High-Tech Museum Exhibits in the Twenty-First Century: An Evolution of Education and Entertainment

A Sociology and Anthropology Senior Thesis

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Introduction: Literature Review and Methodology

Abstract:

Today’s Museums run the gamut of subjects from those centered on art to those that explore science and technology. Some are private, others public. They both educate and entertain. Based on a review of the current literature on museums and several visits to three museums of varying disciplines in the Philadelphia area, this thesis explores what it means for a museum to have interactive exhibits. It argues that the “high tech” interactive exhibits, although valuable and intriguing, appear to play only a minor role in the modern museum goers’ positive experience. Although high tech helps facilitate visitor interactivity, it is ultimately an interesting though not required way of making interactivity more accessible in the modern museum experience. Without some degree of interactivity, it becomes increasingly difficult for a museum to stay relevant and interesting to a new generation of museum attending audiences.

Preface:

Ever since I was a child museums have always been a dominant factor in my cultural upbringing. My grandmother, an esteemed art therapist, frequently took it upon herself to instill a deep respect for museums at an early age. She would typically take my sister and me to the Carnegie Museum of Art and Natural history in Pittsburgh on a regular basis. This regular exposure gave me a great reverence for museums and established them as centers of both education and entertainment.

More than a decade later, I was hired to work as a camp assistant for the same museum’s summer program in the summer of 2014. In this position, I found myself in the role of being both an educator and an entertainer on behalf of the children in the museum’
summer caps. In this job, I was tasked with supervising children from ages 6-13 on a daily basis and would give them tours of the various exhibits in the museum. There were several things that struck me as very anthropologically interesting during these tours. Firstly, the children were always more interested in seeing exhibits in the natural history museum than the art museum. This was a consistent trend with campers of all ages each week even as the roster of campers changed. Even the eldest campers expressed little interest in the art exhibits compared to the natural history exhibits. This attitude was also made evident in the population of the camps. Weekly camps were divided amongst Natural History and Art, and Natural history camps were typically far more popular than the art ones.

I personally believe this was due to the greater prominence of interactivity and high-tech exhibits found in the natural history galleries. Upon marking this distinction, I became vested in further understanding how this effect is played out in the planning and implementation of museum exhibits, and what it might indicate about what different age groups perceive to be the benefits of high-tech exhibits.

As I pondered some of the implications of these casual observations, I began to realize that this would make for a unique and engaging field of study for my senior thesis. I knew that I wanted to examine museums and the behaviors of its visitors, but I didn’t know exactly what about them I wanted to understand via these experiences. One day, as I was discussing this dilemma with my father, he recommended that I explore what exactly the purpose of a museum is. When I asked him to elaborate, he said “Well you said the kids in your program seem to be more entertained when they get to actually play
with the exhibits. Does that mean museums are supposed to be more “fun” if they’re going to keep their visitors interested now?”

While this was not necessarily the most articulate way of addressing what I wanted to study, it lead me to musing and creatively thinking about how this could be the focus of my thesis. In particular, I was reminiscing about my visit to the Smithsonian Air and Space Museum in Washington D.C. back in 2001 when I was eight years old. At the time, there was a temporary traveling exhibition there that was showcasing most of the costumes and props from the original Star Wars trilogy. The exhibit was incredibly packed when we went, and I remembered anxiously waiting to see my favorite characters in a line that traveled the length of the entire museum leading up to this special installation.

Looking back on this, I was inspired by the notion of entertainment being a prominent role in museums. While the Star Wars films are in their own right excellent cinematic productions, their educational value or relevance for a national air and space museum seemed dubious at best. Yet at the same time, this exhibit drew in such an incredible amount of visitors to the museum that it could not be dismissed as a decision fluke. From this reflection, the relationship between entertainment and education entered my consciousness and became the driving force behind what I wanted to study for my thesis. The incorporation of high-tech exhibits in this exploration seemed apropos as they are seemingly one the greatest sources of interactivity in today’s museums, and as such, add much to the discussion of these themes.

**Historical Context and Museology:**
The first major category of scholarly debate to address could be considered the challengers to the concept of “museology.” In essence, museology is the study of museums, their purpose, their history, and their development. Though it is not a field with as many scholars or literature as its inter-related disciplines (i.e. art history, education, anthropology, etc.), it is important to note some of the major scholarly perspectives in this field study. In Jorge Glusberg’s *Cool Museums and Hot Museums* (1980), he challenges common misconceptions about museums by making a condemnation against the idea that a museum is merely a “repository” for historically important objects. Instead he argues that,

The library and the art gallery, with its art societies and restoration workshops, a theatre, an auditorium, a planetarium, collections of flora and fauna, and many other things can be incorporated into the museum. Any museum which lacks such a comprehensive approach and an encyclopedic commitment to all non-religious and non-productive spiritual activities does not deserve to be called a museum.(Glusberg 51)

From this bold assertion of what truly differentiates something as a museum, rather than a repository, library, archive, etc. Glusberg illustrates the multifarious qualities and services that must be provided in order for an institution to succeed as a museum. It is concerning that Glusberg cites a lack of religion to be an necessary marker of a museum given how many notable religious museums exist today, especially when it comes to high tech exhibits. One of the most famous examples would be the Creation Museum in Petersburg, Kentucky. Although this museum has come under wide national controversy for its state-of-the-art depictions of man and dinosaurs sharing the Earth, God as an infallible Creator, and other lessons from the Bible as scientific fact, the scale of its technology, popularity, and design nonetheless makes it a museum. Therefore, I do not agree with his sentiment that a museum must have a non-religious approach to work
efficiently, he does raise an important point about how the diversity of content is essential for a museum being one.

More importantly, the way the content is stored must have an element of presentation that makes it easily accessible to the visitor’s perception. In other words, a good museum is one that has a wide array of offerings beyond simple storage of important/interesting items. These items must be coupled with a plethora of goods and experiences to make them more engaging and presentable to the public en masse. He also applies his own brand of unique museology to define the title of his aforementioned book and distinguish what qualifies as a cool and a hot museum, respectively. He diagrams this distinction via the following:

Cool museums...participation...communication...creativity...explicit conditions of production.

Hot museums...information...documentation, little participation...no knowledge of conditions of production.” (Glusberg 17)

To verify, the “conditions of production” that Glusberg addresses refers to the way in which a particular artifact, painting, etc. in a museum was created prior to its placement in the museum. From these descriptions, it is evident that Glusberg values cool museums significantly more so than hot museums. Bearing this in mind, one could assume that the aforementioned qualities of what truly “makes” a museum would likely be more prominent in a cool museum. Therefore, we can assume that the most successful museums that continually engage the public in a positive manner are indeed cool museums based upon the museology context Glusberg applies to his literature. Furthermore, we will find later that although Glusberg writings come from the 1980’s
when high-tech museum exhibits weren’t as prominent as they are today, his application of museology and the defining of a “cool museum” will bear relevance to how electronic and digital technology is used in museums today.

Glusberg’s analysis exemplifies a sophisticated form of museum studies that promotes the interactivity of a cool museum as something for all museums to aspire to.

However, some of Glusberg’s scholarly peers have demonstrated a skeptical attitude of the applicability of museology as a viable field of study that he uses to examine museums. Certain academics such as Stephen Weil and Wilcomb Washburn (Krech 517) argued that museum studies itself is too specific a field to be labeled as an academic discipline and that museums are really just a manifestation of art history, anthropology, history, and other related disciplines synthesized into a space of communal education.

Since my thesis is centered on the American museum tradition rather than that of the international community, it is essential to distinguish how that tradition is evolving. According to sociologist and museum scholar Peggy Levitt in her ongoing project *The Bog and the Beast: Museums, Nations, and the World*, she rightly questions that,

Museums might seem like unlikely places to look for answers. But ever since August 1793, when the leaders of the new French Republic opened the doors of the Louvre to the French public to celebrate the one-year anniversary of Louis XVI’s demise, museums have strongly influenced how people imagine the nations where they live. To create a unified “team” out of millions of people who would never meet, museums showcased the knowledge and customs their citizens shared...But in today’s global world, have museums taken on the challenge of creating the global citizens of the future too? Where do they fall in the battle between multilingual globalism and parochial nationalism? Why do particular cities create regionally or internationally-focused institutions while others create museums that look barely past their front doors? (Levitt 2014)

Although the political implications of her inquiry are not highly pertinent to my own investigation regarding interactivity in high tech exhibits, she still highlights the
nationalistic context one must consider when viewing museums in the American
tradition. In other words, her analysis shows that the kind of education a museum can
provide might be very political for a visitor, even if the content it demonstrates is not
obviously so.

Therefore, it is important to note that the observations and claims I make
throughout this thesis cannot be generalized for all museums on a global scale.
Furthermore, most scholarly allies and proponents of the American Association of
Museums dismiss the notion that museology is not a singular discipline and believe
museum studies are indeed an independent field of study that is legitimate and necessary
for the successful continuation and empowering knowledge of today’s museums.

Educational Value of Museums:

Some major scholars of museology argue that museums have expanded their
educational potential dramatically in recent years. This helps make them valuable centers
for academic knowledge beyond what can be gained from individual visits to a respective
museum. In particular, some believe that the growing relationship between schools and
museums has enabled students to gain hands-on experience via the educational resources
a museum can provide, especially in regards to long-term internship or employment
programs for college/university/graduate students. While the scholarship written behind
this school of thought is likely quite biased (most of the authors are involved in museum
work themselves), it is still worth examining on an in-depth level for the sake of this
thesis.
For example, Jeffery P. Bonner, Director of Exhibits and Programs at the Museum of Science and Natural History in St. Louis, MO, states in his essay “Museums in the Classroom and Classrooms in the Museum” that,

All museums, be they art, history, or science museums, ultimately may be defined in the same way: they are permanent, public, educational institutions that provide systematic care for collections (Burcaw 1975:9). In terms of common goals, museums and colleges share a commitment to education. As Van Dorn has noted (1984:221), the educational aspect of museum services has increased dramatically in recent years, bringing the respective role of museums and colleges even closer together. (Bonner 288)

From this statement, Bonner indicates a high regard for the value of museums and their currently expanding relationship with colleges and universities. However, his insistence that museums are inherently public may be a bit misguided. Since a majority of museums are not free to enter, the notion of them being public institutions relies solely on the idea that an institution is public in that it receives some sort of local, state, or government funding.

Nonetheless, Bonner and his like-minded peers treat education as a cornerstone of today’s museums that has only become more positively enriched as time has passed and relationships with centers of higher learning have strengthened. Though most of Bonner’s peers agree with his positive outlook on the educational value of museums, they interpret that value to be more beneficial for a wider array of age groups than he addresses. In other words, it isn’t just undergraduate and graduate university students who have much to gain museum’s educational program.

According to Edward Taylor and Amanda Neill in their article, “Museum Education: A Nonformal Education Perspective”, they argue that full-time working adults have much to gain from museums on an educational level even if they are not enrolled in an education program/class. In essence, they argue that since most adult visitors of
museums have full-time jobs and don’t have the time or resources to commit to their own education outside of work, museums can act as informal “refreshers” or quick lessons on subjects that adults may have been unaware of or have outright forgotten from their past days as full time students. (Taylor and Neill 24)

Furthermore, the Museums Association (A UK museum coalition) and its Public Attitude Research guide (2014) help validate these kinds of education-centric perspectives for museums. The project, which was conducted by a research organization called BritainThinks, revolves around discovering public outlook on museums so that a better future can be put in place for these kinds of institutions. According to the report’s conclusion,

What the public sees as essential purposes – care, preservation and display of heritage; entertaining education for all children; and trustworthy information for all adults – explain why museums are held in such high regard. They help to define what a museum is and, furthermore, constitute desirable goals which museums are extremely well-placed to achieve compared to other societal institutions. (MuseumsAssociation.org)

Despite this claim, there are still notable cynics who challenge this optimistic outlook on the educational evolution of museums. These critics represent a group of thinkers who believe that museums are transitioning away from their formally educational roots and reforming themselves into more entertainment/amusement based centers due to a wide array of market demands factors. While some of these critics aren’t dismissive of education’s continued importance to a museum, they are dubious as to what extent a museum can rely on its own intrinsic educational value to maintain its continued survival. In particular, they believe that the desires and demands of the public overrule any creative initiative the museum may implement. This is especially applicable if the direction a museum takes might not be in line with what the general public wants to get
out of their individual museum experiences. According to Gail Anderson in her book *Reinventing the Museum* she declares in the beginning to her chapter “Perspectives on Meaningful Public Engagement” that,

> Today, most museums incorporate the perspective of the public when determining institutional directions and priorities... With increasing levels of competition from other leisure and educational providers, museum leaders continue to turn to tactics long familiar in the business world, such as marketing, evaluation, and financial analysis, critical to informed decision making. Today a museum cannot afford to assume it has intrinsic value for the public... Placing the public at the center of a museum’s future has resulted in a shift in management practices—in the way exhibitions are developed, in board recruitment strategies, in hiring practices, and in what and how museums collect, if they collect at all. It is a dramatic shift from the days of internally focused decisions made with little regard for public desire or interest. Today’s museums know that they cannot survive without ongoing feedback from and involvement with the public. (Anderson 287)

In this analysis, Ms. Anderson rightfully points out that although they certainly have a major educational emphasis, museums are still businesses that face marketing challenges similar to other recreational institutions. Therefore, the educational value of any given museum can potentially be derailed by the public demand for more entertainment-based exhibits. While Mr. Bonner’s lauding of education in a museum context are likely based primarily on his own experience working for the St. Louis Museum of Science and Natural History certainly has merit, he might be neglecting the commercial elements of entertainment and the public’s demand permeating today’s museum landscape.

Therefore, it is both possible and likely for both of these groups of thinkers to be correct in their assertions. To be specific, museums may indeed be more advanced in their educational potential today, but only in the context of extended educational programs built towards a student audience. The museum experience of the “common” audiences that Anderson alludes to, does not bear the same educational value since e
museums must adopt a flashier, more tourist-oriented presentation in order to survive as an institution. Operating under this context, it can be inferred that museums have advanced in unprecedented and unexpected ways beyond the days of “look, don’t touch” policies that permeated museums for centuries.

Museums as Entertainment:

Now that the current state of museums and their relationship with education has been established, it is now worth exploring conversations over the role of entertainment, especially in regards to how museums market themselves to the public today. Since this is a relatively novel field of study with most of its content having arisen in the past decade, the literature on this subject may not be as plentiful as the education section. Nonetheless, it is still an important part of this investigation and exploring the evolution of museums, especially in regards to their recent implementation of high-tech exhibitions. The first major category of scholarly debate in this section would be what I would call the “resistance” to entertainment in the museum world. Though this movement typically is associated with a pre-contemporary era (museums prior to the new millennium) of museum development, it still plays a role in some of the more “elite” museum circles (donors, curators, presidents, boards, etc.) today.

This resistance category is typically comprised of scholars, major donors, and museum curators who find that the featuring of entertainment-based attractions in museums to be abhorrent and detracting from the sophistication and cultural values museums are typically lauded over.

For example, in Bill Mikulak’s article “Mickey Meets Mondrian: Cartoons Enter the Museum of Modern Art”, he investigates the controversy over the Museum of
Modern Art’s decision in the early 1940’s to include footage from Disney animated films in its newly created Film Library. At the time, many of the museum’s major donors and patrons were offended at the notion that film (especially for-profit animated film) was being promoted in an institution that they believed to be immune from the influence of “common” tastes and aesthetic preferences. In the conclusion of his analysis, Mikulak stipulates that,

“When the Museum of Modern Art Film Library sought to include commercial Hollywood films in its collection, it encountered an elitist disdains for mass-produced culture on the one hand an incredulous group of business owners on the other. Had the museum restricted its interest to independently produced experimental and avant-garde films, it might have had a much easier time.” (Mikulak 68)

From this declaration, Mikulak has demonstrated that it is not just the commercial element of the films that the cultural elite held disdain for, but the mass-produced nature of film in general. In other words, if a work of art or an artifact can be easily made and distributed, it loses its unique quality and is therefore not worthy of being considered an art form. If we apply this mentality towards entertainment in museums today, it seems that the MOMA and other innovative museums are using entertainment to challenge the notion what exactly qualifies as art, and therefore, challenge the notions of art education, and even museum education itself. Therefore, these kinds of museums are challenging how we engage mass-produced media and what sort of intellectual benefits can be gained from them.

This transitions into the second major category of scholarly debate surrounding entertainment in museums that I will call the pro-entertainment group. This counterargument camp to the entertainment resistance values entertainment-based media in all museums not only because they challenge the public to think in novel terms via new
experiences, but also allow the museums to draw in an even wider swath of the public for
increased overall museum attendance. This is especially pertinent when challenging the
notion of “passivity of the audience” as a cornerstone of entertainment. In Stephen Bates
and Anthony J. Ferri’s “What’s Entertainment? Notes Towards a Definition”, they claim
that passivity, which used to be a defining factor of entertainment, is slowly being
dismantled and challenged by the dramatic increase interactive media and video game
culture in modern culture. (Bates and Ferri 14) Bearing this in mind, we can begin to see
how both entertainment and education are affected by this uprising of interactivity, and
how that is made manifest in the high-tech exhibits of today’s museums.

The Role of High-Tech Exhibits:

The final major category for scholarly debate in my literature review is the role of
technology itself, especially with regards to high-tech museum exhibitions. While many
critics have a wide array of viewpoints on both education and entertainment, it is
ultimately how technology affects these two evolving roles of the twenty-first century
museum that interest me the most. In particular, I wish to observe how the current
existing scholarship on museum technology synthesizes these roles and determine what
technology does for the joining of entertainment and education into a positive museum
experience for today’s visitors.

In this context, the first major group of scholars to explore would be what I call
the Technological Educators. These scholars argue that technological improvements in
the past decades have made museums significantly more educational via the
aforementioned interactivity of exhibits that are not only more interesting to younger
visitors, but also allow them to engage the concepts that a particular exhibit might be trying to educate the visitor about on a deeper level.

Some of the most articulate allies to this school of thought are Scott Sayre and Kris Wetterlund, who wrote a cohesive article entitled “The Social Life of Technology for Museum Visitors” that sheds light on the usefulness of new-age technology in museum education. In particular, they advocate that resources such as web-learning, audio tours, movie theaters/auditoriums, touch-based interactive exhibits, and even group-based video games are all of vital importance to the expansion of today’s museums in both an educational and marketable sense.

For example, they discuss a 2007 exhibition entitled the *Minnesota 150* at the Minnesota Historical Society to celebrate the state’s 150th anniversary. To make things interesting, the exhibit’s most prominent feature was an auditorium sized trivia game that would involve up to 16 different players at a time. Players would compete against each other to answer multiple choice trivia questions about the state’s history and were frequently prompted by various image and video clips for most of the questions. This sort of community learning not only made the education of the state’s rich history more “fun” by turning the visitors’ experience into a game, but also allowed the audience to learn from one another by sharing their pre-existing knowledge with each other, thus unifying strangers in a form of communication and camaraderie that is unprecedented by most museum standards. (Sayre and Wetterlund 91)

Sayre and Wetterlund’s analysis lends itself to a very positive outlook not only on the educational value of high-tech exhibits in museums, but also how that kind of education is strengthened by the socialization factor inherent in these exhibits. In other
words, the social aspect in these exhibits is an essential component to how the technology can both educate and entertain the audience.

This socialization and technology factor extends beyond the walls of the museum itself. In Lesley Langa’s article, “Does Twitter Help Museums Engage with Visitors?”, she endorses the notion that social media is becoming a critical component of how American museums rely on online platforms such as Twitter to remain relevant and maintain free promotion of their exhibits, offers, events, etc. While Langa’s case studies are primarily centered upon the experiences of art museums that have used Twitter, it is nonetheless applicable to museums that rely on social media as a whole. Bearing this in mind, it seems that the role of technology is one that can be considered multi-faceted in its application to museums.

Though the interactive factor of high-tech exhibits museums is typically more common in those focused on science or natural history, art museums are also beginning to engage in this process so as to advance their educational outreach and potential. In Mariana Adams’ “The Dilemma of Interactive Art Museum Spaces”, she uses three real-world examples of how art museums have successfully utilized interactivity in museums that have usually been areas that have maintained a “no touch environment where engagement is primarily visual, intellectual, and, for some people, spiritual. But that is changing.” (Addams 1)

What seems to be most interesting about Addams’s investigation into the prominence of technology in art museums is that her three major informants are all museum educators who have taken an active role in how this interactivity is implemented in their respective art museums. Therefore, we can conclude that because of these various
qualified informants’ positive advocacy for interactivity in art museums, technology seems to ultimately be beneficial for museums, in both its educational value and its ability to gain increasing visitor interest.

Overall, it seems evident that museums in their current form are rife with debate over how they currently stand and how they should be developing. Though the field of museums itself isn’t as controversial or widely pertinent as other anthropological topics, it is nonetheless worthy of consideration as they are arguably one of the pivotal cornerstones of American education made readily available to the public at typically affordable prices.

Methodology

The methodology for my investigation was a simple yet multifaceted process. Firstly, I gathered a plethora of relevant secondary scholarly texts that shed light on the history and current state of museums. With these texts, I expanded my current literature review so that these additional readings improved the academic quality of my information and how it is presented. They were essential for the overall project, which relied heavily on these documents for a clear and concise background on museums that also helped to substantiate some of the claims I shall make regarding my own observations.

After I had received IRB approval for my personal investigation methods, I began making visits to the three major museums I had chosen to do my observations at. During this process, I initiated my outreach to potential interview candidates to see if they would be interested in speaking with me about their involvement in museums. Once I had collected significant data from both visit observations at my museum sites and my
interviews, I then compared how these data relate to or challenge the previous scholarly literature that currently exists on museums.

For example, let's say I had wished to defend an author's claim that museums are increasingly relying on interactivity to educate and entertain its audience. I would then turn to my ethnographic studies and interviews to seek out instances where this claim was validated and in what situations it was not. Furthermore, had observations had no relevance or contradicted the material I had read, they became the basis for new claims about museum culture that may not have been documented in the existing literature on this subject.

Prior to my investigation, I constructed a hypothetical example that might have demonstrated this effect. In this example, I am performing observations at the Franklin Institute. During my visit, I notice that most of the interactive high-tech exhibits (specifically those that require direct participation from the visitor in order to present/access information), is being used predominantly by children yet rarely interacted with by adults unless they are accompanied by their own children. If this pattern continued at the other museums I had observed, I could have then deduced that interactivity in high-tech is rarely taken advantage of by adults and is more valuable for child-aged visitors. Therefore, claims about the usefulness of interactivity by some of the authors might be valid, but only with certain age groups/circumstances.

The Franklin Institute, in addition to The Drexel Academy of Natural Sciences and the Institute of Contemporary Art, made up the three museums for the sites of my observations. My reasoning behind these three was based on several factors. Firstly, they are all Philadelphia-based museums that were easily accessible to me via public

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transportation since I do not have a car to travel to museums that are not reachable by public transportation. Secondly, they are all museums that I felt would have a high potential for featuring high-tech exhibits given the scale of their funding, the type of content they are known for featuring, and level of recognized prestige. Thirdly, each one of these museums represents a natural sciences, social sciences, and humanities focus respectively, which feels very appropriate for a liberal arts approach towards this investigation. In other words, the very nature of Swarthmore’s academic structure for all of its students had influenced me to see all the major academic disciplines as important to gaining a truly informed and nuanced perspective on academia. Furthermore, it was interesting to see how high-tech exhibits and interactivity are handled similarly and differently in a science, history, art, etc. museum context.

This type of observation applied to each of the museums observed. I visited each museum twice, spent approximately three hours there per visit, and spaced out my visits over the course of the year so that I could see new galleries/exhibits/content at each museum upon my subsequent investigations. During my observations, I typed out written notes on my phone about notable visitor qualities and behaviors. In this process, I did not directly speak to any of the visitors I was observing and exercised discretion to make it seem like I was not actually observing them. Had a visitor ever become suspicious that I was writing about them and they confronted me on it, I would have explained to them the nature of my project and that if they were uncomfortable with anything I had recorded about them I will happily erase it.

To help mitigate the risk of this particular situation, I lingered around certain exhibits for 20-30 minute intervals and recorded some of the visitor behaviors when they
were in the same exhibit as me. That way, it did not seem like I was following any
particular visitor at any point, even if he/she was demonstrating behaviors that seemed
particularly interesting or relevant to my research. In addition, when there were any free
tours/tour groups traveling through the museum. I silently tagged along to learn about
how the museum is presented to visitors in that particular fashion and how visitors on
tour groups behave differently than those that were not.

In the cases of whom I interviewed, I sought out subjects based on their relevance
to my material and their level of professional engagement with museums. I spoke to
many interesting individuals, some of which were employees of high standing at the
museums where I conducted my observations. Some were also professionally linked to
museums, though not direct employees of one. I argue that these informants were more
valuable to my research than say janitors, visitor service representatives, etc. since they
have a more direct role in the content of the museum’s exhibitions and likely have greater
influence as to how this content changes over time. The more senior the members of the
museum, the better they were as informants since they had greater experience watching
museums evolve in their careers.

To find these contacts, I went to each of the main websites for these museums to
find the relevant contact info in the museum’s employee directory for these potential
informants. When no such public employee directory exists, I contacted the museum
itself with my info and asked them to forward my information and the nature of my
research to any individuals who would be willing to help answer my questions.

Once my contacts had been acquired and I had received consent for the
interviews, I arranged a time for us to conduct a phone interview. Before I conducted the
interviews, I researched a bit about my interviewee via information provided on their LinkedIn page and other sources listing their professional accomplishments in museum work. Given these bits of information, I had obtained more information about who they are so that I could ask specific individualized questions that touch upon their experiences.

After having the necessary framework laid out for these interviews, I then proceeded with a general set of questions that I had prepared for all of my interviewees. Having expressed my gratitude for their agreeing to interview me, I asked them the following, as well as individualized questions about their own specific experience:

1. What do you envision the museum being like 5 years from now? 10?
2. What experiences and/or desires lead you to this particular field?
3. What authority/influence do you possess in the selecting/organizing/creating of the museum’s exhibits? What differences and/or similarities exist in the work required between permanent and temporary exhibits?
4. What do you think are the museum’s greatest strengths?
5. What is your favorite thing about working at the museum?
6. What is your favorite exhibit or installation that has been featured in the museum and why?
7. What are some of the most difficult challenges of working at the museum?
8. What do you think is the museum’s capacity as a center of entertainment? What about as a center of education?
9. What marketing/advertising tactics are being taken to maintain a steady audience? What kinds of exhibits draw in the most visitors?
After completing the interview, I thanked them for their time and reassured them that they can ask to be anonymous and/or have certain questions/answers redacted from the interview at any time. I then saved the recorded information on my Google Drive account so that it could be referred. I also then followed up with a separate thank you message via email.

Another aspect of primary source accumulation I engaged with was the museum’s online presence, especially in regards to their social media outlets. By examining things such as their Twitter, Facebook, Blogs, etc., I engaged in analysis as to how they use these digital platforms to reach out to their audiences. Analysis of how these online resources are utilized shed greater light on what museums aim to do with social media technology to stay relevant today, especially with millennials.

Finally, it is worth noting that I based the style of observation from Sarah Thornton’s book, *Seven Days in the Art World*. In this fascinating work, Ms. Thornton conducts her ethnography of various centers of the contemporary art world in a very story-based style that is rich with thick description. She often avoids making reference to other scholars and academic sources during these ethnographies, and I have found this style of writing to be sensible and accessible to the everyday reader. Therefore, my sections describing my observations are not peppered with scholarly sources/references, but rather a narrative reflection of my experiences at each museum. From these experiences, I then determined what I believed to be significant at each museum, and then compared those conclusions to various sources that might substantiate those claims.

With this methodology in mind, we will now explore the history of museums, how high-tech exhibits evolved in the new millennium, the role of social media, and other
important factors that have shaped the American museums of today. Following this
examination, I will then share the results of my museum visits/interviews and how they
compare to the following content.
Chapter 1: Museums and New Technology

Museums in the Beginning:

Now that what I will be investigating, how I will engage it, and why I am doing so has been established, it is now imperative to examine how this all unfolds in relation to the museums themselves and what I discerned from them. By first exploring the origins of museums and some notable instances of implementing high-tech exhibits, we can enrich our understanding of the field as it stands. Though the majority of my research is concerned with the contemporary era of museums and its high-tech manifestations, I will venture back to the very first public museums so that an origin of museology can be established.

As arguably one of the founding cultures of Western civilization, the Ancient Greeks can be considered the creators of the first museums. They coined the term *mouseion*, which was made manifest as temples built to honor the muses and contain other forms of high art including sculpture and poetry that represent some of the highest forms of art and knowledge the Greeks possessed. (Modello 2008)

This sort of reverential quality for Western culture’s intellectual merits was a hallmark of museums for centuries following the Ancient Greeks. Though most of the museums that formed in those years were not open to the general public, especially those following the rise of early Christianity, they were still notably concerned with the preservation of art and artifacts of significant historical and/or cultural value.

It wasn’t until 1786 that the first “true” museums became a reality. While most manifestations of the museum had been in the form of the private collections of kings and the aristocracy in Europe, these new public museums were not only made accessible to
visitors of non-nobility/royalty, but even actively encouraged their interactivity with the exhibits. This was made especially notable in early anthropology museums that collected artifacts from other cultures, often without permission from those cultures. Visitors were frequently encouraged to enjoy a truly “sensory” experience with the objects and touch them, pick them up, and in some cases, even take small parts home as souvenirs.

According to Constance Classen in her article “Museum Manners: The Sensory Life of the Early Museum”, the ability to sense an object beyond just looking at it was essential for visitors to truly gain a deep appreciation and understanding of whatever they were trying to engage with (Classen 2007:856).

This interactive quality of museums began to disappear in the late 19th century when the threat of decaying or destroying artifacts was very real when many visitors were allowed to touch the works. Interests of preservation surpassed most museum’s desires to have their visitors get the “whole experience” of their collection. However, with the rise of high-tech exhibits that encourage touching and other forms of interactivity in recent years, especially in science museums, the very origins of early museum behaviors are beginning to resurface in today’s exhibits.

**Social Media Presence:**

Social Media has become one of the most dominant forms of advertising and customer outreach in the recent years. Today’s museums have become aware of this and have established a presence online via a variety of engaging tactics and channels such as Facebook, Twitter, YouTube, and even Snapchat. These platforms act as a free form of publicity for social media participants, and allow the museum to advertise the kinds of events, exhibitions, and other assorted activities it is sponsoring. For example, on the
Academy of Natural Sciences Facebook page, they frequently list the various showings for upcoming events such as “Mega-Bad Movie Night.” As it is currently listed, their next feature film to be shown is Anaconda. Although this may be a bit of a comparative stretch, I believe that the showing of this film bears some significance to both the roles of education and entertainment in this particular museum.

The case for this event as a form of entertainment seems obvious here. The film, which is notoriously campy and over-the-top, is clearly meant to be a fun and frightful diversion for its intended audience. However, when we contextualize the showing of the film in this particular museum, then the educational aspect becomes slightly more apparent. By showing this film at the museum under the publically stated context that it is “mega-bad”, the museum is in a sense providing an ironic anti-education via the film showing. In other words, the museum is showing its audience the film so that they can be exposed to a laughably false depiction of anacondas and other reptilian creatures, and then when they are done viewing the film, can learn the “real facts” behind these creatures within the museum itself. In this sense, the entertainment ploy here becomes a means of opening up unconventional, though potentially useful, educational opportunities.

Another manifestation of how entertainment can act as a ploy towards education is made manifest by the Los Angeles County Museum of Art. The LACMA’s use of the picture and video sharing app Snapchat is of particular relevance to the role social media technology in how museums market themselves. Not only is their presence on this typically comedy based app astounding given the implications of how this debunks the museum as a traditional institution, but even the very content they upload remains in true
spirit with youth appeal and Snapchat’s silly ethos. The LACMA’s use of Snapchat is of
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silly ethos.

For example, one of their snaps is a painting of a young girl (most likely from the
late 19th century given her style of dress) making a rather demure expression. The
Snapchat the LACMA uploaded to its “My Story” (the publically shared form of
Snapchat) of this painting has the caption “Haters Gon’ Hate” coupled with several
feminine emojis. Another particularly notable snap of comedic value is the famous
painting “The Grand Odalisque”, which depicts a nude woman looking over her shoulder
to the viewer, seen from behind with the caption “#BreakTheInternet” in reference to
Kim Kardashian’s recent nude cover shoot for Paper magazine. Fortunately, I was able to
screenshot these particular snap chats before they disappeared, so that they can be shared
with the reader. (Pictured on the following page)
In fact, the impermanent nature of the snap (and all snapchats) suggests an attitude of the LACMA in its social media presence that is worth considering. The fact that these snaps disappear from LACMA’s My Story as well as from each individual viewing on a user’s phone indicates that although the LACMA clearly is willing to engage in humorous diversion to draw in a younger audience, it is not going to immortalize these gestures. Had the LACMA uploaded this snap to its Facebook, Twitter, Blog, or even official site, then it would have had much greater implications as to how “serious” an institution it is. But since this is not the case, we can assert that the LACMA is able to engage in it’s appeal to younger age groups via social media while still maintaining its publically refined attitude as an institution of fine art.
Like the case of the Star Wars exhibit at the Smithsonian that I experienced in my childhood, it seems that The Franklin Institute is also utilizing popular sci-fi entertainment to draw in audiences to the museum. This can be observed given its current showing of *Interstellar*, Christopher Nolan’s latest film starring Matthew McConaughey and Anne Hathaway, at the museum’s IMAX Theater. Unlike the showing of *Anaconda* at the Academy of Natural Sciences for its Mega Bad Movie Night, there is no sense of comedic irony in how the Franklin Institute presents Interstellar to its visitors. In fact, as of this writing, the film’s showing at the museum is advertised via the museum’s cover photo on Facebook, thus making it the very first thing visitors will notice upon looking at the Franklin Institute’s page. Bearing this in mind, it is worth dissecting what the presentation of this film at the museum pertains to both education and entertainment on the part of the museum.

On the museum’s official website, *Interstellar* and it’s showings is one of the main features listed on the home page, just like it’s Facebook page. Furthermore, on the actual description and the page to purchase tickets for the movie, the Franklin Institute proudly boasts that the museum is the only place in Philadelphia where there is an IMAX theatre and that Nolan shot the film in IMAX and intended it to be viewed as such. Because of this, the Franklin is in a sense monopolizing on its ability to be the only “authentic” viewing experience of the film.

What’s even more significant is the fact that on the same page, the Franklin has made available what it calls an “*Interstellar Educational Guide*” for Educators that might plan on bringing students to come see the film. This free downloadable guide includes a Teacher’s guide, an activity booklet, and even a large double-sided printable poster.
entitled “Interstellar: Explore Science In The Classroom” that also includes shorter activities, online links, and games on it.

Acclaimed astrophysicist Neil DeGrasse Tyson in his scientific review of the film validates the museum’s defense of Interstellar as having meaningful educational value. Dr. Tyson frequently releases reviews of major science fiction blockbuster films, especially those that aim to be “realistic” sci-fi, that focus on the scientific accuracy of the films rather than their artistic value his own personal opinion of the film. In his review, Dr. Tyson lauds the film for its accurate depiction of achieving zero-gravity in space, Einstein’s Relativity of Time and Curvature of Space (which had never been properly displayed in a major motion picture before), and that strong gravitational fields measurably show the slow passage of time relative to others outside those fields. (Tyson via Salon.com)

Interstellar is not the museum’s only foray into entertainment-influenced education today. It’s newest exhibit entitled, “Sesame Street Presents: The Body” is a large-scale interactive exhibit targeted towards children that is sponsored by the TV show of the same name with classic characters such as Elmo, Big Bird, Cookie Monster, and others educating children about the science behind how bodies work. Like Interstellar, this is a specialty “pay-extra” exhibit that is not included with a general admission ticket to the Franklin Institute. Because of this, the exhibit not only becomes a special commodity via its pop-culture entertainment pedigree, but also enables it to become an unofficial private “safe-zone” for children who would attend the exhibition with their families. This should not suggest that the museum is not already safe and entertaining for children, but the fact that this exhibit is segregated from the rest of the museum by an
additional “cost barrier” makes it so that adults who are not accompanied by children are implicitly deterred from attending this exhibit. Although there is no rule prohibiting adults from purchasing tickets to this exhibit without a child accompanying them, it is silently discouraged by both the way the exhibit is advertised and the very nature of the show itself.

In fact, it is even possible to attend the exhibit outside of the rest of the Franklin as an isolated experience. Because of this level of exclusivity, it becomes evident that not only is this particular form of commercialized entertainment and education a “selling point” for the museum, but also a definitive form of separation for the museum’s content. Therefore, it becomes clear that the premium content that cycles through the Franklin’s pay extra exhibits are not only an important source of additional revenue for the museum, but also to keep it fresh, new, and interesting to its loyal visitors.

**The Low-Tech Exhibit**

While the majority of the investigation in this thesis centers on high-tech exhibits, I’d like to briefly focus on an intriguing example of “low-tech” exhibits that still embody an entertainment and education ethos while being very pertinent to today’s museums. One of the most intriguing contemporary examples is a traveling exhibition that began at the Smithsonian American Art Museum entitled “The Art of Video Games.” The exhibit includes dozens of concept designs, screens, and images from some of history’s greatest video games over the past forty years and even plays songs from the games as visitors enter the gallery.

During a brief exchange I had with Saralinda Lichtblau, a Swarthmore alum and Director of Teaching and Learning at Hudson River Museum, she mentioned that her
staff was delighted to host the exhibit at the museum. However, she said one of the
greatest challenges of having the exhibit wasn’t its installation, but training the volunteer
docents (who are typically elderly/retired) on how to give educational tours of the exhibit
to visitors. This was difficult since not many individuals on the museum staff had
extensive video game knowledge or experience, and thus had to consult with outside
educators in order to give proper tours of the art exhibited.

From this valuable insight, it becomes clear that a generational gap can affect the
way a museum communicates with its visitors. Since video games are inherently linked to
entertainment, it becomes harder to contextualize them in an educational platform,
especially when the educators weren’t raised or exposed to video games regularly. Yet
with their successful immersion in video games as an artistic education tool, the exhibit
can be highly successful. Although this was technically a “low-tech” exhibit, it still relied
on inspiration from high-tech entertainment media (video games) to make it accessible in
an educational format for the museum’s visitors.

Admittedly none of the Philadelphia museums I have observed draw directly upon
video games or use low-tech media in an entertainment context like this exhibit.
However, it is still valuable to see how different museums utilize these kinds of
installations, especially traveling ones, so that a greater appreciation of entertainment and
education can be observed in the following museum visit observations.
Chapter 2: Observations at Philadelphia Museums

Institute of Contemporary Art:

First Visit to the ICA:

The first museum that I examined was the Institute of Contemporary Art. The ICA, who’s mission statement, “The Institute of Contemporary Art at the University of Pennsylvania believes in the power of art and artists to inform and inspire. The ICA is free for all to engage and connect with the art of our time.” is made evidently true via my experiences there. The museum, which was founded in 1963 by Holmes Perkins, is a small but important museum for the contemporary art scene of Philadelphia given the fact that it is a non-collecting museum (a museum that does not keep permanent installations/works). This means that the content of the museum is always shifting and more artists get the chance to be featured in the galleries.

During my first visit, I noticed many significant and surprising behaviors amongst both the visitors and with the presentation of the galleries themselves. The lobby entrance’s exhibit was entitled “Readykulous by Ridylkulous: This Is What Liberation Feels Like.” The collection was comprised of various writings, drawings, photos, audio recordings, paintings, video-installations, and other mixed media that was graphically sexual in nature and dealt with themes of hetero-normative oppression and queer issues. I noticed that this was easily the least popular attraction in the museum and the few visitors that seemed to engage with it did so on a cursory level. This is evinced by the fact that I was the only visitor that I noticed who actually went and put on the headphones to listen to some of the video projects. The few times that I saw individuals interact with the
exhibit were typically those who had come to the museum by themselves and were typically younger white males.

Interestingly, the same artist who had collaborated on this exhibit, Nicole Eisenman had an exhibit on the first floor titled “Dear Nemesis” that was far more popular than Readykeulous. This exhibit was far less graphic in terms of sexual content and had no video component to it, which may be why some visitors weren’t as repulsed by it as they were with Readykeulous. However, this should not suggest that video art was unappealing to visitors on the whole. In fact, arguably the most popular exhibit I saw was a full room video installation entitled “Easternsports” by Alex Da Corte and Jayson Musson. Based on Musson’s 2001 poem of the same name, the single room installation is dimly lit with a soothing orange glow and the floor is covered in soft carpeting. Across the carpeted floors, various plastic oranges are strewn freely about. Visitors are implicitly encouraged to sit on the carpeted floor and even play with the toy fruit on the ground, thus creating an almost child-like playroom atmosphere for the participants. Large screens surround the visitors in a panoramic view with four large screens on each side that tower over the visitors and reach to the ceiling. On each monitor, varying actions, characters, and events take place, yet all with in the same “scene” of the overall film.

For example, during one segment of the nearly two and a half hour film (which I admittedly did not watch in its entirety), A witch would be smoking a cigarette out of a window in one screen while the screen vertically across from it would show a male ballerina playing with balloons and transforming into a female ballerina as he enters a pink door. Unspoken subtitles to various dialogues and stories run along the bottom of the “central” action in whatever is happening on screen, thus further forcing the viewer to
choose either between reading the narrative and fully engaging with the visuals on-screen. This disorienting effect kept the audience captivated during my time there, and all patrons eagerly turned towards each screen when the action shifted. A couple spooned on the ground while watching the film, and some people relaxed in a fully splayed out position on the ground as if to take a nap.

There are several notable factors I deduced via my first visit there. Firstly, the museum’s visitors were almost all entirely white. With the exception of maybe 2-4 visitors, I did not see a single individual of color visiting the museum. Secondly, the museum does not seem to pander to a “general” audience. This is likely derived from the museum’s description of their history on their official website, in which they state that, “Since our founding, ICA exhibitions have aimed to bring under-recognized artists to the attention of the broader world…It is this continued commitment to both accessibility and risk-taking that prompted New York Times art critic Roberta Smith to declare the ICA “among the most adventuresome showcases in the country where art since 1970 is concerned…”

Since the museum is both free and is entirely funded by generous donations from Amanda and Glenn Fuhrman, it does not need to tailor its art or presentations to a “family-friendly” experience like that at Franklin Institute. However, contemporary art in general tends to court shock value/controversy openly, and as such is an expected presence in any museum that sponsors contemporary art, regardless of whether it is public or private. Nonetheless, it is interesting to note that while all three of the museums I am observing take certain risks with their content, the ICA’s risks are significantly different than the others. For it is the very risk-taking nature of the ICA coupled with its fully funded nature that enables it to engage with graphic sexual content like in Readykeulous by Ridykeulous. This should not suggest that the Franklin Institute does
not also take risks with its exhibitions, but the kind of risks it takes are derived from the
cost of their high-tech exhibitions, not the actual content itself.

Let’s indulge this idea via a hypothetical example. Let’s say the Franklin Institute
commissioned a specialty exhibit on the science of war, sex, drugs, or other socially
 taboo subjects. The critical backlash that would likely come from this could cost the
museum both socially and financially, especially if the particular exhibit they created
involved several high-tech works. Imagine if there was a giant digital interactive human
body replica that was controlled via a large touch screen in front of the body. Visitors
could be prompted as to what kind of legal or illegal drug(s) they wanted the body to
ingest, in what quantity, etc. and then observe how the body’s brain activity, heart rate,
blood pressure, etc. changed based on the stimuli it received, with excessive amounts
even potentially causing the body to overdose and suffer severe symptoms as such. It
could even measure long term effects over varying periods of time if the particular drugs
selected are put on repeat usage. While this would undoubtedly be an interesting and
educational tool, especially for teens and young adults who are at a higher risk of abusing
drugs, its context in the Franklin Institute would likely be upsetting to some parents and
could be harmful to the museum dearly if it was poorly received.

Conversely, if the ICA tried to commission an extremely advanced high-tech art
project that cost millions of dollars to present, the museum may find itself financially
endangered to keep the exhibition running and therefore challenge its mantra of staying
open and free to the public or make that particular exhibition a “pay extra” feature like
the Franklin’s current Sesame Street exhibit. Imagine if this kind of exhibit featured
motion sensor based animatronic sculptures that moved about the room and could
similarly be controlled by viewers via a touch screen like in the drug body example. While the ICA’s audience would likely receive this sort of work much better than the Franklin’s, even if the sculptures engaged in graphically sexual or violent behavior, the cost of running such an exhibit would be incongruous with what the ICA strives to achieve.

Therefore, it can be inferred from these hypothetical instances that high-tech museums exhibits necessitate a sort of “safe” approach in the kind of content it presents. When the survival of a museum is contingent on the funding of these kinds of work, extreme controversy can mean a serious loss for both the museum and its visitors if it is poorly received.

**Second Visit to the ICA:**

My second visit to the ICA occurred on Valentine’s Day 2015 as a date activity. This time around, the ICA had replaced all of its previous content from my last visit with new exhibits. However, I was disappointed to find that these works were arguably far less engaging than the previous ones and had less interactivity than their predecessors. There were also far fewer patrons in attendance than last time, which was especially surprising given that it was Valentine’s Day and I had hypothesized that there would be a greater amount of college-aged couples stopping by. However, other than me and my partner, I only noticed two other couples (assuming they were couples based on their body language). The first was an older couple that appeared to be aged in their fifties; the other seemed to be mid- to late-twenties. There was even less racial diversity in patrons this time around than last.
There are several factors that could potentially be attributed to this lack of museum patronage on this day. Firstly, the weather was very cold and could have been a deterrent against those who might have been out and about that day since museum attendance, like most recreational activities and tourist industries, could simply be negatively affected by the winter season. Secondly, the museum itself may not in fact be a popular Valentine’s day activity for couples who might be seeking a museum experience, but perhaps at a larger one such as the Philadelphia Museum of Art or the Franklin Institute. Thirdly, the absence of a lobby exhibit made the museum lack an immediate visual appeal of content to draw in a passerby. Although Readykeulous may have been graphically shocking in its sexual nature, it at least had some form and color to catch the attention of anyone walking within the vicinity of the entrance. Finally, the fact that no discussion group was being held that day to discuss a particular gallery,

In the latest exhibits, there was one major interactive work in an exhibit that I believe qualified as a true “attention-getter” from the visitors. Bael Abbas and Ruanne Abou-Rahme’s “The Incidental Insurgents: The Part about the Bandits is a unique exhibit on the second floor of the museum that is formatted like a large office. However, the office is messy in its disarray, with notes, pencils, objects, and pictures scattered about and haphazardly attached to the wall to give a sense of chaos and disorganization, perhaps even elicit the fear of a planned terrorist attack. For non-Arabic speakers, certain elements of the exhibit remain inaccessible. Many of the texts on the wall were written exclusively in Arabic, where others were just in English, and some a mixture of both with one language abruptly changing into another mid-sentence.
While visitors are not permitted to touch any of the objects in this office space, there is a large wooden yellow door lining the wall placed neatly between many photos of Palestinian deserts, victims of violence, poems written in both Arabic and English, etc. The door emits a vibration from the loud and booming sounds going on behind it. Intrigued, I opened the door and stepped into a darkened room where a film was playing in a completely blackened room.

The only things for visitors to sit on in the room were uncomfortable and small spiral stools, which contributed to the aesthetic unease of the piece and the theme of not belonging that permeated the entire exhibit. The film would also play on two different screens facing each other on parallel walls and the content would shift sides without warning, thus disorienting the viewer and requiring him/her to spin around and follow the strange but beautiful tale that was unfolding. Though this video installation piece was undeniably fascinating, especially in relation to the themes of the overall exhibit, it was unfortunately the only truly notable form of interactive art made immediate available at the exhibit, if not in the entire ICA that day.

Furthermore, it is worth noting that the ICA’s official Facebook page has been completely updated to reflect its current exhibitions. In particular it is notable that they have changed their cover photo to Barbara Kasten’s “Architectural Site 17”, which is one of her most colorful and prominent works on display currently at the ICA. Though Kasten’s works are visually striking and not quite as interactive as the upstairs exhibits, their interesting and surrealist form was still more engaging to visitors than the rather bleak and depressing tone of the works featured upstairs.
What is perhaps most interesting about Kasten’s exhibit is the use of sound. Throughout the entire exhibit, strange and melodic ambient noise played loudly throughout the gallery. Though the effect was initially distracting and somewhat off-
putting, it quickly became apparent that that was indeed the intended effect. By stimulating the audience’s auditory senses while enticing our visual senses with Kasten’s beautiful renderings of colorful landscapes, the dreamlike feel of her collective works was notably more pronounced. This reiterates just how valuable interactivity and change is for the ICA’s most successful exhibits. Even if a visitor cannot alter the space he/she is in or touch the art that is on display, the ability to change the way he/she sees, hears, and experiences the art dramatically increases their interest, no matter what the content.

The Academy of Natural Sciences of Drexel University:

First Visit to the Academy:

On January 17th, 2015 from around 3-5 pm, I made my first visit to the Academy of Natural Sciences of Drexel University while accompanied with one of my best friends. Though a lot of what I observed at the Academy does support my claim that high-tech interactive exhibits do have greater entertainment and educational appeal, the presence of high-tech was merely correlative, not causational in this regard. In other words, it seemed that interactivity itself was one of the most important aspects of whether a visitor was interested in an exhibit or not. Whether or not that exhibit was high-tech based was inconsequential, as is a common theme of this thesis. Though most of the exhibits that had interactivity were tech, based, the non-tech based interactive exhibits were extremely popular, especially with children and their families.

For example, one of the most popular exhibits for children was the DinoDig exhibit where they could pretend to be archaeologists digging up fossils with plastic chisels. Though there was no high-tech element to how this exhibit functioned, children delighted in being able to get their hands messy with dirt and tools. In fact any time the
children were able to directly touch an exhibit or play with its parts deeply intrigued them regardless of a tech presence.

The only exception to this would arguably be the Dioramas exhibit. Though children were not allowed to touch or interact with the taxidermy animal displays in these exhibits, they were still widely fascinated with the content and the animals on display. An actual mummified human corpse drew even greater attention, horror, and fascination from the children when they realized it was an actual human cadaver.

**Breakdown of Visitors:**

On the whole, the racial and class make-up of visitors that day seemed to be predominantly white middle-class families with an average of two children per family, with most children appeared being under the age of 10. Of the non-white families I noticed at the museum with children in similar age groups, I noticed an interesting behavior discrepancy between that of the white families. To be specific, and without making any generalizations, I noted that on many occasions, black and brown children who would act in a rambunctious manner (screaming, running, touching exhibits they were not supposed to touch, etc.) were much more likely to be disciplined by their parents than their white peers. While this may be a loose example of the concerted cultivation and natural growth techniques to parenting outlined in Annette Laureau’s *Unequal Childhoods* (Laureau 2003), it is nonetheless important to understand how this race and class factor might affect a visitor’s experience at a museum.

This also seemed to play a role in visitors who did not attend the museum with anyone in their company. Although I could not be entirely certain at all times who truly came alone to the museum, the body language of older white men in their late 50's to
early 60’s seemed to indicate that they had come for their sole entertainment. Although I obviously did not speak to them and inquire why they were attending alone, I would venture to guess that as older white men who are able to spend the afternoon on a weekday at a museum, they are wealthy and retired. This is implied via their confident body language, high-quality shirt/pants, and the fact that they are engaged in a leisure activity during typical work hours. Though my thesis is concerned primarily with how visitors engage with high-tech exhibits, it is possible that white privilege shapes how exhibits are being engaged by a wide array of Philadelphians.

**Interview with Trisham Purdum:**

One of the most valuable connections I made during my initial visit was with Trisham Purdum, who currently serves as the Director of Education. I met Ms. Purdum at a table she had set up based around mythological creatures and their relationship to fossilized animal remains. I was drawn to her table due in part to the large print out of the beloved animated character Ariel from Disney’s *The Little Mermaid* sitting next to a manatee tail bone. My initial reaction upon seeing this was that of curiosity and excitement. Here was a clear example of the museum using popular entertainment figures to draw an audience into an educational experience.

Ms. Purdum reaffirmed the sentiment during our interview. She proceeded to explain to me that manatee remains were the basis of mermaid folklore. She elaborated by implying that lonely soldiers at sea who desperately missed the sight and feeling of women would romanticize manatee bones of be that of a lovely mermaid who could give them the pleasure and comfort they so strongly desired. She also showed how narwhal
horns had been the basis of the unicorn; elephant skulls were the basis of the myth of the Cyclops, as well as many other fantastical creatures and their real life counterparts.

After discussing the content of her mythological beast table set up, Ms. Purdum and I exchanged information and she agreed to be interviewed for my thesis. During our interview, which we held on January 30th, we discussed her role as an education director for the museum and what her experience there has entailed. One of the most interesting take away that came from our interview was the fact that the Academy of Natural Sciences also puts out an RFQ for independent contractors when putting in a major exhibit installation.

When I asked her if the process was similar to that of what Charlie Otte described to me in his work with ThinkWell (a design firm that will be explored further in the next chapter), she said it was exactly like that process. In other words, any museum that seeks to adequately install a fun and engaging high-tech exhibit must consult with an independent contractor or design team from across the nation to make this exhibit come to life. Most museums simply do not possess the full-time staff or resources to implement a high-tech exhibit on their own, and as such, necessitate a positive working relationship with independent contractors like ThinkWell.

Though the Academy has never had a direct working relationship with ThinkWell, seeing this kind of relationship with private design firms emphasizes an interesting development in how museums engage their audiences today. The move towards partnerships with private design firms emphasizes how museums value their high-tech exhibits and how their interactivity is very enticing to the public. Since it is so
important for both the museum’s longevity and the public’s enjoyment of the museum
that these exhibits go off without a hitch, outside help becomes a necessity.

Ms. Purdum evinced this when she told me that “last year’s Dinosaurs Unearthed
exhibit was the most popular exhibit in the museum’s entire history and drew an
unprecedented amount of visitors.” The exhibit was a “pay-extra” installation similar to
that of Sesame Street’s The Body at the Franklin Institute. According to the Academy’s
official website, the exhibit was advertised by the following statement:

Roaring, moving, life-size, animatronic dinosaurs invade the Academy of Natural
Sciences of Drexel University for a multi-sensory experience for the whole family. State-
of-the-art and scientifically accurate—down to the feathers on T. rex—Dinosaurs
Unearthed features more than a dozen realistic, full-bodied dinosaurs, as well as
skeletons, fossil casts of skulls, claws and horns, real specimens of mosasaur and
spinosaurus teeth, an Oviraptor egg, and the ever-popular coprolite (dino poop). A dig
site for young paleontologists, a Dino Detective touch-screen quiz, chances to control
dinosaur movements, and other activities encourage exciting hands-on exploration.

Entry to Dinosaurs Unearthed cannot be guaranteed after 3pm.

Animatronic dinosaurs you’ll see in Dinosaurs Unearthed:

- 3 juvenile allosaurs
- 1 microraptor
- 1 protoceratops
- 1 juvenile stegosaurus
- 1 juvenile triceratops
- 1 juvenile T-rex
- 1 velociraptor
- 1 yangchuanosaurus
- 1 adult Tyrannosaurus rex (in front of the museum)
- 1 Ruyangosaurus (in the Art of Science Gallery)
- 1 Yangchuanosaurus (in Dinosaur Hall) (ANSP.org)
Given the plethora of content and robotic dinosaurs on display, it is no wonder this became such a popular attraction for the Academy. The fact that entry could not even be guaranteed after 3 pm further evinces that incoming crowds were so plentiful that certain visitors would not be able to get in. This is almost unheard of in the museum world, and rarely occurs in museums outside of the world’s most famous museums/exhibits.

Unfortunately for the Academy, this was a traveling exhibition and they were unable to keep it past March of 2014 before it was passed onto the next museum paying for its usage. However, they were able to purchase the velociraptor from the owners of Dinosaurs Unearthed, and it is currently featured at the very entrance to Dinosaur Hall today. This is especially important given what I observed upon my arrival to Dinosaur Hall. Nearly every visitor, especially children, who entered the hall was drawn towards
the orange velociraptor and began taking pictures with it as it writhed its head and made roaring sounds at passing guests. The fact that the moving and motion-sensor based dinosaur captivated so many guests further evinces Ms. Purdum’s claims of how important this exhibit was to the museum.

**Adults Only Events:**

We also discussed the role of Mega Bad Movie Night and its significance to the museum’s educational value. As I had suspected, Mega Bad Movie Night is in fact a way that entertainment (even “low-brow” entertainment) can be repurposed for educational means. Not only was I correct in my guess that the films are used as a “reverse lesson”, showing how animal and natural sciences DO NOT act in the real world, but includes activities and live animal specimens for visitors to engage with after the film’s showing. In fact, the education and entertainment factor is prominent while the film is being played. Included in the film’s showing has ‘‘witty experts [that] will be onstage to offer their quips and sidesplitting comments on the many scientific absurdities—think Mystery Science Theater 3000!’’ (ANSP.org) It is also worth noting that this is an “adults only” event and that alcohol is served to those in attendance.

The fact that adults are a target market for this experience is surprising given how child-friendly the museum’s exhibits and content typically are. The same applies to the Franklin Institute, which is hosting an adult 1920s-themed after hours event on February 10th, 2015 entitled “Speak Easy: A Celebration of All Things Outlawed” (FLedu). The hosting of these events demonstrates both of these museums’ desire to appeal to the public in all ages and demographics. By tailoring the entertainment factor (in this case, drinking in a nighttime adults-only setting), to an audience that wouldn’t normally go to
the museum (likely adults without kids/college kids without pre-existing interest in museums) can now find ways to become educated via the interactive entertainment that is most suitable to their liking.

**Second Visit to the Academy of Natural Sciences:**

My second visit to the Academy took place on the same day as my second visit to the Franklin. Since they are both right next to each other, I planned to get both of my visits done in one day. However, since I chose to do ethnography at the Academy before the Franklin, I arrived rather early (11 am) on a Friday and was disappointed to find that there weren’t that many visitors there to observe compared to my previous visit in the later afternoon. That being said, there were still some interesting behaviors I noticed that carried over from my first visit. Once again, the DinoDig exhibit remained the most popular exhibit with children. While there wasn’t a line to get into the DinoDig like there was last time, the fervor and excitement with which children pretended to be archaeologists was palpable, and re-emphasized the value of interactivity.

However, I was disappointed to see that the education stations (the tables with workers explaining different science facts, like Ms. Purdum and her mythology table) had not been set up yet throughout the museum. When I inquired about why the tables were absent, an employee explained to me that they only do those tables on weekend days when visitors are the most plentiful.

Although it was interesting to re-examine all the exhibits again, it was admittedly not quite as useful to go to the Academy a second time. The lack of visitors compared to the first visit, in addition to no new exhibits/galleries compared to my last exploration made this only a reaffirmation of the value of interactivity in an exhibit instead of insight
into any meaningful and new information. However, I understood that given the limitations of the time and day I had visited again made it impractical to have nearly as much to observe this time around.

The Franklin Institute:

First Visit to the Franklin Institute:

My first formal visit to the Franklin Institute for my thesis took place on Wednesday February 25th, 2015. Although I had been to the Franklin on previous visits prior to beginning my thesis, this was the first time I had engaged it on an observational level. To my pleasant surprise, this visit was chock full of valuable information that reaffirmed the value of interactivity and its importance for meaningful visitor experiences in a museum.

This was my first time visiting any of my museum sites alone, and admittedly it did make me rather self-conscious as an observer. Having had a person accompany to all my other sites thus far may have been distracting in terms of my ability to observe visitors without a biasing perspective, but it also gave me what I felt as a degree of anonymity. Ironically, coming alone actually proved to complicated my visitor experience, as certain exhibits required two or more participants for the activities they had to be functional, though those will be explored further in-depth throughout the following sections.

Field Trips:

Part of my rationale for attending the museum on a Wednesday rather than on a weekend like I had usually done with my other visits thus far was the hope of seeing how a school field trip would interact with the exhibits in a large group setting. To my
pleasant surprise, there were dozens of school busses lined up around both the Franklin Institute and the Academy of Natural Sciences. Realizing that I only had enough time to observe students at one or the other (I had arrived around 1:30 pm, and as such had limited time to visit a museum before the students would return back to school). Opting for the Franklin was a wise decision, as upon entering the lobby I was treated to a woman who had set up a large table display with lots of lab equipment right in front of the Benjamin Franklin statue in the middle of Wisdom Hall. For those who are unfamiliar with the Franklin, Wisdom Hall functions as the main entry hall to the museum. Not only is there an enormous marble representation of the museum’s historic founder and namesake, but also large-scale quotes from him such as “Early to bed and early to rise makes a man healthy, wealthy, and wise” are projected on the four corners of the enormous room.

The woman hosting the table was a young African-American employee in who appeared to be in her late twenties. She excitedly clapped her hands several times and then loudly projected her voice to a group of small children seated in front of her table. (Pictured below) Older children from other schools stood clustered together, pretending to be not interested as they whispered and texted each other, though it seemed apparent they too were also interested in what was going on. She proceeded to explain how molecules bond with one another, and even called on volunteers to come up to the table and help her with her mini-demonstration.
This level of interactivity and showmanship, especially happening within the lobby of the museum, makes it clear to visitors that the Franklin is not meant to be a passive experience, but one where visitors are entertained, educated, and actively contributing to both these facets.

Learning with Legos: The Art of the Brick

The latest touring exhibit to arrive at the Franklin Institute was a fascinating gallery of works by artist Nathan Sawaya entitled “The Art of the Brick.” Though this was a “premium” exhibit that cost an extra five dollars to see in addition to the already steep cost of adult museum entry (twenty-five dollars, thus raising my museum entry fee to thirty dollars). Though this may seem like a very steep price for a museum, the immense amount of quality and quantity in the Franklin’s exhibits made it more than worth the hefty price.

What was arguably most interesting about this particular premium exhibit is how it still managed to stay interactive even though touching the artworks was forbidden.
Upon entering the exhibit, a staff member greets the visitors and puts on a brief documentary about Sawaya on. Following the documentary’s showing, we are all told to “please take lots of pictures”, thus implying that our interaction with the exhibit could be felt, even if it had become limited by the nature of the art it contained. What was most fascinating is the ways in which light and sound were utilized to convey various themes within each room, just like Kasten’s work at the ICA.

For example, in the entry room, where history’s most famous paintings and sculptures such as the Mona Lisa, The Scream, David, etc. had been re-created with Legos, gentle classical music, red walls, and bright lighting conveyed an atmosphere of class and sophistication to the space as visitors milled about examining the works. Conversely, the music playing overhead in the “Through the Darkness” section of the exhibit was characterized by heavy and eerie drum beats, with black walls, and low, ominous lighting. This was appropriate given that the original works in this room were based on the artist’s struggle with his insecurities, the fear of leaving a stable career in corporate law behind for his passion of Lego art, and other complex/troubling aspects of the human condition.

Finally, one of the most notable works in the exhibit, entitled Dinosaur Skeleton (pictured below), was given an entire room to itself. This was critical for the atmosphere of the piece since the room was lit with a light green color, had smoke machines, and jungle sounds emitting throughout the room, so as to effectively give visitors the aesthetic that they were in the age of the dinosaurs.
Overall, this exhibit demonstrated that although interactivity may be crippled at times via the delicate nature of art, it is still possible to effectively immerse visitors in the experience with careful use of high technology to create the proper aesthetic. On an educational level, it also advocates how anyone can be an innovative artist if he/she is willing to put his/her mind to it. This is evinced by Sawaya’s statement,

“This exhibition engages the child in all of us while at the same time highlighting sophisticated and complex concepts. I use LEGO in my art because it is cheap and simple. Chances are you probably don’t own marble or a ceramic kiln at home. But you probably have LEGO bricks.”

Which proudly hangs in the classical gallery part of this phenomenal exhibit. This sentiment is important, especially since it encourages children to think both artistically and scientifically. This is reinforced by several occurrences throughout both this particular exhibit and the rest of the museum. Firstly, in the gift shop exit for _The Art of the Brick_, three children’s own Lego creations are shown in glass casing. Each one of
these sculptures is the respective winner of the “Make Your Own LEGO Dreams” based on age group.

Furthermore, there was an activity center in the lobby of the Franklin where children could build their own Lego sculptures. However, unlike *The Art of the Brick*, this section was not a “premium” price on museum entrance costs, and thus reinforced the affordability and accessibility of creating art with Lego’s that Sawaya advocates for. Unfortunately, this section was closed off to children and their parents only, thus preventing my ability to go in and build my own Lego art and make more keen observations of how the children interacted with the Legos. I encountered this kind of age roadblock as well in the “Kid Science” exhibit hosted in the museum’s basement. This exhibit was not even clearly observable, as the entry way was blocked by a large sign making it clear that this was a zone for kids and their parents only.

However, I personally commend the Franklin for making these spaces “adult-less” because it allows the children to act in a manner that is unfettered by a fear of strange adults. There were multiple times during my visit that I noticed children nervously avoid any interactive exhibit I or another adult guest was using when the child came by. By removing these older persons, the children are not only given more freedom to interact with educational content, but also with less anxiety about how the presence of strangers may affect their enjoyment of such content.

Finally, there was a gallery on the second floor comprised entirely of children’s paintings of outer space related content. This particular gallery was introduced by a sign stating that (pictured on the following page),
Following this sign, the exhibit then leads to the entire floor being decorated by children from the Philadelphia area’s artworks on the walls. This truly surprised and pleased me. It was the first time I think I had ever seen an entire museum exhibit dedicated solely to children’s art, rather than having the art featured as a side note in more professional museum installations. It further evinced how committed the museum was to not only have kids use their interactivity skills in creative ways, but also to have them see their very own work as a starring presence in such a famous museum.

Your Brain:

Though there were many fascinating exhibits that featured interactivity throughout the entire Franklin Institute, I think the most notable use of interactivity and visitor enjoyment was arguably in the newest “Your Brain” exhibit. This enormous permanent installation was a true gem of museum craftsmanship, and drew upon
interactivity in all its forms. What was even more interesting is that the interactivity came in all forms, both high and low-tech. For example, the low-tech exhibits included things such as “feeling” a human brain (visitors would touch a replica material of what a human brain feels like) or solving brainteasers written on the wall.

The most notable part of the exhibit was a large climbing gym clearly meant for children (I had a difficult time attempting to climb through the high structure considering how big I was in comparison to the gaps, as well as receiving disapproving looks from accompanying parents.) that replicated the human brain and how various neurons are connected to each other. In addition, this educational jungle gym also shows how a charged reaction in one part of the brain sends signals to others as evinced by the platforms glowing and making loud noises whenever a certain stimuli was sent from one neuron to another.

(Pictured above: The neuron-network climbing gym found in the center of the Your Brain exhibit.)

Unfortunately, some of the aforementioned exhibits required participation with other visitors, which I could not try out having attended the Franklin alone that day. Although I was tempted to go up and ask a stranger to participate in one of the “multi-
player” pieces with me, I abstained for I feared that 1. This could be very off-putting for the visitor, 2. It would involve me causing a direct change in visitor behavior beyond that of an observer, thus complicating how my observations are obtained. These multi-player experiences included games such as a lie-detector test where one partner would use a screen to analyze their partners facial expressions and try to detect when he/she was telling a lie, a child-parent exercise that had the parent test the child’s ability to understand object placement and object permanence, and a large “survey” table where research ethics issues in brain research would be voted on by visitors sitting at the table.

However, before they could cast their votes on a particular issue, visitors were encouraged to speak to each other for two minutes in a round-table discussion format to argue over the merits of a particular side. This dual tech and debate form of interactivity was unique, yet disappointingly nobody sat at a table with me to try it out. Perhaps it was due in part that there were so many kids in attendance with their parents, and since concepts about research ethics may be too advanced for young children to comprehend.

Interestingly, this was not the only tech-interactive activity that proved to be far too complex for children at the Franklin Institute. One game, which I was very fond of in the “Changing Earth” exhibit, was called “Widget Climate Change.” In the game, visitors had to select up to eight energy policy reforms out of dozens of options to help reduce manmade climate change. After each option you selected, three towers including land use, cost, and waste would raise based on user choices. A small child attempted to play the game, but had no concept of what the options represented and randomly clicked on whatever colors appealed to him. As the “cost” tower raised, he became excited and declared “Mommy! Mommy look! I’m making money! Look its making money!” His
mother came over to observe his progress and also fiddled about with the exhibit, clearly not understanding what it represented, demonstrating actual interest in what the game was supposed to teach, or that the money tower was a “bad” thing to increase.

This demonstrated that although the museum tries to make all exhibits as educational and accessible as possible, there are certain concepts that simply require background knowledge to fully appreciate. Since the Widget Climate Challenge expected its audience to already know that global warming is not only a serious issue, but one that is man-made, it could not be fully utilized by children and other individuals for whom this concept is too advanced. Therefore, it can be concluded that even when a particular exhibit is not labeled for a certain age-group (i.e. kids-only, adults-only), it will still have limitations on how impactful it can be for a given audience.

**Interview with Luke Van Meter:**

I had the pleasure of meeting Luke Van Meter at a Haverford College event called “Careers in the Arts” where three Haverford and one Bryn Mawr alumnus came to speak with students about their current careers in the arts scene in Philadelphia. Though all of the speakers shared fascinating stories and advice for how to succeed in an arts position in Philadelphia, Mr. Van Meter presented some of the most compelling and relevant information for my thesis.

Despite being one of the youngest speakers who attended (he graduated Haverford in 2009), he has already undertaken an impressive career in the Philadelphia museum landscape in the six years since graduating. In particular, his work as a coordinator for the education department at the Franklin Institute, and now at the Pennsylvania Academy of Fine Arts as the Director of High School Programs makes him
a relevant informant for my investigation. Furthermore, he has a masters’ degree in industrial design that is now closely tied to the educational work he does at PAFA.

Furthermore, this background came in handy when the Franklin was installing its latest exhibit on the human brain. Though Mr. Van Meter made it clear that he did not oversee the installation or design of this exhibit, he did mention that he was included in talks with University of Pennsylvania Neuroscience specialists, as well as Franklin staff, where he served as a project manager for the educational curriculum for this exhibit. In other words, Mr. Van Meter was able to use both his industrial design and education skills to help shape how the Franklins’ students would be educated by this exhibit, even before it was installed.

This diversity of talents and expertise is important in how Mr. Van Meter characterizes the Franklin Institute’s working environment. He even referred to it not as a science museum, but rather a “21st century skills” museum. This is important given how diverse the staff is in terms of their professional backgrounds. Whereas the PAFA is primarily composed of working individuals with experience in the arts and art history, the Franklin thrives on having experts in all fields, as evinced by the kind of exhibits I saw during my latest visit.

When I asked Mr. Van Meter to tell me about some of his greatest accomplishments while working at the Franklin, he stated that,

“While I was at TFI, I developed an exhibit design curriculum for high school students in collaboration with a consultancy named PlusUs. The Exec. Director at PlusUs and I planned and implemented the curriculum as a two month high school-level course, which focused on developing interactive exhibits that are human-centered and
engage the learner in an active manner (the TFI trademark!). It ran twice and the second
time, it won an award: 2nd Place in the Design Learning Challenge (a national
competition created by the Industrial Designers Society of America or IDSA).”

Thus signifying just how important Mr. Van Meter esteemed his ability to not
only work with the exhibits themselves, but to also extend their interactive and
educational value beyond that of the common visitor experience. In other words, Mr. Van
Meter’s professional experience at the Franklin is an embodiment of the “skills center”
ethos that he lauds the museum for. By drawing on all of his diverse talents in both
educational and industrial design contexts, the Franklin finds innovative and interesting
ways to utilize the best of what its employees have to offer it.

Second Visit to the Franklin:

Though much of what I had observed on my initial visit to the Franklin carried
over on my second visit in terms of visitor behavior, I was at a unique advantage this time
for my observations since my partner was accompanying me for this final visit. Having
him with me made it possible to do some of the “partner” activities that had been
previously inaccessible to me during the Your Brain exhibit from my first visit when I
had gone alone. In particular, pieces such as the lying game in this brain exhibit were an
intriguing challenge for Andrew and me to play since we have known each other well or
such a long time that lying to the other, especially in the form of a game, is tricky.
Essentially, the game worked by having each player take turns looking into their monitor
and being prompted by the monitor to either say something that was true or something
that was a lie.
For example, when the screen prompted me to tell a lie, I told the screen that I had rushed as a pledge for a fraternity for my school during my freshman year. The screen then recorded my facial expression as I told this lie, and then it was Andrew’s turn to tell his truth or lie, depending on what his screen prompted him to do. At the end, we were asked to guess which statements from our partner had been lies and which had been truths. The computer then revealed the “true” answers, and also did a comparison of how facial expressions varied from lying and truth telling, thus educating both of us on how our faces reveal our own lying tendencies in everyday life.

Though I was initially annoyed that this game could not have been formatted to a “single-player” experience when I first visited, I later realized that it was much more valuable to have a partner to do the game to not only measure how I perceive their potential lying, but also how they perceive mine and the way we use facial cues to determine the validity of what others tell us. From this, I concluded that the Franklin is not only using its exhibits to advocate science-based entertainment and education, but to also strongly encourage these processes with others. While it is certainly possible to enjoy the Franklin while visiting it alone, the way it is structured demands that it can only be appreciated in its entirety when the visitor comes with others.

Additional Thoughts on the Franklin:
In Laura Waldron’s definitive museum resource, *Museums of Philadelphia: A Guide for Residents and Visitors.* She declares that,

The Franklin Institute is among the world’s most important science museums... The collections of this institution are truly staggering: original Franklin lightning rods, an Edison light bulb, the Wright brothers' wind tunnel and flight notebooks, steam-powered bicycles, and eighteenth-century automaton, early Kodak cameras, an actual lunar module, Muybridge’s Animal Locomotion series, and a Baldwin locomotive too name just a fraction of this interesting and unique collection. It is the interactive nature of the
displays, however, that makes the museum world renowned. Innovative and imaginative, they make learning about science and technology fun for everyone…You simply can’t go wrong with this fascinating and innovative museum. (Waldron 40)

This glowing review of the Franklin is more than just positive lip service for the museum. It highlights one of the key elements that makes it, and all of the museums I have observed succeeding at maintain and growing visitor engagement in the twenty first-century. In particular, “interactivity” is the key element at work here. Whether that interactivity is high- or low- tech is certainly useful, but not nearly as essential as one may be lead to believe. What matters is that the museum distinguishes itself from other science museums by emphasizing its interactive exhibits to a degree beyond that of its competitors.
Chapter 3: Expanding to New Audiences

ThinkWell and Design Firms:

Now that we have explored some of my observations at some of the best museums of Philadelphia, it is now worth exploring how these museums fit in to the national schema of museum technology and marketing. During my interview with Charlie Otte, who works with the Los Angeles-based media design group ThinkWell, I gained valuable insight into how museums partner with external resources and agencies to implement new interactive exhibitions. Creative design firms such as ThinkWell are usually contracted by major Science and Natural History museums, though some art museums have also sought after the services of these types of companies.

In the case of ThinkWell, they are currently partnered with the Smithsonian National Museum of American History based in Washington D.C. to help redesign a new wing in the museum’s current renovation project. Like most of ThinkWell’s clients, the Smithsonian did not directly contact ThinkWell for the project, but instead put out what Otte calls a “request for qualifications” or RFQ. Similar to the principle of an audition, any organization or company that needs a creative design firm to work on a particular project will put out an open call to design firms to give them the best pricing/experience/vision for how to specifically implement their project.
For example, one of ThinkWell’s most notable current clients is The Warner Brothers’ Studio in London and their installation of the *Making of Harry Potter* exhibit. When Warner Brothers put out the RFQ for a design firm to help them implement this exhibit, ThinkWell organized an elaborate proposal as to how they would successfully help make this Harry Potter attraction appealing to both die-hard fans and uninitiated audiences to the studio. After being thoroughly impressed with how ThinkWell wished to implement the creative design of the exhibit, Warner Brothers contracted them despite not being a London-based company.

The skills and strategies ThinkWell used for this exhibit, though notably much more entertainment focused ones, are pertinent to how they approach their RFQ’s with major museums seeking creative design assistance. In particular, their aforementioned ability to take in both the informed and uninformed audience and still give them a meaningful visitor experience is what sets them apart. When Otte discussed his work prior to joining ThinkWell, he mentioned that one of his most valuable skills that he brought to the team was being able to create exhibits that mastered this “appeal to the uninformed audience.” He demonstrates this in his claim that,
“I find that establishing context is really obvious but important. Because what can often happen is that people might not have any real connection with what you’re presenting them. So you know... you could be looking at something or a video about Lord Nelson going into battle, but if you aren’t given a clear understanding of who he is and why he was important, then the visitor isn’t going to care or pay attention at what you have to show about him.”

Therefore, it can be inferred that although independent design agencies like ThinkWell may not be inherently based on an educational or museum-based focus, their consideration for how their exhibits will educate an audience is important. This is significant because it shows just how critical it is to consider education and entertainment simultaneously for any major installation.

**Apps and More: Cuseum and Beacons:**

“Tech can, and should, bring joy and enrichment to galleries” Brendan Ciecko, founder of Cuseum, claims is just one of the many benefits of his ingenious new app. Ciecko can be partially credited for generating new interest in art galleries with the millennial generation thanks to his creation. Cuseum is a mobile phone application that tracks a visitor’s movements throughout a particular museum and “pings” them on their beacon whenever he/she reaches a particular painting, sculpture, or other traditionally non-interactive work of art in the museum. Once pinged near a particular work of art, the visitor can then interact with the work via digital history, fun facts, docent notes, other visitor reviews of the work, etc. like a Yelp version of today’s fine art. (Pictured below)
While more traditional museums such as the Frick Collection and the Isabella Stewart Gardner museum have avoided adopting this technology for fear of it disrupting other visitors’ quiet contemplation of the gallery space, those that have embraced Cuseum have found it to be wildly popular with college-aged visitors and has increased each museum’s ability to communicate more effectively with patrons about what they would like to see from upcoming exhibitions. (Cannell, New York Times, 2015).

Although Cuseum is not available at any Philadelphia art museums, it is nonetheless a fascinating form of digital media that creates effective dialogue with visitors and curators while also giving the former a taste of what it's like to be the latter. In other words, Cuseum lifts the veil on some of the more esoteric matters of museum planning and curating, thus making customers have a greater voice in how a gallery’s content will be shaped.

My International Experience:

Although this investigation remains focused on the American museum tradition, I thought it was pertinent to share an anecdote about a recent museum experience I had in an international context. During my visit to Israel on the Taglit Birthright program Mayanot in January, I visited the Israel Museum in Jerusalem with my fellow group of
Jewish young adults. The Taglit Birthright program is an effort on the part of the state of Israel, as well as other Jewish philanthropists and donors, to expose young Jewish adults to Israel for a free ten-day trip that gives them a taste of history, culture, and life in Israel. On the 7th day of our trip, we visited this immense museum and interacted with several fascinating art exhibits. However, the most pertinent piece in the entire museum was a video art installation called DeadSea by Israeli video artist Sigalit Landau.

![Still Frame from DeadSea](image.jpg)

*Pictured Above: Still Frame from DeadSea*

What made DeadSea so intriguing is not only the content of the video itself, but how it engages the audiences that witness it. The video was played on a large floor screen that gave the viewer the feeling of towering over what was happening below, just as the work had been originally filmed. The camera starts out heavily zoomed in on a slowly rotating chain of watermelons. However, as the camera begins to zoom out, the viewer realizes that the chain of watermelons are all linked and slowly unraveling with a nude woman (the artist) clinging onto a cut open watermelon while also floating with them in the Dead Sea. An English-speaking tour group stood around the work entranced as the tour guide explained the work’s meaning. After he was done elaborating on his interpretation of the work and the artist’s intent, he began to lead his group away from the
exhibit, but was met with resistance by nearly every member of the group who wished to see the chain fully unravel.

This resistance to leaving the video before the unraveling had completed was particularly notable to me because it demonstrated how effective the work was at maintaining the audience’s attention. As I continued to observe this tour group throughout the museum, they did not demonstrate nearly the same level of focus (not looking at their phones, maintaining their gaze on the work, asking lots of questions, etc.) with any of the other non-video artworks the guide showed them. Therefore, I argue that DeadSee is a prime example of how technology can enhance the interactivity and appeal of an art installation piece, especially since the changing nature of its content and the way it is laid out involves the viewer on a deeper level than a standard framed painting or marble sculpture.

**The Four Types of Interactive Museums:**

Though it may seem rather obvious, it is important to distinguish a museum not only by its genre (art, history, science, etc.), but also what degree of interactivity it is engaged with. However uncommon, an art museum could theoretically be highly interactive and have lots of high-tech where a science museum could have the inverse qualities, thus making it worthwhile to develop a characterization of a museums’ interactivity for intelligent categorization.

According to Mark Walhimrer, founder of the interactive exhibit design firm Museum Planning LLC (similar to ThinkWell but with a museum-exclusive focus), there are four major types of interactive science museums that have evolved over the past century. These four categories do not necessarily reflect all museum types, and is
specifically tailored at museum experiences. Listed below are Walhimer’s explanation of these generationally based museums, and a real-life example of a science museum that embodies that museum type:

“Museum 1.0
First Generation Museum, “Cabinet of Curiosity”
Collection cases, static displays, dioramas, object centric
- Mutter Museum

Museum 2.0
Second Generation Museum / Science Center
Collection cases with push buttons and cranks
- Museum of Science, Boston

Museum 3.0
Third Generation Museum / Science Center
Open ended, multi-layered and visitor centric and encourages conversations
- Exploratorium

Museum 4.0
Fourth Generation Museum / Science Center
The Museum / Science Center is without walls, the museum experience starts prior to the visit to the “bricks and mortar” location and continues after the visit to the museum. Museums of the fourth generation can / will use the techniques of museums 1.0, 2.0 and 3.0, plus the museum experience is customized to the visitor (similar to Web 3.0). The visitor experience “meets” the visitor at their level of engagement, interest and knowledge. The museum experience is customized to the visitor prior to the museum visit. I do not know of any museum that I would refer to as Museum 4.0”

Walhimer’s conception of Museum 4.0 may not be as mythical as he makes it out to be. While it is true that there are no “pre-made” museum experiences where visitors can order a customized museum experience in advance, the ability for a museum to expand beyond its brick and mortar confines certainly seems to exist today. In particular, the fact that social media, off-site educational programs, and other forms of interactive engagement have come to exist in the past few decades, it seems likely that the Museum 4.0 is already beginning to form. While digitalization and advanced technology may be threatening and/or changing the way traditional forms of recreation are engaged with, it
seems that the museums of the future (perhaps even within the next twenty years) might seem a lot like Museum 4.0.

Even today, museums are basing their exhibits on popular demand and relying on visitor input to craft their latest exhibits. Though high-technology may be the harbinger of this demand, it seems that as long as exhibits maintain a degree of interactive engagement, museum visitors will continue to multiply and make the entertainment and education factor even more prominent in years to come.
Conclusion:

Museums are inarguably one of the most valuable educational and entertaining centers of learning not only in Philadelphia, but every metropolitan city in the world. Though each museum takes on its own unique approach to how it engages visitors, it is undeniable that they are still a thriving form of recreation today for children and adults, tourists and locals alike.

However, it seems that interactivity has become an important and inextricable development of what makes these museums so appealing. While it is true that high-tech exhibits help facilitate interactivity, it seems that in almost all types of museums, simply being interactive (with or without advanced technology) is all that is necessary to increase a visitor's interest. Even in the case of art museums, which are easily the least reliant on high-tech exhibits of all the museums we've explored thus far, the ability for a visitor to interact with an exhibit is essential for its meaningful engagement.

Although the Franklin may arguably be the most “successful” at including effective interactivity than the other museums I have observed for this thesis, all three bear unique strengths and weaknesses that make them meaningful to the visitors who enjoy them. Whether you are a fan of art, science, history, or a little bit of everything in between, museums are an incredible way to not only entertain and educate yourself on these subjects, but also change the very way you perceive them.

This distribution of interactivity and its prominence is not surprising given the currently existing data on museum visitors. According to a 2010 survey conducted by Reach Advisors of 40,000 regular museum attending households,

Art museums. Have generally older visitor bases, with 65% of respondents over age 50. Only 18% of respondents are parents of minor children, and those parents that did
respond have significantly older children; over half are in middle or high school. Respondents have the highest college attainment of any type, with 86% having at least a college degree. Additionally, 55% have at least one parent with a college degree. Generally, respondents are less diverse than the overall sample, with 92% identifying as white, and only 16% identifying as a minority.

**Science centers.** Have generally younger visitor bases, with 72% of respondents under age 50. Two-thirds of respondents are parents of minor children, and most of those children are in elementary school. 80% of respondents have college degrees, and 53% have at least one parent with a college degree. Science centers have the most diverse sample, with only 84% of respondents identifying as white and 34% identifying as a minority. They do particularly well with Asian audiences, with 12% of respondents identifying as Asian - twice the topline (overall) average.

**History museums and historic sites.** Like art museums, have generally older visitor bases with 65% of respondents over age 50. This sample is the closest to gender parity, with nearly 40% of respondents being male. A quarter of respondents are parents of minor children, and those parents have significantly older children; over half are in middle or high school. Respondents have the lowest college attainment of any type, with 78% having at least a college degree (though this is still three times the national average). They are also the least likely to have at least one parent with a college degree, only 45%. Respondents are the least diverse, with 95% identifying as white, and only 12% identifying as a minority.

**Children's museums.** Unsurprisingly have the youngest visitor base, with a whopping 89% under age 50, and 64% under age 40. Respondents are overwhelmingly female (89%) and parents of minor children (88%). Those children are significantly younger; two-thirds of respondents have at least one infant, toddler, or preschooler. 81% of respondents are college educated, and they are the most likely to have at least one parent with a college degree, 58%. Interestingly, despite being the youngest set of visitors, they also have the highest income, with 44% having household incomes over $100,000/year (compared to 39% topline average). And while respondents are not quite as diverse as science center respondents, they are significantly more diverse than art museum and history museum respondents. (Reachadvisors 2010)

Given these data, it seems obvious that museums such as the Franklin would use greater interactivity since it aims its appeal to a younger demographic. And while interactivity is likely very present at museums such as the Please Touch museum their extremely child-centric and female-mother dominated audience unfortunately made it unfeasible as a site of observation for my thesis. Nonetheless, this investigation emphasizes how class, race, age, and other personal factors affect the museum goers chance of experiencing interactivity in today's museums.
And while the more commercial aspects being incorporated into museums concern some educational purists, especially the influx of characters and films from popular culture, it seems that the evolution of twenty-first century museums is working towards a greater good. As Robert Janes points out in his article “The Mindful Museum”, Rethinking the role of museums as social institutions will require no less than a reinvented museum—a mindful organization that incorporates the best of enduring museum values and business methodology, with a sense of social responsibility heretofore unrecognized. (Janes 508)

This rightly questions how museums are currently fulfilling their ethical responsibilities to being “mindful” institutions, though I’d argue that Janes’ cynicism might actually be misplaced, or at the very least, assuaged by what I’ve observed at these museums. Though each museum and each of its exhibits have very different cultural lessons that can be drawn from it, the way they are interacting with today’s issues are certainly living up to the moral obligations Janes addresses.

Whether it is nuanced commentary on the Middle East conflict at the ICA, or a game educating the public on the complexities of curbing dramatic climate change at the Franklin, or just simply teaching kids and adults about other species in a fun and informative fashion, I argue that every museum I have observed has evolved to fulfill its duties as both an effective business and positive role model for the values it shares with its audience.

Overall, I think one of the most valuable things I learned from this experience is just how valuable interactivity can and should be in this endeavor for making a meaningful and successful museum. Though I had initially begun this investigation seeking to understand high-tech exhibits and their entertainment and educational value for museum visitors, I now realize that it is really interactivity that matters most. Through my observations, interviews, and scholarly readings/analysis, it seems that interactivity is what can make or break a museum today for maintaining growing attendance. Although
high-tech exhibits help facilitate interactivity, they are not required to be advanced in their technological design to have a meaningful interactive experience. Even art museums, which are arguably the most traditional and often elitist form of museums there is, are finding new ways to use interactivity to appeal to millennials as well as engage in greater dialogue with their audiences.

In this sense, museums are almost going through what I would call a "rebirth of interactivity." As established earlier, the earliest public museums were highly interactive centers where visitors were encouraged to touch and engage with the materials found within its galleries. The rise of European Enlightenment and elitism in the mid-nineteenth century quashed this practice and instigated a "hands off" policy across most museums.

However, technological advances and the introduction of high-tech exhibits have found ways to circumvent the hands off policy without endangering the quality of the works in a given museum. Therefore, tech has enabled interactivity in a new fashion that transforms museums into even more complex entities while also increasing its appeal to a broader audience. So although the "Museum 4.0", an experience truly customized to each individual visitor that exists beyond brick-and-mortar buildings, may not fully exist yet, I think we've seen a lot of amazing work from both museums and design firms that will make this new type of Museum redefine how the public educates and entertains itself in years to come.
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Works Cited:

The Academy of Natural Sciences of Drexel University Official Website.

http://www.ansp.org/


The Franklin Institute Official Website. https://www.fi.edu/


