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New Technology for Old Models: Can Dioramas Resonate with a Modern Audience?

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THE ROCHESTER INSTITUTE OF TECHNOLOGY
COLLEGE OF LIBERAL ARTS

New Technology for Old Models:
Can Dioramas Resonate with a Modern Audience?

A THESIS SUBMITTED
IN PARTIAL FULFILLMENT OF THE
BACHELOR OF SCIENCE DEGREE
IN MUSEUM STUDIES

DEPARTMENTS OF PERFORMING ARTS AND VISUAL CULTURE AND HISTORY

BY

Carmen Ibis Lopez

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Abstract:

This thesis uses visitor studies from the Rochester Museum & Science Center (RMSC) to investigate whether dioramas are still a useful, resonant tool for visitor engagement and if they do fulfill this purpose, how do they do so. The case study is the newly revamped diorama *Rochester in 1838: Young Lion of the West* at the RMSC. This diorama, a 70-year-old model, has been mixed with modern Virtual Reality (VR) technology to create an experience that will provide the visitor with a new perspective on an old model. As context, this thesis uses the history of the diorama to show the evolution of exhibition in museums. It also discusses the literature about how VR technology engages contemporary audiences. In addition to visitor observation and surveys, this thesis also includes insights from an interview of an artist and the restorer of the RMSC's diorama. By comparing the artist's intentions to visitors' responses and lastly the museums expectations, this thesis will develop conclusions about the potential for the ongoing relevance of dioramas in museums. The visitor studies conducted for this thesis will also yield useful information to the RMSC for the development of a new VR vignette for the *Rochester in 1838: Young Lion of the West* diorama.

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Introduction

What is a diorama? A diorama is a model representing a scene with three-dimensional figures, either in miniature or as a large-scale museum exhibit. In the words of the Rochester Museum & Science Center (RMSC), “museums have used dioramas to present ideas from history and natural history since the late 1800s. They often illustrate not only the distant past, or an exotic place, but also the time period they were created in.”¹

In museums there has been a recent trend of dismantling these models: whether they are in disrepair and require expensive renovations, or they are depicting inaccurate history, or if a technological advance is perceived as better, dioramas may be seen of being as obsolete. Museums professionals have called this trend the “diorama dilemma.” Even though the research suggests that only natural history dioramas are plagued with this dilemma, the truth is that all dioramas are in danger of becoming obsolete. In an article by Max Kutner for *Newsweek* talks about this problem more in depth, giving examples of museums that have disposed of some of their dioramas:

There are examples from all across the country. The California Academy of Sciences in San Francisco closed in 2003 and reopened in a Renzo Piano-designed building in 2008 with only one of the two diorama halls surviving the move. Around that time, the Smithsonian's National Museum of Natural History in Washington, D.C., closed two diorama halls and reopened them with video screens, interactive features and stand-alone specimens where the dioramas had been.²

Despite these sad times for dioramas, this article gives an example of models that have not only been fortunate enough to survive but thrive. The article explains that in just one month Chicago's Field Museum was able to crowd source \$155,000 for the new installation of a diorama. This was

¹*Rochester in 1838: Young Lion of the West*, third floor RMSC, permanent exhibition, label copy

²Max Kutner, “Museum Dioramas Are as Endangered as the Animals They Contain,” *Newsweek*, August 2015
<https://www.newsweek.com/2015/08/14/museum-dioramas-endangered-american-museums-358943.html>

the first new diorama the museum had installed in twenty-five years and used animals that were originally mounted in 1896. The article mentions climate changes and environmental threats as a reason for renovating old dioramas and using them as a teaching tool to address current problems with modern audiences. For example, at the RMSC there is a diorama about beavers and included in this diorama there are old tires and straws. Showing how this litter interferes with the nature stirs the conscience of the viewer.

With current technologies offering such immersive learning experiences, some museums professionals have sought to replace dioramas with such things as Virtual Reality (VR). VR is “an artificial environment which is experienced through sensory stimuli (such as sights and sounds) provided by a computer and in which one's actions partially determine what happens in the environment.”³ Stephen Quinn, a retired senior project manager and longtime diorama artist at the American Museum of Natural History (AMNH), said this to illuminate what dioramas can offer rather than technological advances:

With computer interactive display in a natural history museum, you can do the same sort of things on your laptop at home, the thing that natural history museums provide that is such a unique experience is showing you the real thing.... That kind of personal encounter cannot be experienced through modern media.⁴

Is the diorama dilemma a real problem or is it a lack of imagination on the part of curatorial staff? Should technology replace these models? Or can they work together to provide the best experience for visitors and promote meaning making? Are these old tools still useful and relevant in the museum exhibition space, or are dioramas a dying art that museums should dispose of? Based on some of the innovative ways in which museums continue to use dioramas effectively, with the use

³ “*Virtual reality*.” Merriam-Webster.com Dictionary, Merriam-Webster, <https://www.merriam-webster.com/dictionary/virtual%20reality>. Accessed 26 Apr. 2020.

⁴Max Kutner, “Museum Dioramas Are as Endangered”, *Newsweek*, August 2015

of novel technology to create new engagement with this old mode of display, this thesis will answer these questions and ultimately uncover what museums seek to gain in using these forms of display.

Limitations

This thesis was slightly changed due to the Corona Virus or COVID- 19. Social distancing played a very big role in the end product of this project; therefore, this thesis reflects the time it was written in and attempts to make a point despite a pandemic.

Literature review

Examining the literature in the museum field on VR and dioramas, gives us a more complete perspective on this medium as a whole and helps this thesis make some of the connections between technology and these old models. Another useful context that this literature review provides is to see how examples of how different types of models, have been used before to evoke all types of emotions and provide a jumping board for visitors to make their own meaning through experience.

The diorama can be called the magic carpet of museums, the artistic model they use to transport the visitor into another world. The article “ The Influence of Museum Exhibition Design on Immersion and Psychological Flow” by Mark J Harvey, Ross J Loomis, Paul J Bell and Margert Marino, states that dioramas are a three dimensional representation of the subject matter and allow a realistic representation of the topic therefore initiating a more active experience for the visitor.⁵ Bryan B. Rasmussen wrote an article titled “Technologies of Nature: The Natural History Diorama and the Preserve of Environmental Consciousness.”⁶ He examines decade by decade the different types of dioramas, how they evolved to be natural history tools to

⁵ Mark L. Harvey, Ross J. Loomis, Paul A. Bell, and Margaret Marino. “The Influence of Museum Exhibit Design on Immersion and Psychological Flow.” *Environment and Behavior* 30, no. 5 (September 1, 1998): 601–27. <https://doi.org/10.1177/001391659803000502>.

⁶ Bryan B Rasmussen, “Technologies of Nature: The Natural History Diorama and the Preserve of Environmental Consciousness.” *Victorian Studies* 60, no. 2 (June 26, 2018): 255–68. <http://muse.jhu.edu/article/697836>.

drive social consciousness towards environmental appreciation.⁷ This diorama makes the observer gain a respect for nature by showing the beauty of it. This is one emotional connection that would benefit the greater good.

An article that shows that VR complements museums' educational tools such as dioramas is "UX Designer and Software Developer at the Mirror: Assessing Sensory Immersion and Emotional Involvement in Virtual Museums" by Eva Pietroni, Alfonsina Pagano and Bruno Fanini. Although this article is focusing on virtual museums it discusses some cognitive information that could be applied to dioramas and VR experiences. It positions itself by saying that "because perception is a transaction between the world and "us," it generates attention, memorization and comprehension, general cognitive processes that use existing knowledge to generate new knowledge."⁸ We use perception like, the sense of sight when experiencing VR components and therefore mixing VR with dioramas which are also a tool that requiring sensory perception, can prove beneficial to a museum exhibition.⁹

A case that really shows the emotional potential that dioramas have is the one discussed in the article "See Dioramas of Refugee Homes, Each Re-Created in an Old-Fashioned Suitcase" by Diane Cole. She discusses these miniature dioramas that were created as a memory of refugees' homes. One powerful quote from the article demonstrates this in making a correlation between historical periods, as some of the suitcases used to construct the miniature dioramas belonged to refugees during the Nazi era. In reflection on of this fact the artist Mohamad Hafez

⁷Bryan B Rasmussen, "Technologies of Nature: The Natural History Diorama and the Preserve of Environmental Consciousness." *Victorian Studies* 60, no. 2 (June 26, 2018): 255–68. <http://muse.jhu.edu/article/697836>.

⁸Eva Pietroni, Alfonsina Pagano, and Bruno Fanini. "UX Designer and Software Developer at the Mirror: Assessing Sensory Immersion and Emotional Involvement in Virtual Museums" *Studies in Digital Heritage* 2, no. 1 (September 26, 2018): 13–41. <https://doi.org/10.14434/sdh.v2i1.24634>.

⁹Eva Pietroni, Alfonsina Pagano, and Bruno Fanini. "UX Designer and Software Developer at the Mirror: Assessing Sensory Immersion and Emotional Involvement in Virtual Museums." *Studies in Digital Heritage* 2, no. 1 (September 26, 2018): 13–41. <https://doi.org/10.14434/sdh.v2i1.24634>.

said ““It is the belongings of yesterday's [refugees] telling the story of today's".¹⁰ This example can be used as a road map for future diorama making. The many ways objects-including dioramas- can facilitate meaning making are capture in the words of Peter Samis and Mimi Michaelson in the article “Meaning Making in Nine Acts”

(objects)offer important lessons to share honoring controversial and complex truths; connecting past objects with present issues; presenting grisly facts; inviting new collaborators to co-create exhibitions; providing fresh ways of looking at stereotypes; offering places to linger or to try one's hand.... It is the museum staff's role to design for a multiplicity of experiences, to make sure that the broadest number of people can find their way into the objects we present.¹¹

The article “Spectacles within Doors: Panoramas of London in the 1790s” by Markman Ellis discuss the emergence of visual culture,¹² which is the ways that visual interpretation is part of social life. Visual culture had its roots first in the invention of the panorama, and how this was the foundation for mass entertainment. In turn the article brings up the patent for the panorama stating that, they were meant to “stun the visitor with illusionism, that permitted the observers to imagine themselves as if really on the very spot.”¹³ A good way of thinking of dioramas is panoramas on steroids. Dioramas have more of a 3D element, sometimes including real specimens. If a panorama was meant to help the observer imagine themselves elsewhere, the diorama with its more intriguing elements, does just this.

The book *Natural History Dioramas: History, Construction, and Educational Role* has a chapter titled “*Storytelling and Performance in Diorama Galleries*” by Dunmall Keith, which

¹⁰Diane, Cole, “See Dioramas Of Refugee Homes, Each Re-Created In An Old-Fashioned Suitcase.” *Goats and Soda [BLOG]*; Washington, December 23, 2017.

<http://search.proquest.com/docview/1979868799/abstract/CBC63854955F4B1CPQ/1>.

¹¹Peter Samis, and Mimi Michaelson, “Meaning Making in nine acts”, *Exhibition spring*, 2013, pg 59

¹²Markman Ellis, "'Spectacles within doors': Panoramas of London in the 1790s." *Romanticism*, vol. 14 no. 2, 2008,p. 133-148. Project MUSE muse.jhu.edu/article/248769.

¹³Paul Bijl, “Emerging Memory”, Published by *Amsterdam University Press*, Project,MUSE.muse.jhu.edu/book/66385.

discuss the idea of creating the visitor background, it helps bring the visitors' imagination along for the educational ride. Dioramas along with active storytelling and performance, worked together to make dioramas an asset to museums. In this chapter Dunmall uses the Powell-Cotton Museum as a case study. The museum works alongside a local theatre company to make interesting, factual stories based on some of the dioramas in the museum.¹⁴

A different chapter in this book written by Michael J. Reiss titled "The Cultural History and Learning Affordances of Natural History Dioramas" discusses how museums are aware that visitors bring a treasure trove of prior knowledge with them and that "Dioramas can be fruitful in this regard as they offer a range of possible hooks onto which visitors can latch."¹⁵ Prior knowledge, learning something new based on that knowledge is one of the many forms meaning making can come in. He discusses the children and how they can use visual culture, to conversate on their own viewing and understanding of the dioramas and construct lasting lessons.

The article "Sensory Immersion" by Craig Kavicky mentions specific examples of companies or museums that are using technology to involve the senses.¹⁶ One of these is, he mentions the case study of Adidas and how they used a VR experience to make users feel the excitement of mountain climbers, and he says that the feeling of excitement is the key to sensory immersion. The article "Beyond virtual museums: Experiencing Immersive Virtual Reality in Real Museums" by Marcello Carrozzino, and Massimo Bergamasco states that "VR's main goal

¹⁴Keith Dunmall, "Storytelling and Performance in Diorama Galleries" *Natural History Dioramas: History, Construction and Educational Role*, edited by Sue Dale Tunnicliffe and Annette Scheersoi, 243–50. Dordrecht: Springer Netherlands, 2015. https://doi.org/10.1007/978-94-017-9496-1_18.

¹⁵Michael J. Reiss, "The Cultural History and Learning Affordances of Natural History Dioramas" *Natural History Dioramas: History, Construction and Educational Role*, edited by Sue Dale Tunnicliffe and Annette Scheersoi, 243–50. Dordrecht: Springer Netherlands, 2015. https://doi.org/10.1007/978-94-017-9496-1_18.

¹⁶ Craig Kavicky, "Sensory Immersion" - *ProQuest*. Accessed November 10, 2019. <https://search-proquest-com.ezproxy.rit.edu/docview/2069424164/fulltextPDF/D453FBE61DFC4F84PQ/1?accountid=108>.

is to experience presence, i.e. the belief of actually being in a virtual space.”¹⁷This belief makes it easy for visitors to feel an emotional connection. The literature brings together many different parts in the discussion of dioramas and VR. The possibilities of their partnership and examples of dioramas can still achieve.

¹⁷ Marcello Carrozzino, and Massimo Bergamasco. “Beyond Virtual Museums: Experiencing Immersive Virtual Reality in Real Museums” *Journal of Cultural Heritage* 11, no. 4 (October 1, 2010): 452–58. <https://doi.org/10.1016/j.culher.2010.04.001>.

Methodology

Like a diorama has various parts to create a mystical transportation of the viewer to another moment in time or space, this thesis also uses many parts or methods to reach its conclusion about dioramas. It looks at the history of the diorama and the literature about meaning making and VR, as well as utilizing a case study, asking the public for their opinions, through visitor studies. Lastly it uses an interview with current professional on how dioramas and VR can make a dynamic duo.

Considering the history of the dioramas, shows how they have not developed in a linear way. The way that the historical evolution unfolds makes up an important part of this thesis. The correlations between dioramas and technological gadgets, proves that together they can make a better experience for the visitor. The other research done for this thesis was to look at the potential of dioramas and VR experience in relation to how it makes the visitor or user feel. The emotive responses for the diorama were contextualized within meaning making and the different forms it takes, but most importantly how VR and dioramas can work together in the construction of personal meaning making.

In developing a visitor studies, a specific case had to be chosen to give the respondents a more direct link with dioramas. I chose this specific diorama to be the star of the show because of how it brought together a modern technology with an old tool. The *Rochester in 1838: Young Lion of the West* diorama incorporates the relatively new VR technology with well-established model making practice. It is also in a pivotal location at the RMSC, where there is heavy traffic flow due to a regularly scheduled public theater program. Using this diorama as a case study will exemplify how the diorama dilemma is an opportunity for museums that should not be wasted.

Another facet in developing the visitor survey was to work hand-in-hand with the museum in question. I had the pleasure of working with Kathryn Murano Santos, the Senior Director for

Collections and Exhibits at the RMSC, to develop the survey questions and determine what me along with the museum wanted to ask. Since dioramas are somewhat out of mind for the modern museum goer, we had to establish what people think of dioramas as a whole. Many of the questions asked on the survey addressed this concern. For example, one of the more direct questions is “do you think that dioramas are cool?” With these questions we hoped to discover whether the public even cares about dioramas and get a handle on what the broad agreement is for dioramas. Some of the other questions were designed to determine what emotions a diorama might evoke. Questions like “what does this make you feel” or “what connections if any does this make for you” were addressing this. There were questions based on the VR experience, whether it enhanced the original diorama, and do they work well together. There were also a few questions designed to test whether the RMSC met its goals for the first VR vignette experience. The term “vignette” in this thesis will refer to the VR experience as a whole, from the image to the physical screen it displays on.

When working with a museum partner in developing a survey, the questions must address the concerns of both parties. This thesis hopes to establish dioramas as relevant, and as stated before, the RMSC wanted to see if they had met their goal with the first VR vignette. Those goals were to better orient visitors to the historic landscape using the entry point of the current landscape and helping visitors imagine the future by showing change over time. RMSC also will use the audience’s perspective as a foundation to make a second VR experience attached to the original VR vignette and the diorama. The new vignette would, in theory, feature more of a character focus, with character stories, showing actual people who lived in Rochester at the time. We tried to address all these moving parts in developing the surveys.

The survey took place over many weekends, with no specific pattern to ensure a random grouping of people. It was done in a way that attempted to discover the range of responses to a particular question, then clustered these responses into common patterns to facilitate the acquisition and analysis of a larger data set through a more streamlined, multiple-choice survey. Ideally this survey was meant to be given in two parts where the first sought to get a big understanding of data and general ideas of what the public thought, and the second would have specifically asked about the VR experience. But upon further consideration and consultation with the museum, it was determined that a second attempt to the survey would not be necessary. If a second iteration of the survey would have been offered it would have been interesting to try to glean more information. The second iteration would have taken place during another of the museum's busiest times, which is spring break. Just like with the Christmas season, this would have yielded the most responses. The first survey yielded a great data set; therefore, a second iteration would have been supplementary but not necessary. A second survey could be a potential extension of this project for the future.

I was fortunate enough to attend a meeting on the new development of the VR vignette after my survey. In this meeting I was able to briefly present some of my findings and hear a more in-depth explanation of what the museum wants. We met with a historian who shared his insights on the city of Rochester's history. He suggested that the VR designers and the museum pick a major event around or on the general time period of 1838, like the opening of the canal in Rochester in 1823. This would make it easier to find historical material to base the vignette on and conveniently make the experience as a whole more accurate. Picking a major event would also facilitate the finding of actual people in city directories, so as to not have to embellish and fudge the historical details of the VR experience.

Attending this meeting gave me the opportunity to think about, if I were to develop a second iteration of the survey, what would it look like? The questions would be more to the point of the museums and what they want for the VR experience. They would be based on asking the visitors, what else might they like to see moving forward and what would appeal to their viewing of the VR. In the meeting we discussed the possibilities of perhaps more seasonality in the VR vignette, as in making it seem like Rochester in the fall, or maybe at Christmas. We also discussed museum should include characters and what stories the visitor would be interested in hearing or seeing.

Other than the visitor study, another method implemented in this thesis was to interview a creative professional who played a role in restoring the diorama. Aaron Delehanty, the artist in residence for the RMSC. The purpose of this interview was to get the artist talking about his passion for creating dioramas and where he thinks the future of these models lies. Interviewing Delehanty gives the perspective of someone who has been up close to dioramas.

A perspective that would have also been beneficial would have been to interview a VR specialist. In getting to talk with a VR specialist, we would have gotten the perspective of the functionality of the VR in relation to the diorama. Getting this insight could be a nice addition for a future consideration of this topic. Instead we will see how other VR projects have influenced visitors and created a memorable experience.

The history of the diorama

The history of the diorama and its ancestors is necessary to consider in this thesis because it shows that exhibition has been an ever-evolving process. We will learn that the one of longest enduring iteration has been the diorama and we will see why it has lasted the longest. To adequately consider the history of the diorama, the first step is to see the mode of exhibiting that came before it. The invention of the panorama in the 19th century, has been credited to Robert Barker from Scotland and Johann Adam Breysig from Germany. The word panorama stems from the Greek words of “*pan*” which mean everything and “*orama*” which means to see or sight. These artistic creations are large paintings that “show everything.” Panoramas represent a unbroken view of the whole region surrounding an observer. The panorama really caught on in 1793, when Baker painted a panorama as never before seen in London, one that had a large circular building built for the sole purpose of its creation and its viewing. “The motif on display was not a city view but the Russian fleet at Spithead, the main roadstead of the British fleet, which could be viewed from the deck of a frigate built in the middle of the rotunda.”¹⁸ After this huge success, there was a panorama in every major European city by 1800. This gave birth to other modes of depicting large locations, some of which are still used in the museum space, while others were turned into children’s games or simply went extinct despite their interesting aspects.

For example another precursor to dioramas were the myriorama, invented in 1802 by Jean-Pierre Brès. It was meant to compete with the panorama but was re-done as a miniature version, cut into pieces in a version by John Heaviside Clark in London. This puzzl- like version

¹⁸Claudia Kamecke, Rainer Hutterer, “History of the Diorama,” *Natural History Dioramas: History, Construction and Educational Role* edited by Sue Dale Tunnicliffe and Annette Scheersoi, (Springer Netherlands 2015):8-9

of the panorama became a mode of entertainment for children and still endures till today. Next was the cyclorama:

They were constructed in a semicircle, built into a box and viewed through optical glasses to let them appear life-sized with more plasticity and spatial depth. Six to eight glasses of up to 12 cm in diameter were installed in the front walls of the box, which was built at 1 m from the picture plane. Cycloramas were mostly illuminated by daylight and allowed more varied performances. They soon attained equal footing with the exhibition of large panoramas and became more and more popular, especially in the first half of the nineteenth century.¹⁹

The cyclorama and the panorama differ in that the cyclorama is a whole circle of immersive painting, but a panorama is more horizontal and doesn't come full circle. So great was the popularity of this type of immersive paintings that the Metropolitan Museum of Art in New York city has their very own. "It is a circular panoramic view of the Palace of Versailles that was painted in Kingston, New York, and New York City between 1818 and 1819 by John Vanderlyn."²⁰ At the time this type of panorama could be compared to virtual reality, "combining art, lighting, architecture, and installations to convey viewers to exotic locales or the recent and distant past."²¹ Another iteration of the panorama was the georama. "A gigantic hollow globe construction with continents, oceans, rivers, mountains etc. displayed on its inner surface, so that the public could wander around within the globe and look at the side-inverted displays."²² This was the last iteration before the true diorama came into existence.

¹⁹Kamcke, Hutterer, *Natural History Dioramas: History*, 9

²⁰John Vanderlyn, "Panoramic View of the Palace and Gardens of Versailles", 1818–19, *Metropolitan Museum of Art*, New York, <https://www.metmuseum.org/art/collection/search/13052>

²¹Allison C. Meier, *Cycloramas: The Virtual Reality of the 19th Century (JSTOR Daily, 2018)*

²²Kamcke, Hutterer, *Natural History Dioramas: History*, 9

The word diorama comes from the original concept of what a diorama is. In 1822 Louis Jacques Mandé Daguerre and Charles-Marie Bouton, showed a crowd in Paris an invention that consisted of painting and light effects:

The audience was sitting in a dark room. The lighting effects could range from moonlight to sunlight with wafts of mist, moving clouds, sparkling waterfalls, oncoming and unleashing thunderstorms etc. The lights merged continuously, and with the changing light intensity the colors also changed, regulated by the different apertures. That kind of motion in a picture was the overwhelming novelty at that time.²³

All the other iterations discussed before were static or rather without movement, but the diorama especially “during the presentations, rarely had a moment in which nothing moved or was altered.”²⁴ This invention went with the Greek origins of the word, because the word “*di*” means through and “*orama*” again means to see or sight.

After making his way through Europe, Daguerre opened an establishment in London that would showed off his different dioramas. Sadly in 1839, a fire broke out in Regents Street and many of the dioramas and the secret workings to their movements were lost. Daguerre moved on to inventing the first photographic process after this and dioramas seemed to have lost their appeal. In 1880 and 1900, the panorama made a comeback with the length panorama which was a long panorama attached to a wheeled device. The painting was attached to the wheeled device and pulled with a string to imitate movement of the scenery like an early rear projection effect. This was prominent in theatre productions for scenery change.

A crucial turning point in the history of these scenic paintings was in 1883, when a historic event was portrayed in a cyclorama. The Battel of Sedan was painted by Anton von Werner in

²³Kamcke, Hutterer, *Natural History Dioramas: History*, 10

²⁴Kamcke, Hutterer, *Natural History Dioramas: History*, 10

Berlin depicting the Prussian war.²⁵ This transformation showed that panoramas not only could be used as entertainment but also to enlighten and educate. This was the first art piece of its kind to show an historical event. In this artwork there were also three-dimensional objects added to the foreground to provide supplements to the portrayal of this historical event. This work was intended for visiting political and ruling figures at the time and was considered a political piece. It is worthy to say that all museum exhibits, and dioramas in particular, are a representation of reality that demonstrate the intentions and biases of the creator in addition to the event they are portraying. But at the heart of these historic art pieces they were meant to educate and enlighten people on what, in this case, the battle looked like and where it took place.

In the same year as 1883, another cyclorama depicting a historical battle was made. The Gettysburg Cyclorama was painted by the French artist Paul Philippoteaux, a professional cyclorama painter and artist who came to the United States in 1879. Philippoteaux did an extensive amount of research before embarking on the painting of Pickett's Charge:

Philippoteaux arrived in Gettysburg in 1882 armed with a sketchbook, pencils, pens, and a simple guidebook to help him locate the site of the climactic charge. The artist spent several weeks on the battlefield, observing details of the terrain and making hundreds of sketches. To help him recall the landscape with accuracy, Philippoteaux hired a Gettysburg photographer to produce a series of panoramic photographs for his use. These images are some of the earliest detailed photographs of Cemetery Ridge, the Angle and the "High Water Mark," and the field of Pickett's Charge. Philippoteaux was also lucky enough to interview a number of veterans of the battle, who helped with suggestions on how to depict the chaos of battle.²⁶

²⁵John Swift, "Battle of Sedan" *Encyclopædia Britannica*, Proposed article by The Editors of Encyclopaedia Britannica, Apr 17, 2017 <https://www.britannica.com/event/Battle-of-Sedan>,

²⁶National park service, *Gettysburg Cyclorama*, December 2, 2015, <https://www.nps.gov/gett/learn/historyculture/gettysburg-cyclorama.htm>

After this research, he went to work trying to create an immersive, accurate experience of the battle. The National Park Services describes it as

a breathtaking canvas that measures 377 feet in circumference and 42 feet high. Longer than a football field and as tall as a four-story structure, the Gettysburg Cyclorama oil painting, along with light and sound effects, immerses visitors in the fury of Pickett's Charge during the third day of the Battle of Gettysburg.²⁷

This cyclorama can really claim the purpose of educating the viewer. Based on how much research the artist did to accurately show the battle. He even included first person accounts of it and in doing so used primary sources. This was the beginning of using these mediums for the higher purpose of teaching a new generation about something that the older generations had gone through. So precise was the artists rendition that it is reported that veterans at the time wept in response to the gory, awful memories of the battle.²⁸ An important note is the one that the article “*The Great Illusion of Gettysburg: How a re-creation of its most famous battle helped erase the meaning of the Civil War,*” by Yoni Appelbaum points out, that this cyclorama created the illusion of seeing “the real” Gettysburg but, in so doing, put the military collision on view while making the ideological significance of the battle invisible. This article also points out that the danger in historical dioramas is that they need to be accurate and representative of a broader story.

After this, the diorama moved to natural history museums. The book *Natural History Dioramas: History, Construction, and Educational Role*, in the chapter titled “History of dioramas” gives an account of the development;

Carl Akeley (1864–1926), famous taxidermist, hunter and sculptor, was an inventive pioneer of the habitat concept. His muskrat group of 1889 is regarded as one of the first

²⁷National Park Service, *Gettysburg Cyclorama*, May 15, 2019

²⁸Yoni Appelbaum, *The Great Illusion of Gettysburg: How a re-creation of its Most Famous Battle Helped Erase the Meaning of the Civil War*, *the Atlantic*, February 5, 2012

true habitat dioramas. It depicts muskrats in a re-created marsh against a mural of a wetland. He constructed it while working at the Milwaukee Public Museum.²⁹

This chapter also refers to American museums adopting nature dioramas because of their entertainment aspects and claims this for being the reason that American museums adapted the diorama into their exhibit.

²⁹Kamcke, Hutterer, *Natural History Dioramas: History*, 10

Case study: Rochester in 1838: Young Lion of the west

This thesis uses a specific case study to see how these old models mix with new technology to create a resonating and wonderful experience for the visitor. The Rochester Museums & Science Center in Rochester NY has a diorama which is very iconic and idyllic in the mind of Rochestarians. It is the *Rochester in 1838, Young Lion of the West*. First put on display in 1946, at first glance this diorama suggests that it was meant to portray Rochester as it first flourished under the benefits of the Erie Canal. Instead, the artists in the 1940s depicted a miniature “mature, settled town”³⁰ rather than the restless boomtown it really would have been in 1838. It isn’t really certain if the artists did not understand Rochester history or tried to give the diorama a (at that time) modern flare, the point is that it needed updating. The diorama was originally conceived to be a Christmas display in the Sibley Department store, a historic shopping building in the middle of downtown Rochester. There were two processes this model went through: first it was made simple and appealing with a Christmas theme for the store display window, then it went through more detailed work when it was going to be donated to the museum.

The museum staff in the 1940s did the best they could with the research to accurately portray Rochester. All the information gathered was courtesy of the museum, the Rochester Museum of Arts and Sciences, now the Rochester Museum & Science Center. They started with sketches of Rochester, a book documenting Rochester in 1838 done by Henry O’Reilly, a prominent businessman in 1838 Rochester. The images and descriptions from this book comprise the earliest “picture” and descriptions of Rochester and they thus modeled the diorama after it. The museum made the changes they could to try to make the diorama accurate. The general research of the time period was one factor that the museum tried to implement, and one of their

³⁰RMSC, label copy, *Rochester in 1838: Young Lion of the West*, 2017

accomplishments was installing lighting into the diorama. When the intention of donating it to the museum was known, they made more of an effort to make it special. The diorama would transition from daylight to nighttime at the push of a button, and that's when the faint lighting would come on.

The work on the diorama as it appears at the RMSC was done by Vera Achen Jewett, Frank Limpert, and Norman Akeley (which was related to Carl Akeley). Painting the diorama took two and half years and after the Christmas season was through, Louis W. Johnston donated the model to the museum. This event was documented in major newspapers of the time.³¹

By 2000, the diorama was showing its age with decades of dust accumulation and a falling sky. The Rochester Museum & Science Center; first applied for a New York State Council on the Arts grant (NYSCA). To identify the history of the diorama and come up with a plan for how to conserve it. Looking at some of the grant descriptions from the 2000 application grant, we acquire new information about the building of the diorama and the condition it was in. For example, it goes into detail about the materials used to build the diorama,

It consists of a wooden platform overlaid with various construction materials: cardboard, sheet metal, Masonite, wood, Kraft paper, and numerous unidentified materials. The landscape and built-up features are composed of plaster and other moldable materials, as well as wood, metal and Masonite. The buildings are similar; made from lightweight construction materials such as Masonite and pressboard, cardboard, and wood. Decorative elements are painted and there is abundant use of natural materials to impart a realistic appearance; sand and small stones on the roadways, twigs and branches for plants and trees, and bits of wood etc for woodpiles.³²

Reading the materials list closely we see that the model was built with very simple materials, things that were not made to last. The grant mentions this as one of the reasons for their

³¹RMSC, newspaper clippings, "*Syracuse Herald America*" Rochester as it was in 1838, April, 14th 1946

³²RMSC staff; "Conservation Overview Report on the 1838 Diorama", 2016

research. “The materials used in construction are not designed for strength or longevity. They have become brittle over time; short-term glues have weakened and desiccated, and the various cardboards and paints have been compromised from decades of cycling through extremes of temperature and relative humidity.”³³

After this initial condition report, the museum wanted to make some overall improvements.

They described it by saying

Conservation of the diorama will require general surface cleaning with specialized tools and techniques. Access to the diorama will have to be via a cantilevered support which will allow the conservator to work from above. Cleaning will be followed by stabilizing loose and fragile elements and repairing damages. Depending on what is revealed in the process, cosmetic treatments will be undertaken as necessary.³⁴

The grant they applied for was a planning grant only and they could only specify what they needed, not actually perform any of the care the diorama needed.

In 2017, in commemoration of the 200th anniversary of the Erie Canal, the RMSC applied for a NYSCA Arts, Culture and Heritage New Initiatives Implementation Grant and the Erie Canalway National Heritage Corridor grant. This helped the museum revamped the diorama with an artistic restoration and add complements of VR technology. At that point the diorama would have been on display for seventy years, time had taken its toll. Not to mention the historical incongruencies that under better research came to light. The grant from 2017 gives a full scope of the museum’s intentions; they wanted to:

- Retain specialists in the conservation and restoration of historical dioramas to refresh the diorama’s look, restore its functionality, and ensure that it will be available for the enjoyment of future generations; the restoration process will be put on public view to

³³RMSC, “NYSCA Arts, Culture and Heritage New Initiatives Implementation Grant draft” from 2017

³⁴RMSC, “NYSCA”, (Courtesy of Kathryn Murano Santos)

excite visitors with experiences at the intersection of art, cultural heritage, and the conservation sciences.

- Re-create the diorama’s failed lighting effects with modern technology and light the diorama for the holidays, adding seasonal interest to the display and compelling stakeholders to return annually to enjoy the piece, and to share it with future generations.
- Renovate the diorama’s façade and create new interpretive signage and object displays leveraging the foundational concept of Rochester as the nation’s first boomtown after the opening of the Erie Canal.
- Enhance cultural interpretation through the addition of “augmented reality” (AR) technology to juxtapose and illuminate “then and now” vignettes.
- Merge art and engineering in the development of a skills-based canal model-making program that will be offered as a 2017 summer camp program. The construction of physical and mental models and concepts of scale and proportion are important understandings that translate to success in young learners.
- Deepen interest and awareness of the diorama and its relevance to the community by engaging a marketing agency to develop a crowdfunding campaign for the project (including final exhibit branding), create digital assets for web-based promotion, and develop a visitor survey tool to gauge the success of the reinterpretation.
- Celebrate the Erie Canal’s bicentennial through events and partnerships that boost local tourism.³⁵

After specifying the purpose of their new project, the RMSC received the grant and started on the restoration project. Subsequently the RMSC received another Erie Canalway National Heritage Corridor grant and help from the Verizon Foundation to install two VR vignettes. Currently the diorama is in pristine artistic condition with a VR vignette displaying an overlay of modern Rochester on top to the diorama created by a gradual build-up of the modern cityscape over time.

³⁵RMSC, “NYSCA Arts, Culture and Heritage New Initiatives Implementation Grant draft” from 2017(Courtesy of Kathryn Murano Santos)

Aaron Delehanty's Interview

One very interesting perspective on dioramas is the perspective of the artist who creates them. Aaron Delehanty is the staff artist for the RMSC and was the team leader on the rehabilitating of the Rochester diorama. In a TEDx presentation, he said “These precise recreations of the world have the amazing ability to bring us up close to people and animals that are far away in space and time.”³⁶ Delehanty compares his art to making time machines that show the visitors something that they can't see every day. He also wants it to be known that this wonderful comparison of time machines and dioramas is courtesy of YouTube star Emily Grassley, who came up with this wonderful metaphor.

I had the opportunity to interview Delehanty. Our conversation was very insightful and of course defended dioramas on a new level. We recorded our interview for posterity (see appendix). Delehanty has two undergraduate degrees, one in history and one in studio art. His graduate degree is in painting. He attributes his education and the melding of his passion, history and painting to his interest in dioramas. Delehanty's first diorama projects were in Field Museum in Chicago, when he worked as an artist who makes replicated artifacts. The dioramas he first worked on were about ancient Chinese civilizations and gave him the opportunity to utilize his history degree.

When he came to work at the RMSC, the museum asked him to look at the Rochester diorama that was in complete disrepair. He and his team did an overall evaluation of the work that would be needed, “*to bring the diorama back to its previous glory*”³⁷ and fix any

³⁶Aaron Delehanty “Gallery: The Art and Science of Museum Dioramas.” *ideas.ted.com*, July 13, 2017. <https://ideas.ted.com/gallery-the-art-and-science-of-museum-dioramas/>.

³⁷Aaron Delehanty, in the interview, Feb 26, 2020

*“inaccuracies or problems that the diorama had.”*³⁸ Delehanty explained that as part of their artistic process they conducted research to answer questions about the diorama that came up, like why the specific site of the diorama was chosen, and why the year of 1838 was chosen.

They even developed a walking tour of the original site that the diorama depicts, which is downtown Rochester. The exhibition team and some other museum staff went to see the site and make mental correlations between the actual buildings and the miniature ones they would have to create as well as some of the other the work they had ahead of them. They also used this for context to see the once economically flourishing district of Rochester. He explained that his intent in restoring the Rochester diorama came in two waves, first to help the Rochester community preserve their history, through their most beloved diorama, and second to correct the historical inaccuracies, that the diorama had. He went into detail about how many flags there were in the diorama and that in 1838, the American public was not so patriotic, therefore they remedied that by taking some out and explaining this in the label copy. He also talked about the census of 1840 and how at that time 3% of the population was African Americans, but in the diorama, there were 200 figures and who were all white. So, they fixed this and added some African American figures to it. Also, they added livestock showing Rochester in a more rural way and depicting it more historically accurate.

One focal point throughout the interview was what dioramas possess, that other mediums don't. I asked Delehanty what dioramas meant to him and he answered that they are very important because they are fantastic tools for communication. They tell the viewers stories in a gestalt way. Viewers can imagine themselves here whether it is an animal scene or a scene of

³⁸Aaron Delehanty

peoples; even without reading a label it brings the scene to life seeing everything in the natural context. He also said that dioramas are great tools for telling stories because they entice the imagination and create lasting memories.

In closing the interview, I asked Delehanty, what he thought about the VR experience that accompanies his art restoration on the *Rochester in 1838: Young Lion of the West* diorama. He said that he thinks it is great and, that being in the year 2020, VR brings the diorama into the modern age, it enhances it. He extended this response to include the sad fact of the diorama dilemma, and how VR offers a good way for dioramas to survive into the future. But when asked if VR could replace dioramas, Delehanty said that since we are bombarded with technological and visual information, the mix of the diorama with the technology provides a mental and visual rest from this. A diorama allows viewers to have a break just looking at and appreciating the hard, artful work put into it. The final question was what he would say to the museums that are getting rid of their dioramas, and his answer was the following, “they are works of art, so they have artistic value and therefore should be preserved.” He also said that there are many ways to remedy inaccuracy. He said he understood why museums would get rid of them, they are very costly and time consuming, but that 3D printing offers a bright future for dioramas, because of the quick and easy ability to make miniature or even large things quickly.

Visitors studies

Do you think Dioramas are cool? This was one of the questions on the survey that in a very open-ended way addressed the elephant in the room that is the diorama dilemma. The data that was brought to light with these surveys made the research that was done for this thesis shine as it goes with what this thesis hopes to prove. The survey was also created to help inform the museum about visitor perspectives on the strengths and weaknesses of their Rochester in 1838 project.

The demographic of survey takers mirrored the classic demographic of the museum. Families were composed of different age groups and ethnicities. There were also some couples and lone museum goers of ages ranging from early twenty to forties. There was a total of thirty-five surveys that were given. Something interesting to note was the location of the diorama itself. It is located on the third floor next to an inventor center where children and families are invited to “participate in engineering and design challenges, to tinker with raw materials to create working inventions that can be tested and shared.”³⁹ It is also near a the Electricity Theatre, which “shows a dazzling display of indoor bolts of musical lightning produced by twin solid-state Tesla coils.”⁴⁰ Knowing where the diorama is located in the museum is beneficial in knowing what part of the RMSC’s demographic took the survey.

Also, it is important to state the time period that the surveys were given. The thirty-five surveys were collected during the Christmas season, so a lot of the questions that pertained to Rochester as a city were sometimes answered by visiting relatives stating that they were not from

³⁹RMSC website, Inventor center description, Mason Digital(2020) <https://rmsc.org/science-museum/exhibits/item/4-inventor-center>

⁴⁰RMSC website, Electricity Theatre description, Mason Digital(2020) <https://rmsc.org/science-museum/exhibits/item/6-electricity-theater>

the city or were not answered at all. During this time the museum has a very large attendance, so I was able to get a decent amount of responses from people.

The surveys were constructed with, first an introduction paragraph giving the responders some context. The paragraph included a brief definition of diorama and that the survey responses were going to be used for a thesis. The survey had seventeen questions, six of which were general demographic question. There were two multiple choice questions and the rest were short answer. A picture of the diorama was added, even though the survey was handed out near the diorama, the picture was added for visual effect. Most of the surveys were partially or half filled out, leading to going on an educated guess that perhaps the surveys were too long. This could be beneficial to consider in the future.

While I handed out the surveys, I had my little sister, Noemi do brief visitor observations. She recorded that people would spend an average of about five to ten minutes looking at the diorama. She also recorded that if the family had a younger child with them, they would initiate the child to look closely and point out some features of the diorama. If the family had older children, they would ask them what the child liked the most. This behavior is interesting because it was never a question of whether the child should pay attention to or like the diorama or not, it was always a question of what about it they liked. I found these same results in the survey question of whether people thought the diorama was cool or not, every response included a resounding yes, with a more in-depth explanation of why.

A very important question on the survey was whether they liked the VR experience, or the diorama more, or if they thought that they both worked together. To this question the overwhelming answers was that they liked the diorama. The second most popular answer was that they worked well together. Coming in last place was the VR experience. This poses a very

challenging question, does a modern audience even needs a technological component to be engaged? This might have to do with modern trends of people liking vintage things. Styles of speech and even hairstyles come back from times gone by and everyone now likes to live in their own favorite time period. Also, people like handmade things or specializing in crafts of times gone by. For example, when asked what about the diorama they liked, survey takers answered things like, “I liked the craftsmanship,” or “the little intricate details.”

Meaning making

Meaning making is a very trendy word in museums right now, but what does it mean and what does it have to do with this thesis? In the article called “Is Meaning Making Constructivism, is Constructivism Meaning Making” by George E. Heins, he defines meaning making as “A inevitable consequence between humans’, nature and culture.”⁴¹ Therefore meaning making happens with everything, and it is a learning process that happens unintentionally. The goal for dioramas moving forward should be to try to initiate “meaning making,” whatever that may mean to the visitor. Since we cannot control the meaning that visitors make from our exhibitions, before gutting a diorama, museum staff should conduct surveys in the area and find out what dioramas do for their visitors.

For this thesis and looking back at the survey section, we see that this diorama in particular has a great effect on visitors. Some liked the craftsmanship, some had a nostalgic connection, and some had a more educational approach with comparing Rochester’s modern layout with that of its past. The survey showed helpful results in trying to ascertain what exactly visitors get from the diorama.

One of the sources that directly influenced our writing of the survey was “Resonance and Wonder” by Stephen Greenblatt. In this article he gives the perfect definitions to these terms as it pertains to what I hope to prove true about dioramas. He defines resonance *as* “the power of the object displayed to reach out beyond its formal boundaries to a larger world, to evoke in the viewer the complex, dynamic cultural forces from which it has emerge.”⁴² He describes wonder as the “power of the object displayed to stop the viewer in his tracks, to

⁴¹George Heins, “*Is Meaning Making Constructivism, is Constructivism Meaning Making*,” Jan,1,1999 pg 17

⁴²Stephen Greenblatt, “Resonance and Wonder”, *Bulletin of the American Academy of Arts and Sciences*, Vol. 43, No. 4 (Jan.,1990): 20

convey an arresting sense of uniqueness, to evoke an exalted attention.”⁴³ As discussed in the previous section, there were a lot of survey responses that reverberated one or both of the terms as defined by Greenblatt. Some of the survey responses to a question about the physical diorama, included answers like: “the craftsmanship and small details are impressive!” and “that dioramas add to the visual importance of a place.” These answers although not as expressive as Greenblatt’s definitions go hand in hand with what a resonating and wondrous object in the museums space should be.

Another possible facet of meaning making, that is also a trendy museum term is a sense of place. The surveys brought to light that some of the visitors felt this sense in seeing the diorama. The book *Natural History Dioramas: History, Construction, and Educational Role* includes a chapter titled “Storytelling and Performance in Diorama Galleries” by Keith Dunmall, which matures the idea of creating a sense of place with the visitor.⁴⁴ Dioramas can be compared to movie sets; without them we would not know what is going on and the context of the movie itself depends upon creating the scene. David Glassberg in his article “Public History and the Study of Memory,” defines sense of place two ways: first as a psychological term for place consciousness and a factor in personal identity, then as a term of group communication and collective memory.⁴⁵ A dioramas can call forth memories and personal identity by showing itself as a replica of the places people have a connection to. This type of visual help that movies and dioramas give makes the learning/interaction seamless; it helps bring the visitor’s imagination along for the educational ride, and perhaps igniting “meaning making.” Another chapter of the

⁴³Greenblatt, “Resonance”, 11-34

⁴⁴Keith Dunmall, “Storytelling and Performance in Diorama Galleries” *In Natural History Dioramas: History, Construction and Educational Role*, edited by Sue Dale Tunnicliffe and Annette Scheersoi, 243–50. Dordrecht: Springer Netherlands, 2015. https://doi.org/10.1007/978-94-017-9496-1_18.

⁴⁵David Glassberg, “Public History and the Study of Memory”, *The Public Historian*, Vol. 18, No. 2 (Spring, 1996), pp. 18-19

book *Natural History Dioramas: History, Construction, and Educational Role* written by Cecilia Garibay and Eric Gyllenhaal titled “Habitat Dioramas and Sense of Place: Factors Linked to Visitor’s Feelings About the Natural Places Portrayed in Dioramas,” specifically makes correlations to natural dioramas and sense of place. The chapter uses a previous study to make these claims:

In studies of the dioramas at the Chicago Academy of Sciences (Perry et al. 1995; Fialkowski et al. 1992), visitors recognized that the dioramas represented real places in the Chicago region and discussed connections between the dioramas and the real places—especially those they remembered from previous experiences.⁴⁶

Dioramas, along with active storytelling like a VR experience, worked together to make dioramas an asset to museums. An example of this was in one of the survey responses in the survey I did, the person said that they felt nostalgia in seeing how Rochester had changed over time, but that they still recognized “their city.” This same person said that they had created a new memory for experiencing how the physical diorama and the VR worked together. I was very excited to read this because it fits in with the Hein article about meaning making. He writes that “visitor’s make new meaning based on new experiences and how these fit into what they already had in their mind.”⁴⁷ This means that for this visitor a form of meaning making was accomplished with the diorama!

⁴⁶Cecilia, Garibay, Eric, Gyllenhaal. “Habitat Dioramas and Sense of Place: Factors Linked to Visitors’ Feelings About the Natural Places Portrayed in Dioramas”, *Natural History Dioramas: History, Construction and Educational Role* edited by Sue Dale Tunnicliffe and Annette Scheersoi, Dordrecht: Springer Netherlands, 2015. https://doi.org/10.1007/978-94-017-9496-1_18, pg 210

⁴⁷George Heins, “*Is Meaning Making Constructivism*”, Jan,1,1999 pg 18

Conclusion

Of course, this thesis would not be complete without briefly discussing the limitations of a diorama. It is true that most of them are outdated, depicting offensive messages of Native peoples or incorrectly showing different cultures and historical events. Also, they raise questions about animals and whether we should be displaying their remains. And there will always be a disparity in making dioramas accessible to people with low or no vision.

But there are many ways to deal with these limitations. For example in 2019, the American Museum of Natural History (AMNH) did something incredible with their inaccurate diorama. An article by the *New York Times* give a full account of what happened. The AMNH had a diorama depicting the Lenape, an indigenous tribe, in a very offensive and erroneous way. The article by Ana Fota, quotes Lauri Halderman, the museum's vice president for exhibition, saying, "“We could have just covered it over.”" Instead, museum officials decided on a more transparent approach. "“What was actually more interesting was not to make it go away,”" Ms. Halderman continued, "“but to acknowledge that it was problematic.”"⁴⁸ The article explains further, "“While the scene remains intact, 10 large labels now adorn the glass, summarizing various issues. The largest one, visible from a distance, invites visitor's to “reconsider this scene.”"⁴⁹ These new labels seek to show all sides of history, the real events and the wrong interpretations that also make up a part of history.

In terms of making the dioramas more accessible, a future consideration could be to try what the Canadian Museum for Human Rights did for blind or visually impaired visitor's. An official news website for Canada gave the details:

⁴⁸Ana Fota, "What's Wrong With This Diorama? You Can Read All About It", *New York Times*, March, 2019

⁴⁹Ana Fota, Wrong With This Diorama? 2019

On February 20th, 2016, the Canadian Museum for Human Rights (CMHR) unveiled an exhibit entitled ‘Sight Unseen: International Photography by Blind Artists’. The exhibition showcases photographs taken by blind photographers from across the world. Its focus is to “explore how the blind can often see in ways that the sighted cannot” and coincides with the 10th anniversary of the United Nations Convention on the Rights of Persons with Disabilities.⁵⁰

It further explains the interesting notion that made this exhibition truly accessible,

As part of this exhibit, Sight Unseen is also showcasing 3D printed images that are specially intended for the visually impaired. These printed images are the first of their kind to be showcased in any museum. The 3D images are created by 3DPhotoWorks, a New York based company that “converts any painting, drawing, collage or photograph to a 3Dimensional Tactile Fine Art Print.” The blind can touch the 3D prints to feel the artworks which have “length, width, depth and texture,” allowing them to create a mental image of the artwork. There are also sensors “embedded throughout the artwork that when activated by touch, provide custom audio” which also help provide additional information about the art, and in turn help the blind with creating a mental image of the artwork.⁵¹

This could be an answer to making them more accessible, lifting the glass and letting people touch it. If there is a problem about what this will look like for the preservation of these art piece, some pieces of a diorama could be 3D printed and used as a teaching collection for visitor’s to touch. In terms of the animals, let them not die in vain. I believe since they are already dead why not use them to educate the public, but I know everyone does not share this mentality. For a further consideration pertaining to natural history dioramas, it would be interesting to develop a way to see if visitor’s seeing taxidermy creatures, eradicates the need some people have to hunt them.

In my opinion, I would say, a museum in the educational sense is meant to protect and preserve things from the past to promote understanding and advancement through knowledge of the past. Therefore to remove part of a museum’s own history, its history of exhibition, its

⁵⁰Official Canada website, “*Canadian Museum for Human Rights Showcases Blind Artists’ Photographs, and Touchable 3D Prints for the Visually Impaired*”, June 2016

⁵¹Official Canada website, “*Canadian Museum for Human Rights Showcases Blind Artists*”

dioramas, is going against what museums have sworn to protect. This thesis has shown that something must be said about craftsmanship and the love of art, as people have many different reactions to the detail works of dioramas. Also, new technologies can most definitely contribute to the overall ability to reach audiences. One respondent was very direct in answering one of the multiple-choice questions about which element they liked more; they made a little note saying that they liked the physical diorama, but that the kids liked the VR. Ultimately as a family they agreed that they liked how the both elements worked together. As mentioned previously in the article called “Cycloramas: The Virtual Reality of the 19th Century” by Allison C. Meier, which compares cycloramas, one of the ancestors of dioramas to VR, we can come to the realization that dioramas are not really stagnant but have been ever changing in trying to be immersive and enhancing our realities

Seeing all the artifacts in museums is one experience, but just as in a delicious recipe or a puzzle all the parts must come together to create a culinary treat or a cohesive picture, seeing all artifacts come together along with technological enhancements, activates a bigger picture, a model of the times gone by, and actually puts the artifacts in context. Time is ever changing and so is “meaning making,” but in this thesis shows that when paired with a modern tool like VR, dioramas can shine again as a resonating wondrous tool. Once again, the words of Peter Samis and Mimi Michaelson in the article “Meaning: Making in Nine Acts” come as a calling for museum professionals, who strive to facilitate meaning making. Not only is this a calling but serves to unintentionally defend dioramas and the rich, varied, and valuable experiences they can initiate:

It is the museum staff's role to design for a multiplicity of experiences, to make sure that the broadest number of people can find their way into the objects we present. All of these approaches offer visitor's multiple ways to connect and move inside a story. They also remind us of something more: the primacy of experience itself-be it aesthetic, emotional, intellectual, playful, spiritual, or a combination thereof. Museums are havens for felt

experience. Anything that falls short of that mark is a failure to connect. Visitor's must feel a stake in what they see, and as professionals it is our challenge to open ourselves up to the questions of others.... We must constantly reconsider our own discourse and actively seize the opportunities our publics offer to become more relevant to their lives.⁵²

Consequently, dioramas should be persevered, updated, and love for many generations to come.

⁵²Peter Samis, and Mimi Michaelson, "Meaning Making in nine acts", *Exhibition* spring, 2013, pg 59

Appendix

Most of these pictures are courtesy of Kathryn Murano Santos and the RMSC

Figure 1. Restored Diorama (without VR vignette), *Rochester in 1838: Young Lion of the West*





Figure 2. A close-up of the sky in the damaged Rochester diorama

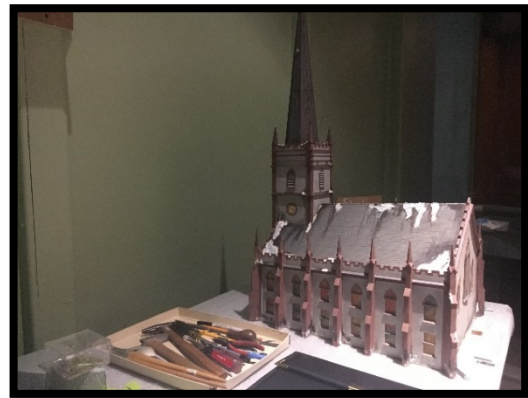


Figure 3,4. Diorama in the restoration process


Figure 5 Artist, Aaron Delehanty and Rich Cristian assessing the work that need to be done to the diorama



Figure 6. Fill out visitor survey (front and back)

The Rochester in 1838 diorama survey

Thank you for stopping by the Rochester in 1838 diorama at the RMSC! A diorama is a model representing a scene with three-dimensional figures, either in miniature or as a large-scale museum exhibit. The Rochester diorama has been here for generations and was recently updated artistically and with virtual reality (VR) technology, and we want to know what you think! Your responses will be used for a RIT senior thesis.



What do you think the view in the tablet is showing? Do you recognize any features or buildings? I think it is showing a modern day depiction of the area of Rochester shown in the original diorama. No, but I don't live here!

Does the tablet experience change your understanding or experience of the physical diorama? If so, how? It makes me more aware of how much has changed in a relatively short amount of time.

Did seeing how much Rochester has changed make you think about Rochester's future? If so, in what way? Yes, hoping not to add more concrete and lose greenery. Hope that cars will be de-prioritized.

What other Rochester scenes would you like to see as additions to the tablet experience (ex. a different season, time period, or characters)? Winter ☺

How does the exhibition as a whole make you feel (ex. nostalgic, surprised, bored, indifferent, excited, awed, enlightened)? A little sad. The community depicted in the diorama is more beautiful to me.

What makes you feel that way? More people walking on the streets and interacting. Cool! lol!

Circle all that apply:

I have created a new memory from this experience

My beliefs/ views have changed from this experience

My attitude has changed from this experience

My knowledge has changed from this experience

I will act differently as a result from this experience

Which do you like more?

a. physical diorama

b. VR technology (like you see in the tablet)

c. how they work together

If you answered a or b to the previous question, why do you like one better than the other? Because it's more lifelike, makes me want to become one of those little people.

Do you think dioramas are cool? yes!

Why or why not? Because for a person like me I like the Dimensions and how it actually looks like a town where you can live.

How many times have you visited the RMSC in the last year? 0

What's your age? 28

Zip code 14609

how do you self-identify?

race/ethnicity Hispanic

gender Female

Figure 7. Survey observations sheet (courtesy of Noemi Lopez)

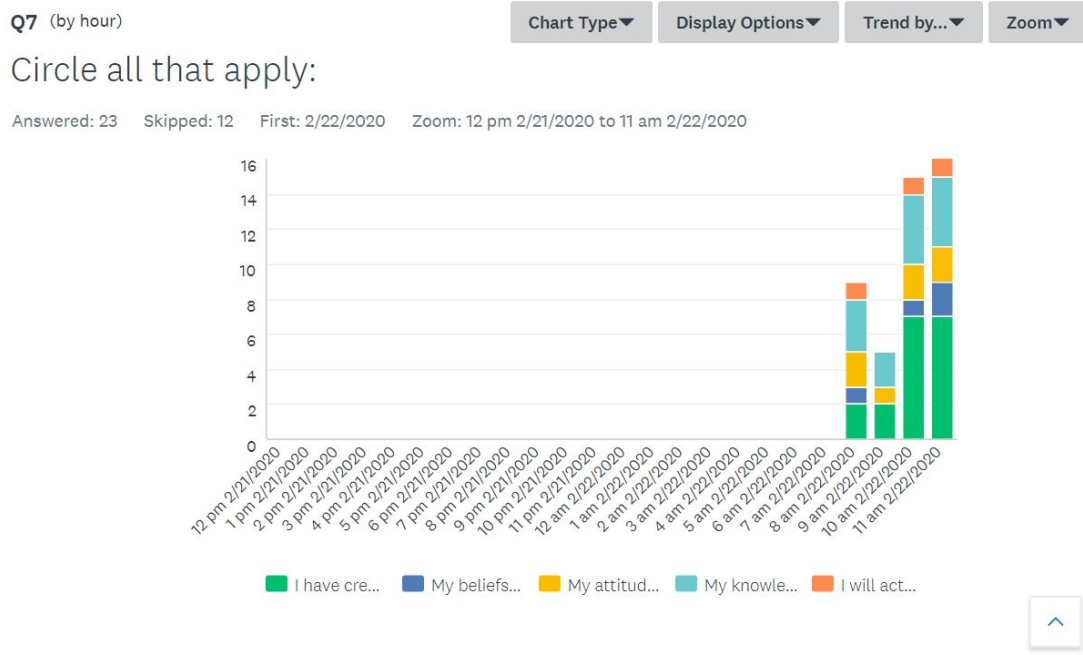
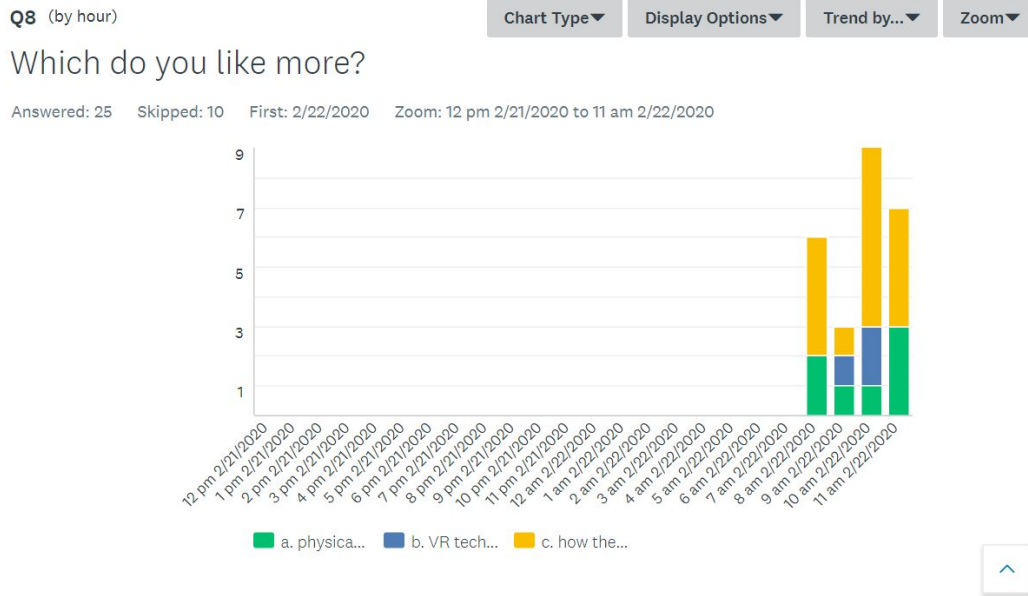
AZ OBSERVATION GUIDE

12/24
7 people

Group Description	Exhibit piece	Dwell time	Label read		Questions		Shared engagement	Conversation	
			Silently	Aloud	Asked	answered		Experiential	Content
one white child (girl)		5min	I		II	I			
one white elderly lady		3min	I		II	I	I		
one white mother and her white child (female)		6min	I			I	I		
two white men		7min	I		III	I	I		
white dad with baby		6min	I			I	III	whole family social	intricate
white couple		6min	I			I			
hispanic teen		4min	I		II	I			
Black family one man and child one female grandma father and daughter		10sec	I			I		took pictures with phone	

- Questions are too complicated
 - takes time to do survey
 - too academic
 - can't recognize poster
 - first VR is confusing
 - when lights go off interest leaves
 - doesn't read table
 - intimidated by survey (survey is too long)

Figure 8,9. Survey Monkey Charts of the two multiple choice question



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