Elise Roy, a product designer who has been deaf since she was ten, stated, “When we design for disability first, we often stumble upon solutions that are not only inclusive but also are often better than when we design for the norm.”<sup>12</sup>

Many institutions are currently exploring multisensory elements for the purpose of improving the museum experience for people with disabilities. Most articles on the subject examine case studies in art museums, natural history museums, and historic place museums. For example, as a way to be more inclusive for people with disabilities, the Metropolitan Museum of Art produces “multisensory stations” on select Fridays that allow visitors “to experience exhibits th[r]ough scent, touch, music and verbal imaging.”<sup>13</sup> Many natural history museums have added multisensory elements to better interpret their dioramas. The Boston Museum of Science added smell boxes, touchable animal pelts, and audio to their dioramas in the New England Lifezone Hall in

the late 1980s to enhance the museum experience for visitors with disabilities. Through a summative evaluation, they found that the new addition not only helped visitors with disabilities, but all visitors in general have a more enriching experience. They spent more time in the exhibit and were able to recall more information.<sup>14</sup>

Some historical place museums are also looking towards multisensory interpretation to help provide their visitors easier access. For example, in the article “Historic Sites and Universal Design: Lessons from the Tenement Museum,” Miriam Bader, former Director of Education at the Lower East Side Tenement Museum, uses her experiences at the Tenement Museum in New York City to provide examples of what a historic home or site can do to become more accessible, such as providing large print version of primary sources and transcripts of oral history and allowing visitors to handle objects. She goes on to describe their new exhibit that is the only wheelchair accessible space in the museum. The museum included many multisensory elements within the new exhibit, including a talking tactile book as an alternative to a touchscreen counter and smells and music in the



The Tenement Museum's *Shop Life* exhibit includes several multisensory elements, including this touch table which combines education objects, sound, and historical images.

Image Credit: Tenement Museum, <http://tenement.org/blog/new-media-in-shop-life/>



saloon recreation. During construction, the museum made sure to include induction loops, which allow the sound in the room to be picked up by hearing aids.<sup>15</sup> Traditional history museums can use many of the techniques used by historic places to bring their own exhibits to life and connect the objects to the people and places who visit their museum.

## Children

Another group of visitors that benefit from multisensory museum exhibits are children. The author's personal experience indicates that many children do not easily engage with traditional museum exhibits consisting of

labels and objects. The lack of engagement occurs for a number of reasons, including children's inability to read due to age level. Children's museums actively try to create multisensory exhibits with little to no writing. Exhibits tend to create very active hands-on experiences, often with multiple outcomes that allow children to do what they find interesting. The exhibits focus less on facts and figures and more on learning by doing, socializing, and observing. For example, in an interview with Mindy Porter, Director of Education, and Erik Smith, Director of Exhibits & Facilities, at the Scott Family Amazeum, a children's museum in Bentonville, AR, they stated that the museum does not focus on learning facts. In fact, few labels exist in the entire museum. Instead the exhibits are all multisensory with multiple outcomes and children choose to interact with the exhibit however they want to. Because the exhibits are so open and versatile, children can walk away having learned very different principles. Some things Porter and Smith noted as possible takeaways from the exhibits are 1) children developing new identities (such as being able to see themselves as an artist or an explorer), 2) challenging their attitudes of themselves (possibly by conquering their fear of heights by climbing to the



Image Credit: <http://www.amazeum.org/experiences/canopy-climber/>

Canopy Climber at the Scott Family Amazeum

top of the tree canopy), and 3) gaining social skills by working together towards a common goal.<sup>16</sup>

## Secondary Language Speakers

Due to changing demographics many local history museums, now find themselves serving an audience that speaks multiple languages. This change is not limited to museums in large cities, like New York City, Chicago, or San Diego. Springdale, Arkansas has a population of around 78,000 people, so not a big city, but not a small town either. In Springdale, over 36 languages are spoken, with Spanish being a primary language.<sup>17</sup> On an even smaller scale Ulysses, Kansas is being revitalized by immigrants from Mexico and Central American who now make up 50% of its 6,000 population.<sup>18</sup>

The museum field as a whole is still trying to develop the best strategy to engage these audiences. Several articles and museum blogs discuss how to attract multilingual audiences to the museums, which can be quite challenging. For example, in 2012 Esmeralda Montenegro Owen, who was the Curator of Marketing and Community Engagement for the National Steinbeck Center, said she partnered with the local Spanish radio,



The National Museum of American Jewish History in Philadelphia welcomes visitors in fourteen different languages to encourage diverse audiences to visit.

Image Credit: <https://trimmtravels.com/best-time-to-visit-philadelphia/>

TV, magazines and newspapers in order to attract more of the Latino population. These efforts led to a “slow but steady” increase in “attendance, participation, visibility, and interest.”<sup>19</sup> Many of these articles describe the process of becoming involved with the community, but fail to note what is at the museum to engage these audiences. Does the museum offer programs in other languages or bilingual exhibitions?

The *Bilingual Exhibit Research Initiative* found many benefits to producing bilingual exhibitions, but according to *The Multilingual Interpretation in Science Centers and Museums* report only 10% of U.S. museums surveyed “offer most or all visitor information in more than one language.”<sup>20</sup> Becoming a bilingual museum is a huge undertaking. Even creating one bilingual exhibit is a long process. In an issue of exhibition, staff from the Canadian Museum of History describe the process to be “complicated, time-consuming, and costly” and identifies six distinct steps to creating bilingual text.<sup>21</sup> Many museums simply don’t have the resources to create bilingual exhibits. *The Multilingual Interpretation in Science Centers and Museums* report identified “finding and identifying sufficient monetary and staff resources”

as the biggest challenge in creating multilingual strategies.<sup>22</sup>

In this author’s opinion, secondary language speakers could benefit from the inclusion of multisensory elements within exhibits, which depending on the design may be able to be added to existing exhibits and be cheaper than developing a bilingual exhibition. Because many multisensory elements do not rely on language to convey information, the elements could be used to provide interpretation to people who speak all languages not just a select few. Also, there are many methods for learning how to read and speak other languages which hinge on a multisensory approach.<sup>23</sup> For example, the Anchorage Literacy Project (ALP) in Anchorage, AK uses a modified version of the Slingerland method to teach adults with low-level reading skills. The Slingerland method “uses multisensory teaching techniques from Orton-Gillingham that were adapted for the classroom.”<sup>24</sup> A typical lesson combines the senses of sight, hearing, and touch. In one activity, students see the letter, while speaking the sound associated with it and tracing its form in the air with their finger or writing it on paper. All three actions serve to reinforces the lesson



Using multisensory elements for the purpose of interpreting content for secondary language speakers in the museum setting has not been heavily discussed or analyzed by the museum field, so few articles on this subject exist. Further research would need to be conducted to see if adding multisensory elements to a space is enough to allow secondary language speakers feel welcome in the museum and engage with the exhibitions. A combination of bilingual and multisensory elements might be the best for engaging visitors who speak a secondary language.

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- 6 Carla Lane, "Gardner's Multiple Intelligences," Accessed January 17, 2018. <http://www.tecweb.org/styles/gardner.html>.
- 7 *Ibid.*



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9 Ibid, 121.

10 Ibid, 122.

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18 Chuck Conder and Ted Rowlands. "I am America: Latino immigration transforms a Kansas town." February 20, 2012. Accessed November 18,

2017. <http://inamerica.blogs.cnn.com/2012/02/20/i-am-america-latino-immigration-transforms-a-kansas-town/>.

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20 Steve Yalowitz, Cecilia Garibay, Nan Renner, and Carlos Plaza, Bilingual Exhibit Research Initiative: Institutional and Intergenerational Experiences with Bilingual Exhibitions, Report, September 2013, Accessed August 20, 2017, [http://informalscience.org/sites/default/files/2013-10-01\\_BERI\\_Research\\_report\\_Final\\_Sep\\_2013.pdf](http://informalscience.org/sites/default/files/2013-10-01_BERI_Research_report_Final_Sep_2013.pdf); Association of Science-Technology Centers, Inc., and Exploratorium. Multilingual Interpretation in Science Centers and Museums, Report, Accessed June 14, 2017. [http://astc.org/resource/equity/Multilingualism%20Report\\_Final.pdf](http://astc.org/resource/equity/Multilingualism%20Report_Final.pdf).

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The Museum of Fine Arts in Boston offers several multisensory options as a way to become more accessible.

image Credit: New York Times, <https://www.nytimes.com/2013/10/27/arts/artsspecial/welcoming-art-lovers-with-disabilities.html>

**Multisensory Interpretation**



## Multisensory Interpretation and Some Possible Technologies

One of the great things about using multisensory elements is that they can be used to create design solutions to fit almost any budget or space, but before using them, one should consider how the elements will improve the exhibit experience. In a survey conducted for this thesis, several respondents said that they consider how the multisensory elements will relate to and enhance the exhibition themes before using them. One survey taker wrote that they consider whether “the elements contribute to the thematic message and content of the exhibition or if they’re just bells and whistles unrelated to the content. (Try to avoid the later).” In order to help create an understanding of some of the ways multisensory elements can be used to connect to

the contents of an exhibition, the next portion of this thesis will provide a general overview of the potential learning outcomes each of the five senses can provide. This section will also touch on some of the technologies that can be used to help tell those narratives without a reliance on language.

## Sight

Sight is probably the most utilized sense in the museum setting. Levent and Pascual-Leone wrote that museums “are still subject to the ‘sense hierarchy’ that elevates and privileges sight above other senses.”<sup>1</sup> Museum designers and curators work to create a visual aesthetic that combines a variety of elements to create a space that supports the exhibition’s themes and is pleasing and comfortable to be in. Instead of focusing on the overall look, feel, and design of an exhibition, this section will focus on how visual components can directly relate to an object in order to provide interpretation for it. Sight can be used to provide greater context for the people, cultures, places, and time periods connected to an object, draw attention to design details, and show how and what an object was used for.

### Creative Object Display

The simplest way to provide context through sight is to simply pose the object in a thoughtful way. It does not require any extra materials except for maybe some extra mounts. Many history museums display their objects resting within a blank case which does nothing to demonstrate the purpose of the object. Instead of keeping with this tradition, museums could pose the

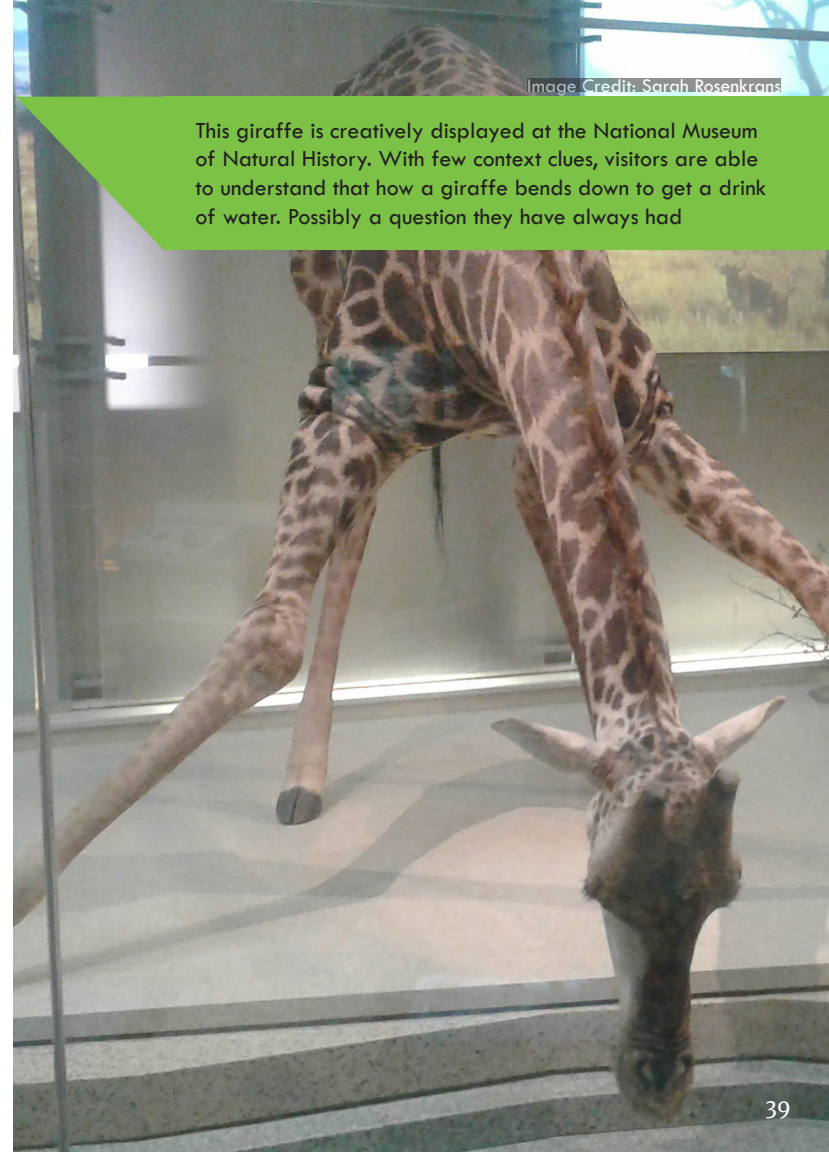
object in a way that shows visitors how the object would have been used. For example, a teapot could be hanging at an angle above some teacups to simulate pouring tea or instead of a sword hanging on a wall it could be facing a visitor head on. How would it feel to face the point of a sword head on? The pros and cons of this idea would need to be weighed before implementation, but in the author's opinion posing artifacts would provide a very different experience than just viewing it from the side. Some visitors would probably know the purpose of these objects based on past experiences, but displaying them in this manner could renew curiosity for them. The same concept could be used on less familiar objects, where visitors may need the extra help to understand their purpose.

### Combining 2-D Images with 3-D objects

Building off of the previous example, museums could better utilize the sense of sight by combining images with 3-D objects. For example, pairing an enlarged image of a person using a tool in the collection with the actual tool positioned in front of it. (A regular sized image could also be placed beside the object if constraints did not allow for it to be enlarged.) This

Image Credit: Sarah Rosenkrans

This giraffe is creatively displayed at the National Museum of Natural History. With few context clues, visitors are able to understand that how a giraffe bends down to get a drink of water. Possibly a question they have always had





would not only provide context about the object by creatively displaying it, but it would also give visitors a sense of who would have used the tool. How was the person dressed? Was the owner wealthy? Was this product intended to be used by men/women? What time period was this tool used in? Using this method, questions such as these could be answered without the need for words. This technique is sometimes used in natural history museums when displaying skeletons. Sometimes the picture of the animal is displayed behind the skeleton. If photographs are not available illustrations could be created to convey the same interpretation. Videos could also be used instead of pictures. The Indiana State

Museum does this in their recently opened exhibition *First Nations: Decode Ancient Echos*. In one section, a projection shows a Native American walking over to an object in a case, “picking” it up, and beginning to use it in a game of chunky.

Another way to combine 2-D images and 3-D objects is through object theater. Object theater combines multimedia presentations and 3-D objects to tell a story. It often involves (but does not have to) images, videos, sound effects, narration, and dramatic lighting in addition to the artifacts. Object theatre can sometimes be considered “tacky and ugly,”<sup>2</sup> but when done right it can really bring an idea to life by immersing visitors in the scene and telling stories directly connected to the objects in front of them. For example, the Museum of History and Industry in Seattle, WA uses object theatre to tell the story of the great fire that destroyed much of the city in 1889. The program is set to a song and is relayed through first-person narrative with each object being lit by a light when it is “speaking.” Behind the objects is a large screen projecting historical images and subtitles. Elizabeth Wood, professor at Indian Univerisy-Purdue University Indianapolis, and Kiersten F.



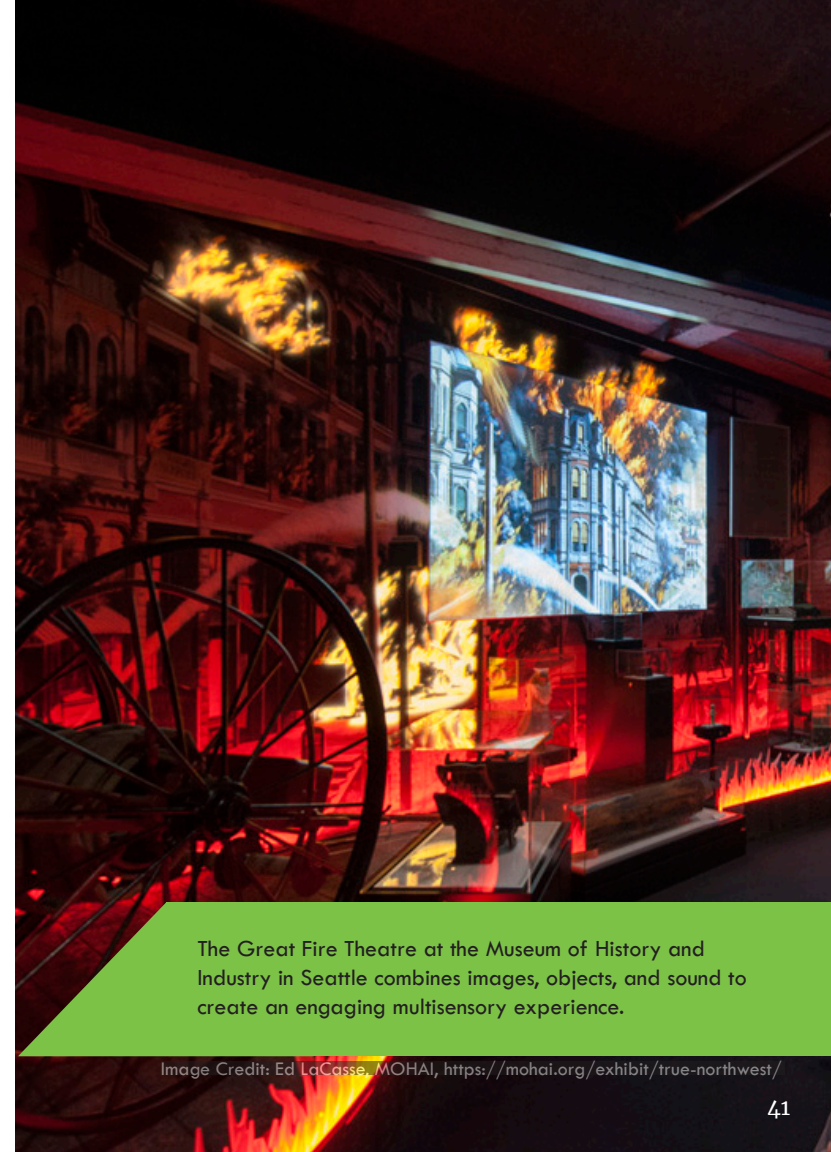
Image Credit: Indiana State Museum and Historic Sites

Video of Native American "picking up" object to play chunky.



Latham, professor at Kent State University, state in their book *The Objects of Experience: Transforming Visitor-Object Encounters in Museums*, “What is important about the Great Fire Theatre is the use of humor and dramatic tension that help demonstrate each of the characters, bring the objects to life in a new way... it all happens through a finely crafted and researched strategy.”<sup>3</sup> One thing to remember about object theatre is that its interpretation often relies on language due to the narration, so if an institution is trying to serve a multilingual audience it is important to consider what the visitor experience would be if they can not understand the video.

Combining 2-D images and 3-D objects could also be used to draw connections between past and present times or different cultures. Instead of using an image from the time of the object, museums could place an image of a similar tool from another culture or time. A strong juxtaposition could peak a visitor’s curiosity, causing them to take a closer look and begin to notice differences between the two tools. As the visitor spots the differences they may begin to wonder why the objects are so different. Are the differences because



The Great Fire Theatre at the Museum of History and Industry in Seattle combines images, objects, and sound to create an engaging multisensory experience.

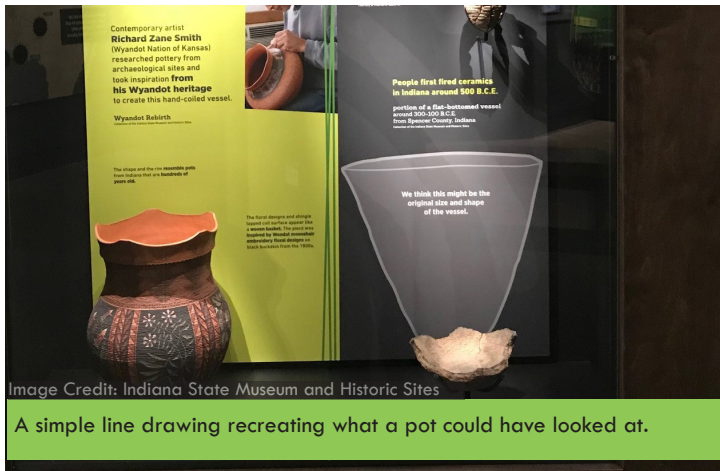
Image Credit: Ed LaCasse, MOHAI, <https://mohai.org/exhibit/true-northwest/>

of resources in the area, slightly different goals, a cultural taboo, etc? The visitor might also begin to think about how the objects accomplish the same task. This full spectrum of thought could show how humans have adapted to different regions across time.

Museums could also use 2-D images to recreate/finish 3-D objects that are broken or incomplete. Often times historical artifacts do not survive to the present day fully intact. Pieces are missing or maybe all that remains is a shard. To provide a more complete picture of what the object would have looked like, illustrations can be created to complete the object. This would be important

if the exhibit's goal was to recreate the historic scene or if the design of the object was important to the culture or practice being discussed. If the object is very detailed, it could show visitors the level of craftsmanship needed to create it.

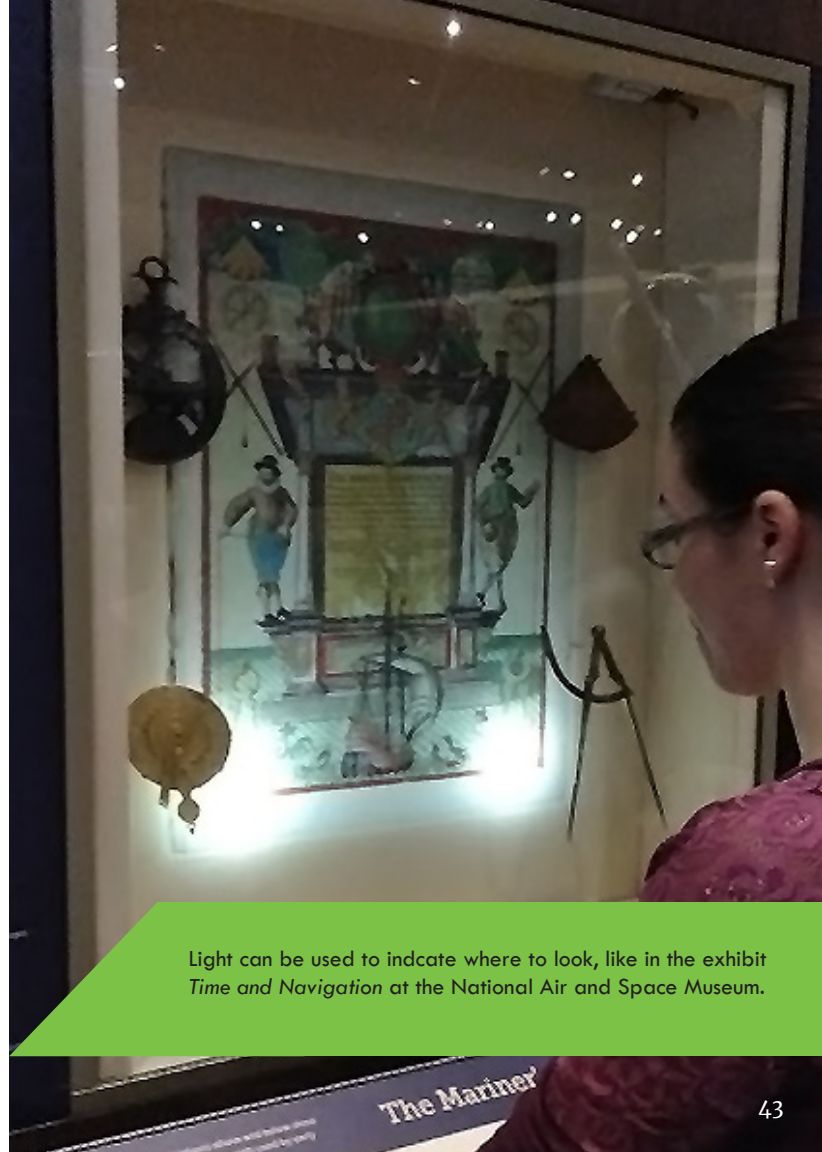
A more technological way to achieve this effect would be to use augmented reality technology. Visitors could hold up a device and see it restored, see it or a modern counterpart in use, or zoom in to see the object in more detail.



## Look at the details

Another way to engage visitors through sight is to ask them to look at the details of an object. Museums often do this in the text of their labels, but there are ways to achieve this reaction without the use of words or in conjunction with them. One way is to put a symbol near the area you want visitors to examine. This could take the form of an arrow, a magnifying glass, or any symbol that fits the theme of the exhibit. This symbol would act like a “you are here” sticker, drawing the visitors’ attention to the desired area. This effect could also be created using a spot light or different colored light to indicate the area to look at.

Another method to focus museum visitors’ attention is by enlarging specific details of an object or picture. The enlarged images can then be placed on the label in front of the object or around it. These enlarged images ask visitors to take a closer look at specific areas. Words that explain the different symbols and connections typically accompany each zoomed in image, but connections can still be drawn without the words. The connections just might not be as academic as the one’s the captions provide. Visitors will instead connect



Light can be used to indicate where to look, like in the exhibit *Time and Navigation* at the National Air and Space Museum.

the images to their own experiences, which can yield a variety of results ranging from something very scholarly to connecting it to a personal memory to simply saying whether they like the design or not.

This method could also be used to compare different variations of similar objects. Pointing out differences between objects can help visitors understand how objects have evolved over time and between different cultures. This comparison can be accomplished by drawing attention to specific elements of an object, as discussed earlier, or it may be enough to have two contrasting objects next to each other. An element of

touch can also elevate this experience.

One thing that may make this comparison more difficult for visitors is if there are too many objects to compare. Sometimes museums cover an entire wall or section with a multitude of the same object, most often this is done with objects like arrowheads or weaponry. This can create beautiful displays and easily show the number of styles that exist or wide use of an object. However, the volume does not create a good form for comparison. Too many objects may make it hard to choose one to focus on and look closely at the details. Visitors may be able to see the most obvious differences, but not the smaller ones, which sometime are more interesting or relevant to the story.

## Recreate the Scene

Sight can also be used to recreate the scene in which the object would have been found. Recreating the scene can inform visitors about the culture, climate/region, and/or use of an object. This can be done to different levels of realism and using a variety of technologies. The other four senses can be added to heighten the experience of a recreated scene and will be further described in each section.



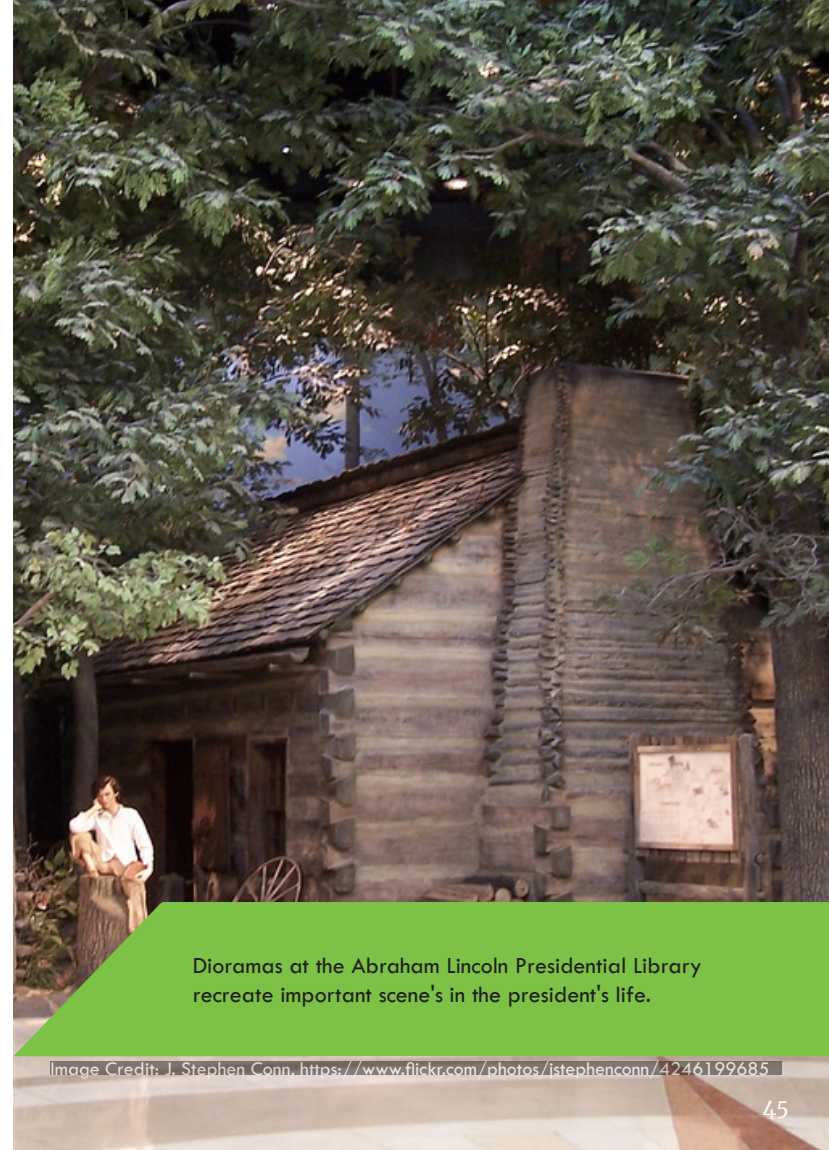
Image Credit: Chelsea Schiff, <http://www.travelandleisure.com>

Images on the reader rail point out symbols to look at in the larger picture



One way to recreate the scene is with dioramas. For the purposes of this thesis, dioramas are life size representations of a scene. They can range from fully recreated, highly detailed, realistic scenes, like the ones at the Abraham Lincoln Presidential Library and Museum to more simplified or cartoony versions of the environment, similar to the environments sometimes found in children's museums. Often times visitors can walk through these scenes which creates a very immersive experience. Visitors can feel transported to a different time or place and possibly get a better understanding of an object's purpose and its significance.

Dioramas can also focus not on the environment of the object, but on the people in the scene. can create a sense of action and drama as well as help create a more personal connection. Instead of a general idea of who would use this object, visitors can actually put a face to it. The expression on the "person's" face could convey a sense of fun, anger, or tiredness, which in turn could create a responding emotion in visitors. For example, the Museum of the American Revolution in Philadelphia recreates historical scenes with a minimal amount of scenery. Instead, the dioramas rely on



Dioramas at the Abraham Lincoln Presidential Library recreate important scene's in the president's life.

Image Credit: J. Stephen Conn, <https://www.flickr.com/photos/istephenconn/4246199685>

mannequins to convey the emotions and actions of a scene through their poses and expressions.

2-D cutouts can be used to recreate a scene in much of the same way as dioramas. Depending on the design, though they could be a little cheaper. Although the design will not be highly realistic, 2-D cutout can recreate environments ranging from forests to city scenes such as in the Civic Education Resource Centre for the Home Affairs Bureau in Hong Kong. 2-D cutouts can be another way to introduce characters into an exhibition. Real images of people could be cropped and used to create a sense of authenticity or new characters

could be created to better convey the feeling of the exhibition. The incorporation of actual objects with 2-D cutouts could work well because they require less space than dioramas and can be made to fit into a case with the objects.

A newer and more high-tech way to immerse visitors in the scene is to use augmented reality technology. Visitors could hold up a device and view the object in the scene the object would have been in when it was in use. For archeological artifacts, visitors could view how the object would have looked when archeologists found it, such as in the ground or a crumbling wall.<sup>4</sup>



Image Credit: Peggy Sands, georgetown.com

Diorama at the Museum of the American Revolution.



Image Credit: <https://www.frameweb.com/news/civic-education-resource-centre>

2-D environment at Civic Education Resource Centre for the Home Affairs Bureau in Hong Kong.

Models can also be used to help set the scene for an object or exhibition. For this thesis, models are scaled down versions of a scene. Because models are so much smaller, they typically provide a more over all view and do not create the immersive experience dioramas do. Instead models help visitors understand the larger picture and how all the parts work together to create a whole.

Models can also be helpful when trying to explain a process. Multiple small models can be used to depict every step of a process. Doing this at a life size scale with a diorama would be very expensive and take



Image Credit: Dmarkwind, <https://www.tripadvisor.com/>

2-D cutout at the Science Museum Oklahoma fits in the case with the bike.



Two fictional siblings help tell the tale of traveling across country by stage coach in this exhibit at the Museum of Science and Industry in Chicago.



up a lot more space. For example, a series of models depicting each step in the process of tanning a buffalo hide to turn into a tipi.

Other senses can also be integrated into models. Some have pieces visitors can touch. Other incorporate sound effects. For example, the Great Train Story exhibit at the Museum of Science and Industry in Chicago features a huge model train set complete with sounds and buttons visitors can push do cause actions to occur on the model such as lower a drawbridge or fell a tree.

## Lighting

An often-overlooked way to engage sight is the lighting of a museum. Lighting can do more than simply allow the objects to be seen. It can create a sense of movement, add a layer of drama, or set the tone for a section. Movement can be created with the use of moving lights and projections. One popular option for creating this movement is using gobo projectors and stencils. For example, Lightemotion used a combination of theatrical lighting, filters, and projections to create a sense of movement throughout the galleries at Train World in Belgium. The lighting designer explained in

an article that “the ambiance of each gallery is always subtly moving, slowly changing like time passing...the movement of light brings them [the trains] to life in ways that complement the artistic direction of the exhibit.”<sup>5</sup>

Creating visual interpretation with lighting does not need to be that complicated. Simply adding a different colored light to a space can add drama to the story the object is telling. Red can add a sense of fear or anger to a story about war. Blue could create a sense of calm for an exhibit on health and wellness. Even playing with different temperatures of white light can have an effect on a space. A lower temperature creates a warm light



Image Credit: <http://www.lightemotion.ca/pdfs/MA91-2016-07.pdf>

Dramatic Lighting at Train World helps create a sense of movement.



that can make a space feel welcoming and cozy, whereas a higher temperature can make a room feel cold and crisp.<sup>6</sup>

1 Levent and Pascual-Leone, *The Multisensory Museum*, xviii.

2 Helene Alonso, "Welcome to the Brain – Object Theater – AMNH 2010," Helene Alonso Portfolio, Accessed April 16, 2018. <http://helenealonso.com/portfolio-item/welcome-to-the-brain/>.

3 Kiersten F. Latham and Elizabeth E Wood, *The Objects of Experience: Transforming Visitor-object Encounters in Museums*, London: Routledge, 2016.

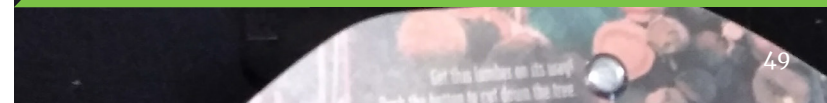
4 George Papagiannakis, Efstratios Geronikolakis, Maria Pateraki, Victor M. López-Mencheró, Michael Tsioumas, Stella Sylaiou, Fotis Liarokapis, Athina Grammatikopoulou, Kosmas Dimitropoulos, Nikolaos Grammalidis, Nikolaos Partarakis, George Margetis, Giannis Drossis, Martha Vassiliadi, Alan Chalmers, Constantine Stephanidis, and Nadia Magnenat-Thalmann. "Mixed Reality, Gamified Presence, and Storytelling for Virtual Museums." *Encyclopedia of Computer Graphics and Games*, 2018, 1-13. Accessed April 29, 2018. <https://www.fi.muni.cz/~liarokap/publications/ECGG2018.pdf>.

5 "INDUSTRIAL THEATRICALITY," MA91, July 2016, 116-22, Accessed February 5, 2018. <http://www.lightemotion.ca/pdfs/MA91-2016-07.pdf>. 119.

6 Information on the effects of light gained from a museum lighting class at the University of the Arts in spring of 2017.



Interactive model at the the Great Train Story exhibit at the Museum of Science and Industry in Chicago.



# Touch

Touch can reinforce knowledge of the exhibit visitors are visually seeing. In fact, the senses of sight and touch are processed in many of the same regions of the brain. Simon Lacey and K. Sathian wrote in their article “Please DO Touch the Exhibits!,” “many brain regions previously considered to be specialized for various aspects of visual input are now known to also be activated during analogous tactile or haptic...tasks.”<sup>1</sup> Because of this deep connection, when sight and touch are used simultaneously in an exhibit, visitors can gain a deeper understanding of the object and content.

There is also an aspect to touch that blurs the line between “bodily feeling and world-experience” called the “phenomenology of touch.”<sup>2</sup> This quality of touch can forge a deeper connection between a visitor and an object, making the experience more real and memorable. Nina Levent and D. Lynn McRaney state in their essay “Touch and Narrative in Art and History Museums” that “by touching or just being in close proximity to objects, visitors feel a little closer to someone of the past. Kiersten Latham has described such highly personal exchanges or ‘transactions’ between visitors and objects as ‘numinous experience,’

a unique, almost spiritual sensation in the presence of museum objects.”<sup>3</sup>

Much can be conveyed about our surroundings and way of life through the sense of touch. Through touch one can interpret texture, temperature, weight, and ergonomic design of an object. From these sensations, visitors can learn how weathered an object is, which draws connections to the user’s way of life, the materials used, which can convey social standing and geographical information, and draw comparisons between different objects. Touch also provides an active experience, whether it is reaching out and around an object or moving something as part of an interactive.

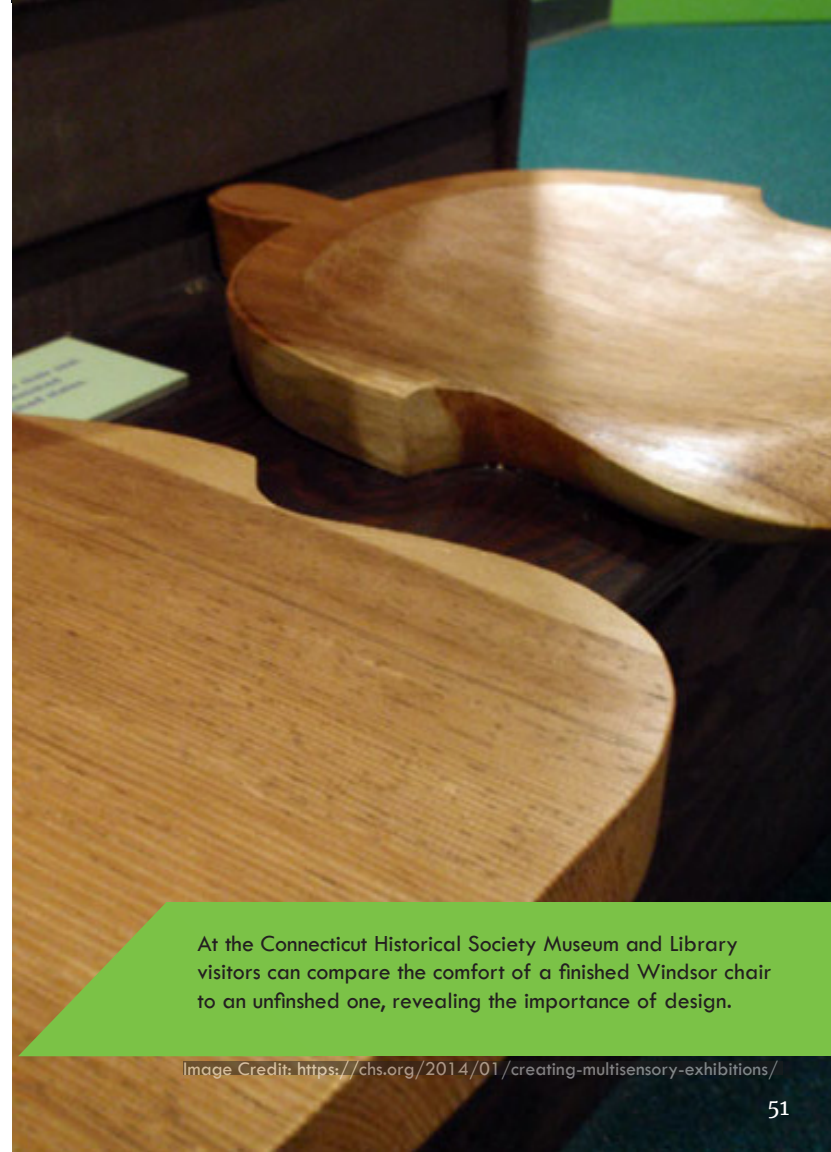
## Physical Design and Revealing Details

Touch can work in tandem with sight to create a fuller sense of the physical design of an object. For example, most visitors can see if a pot has a raised/indented pattern or if it flares out at the top, but actually touching the design gives new meaning. Visitors can get a sense of how raised the design is or how flared the lip of the pot is and imagine how much effort or precision was needed to create the design. Lacey and Sathian

wrote, “when feeling an object, one naturally imagines what it might look like,” but touch can do more than just replicate what visitors are seeing.<sup>4</sup>

In some instances, touching an object actually reveals information that visitors cannot see. Many small details of an object can get lost when visitors are just looking at it. By touching an object, visitors can gain a sense of the physical design of an object. The visitor can feel how the indentions in the handle of a cup conform to the shape of fingers or how part of the object fits the hand uncomfortably causing blisters and then callouses to form. Sight would not allow the visitor to experience the fit and comfort of the cup. It can only be experienced through touch. By holding the cup the same way as historical owner of the object, visitors create a connection to the past, they can now better understand how the object was used.

Sometimes the details are lost simply because of the shadows caused by lighting. Details can be almost worn off from weathering and need a high level of light to see, but the preservation of the object or objects in the area requires low lighting. In these cases, replicas of the detail can be created to provide this information or tour



At the Connecticut Historical Society Museum and Library visitors can compare the comfort of a finished Windsor chair to an unfinished one, revealing the importance of design.

Image Credit: <https://chs.org/2014/01/creating-multisensory-exhibitions/>

guides could ask viewers to look at specific elements. For example, the Penn Museum in Philadelphia houses the largest sphinx in the western hemisphere. It is the centerpiece of the gallery and a highlight on many tours, so the sphinx has faced lots of visual scrutiny over the years. However, it was not until recently that docents discovered that the ribs of the sphinx are still visible. This discovery was made on a touch tour by a visually impaired visitor exploring the statue. The dim lighting in the room had hidden the ribs from view, but the ribs were still easily felt. Docents can now use a small flashlight to illuminate the ribs on tours, allowing this discovery to be shared with both visually impaired and sighted visitors.<sup>5</sup>

Touch can also better explain the effects of time and use on the physical design of an object. Many objects show wear and tear, even after being conserved as best they can. Feeling the differences in texture on an object can reveal a lot about its life. Visitors can learn about the object's use by examining where the object is worn. Parts that are rubbed smooth indicate how the original owner held and manipulated the object. Nicks and dings may tell the story of a hard life. Touch makes these

stories more real. Wear is physical proof that something happened.

Weathering on an object might also tell the story of how it was preserved or found. Did the wind blow one part of it smooth? Was it broken and thrown into a trash pit? A good example of this can be found by looking again at the sphinx in the Penn Museum. The bottom of the sphinx was buried in the sand and is very smooth to the touch. However, the top was exposed to the elements and is very rough. Visitors can see this roughness of course, but it is quite shocking to feel just how sharp the rough parts are and how sudden the change in textures



Image Credit: Penn Museum, <https://www.penn.museum>

Sphinx at the Penn Museum in Philadelphia.



occurs. Touching it makes the fact of weathering much more real and believable.

## Material

Paying attention to the material of an object can open up a number of stories such as understanding the resources available in the area it was created, communicating social status, and creating physical representations of what is in an image. Museums can create opportunities for visitors to feel the material of an object by holding the artifact itself or by putting together material samples disconnected from the object. Producing these material samples could provide opportunities to forge connections between objects visitors cannot actually touch due to conservation concerns. Actual samples of the material also open up the opportunity for visitors to smell the substance adding another sense to the experience in a natural, unobtrusive way.

Depending on how it is implemented, interacting with the materials of an object can provide visitors with a better understanding of what it would be like to hold the object. Take a cup for example. The material used



"Material book" created for the Oracle Figure (Kafigeledjo) by former Metropolitan Museum of Art Intern, Ezgi Ucar, included wood, iron, porcupine quills, feathers, and commercially woven fiber

Image Credit: <https://www.metmuseum.org/blogs/digital-underground/2015/multisensory-met>

to make the cup (wood, metal, or plastic) tells a story. The different weights and textures of the material could be experienced through touch. Maybe the metal cup has a hammered texture, the wood has been sanded smooth, and the plastic has a slight grainy texture. These textures can help reveal how an item was made and connect it to the story of who made the cup and for what purpose. Visitors might also notice that the metal is colder than the other two or that it changes temperature as it is handled. A cup is a simple object, but the material it is made out of can have a big impact on the experience of using it.

By breaking down an object to its raw materials, museums can relate the object to the story of natural resources and trade. This could be done through the use of labels or a guide explaining and asking questions, but it could also be done in a non-lingual way if the materials are combined with visual elements. If the object was made using trade materials, the substances could be placed on a map with arrows pointing to the object. If the materials are from local sources, maybe images of where the materials are found in the area could be posted near the samples themselves. Museums

could also use the materials of multiple objects of the same variety (e.g. cups, beds, shoes, etc) to draw comparisons between resources in two different regions and how available materials affected the culture of a region.

The materials an object is made out of can also communicate the social status of its historical owner. A dress made out of cotton or wool, for example, probably belonged to a person of lower status than one made of silk. Visitors could determine this by looking at the different styles of dresses (one is probably much simpler than the other), but touching the material could also reinforce this idea. The cotton/wool would be much coarser and harsher on the skin than the silk. Visitors could infer that because it would be less pleasant to wear, it would be of lower quality. Another marker of status is the weight of an object. Heavier materials tend to be more durable and of higher value. When trying to communicate social status to visitors through object materials, it might be most effective to offer the option to compare two materials. How would visitors know if one metal is heavier and more durable over the other if they have nothing in their mind to compare it to?

Interacting with the materials of an object can provide more information about the people and environment in an image, whether it is a photograph, sketch, or painting. Picking out elements of an image can help transport a viewer into the world of that image. For example, if a person reading a book while leaning on a marble table in a garden in an image, visitors could touch a piece of marble feeling the cold, heaviness of it, feel a piece of paper, maybe flipping it over a couple of times like turning the page of a book, or feel the flowers. (smells could also be added to complete the scene) All of these elements help relate the image to a person's own experiences. Touching the material may help them more fully understand what the person in the image is experiencing.

### Way of Life/An Object's Purpose

Touch is often activated in the museums setting through interactives. This can take a variety of forms depending on the design. Sometimes it is a touchscreen, which really utilizes the sense of sight and or sound more than touch. Other times it involves moving pieces around on a table to achieve some goal or even just sketching a design. An interactive involving touch could even be an



In the temporary exhibition Little Black Dress at the Missouri History Museum, visitors could touch material samples for some of the dresses, including this swatch of taffeta.

Image Credit: <http://mohistory.org/blog/enhancing-access-to-our-exhibits/>



experience that involves the whole body in a physical activity. Because of the wide variety of interactives involving touch, this thesis will not explore all the options. Many methods exist to create engaging interactives for visitors who can not read written content that relate to an object using techniques discussed in other areas of this thesis.

One concept that touch interactives can express possibly better than the other senses is how to use an object and the effort needed to accomplish a task with that object. Many artifacts museums own are no longer used by most visitors. Providing a tactile interactive that allows visitors to experience the effort and/or skill that went into using these objects could create sympathy or empathy for their historical owners as well as create a more concrete connection to the past. An example of this form of interpretation can be found in the exhibit *Within These Walls* at the National Museum of American History in Washington D.C. The exhibit is built around a partially reconstructed house and tells the story of the five families that lived in it over the past 200 years. Catherine Lynch and her daughter lived in the house from 1870-1890 and were washerwomen. To explain

how strenuous their job was, the museum created two touch interactives. One interactive asks visitors to lift a weighted bucket, simulating carrying the water to wash the clothes. The other asks visitors to wring out a towel and tells them how dry it is based on their effort. Both are harder to accomplish than one would think. Actually doing these activities gives participants a better understanding of how difficult it would have been to be a washerwoman during this time and maybe gives them a better appreciation for their own washer and drier at home.

## Invisible Touch

There are some invisible aspects to touch-aspects that can be felt, but not seen. These aspects include temperature, air flow (think of the wind), and vibrations. Utilizing temperature and air flow to help recreate the scene could add an extra dimension that more fully immerses the visitor in the environment of the object, however museums rarely take advantage of them. This could be for various reasons, but the one that appears to be of most concern is the possible damage these aspects could cause to the artifacts. Artifacts need to be kept at certain temperatures and climates in order to

be preserved for future generations. Messing with the temperature could cause them great harm. They could possibly be enclosed in a climate-controlled vitrine, but these can be fairly expensive. Moving air might prove less of a risk to objects, especially if they are behind glass, but it could require a lot of planning and testing to implement properly. Museums would have to weigh the risks versus rewards of using these elements.

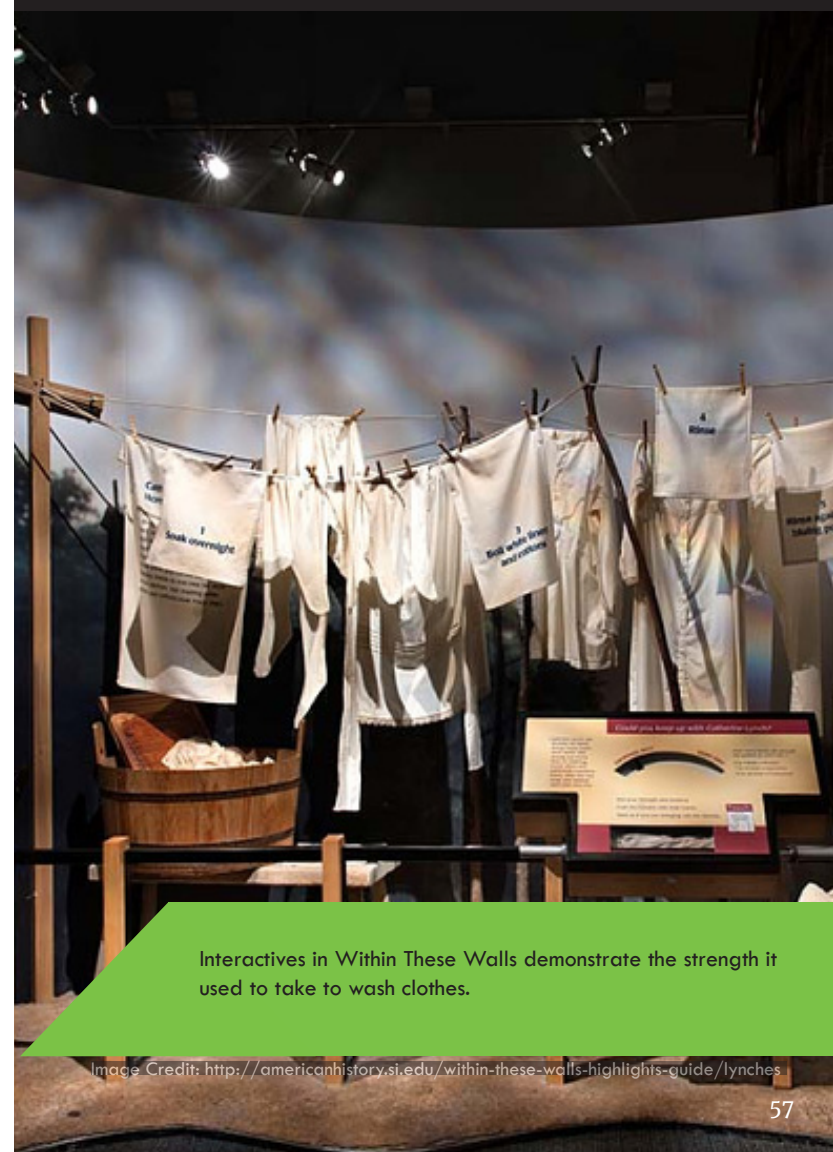
1 Simon Lacey and K. Sathian “Please DO Touch the Exhibits! Interactions between Visual Imagery and Haptic Perception” in *The Multisensory Museum: Cross-Disciplinary Perspectives on Touch, Sound, Smell, Memory and Space*, Nina Levent and Alvaro Pascual-Leone, eds Lanham: Rowman & Littlefield, 2014. 3

2 Matthew Ratcliffe, “The phenomenology of touch,” in *Feelings of Being*, 2008. Accessed April 20, 2018. [https://www.researchgate.net/publication/300110284\\_The\\_phenomenology\\_of\\_touch](https://www.researchgate.net/publication/300110284_The_phenomenology_of_touch). 77-102.

3 Nina Levent and D. Lynn McRaney, “Touch and Narrative in Art and History Museums” in *The Multisensory Museum: Cross-Disciplinary Perspectives on Touch, Sound, Smell, Memory and Space*, Nina Levent and Alvaro Pascual-Leone, eds Lanham: Rowman & Littlefield, 2014. 79

4 Lacey and Sathian “Please DO Touch the Exhibits! Interactions between Visual Imagery and Haptic Perception,” 79.

5 Story relayed to author while on a touch tour at the Penn Museum.



Interactives in Within These Walls demonstrate the strength it used to take to wash clothes.

Image Credit: <http://americanhistory.si.edu/within-these-walls-highlights-guide/lynches>

# Sound

Sound is becoming increasingly used in museums. Fading away are the days when museum visitors are expected to simply stare at an object in silence. Instead, many museums are trying to become engaging places that foster dialogue and create experiences that “stimulate the interest of the visitors.”<sup>1</sup> Sound can help do this. According to Nikos Bubaris’s article “Sound in museums – museums in sound,” activating the sense of sound in museum exhibitions can create “a sense of immediacy and participation” as well as “energise [sic]” a museum experience.<sup>2</sup> This in turn allows the visitors to perceive the “museum exhibition as a ‘live event,’” meaning sound can make an experience seem more real or authentic.<sup>3</sup>

Sound often works in conjunction with the other senses. For example, videos and games on touch screens often have noises that alert visitors to how well they are progressing. Sounds can also be added to sight elements like models and dioramas to help further immerse visitors in the scene. However, sound is also capable of conveying information on its own.

Sound in connection to objects can tell many different stories. Recorded sounds can be used to reveal characters (whether historical or fictional) and produce

noises related to the object. More ambient sounds can create an environment or set a tone or mood of an exhibit. Audio tours can also be implemented to utilize the sense of sound.

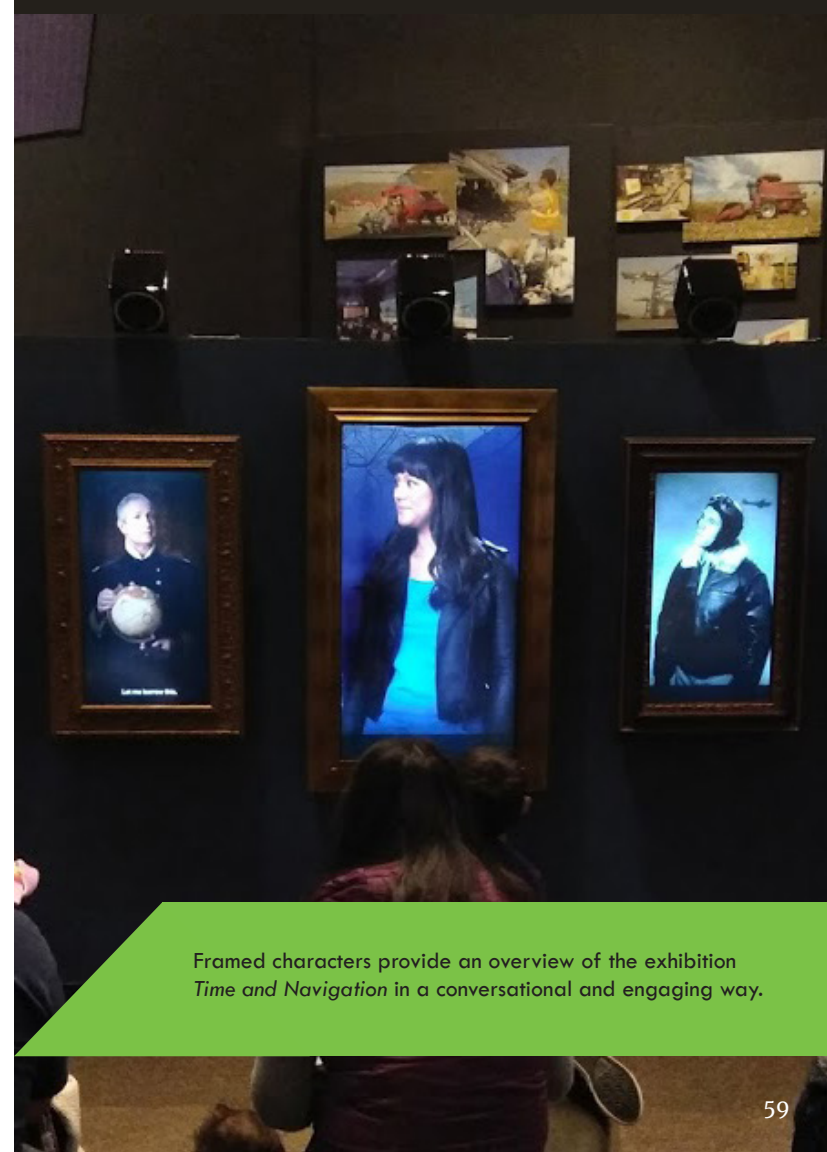
## Revealing Characters (Conversations)

Sound can be used to reveal characters associated with objects, arguably better than any other sense. Typically, this is done by the use of recorded first-person narratives. These narratives could be based on documented historical conversations (such as in a courtroom), inferred conversation between historical figures, or fictional conversations between figures based on historical experiences (often this is needed to bring the voice of lower class or minority people into the exhibit). It could also be very impactful if oral histories can be worked into the exhibition. To see and hear from a person who actually experienced can have a powerful effect. The method all depends on what resources are available to the institution and what the goals of the experience are. Does it need to be 100% historically accurate or is it more about the emotion trying to be presented? To be most effective, the conversation would reveal something personal about the person speaking, so

visitors feel emotionally connected to the person and/or relate the experience to their own life. The conversation could be a point of view on a subject, a fact about their work environment or family life, or revealing the effects of a major historical event/phenomena on their life.

Presenting these first-person narratives can help people better connect to objects and larger concepts that may be harder to grasp. These narratives can provide specific details that make the larger concepts more manageable and real. They can also be a great way to introduce differing points of view into an exhibit. This could be done through a heated argument or a friendly discussion depending on the characters that were developed. For example, in the center of the exhibit *Time and Navigation* at the National Air and Space Museum five images of characters from different time periods come to life to discuss what instruments they used to navigate. Visitors learn about multiple viewpoints and how navigation devices have changed over time as the framed characters talk to and over each other to create an entertaining dialogue that is almost like a play.

There are multiple ways the characters created to tell



Framed characters provide an overview of the exhibition *Time and Navigation* in a conversational and engaging way.

these stories could be introduced into the exhibit. The voices could be set to a timer, so that the voices fill the entire area at certain times. Pinpoint technology could also be utilized, so that the voices are heard only when visitors stand in a certain area. This could more easily connect to one specific object or case. This pinpoint technology could play automatically, or a button could be hit to start the sound. Different buttons could correspond to different characters. Handheld devices, such as fake phones or audio tours, could be used to ensure that only one person heard the conversation at a time. This could also cut down on the noise level in the gallery as a whole. When considering what technology to use it is important to consider how long the character's narration is going to last. Will it be long enough that visitor will want a seat or move along to the next case while listening? Will it be a short snippet that would make it practical to have several buttons in one place?

One limitation of these narratives is that it is not as effective at conveying information to secondary language speakers. If visitors do not understand what is being said it is hard to create an emotional connection to it. They maybe able to pick out a word or two

and understand the general tone of the conversation playing out, but this experience does not create as deep a connection to the object. This does not mean to exclude interesting and dynamic conversations from the exhibition space, but instead to think deeply about what a visitor would be missing if they can not understand the words. Is it enough to know two voices are arguing over a document? Is there a different experience, maybe one that relies on a different sense, that helps them understand the same information that doesn't rely on language?

Perhaps adding a visual element can help with the



Image Credit: <http://www.kathysclutteredmind.com/2013/03/hands-on-history-at-titanic-museum-in.html>

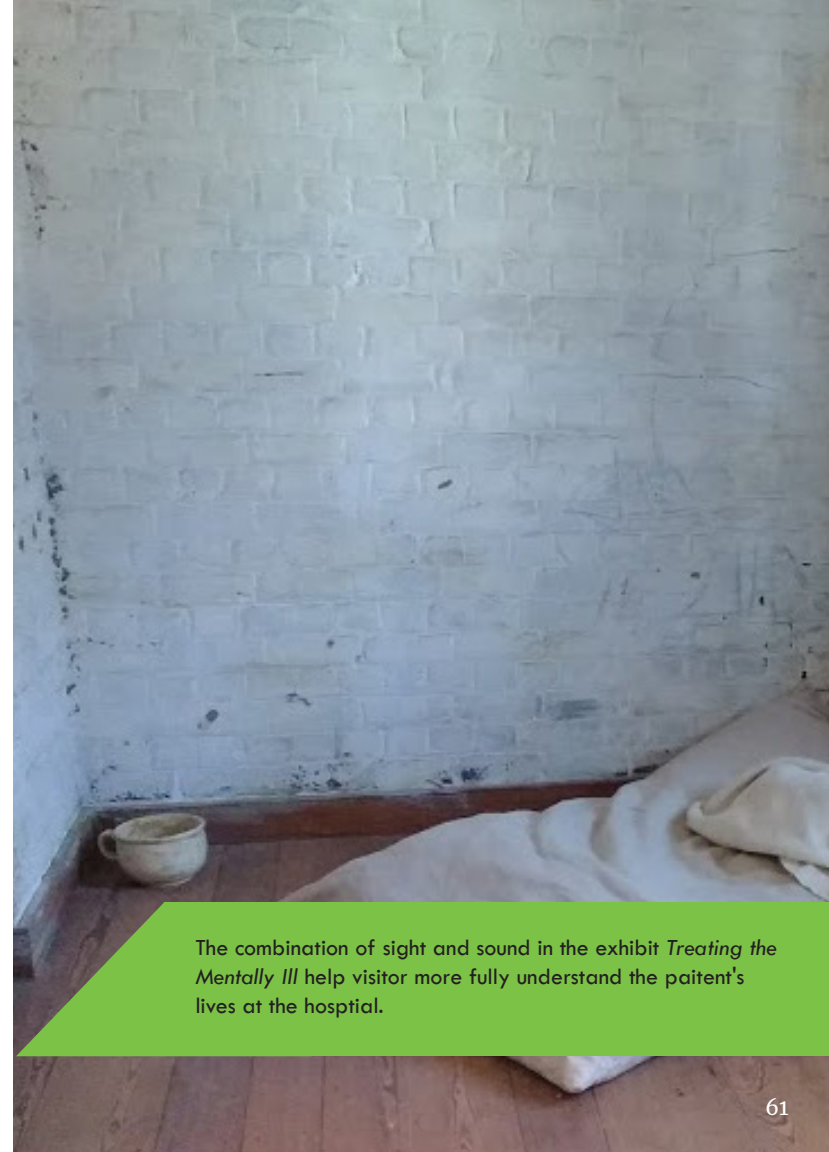
Visitors hear many perspectives in this interactive, but sound bleed can occur.



language barrier. An example of this can be found at Colonial Williamsburg's Public Hospital in an exhibition called *Treating the Mentally Ill*. In it are two recreated cells from different time periods of the insane asylum. Periodically, visitors hear the two patients talking to the doctors. Although secondary language speakers might not be able to understand what the characters are saying, they can still get the idea of how the patients were treated while at the hospital. The rooms are sparse and throughout the conversations the voices of the patients fluctuate from calm to upset as the doctor talks.

### Object Specific Sounds

Some objects have specific sounds that are associated with them. For example, musical instruments almost beg to have an audio component to their display. Hearing a sample of music from the time period, would allow visitors to understand how music has changed over the years and maybe at what type of function the instrument was used at (a ball, around a campfire, etc). Moving mechanical objects might also have a distinctive sound that could accompany a visual of the machine moving. Noises for loud objects like cannons or fireworks,



The combination of sight and sound in the exhibit *Treating the Mentally Ill* help visitor more fully understand the patient's lives at the hospital.

might be a good way to draw attention to a specific section of the exhibit or a program taking place in the area. Object specific noises are even more impactful if visitors can see the actual object in use. The Titanic Museum Attraction in Pigeon Forge, Tennessee takes this approach in the room discussing the musicians that were on board the ship by having an interpreter play the piano as visitors move through it. They use the music as an entry point to discuss the band's role on the ship and how they continued to play even as the ship was sinking. It also gives visitors the opportunity to hear the music of the time period.

## Environmental Effects

One way to employ ambient noise in a museum is by playing environmental sounds. Environmental noises can accompany models and dioramas, but can also be effective when it is just the sounds and the objects. These sounds could take many forms depending on the object. They could be sounds from nature, which may be effective for objects that were used outside, such as modes of transportation or farming equipment among other things. For example, in an exhibit displaying objects from a settlement near a river such as a canoe

or fishing net the sound of running water and insects might be very critical for setting the scene of an object. These environmental noises could also be man-made. Music could connect a gown to the scene of a ball or party. Clinking glasses and silverware could enliven a table setting. These man-made noises could be used to more fully express the culture of an object. For example, at the American Museum of Natural History in New York City, music fills the Margaret Mead Hall of Pacific Peoples even though there are no musical instruments on display. However, the hall is dedicated to exploring the pacific cultures, so the music is not out of place and furthers the exhibits goals. The man-made noises could also be the murmuring of voices. This effect could be very effective in historic house museums that are trying to enliven the space and could be filler sound between timed conversation pieces. Environmental sounds could also reveal the work environment an object was used in. For example, the clanking of pots and sizzling food in a kitchen or the banging of a gavel for courtroom objects could be used to set a stage for the exhibit. The Pigeon Forge Titanic Museum, which was mentioned earlier, plays construction noises in the room discussing how and where the ship was built. The room also includes a wall



sized image of the Titanic under construction, which reinforces the sounds.

## Setting the Tone

Ambient noise can also be used to help convey the mood of the exhibit. Although not directly related to the object these sounds can facilitate the emotion that museum designers are trying to create through the use of the objects and exhibition narrative. Music and sounds have the ability to convey emotion sometimes better than words. Think of movies. Many of the most emotional scenes have no words. Instead they are filled with music. Exhibits can use this same technique to move visitors through the emotions of the narrative they are trying to convey.

## Audio Tours

Audio tours are fairly common in large museums. They can take a variety of forms, but typically consist of a listening device that allows visitors to type in a number that corresponds with an audio selection. Because the content can be translated into many different languages, audio tours present one way for museums to reach multilingual audiences without having to create cluttered



Costumed interpreter plays piano in the musicians exhibit at the Titanic Museum in Branson, MO, bring to life the sounds from the era.

Image Credit: [http://www.joplinglobe.com/news/lifestyles/titanic-s-musicians-honored-in-branson-museum-s-new-gallery/article\\_aef2726c-b8cb-5596-8be4-25eac82af8d.html](http://www.joplinglobe.com/news/lifestyles/titanic-s-musicians-honored-in-branson-museum-s-new-gallery/article_aef2726c-b8cb-5596-8be4-25eac82af8d.html)

labels. Audio tours can also be a way to provide access for visitors with disabilities. The 9/11 Museum, for example, offers an Audio Guide App which features several different tours including an audio descriptive tour for visitors who are visually impaired and one in American Sign Language.<sup>4</sup>

Although audio tours utilize the sense of hearing, traditionally they provide a very didactic experience, which differentiates them from other multisensory elements. The voice on an audio tour is typically just repeating words commonly found on the object label resulting in a didactic experience. Audio tours do not have to be this way though. They can utilize many of the techniques previously discussed in this section to serve a more diverse set of learners.

The Denver Art Museum experimented with creating engaging audio tours because “Unlike text on the wall, audio messages can guide looking experiences in an uninterrupted way; they can evoke other times and places through sound environments and music; and they can be an extremely effective vehicle for aural learners.” They tested a variety of different listening stops to try to find which version their visitors

enjoyed the most before creating “a museum-wide audio initiative.” First-person stops featured “narration by the museum’s curators and outside experts.” Comparison stops asked visitors to compare different works of art. Music stops introduced the piece and then produced “extended musical selections.” At these stops visitor expressed that the music “provide[d] fuel for the imagination” and “set the mood.” Character stops personified artworks adding some humor to the experience, like when a chair started talking to visitors. These stops were originally developed for children and families, but the museum found that they were very popular with “novice” visitors as well. Interactive stops and a more interactive experience by inviting visitors “to ‘jump into’ and explore a landscape, complete a story based on a painting, or test their looking skills.” The museum also created mini-tours which stopped at only four works in a gallery, but provided good examples of the themes in the gallery.<sup>5</sup>

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1 Nikos Bubaris, “Sound in Museums – Museums in Sound,” *Museum Management and Curatorship* 29, no. 4. July 15, 2014: 391-402, Accessed April 15, 2018. <https://www.tandfonline.com/doi/abs/10.1080/09647775.2014.934049>, 394

2 Ibid.

3 Ibid.

4 "9/11 Museum Audio Guide," National 9/11 Memorial & Museum, Accessed April 19, 2018. <https://www.911memorial.org/911-museum-audio-guide>.

5 "Interactives for Adults," Denver Art Museum, Accessed March 15, 2018. [https://denverartmuseum.org/sites/all/themes/dam/files/EnrichVisExp\\_2.pdf](https://denverartmuseum.org/sites/all/themes/dam/files/EnrichVisExp_2.pdf), 5-6.



9/11 Museum Audio Guide App offers several tour options including an American Sign Language tour and audio descriptive tour.

Image Credit: <https://trip101.com/article/remembering-9-11-at-the-national-september-11-memorial-museum>

## Smell

Smells can create very deep connections between the visitor and the objects. The olfactory sense is very closely connected to memory, so it can create very emotional reactions within visitors. Rosie Clarke, Communications and Sector Support Manager at Cultrue24, summed up how smell can enhance a museum program in a 2016 blog post:

“Smell is about our perceptions and opinions. We each form emotional responses to different smells based on our formative experiences with them. Museums and galleries can harness the potential of smell for mediating between visitors’ own ideas and memories, and what’s on display at the venue.

Smell is sociable and interactive. Crack out some scents at an event, and people love sharing and talking about what they think of them. It cuts out the small talk, and even in a roomful of strangers each visiting on their own, people will often share moving memories that smells remind them of.

Smell is intangible: you don’t need a big budget production or lots of art direction to create a special experience. It’s all in the imagination.”<sup>1</sup>

There are several ways to integrate smells into an exhibit. Probably the most common is through the use of smell-boxes. These boxes can take many forms to support the theme and look and feel of an exhibit, but they all consist of a container which contains the scent and some mechanism that releases the smell, often times a flap. The scent can be highly concentrated oils that only require a drop or two to be smelled or could be the actual material itself, such as putting a mint leaf in a container. The disadvantage of using natural materials for smell is that they can potentially attract bugs, a big hazard for object-based institutions. One survey respondent s stated when it comes to odors it is important to remember that “...the oils that carry scents can be damaging to artifact...” Other ways of incorporating smell into an exhibit include scratch and sniff cards and scent strips strategically placed around the galleries. When using these methods of smell be sure to think about where they will be disposed and the smells that place will acquire.

When using scents, be careful not to overwhelm the nose. Smells can quickly become overwhelming, so designers should be keep in mind how many are in a

space. Different people recommend different numbers of scents in an area. Rosie Clarke recommended having a maximum of six smells in an hour long program.<sup>2</sup> Christopher Maute, a scientist laboratory manager at Monell Chemical Senses Center, on the other hand said 3-5 smells in fifteen minutes can produce a good odor experience, more if they are distributed with a scratch and sniff card, though he did expand his answer by saying it really depends on the exhibit.<sup>3</sup> Factors include how strong a scent is, how much space it is filling, and how it is distributed.

### What's in a vessel?

Smell can be a very effective way to indicate what a container held, whether it was food, wine, medicine, or perfume. Producing actual samples of the material may be challenging, but with the rise of manufactured scents it might be relatively easy to find something close to what the material smelled like. For example, the Petrie Museum of Egyptian Archaeology in England could not find a scent for blue lotus, so they substituted a pink lotus smell.<sup>4</sup> These smells could cause the visitor to think about how they transport the same materials. Museums could also connect the smell to the design of the object



The Connecticut Historical Society Museum and Library incorporated smells into their exhibit Try It! by putting scented cubes in stainless steel shakers

Image Credit: <https://chs.org/2014/01/creating-multisensory-exhibitions/>



the material was packaged in. For example, a glass medicine bottle from the 1800s versus the plastic bottles used today.

### What is it made of?

Similar to touch, smell can be used to study the materials of an object. These materials could tell the story of trade and/or conquest, how the materials were moved from place to place, or what the local flora and fauna were. For example, a section in the Arabia Steamboat Museum in Kansas City discusses the “treasures” that were found in the ship’s wreckage, among them a French perfume still intact. The museum sent the perfume to International Flavors and Fragrances in New York where the scent was replicated.<sup>5</sup> Visitors can now sample the recreated perfume in the exhibition, which tells the story of how goods were transported, where they were going, and how the ship was rediscovered. This technique can also be used to break down the elements of a painting. How would the ocean in the background smell or the cologne the man could be wearing? See previous section in touch on page 49 for more information on how an object’s material can convey information.

### Completing the scene


Like the other senses discussed previously, smell can be used to recreate a scene. Odors can bring to life a kitchen scene, doctor’s instruments, or the nature that would have surrounded the object while in use. Although smell may work best in tandem with the other senses, it does not necessarily need other experiences to communicate a sense of place. For instance, the smell of the ocean is very recognizable to those who live near the sea without much other content. Other less recognizable scents require context to be able to place them. Christopher Maute explained the need for this context in an interview:

“Because there is so much real estate in our brain dedicated to vision and sound and so little to smell, we frequently have something that is called the tip of the nose phenomenon, where we will detect something, know that it is familiar, but we can’t put our finger on what it is...One of the examples that can be given is that the same smell can mean different things in different context... Butyric acid comes off both sweaty feet and parmesan cheese. So, if you are in South Philly and walk into DeBruno

Brothers and smell butyric acid you are going to welcome it. If you walk into a locker room and you smell butyric acid, you will not think of parmesan. You will more likely think of sweaty socks.”<sup>6</sup>

The object itself could provide the reference needed for the smell, but also a simple image or the sounds associated with the same object could help the scene feel more complete.

When using smell to re-imagine a scene, it is especially important to think about how it will be implemented. Are the smells going to be ambient and floating throughout the whole space? If so it would be important to consider the most important smell that connects to most of the objects in the area because more than one or at most two smells could be overwhelming or mix in an unpleasant manner. If odors are going to be more contained, it is important to think about placement. Is it multiple scents near one object or the entrance, so visitors can remember the smell throughout the space or are the scents more specific to certain objects and spread equally throughout the space. If they are close together, try to find ways to keep the smell containers



In the temporary exhibit *Common Touch* smell was used to help recreate the scene as an olfactory machine released scents in time with an audio story.

Image Credit: <https://chs.org/2014/01/creating-multisensory-exhibitions/>



from mixing. When the Tenement Museum implemented smells into their Shop Life tour they had some issues with scents mixing and smelling the same over time because visitors would put the wrong lid on the scent jar.<sup>7</sup>

## Cultural Aspects of Smell

Smells are also tied to many elements of culture. This ranges from foods (spicy Latin American dishes, hot dogs at a baseball game) to religious rituals (incense, myrrh) to popular scents of perfume and cleaning products. All these aspects have a smell to them and convey different parts of a culture. Smells can also indicate status and power. Was a scent more popular among the elite because it had to be imported from far away and therefore cost more? Is a certain scent associated with a specific occupation? For example, burning coal for blacksmithing. Scent can be the jumping off point for investigating these topics and intriguing visitors.

The same scent might be able to connect two concepts or two time periods. Many of the same scents are used in different cultures sometimes for the same uses, sometimes not. Scents also come in and out of style and telling when and why the same scent is popular could be

very interesting. For example, Lizzi Ostrom (also known as Odette Toilette) worked with the Petrie Museum of Egyptian Archaeology in England to connect smells to objects in the galleries and programming. One smell they discuss is the blue lotus, which was very popular in Ancient Egypt. It was used in everything from gardening to wine to perfume to religious ceremonies. The smell became popular again in the 1920s when people could not get enough of Egypt inspired items. During programming, the museum found that visitors were very interested in this story and “loved the idea that you could actually smell and listen at the same time.”<sup>8</sup>

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1 Rosie Clarke, "How to Use Scent in Events: Odette Toilette's Guide for Museums," Museums at Night, June 3, 2016, Accessed March 15, 2018. <http://museumsatnight.org.uk/festival-resources/resources-and-downloads/how-to-use-scent-in-events-odette-toilettes-guide-for-museums/#.WrmmjojwblV>

2 Ibid

3 Christopher Maute, Interview by Sarah Rosenkrans, March 22, 2018.

4 "Museums at Night - Using Scent in Events," Museums at Night, 2016, Accessed March 15, 2018. <https://vimeo.com/160860038>.

5 "The Treasure," Arabia Steamboat Museum - Kansas City, Accessed April 19, 2018, <http://1856.com/arabias-exhibits/floor-plan/the-treasure/>.

6 Christopher Maute, Interview

7 Ellysheva Zira, Interview

8 "Museums at Night - Using Scent in Events," vimeo.com.



Visitors to a program at the British Museum use scent strips to enrich their experience.

Image Credit: <http://museumsatnight.org.uk/festival-resources/resources-and-downloads/how-to-use-scent-in-events-odette-toilettes-guide-for-museums/#.WqivjwbiU>

## Taste

Like smell, taste is closely connected to memory.<sup>1</sup> It can bring back powerful memories and is deeply tied to culture. What a person eats can indicate their ancestry/family traditions, what food is able to grow in their region, and sometimes their economic class. There are whole museums dedicated to investigating the stories food can tell, such as the Southern Food & Beverage Museum in New Orleans. Despite these opportunities for interpretation, taste is rarely used in exhibitions. Health and safety regulations make it hard to obtain permits to prepare and serve food to audiences. Using already prepared food and handing it out can however be easier to implement because there are fewer regulations.<sup>2</sup> Food in an exhibit space also brings the risk of bugs, which can spell disaster for the museum collection and objects on display if not accounted for. Things to keep in mind are how are visitors going to dispose of waste and/or unwanted food, will the food need to be contained in one area, and how sensitive to bugs the objects are.

There are a few museums who have thought through these issues and been able to introduce food into selected exhibit spaces. For example the Detroit

Institute of Arts (DIA) opened the temporary exhibit, *Bitter | Sweet: Coffee, Tea & Chocolate*, which engaged all five of the senses as it explored “the fascinating story of the introduction of coffee, tea and chocolate to Europe beginning in the late 16th century, and the far-reaching social and economic changes that occurred as a result.”<sup>3</sup> At the end of the exhibition visitors could choose between two types of hot chocolate, an Aztec or French recipe, to drink in a designated area. DIA director Salvador Salort-Pons stated, “the chocolate tasting is a delicious way to make a very personal connection to the art.”<sup>4</sup>

Many museums still recognize the importance of the stories food can tell, but have not been able to overcome the obstacles of using food within an exhibit. Some museums simply create exhibits that describe the impact of food and how the food might have tasted. For example the Jewish Museum of Maryland created a temporary exhibit in 2011 called *Chosen Food: Cuisine, Culture and American Jewish Identity*, which explored, “the diversity of Jewish eating and uncovers the messages in our meals. It shows how the foods we choose to eat speak volumes about who we are.”<sup>5</sup>

Other institutions design programs around food. During some of these programs food is maintained in a select area, such as a cafeteria, while in others food is allowed through the entire exhibit. Having only a few days of food clean up might prove much less risk than having food in the exhibit every day. Guests can also be monitored easier during these events. The Tenement Museum in New York City for example hosts a tour called “Tasting at the Tenement,” where visitors walk around the neighborhood discussing how immigration influenced what is eaten in the neighborhood before eating a meal at an offsite dining room. They are unable to eat in the historic building due to conservation concerns, so they created a program around the neighborhood to still be able to tell the story of food.

Another option is for museums to serve content-related food in their existing cafeterias and cafes. Foods could connect to the cultures and time periods discussed in the exhibits and more information could be provided on the tabletop display stands and through programs. In 2017, the Philadelphia Museum of Art opened Philadelphia Assembled, a temporary exhibit aimed at better connecting the museum to the neighborhoods



Visitor taste the difference between Aztec and French hot chocolate in the exhibition *Bitter | Sweet: Coffee, Tea & Chocolate*.

Image Credit: Casey Rakowski, <https://www.instagram.com/p/BQqLH9LDWnN/?tagged=sipthestory>

around it by working with over 150 collaborators. Part of this exhibition included a kitchen. Instead of preparing typical cafeteria food co-curator Kristen Schwab said, “We wanted to create a space where people of different backgrounds could connect, learn from one another, and build community. We wanted to honor the cooks who fed past movements of change and feed Philadelphia’s current freedom fighters.”<sup>6</sup> The menus created centered around the themes of survival, resistance, and victory and included, among others, Lao, African, and German dishes.

### Connecting to Culture

Taste is very much connected to culture. The food one eats depends on what is grown in the area, if the country has trade relations with other regions, and technologies used to preserve it during travel, prepare it, and serve it. Food can also tell the story of class. Did the wealthy eat something different than the poor?

Food can be used as a starting point for conversations that compare different cultures. This could be two cultures foreign to the visitor, but it is likely with food that visitor’s will always compare it to their own

experiences and culture. As Ellysheva Zeira at the Tenement Museum put it, “we all eat food and have our own memories connected to it.”<sup>7</sup> She goes on to say that sometimes guides at the museum find it easier to start by connecting the food with a visitor’s own memory before jumping into the larger picture questions. This gives the visitors a base understanding of what food can mean to someone, including themselves.

### Immigration and Trade

Food can also tell the story of immigration and trade. Where did certain foods originate and why did they end up traveling elsewhere. If one tracks the route of food, one can find the migration patterns of a group of people. This travel of food can then be used to examine how the composition of the neighborhood or city changed. It can connect to specific business and the people who prepared the food.

### Climate/Cultivation of Food

By examining food, museums can also incorporate the story of how food is grown and prepared. This can include details about the local climate and the impact of natural disaster like droughts and fires. It can also



tell the story of the worker: the farmer who toiled in the field and the chef who cooked by a hot stove all day. What were their lives like?

1 Molly O'Neill, "FOOD; Taste Memory," The New York Times Magazine, May 12, 1996. Accessed April 29, 2018. <https://www.nytimes.com/1996/05/12/magazine/food-taste-memory.html>.

2 Ellysheva Zira, Interview

3 "Last Chance to Experience "Bitter | Sweet: Coffee, Tea & Chocolate" at Detroit Institute of Arts Popular Exhibition about History of Coffee, Tea and Chocolate Ends March 5," Detroit Institute of Arts, February 14, 2017, Accessed March 25, 2018. <https://www.dia.org/about/press/news/last-chance-experience-bittersweet-coffee>.

4 "Last Chance to Experience "Bitter | Sweet: Coffee, Tea & Chocolate"

5 "Chosen Food: Cuisine, Culture and American Jewish Identity," Jewish Museum of Maryland at the Herbert Bearman Campus, Accessed April 19, 2018. <http://jewishmuseummd.org/exhibits/past-exhibitions/chosen-food-cuisine-culture-and-american-jewish-identity/>.

6 Alex Jones, "Food, Culture, & Race Are Part of the Exhibit at This Museum," Civil Eats, November 30, 2017, Accessed April 19, 2018. <https://civileats.com/2017/11/30/food-culture-race-are-part-of-the-exhibit-at-this-museum/>.

7 Ellysheva Zira, Interview



Chefs of Philadelphia Assembled created food connected to the exhibition and their communities.

Image Credit: <https://civileats.com/2017/11/30/food-culture-race-are-part-of-the-exhibit-at-this-museum/>



**Conclusion**



## Conclusion

In conclusion multisensory elements can be used to convey a variety of information related to objects and exhibition themes. When implemented effectively, the use of them can improve the museum experience for all visitors as well as provide access to specific audience segments. In order to reap these benefits, someone at the institution must speak up for the inclusion of multisensory elements. This advocate could be directly connected to the exhibit's design or content development, such as Beth Van Why, the Chief Officer of Engagement at the Indiana State Museum and Historic Sites who oversaw the creation of many of the institutions new exhibits which feature many multisensory elements. The advocate could also be indirectly involved

in the creation of the exhibition. For the creation of this thesis the author consulted personnel in a variety of museum positions who all saw the potential benefits of multisensory elements.

Kevin Schott, Education Programs Manager at the Penn Museum, often uses multisensory elements in the programs he develops. During the planning of the new galleries the museum is opening, he suggested including touchable reproductions of some of the artifact to provide a more accessible and enriching museum experience. Exhibit planners agreed with him and several touchable elements are now in the final exhibit designs.

Erika Piola, Director of the Visual Culture Program and Associate Curator of Prints and Photographs at the Library Company of Philadelphia, tries to advocate accessible design in the exhibits she is involved with. In the exhibit *Common Touch*, which she project managed, this meant the inclusion of multisensory elements. Both she and the guest curator, artist Teresa Jaynes, felt the subject matter, which used the institution's collection of printings for the blind to explore how we, as humans, learn about the world through our senses, required

multisensory elements to become accessible, especially to visitors who are visually impaired because of their direct connection to the content. The inclusion of multisensory elements and community partnerships made *Common Touch* one of the institution's most successful exhibits to date.

In an interview with the author, Emily Urban, a development officer at the Philadelphia Museum of Art, stated that if implemented as a way to provide accessibility, multisensory exhibits are relatively easy to find funders for. In her experience most people are aware that it is important to become accessible, so that all visitors can have an engaging experience regardless of abilities. She also disclosed that the museum acknowledges that it is their fault if an experience is inaccessible and no blame or judgment should be placed on the visitor. She said it is the museum's stance that if all areas are not fully accessible "we are actively discriminating and no longer neutral." While she admits that the museum is currently not as accessible as it would like to be, it is aware of the issues and striving to correct them.

These examples, demonstrate the range of museum

personnel who recognize the benefits of multisensory elements and can become advocates for them. The guidelines below are meant to assist any institution or multisensory advocate in the implementation of multisensory elements within their exhibitions.

**Guidelines**

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## Guidelines for using Multisensory Elements

With all these different multisensory technologies, it could be confusing to know where to start when wanting to implement them. Most of the decisions and solutions will differ from institution to institution, so instead of providing a list of do's and do not's, below are some questions and suggestions to think about when planning to incorporate multisensory elements into an exhibition.



# General Guidelines

## What are the objectives of the exhibit?

- Connect to local area/region?
- Bring to life the people who lived there?
- Create appreciation for the object's history/design?
- Draw comparisons between then and now/different cultures in the area?

All of these goals and many others can be achieved using multisensory objects, but require different approaches. About half of the thirteen online survey takers stated that it was important to consider how the multisensory elements connected to the themes and/or content of the exhibition. This indicates that it is important to know what the overall goals of the exhibition are and then find ways to use multisensory elements to help achieve them.

## Which objects are most important/most effectively tell the story?

Having too many multisensory elements in an area can be overwhelming and distracting, so it is important to identify which objects most effectively convey the message of the exhibition. The senses of smell

and sound can be particularly overwhelming and distracting so it is important to make sure you use them effectively. If there are many elements of these senses, it is important to keep them contained to certain areas, so they do not cause overlaps. Two respondents to the online survey mentioned that one of the least effective uses of multisensory elements they had experienced were caused by music being too loud, especially when the exhibit had a lot of text to read.

Because they can be overwhelming, it is also important to be able to turn on and off multisensory elements especially for visitors with certain disabilities. One survey respondent stated, "...We do know some of the sensory exhibits present challenges to autistic children and others with sensory sensitivity..."

## Who can you test your ideas with?

An important guideline for any project is never assume you know what is going to work. This goes for using multisensory elements as well. Do not be afraid to prototype your ideas with the community. Ask and observe questions like: How intuitive are the interactives? What are people actually taking away from different elements? Are they getting distracted/overwhelmed by

the information?

It is also important to observe the people using your design. Kevin Schott pointed out that many times people will try to be nice when answering surveys, especially if there are few programs or exhibit elements available for the specific audience segment you are working with. They will simply appreciate you trying to be inclusive. When it comes to observation he said, “trust your instinct” and listen to side conversations. When targeting a specific audience segment be sure to work with someone in the community from within that segment. Do not assume anything.<sup>1</sup>

### What is the budget?

The budget can influence what technologies are used and how multisensory elements are integrated into the exhibition, but it should not affect the overall goals or reasons for wanting to include them. There are many different technologies available, so it may take some time and testing to find the best fit for the exhibition, institution, and audience. Neither the most expensive or the cheapest up-front option might be what is best in the long run.

Questions that can affect the cost/viability of a multisensory element:<sup>2</sup>

- What is the exhibition’s run time? Cheap materials like pencils and sticky notes can add up over time. If the exhibit is going to be up for a while it might be worth looking into a more permanent solution, even if it has more up-front costs.
- How durable do the components need to be? Replacement parts can add up in the long run, so it may be best to pay more for a better-quality material
- Can the staff handle any I.T. issues that arise? When considering a high-tech solution, it is important to consider who is available to fix any glitches that may occur

## Be up front about authenticity and inferences.

It is almost impossible to create a 100% authentic experience using multisensory elements, so it is important to be up front about how authentic an element is. Is the object visitors are touching the real thing or a replica? Were assumptions made to recreate the smell? Are certain smells missing because they were found to be too gross?<sup>3</sup>

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<sup>1</sup> Interview with Kevin Schott, March 28, 2018.

<sup>2</sup> Questions created based on survey responses to the question “What are some of the things you consider before incorporating multisensory elements into an exhibition?” and an interview with Erika Piola on some of the challenges faced in creating the exhibition Common Touch.

<sup>3</sup> Interview with Kevin Schott

## Tips for Smaller Institutions

### Think “Low-Tech” Solutions

Multisensory elements do not have to be fancy digital media interactives to be effective. Think out of the box and use readily available materials to create lasting memories. Plus “low-tech” options are probably cheaper than computer-based options and “can often be developed, fabricated, and installed in a relatively short amount of time.”<sup>1</sup> Low-tech solutions also reduce the need for an on-staff IT person.

### Implement Elements in Stages

Although it would be wonderful to do so, many institutions simply can not afford to add a lot of multisensory elements at once. If this is the case, start small. Add one or two multisensory elements at a time. Target the objects that best connect to the exhibition story and goals and try to connect multisensory elements to them. As funding is found, more elements can be added to the exhibits.

### Test with Temporary Exhibits

Another option is to try to test out multisensory elements within a temporary exhibit space. Finding staff to

prototype multisensory elements on top of all their other duties can be difficult.<sup>2</sup> Temporary exhibits provide an opportunity to test multiple ideas to find what works best for your institution with limited risk since it will not be up for very long. The lessons learned in these temporary set up could then be applied to permanent exhibition spaces. It may also prove to be easier to get grant money for an exhibition that is more innovative, which could mean the inclusion of multisensory elements. For example, a major reason the Library Company was able to create the exhibition Common Touch was because they received a grant to do so.

## Partner with Local Organization

It may prove useful to partner with another local organization while creating multisensory elements. Community partners can be tricky to manage, but they can also help create more opportunities. Working with them allows for more points of view to be heard and institutions can pool their resources. Partnering with another organization can also provide an audience to prototype with and can help spread the word about the innovative things the institution is doing.

Community partners can also provide expertise on subjects that the museum staff might be lacking in. For example, the Philadelphia Museum of Art partnered with an organization to create a program that allows veterans with PTSD tour the galleries and then create their own artwork as a form of release and therapy.<sup>3</sup>

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<sup>1</sup> Rebecca Martin, "Interactives for Everyone!," January 31, 2013, Accessed February 18, 2018. <http://blogs.aaslh.org/interactives-for-everyone/>.

<sup>2</sup> Interview with Erika Piola.

<sup>3</sup> Interview with Emily Urban.

**Areas for Further Research**

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## Further Research

Due to the scope, time constraints, and the timing of elements discovered while researching this thesis, many considerations pertaining to the use of multisensory elements in a museum setting have remained undiscussed and/or unresearched. Below are some recommendation for how to further this area of research.



## Empirical Studies

An empirical study could be conducted to discover how different audience segments (people with disabilities, children, secondary language speakers, etc.) actually respond to the inclusion of multisensory exhibits. A separate study could be conducted for each segment and then the results could be compared. Such a study would further what visitors actually take away from multisensory exhibitions and how it furthers their understanding of a theme.

## Differences between Institutions of Various Sizes

Different sized institutions have different resources available to them and sometimes different priorities. This could cause the various museums to implement multisensory elements in different ways. Although it is mentioned in the guidelines that multisensory elements do not have to be expensive, this thesis was unable to go into specific on how this could be done. A study could be conducted on how to create affordable multisensory exhibitions and/or the differences between implementing multisensory elements in small and large

institutions. In order to serve the field better it could be useful to have guidelines that cater to specific types of institutions.

## More Detailed Guidelines

It might also prove useful to develop a more detailed set of guidelines for the use of multisensory elements within the museum setting. Separate guidelines could be created for each position in the museum (ex: exhibit designers, educators, etc.) so that multisensory elements could be implemented into all areas of the museum and an institutional wide advocacy could be created.

## A Collection of Case Studies

In order to spread knowledge on how to use multisensory elements and provide access to example of what is already being done, a more dynamic paper or website could be created. It would feature case studies and examples from a variety of institution to show the range of what can be achieved. A website could also provide the museum community with a platform to ask questions and get guidance specifically on the implementation of multisensory elements.



# Appendix



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# Interviews

In order to understand how museum staff are currently using and thinking about multisensory elements a number of interviews were conducted. What follows is a list of who was interviewed, a little bit about the institution, and some major takeaways from the interviews that influenced the creation of this thesis.

## Mindy Porter and Erik Smith

Director of Education and Director of Exhibits & Facilities  
Scott Family Amazeum

### **The Institution:**

The Scott Family Amazeum is a children's museum in Bentonville, AR that opened during the summer of 2015. It provides a fully hands-on experience with almost no labels in the entire museum. Permanent exhibits include immersive environments, such as a cave and log cabin, themed interactive areas, like a water zone, playscapes, such as the canopy climber, and tinkering zones. All the permanent exhibitions have multiple outcomes, which allows children to experience and learn new things with every visit.

### **Major Takeaways:**

Because of Amazeum's audience and its dedication to

open-ended exhibitions they do not use multisensory experiences to convey facts and figures. Instead they use the elements to help children better understand the world around them, gain social interaction skills, and experience self-growth, such as being able to go farther into the "dark, creepy cave."

When asked about ineffective uses of multisensory elements both agreed that elements like push buttons, reveal flaps, or other things that move to reveal an answer are the least helpful because visitors pay attention to the action and not the information revealed. A survey taker echoed their sentiments by saying, "I've noticed that any interactive that puts an action between you and the information is ineffective (ex. buttons lighting up text, a "lid" on a text piece you have to lift up, a phone you pick up with audio info)." While I agree that these "interactives" provide a didactic experience more than a multisensory one, in my personal experience and observations I have noticed that some adults ignore the text panels and for the most part only read the information revealed through these methods, so maybe this needs to be tested based on the exhibit's target audience and each institution.

## Ellysheva Zeira

Education Associate for Access and Food Programs  
Lower East Side Tenement Museum

### The Institution

The Lower East Side Tenement Museum is located in two historic tenement buildings in New York City. It tells the stories of the immigrants who lived in these buildings through guided tours of recreated apartments and businesses. They also offer walking tours which explore how life for immigrants and the neighborhood has changed over time.

### Major Takeaways

Prior to interviewing Ellysheva Zeira, the author read an article in the Fall 2015 issue of the *Exhibitionist* called “Historic Sites and Universal Design: Lessons from the Tenement Museum,” which detailed how the museum’s exhibit *Shop Life*, the only wheelchair accessible tour the museum offers, was designed to be inclusive to all visitors. The article said the tour included several multisensory elements including a talking tactile book as an alternative to an interactive counter and smells and music in the saloon recreation. On a tour of this exhibit, the author gained a better understanding of

the interactive counter which consists of putting teaching collection objects onto the counter which trigger audio narration and historical images connected to the object and historical figure being discussed. This allowed visitors to get a deeper understanding of the variety of people who worked and lived in the building.

One thing that was mentioned in the article, but was not present during the tour when the author took it was the use of smells. When asked about this Zeira said that they had tried to introduce smells into the tour, but had run into issues. One issue was that they had trouble keeping the smells separate. The smells were passed around in containers with removable lids and visitors would put the wrong lids back on the containers, mixing the smells until all the containers smelled the same. The museum also found that the smells they chose were not exciting to visitors. Zeira stated that when she presented smells to visitors on a low vision tour they said, “Oh yeah, I know what that smells like,” so it was underwhelming.

On top of these less than thrilled reactions, the Tenement Museum also had to deal with a lot of conservation issues when dealing with smells. Because it is in a

historical building anything brought into the space has to meet strict regulations. Zeira gave an example of trying to integrate spices into the kitchen of a family from Puerto Rico. To do so they had to freeze the spices overnight, put them in the containers to smell, and then at night it would have to be thrown out. This process would have to be repeated every day, so the museum was forced to consider if the experience the smells created were worth all the resources it took to integrate them into the space. Ultimately it was decided that the smells were not worth it for a regular tour, but maybe for specialty tours.

The Tenement Museum offers a tour called “Tastings at the Tenement” which ends with visitors sampling foods from the neighborhood in a space separate from the historical buildings. Zeira said that they include food on this tour because it can provide a “wonderful entry way into connecting with people.” Educators at the museum often start with asking visitors on this tour to recall a memory associated with food. Once visitors see how food is connected to their own lives, they are more likely to see the relevance of it in someone else’s. The program examines questions like “what does food

tell us about immigration? What is American food and how have immigrants assimilated into American food culture? How has immigrant food changed American food culture?” Zeira stated that food can tell us about the neighborhood and the history of the people who lived here, how outside communities viewed immigrant communities such as how coking traditional food was sometimes seen as immigrants not assimilating, and how food can connect community.

The museum does face some challenges integrating food into this program however. First, food can not be brought into the historical spaces because “It could invite pest in. it could spill and mess things up.” Instead, it is eaten out on the streets or in a classroom space not connected to the historical building. The museum also is not able to cook or prepare food due to regulations. Instead they buy prepared food and serve it to visitors. Even just serving prepared food has it challenges though. Zeira talks about the scheduling and workload associated with obtaining the food. Someone has to make sure there is enough food to go around. Someone has to go out and buy the food. Someone has to serve it and lead the tour. Zeira said that a lot of scheduling is involved

because she tries to break all these tasks up, so that no one is overwhelmed. Also, when buying prepared food, the museum has to have a back-up plan for when they can not get food where they normally do so. This could be because a business isn't open, possibly because of a holiday, or if they run out of a specific kind of food which happened on a tour during Chinese New Year.

### **Beth Van Why**

Chief Officer of Engagement  
Indiana State Museum and Historic Sites

#### **The Institution**

The Indiana State Museum and Historic Sites presents exhibits connected to the state of Indiana and covers a variety of themes including history, art and culture, science, and geology. The exhibits feature many hands-on opportunities and utilize a variety of multisensory elements.

#### **Major Takeaways**

The Indiana State Museum strives to create interactives that include elements that allow visitors of all abilities to connect to the themes being presented. Beth Van Why gave numerous example of how the museum does this,

but one that stood out to the author was an interactive aimed at exploring the differences between five species of frogs found in the state. Each frog is represented by a true-to-life scaled touchable model. Words around the frogs identify them as well as describe the sound associated with each one. When touched, each model verbally names the frog and plays the sound it makes. Because this interactive engages multiple senses it allows all visitors, including those with visual and hearing impairments and secondary language speakers, to compare the frog's sizes and sounds.

### **Christopher Maute**

Laboratory Manager  
Monell Chemical Senses Center

#### **The Institution**

Monell Chemical Senses Center is dedicated to researching the senses of taste and smell through a multidisciplinary approach. They have worked to create smells and scent machines for museum exhibitions in the past.

#### **Major Takeaways**

This interview provided a lot of the scientific and



psychological information connected to smell presented in this paper. The author found much of the science behind smell hard to understand and Christopher Maute was able to clear up the confusion.

Maute was also able to explain many of the factors museums should consider before incorporating smells into their exhibitions. When asked how many smells can be incorporated into an exhibition he said it depends and to consider these constraints:

- How big of a break is between smells?
- How localized the smell is?
  - More contained a smell is the more can be incorporated into a space
- How long will the smell linger after being released?
  - Depends on chemistry of smell (Simple alcohols evaporate and go away quickly)
  - Depends on how big of a space it is filling and ventilation
- How to prevent cross contamination of odor?
- If it is something visitors carry around like a scratch and sniff card think about how it will be

disposed of because that space will begin to smell as well

He also recommended that museums use visco pearls, which are tiny beads that contain smells, to distribute scents instead of liquids. Liquids can spill causing a smell where it is not wanted and are easier to contaminate. Visco pearls do not have that problem. They are used by filling a container halfway up with them. The air in the rest of the container fills with the smell which can then be pumped out to release the scent.

### Erika Piola

Director of the Visual Culture Program & Associate Curator of Prints and Photographs  
Library Company of Philadelphia

### The Institution

The Library Company of Philadelphia is a research library founded by Benjamin Franklin in 1731. The works it houses focus on American society and culture from the 17th and 19th centuries. Although it primarily functions as a library, it has a small rotating exhibition space that typically hosts two exhibitions a year.

## Major Takeaways

The interview with Erika Piola focused on the exhibition Common Touch: The Art of the Senses in the History of the Blind, which was the institution's first exhibition to include a lot of multisensory elements. The exhibit included several touching components, localized points of audio, an audio tour, and an olfactometer, which released scents in time to a story being told through the use of headphones. More information about the exhibit can be found on its website:

<http://commontouch.librarycompany.org>.

Besides providing example of multisensory elements in use, Piola was able to describe some of the struggles smaller institution face when implementing multisensory elements, especially high-tech based ones. From the beginning of the interview Piola made it clear that the institution had not been able to continue to use multisensory elements in their exhibitions. When helping to create the exhibition, she knew this would probable by the case, but felt that the subject matter of Common Touch required the use of multisensory elements so that it was accessible to visitors with visual impairments.

There were several reasons why the use of multisensory

elements did not continue including lack of resources such as funding and time, the maintenance required for the upkeep of technology, and institutional priority.

To create Common Touch the Library Company received a grant from the Pew Center for Arts and Heritage, which allowed the institution to fund artist, Teresa Jaynes's creation of the multisensory elements and the creation of a professionally recorded audio tour. Piola also mentioned how often times the curators who help develop the exhibits simply do not have enough time to properly plan, create, and implement multisensory elements. The curators are still having to do other parts of their jobs like assisting with research and preparing papers, which may or may not have anything to do with the exhibition. Even with Common Touch, where Teresa Jaynes was a guest curator, some of the multisensory elements just barely got created in time for opening.

Piola also stated that the institution just did not have staff with the experience to keep doing technology-based elements up and running. She stated, "once you go multisensory, a lot of times technology is involved, and that technology adds money and adds the chances for things to go wrong and also the staff for someone

to be there the entire time to monitor.” She stated that she would sometimes walk through the exhibit to find the music turned off and no one knew because the visitors had not reported it and the person at the front desk was far enough a way that she could not hear it when it was on. She also mentioned that the olfactometer broke down a couple times and they would have to call someone in to fix it.

She also stated that while the institution sees the value in becoming more accessible, it has not made it a top priority. For example, she stated that for an upcoming exhibition, the designer was considering a dark accent wall with white text even though one of the co-curators said that he had a hard time reading it. She stated it was really up to the curators as to how many accessible design elements were in each exhibition.

## **Kevin Schott**

Education Programs Manager  
Penn Museum

### **The Institution**

The Penn Museum is associated with the University of Pennsylvania and preserves objects and presents

exhibitions related to archaeology and anthropology.

### **Major Takeaways**

Keven Schott has been working on several programs for blind and visually impaired visitors at the Penn Museum. One is an educational box on Ancient Rome, that is meant to be used in schools for the blind and visually impaired. It contains activities that use all of the senses. In one section he encourages the recreation of a Roman feast which includes how to create a toga out of a sheet, recipes from ancient Rome, scents of incense that would have filled the rooms, and instructions on where to find music and poetry readings from the era.

One of the main points Schott stressed during the interview was the need to prototype and never assume anything, especially when designing for a specific audience such as people who are blind and visually impaired. He said that he is sometimes asked if he can speed up his process and he steadfastly says no because he wants to make sure what he is doing is effective for the audience he is trying to reach. He also stated that it is helpful to do surveys, but to “trust your own instinct” when observing because people will often want to be nice when giving feedback, especially

if there are not many programs in the area for that specific audience segment. One example he provided was that when he asked a group of people with visual impairments whether it took too long for the object they were passing around to reach everyone, they said no. However, through observations he could tell they were getting bored, so he began to include multiple copies of the same object in programs and got very positive responses.

## Emily Urban

Development Officer at the Philadelphia Museum of Art

### **The Institution**

The Philadelphia Museum of Art is a world class art museum. It is home to influential works by Cezanne, Duchamp, and Van Gogh among others.

### **Major Takeaways**

One of the most encouraging takeaways came out of an interview with Emily Urban: people are willing to fund projects that make museums more accessible. These projects often include multisensory elements. For example, the PMA is currently trying to create touch tours as a way to become more accessible.

Urban also stated that the museum often works with outside organizations to co-create experiences for specific groups. For example, the institution partnered with an organization that supports veterans with PTSD to create a program that encourages veterans to create artwork which can be therapeutic.

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