8-1-2018

Play and Exhibitions: Expanding Definitions Within Museums

Helena Sizemore
University of Denver

Follow this and additional works at: https://digitalcommons.du.edu/etd

 Part of the Education Commons, and the Museum Studies Commons

Play and Exhibitions: Expanding Definitions Within Museums

Abstract
This thesis is an exploration of the utilization of play, as a method for visitor engagement, within the context of the museum. Play, as a method for learning and engagement, is often a contested topic between scholars and practitioners within the museum field. This is in part due to the ambiguous nature of defining play, the ever-present dichotomy between work and play, and the struggles museums find in balancing education and entertainment. The Denver Museum of Nature and Science in Denver, Colorado names play as part of one of its core values. Using anthropological theoretical and methodological approaches, I examine the impact of social, historical, and economic contexts on the creation of museum core values. Based on these findings, I stress the importance of defining play within a museological context and recommend a definition of play that is specific to the context of the Denver Museum of Nature and Science.

Document Type
Thesis

Degree Name
M.A.

Department
Anthropology

First Advisor
Christina Kreps, Ph.D.

Second Advisor
Esteban Gomez

Third Advisor
Alison Krogel

Keywords
Denver, Colorado, Education, Engagement, Museum, Play

Subject Categories
Education | Museum Studies

Publication Statement

Play and Exhibitions: Expanding Definitions within Museums

_____

A Thesis

Presented to

the Faculty of Social Sciences

University of Denver

_____

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts

_____

by

Helena Sizemore

August 2018

Advisor: Christina Kreps, Ph.D.

Author: Helena Sizemore
Title: Play and Exhibitions: Expanding Definitions within Museums
Advisor: Christina Kreps, Ph.D.
Degree Date: August 2018

Abstract

This thesis is an exploration of the utilization of play, as a method for visitor engagement, within the context of the museum. Play, as a method for learning and engagement, is often a contested topic between scholars and practitioners within the museum field. This is in part due to the ambiguous nature of defining play, the ever-present dichotomy between work and play, and the struggles museums find in balancing education and entertainment. The Denver Museum of Nature and Science in Denver, Colorado names play as part of one of its core values. Using anthropological theoretical and methodological approaches, I examine the impact of social, historical, and economic contexts on the creation of museum core values. Based on these findings, I stress the importance of defining play within a museological context and recommend a definition of play that is specific to the context of the Denver Museum of Nature and Science.

Acknowledgements

There are many individuals whom deserve my thanks for providing both the encouragement and intellectual support needed to complete this thesis. First and foremost, thank you to the University of Denver Department of Anthropology for the opportunity to further my studies. Second, I would like to thank my defense committee members: Dr. Christina Kreps, Dr. Esteban Gomez, and Dr. Alison Krogel. I would also like to give a special thanks to Dr. Alejandro Cerón.

Thank you to Brooke Rohde and Anne Amati for the countless museum experiences and learning moments you provided over the past two years. Your guidance and words of support and wisdom are things I will never forget. I would also like to thank my family, specifically my mom and dad. Without your constant love and support I never would have had the courage to pursue my dreams of higher education.

Lastly, a very special thank you to the wonderful staff and volunteers at DMNS. Thank you for being so open to talking about and sharing all of the work you are doing. Without you, the research for this thesis never would have been possible.

- Helena

Table of Contents

List of Figures

Chapter 1: Introduction

In his article, *Some Principles of Museum Administration*, Franz Boas, considered to be the father of American anthropology, famously wrote: "Museums may serve three objects. They may be institutions designed to furnish healthy entertainment, they may be intended for instruction and they may be intended for the promotion of research" (1907, 921). Ten years after Boas' assertion, John Cotton Dana, a scholar of both libraries and museums during the early 20th century, published his first issue of *The New Museum*. In this publication, Dana approaches topics such as "How to stimulate interest in a local museum [and] [h]ow to construct a museum which shall interest and help its community" (1917, 10). Although it has been over a century since Boas and Dana first shared their beliefs concerning how museums may interest, entertain, and educate the general public, their words still spur developments within the field of museum practices. Museums in the 21st century still strive to be institutions that entertain and educate while also maintaining their local community's interest. This thesis approaches these topics through a study concerning the appropriateness of play within the institution of the museum.

Over the past 20 years, scholars within the fields of anthropology, psychology, education, and technology have noticed a trend toward more playful experiences in museums (G. Hein 1999; Knerr 2000; Resnick 2004). Although the topic of play in museums has been approached in scholarship and through popular media, it has not been addressed in a critical and reflexive manner. This lack of reflexivity creates a gap

between scholarship and practice in museums. In this thesis, I explore the utilization of play within the context of the museum through a case study at the Denver Museum of Nature and Science (DMNS). Below is a short anecdote relaying how I came to focus on this topic.

On Sunday, May 7th, 2017, I had just completed my shift volunteering at DMNS when I decided to observe guests in the exhibition *Expedition Health*. I chose this specific exhibition due to an article written by Lilia Ziamou, a visual artist and writer for Huffington Post, that relates interactives to play and learning through the assertion: "Learning through physical activities and play increased visitors' involvement" (2012). Within *Expedition Health*, there are many opportunities for visitors to be active.

I had visited the space many times before, but only during hours when the museum was unoccupied. On this particular day, the exhibition came to life as guests interacted with exhibition components and one another. I watched guests climb the bouldering wall; check their heartrates while racing on the stationary bikes; dance in front of a virtual screen as a skeleton mimicked their movements; and skip in front of a green screen to measure their stride length. The space was noisy, and guests ran around with abandon.

After observing the exhibition, I moved to a quieter space in the museum. *The Wildlife Halls* proved to be an excellent place to find the solitude I required to review my notes from the day. I settled in a chair overlooking a diorama depicting a moose in its natural habitat. Only after sitting for a moment staring at this diorama with its beautifully painted landscape, did the stark contrast between the two spaces become apparent. From one hall to another, the museum seemed like two different worlds. A sense of

contemplation overtook me when I considered that had I visited DMNS just forty years ago, the diorama halls would have been the main attraction.

This anecdote is representative of more than just a comparison between two different museum spaces. It speaks volumes about the developments that have taken place within museum practices. Most museum scholars can agree about one thing: museums have drastically changed over the last century. In the production of museum exhibitions, "times change, expectations change, demographics change, and opportunities change" (Kruger, Clancy, and Haglund 2013, 65). Rapidly fading are the days when visitors came to museums for quiet reflection while taking in pieces of priceless artwork or strolling through diorama halls. In many science and natural history museums, exhibition design has shifted, thus rendering diorama halls almost as endangered as the animals and landscapes they represent (Kutner 2015). In her chapter entitled, *Interactivity: Thinking Beyond*, Andrea Witcomb, scholar of cultural heritage and museums, discusses marketing pushes during the 1980s that "suggest a distinction between interactives and interactivity, on the one hand, and ordinary displays of objects and images, on the other" (2006, 353). Museums such as The National Science and Technology Center in Australia, La Habra in California, and the Science Museum in London have long been associated with interactive elements. With the influence of digital technologies in the 21st century, the association between museums and interactives is only growing stronger (Witcomb 2006). That is not to say that visitors cannot still participate in quieter, reflective activities but that museums are now offering a variety of experiences for a variety of guests.

Throughout my research, I continued to adopt a critical and reflexive stance. Michael Ames, a scholar of critical theory in museums, explains that in adopting a critical stance, "The objective, then, is not simply to criticize museums but also to attempt to locate them (and the critiques) within their social, political, and economic contexts" (1992, 5). Therefore, in studying play within the context of museums, I must also study the context in which museums exist.

Within societal context, museums are often viewed as places of leisure. However, museums are also expected to uphold their place as institutions of informal education. The case study presented in this thesis is intended to contribute to how and why play should be considered a value in a nature and science museum. Is it appropriate for a science museum to incorporate a focus on play, and if so, what does that emphasis on play look like? These topics will be explored through a focus on one of DMNS's core values: "We are curious, creative, and playful" (DMNS 2018a).

In conjunction with critical and reflexive methodologies, I also utilize the theory of play in anthropology. Anthropology recognizes play as an ambiguous concept that requires definition based upon context and is thus not transferrable across cultural boundaries. In some cultures, there is no specific term that can be directly translated to *play*; therefore, care should be taken in its use when performing ethnographic research or applying museum practice based on play cross-culturally. DMNS does not yet have a standard definition of play as it applies to the context of the museum. Therefore, this thesis will also use cross-cultural analysis and responses from participants to offer a definition of play within the context of DMNS.

Chapter Summaries

   Chapter Two provides a brief background of how museums seek to engage their visitors and a review of relevant literature. I begin this chapter with the history of democratization in museums and then provide an overview of the history of the Denver Museum of Nature and Science (DMNS). The goal of this chapter is to explore how museums have previously interacted with visitors and how they are now becoming more focused on engaging their communities and publics. This chapter will also provide an introduction to DMNS's strategic plan, mission, and values.

   Chapter Three introduces the theoretical framework that guides this research. I examine the history of the anthropological theory of play, briefly describe other fields that have studied play in the past, and review studies that are relevant to my own research. Scholars often mention play and its association to learning when tying play to museum spaces. I will address this association, the ambiguity of the term *play*, and how these factors affect my research. This chapter concludes with discourse regarding the importance of reflexive, critical museology and its application in museums.

   Chapter Four outlines the research design applied in this thesis. The research design offers information regarding the processes which guided data collection and analysis. In this section, I state my research question and provide justification for why I chose DMNS as the research site. I also explain the methodologies employed during fieldwork. Predominantly, I describe how I applied ethnographic, qualitative methods within the museum space.

Following the description of methodologies, I outline the details of my data collection and analysis. It is important to note that although these are detailed in separate sections, data collection and analysis occurred simultaneously during my research. My positionality as an anthropological researcher and student of museum studies became important as research progressed and are also discussed in Chapter Four. To conclude this chapter, I discuss the ethical considerations associated with research.

Chapter Five details the results of my thesis. I also present discussion alongside these results. The opening section of Chapter Five is an exploration of the meaning of play. For this section, I utilize answers from participants regarding the meaning of the term *play* and a cross-cultural analysis of the term. For the cross-cultural analysis, I cite specific case studies in which anthropologists study words that represent play. These studies show the similarities and differences between how cultures view and understand the concept of play. The culmination of this section is the creation of a definition for the term *play* within the context of DMNS.

The second section of Chapter Five focuses on why play is incorporated in the core values of DMNS. I present analysis of responses from the participants of this study, which focus specifically on when and why play is considered a core value. This section also contains details concerning how DMNS responds to hot topics such as balancing play with learning and who should be allowed to play within museum spaces.

The final section of Chapter Five focuses on specific exhibition components in *Expedition Health*. As I explore five of the components of this exhibition, I provide quotations from participants that explain why they believe these specific components encourage play. In tandem with participant quotations are pictures and descriptions of

these exhibition components. I also reference my own participant observations to discuss what play may look like as visitors interact with exhibition components.

As mentioned previously, I present the discussion of results in tandem with the results of my research. For discussion, I review topics and studies mentioned in the background section and relate them to the findings of this research. In this way, I am able to provide commentary on both participant responses regarding play and scholarly work from various fields.

This thesis concludes with my final thoughts concerning play in museums. I offer commentary regarding the whole of my research in addition to recommendations for future research. This section includes recommendations for the exhibition that informed most of my research, *Expedition Health*. The recommendations that I offer will regard audience engagement and play within the exhibition.

Chapter 2: Background and Literature Review

In this chapter, I explore the history of museums and public engagement and the history of the Denver Museum of Nature and Science (DMNS). Themes covered include: engaging the public in museums, museums and communities, and the creation of core values. These themes are further addressed in the analysis of the results of this thesis.

Engaging the Public

Museums were not always the public institutions we see today. Historically, the word museum is derived from the term *muse*. In Greek mythology, the Muses were daughters of Zeus and acted as embodiments of the arts and sciences. According to Paula Findlen, professor of history, during the Renaissance a *musaeum* was "most traditionally the place consecrated to the Muses" (1989, 25). These were places for higher thinking and scholarship and as such, spread throughout Europe. The practice of collecting, although not the predominant purpose of the early *musaeum*, did exist among the educated elite.

As European powers "discovered" and explored numerous parts of the world, the practice of collecting grew, and many of society's elite started their own private collections. In *Museum Basics*, Ambrose and Paine state, "The first use of the term museum in English was in 1682; it described the collection of strange, rare and exotic

things that the gentleman Elias Ashmole gave to the University of Oxford" (2012, 11).

Many gentlemen followed Ashmole's example and entrusted their collections to universities. Scholars of the day studied these items in university or private settings meaning that museums, for a time, were meant only for conducting research and serving the upper class. However, as reading and writing became prevalent through public education, and individuals moved to cities during the Industrial Revolution, there was a movement to make other forms of education more accessible. According to Ames, this process, known as democratization, also included the shifting of large private collections "into public or government ownership, and museums began to open to the public" (1992, 17). With the democratization of museums also came the museum profession. Staff were hired to interpret and organize objects. Some museums sought to attract visitors by enticing them with curiosities from around the world. Others designed exhibitions that catered to specific interests. As interest in certain topics grew, the field of museums expanded and specialized. Elaine Gurain, a museum scholar and consultant, proposes five categories of museums: "object centered, narrative, client centered, community, and national" (2006, 48).

Scholarly debates, taking place for over a century, have questioned the feasibility of museums upholding their place as elite educational institutions while also being accessible to the public. In 1907, Franz Boas asserted that museums should be used for both entertainment and education (1907). Prior to Boas' assertion, in 1889, George Brown Goode, a scholar and museum administrator, focused on the museum of the future stating:

> The museum of the future in this democratic land should be
> adapted to the needs of the mechanic, the factory operator, the day-
> laborer, the salesman, and the clerk as much as to those of the
> professional man and the man of leisure (1889, 263).

Too often ignored, is the time when museums were places of leisure and entertainment for the upper class. Young men partaking in their "grand tours" of Europe were visiting museums as much for leisure as for education.

Following the work of both Goode and Boas, John Cotton Dana is one of the first professionals to create exhibitions specifically catered to audiences. He sought to educate and entertain the public by creating exhibitions in which the public could see themselves (Duncan 2009). During the early 1900s, Dana worked to establish museums and libraries meant for public use. He wrote of the new museum as a place to "Entertain, and be ready to try to interest and instruct" (Dana 1917, 18). Arising from this work, comes a focus on visitors when creating museum exhibitions. However, before knowing how to develop exhibitions catered to visitors, museums must first acknowledge who their visitors are, where their interests lie, and how they learn.

In the latter part of the 20th century, museums shifted toward a focus on visitor research. Kathleen McLean, a museum professional specializing in exhibition design, was at the forefront of this shift. She believes that visitors are of the utmost importance. Visitors come to museums for a variety of reasons, and not all visitors interact with exhibitions in the same manner. Through metaphorically writing, "instead of placing our objects on pedestals, it's time we placed our visitors on pedestals as well" (McLean 1996a), she is stating her opinion that museums should focus on visitors as much as objects. McLean also emphasizes that many visitors come to museums for social

interaction and entertainment. Thus, museums should begin looking to entertainment industries such as Disney for an example of proper guest treatment (McLean 1996a). However, McLean also notes the importance of educators in ensuring that exhibitions are developed with content that the public can understand. Thus, museums should study visitors in order to find out how to properly provide them with entertainment and education.

Other scholars such as John Terrell, an anthropologist at the Field Museum in Chicago, are adamantly opposed to the Disneyfication of museums. Published in 1991, his article, *Disneyland and the Future of Museum Anthropology*, is more focused upon the lack of collaboration among museum professionals. Terrell emphasizes the importance and effectiveness of the team approach in museums. He also details the struggles which the Field Museum encountered during the 1970s as it competed against Disneyland and other entertainment industries.

The three types of museum professionals that Terrell describes when discussing team approaches in museums are the curators, educators, and exhibitions designers (1991). Terrell defines curators as staff responsible for the informative nature of exhibitions. Based on research, they write exhibition labels and ensure the scientific accuracy of the information presented. The educators are responsible for the accessibility of the information being presented and ensuring exhibitions are designed with the public in mind. Lastly, exhibition designers are responsible for making exhibitions visually appealing. During the 1960s and 1970s, as visitor attendance began to drop, curators in many institutions found themselves being faulted for their practices. Terrell provides a sarcastic summary of the accusations which curators endured:

It is common knowledge, after all, that curators do not care about the museum public. They just want to do exhibitions to impress other curators in museums. They also don't realize what everyone else in museums knows: people don't read labels. […] Only curators, you know, like to look at dried-up, broken old things (1991, 150)

In an effort to increase visitor attendance, many museum boards chose to remove the responsibility of content design from curators and instead entrust this task to educators. Before this time, educators were "long the underdogs of the museum world" (Terrell 1991, 149). This change in museum dynamics in association with an emphasis placed upon the visitor created a rift between the different museum professionals. Terrell's final assertion is that if museums continue in this manner they will cease to be museums at all and will simply either become or fall to Disneyland (1991, 153).

When viewed in historical context, Terrell's article is a commentary on the growing pains museums have undergone when shifting towards being more visitor focused institutions. McLean's article in comparison occurs after the newfound status of museum educators has been solidified and a focus on visitors has become prominent. This does not, however, make any of Terrell's arguments less valid. Even with educators moving to a more prominent position within museums, many scholars note the difficulties which museums are having in balancing education and entertainment. Indeed, Hilde S. Hein, prominent scholar of museum theory, believes, "Museums are probing the boundary between learning that is 'fun' and fun that is 'merely' entertainment" (2000, 126). Yet, there are those that ask why not both? Is it so difficult for museums to be both educational and entertaining to the public? Boas certainly believed that museums can and must engage the public by providing both educational and entertaining experiences.

However, Eilean Hooper-Greenhill, a professor of museum studies at the University of Leicester, attests that "Museums and galleries are fundamentally educational in character […] They are not fundamentally entertaining; entertainment in museums has always been an ulterior motive" (2013, 140). Regardless of whether it be inherent or an ulterior motivate, museums are still attempting to incorporate entertainment. The 21st century is a challenging time for museums because even after many long years of debate, they are still working to find the balance between education and entertainment.

Museums must consider that visitors have many options for how to spend their leisure time. In a 2006 International Committee on Management (INTERCOM) conference paper, Christian Waltl, a cultural consultant, reinforces the importance of visitors: "Let's face it: museums without visitors would be like lifeless, empty halls with no purpose" (2006, 1). He argues, similarly to McLean, that studying visitors should be a top priority of the museum. Waltl concentrates on the use of audience development in understanding how to attract visitors. Entertainment is used to entice visitors while information encourages them to stay and learn. He also shares Terrell's vision of a team approach with museum professionals working together to create an educational and entertaining environment for guests. In this manner, Waltl provides a balance between McLean and Terrell's arguments.

John H. Falk and Lynn D. Dierking also believe that creating a dichotomy between education and entertainment is problematic. As leading figures in free-choice learning and museum research, they believe that "most museum visitors see learning and fun as a *both-and* rather than an *either-or* proposition" (Falk and Dierking 2012, 44). Even with the knowledge that attracting visitors is vital to an institution's economic and

political status, each institution must determine what methods to employ. These methods cannot be homogeneous because "even if we agree that museums have an overarching public responsibility, they should not be programmatically uniform" (Gurian 2006, 48).

DMNS and Engaging the Public

In 1868, Edwin Carter moved to Breckenridge, Colorado to scientifically explore and collect the plants and animals of the Rocky Mountains. Word spread of his work, and in 1892, prominent leaders in Denver bought Carter's entire collection for $10,000. They also purchased collections of crystallized gold, butterflies, and moths with the intention of opening a museum. In 1908, the Colorado Museum of Natural History opened its doors. Boasting extensive collections of flora and fauna (DMNS 2018b), the museum sought to introduce the public to the Colorado region. Museum leaders hired a director, and with the addition of staff to develop new exhibitions and visitor programming, the museum continued to expand.

Some of the most notable events for the museum occurred between 1926 and the middle of the 20th century beginning with the discovery of Folsom points in Colorado and the opening of world-famous dioramas. Within the first fifty years of opening, the museum attracted over one million visitors. As the museum attracted more interest, it expanded, building around the existing structures resulting in an edifice that is as much artifact as the objects it holds. In 2000, the Colorado Museum of Natural History made the decision to change its name to the Denver Museum of Nature and Science. With this

change, the museum also began to focus more on "hands-on experiences for guests" (DMNS 2018b).

DMNS, an accredited museum through the American Alliance of Museums (AAM), "served nearly 1.9 million people" (DMNS 2016) in 2016. Of the nearly 1.9 million people served, 1.47 million were guests to the physical museum space while the remaining were served through outreach activities (DMNS 2016). Also in 2016, DMNS "achieved operating revenues of $35,085,000" (DMNS 2016). The majority of the museum is supported through revenue from admissions sales in addition to grants from private and corporate sponsorship and the Scientific and Cultural Facilities District (SCFD) described below.

Although DMNS does attract tourists, its main visitor base comes from Denver and the surrounding areas. For this reason, many of the exhibitions draw directly from experiences that local Coloradans may share such as hiking, awareness of Colorado's connection with mining and paleontology, and plants and animals local to the region. As an institution, DMNS strives to encourage the communities of Denver to be further engaged with science by providing exhibitions and experiences which relate to its particular audience. For this reason, regional focus is often a customizing feature in DMNS's exhibitions (Kruger, Clancy, and Haglund 2013). *Expedition Health,* the exhibition that served as my case study, seeks to educate visitors about their own health by drawing upon the experience of hiking a local fourteener (a mountain which has a peak rising 14,000 feet above sea level) named Mount Evans.

DMNS, as well as many other institutions in Colorado, is in the unique position of receiving funding through a voter approved taxation. Each year, The Scientific and

Cultural Facilities District (SCFD) distributes funds from a 1% sales tax to cultural

institutions throughout the Denver, Colorado metropolitan area. These institutions are

divided into three tiers which act as qualifiers for the amount of money an institution may

receive. According to the 2016 report, DMNS as a tier one organization, received

$8,971,998.10 through SCFD funding (SCFD 2016). This funding accounts for 20-22%

of DMNS's operating budget (Interview #2- Educator 1). DMNS uses some of this

funding to offer free days sponsored by SCFD. In 2018, SCFD will sponsor 18 free days

at DMNS (DMNS 2018c). Admission to DMNS costs, on average, $9 for adults, $8 for

seniors, and $6 for children and juniors. These do not include the costs of special events

or group pricing. Because SCFD is a voter approved taxation, DMNS is economically

affected by the public's perception of its relevance. The SCFD sponsored free days are a

way for DMNS to reach out to the people of Denver, and in a sense, prove its relevance.

In 2014, DMNS initiated work on its latest strategic plan to date. This plan began

with a focus on how to better serve the communities of Denver. Though DMNS has long

been in the process of democratization, its leadership is now choosing to publicly

demonstrate its focus on serving and engaging the Denver communities. DMNS's

mission, vision, and values shifted in order to reflect this focus. The new mission reads:

"Be a catalyst! Ignite our community's passion for nature and science," (DMNS 2018a).

This statement is a symbol of DMNS' desire to become more oriented and publicly

engaging with various communities. The use of an exclamation mark in conjunction with

words such as *catalyst*, *ignite*, and *passion* are used to evoke excitement whereas the

phrase *our community* is used to give a sense of togetherness. Museums have the power

to shape societal ideals, however, as Shelia E. R. Watson, author of *Museums and their*

Communities states, "such shaping of ideas depends not only on visitors' individual senses of themselves […] but also upon the perspectives, values, and understandings of the communities to which they belong" (2007, 1). In order to ignite the community's passion, DMNS needs to identify their communities and question how they may better serve them.

Elizabeth Crooke, a professor of museum and heritage studies, notes that within past decades, the need to make museums relevant to the community:

> has swiftly moved to combining museums with some of the key social policy issues, tackling exclusion, building cohesive communities, and contributing to community regeneration (2011, 170).

This movement arose out of the need for museums to have "useful roles in contemporary, democratic society" (Ames 1992, XIII). However, even with this emphasis on serving communities, Crooke also notes that the term *community* is rarely defined. On her popular blog, *Museum 2.0*, Nina Simon, executive director of the Santa Cruz Museum of Art and History, asks museum professionals how they define community. She says that a museum can use qualifiers such as geography, identity, and affinity in order to determine the communities they serve (Simon 2015). Although her qualifiers were met with some criticism through comments on the post, most agreed that museums should identify who they serve. However, as the concept of community has been contested for years, simply identifying a 'community' is not enough. In 1992, after attending a conference hosted by the Rockefeller Foundation and Smithsonian Institution, Ivan Karp noted, "While exhibitions and collections were contested, they were not nearly so contested as relationships among diverse museums and diverse communities" (1992, 3). The problem with simply defining a community is that communities are not static (Bennett, Grossberg,

and Morris 2013). As with cultures and societies, communities are subject to change based upon political and social climates.

Other critiques determine that too often, the term *community* is "to be sprayed on to any social programme, giving it more progressive and sympathetic cachet" (Cochrane 1986, 51). Utilization of the term *community* cannot, on its own, imply inclusion because communities are not homogenous. Porchia Moore, a doctoral candidate of museum management at the University of South Carolina urges, when communities are identified, "let us avoid the tendency to think of monoliths" (2015). A community should not be solely identified based upon the perceptions of a museum. Watson believes this is because, "through associations with communities, individuals conceptualize identity […] Thus, a community is essentially self-determined" (2007, 3). If we attempt to divide people into a specific community, we are erasing all of the things that make them different. These critiques, however, are not suggesting to completely throw out the term *community*, rather museums should be conscious of how they approach and utilize the term.

In her 2010 journal article, *Museum as Soup Kitchen*, Elaine Gurian suggests that "museums have not explored their potential opportunities enough when dealing with their communities" (2010, 71). Through working in various museums and now providing consultation, Gurian has experienced the potential of relationships between museums and communities. However, she is also quick to note that each museum must decide what level of community outreach is appropriate for their specific institution. Thus, museums may choose to complete community outreach which still falls under their mission statement.

Julian Spalding, former director of the Glasgow Museums and Galleries, claims, "Museums are living institutions" (2002, 23). In this, Spalding affirms that as the context in which museums exist changes, so must the museum's purposes and practices. The communities which a museum serves can directly affect its societal context. DMNS has chosen to reach out to the communities of Denver through their Community Collaboration Project. Through surveys and community forums and summits, DMNS is attempting to gain a better understanding of who its various communities are. Based upon these, DMNS has shifted its mission and core values to reflect its context.

In an effort to visually depict this shift in focus, DMNS tasked two artists with creating the following representations. The artist of Figure 1 summarized DMNS's 2013-2017 strategic plan. It depicts projects which were undertaken during each year. Room has been left so that DMNS can further extend this plan to include projects for 2018 and beyond. The artist of Figure 2 created a drawing which summarizes a day of community discussion. The ideas presented in this drawing come from community members expressing their vision of DMNS as a welcoming institution. The creation of this new mission, vision, and core values is an example of how DMNS is reaching out to diverse communities. One of the core values states, "We are curious, creative, and playful" (DMNS 2018a). Play is often directly associated with entertainment but increasingly has been finding its way into educational institutions. This became the core focus of my research: to not only study why DMNS was choosing to incorporate play but how play can be related to education and learning.
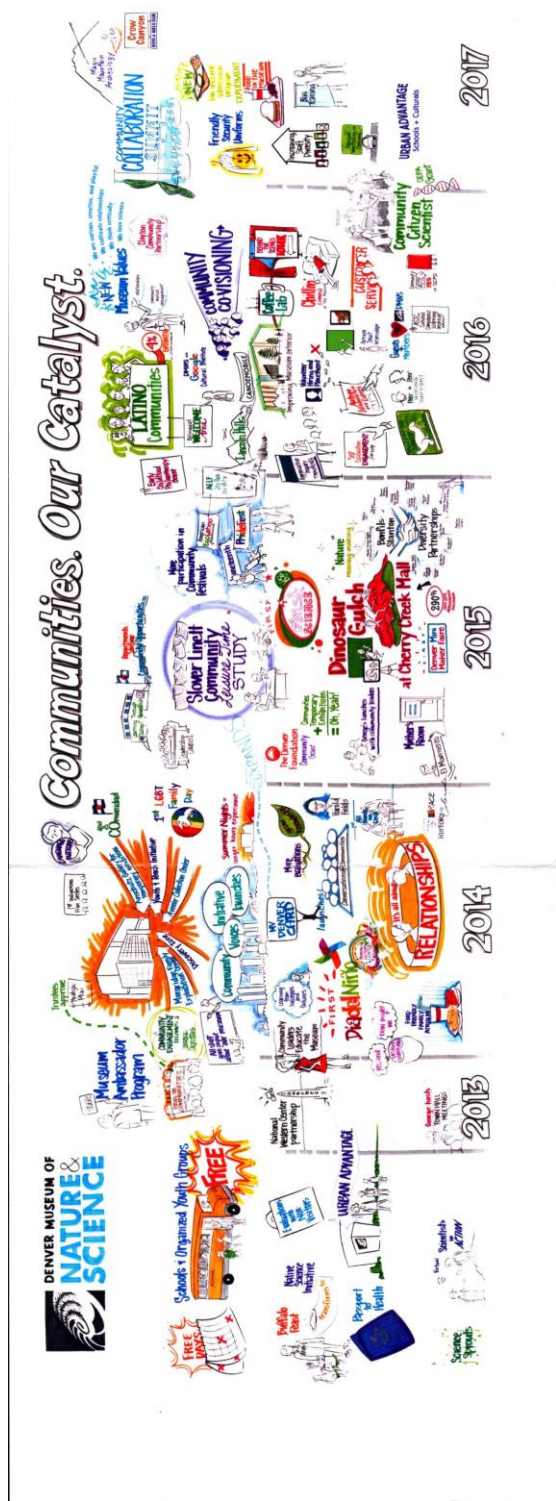
©Denver Museum of Nature & Science

Figure 1: A moment-in-time capture of the communities' projects and learnings the Museum undertook between 2013-2017; room in 2018 was for staff to fill in their new ideas and ongoing accomplishments.

©Denver Museum of Nature & Science

Figure 2: Summarizing the day-long discussion at the community summit in February 2017, an artist captures the different ideas articulated by community members.

Participatory, Interactive, or Hands-on

In 2000, DMNS as an institution made the decision to incorporate more hands-on activities into their exhibitions. Through the artist's depiction in Figure 2, it is clear that DMNS intends to implement interactivity and interactive technology in their exhibitions as well (Figure 2, Top Possibilities, Easiest to Implement). Hands-on experiences are not uncommon within museums, and although many scholars attribute the phenomenon of interactive and participatory exhibitions to the 20th and 21st centuries, they have been around for much longer. During the 19th century, the Urania in Berlin became a highly acclaimed museum due to its scientific theater and models that could be activated by visitors (McLean 1996b). However, exhibitions of these types were rare. It was not until

the mid-20th century with children's museums and science centers that participatory and interactive exhibitions became commonplace.

Most notable in the existence of participatory and interactive exhibitions is the Exploratorium in San Francisco, California. Opening in 1969, the creators of the Exploratorium "were convinced that museum-like institutions were a neglected form of education in America" (Oppenheimer 1972). Frank Oppenheimer, the founder, sought to encourage broader forms of learning through enticing the senses of guests with participatory exhibitions. Since its opening, many science museums and technology centers have followed the Exploratorium's example in creating exhibitions designed for participation and interaction (Cole 2009).

It is important to note that although often used interchangeably, the terms *participatory*, *interactive*, and *hands-on* do not refer to the same phenomena. The term *hands-on* is the most general and refers to an object being tactile. Scholars also differentiate between the terms *participatory* and *interactive*. According to Kathleen McLean, "*participatory* defines the visitor in relation to the exhibit (the visitor participates in the exhibit), *interactive*, puts more emphasis on the exhibit component's ability to *react* to visitor stimuli" (1996b, 93). For example, a visitor may go into a museum space where they touch an object. The action of touching objects is *hands-on*; however, it is not necessarily *participatory* nor is it *interactive*. If a visitor is encouraged to touch various objects as they move through an exhibition, they are being *hands-on* in touching the objects and *participating* in the exhibition. Therefore, they are being both *participatory* and *hands-on* but still not considered *interactive*. In order for an exhibition to be termed *interactive*, the visitor must be able to alter something within the exhibition

and receive a response. In the same example, if a visitor were to be encouraged to touch and manipulate objects in an exhibition which results in an outcome based upon their input, the exhibition can be termed *interactive*. Throughout my time studying *Expedition Health*, I observed how a museum may utilize *hands-on*, *participatory*, and *interactive* elements to engage the public.

Chapter 3: Theoretical Framework

In this chapter, I provide the theoretical framework that guided my research of play in museums. I pull from the anthropology of play to discuss the syncretic approaches used in the study of play as well as to address the ambiguity of play. I also discuss the contributions of new museology and critical, reflexive museology to the study of museums today.

Anthropology of Play

At a 1972 American Anthropological Association (AAA) symposium, Margaret Mead stated that little to no anthropological research had been conducted concerning how play functions in the lives of those within a particular culture (Sutton-Smith 1977, 222). Her comments spurred the anthropological community into action, and in 1974, the Association for the Anthropological Study of Play formed. Play could be studied by both physical and cultural anthropologists because, as Edward Norbeck, a professor of anthropology, argues, "human play is both a biological and cultural universal," (1974, 4). While Norbeck may have been correct that play is universal, not every culture plays in the same way. Rather, according to the *Encyclopedia of Cultural Anthropology*, play came to be seen as "a framing or orienting context consciously adopted by those engaged in it" (Lavenda 1996, 936). The context in which play occurs and how it is understood

within that context is very important in the anthropological study of play. Thus, it is

important to first identify the context in which play will be studied and then work to

discover how play may be defined within that context. It is also important to clarify that

although anthropology does possess a theory of play, this theory has been developed

through an interdisciplinary approach and draws heavily from biology, psychology, and

education. This will become apparent in an exploration of the theory of play.

Play Theory

  Huizinga, a Dutch historian, is often the first social scientist credited with creating

a theory of play. In a reprint of his 1938 book, *Homo Ludens. Proeve Eener Bepaling*

Van Het Spel-Element Der Cultuur, (Playing Human: A Study of the Play-Element in

Culture) he defines play as:

> a voluntary activity or occupation executed within certain fixed
> limits of time and place, according to rules freely accepted but
> absolutely binding, having its aim in itself and accompanied by a
> feeling of tension, joy, and the consciousness that it is different
> from ordinary life (Huizinga 1950, 28).

Huizinga suggests that play is paradoxically a non-serious action that can be

differentiated from everyday, normal activity but is also essential to culture as a precursor

to learning. His definition was met with immediate criticism by anthropologists. Critics

believed that Huizinga was ignoring the uses of play as a non-frivolous activity,

especially the role of play in learning. These criticisms however, did not prevent

Huizinga's definition from being adopted by many anthropologists.

  Based on Huizinga's work, French sociologist, Roger Caillois developed

classificatory systems of play. His systems are still used today to classify what type of

play is taking place in a given context. These categories include: competition based,

games of chance, or mimicry. Other classifications were also created such as those by

Gordon Burghardt, a scholar of psychology and animal behavior. Burghardt focused

more on creating classifications which could be used to identify play when completing

research in the field:

> Play is incompletely functional in the context in which it appears;
> functional actions in play do not by themselves contradict play, but
> in play these actions are typically combined with actions that do
> not contribute to the achievement of a goal.
> Play is spontaneous, pleasurable, rewarding, or voluntary.
> Play differs from more serious behaviors in form or timing.
> Play is often repeated, but not in stereotypic forms.
> Play is initiated in the absence of acute or chronic stress.
> (Schousboe and Winther-Lindqvist 2013, 233).

Although Burghardt's classifications may help researchers to identify playful actions,

they do not denote the importance of the player's actions or their relationships.

Published in 1973, Geertz's *Deep Play: Notes on the Balinese Cockfight* focuses

on the symbolic and deeper meanings of culture that are at play:

> Much of Bali surfaces in a cock ring. For it is only apparently
> cocks that are fighting there. Actually it is men […] much more is
> at stake than material gain: namely, esteem, honor, dignity,
> respect- in a word though in Bali a profoundly weighted word,
> status (1973, 15-16).

Geertz's writings were not meant as a comment on play and games, however

anthropologists such as Thomas Malaby, professor of anthropology at the University of

Wisconsin, note:

> To be sure, Geertz's response to materialist approaches to culture
> was desperately needed, and it formed the vanguard of a
> productive connection between sociocultural anthropology and the
> humanities that continues to this day. What should interest us

about this treatment of a game, however, is the way it trades one kind of reductionism for another (2009, 207).

Malaby is interpreting Geertz's work as a comment on how gambling and games in society can be symbolic of social order. He is not the only scholar to interpret Geertz's symbolic approach in this manner. As a professor of media and information at Michigan State University, Casey O'Donnell teaches his students about the reflective nature of play in culture through examining *Deep Play: Notes on the Balinese Cockfight*. He says:

> More than anything, Geertz [offers] a vision of play deeply imbricated within/of/as culture. […] Play happens. Play is experienced. Play is observed. Play can be theorized, but it will always remain a very empirical occurrence fraught with context and specificity that falls away as we extract it from those moments (O'Donnell 2014, 407).

O'Donnell also believes, "A push to see games and play as thoroughly imbricated in/of/as culture ought to be seen as Geertz so eloquently put it, 'like any art form'" (2014, 411). Here, O'Donnell is construing Geertz's interpretation of the cockfight as play within/of/as culture which can be studied "like any art form" (Geertz 1973, 443). Following O'Donnell's commentary, Bjarke Liboriussen and Paul Martin, assistant professors of digital and creative media at the University of Nottingham Ningbo China, note in their 2016 article *Regional Game Studies*, "Perhaps the most famous example of non-Western epistemologies challenging conventional notions of play comes in Geertz's (1973) essay 'Deep play: Notes on the Balinese cockfight'" (2016). They go on to say, "The essay has since been used by several scholars to contest the idea of games as separate from everyday life" (Liboriussen and Martin 2016).

The point of this commentary is not for me, personally, to reinterpret Geertz's study of the Balinese cockfight and culture. Rather, it is to show that his research has

been interpreted by anthropologists and game scholars to provide commentary on play and games as they are located in and as a representation of culture. Through their interpretations of Geertz's works, these scholars are trying to show that play and games are not separate from everyday life and can be serious.

Shortly after Geertz's work in Bali, Gregory Bateson studied the communication associated with play. Bateson emphasizes that gaining an understanding of play can come from understanding how play is communicated. He asserts that play employs metacommunication. Through nonverbal actions, it can be communicated "this is play" (Bateson 1976) ensuring that all those partaking are aware of the nature of their involvement. Bateson also notes the paradoxical nature of play stating that something such as a bite when defined within the context of play is not truly a bite. In conjunction with his other reasonings, Bateson challenges Huizinga in that play is separate from everyday activities. Although he believes that due to its paradoxical nature, play has an element of something being untrue (a bite is not really a bite), he also notes that play is a social part of everyday life.

Through an analysis of Huzinga and Burghardt's work, it is evident that play is viewed as differing from serious activity. However, in the interpretations of Geertz's work and though Bateson's study of communication, play can be serious and is not separated from everyday life. Thus, as social scientists continued to move forward in their study of play, they contended with the dichotomy between work and play or between serious and non-serious actions.

The grounds for opposition between work and play enters scholarship much earlier than Huizinga's writings. In Weber's classic 1905 work, *The Protestant Ethic and*

the Spirit of Capitalism, the bourgeois business man is referred to as being held in high regard within the Puritan society. This dichotomy is deeply rooted within Christian values, dating all the way back to the Reformation. After the Reformation, the ordinary man could no longer be assured salvation through receiving the sacraments of the Roman Catholic Church. Protestants began to search for other ways to assure themselves of their salvation and concluded that salvation was related to vocation. Vocation relates to not only work within the church but also to various trades to which the Protestants were called. As Weber states, "The Puritans *wanted* to work in a calling" (1905, 6). They believed that work was a Christian value whereas play was self-indulgence and in their society, "permitted only to children, and then with severe restrictions" (Stevens 1977, 238).

In 1978, Phillips Stevens, Jr., then President of The Association for the Study of Play, determined that the dichotomy between work and play should no longer have a role in play theory. He wrote:

> What I want to say is this: in our efforts to categorize behaviors
> which we think fall within, or beyond, the headings of "play" and
> "play-forms," and especially in our painstaking, even religious,
> efforts to distinguish conceptually between what is "play" and
> what is "work," we have gotten ourselves into a rut (1978, 17).

Although some studies still continue utilizing this dichotomy, many others have sought new methods for studying and understanding play (Specific studies will be cited in Chapter Five as cross-cultural comparisons).

In the late 1990s, Sherry Ortner, a cultural anthropologist who studied Himalayan mountaineering, notes that although mountaineering is most often connected to leisurely pursuits, it provides work for Sherpas and is often dangerous. In her book, *Life and Death*

on Mount Everest: Sherpas and Himalayan Mountaineering (1999)*,* she uses the term *serious games*. In a reflection of her own writings, she confirms that "a serious games perspective is seen as something that is actively played, oriented toward culturally constituted goals and projects" (Ortner 2006, 129). Thus, Ortner's study of serious games is more about how actors in society play their specific roles and less about true games.

Similarly, to Geertz's writings being interpreted as connected to play, Ortner's assertion that serious games were not connected to real games did not prevent her from becoming part of anthropological research regarding games and play. Again, anthropologists such as Thomas Malaby often cite Ortner as yet another crusader in the attempt to dissolve the false dichotomy between work and play (Malaby 2007). As an anthropologist, Malaby writes extensively of gambling in Greece and in conjunction, how play and games do have an effect on everyday life. He has also published two articles detailing how games act as a reflection of true life and how the expansion of virtual games into society is forcing anthropologists to reexamine the play element in culture.

The studies of play previously mentioned come together to create a paradoxical theory of play in which play may or may not be serious and may or may not be separate from everyday life. They also show the influence of interpretations of research not originally meant to provide commentary on play and gaming. This is the ambiguity and confusion surrounding the topic of play which Brian Sutton-Smith addresses in his book entitled just that: *The Ambiguity of Play* (1997). After many years of research, the theory of play is still underdeveloped because play can be ambiguous in its own meaning. Some of this ambiguity may be illuminated by referencing some of the first studies of play. In these studies, anthropologists realized that no cultures interpret play exactly the same.

Through sociolinguistics, anthropologists are still recording and studying various terms which cultures use to reference play. Play itself is an activity that can only be defined by the context in which it is found; and one person's perception of play may not always match another's. Therefore, depending upon the context and perception, play may or may not be serious, and it may or may not be separate from everyday life. It is important to identify the context in which play will be studied before determining how play may be defined within that context.

Play and Learning

This study concerns the ties between entertainment and education which can translate to the ties between play and learning. Many anthropological ethnographies concerning play are created through a syncretic approach of drawing information from various other fields. In fact, just fourteen years after its origin, The Association for the Anthropological Study of Play changed its name to The Association for the Study of Play to show its multidisciplinary focus. Members came together from varying disciplines, to examine play from their own disciplinary backgrounds. This thesis will also use an interdisciplinary, syncretic approach to explore why museum professionals incorporate play into the realm of museums. This section will provide a brief background of the relationship between play and learning within the fields of biology, psychology, and education.

Biological Studies of Play

One study that anthropologists from the early stages of studying play used as guidance was the 1971 study, *Depression in Primates*. This study of Rhesus monkeys was completed by American psychologists, Stephen J. Suomi and Harry F. Harlow. During the course of their research, they determined that monkeys that were caged and kept separate from others were inept and did not understand the social order. These monkeys were also often aggressive and even injured themselves. Their explanation for this behavior was the lack of time the caged monkeys spent playing with other monkeys (Suomi and Harlow 1971). From this study, the researchers concluded that play is essential for teaching primates the rules of social interaction and order. As acknowledged earlier in this section, anthropologists such as Bateson also studied primate behavior to make determinations concerning play.

Psychological Studies of Play

In psychology, play has often been studied in terms of human development. Jean Piaget is a figure frequently referenced in the psychological study of play. His theory of play is often referred to as the "developmental stages theory". This theory suggests that children go through various stages of play as they cognitively develop. In this way, children are developing through exploration as opposed to simply being given information. Piaget determines that playing helps children to think more creatively and innovatively as opposed to just learning what is already known.

Piaget breaks his developmental stage theory into four stages of cognitive development: During the first stage, children use their five senses. They may make

repetitive movements in experimental ways to test the outcomes and are very focused on

exploring toys. During the second stage, children are learning to speak and therefore will

begin using their imagination and playing pretend. They will also ask a lot of questions as

a method of trying to learn more. In the third stage, children begin to think more

logically. The fourth and final stage lasts until adulthood. During this stage, children will

use their past experiences in order to think logically and process thoughts (Piaget 2008).

Psychologists today are still using Piaget's developmental stage theory to describe

the ways in which children can learn in museums. For this reason, children's museums

often employ Piaget's stages to find which methods of play work best for which ages:

> Piaget believed children to be little scientists, who were driven to
> perform everyday "experiments" that would reveal the nature of
> the world. […] Amazingly, children's play with objects not only
> teaches them about the particular objects with which they
> personally interact, but the knowledge gained through exploratory
> play can help children generalize about broad categories of similar
> subjects (White 2012, 12).

As Piaget's stages end once a child becomes an adult, he does not explore why play may

be important for adults.

Several other psychologists however have studied the importance of play in

adulthood. In most cases, they determine that play is a way to create a healthy, balanced

life. Play, or recreation as it is commonly referred to in adulthood, opens the mind for

social activity and creativity, which can boost productiveness in many cases. Adult

coloring books have gained a lot of attention in recent popular media; and some

psychologists consider them a way for adults to reconnect with the positive influences of

play time (Keller 2015). In 2016, *Psychology Today* explored whether or not taking a

mental break to color was actually productive or if it was all just a marketing gimmick.

They determine that although more research was needed on the subject, preliminary results suggested that the creativity and repetitiveness of coloring can increase mental productivity (Silber 2016).

Educational Studies of Play

Educational studies of play tend to focus more on the primary levels of education for young children. In many cases, the studies include specific instances of play being utilized within the classroom. Museums as informal places of learning, often hire staff educators who are able to take these studies and directly apply them to educational materials being used in exhibitions or outreach programs. This is very useful when studying the direct application of play-based learning (Briggs and Hansen 2012).

In many ways, educational studies of play are based upon the same findings as psychological studies. They are both focused on stages during which children and adults alike, play in order to understand more about a specific subject or the world around them. However, in education there is more often a strong focus on learning styles. The belief that different types of people learn in different ways is a driving force behind educational research.

The work of John Dewey, the philosopher, has been very influential to the field of education. Dewey believed that you learned through doing and through experience. He insists that the traditional style of education involving transmission of facts from teacher to student is becoming outdated. Dewey does not believe that this style should be completely dissolved, rather that it be combined with a progressive style of education that focuses on experience as a method of learning (Dewey 1938). Many museums are

incorporating Dewey's emphasis on experience and various learning styles to provide

experiences that reach a larger audience. One breakdown of learning styles consists of

visual, kinesthetic, and auditory. *Visual* means learning by seeing; *kinesthetic* means

learning through sense of touch; and *auditory* means preferring to listen and learn.

Visual is the most obviously applicable learning style for museums. In the history

of museums, a focus on the visual has been placed at the top of the hierarchy of the

senses as a method for displaying objects (Edwards, Gosden, and Phillips 2006). In this

hierarchy, seeing and hearing are understood to be the senses which have the power to

create rational knowledge. The other senses such as touch, taste, and smell are not

thought to produce this same type of knowledge. It is thought that this Western way of

thinking created:

> strategies of stratification and specialization that have had the
> effect of marginalizing the sensory intelligence of numerous
> groups struggling within world systems of discourse and
> knowledge, a process that has been integral to colonialism and the
> concomitant practices of museums and other institutions (Edwards,
> Gosden, and Phillips 2006, 7).

However, today many museums are attempting to move towards a more multisensory

approach. A "multi-sensory approach to gallery display […] helps everyone. People with

impaired sense are able to use others, and all people have an opportunity to select their

preferred sensory learning mode" (Hooper-Greenhill 2013, 113). Thus, as more

multisensory approaches are integrated into museums, visitors are given more choices of

how to approach learning.

Another museum approach that draws from visitor choice is constructivism. In the

vast literature on education in museums, constructivism has been given a prominent place

and is the term that is often applied to visitors utilizing prior knowledge and experiences to inform their own understanding (G. Hein 1999). George Hein, originally a chemist, became a prominent figure in the study of museums as he explores how museums may create exhibitions with a constructivist approach. It is thought that by providing visitors with objects and experiences to which they can already relate, visitors can interpret an exhibition in their own way and develop their own understanding and meanings. The concept of constructivism within the context of a museum exhibition is relevant to this thesis because DMNS is attempting to create exhibitions that visitors can relate to through their experience of living in Colorado. However, this concept can also be problematic to visitors without prior knowledge and experience of living in Colorado or if they were unfamiliar to the many concepts and design elements which I later discuss in Chapter Five: Findings and Analysis.

Anthropology of Museums

In her forthcoming book, *Museums and Anthropology in the Age of Engagement,* Christina Kreps, a professor of anthropology and museum studies, states that museum anthropology is both "anthropology practiced *in* museums and the anthropology *of* museums" (Kreps, n.d.). This thesis is concerned with the anthropology of museums, which is very different both in origin and in practice than anthropology in museums. The practice of anthropology in museums is often concerned with studying and caring for collections. The anthropology of museums is instead concerned with the study and

36

critique of museum practices and emerged during the 1980s and 1990s along with

postmodern and postcolonial critiques.

Mary Bouquet, a cultural anthropologist who studies museums, summarizes the

initial relationship between anthropology and museums:

> That relationship is often couched in historical terms: anthropology
> started out in the museum in the nineteenth century, but academic
> anthropology sloughed off its material residue to become a fully-
> fledged social or cultural discipline in the universities after the
> fieldwork revolution of the early twentieth century (2001, 2).

As fieldwork became the defining feature of anthropology, museums slipped into the

background. That is not to say, however, that museums began to play a lesser role in

anthropology. Franz Boas, considered the father of American anthropology, began his

research working in museums during this time period. Yet, even with prominent

anthropological figures like Boas and Margaret Mead working in museums, anthropology

became more academically oriented and thus centrally located in universities.

However, during the mid-20th century, museums began to problematize and

question their own practices. The following sections will explore the history of new

museology and critical, reflexive museology. These movements greatly affected the

anthropology of museums and will be directly related to the research presented in this

thesis.

New Museology

Published in 1989, Peter Vergo's book, *The New Museology*, describes

museology as "a relatively new discipline. Not until long after the foundation of the first

museums did anyone think of them as a phenomenon worthy of study" (1989, 3). Vergo

classifies *new* museology simply as a dissatisfaction of what scholars were then labeling

as *old* museology. This sentiment is restated by Peter Davis, a professor of Museology at

Newcastle University, in his book *Eco Museums: A Sense of Place*. Old museology is

chastised for its lack of theoretical development and its inherent focus on objects. New

museology, in contrast, became more focused on "the positionality of the museum and

the situatedness of institutional discourse" (Grewcock 2014, 171).

Although new museology became a beacon for those resisting the Eurocentric

practices of museums, its origins are often traced to community and eco-museums. Eco-

museums first originated during the 1960s and 1970s in France as the creation of Georges

Henri Rivière and Hugues de Varine (Davis 2011). They were designed as spaces which

encouraged communities to focus on their own tangible and intangible heritage while also

focusing on the development and welfare of these communities.

In 1972, during the United Nations Educational, Scientific, and Cultural

Organization (UNESCO) session in Santiago, Chile, members from UNESCO and the

International Council of Museums (ICOM) met to discuss museums (Davis 2011).

Following this discussion, UNESCO solidified the role museums were meant to play in

communities and societies:

> The museum is an institution in the service of society of which it
> forms an inseparable part and, of its very nature, contains the
> elements which enable it to help in moulding the consciousness of
> the communities it serves, through which it can stimulate those
> communities to action by projecting forward its historical activities
> so that they culminate in the presentation of contemporary
> problems; that is to say, by linking together past and present,
> identifying itself with indispensable structural challenges and
> calling forth others appropriate to its particular national context

> […] The transformation in museological activities calls for a
> gradual change in the outlook of curators and administrators and in
> the institutional structures for which they are responsible. […] The
> new type of museum, by its specific features, seems the most
> suited to function as a regional museum or as a museum for small
> and medium-sized population centres (in Davis 2011).

In 1974, following their 11th General Assembly, ICOM released their own statement regarding the role of museums. They determined that museums should reach beyond their tradition role of collecting objects and "interpret the demands of the community in its cultural, environmental, and demographic position" and labeled the museum as "an institution in the service of society" (ICOM 2010).

After this pivotal turning point in the role of museums and further development of new museology, many anthropologists began to study the effect on communities that museums may have. Through her research in the Ak-Chin Indian Community, Nancy Fuller shows the ways in which eco-museums and community museums may empower a community. In a conference paper delivered at the *Museums and Communities* conference, Fuller described an eco-museum as "extend[ing] the mission of the museum to include the responsibility of human dignity" (Fuller 1992). The philosophy adopted by practitioners of new museology calls for museums to be more concerned with the needs of the communities which they serve and thus integrate themselves into society. The new museum of new museology may be described as:

> a democratic, educational institution in service of social
> development. The new museum differs from the traditional
> museum not only in the recognition of the museum's educational
> potential, but also in its potential for promoting social change.
> Conventional museums are seen as object-centered whereas the
> new museum is people centered and action-oriented (Kreps 2003
> 9-10).

Thus, new museology can be viewed as a movement which impacted many studies and museologies that developed thereafter.

New museology directly approaches the concept of how museums position themselves within their communities and thus society as a whole. In this case study, DMNS is working to engage its various communities through its new collaboration project. Through this collaboration initiative, DMNS is hosting forums and summits to determine how it might best meet the needs of its communities. As a result of this project, DMNS has shifted its core values and strategic plan. In this case study, it appears as though through collaboration, DMNS and its communities are experiencing a reciprocal effect in which the communities are voicing their needs and DMNS is altering its practices and values to fit those needs.

Critical and Reflexive Museology

Although much of the new museology movement seemed to approach the practice of the anthropology of museums, this focus came into its own during the 1980s in conjunction with postmodern and postcolonial critiques of museums. Michael Ames, considered to be one of the first practitioners of critical museology, urges museum anthropologists to "study ourselves, our own exotic customs and traditions, like we study others; view ourselves as 'the Natives'" (1992, 10). He believes that through viewing ourselves as 'natives' and museums as "artefacts of society" (Ames 1992, 15), anthropologists may properly study and aim appropriate critiques at the practices of museums.

During the 1990s, the anthropology of museums grew as anthropologists began to realize the use of doing anthropology at home (Ames 1992a). In the early stages of the anthropology of museums, anthropologists such as Richard Handler and Eric Gable realized "there has been almost no ethnographic inquiry into museums as arenas of on-going, organized activities" (1997, 9). Thus, anthropologists began employing ethnographic field methods to study nearly every aspect of the museum. As Sharon Macdonald says in her book, *Behind the Scenes as the Science Museum*, through "defamiliarizing the familiar," (2002, 7) anthropologists may study the process of collecting, creating exhibitions, and museum/community relationships, among other things (Ethnographic methods in museums will be further discussed in Chapter Four: Research Design and Methodologies.)

As aforementioned, Ames believed that critiques should not exist for the sake of themselves but be located within contexts. Christina Kreps reiterates Ames' critical theory in her book *Liberating Culture: Cross-Cultural Perspectives on Museums, Curation, and Heritage Preservation*. She uses critical theory to: "[look] at the museum and curatorial practices as cultural artifacts in themselves, or rather, as cultural constructs located in specific social, political, economic, and historical contexts" (Kreps 2003, 5). In viewing the context of museums as suggested by Ames and Kreps, museum anthropologists can study the influence of outside pressures and the effects on museum practices that they may have.

Reflexivity is an important aspect of critical museology. Published in 1999, Shelley Ruth Butler's book *Contested Representations: Revisiting Into the Heart of*

Africa, details her study of the controversial *Into the Heart of Africa* exhibition at the

Royal Ontario Museum. She approaches the subject of reflexive museology:

> […] reflexive museology changes the way in which we think about museums and their collections. Focusing on museum practices of collecting, classifying, and displaying material culture, reflexive museology is informed by the premise that exhibits of other cultures are neither neutral nor tropeless, despite claims otherwise. Rather, exhibits are informed by the cultural, historical, institutional, and political contexts of the people who make them (2008, 22).

Reflexivity requires museum professionals to be self-reflexive as well as critical of their own practices. In being self-reflexive, "frames are challenged, fragmented, and made transparent as the museum declares itself an active player in the making of meaning. What's typically marginalized or beyond the frame is brought inside of it to dissolve the frame itself" (Marstine 2006, 5). Here, Janet Marstine, an art historian, is showing that reflexivity can change the frames in which museums typically operate. It can overturn ethnocentrism and make improvements for future practice.

Museums are becoming more aware of the Eurocentric epistemologies and interpretations (Kreps 2003) that have driven their practices for so long. With this awareness comes an understanding of how museums may shift their values and practices to become more inclusive. In this manner, critical, reflexive museology is most often associated with the decolonization of museums. However, in her forthcoming book, Christina Kreps states, "The contemporary reflexive museum is associated with self-awareness and self-critique as well as awareness of the need for democratic participation on the part of visitors and various stakeholders" (Kreps, n.d.). Therefore, reflexivity can help museums to define their relationships with their various stakeholders and visitors.

Although critical, reflexive museology has, in the past, been utilized to critique curatorial practices, interpretation, and representation in museums, the same method of viewing museums within economic, social, political, and historical contexts can be applied to non-curatorial practices. If we are to be true critical thinkers, we must also question decisions made about a particular museum's mission statement, educational programming, authoritative voice, community relations, and many other institutional choices that can affect the interpretation of objects and concepts (Marstine 2006). This thesis seeks to do so through questioning what contexts resulted in play becoming incorporated into the values at DMNS. Through viewing play within the contexts surrounding DMNS, I am better able to comment upon whether or not play is appropriate within the larger context of museums.

Chapter 4: Research Design and Methodologies

Outlined in this chapter are the methods and questions that drove this research. I begin by introducing my overall research objective and then provide information regarding the field site, exhibition selection, and methodologies. My position as an anthropological researcher will also be described along with the ethical considerations for this research.

Research Objective

This thesis explores why and how play may be utilized within the context of the Denver Museum of Nature and Science (DMNS). I approach this topic from the perspective of museum professionals to better understand their positionality. Researching the positionality of practicing museum professionals will help illuminate the gaps between practice and scholarship. Current museum practices will also be connected to scholarly resources that address play.

Site Selection

My main research question was: Is a museum focused on nature and science an appropriate place to play, and if so, what does that play look like? This question centers around DMNS's core value, "We are curious, creative, and playful" (DMNS 2018a).

DMNS was chosen as the field site for this project because of this core value and because the staff were open to communication. *Expedition Health* was selected as the focus exhibition because it attracts visitors of all ages and contains many interactives. I was also intrigued by this exhibition because it approaches health from the viewpoint of a hiker while on a hike. When describing how exhibitions at DMNS have developed over the decades and where *Expedition Health* fits within the dynamic, Frances Kruger writes:

> Regional focus is another customizing feature, with a common thread of how the body adapts to life at 5,280 feet above sea level (Denver's elevation) and adjusts to conditions on an expedition up 14,258-foot Mount Evans. The expedition theme weaves together science and experience, provides a compelling story line, honors that Museum's natural history roots, and provides an element of adventure (Kruger, Clancy, and Haglund 2013, 95).

These concepts became a central part of understanding how DMNS sought to engage its visitors.

Opening in 2009, *Expedition Health* was intended to connect museum visitors to their own bodies and new technologies with "hands-on, full-body activities and real anatomical specimens" (Kruger, Clancy, and Haglund 2013, 94). The space was designed so that visitors could participate in an experience that was customized through the use of a Peak Pass card and a virtual learning partner referred to as "expedition buddies." One of the original goals of *Expedition Health* was to create exhibition components meant to entice visitors of all ages and learning styles. As visitors explore these various elements, the Peak Pass records their progress, and a printable report is available at the end of the exhibition.

Within the exhibition space, visitors have the opportunity to check their heart rate while racing others on stationary bicycles, learn what helps their bodies move by dancing

in front of an interactive screen, test the calmness of their brainwaves through

competition, and see how much energy they are expending in relation to their stride

length. The exhibition also offers visitors the opportunity to enter a science lab where

they can perform real science experiments. Other features of the gallery include an area

specifically designed for children ages five and under, a stage for exhibition

programming, and a theater where visitors can enter into an immersive experience. All of

these elements are meant to come together to create an experience which focuses upon

the visitor.

Methodology

My research employs critical theory and reflexive museum practices in

conjunction with ethnographic methods. In this manner, DMNS was viewed as a field site

in which I studied the external and internal pressures that may affect the creation of

museum values. I was also questioning museum professionals concerning their

perspectives. Through this approach I was able to explore not only why play was being

incorporated as a core value but also how play was being utilized within DMNS and why

play may or may not be appropriate within the context of a nature and science museum.

Qualitative Methods

Qualitative research can be used to explore how people experience certain events

or what meaning they ascribe to phenomenon. Qualitative methods can be used to address

hypothesis or question driven research. Through the collection of data including but not

limited to text, photographs, audio, etc., a researcher can gain information that cannot be represented quantitatively or through statistics or numbers (Bernard 2011). The methods which drove my research were the ethnographic methods of semi-structured interviews and participant observation.

The study of anthropology has been connected to ethnographic museums for many decades. In a series of lectures published in 1947, Marcel Mauss, French sociologist and anthropologist, claimed that museology itself was a subcategory of ethnography. His reasoning was that ethnographic museums served as archives for what researchers were studying (Shelton 2011). According to Mary Bouquet, "Ethnographic research is a way of exploring social relations and cultural meanings in all their complexity at a particular time and in a particular place" (2012, 94). Bouquet, a cultural anthropologist of museums, is emphasizing that museums, just as a society or culture, can be studied at a microlevel. The microlevel is typically contextualized as seeing from the 'native' or 'indigenous' point of view. To once again quote Ames, ethnographic research in museums entails "[studying] ourselves, our own exotic customs and traditions, like we study others; view ourselves as 'the Natives'" (1992, 10). This reverses the usual role of the museum professional from researcher to participant. It is also a common practice for ethnographers to "defamiliarize the familiar" (Macdonald 2002, 7). This practice becomes even more vital to ethnographers in museums because it is a crucial element of reflexivity.

Ethnographic research methods can be used to explore how museum collections are created, the creation of exhibitions, and guided tours, among other things (Bouquet 2012). Bouquet also believed that ethnographic research in museums was closely related

to visual ethnographies. This is because museum ethnographers often include visual aids to provide context and support for their reasonings. I have done this in providing pictures and diagrams which focus on DMNS's strategic plan, play, and interactive exhibition components.

The results of ethnography are determined by the context in which an ethnographer is studying (LeCompte and Schensul 2010). Through the use of ethnographic methods, I focus on how these professionals believe play relates to a specific exhibition at a specific time, which makes context even more important. Sharon Macdonald uses ethnographic methods in her book *Behind the Scenes at the Science Museum* (2002). She opens her book with this:

> The aim of carrying out ethnographic research in the Science Museum was to study the construction of science in museum exhibitions, exploring the agendas and assumptions involved in creating science for the public (Macdonald 2002, 3).

Although Macdonald's original intent was to provide an ethnography focused upon how museums are developing science for public consumption, her research acknowledged that outside forces acted upon the Science Museum. Museums are not closed off from other elements of society. Rather, they are open to the outside forces of economics and the larger society in which they are present. If those performing ethnographic research in museums wish to accurately portray their research, they too must view them within these larger contexts. Through the lens of studying the creation of a new exhibition, Macdonald is able to provide commentary for the social and economic situation of museums in Great Britain during the 1990s. In this same manner, I too must view the outside pressures

being placed upon DMNS in order to comment upon the larger situation of museums in America in the 2010s.

Both Macdonald and I also utilize the actor network theory. This theory "recognize[s] that non-human (particular technologies or objects for example) may also be actors and exercise agency" (Macdonald 2002, 7). A very important part of my research was studying the interactive, hands-on, and participatory components of *Expedition Health* and how these may be actors providing agency for play.

Macdonald also acknowledges that museum visitors are consumers (Macdonald 2002). Therefore, museums are providing a product to their visitors. This is important to recognize for ethnographic research in museums because museums are competing with other producers of leisure. In tying the actor network theory to leisure, Macdonald references interactives as something "fun" which museum visitors are often seeking but also that they provide an active experience in which visitors may exercise choice. This aspect will be further developed in Chapter Five of this thesis.

Through the course of this research, I conducted 12, semi-structured interviews with six participants. 11 of these interviews were conducted face to face, while one was conducted via email due to scheduling conflicts with the participant. The 11 interviews which were conducted face to face were recorded using a digital recorder and transcribed with jottings (Bernard and Ryan 2010) which I scribed during the interviews. The semi-structured nature of the interviews allowed me to go into an interview with basic questions but also the flexibility to ask other questions as the interviews progressed. I was also able to probe participants to comment further upon certain topics that became relevant later in my research (See Appendix I for list of questions.)

Participant observation occurred while following participants through a tour of the exhibition. In most cases, I was able to observe not only play in the manners in which participants were describing it but also how participants reacted to play. I was also able to participate through exploring *Expedition Health* on my own and interacting with other visitors throughout the process. These elements of participant observation also blur the lines between an insider and outsider perspective in ethnography. Participation is a heuristic process through which I, as an anthropologist, was able to make discoveries about *Expedition Health* on my own.

It was important for me to observe how each professional reacted to play within the exhibition space because I wanted to gain a sense of how they truly felt about play in museums. Just because DMNS values playful content, does not always mean that staff do not have their own personal opinions. For example, one participant commented on how loud *Expedition Health* was during our interview. Although she enjoyed the fact that visitors were having a good time, she was not ecstatic with the noise level that sometimes impeded on our conversation. Familiarizing myself with the exhibition components of *Expedition Health*, both through self-exploration and through observing guests, provided me with background knowledge that helped in developing questions for participants.

In order to understand how *Expedition Health* might encourage play, I utilized actor network theory to study specific elements and components of the exhibition. This included asking participants about these exhibition components as well as photographing and studying the components on my own. Through comparing what participants said with how the exhibition components looked and functioned, I was able to approach my research interpretations through multiple paths.

50

Data Collection

My research took place over the course of seven months, from July 2017 until January 2018. During this time, I interviewed participants, observed behavioral actions in *Expedition Health*, and researched the history of DMNS and its core values. For research purposes, I chose to interview participants twice. The second round of interviews was meant to build on the first round, which required me to analyze all data from the first rounds of interviews before moving on to the second.

In order to find informants, I used the network of connections I had gathered through volunteering at DMNS. The first of these informants was introduced to me by a volunteer coordinator. As the curator of *Expedition Health*, this first participant was able to not only provide a wealth of information concerning the history of the exhibition but also connected me with others who had either been involved in the creation of or were still working in *Expedition Health*. This pattern continued until I was in contact with the six participants that helped to shape the results presented in this thesis.

Although the participants of this investigation were introduced to me through other participant connections, they were all from different areas of the museum and had backgrounds in various disciplines. Much of this has to do with the structure of DMNS. For each exhibition there is a curator, educator, exhibitions specialist, and researchers. During the course of my research, I was able to interview the original educator, current educator, one of the original exhibitions specialists, the current exhibitions specialist, the current curator of *Expedition Health*, and a specialist from visitor research and evaluation.

The first round of interviews consisted of questions that would help me to better understand why these participants, as museum professionals, thought play was part of DMNS's core values. During this round of interviews, I asked participants to give a general definition of play and whether or not they believed play was an appropriate value for DMNS. Interviews for the first round were all conducted within DMNS.

Questions for the second round of interviews were tailored more specifically towards each participant and their area of expertise. The second interviews, excluding the one taking place via email, were all conducted within *Expedition Health*. This allowed participants to speak directly to what play looked like within that space in conjunction with which elements of the exhibition encouraged play. I found that being immersed within the space with guests present encouraged participants to talk more and to point out specific instances of play. In some cases, participants were prone to simply watch visitors and point to them saying, "that is play". Although this was useful, it left me to provide interesting descriptions of the events taking place based upon notes I was able to record at the time.

It is said that "the direction ethnographic work follows is largely determined by what happens" (Bouquet 2012, 94). This unknown aspect is one of the key features in ethnography. This is why it was so important for me to interview participants twice, once while seated in an informal setting and then again on a walkthrough of *Expedition Health*. By interviewing participants and analyzing their responses before completing a walkthrough, I was able to gage the participants' interests and experience regarding *Expedition Health*. For example, during the first interview, one of the participants informed me that she felt the Optical Illusions show at "Summit Science Stage" was very

playful in nature. On the walkthrough I was able to question her again regarding the show. She pointed out how the space would look when the show was setup and provided a schedule of shows so I could experience them for myself.

Data Analysis

I employed thematic analysis to analyze all data (Bernard and Ryan 2010). This included transcribing all interviews and then searching for patterns and themes located within participant responses. Thematic analysis was very useful in tying together what participants said and in being able to determine whether they had similar or conflicting interpretations. Many of the themes which emerged during this preliminary analysis became part of the ending results and conclusions of this thesis.

Coding was another important step in the analysis of data. This step of analysis allowed me to identify emerging patterns in the transcriptions of recorded interviews. Although not exactly the same as thematic analysis, these two analyses took place simultaneously. My interviews and fieldnotes were transcribed into Microsoft Word documents and then edited to include colors and notations which would denote certain patterns and themes. Open coding (Bernard and Ryan 2010) became very important as I read and then re-read interviews to determine whether the themes and patterns I saw developing were independent of one another or if they could be tied together somehow.

The themes that began to emerge were not so much keywords as they were concepts which could be broken down into smaller themes and concepts. Some concepts and themes which I identified included: ages for play, where to play, varying definitions

of play, public perception of museums, and the role of museums in a community. These larger concepts became the codes by which I sorted and organized all of my data. In the end, I was able to group all of my data under three overall themes that became the sections by which I present my results.

Positionality and Reflexivity

Entering into this research, I already possessed prior knowledge of play being utilized within the context of museums due to my previous experience working in a children's museum. At times, this made research difficult because although I had prior knowledge, I needed to re-contextualize and "defamiliarize" myself (Macdonald 2002). Positionality often refers to how the participants of research view the researcher (Collins and Gallinat 2013). Many of the participants involved in this research knew that I had prior knowledge and would sometimes reference similarities between children's museums and DMNS. In order to work around falling back on my prior knowledge too much, I would ask participants to further explain the similarities they saw.

At this point, it is important to note that all of the participants in this research were female. Studies have shown that while science museums are often dominated by male professionals, children's museums often show the opposite result of female dominated leadership (Wieners 2016). There is thought to be a connection between female leadership in children's museums and the female domination of elementary school education. Historically, the higher levels of the museum profession have been dominated by males. However, academic institutions have noted a large influx of women studying to

be museum professionals. It is believed that "men who entered the field in the 1960s and 1970s are close to retirement and may be replaced by women" (Wieners 2016, 21). Many are questioning whether this gender shift will influence museums in any way. Although I do not have any research of my own to show the gender balance of professionals working at DMNS, these studies would suggest that the movement from a male dominated field to a female dominated one may affect how play is perceived.

Ethical Considerations

There will always be ethical considerations when research involves human subjects. During the course of my research, I determined to minimize the risk of harm through first following the necessary steps to complete proper paperwork and then through taking into consideration the needs of participants. The University of Denver requires that paperwork detailing the research process and potential risks be submitted to the Institutional Review Board (IRB). Working with IRB, I developed a plan for how to obtain consent from informants and keep their identities anonymous (Appendix II).

Many of the participants involved in this research were already familiar with the workings of graduate level research and understood the IRB process. For this reason, they were more than willing to read through and sign documents giving their consent as well as direct me towards others that could help with the process of following copyright rules. They were also able to provide recommendations for wording of questions to make them easier to understand. Overall, working with professionals who already possessed previous knowledge of and experience in completing research proved to be very helpful.

In an attempt to keep all participants anonymous, I will be referring to them using only their professional title in association to *Expedition Health*; however, complete anonymity may be difficult due to the close-knit museum community of Denver. This was outlined on the consent form all participants signed prior to taking part in this research. I also offered all participants a copy of their transcribed interviews. Participants had the option to read through these transcriptions to review what was said during interviews. Each participant will also receive a copy of my full thesis.

Another ethical consideration that came into play during the course of my research was copyrights. This thesis includes statistics and pictures that are copyrighted by DMNS and may only be used and published with their consent. Working with DMNS, I completed the proper request forms allowing me to photograph *Expedition Health* and use artistic representations of their strategic plan.

Chapter 5: Findings and Analysis

In this chapter, I explore the three primary themes that emerged during my research. The first section, "Word Play or Wordplay?", details the importance of developing a museological definition of the term *play*. The second section, "Why Play?", explores the reasoning behind why DMNS utilizes play as a part of its core values. The third and final section, "How to Play?", describes certain exhibition components that are used to encourage play.

Word Play or Wordplay?

What does play look like in a museum? Is the museum an appropriate place to play? These were the questions I asked participants throughout the course of my research. One major issue that I continued to revisit however, was the definition of play itself. Many scholars discuss participation, interactiveness, edutainment, and yes even play but literature is still lacking a museological definition of play. My goal in this section of the thesis is to explore what the term *play* has meant in different contexts and why finding a museological definition of play is open to interpretation.

Participant Perspective

When questioning the staff members at DMNS concerning their viewpoints of play, I realized that it was important to first consider how they chose to define play. One staff member at DMNS believes that play is an action that involves exploration using different parts of your body and your senses. She says:

> Play is an exploration using your hands, your mind, your brain, and your emotions. I think it very often involves imagination, investigating, and experimenting. I'll go back to the example of water. Well, when you play in water, it's a big part of how you learn about how the world works (Interview #1- Exhibitions Specialist 1).

For her, play is a method for learning about the world around you. She provides an example of playing in water because water is a large component of the *Discovery Zone* exhibition at DMNS. I will later discuss the *Discovery Zone* exhibition in greater detail, but for now will focus on why she believes this is an example of play. She is not saying that water itself is inherently playful but rather how a visitor interacts with water may be playful. This participant discusses how guests experiment with changing the course of the water and seeing how different objects react to the changes. Guests use their imagination to come up with ideas and then actively pursue these ideas, which then leads to learning more about water, or as she says, "how the world works" (Interview #1- Exhibitions Specialist 1).

Along similar lines, another participant believes play is an activity that encourages people of any age to explore a certain topic or theme –"I would consider it to

be physical" (Interview #1- Visitor Research and Evaluation Specialist). The similarities between these two definitions are that play involves exploration. However, this participant does not make any mention of play taking place in any aspect other than physical. For her, play is more about the physical movement aspects associated with the term. Other participants relate play to the mind or the imagination.

While an exhibitions specialist I interviewed also references the physical aspects, she thinks about play in a more abstract sense:

> It is multisensory, it's using your body and your mind and it
>
> involves fun. I think play inherently is going to be enjoyable, and
>
> there's a bit of free-formed stuff that goes with it. Even in sports
>
> you're making stuff up. It involves some sort of creativity and
>
> open-endedness and enjoyment. I think that there's very little that I
>
> can associate with play that would not be fun. Those two are
>
> directly linked in my mind (Interview #1- Exhibitions Specialist 2).

Her answer is more open than the previous responses. This participant chooses to describe play using terms like *free-form*, *enjoyment*, *open-ended*, and *fun*. An educator I interviewed describes play in a similar manner saying, "It's self-directed, it's whimsical, it's in groups, it has humor, it's open-ended, it's exploratory, and it's fun," (Interview #1- Educator 1). In both answers, the descriptions of play include fun and open-ended activity. These participants make little to no reference to physical movement in their definition of play and instead focus on the feelings or thoughts that they associate with play.

In contrast to this open-endedness is the thought of there being a structure or boundary for play. One participant asserts play is:

> Within whatever boundaries giving a kid or an adult the ability just
> to have free-form activity; and it can be both physical and mental
> in how they're working through whatever that activity is and how
> they're shaping it. So, for me it's here's the structure [making box
> shape with hands], and within that structure, there's a lot of
> freedom to have physical and mental activity (Interview #1-
> Curator).

Earlier in her interview, she discusses the "unstructured free choice" (Interview #1-Curator) that she associates with play, but when asked for a direct definition she contradicts herself. This participant still believes that play is a "free-form activity", but she believes there is a structure that surrounds this activity. The boundaries she discusses in this interview include: boundaries for safety and spatial boundaries that can limit play. Within these boundaries is the freedom to play both mentally and physically, but there is not a sense of wild freedom that some might expect from play. Her answers and contradictions seem to be influenced by the space around her. When simply thinking about play she wants the freedom and unstructured aspects but when actually applying play to the museum, there are suddenly boundaries. Throughout her interview, she refers to different spaces within the museum that she believes were designed to promote play. Her responses are reminiscent of the psychological studies of guided play (Weisberg et al. 2016). Within certain areas of the museum, visitors are guided or prompted to play.

These areas are designed so that visitors are playing in a manner which can lead them towards accomplishing the learning outcome for that specific area.

All of the participants have overlapping ideas in their responses, but their contradictions made it impossible to create a singular, cohesive definition. Their answers range and contrast from open-ended, tied to boundaries, something that can be done individually, something that should be completed in groups, physical, multisensory, and simply "I would say that it is a verb" (Interview #1- Educator 2). Although these answers are relevant and true, they are varied. An educator directly points to this problem by saying:

> I think play is individualized in that play can mean something to
> one person and something entirely different to another. Play can
> happen on your own, it can happen in groups, and it can happen
> anywhere […] gosh on a small scale or on a large scale. It's
> endless possibilities. There's an infinite amount of ways you can
> play (Interview #1- Educator 2).

But why is that? Is play really an individualized concept with infinite possibilities? Why is it that as humans we have such a difficult time defining something that we have been exposed to almost our entire lives? However, maybe this is the real problem. According to Phillips Stevens, Jr., "Animals and people play from birth to death" (1977, 238). If this is in fact true, then play has been around for as long as humans can remember and is interpreted differently depending upon the context.

Cross-Cultural Analysis

In attempting to create a museum context definition for the term *play*, it would be remiss to ignore some of the cross-cultural meanings for this term. To be clear, the role participants play in this research is not being degraded, but their responses will be reinforced and contrasted through cross-cultural analysis. In this section, I explore anthropological studies that research the concept of play in other cultures.

For many anthropologists, play is connected to other aspects of culture. They draw connections between play, ritual, and in some cases, societal structure. In many ethnographic studies, anthropologists were able to determine that games were used as a method to teach younger members of the society their social roles. The cultural studies referenced below are an effort to step out of an ethnocentric viewpoint and to show why context is so important when creating a definition of play. In some cases, there will be overlap between how typical Western society views play and in others, there will be contrast.

Hohonaqa

In Hopi, the term for *play* is *hohonaqa* (Albert and Shaul 1985). Throughout the 1940s, Frances E. Watkins published a section entitled "Indians at Play" in *The Masterkey*. In each publication of *The Masterkey*, she draws attention to Hopi games. One of the most common games played is called *pak'u'si'vu*. In this game groups play a guessing game using four cups, a small ball, bean or pebble, and sticks or straws as counters (Watkins 1945a). One team hides the object under one of the cups, and then the

other team attempts to guess where the object was hidden. A game like this can also be found among the Tewa peoples of the First Mesa in Arizona. During a study of the Tewa peoples, Dr. Elsie Clews Parsons wrote: "Among the Tewa of the First Mesa the game of *elu* gives its name to the month of January, *elu poye* (moon), the season of its play" (1922, 89). These games are not unlike a game often played at carnivals in which a player must guess under which cup a ball is hidden.

Another game often played by the Hopi is called *mo-toun*. *Mo-Toun* is a game in which boys throw darts constructed of corn husks and feathers at a wheel also made of corn husks. The point of the game is to throw the darts and hit the hoop. Sometimes twine is attached to the hoop in a spiderweb pattern, and the boys have to throw the darts through the holes in the pattern (Watkins 1945b). This is not unlike darts today. The Hopi also play contact sports. Their game *shinny* consists of two teams using sticks, either curved or straight, to hit a ball across the field and through the opposing team's goal (Watkins 1945c). This game is believed to have been the forefather of field hockey. Stickball, another similar game played in the Northern United States and Canada, was the forefather of lacrosse.

Although considered games, when Watkins studied the Hopi during the 1940s, they also used play as a medium for teaching their children about ritual and society. For example, young girls often played with dolls and construct cradles, carriers, and tableware for them that would teach them skills such as weaving and pottery, which they used as adults. Young boys played with slings that help to improve their coordination for hunting. Both young boys and girls were expected to learn about ritual through holding their own mimic rituals using dolls, that were similar to *kachinas,* and small rattles

(Watkins 1946). Through doing this, they learned how rituals were structured and how they were expected to participate.

Pele

The Kpelle people of Africa do not actually have a term for *play*, because the Kpelle do not distinguish between work and play. They refer to hard work and light work further proving that at least in some cultures, the dichotomy between work and play cannot be applied. However, according to *Kpelle: A Reference Handbook of Phonetics, Grammar, Lexicon, and Learning Procedures* they use the term *pele* to refer to games or entertainment (Thach and Dwyer 1981, 120). Make-believe is called *neé pele* which is actually just a "reenactment of the daily round of activities they observed with regularity and concentration" (Lancy 2015, 5). Children are not allowed to stray very far and play in an area near adult members of society completing daily tasks. They often reenact the actions they see adults completing and create imaginary scenarios in which they are the adults. David Lancy did intensive ethnographic research among the Kpelle and determined that "Kpelle children are using make-believe to, effectively, learn and appropriate their culture" (Lancy 2015, 5). In some cases, adults will also play with children to teach them certain games or behaviors. For example, adults playing a game may not explain the rules to children or even to newcomer adults. The newcomers are expected to sit and observe until they believe they have learned the rules of the game.

Pugllana

Between 1991 and 2004, Rachel Corr, a cultural anthropologist, explored the

connections between games and funerals in South America. Corr believes it is important

to study the connections between ludic (playfulness) and ritual because all other texts

concerning ritual from the South American cultural groups had not approached their

playful nature. The reasoning which Corr cites for this lack of literature is "because of the

Western tradition to consider the ludic as not serious, not important, and not worth

studying" (2008, 3). She also notes that religion and play appear to have close

connections in other cultures but that "Religion and play may have become rivals […] as

the Western tradition of the Protestant work ethic developed" (Corr 2008, 4). In South

America, however, games are an important aspect of wakes held for the deceased.

Throughout the course of her research, Corr studied many cultural groups in

South America. She views the games of chance they play as a way to express the

uncertainty of life and death:

> The juxtaposition of humor with prayer and propitiation of spirits pervade
> funeral games. Although the Canelos refer to this gambling activity as
> "play" (*pugllana*), they say that the soul of the deceased flows in and out
> of players (Corr 2008, 14).

The gambling game to which Corr refers is played through rolling a die to see which

player can roll the highest number. The die is always provided by the eldest son-in-law of

the deceased. The family of the deceased may not play games at the wake because their

spirits are the most likely to be carried away by the deceased. Therefore, Corr reasons

that the games played at wakes "throw kinship relations into relief and reaffirm the social

life of the community" (2008, 5). As men play these gambling games, it is common to

see them whispering Catholic prayers into the die in hopes of receiving a better roll. The reasonings behind such gambling games vary from dividing the deceased's property, dividing the funeral's bill, contacting the deceased, and providing humor for the deceased.

Within the Salasacan culture in Ecuador, young boys often reenact festivals and speeches to provide entertainment at wakes. Although these reenactments are meant to be fun, the speeches are well-known to many of the adult men, and they are quick to correct and critique the boys. Though fun, these reenactments are still an important aspect of wakes and young boys are expected to perform them. In this way, they learn how to participate in festivals.

What Does It Mean?

Presented thus far: play at DMNS, play in the Hopi culture, play in the Kpelle culture, and play among South American cultures. Through viewing these four case studies in which myself and other anthropologists are attempting to determine the uses of play, it is easy to see the differences in context. Through the context of the Kpelle case study, we can see that the dichotomy between work and play does not exist in some cultures. Rather, play is used as a method for children to mimic adults and to "effectively learn and appropriate their culture" (Lancy 2015, 5). The Hopi and Salasacan also use play to educate their young. However, both the Hopi and Salasacan reach beyond everyday activities and use play to teach their young about ritual and how they are expected to participate. In Rachel Corr's study of the Salascan and Canelos adults playing

games at wakes, play is a core part of their ritual. They utilize games to juxtapose fun with mourning and as such, "players are laughing in the face of death" (Corr 2008, 15).

Whether it be through learning their role in society, learning about ritual, or learning basic skills, all of these cultures use play to "learn about how the world works" (Interview #1- Exhibitions Specialist 1). What is interesting about this concept is that they are learning how *their* world works. How a culture uses play to interpret *their* world is specific to them. In the examples listed above, the Kpelle and Hopi use play that could be considered physical as the participants of this research suggest. However, for some cultures in South America, play extends beyond the physical realm. Play can be used to amuse the dead and is not bounded by physical space or a "structure" (Interview #1- Curator). I would also argue that within the context of wakes in South America, play is not existing simply for "fun" (Interview #1- Educator 1; Interview #1- Exhibitions Specialist 2). There is a seriousness bound within the playful activities as men gamble and attempt to humor the dead.

When viewing play within these different contexts, we can see play as ritual, play as education, play as appropriation, and play as interaction. These various ways of viewing play only reinforce the anthropological thought that context is key when defining play. If the anthropologists from these studies had relied solely on their own, Western perceptions of play, they would not have realized its importance. Corr even notes that studies concerning ritual prior to hers ignored play because they considered it to be unimportant. It seems as though the participants of this research do realize that play may be used as a medium for learning and therefore, do not subscribe to the outdated Western notions. The context of a museum is going to be similar, yet different when compared to

play within the context of different culture because ultimately, play can only be defined by those within that cultural context. This is important to recognize not only as an anthropologist but for anyone who wants to study and implement play.

I now return to creating a definition of play within the context of the museum, specifically the Denver Museum of Nature and Science (DMNS). When looking for key terms in responses, five of the six professionals interviewed determine that play depends upon the context whether it be physical, mental, in groups, individual, large scale, small scale, etc. Two of the six professionals interviewed explicitly state that play is for enjoyment or considered fun. Every professional interviewed believes that there is an exploratory or freedom element in play, qualify play as a verb by believing there is some sort of action involved and say that play could happen at any age. Only one professional states, in her definition, that play could be used as a medium for learning. All of the other participants allude to play being used to help visitors learn but only one explicitly states this as fact.

As this study's participants and many anthropologists state repeatedly, context matters. Context is why when looking at a person's actions, others may easily be able to determine whether or not that person is playing. However, when trying to determine a simple definition for play, the person's response may be a stream of consciousness as opposed to a concise determination. This often happens when researchers question participants about core cultural concepts. The participants of this study had trouble giving a definition of play right off the top of their heads because for them, play is a cultural norm.

Each participant at the Denver Museum of Nature and Science answered with a stream of consciousness but not before pausing to think a while or asking "define play?" in disbelief. One participant even told me that another participant had approached her and talked about how they had taken issue with the fact that I asked them for their definition of play. After relaying this story to me, this participant said that she personally believes that museum professionals should have a definition of play. However, as opposed to giving a distinct definition for the term *play*, they talked about other terms they associated with play or what they observed guests doing. This can also be seen through the case studies of the Hopi, Kpelle, Canelos, and Salasacan. The anthropologists describe what he or she sees and accepts it as play because the actions closely resemble his or her own perceptions of play. To keep relying upon one's own perception of play is extremely problematic because to that extent there are infinite possibilities and anything could be considered play. To fill this void, I suggest that play is a combination of the answers provided by participants and the results of cross-cultural analysis. Based on this knowledge one way to define play within the context of the Denver Museum of Nature and Science is:

> Play /pleI/ *vi*
>
> To occupy oneself in an activity resulting in exploration, enjoyment, and learning.

To occupy oneself in an activity stems from the activeness implied in the ethnographic studies and in participants' answers. The terms *exploration*, *enjoyment*, and *learning* are

the results of play which participants discussed. These outcomes are central to the context of DMNS but may also be applied to other museum contexts.

Why Play?

Another important theme in this research concerned why play is being incorporated into the values of a nature and science museum. When asked why she thought play was added as part of the core value "we are curious, creative, and playful" (DMNS 2018a), one participant responds:

> I think play is probably added as a value because I think play has a lot to do with learning. So, we are an educational institution, but you know, when we ask people why they come to DMNS, they say they come for the fun and they come for the entertainment; and when you ask why they value the museum, they say education and learning. So, I think play is a gateway to bridge the fun and the learning (Interview #1- Visitor Research and Evaluation Specialist).

Museums are not new to the difficulties of balancing entertainment with learning. DMNS is not alone in the challenge of strategy development to address this issue. Some museums find that they have an option of where to fall on the spectrum of education "ranging from formal learning through leisure learning to entertainment" (Ambrose and Paine 2012, 74). In a 2016 yearly visitor experience survey designed as a select all that apply, 55% of guests report that they visit the museum for Fun/Entertainment while 43%

of guests report visiting the museum for Learning/Education (Interview #2- Visitor Research and Evaluation Specialist). According to Falk and Dierking, "a number of investigators have found distinctions on closed-ended surveys", (2012, 44), meaning that visitors must select either-or. However, when completed either through open-ended interviews or the select all that apply surveys, investigators are experiencing results similar to that of DMNS. The contrast between visitor motivation and valuation leaves institutions such as museums, struggling to find a balance in engaging the public. According to many researchers, in order to remain relevant, a museum needs to remain valuable as well as entertaining in the eyes of the audience (Gurian 2006; Falk and Dierking 2012; G. Hein 1999). In response to their own research, DMNS is incorporating play as a bridge between fun and learning.

Another participant chooses to connect play in museums to democratization. She summarizes this movement by saying:

> Well, museums started out as cabinets of curiosities, as you well
> know, and only the elite went. Over the years, that has changed
> more and more, but I think that we, at least, are realizing that if
> you have fun somewhere, that is more likely to enhance learning
> (Interview #1- Exhibitions Specialist 1).

She is affirming that over the years, museums have shifted from institutions focused on the education of the elite to serving the general public. Somewhere within all of this change, museums have also realized that fun can be used to enhance learning.

When asking why play is important to consider in the museum context at all, it is important to first think about the position of museums in today's society. During her time

at the Science Museum in London, Sharon Macdonald asserts that to visitors, museums in the 21st century are considered a place where leisure time is spent. She says, "some visitors contrasted the museum with other kinds of leisure activities" (Macdonald 2002, 225). Her choice of the word *other* is important because it shows the categorization of museums as a leisurely activity. Almost every museum staff member that I interviewed confirmed that DMNS visitors expect a fun, social experience. Accordingly, museums are, as Macdonald and many others have found, in competition with other leisure time activities, such as going to the movies, attending sporting events, etc.

Many scholars debate whether or not the concept of public-centered design is resulting in the dumbing down of museum content. Terrell and McLean are not alone in comparing this shift in museums to Disney's guest centered approach. Steven Conn addresses the fine line museums are walking with the statement, "[Museum Directors] have addressed charges of elitism leveled by an earlier generation and increased their audience by adding cafes, shops, performance events, and so forth, only to find themselves accused of turning museums into Disneyland" (2010, 4). The question then arises, how can museums attract the public while also remaining educational institutions and avoiding Disneyfication?

"Owning It"

Although play as part of DMNS's specific core values is only two years old, most of the staff members I questioned believe that play was important to their work before the actual value was unveiled. According to a participant within exhibitions, "we have

always considered ourselves curious, creative, and playful because that's a big part of how we do our work" (Interview #2- Exhibitions Specialist 1). Another participant says:

> We were doing it well before that; we just named it. I think that owning play has been allowed because of some structural changes that went into play around how we think [about] this organization and how we think about who needs to come together to make that experience (Interview #2- Curator).

One exhibitions specialist talks about the accountability that comes from making this concept part of a core value. In naming play as one of their core values, they become responsible for its incorporation. However, without having a cohesive definition, DMNS staff may run into the challenge of creating criteria for the incorporation of play into new exhibition components and programs.

Many of DMNS's staff also state their belief that the public perceive science as boring and formal. One participant says, "I think it's okay to have some play in a museum where people think we're already kind of stuffy" (Interview #2- Educator 2). She also believes:

> The reason that [play] was added to the value was to show that science doesn't always have to be stuffy. It doesn't always have to be in a laboratory. It can be playful. It can be out of the box and to kind of erase the stigma of science having boundaries and straight answers to questions, and to allow for creativity and play to be a medium to learning science (Interview #1- Educator 2).

Once again, it is easy to see that democratization and a focus on the public is instrumental in DMNS's inclusion of play. DMNS wants to make science accessible to everyone by altering the public's perception. It can be reasoned, however, that not all of the public's perception concludes the stuffiness of science. This is a homogenous grouping created by DMNS.

None of the participants of this research seem to share the scholarly opinion that play results in dumbing down and do not openly address this debate. However, because much of the debate between play and dumbing down is surfacing through the topic of edutainment, it is important to acknowledge. I did not ask staff members about their personal stance on this topic. DMNS's stance as a whole organization is in support of edutainment, but that does not mean that individual staff members agree. In not asking questions regarding edutainment, I wanted to avoid tensions of this debate and not place staff in an uncomfortable situation. I also did not want to lead the participants in any direction concerning their perceptions of play. Edutainment if often associated with children, and I wanted to avoid this preconceived notion.

In some interviews, however, the topic of edutainment came up naturally. While talking to one participant about whether or not she felt DMNS exhibited the play aspect of its core value she asserts:

> We try to have people know where they fit and make it tie to the
> personality of their lives like, "Where are these things in your
> life?" Umm, in the meantime, we are teaching them something
> which is really hard, which is genetics. So, that fun piece…I know
> I probably shouldn't say it because it's like some people hate this

word, but that edutainment- whatever, I feel really funny, I don't

care that's exactly what it is (Interview #1- Curator).

For her, play is tied directly to edutainment, but that is not true for everybody. In many

cases, edutainment is seen as leaning a bit too far on the entertainment side. However, it

is possible to champion play without being a champion of edutainment. Mitchel Resnick,

a professor of learning research at the Massachusetts Institute of Technology (MIT)

media lab, discusses the passive approach of edutainment. He believes that the terms

education and *entertainment* both imply a sense of passiveness. This is because both

education and entertainment are services that someone else provides. Whereas, the terms

play and *learning* imply activeness. These are both active things that someone can do

rather than something they receive (Resnick 2004). Visitors to museums should not

simply be passive recipients of entertainment and education. Instead, they should be

actively participating and learning. Within edutainment there is the issue of finding a

balance between the two concepts. Could this possibly be related to their passive nature

and because it simply falls to the museum to provide these for their visitors? What would

happen if instead, museums chose to focus on active visitors that were encouraged to play

and learn?

Balancing Act

It is important to note that many of the participants in my research view museums

as spaces of "informal education" (Interview #1- Exhibitions Specialist 2). In research

and interviews, I discovered that there are some conflicting opinions regarding whether

play and education can coexist. When I asked one participant whether play got in the way of or enhanced learning she responds:

> Ideally the second. As I said before, I think that sometimes when people are playing and having fun and doing memorable things that actually is an enhancement to learning, but sometimes when you get big groups of kids, they're just knocking into each other and running around in the exhibit. I don't really think that has anything to do with content (Interview #2- Exhibitions Specialist 1).

In this instance, the participant is answering in regards to how visitors act within exhibitions. Ideally, there would be a balance between how visitors play within a space and what they learn, but sometimes when too much is going on, they are not as focused on the content. Educator 2 chooses to focus not only on the visitor's reaction but also how specific exhibition components are designed. She points to several exhibition components that are a two-step process. The first step being an activity and the second step applying the activity to learning. In regards to learning, she says, "It would take them going to the second step to do that" (Interview #2- Educator 2). However, instead of being discouraged by play sometimes outweighing learning, she focuses on what could be positive:

> I think it's okay to have some of that in a museum where people think we're already kind of stuffy. So, it's okay to be like, "Yes you had fun, you may not have learned anything about the brain [referencing an exhibit component designed to teach about the

brain], and that's okay because that's more of what you love"

(Interview #2- Educator 2).

Play is a broad concept and has many uses, but here I am questioning how play may be used to encourage learning. Through asking the participants to think about whether play sometimes gets in the way of learning, I am encouraging them to think about *Expedition Health* in a reflexive manner. They are commenting not only on *Expedition Health* but on museums in general. Play does get in the way sometimes, but that is not necessarily a bad thing. This can be related to audience development. Visitors can be enticed into museums through the promise of entertainment and fun. If a visitor has a good experience at a museum, he or she will be more likely to return. Each time a visitor returns, the museum has a better chance of studying them, and the visitor has a better chance to learn (Waltl 2006).

When it comes to studying visitors, museums must also think about different learning styles. Through playing, visitors are interacting with exhibitions in various ways. They might be doing something hands-on or thinking about a topic in a more creative way. A kinesthetic learner is more likely to learn through doing and experiencing. Therefore, play seemingly existing for the sake of play can be balanced through understanding the value of audience development studies and its relation to styles of learning.

DMNS also strives to provide balance through balancing its staff. Each exhibition at DMNS has its own team which consists of curators, educators, and exhibition designers working together. One of the participants believes that team work makes the possibility of play and learning together a reality:

We hold each other accountable in the way we form our teams. So, it's not just a curator developing something. My partner in crime is an educator who's got a Master's degree in Education and who can say to me, "That's not quite the word a kid would use. Can we think of a word that is accessible but still scientifically sound?" That's a piece that I think makes us unique is that we have these core teams that have a range of disciplines that hold each other accountable. For example, any of our exhibits have this: project manager from exhibits, an educator, a scientist, someone from technology, and a volunteer engagement specialist (Interview #1-Curator).

She goes on to describe each role these particular team members have when it comes to keeping the exhibition running and up to date. To her, it is the role of the educators and exhibitions team to bring play into the space, whereas the curators and scientists make sure the content presented is accurate. When asked about the balancing of play and learning she says, "I think part of our culture here in the 21st century is fun and play; and you don't have to cannibalize education. And I think a lot of us feel that you shouldn't have to cannibalize the learning or the play – they can be intertwined" (Interview #1-Curator). For DMNS staff, there needs to be a balance between who has a say in what goes into an exhibition. Balance in staff can produce a well-balanced exhibition. This is the point John Terrell is trying to make in *Disneyland and the Future of Museum Anthropology*: Museum professionals should not only focus on one area such as curation or visitor studies; rather, they should work together utilizing a team approach to provide a

healthy work environment for staff and memorable museum experiences for guests. But exactly to which visitors is DMNS trying to cater?

Who Can Play?

It did not escape my notice that when talking about play, many DMNS staff members began by mentioning children. Many of them tried to steer me in the direction of the *Discovery Zone*, an exhibition specifically designed for children. When asked why play was a core value for their institution one participant says, "The *Discovery Zone*, which is our area for early childhood learners, is all about play. Everything there is about how young children gain science process skills through developmentally appropriate play" (Interview #1- Educator 1). Another participant immediately responds to my question about play with, "Of course the *Discovery Zone* comes to mind" (Interview #1- Educator 2). Immediately making the assumption that play is related to children is not uncommon. The historical reference most commonly given, as I previously mentioned, is America's Puritan society.

In the museum world, scholars are questioning just how much museums should cater to children. Steven Conn addresses this topic in a chapter cunningly entitled "Where Have All the Grown-Ups Gone?" (Conn 2010). He focuses his attention on art and science museums asserting that art museums are meant for grown-ups whereas science museums are geared towards children:

> One the one hand, art museums, designed primarily for adults, challenge children with a raised bar and make no particular accommodations for kids in their permanent galleries or temporary exhibitions. Science museums, on the other hand, offer the chance

for adults-parents of visiting children mostly- to dumb down (Conn 2010, 139).

This distinction of art being for adults and science being for children is not true for all museums. Many art museums work to engage a younger audience whereas science museum can also be engaging for adults. However, through this work, we once again see that there is a perception that a focus on children results in the dumbing down in museums. Conn also discusses the shift from a "general audience to one focused more specifically on children" (Conn 2010, 146). In the case of DMNS, 62% of visitors have at least one child in their group (Interview #2- Visitor Research and Evaluation Specialist). This statistic does not include organized groups or school groups, which would raise this percentage significantly. While DMNS tries to focus on its communities, it is already catering to its current visitors: "In most of our cases, a lot of our visitors come here with kids under the age of five, so I think it's, [play], appropriate in the sense that we serve that audience; and it's more likely that audience would learn more through play […]" (Interview #1- Visitor Research and Evaluation Specialist). With a large number of visitors consisting of children, DMNS, in some of its exhibitions and programming, appears to have made the shift Conn addresses.

However, the continuation of the previous quotation is interesting: "[…] not that adults can't learn through play but […]" (Interview #1- Visitor Research and Evaluation Specialist). When asked whether or not they believed adults could play too, staff members respond with, "Absolutely! I don't think we play enough. We get bogged down in jobs – well the traditional sense of jobs – and I think there's a direct correlation between lack of play and unhappiness" (Interview #1- Exhibitions Specialist 2). Staff

members do believe that adults can learn through play, but as seen in the quotation from the visitor research and evaluation specialist, they appear to be more focused on their family and children visitors.

The notion that play is only meant for children relates to the dichotomy between work and play. The previous participant states, "We get bogged down in jobs – well the traditional sense of jobs" (Interview #1- Exhibitions Specialist 2). In this way, she is saying that jobs, sadly, are not what most people consider to be playful or fun. Jobs are work, and for much of Western society, work and play are still considered two, completely different tasks. When Phillips Stevens, Jr. first addressed the issue of the dichotomy between work and play in the 1970s, he believed that it was creating a pigeonhole for the study of play. In returning to the Kpelle case study by Lancy, we may see that he is in fact correct. The reason why the Kpelle do not have a word for play is because they do not distinguish between work and play. For them, it is either hard work or light work. Without recognizing this false dichotomy, Lancy's research may not have been quite so monumental. In 2016, Elizabeth Merritt, head of the Center for the Future of Museums, noted in her annual "TrendsWatch" report, the work dynamics faced by millennials and their happiness. She discusses "work-life blending" as opposed to "work-life balance" in which people are working full-time even at part-time or freelance jobs due to technology and work culture (Merritt 2016). *The Washington Post* takes Merritt's words further to assert that museums need to address the underlying issue, lack of leisure, by creating more time for play (Kennicott 2016).

It seems as though this dichotomy between work and play may be false for the DMNS staff, but could play at work be viewed as "work-life blending"? When asked

where play seemed to apply to their jobs as museum professionals, many of the participants talked about play in their own work. A museum educator responded by saying:

> Well, we are playful. I mean the staff are playful. No matter what department you go into you're going to see humorous things. They have fun together. They make space for play in their time, and they value it. [Play] is something, because we are outwardly facing, that we cultivate in our staff, and so when we do retreats, play time is built in. It's an important part of creativity, and we attract people who are playful to this staff (Interview #1- Educator 1).

This participant is drawing attention to the playfulness of the staff at DMNS by saying that the value "we are curious, creative, and playful" not only relates to guests but to themselves. The exhibitions specialist that discusses the "traditional sense of jobs" goes on to say that she believes her job does not fall within this category (Interview #1- Exhibitions Specialist 2). She also discusses exhibition development and all of the play involved:

> We've been playing with different processes in terms of exhibit development, and design thinking and appreciative inquiry are two methods that we have dabbled in. In terms of process of getting from developing an exhibit or developing an activity, that involves a lot of play. [...] basically, you get goofy and play within that discipline to brainstorm on how you might do this exhibit; and I think it gets people out of traditional thinking and allows people to

come up with different ideas that they wouldn't necessarily have

had. (Interview #1- Exhibitions Specialist 2).

This participant also guided a seminar at a local museum conference in which she talked about ways to enhance creativity among staff through play. This directly relates back to psychological studies showing that adults need the mental break of play time (Keller 2015). Although staff do have opportunities to play while at work, I do not believe this necessarily falls within the "work-life blending" that Merritt addresses. Rather, this appears to be a way for DMNS to develop a healthy work environment for its staff.

It is clear from their responses that the staff at DMNS believe that adults have the capacity to play and should play, but many of their programs and exhibitions tend to focus on families and children as a core audience. Although museums tend to focus on their specific audience base, DMNS has been looking for ways to reach out to those within the community that do not visit the museum. However, in all of the interviews, only an exhibitions specialist discusses the lack of young adult visitors. According to her, "We really drop off in High School and the Millennials sort of generation and then pick up again with adults and seniors" (Interview #1- Exhibitions Specialist 2). She believes a lot of this has to do with the cost of visiting the museum and that young adults are choosing to spend their money on other forms of leisure. This is not a problem central to DMNS. Many museums are seeing this drop as well, and businesses like Museum Hack, a business designed to develop programs at museums for young adults, are trying to reattract visitors. DMNS develops programs of its own intended to attract young adults and hosts 21+ events in hopes of attracting Millennial visitors, but as this participant

reiterates, "It comes down to where are you going to spend your dollars?" (Interview 2-Exhibitions Specialist 2).

This all concludes with the knowledge that everyone can play but that people determine themselves how they would like to play. DMNS develops programs that keep its staff playing as well as providing a work environment that encourages play as a method of brainstorming. However, on the visitor spectrum, DMNS is still having trouble encouraging young adults to play at the museum. Not for lack of trying, but for reasons to which many other museums can relate.

How to Play?

Figure 3: Expedition Health Entrance

In this research, I was most interested in how staff at DMNS thought exhibition components could encourage play. Through focusing on one specific exhibition, *Expedition Health*, I was able to question staff concerning where they saw play taking

place within this exhibition. They point out many specific exhibition components and use

words such as *interactive* and *participation*. According to Nina Simon, museums "use

interactive engagement as the fundamental vehicle to promote visitor learning, recreation,

and exploration" (2010, 349). This next section will explore five exhibition components

within *Expedition Health* where staff saw the most play taking place and why they

believe these components encourage play. Each of these will also be applied to a trend

within the world of museums.

"Tykes Peak"

      "Tykes Peak" is an area designed specifically for children ages five and under.

The area imitates a forest setting in Colorado with central colors of yellow, green, and

brown. The design encourages grown-ups and children to interact while also providing

many activities that children can do autonomously. When I asked staff members where

they saw play taking place within the exhibition, they all directed me towards "Tykes

Peak".

> "Tykes Peak", that's where I would consider seeing a lot of play.
> That's what they're doing right now [gesturing to two children].
> They climb their little mini mountain and come back down the
> slide. They get to role play or put on a backpack and pack it with
> the supplies they think they'll need, so it's sort of quintessential
> early childhood play in my mind (Participant #2- Exhibitions
> Specialist 2).

This participant is using "quintessential early childhood play" to describe the actions

taking place within that space. Children are encouraged to use their imagination to

explore the area. There are no literary prompts, mostly because the target audience cannot

read, but also because without those prompts, the children are able to have more freedom.

Many museum exhibitions are now being designed to give visitors more freedom.

Figure 4: "Tykes Peak"

This desire to provide opportunities for free-choice learning is due to museums

being grouped into leisure: "The key to a successful leisure enterprise is to incorporate

free-choice learning!" (Falk, Dierking, and Adams 2011, 335). However, the opposite of

this argument is that visitors still do not have complete free choice at museums. In

"Tykes Peak", even though children are not given written prompts, they are still given

items that may prompt them to act in certain ways. For example, "Tykes Peak" contains a

lot of materials that act as a prompt:

> This [gesturing towards area with backpacks and fake food] is
>
> especially cool if you are planning your trip. You have backpacks
>
> that you can pack full of fruits and vegetables, and it opens up the
>
> conversation about what you're eating and what you might want in
>
> a backpack when you're out exploring (Interview #2- Educator 2).

The backpacks and fake food to which the museum educator refers, act as a prompt for

children to imagine they are going on a trip and for them to pack food they think they

might need. Once the children pack their backpack, they can climb up a small mountain

and slide down the other side. Thus, the objects also act as a prompt for children to

imagine and play while intentionally following the theme of being prepared and going on

a hike. One participant also informed me that "Tykes Peak" was created to "mimic the

other elements of *Expedition Health* but in an age appropriate manner" (Interview #2-

Educator 1). In this manner, "Tykes Peak" contains hands-on, participatory, and

interactive elements that are designed specifically for younger visitors. The area where

children pack their backpacks with food and then climb up the small mountain is hands-

on and participatory as it mimics the "Hungry Hiker Interactive Game" and the overall

theme of going on a hike. The small red pegs visible just beneath the "Tykes Peak" sign

in Figure 4 can be moved when pressure is applied. This is an interactive because the

pegs react to visitors and children can alter the shape of their hands or bodies in order to

alter the shape of the pegs. The peg wall is meant to mimic "Full Body Viewer".

"Full Body Viewer"

"Full Body Viewer" is an interactive that allows guests to move in front of a screen while a figure of the human body shadows their movements. I refer to this exhibition component as an interactive because it reacts to stimuli from guests. As guests move, so does the image on the screen, and guests can experiment with different body movements in order to learn more about the makeup of their own bodies. One museum educator believes that guests enjoy this exhibition component because it is all about them. She says:

> As you can see, he may not be using it like "Oh yes, here's my ulna," but he is looking at his body's bone structure and feeling his body move and watching the bones move, so if nothing else, while he dances, there's a way for him to at least be absorbing that inside of his body there's this structure. […] I think that's a piece of play because it's all about you and your body (Interview #2- Educator 2).

Although guests now enjoy "Full Body Viewer", it was not always so popular. According to an exhibitions specialist, "The original one was just not that great, and it often didn't work" (Interview #2- Exhibitions Specialist 1). Another exhibitions specialist also points out that "'Full Body Viewer' works a lot better now. We did some updates, and now people seem to love it!" (Interview #2- Exhibitions Specialist 2). Some museum scholars believe that the inclusion of interactives encourages activity and play within a museum space. Witcomb asserts, "Research has also been found that interactive exhibitions are especially attractive to children and families, who form the mainstay of

museum audiences," (2006, 354). With this thought and the knowledge that DMNS's audience consists mainly of children and families, it is not surprising that *Expedition Health* would include interactives.

However, it should also be noted that just because "Full Body Viewer" is an interactive does not mean it truly encourages play. Both exhibitions specialists affirm that "Full Body Viewer" was not popular until updates were made. This is one major problem with using interactives in museums: unless the interactives work and are designed properly, they will not entice visitors. Kathleen McLean focuses extensively upon interactives within museums. She says, "People are wonderfully unpredictable […]. Anyone who has tried to direct the traffic flow through an exhibition will agree that it is difficult, if not impossible, to predict how visitors will react" (McLean 1996b, 98). In this case, visitors were not enticed by "Full Body Viewer" until updates were made so that it would run more smoothly.
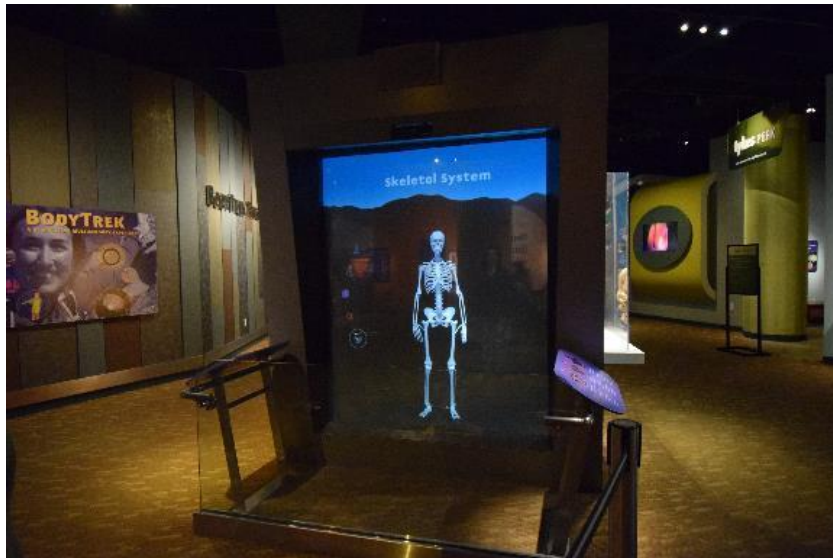

Figure 5: "Full Body Viewer"

89

This also leads to another major problem with interactives: they tend to break down. Interactives take a lot of maintenance and repair to ensure they are working properly.

> Interactive exhibits require a maintenance staff to keep them going, no matter how well they are designed and built. Anything that moves in an exhibit requires more maintenance and care than inanimate exhibits, and the more moving parts, the greater the possibility of breakdown (McLean 1996b, 99).

"Full Body Viewer" has a lot of moving parts that all work together to create an image of the human body and that can mimic movements made by visitors. If even one of those parts gets out of sync, the entire interactive can be rendered useless until repairs can be made. Because it involves intricate software, updates are also required to keep everything running smoothly. Even with necessary updates, "Full Body Viewer" still has limitations. If others are standing too close to the software, the interactive will have trouble determining on which body to focus, which results in jerky movements. The software is also unable to detect movements when a visitor sits on the floor. One exhibitions specialist acknowledges these limitations and even helps guests with this interactive during our interview:

> [Guest asks for Participant to help her grandson, maybe 3 years of age, with" Full Body Viewer". Participant tries explaining how to switch between skeletal and muscle view. Interactive cannot focus. Participant speaks to child]
>
> Here I can change it for you. There we go!
>
> It's hard for little kids to get that one.
>
> [Child sits down and interactive begins moving wildly]

Yeah, it gets a little funny when they're on the ground. So, this is

another thing, I think a little while back we would have been like

"It's not doing what it's supposed to do!" But, like, do they

[visitors] care? Right now, no, not even in the slightest (Interview

#2- Exhibitions Specialist 2).

During later participant observation I discovered that she was correct. Guests did not

seem to mind that the program got a little wonky when they tried it sitting down. In fact,

they usually responded by laughing and calling others over to watch.

The point of "Full Body Viewer" is to encourage guests to explore the makeup of

their own bodies in a playful manner. In this case, the museum staff believe that this

interactive is successful at encouraging play because it encourages guests to explore and

enjoy the movement of their own bodies. The older model had many issues that did not

allow for this and therefore did not encourage play. Even though this most recent update

still has some bugs, those bugs are not trivial enough to stop visitors from enjoying "Full

Body Viewer".

"Hungry Hiker"

Labeled as the "Hungry Hiker Interactive Game", "Hungry Hiker" is designed to

test guests' knowledge concerning healthy, balanced meals. At the beginning, visitors are

clued in on what would be considered a healthy meal. They then play a game in which

they must choose 10 items to create a balanced meal. If the items are chosen correctly,

the hiker will make it to the top of the mountain, if items are not balanced, the hiker will

stop climbing and fall down the mountain. Although not as stimulus driven as the

previous examples, this game can still be considered an interactive. By experimenting

with choosing different types of foods, guests are creating stimuli to which the hiker in

the game reacts and determines whether they make it up the mountain.

Figure 6: "Hungry Hiker Interactive Game"

When walking through the exhibition, many of the participants would point to

"Hungry Hiker" and ask "Have you played it yet?" Their choice of words is intriguing,

which one participant pointed out by saying, "So even that phrasing is indicative, right?

You play the game" (Interview #2- Exhibitions Specialist 1). Indicated by phrasing as

well as the complete name of this exhibition component, "Hungry Hiker" is an

educational game. The game-like component is introduced through the overall design in

which guests are timed and must make quick decisions as to what foods will best help

their hiker ascend the mountain. The whole experience is a bit reminiscent of the Cliff

Hanger Game on the Price is Right.

Although the design is nine years old, one educator believes that its message is

still relevant for guests:

> This still models that My Plate thing. I feel like it's always
>
> changing in nutrition, but this game gets a good general thing
>
> across with what the My Plate should look like with the dairy and
>
> meats and all that stuff. We do have guests that say things like,
>
> "Well, protein comes from a lot of different places" or "My kids
>
> are vegan, so they don't eat dairy," so it is a constant conversation
>
> with guests; but anyways, I feel like in this game you can explore
>
> what choices to make, and then your little person tries to climb to
>
> the top of the mountain, and they either make it or they don't, so
>
> that gamification is really cool (Interview #2- Educator 2).

One concern for this exhibition is the constant change in what is considered healthy. One

participant believes what makes *Expedition Health* so relevant is the authenticity that

they offer. She says, "Yeah so *Expedition Health*, some of the things we have been doing

is when the science changes, we adapt. We don't leave bad science in there" (Interview

#2- Curator). For her, it is the authenticity of what is presented in the exhibition and the

fact that it is real science that can help play exist in museums:

> So, the power of the authentic, whether it be something real or
>
> something real about you right now, that is the hook that then play
>
> helps continue through. So, it's that authenticity that makes play

not frivolous. There's frivolous play, which is just the things we all

need to do that's just plain fun, but there's something about the

power of the real, the power of the authentic in this space. Because

it's the science of you, this hook that takes the playfulness can be

taken with it, so that your end goal is not something you forget

(Interview #2- Curator).

According to this participant, it is the fact that *Expedition Health* contains "authentic

specimen and provides an authentic experience" (Interview #2- Curator) that leaves room

for games such as "Hungry Hiker". When supported by scientific reasoning, the game

and play are not frivolous but rather a method for learning. Findings suggest that,

"objects achieved higher rankings when they could be related to *personal experiences* or

when the participants were *familiar with the subject*" (Hampp and Schwan 2015, 176).

The game boasts basic food choices that most visitors will recognize, and in playing the

game, they are able to relate the food that creates the most balance in the game to their

own personal eating choices.

"Size Up Your Stride"

"Size Up Your Stride", although not referred to as a game, is where most of the

participants see a relation between the museum's software and gaming. The setup

includes a greenscreen, computers, and monitors where guests can watch themselves and

receive their scores. One participant specifically speaks about the gaming aspect that

DMNS was trying to go for with this exhibition component:

So," Size Up Your Stride", this has a great story behind it because

essentially our evaluation showed that not only do kids not

understand calories, nor do adults […] this is basically a big green

screen, and they get to walk or do silly things or just whatever they

want; and the idea is that we are absolutely going for the gaming

experience because you get a score. Anytime you get a score, it's

gaming, right? And it's you, and it's so cool! So, what ends up

happening is that people go many times, and they're trying to get

their score up by experimenting. "What can I do to get a better

score? What if I go faster? Is my stride length longer?" So how

much you're moving plays into this algorithm for movement

(Interview #2- Curator).

In this case, DMNS was trying to create a gaming component by giving guests energy

scores based upon their movement when they walked in front of the green screen. By

watching other guests on the monitors and comparing those scores to their own, guests

try to increase their scores by attempting different movements in front of the screens,

which makes this exhibition component interactive. Although not directly a game in the

most typical sense, the monitors display the guests' scores and movements in a manner

similar to gaming screens. Thomas Malaby, a champion of play and gaming, discusses

the "increasing recognizability of game-like elements in other domains of experience"

(2009, 205). Through using game-like elements, museums are able to allow people to

experience and understand things that they would otherwise simply read or hear about. In

the case of "Size Up Your Stride", visitors are able to think about the energy they expend

through viewing their energy scores after completing the activity. Their energy score is then applied to real life experiences. One educator talks a bit more about the real-life application:

> They do get their little energy score up on the screen, but then the second piece at the computer monitors is where they can see like "Okay, if I were to walk this way, it would take me this long to walk around Echo Lake" – So, what an energy score really means. Like if it's low or high, what does the measurement of your stride mean? What's the difference between running stride or walking stride, so it would take them going to the second step to do that (Interview #2- Educator 2).

Even though "Size Up Your Stride" is not a video game, the similarities and game-like elements are used to help visitors relate their energy scores to a real-life experience.

Figure 7: "Size Up Your Stride"

Thomas Malaby is not the only one to see the use of game-like experiences in museums. Many museums are looking for a platform for engaging visitors and "increasingly, this has resulted in numerous efforts to integrate interactive, game-based dimension into the museum experience, as opposed to relying on more passive observation of collections" (Ferreira 2016). In the case of "Size Up Your Stride", the game-like elements encourage visitors to play by compelling them to experiment with how to increase their energy score by either "running, jumping, skipping, or hopping" (Interview #2- Exhibitions Specialist 2).

"Summit Science Stage"

The final exhibition component I will discuss is "Summit Science Stage". In this area, staff members and volunteers put on shows that are meant to encourage audience participation. The show most participants seem to think is the most playful is Optical Illusions. In this show, illusions are used to teach visitors about how the eye works and how it can be tricked. One participant believes the playful element comes in because:

> It is very good. And it's whimsical with some of that kind of
>
> humor that kids like and adults get on a different level, so that's
>
> something that's fun about it, but it's also very interactive. I mean
>
> it's asking people to participate and that kind of thing (Interview
>
> #2- Exhibitions Specialist 1).

When asking another participant about "Summit Science Stage" she says that she believes it is so successful at getting guests involved because it is "facilitated play"

(Interview #2- Curator). Guests are able to directly question the actors involved in the program about how the illusions work and often times call friends and family over to experience the illusions for themselves. In this way, the exhibition encourages not only play but also socialization in which visitors are sharing their knowledge with others.

Figure 8: "Summit Science Stage"

Also interesting about the Optical Illusions show is that it was developed after the creation of the core value. When asking the educator of *Expedition Health* if she had seen any changes since the development of the new core value she says:

> I have noticed some changes. Like Optical Illusions was developed
>
> over the last two years, and the reason we have people come up
>
> and play around with them and the reason you're asked to be a part
>
> of the show with the staff members is because of that value. We

want you to play with us instead of you just watching us play

(Interview #1- Educator 2).

Although participants' answers varied when asked whether or not the museum had changed since the implementation of the core value, this is an example of a participant being able to give a direct example of the changes. In the creation of new programs, staff members are encouraged to think of ways to make them playful for guests.

Something I found interesting in my study of play was that Caillois in fact based his classification of mimicry on the illusion created when play imitates reality. Illusion is a combination of the Latin words *in* and *ludo* which directly translate to *in play* (Schousboe and Winther-Lindqvist 2013). An illusion itself is play, and an optical illusion can be seen as an image playing a trick on the eye. It is interesting to see play existing both through the nature of an illusion but also through how the program is designed to encourage participation. In this way, DMNS is not only encouraging guests to play but are teaching them through playing. Although some parts of "Optical Illusions" may be termed interactive as guests manipulate illusions, the overall theme of "Summit Science Stage" is more participatory and hands-on driven as guests are encouraged to participate in activities and touch certain objects.

Pieces of the Puzzle

The overall design of *Expedition Health* is centered around a hike up Mt. Evans. Upon entering the space, visitors are encouraged to select a "buddy" who accompanies you as you interact with various parts of the exhibition. These buddies are based on real

Coloradans who actually trained and hiked up Mt. Evans. At the end of the exhibition, visitors are given a printout, which includes information such as height, arm span, heart rate, etc. This information is recorded as visitors make their way through the exhibition and is based upon their contact with exhibition components.

Through using various concepts such as hiking, video games, my plate, and recognizable objects, *Expedition Health* provides a way for guests to relate what they are doing in the exhibition back to their own, personal experiences. In this way, DMNS is creating an exhibition based on constructivism (G. Hein 1999). When explaining how the "Hungry Hiker Interactive Game" worked, a participant uses the example of a video game. The design is not exactly like the video games of today, but there is enough similarity for visitors to understand that they are playing a game. By providing the connection to video games, visitors understand that they are trying to gain a top score by creating a well-balanced meal that will give their hiker the energy to make it up the hill. The same can be said for the game-like appearance of the energy scores in "Size Up Your Stride". Visitors can compare their scores to other scores and will learn that with larger and quicker movements, they can increase their scores. Therefore, by utilizing constructivism, DMNS is allowing their visitors to enter the space with some prior knowledge that can easily be expanded upon.

In terms of trying to reach different age ranges, *Expedition Health* is designed for a variety of ages but is most beneficial for school aged children and under. In "Tykes Peak", it is easy to see where Piaget's developmental stages come in. The most easily recognizable is stage two in which children are using their imaginations to mimic the scenario of preparing for a hike. Toys included in this area of the exhibition are an

excellent method for encouraging guided play (Weisberg et al. 2016) and for younger

children to explore items that may be familiar to them.

Expedition Health offers a variety of experiences that relate to not only different

age groups but also to different types of learners. Kinesthetic learners have the option to

touch whatever they would like within the exhibition space while visual learners may be

more focused on reading the labels scattered throughout. The "Optical Illusions" show

can be used to teach many different types of learners. Auditory learners will be able to

listen to the actors as they explain how the illusions work, visual learners will see the

illusions in action, and kinesthetic learners can interact with the illusions after the show.

In this way, play can reach many types of learners.

Chapter 6: Recommendations, Further Studies, and Concluding Thoughts

Upon reflection of my time spent interviewing DMNS staff members and observing visitors, I would like to offer recommendations regarding visitor experience and play within the exhibition *Expedition Health*. Some of these recommendations include addressing issues of which the staff at DMNS are already aware. In an effort to look toward the future, this section also provides suggestions for topics addressing play in other institutions and aspects of society.

Recommendations

Although *Expedition Health* proves to be a popular exhibition at DMNS, there is still room for improvement. First and foremost, the space does rely on digital technology for many of its components. DMNS is not alone in incorporating digital technology into many of its exhibitions; and museums are often quite proud of their capacities for incorporating technology. However, digital technology is not without its issues. Staff members spoke of the upkeep and maintenance required to keep all of the technological elements operating. There were a few times when I entered the space and discovered that an exhibition component was not functioning properly. Daily functions are not the only issues that can negatively affect digital technology. Technology relying on computer

programming also has a tendency to become obsolete as newer models of programs or updates become available, which require time, effort, and money to stay up to date. DMNS has the capability to include elements that are not so technology driven. It would be interesting to see prototyping of science experiments that did not require so much technology or having guests learn to study their own health without using computer generated reports.

As museums become more invested in the digital technology world, they often lose sight of their collections (Conn 2010). DMNS seems to provide a decent balance of placing real objects alongside the interactive and participatory elements included in the exhibition. However, unless visitors are closely reading labels or participating in some of the science experiments offered, they may overlook these real, biological specimens. The curator of *Expedition Health* and I spoke at length about the power of the authentic. Although this exhibition is mostly driven by visitors having free choice of which elements to explore, I believe it may be helpful to place more volunteers in spaces throughout the gallery to draw attention to these real objects. DMNS utilizes enactors in many of their temporary exhibitions. On busier days, it may be helpful to include hiking enactors who, like the "buddies", can be learning partners for visitors as they navigate through the exhibition.

Although DMNS does not leave "bad science" in their exhibition, health, in so many ways, is open to individual interpretation and no two bodies are exactly alike. *Expedition Health* is individualized in its measurements of all different kinds of visitors, however, there are a few areas that could use an update. For example, the "Hungry Hiker Interactive Game" includes rudimentary dietary options. Participants mentioned that

guests had approached them discussing the lack of options available for vegetarian or vegan diets. It would be interesting to see these options included as a further teaching point of the variety of dietary options and restrictions and how a healthy body can still be maintained.

The scope of programming for *Expedition Health* could be expanded. Parts of the exhibition detail the changes occurring in your body when you go on a hike or are at an increased elevation. It would be interesting to see programming that occurs outdoors and in nature. In this manner, DMNS could explore the utilization of nature play. In 2014, The Natural Learning Initiative, National Wildlife Federation, and Forest Service created a manual regarding the influence that nature play may have on learning. In listing the objectives of their *Nature Play & Learning Places* manual, the first objective is to spread knowledge of, "why nature play and learning is important for health and human development" (R. Moore 2014). The manual provides information regarding where nature play is most instructive and what nature play programs look like as well as how to manage the risks of nature play. Through drawing from resources such as this, DMNS could create nature play programs focusing on health and well-being in association with their exhibition *Expedition Health*. A program involving a true hike may be a bit difficult, but by moving programming to outdoor activities, visitors could further explore their own health and surroundings. After all, your body reacts to a walk outdoors very differently than it reacts to a walk in the nice, controlled environment of a museum.

Further Studies

In the future, it would be interesting to study what play may look like in different institutions. Play is often associated with creativity, and this avenue could be a stimulating topic of study within art museums. This would also be thought-provoking in relation to Steven Conn's assertion that art museums are more for adult audiences as opposed to children (Conn 2010). In this way, research could involve both challenging the misconception that play is only for children and whether or not Conn's assertion is true.

How museums deal with allowing visitors freedom to play while also following safety concerns is another topic for future study. Located within *Expedition Health* is a small bouldering wall. Many participants informed me that guests often complain about the wall, not because of safety concerns, but because they would like the wall to be larger and more challenging. When participants addressed this issue, they always said that the wall could not be larger for two reasons: 1. Concerns for the safety of guests, and 2. The museum structure could not handle the weight of a full bouldering wall. Both of these are legitimate reasons for why the wall could not be expanded, but I was mostly struck by the first reason. How can museums balance the desires of guests while also maintaining a safe atmosphere?

This topic has also been addressed in regards to primary schools in Britain and Germany allowing children to play in areas involving risk. *The New York Times* recently published an article entitled "In Britain's Playgrounds, 'Bringing in Risk' to Build Resilience" describing how playgrounds in countries such as Britain and Australia are

being built not to completely eliminate risk but to think about the good that can come from taking risks and the possibility of falling down. The article also highlights the stark contrast between these playgrounds and those in the United States, which are built almost as small, soft-surfaced prisons. They even include a quotation from a landscape designer who views playgrounds in the United States as, "a rubber floor, a little structure surrounded by a fence, it's like a little play jail" (Barry 2018, 12). This can also be translated into the structure of museums. Most museums seem to shy away from risk-taking when it comes to visitors. It would be interesting to explore what influences this aversion within the museum space.

Concluding Thoughts

The information provided in this thesis is meant to provide a scholarly approach of studying play within the context of museums. In taking a critical, reflexive stance concerning the creation of values within museums, this thesis attempts to bridge the gap between scholarship and practice of museum studies. Although the Denver Museum of Nature and Science (DMNS) appears to be implementing play well in their exhibitions, their methods may not be acceptable in other cultural institutions. The ethnographic research presented in this thesis and reference to earlier ethnographic studies regarding play enforce the importance of context. Play can be a method to bridge fun and learning, but only in certain contexts. Therefore, other institutions should first consider their audience, communities, stakeholders, and current mission and values before choosing to implement play.

One of the difficult aspects of studying play comes from first determining what you are studying. Anthropologists have struggled with finding a definition of play since this concept was first introduced to the field. Play is ambiguous in its own right because so much is left to the determination of those participating. Throughout the course of my research, I determined that play was easier for my participants to identify rather than describe. While in *Expedition Health*, participants made reference to participatory and interactive exhibition components. Play is active in many ways, and the inclusion of participatory and interactive components encourages visitors to be active and playful. Not all visitors will want this active experience at a museum, but the inclusion of these experiences shows just how much museums have changed. Visitors today are searching for an experience that is more leisurely. They are still there to learn, but not every visitor learns in the same way. That is why it is so important for exhibitions like *Expedition Health* to develop elements that can entice and inform all types of learners.

When the staff at DMNS created its core values, they did not set a specific list of criteria for what they deemed to be "playful"; for, they believed it would be easy to identify playful actions as they took place. Although this may work for visitor research and evaluation, it will be more difficult to transfer this concept of seeing and knowing into areas such as programming and exhibition development. In this thesis, I chose to define play within the context of DMNS not only because this definition helped me to

identify play, but also to offer, at least, a baseline for the formulation of a museological definition. This definition states:

> Play /pleɪ/ *vi*
>
> To occupy oneself in an activity resulting in exploration, enjoyment, and learning.

It is said of core values that "they are the defining elements of an organization's culture" (Carfagno and Rozan 2016, 202). Many of the participants of this research shared the belief that naming something as a core value makes you accountable for upholding that value. Formulating a definition for play within the context of DMNS helped me gain a better understanding of play as a concept and how it can be applied to museums. DMNS does not necessarily need to utilize my definition – to occupy oneself in an activity resulting in exploration, enjoyment, and learning – however, having a concrete definition could provide DMNS with a way of measuring how well it, as an institution, is upholding the new core value. In a broader sense, my research can comment on how important core values are to museums. Values give museums standards to uphold and therefore should be measurable.

In questioning why play was added as part of a core value and the appropriateness of play within a nature and science museum, I was able to gain insight into how DMNS went about creating its core values. Through partnering with communities in the creation of core values, DMNS is solidifying its place within these communities and categorizing themselves as a visitor/community centered museum. Many scholars are still debating the

positives and negatives of being visitor centered. Museums in the 21ˢᵗ century are also still struggling with the duality of being places of informal education and places of leisure. When it comes to utilizing play as a method for visitor engagement, as one participant stated, "You don't have to cannibalize education" (Interview #1- Curator). Play can be a method for active visitor engagement and learning within museum settings.

DMNS does have a large visitor sector which consists of children and family units. Many might make the assumption that by incorporating play, DMNS is attempting to cater to this specific group of visitors. However, in my research I found that this is not entirely true. Core values are meant to reflect an institution as a whole, and the staff which I interviewed categorized themselves as playful. This mentality is just one of many that can be used to break down the false conclusion that play is only meant for children or that work cannot be playful.

There is, however, something troubling about DMNS's visitor base. It is not just DMNS that is having the problem of attendance dropping off for those in their teenage or early adult years. As one participant mentioned, this may have to do with museums being categorized as a leisure time activity. Teenage and young adult audiences may be choosing to spend their money elsewhere. It is the responsibility of a museum to determine both who is in their visitor base and who is not (American Association of Museums 1992). DMNS does occasionally host events specifically geared towards teens and young adults, but these events are not necessarily boosting the daily attendance of these groups. I believe that if DMNS does want to increase its daily attendance, it will need to reach out to these groups for evaluation. This method has been very successful for DMNS in determining how to best serve other groups in Denver. Oftentimes, when

certain groups do not come to museums, it is because they feel as though the museum is not meant for them or they are unable to connect with museum content. Learning how to better connect with these groups (whether they be teenagers, young adults, or a cultural group) could strongly improve the relationships which museums have with their communities.

During my time at DMNS, I was able to speak one-on-one with six, remarkable museum professionals. They were all passionate about their work in museums and provided insight into both the innerworkings of the museum as well as their efforts to involve the surrounding communities. Throughout this thesis, I have deconstructed DMNS's utilization of play as a springboard for community engagement. When the themes of this research are more broadly applied, much can be said concerning museums in the 21st century.

Bibliography

Albert, Roy, and David Leedom Shaul. 1985. "Hohonaqa." *A Concise Hopi and English Lexicon*. Philadelphia: J. Benjamins. http://site.ebrary.com/id/10534232.

Ambrose, Timothy, and Crispin Paine. 2012. *Museum Basics*. Michigan: Routledge.

American Alliance of Museums. 2000. "AAM Standards and Best Practices." Code of Ethics for Museums. 2000. http://www.aam-us.org/resources/ethics-standards-and-best-practices/code-of-ethics.

American Anthropological Association. 2012. "AAA Ethics Blog." Principles of Professional Responsibility. 2012. http://ethics.americananthro.org/category/statement/.

American Association of Museums. 1992. "Excellence and Equity: Education and the Public Dimension of Museums."

Ames, Michael M. 1986. *Museums, the Public and Anthropology*. New Delhi, India: Concept Publishing Company.

———. 1992a. *Cannibal Tours and Glass Boxes: The Anthropology of Museums*. Vancouver: UBC Press. http://ebookcentral.proquest.com/lib/ucm/detail.action?docID=3412250.

———. 1992b. "The Development of Museums in the Western World: Tensions between Democratization and Professionalism." In *Cannibal Tours and Glass Boxes: The Anthropology of Museums*, 15–24. Vancouver: University of British Columbia Press.

Anderson, Benedict R. O'G. 2006. *Imagined Communities: Reflections on the Origin and Spread of Nationalism*. Rev. ed. London ; New York: Verso.

Barry, Ellen. 2018. "In Britain's Playgrounds, 'Bringing in Risk' to Build Resilience." *The New York TImes*, March 10, 2018.

Bateson, Gregory. 1976. "A Theory of Play and Fantasy." In *Ritual, Play, and Performance: Readings in the Social Sciences/Theatre*, edited by Richard Schechner and Mady Schuman, 67–73. A Continuum Book. New York: Seabury Press.

Bennett, Tony, Lawrence Grossberg, and Meaghan Morris, eds. 2013. *New Keywords A Revised Vocabulary of Culture and Society*. Hoboken: Wiley. http://nbn-resolving.de/urn:nbn:de:101:1-201412196019.

Bernard, H. Russell. 2011. *Research Methods in Anthropology: Qualitative and Quantitative Approaches*. 5th ed. Lanham, MA: AltaMira Press.

Bernard, H. Russell, and Gery W. Ryan. 2010. *Analyzing Qualitative Data: Systematic Appraches*. Los Angeles, CA: SAGE.

Blair, Elizabeth. n.d. *Interactive Games Make Museums A Place To Play*. All Things Considered. https://www.npr.org/templates/story/story.php?storyId=99244253.

Boas, Franz. 1907. "Some Principles of Museum Administration." *Science* 25 (650): 921–33.

Bouquet, Mary. 2001. *Academic Anthropology and the Museum: Back to the Future*. New York: Berghahn Books. http://public.eblib.com/choice/publicfullrecord.aspx?p=1707792.

———. 2012. *Museums: A Visual Anthropology*. English ed. Ey Texts in the Anthropology of Visual and Material Culture. London ; New York: Berg.

Briggs, Mary, and Alice Hansen. 2012. *Play-Based Learning in the Primary School*. London; Thousand Oaks, Calif.: SAGE. http://public.eblib.com/choice/publicfullrecord.aspx?p=880798.

Buck, Rebecca A, Jean Allman Gilmore, American Association of Museums, and American Library Association. 2010. *MRM5: Museum Registration Methods*.

Buggeln, Gretchen. 2015. "Museum Space and the Experience of the Sacred." *Material Religion: The Journal of Objects, Art, and Belief* 8 (1): 30–50.

Butler, Shelley Ruth. 2008. *Contested Representations: Revisiting Into the Heart of Africa*. Broadview Ethnographies & Case Studies. Peterborough, Ontario: Broadview Press.

Carfagno, Jon, and Adam Reed Rozan. 2016. "Adopting Empathy: Why Empathy Should Be Required as a Core Value for All Museums-Period." In *Fostering Empathy through Museums*, edited by Elif M. Gokcigdem, 201–16. Lanham, MA: Rowman & Littlefield.

Chamberlain, Francis. 1906. "The Meaning of Youth and Play." In *The Child: A Study in the Evolution of Man*, 2nd ed., 10–28. London, UK: Walter Scott Publishing Co.

Cochrane, A. 1986. "Community Politics and Democracy." In *New Forms of Democracy*, edited by D. Held and C. Pollitt, 51–75. London: Sage.

Cole, K. C. 2009. *Something Incredibly Wonderful Happens: Frank Oppenheimer and the World He Made up*. Boston: Houghton Mifflin Harcourt.

Collins, Peter, and Anselma Gallinat. 2013. *The Ethnographic Self As Resource: Writing Memory Experience into Ethnography*. New York: Berghahn Books.

Conn, Steven. 2010. *Do Museums Still Need Objects?* Philadelphia, PA: University of Pennsylvania.

Corr, Rachel. 2008. "Death, Dice, and Divination: Rethinking Religion and Play in South America." *Journal of Latin American and Caribbean Anthropology* 13 (1): 2–21.

Crooke, Elizabeth. 2011. "Museums and Community." In *A Companion to Museum Studies*, by Sharon Macdonald, 170–85. Wiley-Blackwell.

Dana, John Cotton. 1917. *The New Museum*. Michigan: Elm Tree Press.

Davis, Peter. 2011. *Ecomuseums: A Sense of Place*. 2nd ed. London: Continuum International Pub. Group. http://public.eblib.com/choice/publicfullrecord.aspx?p=686924.

Dewey, John. 1938. *Experience And Education*. Riverside: Free Press.

DMNS. 2016. "2016 Annual Report: Denver Museum of Nature and Science." Denver, CO: Denver Museum of Nature and Science. https://www.dmns.org/media/2977161/annual-report-final-hirez-nd.pdf.

———. 2018a. "Mission and Vision." Denver Museum of Nature and Science. 2018.

———. 2018b. "Museum History." Denver Museum of Nature and Science. 2018. http://www.dmns.org/about-us/museum-history/.

———. 2018c. "SCFD Community Free Days." Denver Museum of Nature and Science. 2018. http://www.dmns.org/plan-your-visit/scfd-free-days/.

Duncan, Carol. 2009. *A Matter of Class: John Cotton Dana, Progressive Reform, and the Newark Museum*. 1. ed. Pittsburgh, Pa: Periscope Publ.

Edwards, Elizabeth, Chris Gosden, and Ruth B. Phillips, eds. 2006. *Sensible Objects: Colonialism, Museums, and Material Culture*. English ed. Wenner-Gren International Symposium Series. Oxford ; New York: Berg.

Falk, John H. 2009. *Identity and the Museum Visitor Experience*. New York: Routledge.

Falk, John H., and Lynn D. Dierking. 2012. *The Museum Experience Revisited*. New York: Routledge.

Falk, John H., Lynn D. Dierking, and Marianna Adams. 2011. "Living in a Learning Society: Museums and Free-Choice Learning." In *A Companion to Museum Studies*, edited by Sharon Macdonald, 323–39. Chichester, West Sussex, U.K.: Wiley-Blackwell. http://public.eblib.com/choice/publicfullrecord.aspx?p=819387.

Ferreira, Becky. 2016. "How Games Are Changing the Museum Experience." Motherboard. May 2016. https://motherboard.vice.com/en_us/article/yp3wwj/how-games-are-changing-the-museum-experience.

Findlen, Paula. 1989. *The Museum: Its Classical Etymology and Renaissance Genealogy*. Cambridge, Mass.: University Press.

Fuller, Nancy. 1992. "The Museum as a Vehicle for Community Empowerment: The Ak-Chin Indian Community Ecomuseum Project." In *Museums and Communities: The Politics of Public Culture*, edited by Ivan Karp, Christine Mullen Kreamer, Steven Lavine, and Woodrow Wilson International Center for Scholars. Washington: Smithsonian Institution Press.

Fyfe, Gordon. 2011. "Sociology and the Social Aspects of Museums." In *A Companion to Museum Studies*, edited by Sharon Macdonald, 33–49. Wiley-Blackwell.

Geertz, Clifford. 1973. "Deep Play: Notes on the Balinese Cockfight." In *The Interpretation of Cultures: Selected Essays*, 412–53. New York: Basic Books.

Gilbert, John, and Mary Priest. 1997. "Models and Discourse: A Primary School Science Class Visit to a Museum." *Department of Science and Technology Education*, May, 749–62.

Goode, George Brown. 1889. *Museum-History and Museums of History*. New York: Knickerbocker Press.

Graham, Shawn. 2016. "The Archaeologist Who Studied Video Games, and the Things He Learned There." *The SAA Archaeological Record*, November 2016.

Grewcock, Duncan. 2014. *Doing Museology Differently*. http://site.ebrary.com/id/10756751.

Gurian, Elaine Heumann. 2006. *Civilizing the Museum: The Collected Writings of Elaine Heumann Gurian*. London ; New York: Routledge.

———. 2010. "Museum as Soup Kitchen." *Curator* 51 (1): 71–85.

Hampp, Constanze, and Stephan Schwan. 2015. "The Role of Authentic Objects in Museums of the History of Science and Technology: Findings from a Visitor Study." *International Journal of Science Education, Part B* 5 (2): 161–81. https://doi.org/10.1080/21548455.2013.875238.

Handler, Richard, and Eric Gable. 1997. *The New History in an Old Museum: Creating the Past at Colonial Williamsburg*. Durham: Duke University Press.

Heider, Karl G. 1977. "From Javanese to Dani: The Translation of a Game." In *Studies in the Anthropology of Play: Papers in Memory of B. Allan Tindall: Proceedings*

from the Second Annual Meeting of the Association for the Anthropological Study of Play, edited by Association for the Anthropological Study of Play, B. Allan Tindall, and Phillips Stevens, 72–80. West Point, N.Y: Leisure Press.

Hein, George. 1999. "The Constructivist Museum." In *The Educational Role of the Museum*, edited by Eilean Hooper-Greenhill, 73–79. Hove, United Kingdom: Psychology Press.

Hein, Hilde S. 2000. *The Museum in Transition: A Philosophical Perspective*. http://search.ebscohost.com/login.aspx?direct=true&scope=site&db=nlebk&db=nlabk&AN=762344.

Hooper-Greenhill, Eilean. 1999a. "Education, Communication, and Interpretation: Towards a Critical Pedagogy in Museums." In *The Educational Role of the Museum*, 3–28. Hove, United Kingdom: Psychology Press.

———. 1999b. "Museum Learners as Active Postmodernists: Contextualizing Constructivism." In *The Educational Role of the Museum*, 67–72. Hove, United Kingdom: Psychology Press.

———. 2013. *Museums and Their Visitors*. London ; New York: Routledge.

Huizinga, J. 1950. *Homo Ludens. Proeve Eener Bepaling Van Het Spelelement Der Cultuur*. Michigan: Routledge.

ICOM. 2010. "11th General Assembly of ICOM, Copenhagen, Denmark, 14 June 1974." ICOM. http://icom.museum/the-governance/general-assembly/resolutions-adopted-by-icoms-general-assemblies-1946-to-date/copenhagen-1974/.

Karp, Ivan, Christine Mullen Kreamer, Steven Lavine, and Woodrow Wilson International Center for Scholars, eds. 1992. *Museums and Communities: The Politics of Public Culture*. Washington: Smithsonian Institution Press.

Keller, Jared. 2015. "The Psychological Case for Adult Play Time." *Pacific Standard*, April.

Kennicott, Philip. 2016. "What Do Museums Audiences Need Most? More Time for Play." *The Washington Post*, February 26, 2016. https://www.washingtonpost.com/news/arts-and-entertainment/wp/2016/02/26/what-do-museum-audiences-need-most-more-time-for-play/?noredirect=on&utm_term=.7f72fbf08a26.

Knerr, Gunter. 2000. "Technology Museums: New Publics, New Partners." *Museum International* 52 (4): 8–13.

Kreps, Christina. 2003. *Liberating Culture Cross-Cultural Perspectives on Museums, Curation and Heritage Preservation*.

———. n.d. *Museums and Anthropology in the Age of Engagement*. London ; New York: Routledge.

Kruger, Frances, Liz Clancy, and Kristine A. Haglund. 2013. "Exhibits An Evolution." *Denver Museum of Nature & Science Annals*, no. 4 (December): 65–104.

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

L., F.T. 1907. "Games of the North American Indians." *The American Naturalist* 41 (488): 530–31.

Lancy, David F. 2015. "Kpelle Children at Play." Utah State University.

Lavenda, Robert H. 1996. "Play." In *Encyclopedia of Cultural Anthropology*, edited by David Levinson and Melvin Ember, 1st ed, 3:936–39. New York: Henry Holt and Co.

LeCompte, Margaret D., and Jean J. Schensul. 2010. *Designing and Conducting Ethnographic Research*. 2nd ed. Lanham, MA: AltaMira Press.

Liboriussen, Bjarke, and Paul Martin. 2016. "Regional Game Studies." *Game Studies: The International Journal of Computer Game Research* 16 (1). http://gamestudies.org/1601/articles/liboriussen.

Macdonald, Sharon. 2002. *Behind the Scenes at the Science Museum*. Materializing Culture. Oxford ; New York: Berg.

———. 2011. *A Companion to Museum Studies*. Wiley-Blackwell.

Malaby, Thomas M. 2007. "Beyond Play: A New Approach to Games." *Games and Culture* 2 (2): 95–113.

———. 2009. "Anthropology and Play: The Contours of Playful Experience." *New Literary History* 40 (1): 205–18.

Marstine, Janet. 2006. *New Museum Theory and Practice: An Introduction*. Malden, MA; Oxford: Blackwell. http://public.eblib.com/choice/publicfullrecord.aspx?p=239859.

McKenna-Cress, Polly, and Janet Kamien. 2013. *Creating Exhibitions: Collaboration in the Planning, Development, and Design of Innovative Experiences*. Hoboken, New Jersey: Wiley.

McLean, Kathleen. 1996a. "Museum Visitors." In *Planning for People in Museum Exhibitions*, 1–14. Washington, DC: Association of Science-Technology Centers.

———. 1996b. "Participatory and Interactive Exhibits." In *Planning for People in Museum Exhibitions*, 92–102. Washington, DC: Association of Science-Technology Centers.

Mergen, Bernard. 1977. "From Play to Recreation: The Acceptance of Leisure in the United States, 1890-1930." In *Studies in the Anthropology of Play: Papers in Memory of B. Allan Tindall: Proceedings from the Second Annual Meeting of the Association for the Anthropological Study of Play*, edited by Association for the Anthropological Study of Play, B. Allan Tindall, and Phillips Stevens, 55–63. West Point, N.Y: Leisure Press.

Merritt, E.E. 2016. *Trendswatch 2015*. S.l.: s.n.

Moore, Porchia. 2015. "R-E-S-P-E-C-T! Church Ladies, Magical Negros, and Model Minorities: Undersanding Inclusion From Community to Communities." *The Incluseum* (blog). October 15, 2015. https://incluseum.com/2015/10/15/respect-church-ladies-magical-negroes-model-minorities-inclusion-community-to-communities/.

Moore, R. 2014. "Nature Play & Learning Places. Creating and Managing Places Where Children Engage with Nature." Natural Learning Initiative and National Wildlife Federation. https://design.ncsu.edu/nli/wp-content/uploads/2017/04/Nature-Play-Learning-Places_storefront_preview_0.pdf.

Norbeck, Edward. 1974. "The Anthropological Study of Human Play." *Rice Institute Pamphlet-Rice University Studies* 60 (3).

https://scholarship.rice.edu/bitstream/handle/1911/63156/article_RIP603_part1.pdf.

O'Donnell, Casey. 2014. "On Balinese Cockfights: Deeply Extending Play." *Games and Culture* 9 (6): 406–16.

Oppenheimer, Frank. 1972. "The Palace of Arts and Science: An Exploratorium at San Francisco, California, U.S.A." *Leonardo* 5 (4): 343–46.

Ortner, Sherry B. 1999. *Life and Death on Mt. Everest: Sherpas and Himalayan Mountaineering*. Princeton, N.J.: Princeton University Press.

Ortner, Sherry B. 2006. *Anthropology and Social Theory: Culture, Power, and the Acting Subject*. Durham: Duke University Press.

Parsons, Elsie Clews. 1922. "Hidden Ball on First Mesa, Arizona." *Royal Anthropological Institute of Great Britain and Ireland* 22 (June): 89–91.

Phillips, Ruth B. 2003. "Community Collaboration in Exhibitions: Toward a Dialogic Paradigm." In *Museums and Source Communities: A Routledge Reader*, edited by Laura L. Peers and Alison K. Brown, 155–69. London ; New York: Routledge.

Piaget, Jean. 2008. *The Psychology of the Child*. New York: Basic Books.

Resnick, Mitchel. 2004. "Edutainment? No Thanks. I Prefer Playful Learning." *Associazione Civita Report on Edutainment*, no. 14: 1–4.

Samis, Peter S, and Mimi Michaelson. 2017. *Creating the Visitor-Centered Museum*. http://search.ebscohost.com/login.aspx?direct=true&scope=site&db=nlebk&db=nlabk&AN=1435469.

SCFD. 2016. "SCFD 2016 Report to the Community." Annual Report. Colorado. http://scfd.org/p/annual-reports.html.

Schousboe, Ivy, and Ditte Winther-Lindqvist, eds. 2013. *Children's Play and Development: Cultural-Historical Perspectives*. International Perspectives on Early Childhood Education and Development, volume 8. Dordrecht: Springer.

Shelton, Anthony A. 2011. "Museums and Anthropologies: Practices and Narratives." In *A Companion to Museum Studies*, edited by Sharon Macdonald. Wiley-Blackwell.

Silber, Emily. 2016. "What's the Deal With Adult Coloring Books?" https://www.psychologytoday.com/articles/201609/what-s-the-deal-adult-coloring-books.

Simon, Nina. 2010. *The Participatory Museum*. Santa Cruz, California: Museum 2.0.

———. 2015. "How Do You Define 'Community.'" *Museum 2.0* (blog). 2015. http://museumtwo.blogspot.com/2015/04/how-do-you-define-community.html.

Spalding, Julian. 2002. *The Poetic Museum: Reviving Historic Collections*. Munich ; New York: Prestel.

Stevens, Phillips. 1977. "Towards the Anthropology of Play." In *Studies in the Anthropology of Play: Papers in Memory of B. Allan Tindall: Proceedings from the Second Annual Meeting of the Association for the Anthropological Study of Play*, edited by Association for the Anthropological Study of Play and B. Allan Tindall, 235–42. West Point, N.Y: Leisure Press.

Stevens, Phillips Jr. 1978. "Play and Work: A False Dichotomy." *The Association for the Anthropological Study of Play* 5 (2): 17–22.

Suomi, Stephen J., and Harry F. Harlow. 1971. "Depression in Primates." *The American Journal of Psychiatry* 127 (10): 313–20.

Sutton-Smith, Brian. 1977. "Towards an Anthropology of Play." In *Studies in the Anthropology of Play: Papers in Memory of B. Allan Tindall: Proceedings from the Second Annual Meeting of the Association for the Anthropological Study of Play*, edited by Association for the Anthropological Study of Play, B. Allan Tindall, and Phillips Stevens, 222–32. West Point, N.Y: Leisure Press.

———. 1997. *The Ambiguity of Play*. Cambridge, Mass.: Harvard University Press. http://public.eblib.com/choice/publicfullrecord.aspx?p=3300549.

Terrell, John. 1991. "Disneyland and the Future of Museum Anthropology." *American Anthropologist* 93 (1): 149–53.

Thach, Sharon V., and David J. Dwyer. 1981. "Kpelle: A Reference Handbook of Phonetics, Grammar, Lexicon, and Learning Procedures." Peace Corps, Washington, D.C.

Vergo, Peter, ed. 1989. *The New Museology*. London: Reaktion Books.

Waltl, Christian. 2006. "Museums For Visitors: Audience Development." In .

Ward, David C. 2004. *Charles Wilson Peale: Art and Selfhood in the Early Republic*. Berkeley, CA: University of California Press.

Watkins, Frances E. 1945a. "Indians at Play: Hopi Shell Game." *Masterkey* 19 (1): 20–22.

———. 1945b. "Indians at Play: The Hopi Dart Game." *Masterkey* 19 (4): 113–15.

———. 1945c. "Indians at Play: Hopi Game of Shinny." *Masterkey* 19 (5): 162–64.

———. 1946. "Indians at Play: Hopi Toys." *Masterkey* 20 (3): 81–87.

Watson, Sheila E. R., ed. 2007. *Museums and Their Communities*. Leicester Readers in Museum Studies. London ; New York: Routledge.

Weber, Max. 1905. *The Protestant Ethic and The "spirit" of Capitalism and Other Writings*.

Weisberg, Deena Skolnick, Kathy Hirsh-Pasek, Roberta Michnick Golinkoff, Audrey K. Kittredge, and David Klahr. 2016. "Guided Play." *Current Directions in Psychological Science* 25 (3): 177–82.

White, Rachel E. 2012. "The Power of Play: A Research Summary on Play and Learning." Minnesota Children's Museum. http://www.childrensmuseums.org/images/MCMResearchSummary.pdf.

Wieners, Carrie J. 2016. "Leadership in the Museum: A Possible Shift in Gender Representation." In *Collections Journal Vol 6.1 N6.2*, 7–25. Blue Ridge Summit: AltaMira Press. http://public.eblib.com/choice/PublicFullRecord.aspx?p=5217263.

Witcomb, Andrea. 2006. "Interactivity: Thinking Beyond." In *A Companion to Museum Studies*, edited by Sharon Macdonald, 353–61. Blackwell Companions in Cultural Studies 12. Malden, MA: Blackwell Pub.

Ziamou, Lilia. 2012. "Designing Interactive Museum Exhibits: Three Ways to Increase Audience Engagement." *Huffington Post*, 2012.

Appendix I

Interview Questions

1st Interview Process

1. DMNS lists one of their core values as, "We are curious, creative, and playful." Why do you believe play was added as a part of this value?

2. What do you believe play as part of this value means?

3. If you could give a general definition of play what would it be?

4. Do you believe play should be part of this core value? Why or why not?

5. Do you believe DMNS demonstrates the play aspect core value? If so, where do you see this value?

6. As a museum professional, where do you see the value of play applying to your job?

7. Do you believe play as a core value is unique to DMNS? Do you believe play could benefit or harm other institutions?

Other questions may occur based upon answers

Appendix II

University of Denver

Consent Form for Participation in Research

Title of Research Study: Playing With Exhibition: An Anthropological Study of Interactive Design

Researcher(s): Helena Sizemore, Master's Candidate, University of Denver

Study Site: Denver Museum of Nature and Science

<u>Purpose</u>

You are being asked to participate in a research study. The purpose of this research is to explore the core value "we are curious, creative, and playful," with an emphasis on the playful aspect.

<u>Procedures</u>

If you participate in this research study, you will be invited to answer questions concerning why you believe play is a central part of this core value, what this value means to you as a museum professional, where you see this value in your work, and how this value may be applied to the exhibition Expedition Health. Interviews will take place at DMNS during normal operation hours.

<u>Voluntary Participation</u>

Participating in this research study is completely voluntary. Even if you decide to participate now, you may change your mind and stop at any time. You may choose not to continue with the interviews for any reason without penalty or other benefits to which you are entitled.

Risks or Discomforts

Potential risks and/or discomforts of participation may include time constrictions. If you feel this study is taking up too much of your time, please contact me and we will work out the details of better time management.

Benefits

Possible benefits of participation include benefits to the fields of museology and anthropology. There has been little research from an anthropological perspective concerning play within museums. It is my hope to take a reflexive look at why play is being implemented as a core value and provide feedback for the museum community.

Incentives to participate

N/A

Confidentiality

I will utilize only personal computers and only share details concerning the identity of my participants with my direct supervisor to keep your information safe throughout this study. Recordings of interviews will be uploaded to my personal computer and transcribed by myself. Your individual identity will be kept private when information is presented or published about this study.

However, should any information contained in this study be the subject of a court order or lawful subpoena, the University of Denver might not be able to avoid compliance with the order or subpoena. The research information may be shared with federal agencies or local committees who are responsible for protecting research participants.

Questions

If you have any questions about this project or your participation, please feel free to ask questions now or contact Helena Sizemore at (606) 813-1701 or Helena.sizemore@du.edu at any time. You may also contact my advisor, Christina Kreps at Christina.kreps@du.edu.

If you have any questions or concerns about your research participation or rights as a participant, you may contact the DU Human Research Protections Program by emailing IRBAdmin@du.edu or calling (303) 871-2121 to speak to someone other than the researchers.

Options for Participation

Please initial your choice for the options below:

___The researchers may audio/video record or photograph me during this study.

___The researchers may NOT audio/video record or photograph me during this study.

Please take all the time you need to read through this document and decide whether you would like to participate in this research study.

If you agree to participate in this research study, please sign below. You will be given a copy of this form for your records.

_____   _____

Participant Signature   **Date**