

“Remember When We...?": Personal Memory in Family Visits to History Museums

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Abstract

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As children grow up, they do not just learn about history in school, but develop an image of the past from extracurricular influences, including family members’ stories and memories. Studies of family talk in museums suggest visitors often share personal memories within these contexts. However, these studies have not systematically or deeply interrogated the nature of memory sharing. The purpose of this study was to describe, first, the ways in which family groups visiting history museums use personal memories to collectively make sense of history and, second, what exhibit content or components seem to prompt the sharing of these memories. Using a qualitative survey design, this study examined the frequency, nature, and locations of visitor memory sharing in three history museum exhibits, with video recordings and self-administered questionnaires of 27 families. This study found that families frequently share personal memories in history museum visits. Caregivers are central figures in these conversations, which share a variety of different types of information. Overall, personal memory sharing seems to be prompted by particular elements of exhibit content. Understanding this type of family talk can help history educators from both formal and informal sectors better understand how young people’s ideas about the past develop and consider how personal memory relates to young people’s learning trajectories.

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Chapter 1: Introduction

Context

As children grow up, they do not just learn about history in school. History learning happens at family reunions, vacations, neighborhood walks, movie theaters, and countless other nonacademic settings. In a recent interview, Historian David Blight (2017, Nov. 2) described the process of learning about the past outside of school:

“The average American citizen...rarely makes choices about historical narratives. They get (history) through family, they get it through region, they get it through popular culture, they get it through media, they get it through churches.... Then they encounter school.... And (we historians) like to think that we’re having a great impact on them. We’re not, by in large. There’s far, far more *memory* than there is the history we write. The task, the great challenge now, is the challenge of public history.”

The image of the past that young people develop outside of school can shape their attitudes toward themselves and their communities in significant ways. For example, in 2017, popular conceptions of the past influenced many Americans’ attitudes toward the display of statues commemorating Confederate Civil War figures. Many people feel closely connected to the version of the past that celebrates the Confederacy, one they grew up hearing from family members. As Journalist John Dickerson (2017, Nov. 2) said, these ideas about the Confederacy are “not just something you learn on a blackboard in school...(They’re) in your bones in a way that’s different than...abstract history.” History learned from family members outside of the classroom can hold real sway over people’s attitudes.

Relevant Literature

Literature on history learning suggests that young people develop ideas about the past outside of school from a variety of sources, including both cultural artifacts (like movies or museum exhibits) and family stories (Wineburg, 2000). To make history learning more meaningful, scholars argue that educators should acknowledge and build upon their students’

pre-existing understandings to foster historical thinking (Barton, 2004; Levstik & Barton, 2005; Seixas, 2000; Stearns, Sexias, and Wineburg, 2000). However, more research is needed to better understand how family memories and stories contribute to young people's ideas about the past and whether or not they align with goals for history education.

History museums are highly generative of family talk about the past, suggesting that they may be places where children develop ideas about the past, both from exhibit content and the social interactions of their group. In many cases, this social group is the child's family. Though the literature on family learning in history museums is limited, it suggests that they can be rich sites of learning through talk, including personal memory sharing. In their evaluation of family visitor talk in an exhibit that combined STEM and history, researchers at Conner Prairie Interactive History Park, outside Indianapolis, IN (2016), found that 94% of visitors talked about personally relevant experiences while they were at the museum, such as owning a certain type of radio growing up or having already learned about colors in school. In their research on visitors' conversations in museums, Leinhardt and Knutson (2004) noted that many conversations involved visitors "using the museum visit as an opportunity to connect what they are seeing to their own lives, drawing upon experiences from their past."

While the literature suggests that families' conversations in museums is often highly personal, no studies of family talk in museums, history-focused or otherwise, have made the sharing of personal memories their primary focus. Additionally, little is known about what specific exhibit elements prompt the sharing of personal memories, a research focus that could have valuable practical implications for exhibit designers and other museum professionals.

This study builds upon a sociocultural view of learning, which assumes that learning involves the use of cultural tools, like language, in social contexts, and the internalization of

these experiences, leading to cognitive changes (Vygotsky, 1978). Using this perspective, this study views personal memory sharing as a cultural tool that families use to co-construct meaning. Others' personal memories can be a cultural tool that the listener internalizes. Sharing a personal memory is also an indication (though not evidence) that the speaker is making a connection across contexts, suggesting a possible internalization of an element of the museum. However, as research around personal memory sharing within history museums is limited, the focus of this study is to describe the phenomenon of personal memory sharing. It is outside the scope of this study to determine whether cognitive changes have been made or experiences have been internalized.

Purpose of this Study

This study aims to describe, first, the ways in which family groups visiting history museums use personal memories to collectively make sense of history and, second, what exhibit content or components seem to prompt the sharing of these memories. To that end, this study was guided by the following research questions:

1. What is the frequency and nature of the memories that families share when visiting history museum exhibits?
2. What aspects of a history museum exhibit seem to prompt families to share their personal memories?

Significance to the Museum Field

This study may help exhibit designers, interpreters, and educators understand how to design learning experiences to draw out visitor memories. Results may also help educators from both formal and informal settings better understand how young people develop ideas about the past and consider how or whether personal memory relates to historical thinking.

This study is also intended to shine more light on the collaborative process of family meaning-making in the history museum. It may suggest ways in which visitors make personal connections to museum stories, furthering the conversation about how to design exhibits that resonate with visitors.

Chapter 2: Review of the Literature

Introduction

This study aims to describe, first, the ways in which family groups visiting history museums use personal memories to collectively make sense of history and, second, what exhibit content or components seem to prompt the sharing of these memories. This chapter details relevant literature in the following sections: 1. family learning in museums, 2. personal memory sharing during family visits to museums, 3. personal memory and history exhibits, 4. historical thinking, and 5. situating personal memory sharing and historical thinking within the museum field. Taken together, this literature suggests that personal memory sharing on visits to history museums may be an important way that families further their own learning agendas and engage with exhibits, but more research is needed to learn about how or whether these memories support family members' learning, particularly regarding young people's' historical thinking. Additionally, more research is needed to help exhibit designers understand what environmental stimuli inspires this sort of talk.

Section 1: Family Learning in Museums

Between 60% and 70% of museum visitors come in family groups, and a growing body of literature documents how these groups learn (Dierking, 2013). In these studies, families are conceived of as groups who self-define as a family, usually with members from multiple generations who have an ongoing, but not necessarily biological, relationship (Dierking, 2013). Early research focused on family experiences within the walls of a museum, but the agenda has been expanding to include how museum learning fits into families' larger trajectories of learning across settings and contexts, focusing on visitors' pre-existing knowledge and identities and how

their museum visit contributes to this knowledge and identity-building process (Ellenbogen, Luke & Dierking, 2004).

Family social dynamics shape the learning that occurs on these visits, especially as caregivers take on a variety of roles in family visits to museums. Falk (2009) found that caregivers are often facilitators for their children's experiences or learning. Researchers from Evergreene Research and Evaluation (2013) found that, in other situations, adults might act as playmates, interpreters or supervisors. They also might position themselves as brokers, making connections across their child's learning experiences or supporting their child's interests and identities (Barron, 2010; Bricker & Bell, 2014; Kim, Hung, Jamaludin & Lim, 2014). Additionally, caregivers' levels of interaction with their children vary among visits, depending on social group dynamics and exhibit content.

Several important limitations shape the current research about family learning in museums. While much is similar about how families learn in museums, each family also learns in its own way (Dierking, n.d.) Additionally, much of this research has been done on museum-visiting families, a typically well-resourced group, as opposed to families from non-dominant communities.

Two major themes relevant to this study appear in the literature, described in the following sections: Families learn in museums predominantly through conversation, and what and how families learn is impacted by both family agendas and exhibit affordances.

Family Conversations in Museums. Conversation is both a process and product of family learning in museums (Leinhardt & Crowley, 2002; Leinhardt & Knutson, 2004). Family learning on a museum visit has a fundamentally social nature, as participants co-construct meaning in response to exhibit stimuli. Family members talk with one another, and this talk can

have impacts that last beyond the museum visit, to help young people build expertise or create a foundation for future ways of thinking and understanding the world (Ash, 2004; Palmquist & Crowley, 2006).

Much of the current literature around family conversations in museums focuses on how adults use talk to facilitate their child's knowledge development within exhibits. Palmquist and Crowley (2007) found that caregivers often act as facilitators for their children within museum exhibits when the child is a novice learner on the exhibit content. As the child develops what Palmquist and Crowley call an 'island of expertise' around a subject, such as dinosaurs, parents are less likely to verbally engage in that child's learning in a museum exhibit. Povis and Crowley (2015) also found that developing joint attention on a particular aspect of the exhibit leads to an increase in learning talk among families, suggesting that this is another important factor supporting family learning.

Family Agendas and Exhibit Affordances. Families visiting museums enact their own learning agendas, which interact with exhibit content to shape members' learning. Family agendas may not be explicitly stated, but are comprised of member resources, desires, needs, and expectations for the visit (Dierking & Falk, 1994; Ellenbogen, Luke & Dierking, 2004). All family members, even children, contribute to the family agenda (Moussouri, 2003). For example, in a living history museum, Rosenthal and Blankman-Hetrick (2002) found that caregivers' agendas included an expectation that family members would learn about the past, while children's agendas tended to be more focused on enjoyment. Family learning agendas vary, are rarely articulated, and are constantly being negotiated, but shape each member's museum experience.

At the same time, learning is not just shaped by the family's agenda, but also by the affordances of the learning environment. As Nasir says, "Learning environments are powerful influencers over who gets to learn, what gets learned, and what identities of learners are available in those settings (American Educational Research Association, 2016). Learning environments like exhibits are more impactful when they speak to and align with learners' culture and practices (Nasir, Rosebery, Warren & Lee, 2006). If families do not see their culture and practices represented in a museum exhibit, caregivers may feel less capable of facilitating their child's learning.

Most studies of family learning in museums aggregate conversation and interaction over the course of a visit, making it difficult to determine whether particular exhibit affordances have led to moments of family interaction. However, some research has explored the interaction between particular exhibit design elements and family learning. Borun, Chambers, Dritsas and Johnson (1997) offer general principles to promote interaction with exhibits, suggesting that exhibit design can influence behavior. Exhibits can also help caregivers facilitate family learning with design choices such as focusing attention on a particular piece of content (Povis & Crowley, 2015). Museum staff, such as interpreters stationed in exhibits, can also create opportunities for family learning (Pattison and Dierking, 2015). Additional research on what particular aspects of exhibit designs trigger family learning talk may prove useful for the field, helping exhibit designers support family learning.

In sum, museums offer a setting that supports free-choice, social learning in which families pursue their own agendas. In this setting, families typically communicate verbally, to varying degrees, with caregivers scaffolding children's learning through talk. As part of this talk, families often share their personal memories within museum visits, as the next section will

discuss in more detail.

Section 2: Personal Memory Sharing on Family Visits to Museums

Within the museum field, visitors' personal memories are treated as both a valuable resource and a distraction from other learning. Regardless of museum professionals' intentions, literature suggests that families often share personal memories on their visits to a variety of types of museums.

Frequency of Family Memory Sharing. Families share personal memories frequently on trips to a variety of types of museums, including art, science, and history institutions. Several studies offer examples of this type of talk, but rarely unpack how families are using these personal memories. When studies do outline the social purposes for these talk, the explanations are not consistent, suggesting several different reasons to share personal memories.

In their extensive study on visitor talk in 174 groups (not solely families) visiting five different science, art, and history exhibits, Leinhardt and Knutson (2004) found that personal memory sharing occurs often across exhibit types and groups. Leinhardt and Knutson created the category of "personal synthesis" to describe when visitors connect an exhibit element to "a personal circumstance or possession" (p. 86). They found that visitor groups used personal synthesis an average of between 1.69 and 6.74 times per exhibit visit, depending on the exhibit. To illustrate this talk, Leinhardt and Knutson share several examples. In one, a woman tells her friend, "I have a couple of [movie projector] reels bigger than that.... My dad had a theater when I was a kid" (p. 88). In another, a man tells his friend, "I had a '51 Chevy when I was in engineering school...It's the only car I had that would run at 30 [degrees] below, 35 below" (p. 89).

Studies of family talk in science museums also note the prevalence of personal memory sharing. These studies include personal memory sharing within a larger category, such as “connecting” or “sensemaking,” in which one family member links exhibit stimulus to previous experience. In her study on family talk in a science exhibit, Allen (2002) found that families make verbal connections between the exhibit element and other knowledge or experiences (including memories) at 21% of exhibit stops. This includes both personal memories, such as, “My grandmother loves to collect stuff with frogs all over it” and preexisting knowledge that the visitor recalls, such as, “In Florida the dogs eat poisonous toads and die” (p. 22). Similarly, Zimmerman, Reeve and Bell (2009) found that family members connected exhibit content to their pre-existing knowledge in 14% of science-related utterances during a museum visit. These include connections such as, “Our chickens could eat them [cockroaches]” and, “This bug is like the cutworms that eat the daylilies” (p. 486). While neither of these studies create a category exclusively for personal memory sharing, their findings suggest that families do frequently engage in connecting talk during museum visits, which includes sharing either prior knowledge and/or experience or personal memories.

While there are few studies of family talk at history museums, two studies of family talk at exhibits that combine STEM and history learning suggest that families may often use this type of talk in history museums. In their extensive evaluation of the Create.Connect science and history exhibit, evaluators at Conner Prairie Interactive History Park, outside of Indianapolis, IN, examined 35 adult-child pairs’ talk (Anderson et. al., 2016). Evaluators coded relevant talk according to the scaffolding strategy being used, which included making “personal relevance and identity connections” (p. 50). This code included not only personal memories, but also instances where someone related exhibit content to their own or someone else’s identity such as labeling

someone a scientific or historical thinker. As an example, the evaluation described one caregiver saying, “It’s an iron for your clothes. That’s what I used” (p. 50). Evaluators found personal relevance and identity connections occurred in 94% of the family visits they studied.

Similarly, Fienberg and Leinhardt (2002) studied the talk of ten different visitor groups at a history museum’s exhibit on glass production, which brought together both history and science. They found the activity of “synthesis,” or bringing in ideas from outside the museum or other exhibits occurred an average of 6.84 times per museum visit. This study offered examples of experts with deep understanding bringing in their memories, such as when an architect used his work experience to explain how polarized glass is used to transition between clear and opaque windows. It also offered examples of laypeople bringing in their more general experiences, such as when a woman brought up her work experience ordering glass beakers for a school district. Taken together, these studies suggest that families often bring up personal memories on visits to history-related exhibits.

In most examples given in the literature, an adult visitor shares their memories with a child, such as a father remembering a television show from his childhood (Anderson et. al., 2016). Yet Allen (2002) notes that, in her study, the stop where visitors most frequently made personal connections was at a reproduction of the children’s book *Frog and Toad are Friends*. This image would be familiar not only to caregivers, but also to children, suggesting that personal memory sharing on museum visits may not always be of memories held just by an adult. Additionally, Fienberg and Leinhardt (2002) note that a memory-sharing conversation can take on a different purpose depending on whether the memory is held by one or several group members:

If their companions were familiar with some element in the story, the story served to call up a familiar and shared idea for the group and made an immediate link to the museum content for everyone. If the story was more individually sourced, it became, in the telling of it, a shared expansion on the museum content, whether the story was about a collectible object or a technological process (p. 195).

These anecdotes suggest that who holds the memory – how many people, and their role in the family group – impact the type of talk about it. However, neither study systematically compared memories held by one or multiple group members or by adults as compared to children.

There is not consensus among these studies about the social nature of personal memories. In aforementioned studies in science museums, participants used memories – often shared among family members – to help one another make sense of the new scientific phenomena in an exhibit. On the other hand, in Leinhardt and Knutson's (2004) study across multiple types of museums, they wrote, "The visitors used a particular object not only as a springboard to their personal lives but also as a permission to construct a short narrative of their earlier lives. The object was used to mediate a personal story" (p. 90). This suggests that there may be various types of personal memory sharing, from memories that build interpersonal relationships to those that help the group make sense of an exhibit. More research is needed to understand these nuances.

In sum, families do frequently bring up their memories in exhibits, but there is still a great deal left unknown about the frequency of this talk in history-specific exhibits, the nature of this talk, and how it relates to exhibit design and content. The following section discusses possible frameworks from the field of public history to describe the nature of personal memory sharing.

Section 3: Personal Memory Sharing and History Exhibits

As discussed in the previous section, studies from the field of family learning in museums document the high frequency of personal memory sharing in exhibits. However, history museums are also sites where a narrative about the past is presented in the form of an

exhibit. Though there are few studies that capture personal memory sharing on family visits to history museums (as mentioned above), several studies from the field of public history and memory studies here prove useful, offering insights into possible types of relationships between personal memories and history museum narratives.

In their extensive study of how Americans use and understand the past, Rosenzweig and Thelen (1998) offer insight into the public's relationship to history museums. This study involved phone interviews with 808 Americans, each of which took around 30 minutes. Rosenzweig and Thelen found that respondents felt very connected to the past at museums and historic sites, rating these sites as very trustworthy places where they "uncover 'real' or 'true' history" (p. 32). Yet Rosenzweig and Thelen also found that people rated their own memories and those of members of their social network as trustworthy.

In the studies of family talk in exhibits detailed in Section 2, only Conner Prairie's evaluation offers insight into the exhibit content that prompted family members to share memories (Anderson et. al., 2016). In this case, the evaluation offered the broad observation that personal relevance talk often occurred next to the section on electricity. As with the lack of research available on how exhibits influence family talk, there is also limited literature on what exhibit content or design elements influence personal memory sharing.

Given the limited literature from the field of museum studies on the topic, literature from the field of public history is helpful in framing the relationship between visitor memory and exhibit content. In considering this topic, Bodnar's (1992) framework of "official" and "vernacular" narratives is particularly useful. In this framing, official narratives are those advanced by institutions such as museums, and often serve to further an idealized narrative of the past, supporting the formation of an imagined community. Vernacular narratives are varied,

segmented rather than cohesive, and seek to describe an authentic experience, rather than an idealization. In this framework, the museum narrative is considered the official version of the past, while the visitors' memories are the vernacular.

The literature suggests several possible relationships between official and vernacular narratives. Rosenzweig and Thelen (1998) found that many people felt that their personal pasts and national histories intertwined in complicated ways – though this was not a finding specific to the experience of a museum visit. They write, “For many respondents the line blurred between ‘personal’ and ‘national’ pasts. Some turned national events into settings for personal stories” (p. 22). Paris and Mercer (2002) found that visitors often imbue objects with personal meaning, such as relating a piece of machinery to a family history of working in the auto industry.

Rowe, Wertsch, and Kosyaeva's (2002) study used in-gallery observations at Missouri History Museum to support the idea of a complicated relationship between official and vernacular narratives in museums. Rowe, Wertsch, and Kosyaeva offer four relationships between official and vernacular narratives:

1. Visitor acceptance of the official museum narrative;
2. Visitor rejection of the official museum narrative;
3. Visitor narratives that use the museum narrative as a jumping off point, spring boarding beyond the narrative boundaries of the official into the vernacular. The authors call this poaching “on the official cultural representation,...neither taking it up as one's own nor challenging it fundamentally” (p. 109); and
4. Visitor narratives that illustrate the museum narrative, using the vernacular to give concrete examples of the official narrative.

However, this study does not systematically code visitor talk, and only offers illustrative examples, presenting an opportunity for a more detailed analysis that expands on this coding structure. The researchers themselves call for this sort of analysis:

The discussion of the role of narratives in memory, history and identity needs to be expanded to include a systematic analysis of how narratives come into dialogic contact. The story is likely to get much more complicated than anything we have envisioned here (p. 109).

These studies, primarily from the field of public history, suggest a variety of possible relationships between the exhibit and personal memory, including acceptance, rejection, to springboard into the vernacular, or to help detail the official. These may also align with the types of personal memory outlined in the aforementioned studies of visitor talk. However, the literature is still lacking cohesion around of the different types of memory sharing.

This section has focused on the nuances of personal memory; the next section will expand in scope to consider how the experience of hearing or sharing memories in a history museum visit might relate to broader learning goals for young people.

Section 4: Historical Thinking

History museums are one part of a larger ecosystem where young people learn about the past. Debates on what young people should learn about history – or what “historical thinking” they should develop – typically do not focus on history museum learning, but instead on the K-12 school setting. Within discussion around historical thinking, there is agreement that young people develop pre-existing ideas about history, often based on extracurricular experiences such as family members’ stories or history museum visits.

In debates around historical thinking, many educational scholars start with the proposed end-goal of history learning, then work backward to determine the practices that foster this result. Wineburg (1998, 2003) developed his influential model for historical thinking by asking

historians to verbalize their thought processes as they studied primary sources. His findings indicate that historians quickly seek out the provenance of a document and weave a context around it. Despite using professional historians as the model, Wineburg makes the case that historical thinking habits are important for learners no matter their professional goals, as historical thinking builds empathy for others and equips students with tools to be better participants in public life, such as evaluating news sources (Stanford History Education Group, 2008; Wineburg, 2001). Other models for historical thinking begin not with historians, but by asking what skills young people will need to participate in public debates in a multicultural, pluralist, and sometimes-fractured democracy (Levstik & Barton, 2005; Peck & Seixas, 2008). These similar, but slightly different, proposed end goals have led to divergent models for historical thinking.

Based on their proposed end-goals for historical thinking, educational scholars have assembled several definitions for “historical thinking,” all emphasizing slightly different practices. Even the term “historical thinking” is not used consistently, often replaced by “historical consciousness,” “historical understanding,” or, sometimes, “narrative competence” (Duquette, 2015; Ercikan & Seixas, 2015). Wineburg (Stanford History Education Group, 2008) argues that historical thinking comes from learning how to do three practices: to source, or consider a document’s provenance and how that impacts its value; to contextualize, or create a spatial and temporal context; and to corroborate, or compare the details of one document with those of another. Peck and Seixas (2008) offer a model with five practices: understanding historical significance, continuity and change, causes and consequences, historical empathy, and complexity of the past. Duquette (2015) adds that historical consciousness involves all of the thought processes Peck and Seixas list, but also systematically interrogating the past using

sources. Recently, Korber and Meyer-Hamme (2015) offer a model with four practices: questioning, using historical methodologies, relating history to one's own life, and competence with content knowledge. The United States' National Assessment of Educational Progress, also known as The Nation's Report Card, defines historical thinking as engaging with historical knowledge, perspective, analysis, and interpretation (Lazer, 2015).

This limited summary of the views on historical thinking suggest the divergence in models and the ambiguity of the term "historical thinking." Despite the variety in models for historical thinking, in all cases both content and process play a role in students' understanding. In other words, these models vary in how much they emphasize the acquisition of content knowledge and how they see this type of knowledge being used as the raw material for historical thinking practices, but each model includes both (Ercikan & Seixas, 2015; Radinsky, Goldman, & Pellegrino, 2015). Additionally, historical thinking literature suggests that engaging with historical thinking practices can change students' cognition habits, though there are relatively few studies of these impacts (Lee & Ashby, 2000; Radinsky, Goldman, & Pellegrino, 2015; Shemilt, 2015).

The prevalence of literature on historical thinking suggests an important broader idea: By suggesting that there are a series of practices with which learners need to engage to develop historical thinking habits, these scholars suggest that historical thinking is not a natural state of mind, but is developed over time. What sort of pre-existing knowledge and understanding do students bring to the classroom? Historical thinking combines both mental practices and content knowledge, and students come to the classroom with both.

Barton (2004) outlines several common mental practices that cause early learners of history to make incorrect interpretations, including over-attributing change to the actions of

individuals, over-narrativizing events, and not thoroughly understanding how to evaluate sources. Wineburg (1998) describes the “presentist” mindset as a similar phenomenon:

The phenomenon of “presentism,” the act of viewing the past through the lens of the present, is not some bad habit we’ve fallen into, but is instead our psychological condition at rest. If [Abraham] Lincoln seems to be saying two different things, (we assume) it is because he is speaking to two different audiences for, in our world, we know exactly why Bob Dole says one thing to Kansas wheat farmers and another to New York City stock brokers. We resolve contradictions in Lincoln’s words by turning him into one of us (p. 338).

Lowenthal (2000) writes that this is especially true for young people, saying, “At the start of life we are immured in the present” (p. 65). Does listening to personal memories contribute to or challenge these mental habits? Scholars of historical thinking do not address the impact of listening to others’ memories or sharing one’s own, suggesting more research is needed to determine this relationship. (See Summary section, below, for further discussion.)

In addition to these habits of thinking, students also come to K-12 history classes with a variety of pre-existing content knowledge about the past. Existing research suggests that these ideas come from many sources, including both cultural artifacts (like movies or museum exhibits) and family stories. Wineburg (2000) conducted interviews with teenagers and their caregivers in which interviewees responded to cultural artifacts, including photos and songs, related to the Vietnam War, a time that many of the adults interviewed remembered but teens did not. Wineburg realized that much of one teen interview subject’s understanding of how veterans were treated in that era had come from the movie *Forrest Gump*, suggesting that learning about the past can come from family viewing and discussing cultural artifacts. Wineburg writes, “The family serves as the context for this video history lesson by mediating the larger cultural narrative provided by Hollywood” (Wineburg, 2000, p. 320). In another study, in which he asked children from grades five to eight to draw images of pilgrims, hippies, and Western settlers, Wineburg found that young people have detailed mental models of past periods, even ones they

had not deeply studied in school (Wineburg, 2000). As Wineburg (2000) writes, relatively little is known about how extracurricular influences like family members' memories impact young people's understanding of the past:

There have been few if any attempts to track how the processes of historical memory play out in the lives of ordinary people, how it is that the proverbial person on the street embodies (or doesn't embody) the broad social processes posited by the theorists of collective memory (p. 322).

Scholars of historical thinking suggest that K-12 educators should consider students' pre-existing understandings and knowledge as they help young people develop historical thinking (Barton, 2004; Levstik & Barton, 2005; Seixas, 2000). They remind educators that children from different cultural backgrounds often learn different ideas and content about the past from their family members. African American young people, for example, typically grow up learning about different historical figures and events than do white children and tend to have more complex ideas about social progress (Barton, 2004). Stearns, Sexias, and Wineburg (2000) call for more integration of students' pre-existing understanding with school learning in a way that opens up history learning opportunities for more students:

Some conventional interpretations in national history bounce off certain student groups because of the interpretations' lack of fit with histories learned outside the classroom. Can we figure out how to pull in the curricular and the extracurricular versions of history, while improving student capacity to assess their validity through imaginative exercises in interpretive conflict (p. 472)?

Stearns et al. are not here arguing for the erasure of students' funds of knowledge, nor that teachers should use these understandings as tools to subsume students' cultural perspectives into a larger narrative that oversimplifies or marginalizes diverse experiences. Instead, these scholars are, in a sentiment that echoes Tilden's, pointing out that history learning that does not address what students already know based on family stories and other influences will be less meaningful.

Section 5: Historical Thinking in History Museums

Recent research has sought to apply models of historical thinking to history museums and historic sites, and suggests that these are physical spaces where both adults and children can engage in historical thinking. Several recent studies have found evidence of Peck and Seixas' (2008) model of historical thinking in history museums. Rzemien (2016) developed 15 statements aligned with Peck and Seixas' six practices of historical thinking, such as, "I thought about how learning about the past can help us face ethical issues today" and "I thought about the circumstances that led to a certain event in history" (p. 33-41). In his study, 26 visitors to a history museum self-reported engaging in an average of 11 out of these 15 behaviors during their visit. Similarly, Martinko (2017) found that hands-on history museum spaces can generate the historical thinking in Peck and Seixas' model, with 90% of the children she studied engaging in at least one of Peck and Seixas' elements of historical thinking.

Baron (2012) used Wineburg's model of historical thinking at a historic site, the Old North Church in Boston. She found that, like historians reading a text, the historians she followed engaged in Wineburg's practices of historical thinking. They participated in sourcing by attempting to determine the building's origin, corroboration by comparing this building to others from the time period, and contextualization by situating the building within the history of the area. Baron also found that these historians engaged in the two additional practices of empathetic insight, or attempting to imagine the behavior of the building's previous users, and making suppositions, or creating tentative hypotheses or if-then proposals when the building did not readily have answers to their questions. These activities draw more from the historians' personal experience and pre-existing knowledge than Wineburg's other practices, as they require the speaker to pull in additional knowledge outside of that presented in the site itself. This

suggests that historical thinking at museums and historic sites may have its own slightly distinct nature, one that pushes the participant to engage more with his or her pre-existing knowledge. Overall, this literature suggests that history exhibits and sites are locations of both personal memory and historical thinking. However, it is unclear how these behaviors relate or interact as families learn in these spaces.

Summary: Personal Memory, Historical Thinking, and Museums

Children come to history learning in school with pre-existing ideas about the past, but little is known about how these ideas develop. Hearing family's stories and personal memories may contribute to both children's ways of thinking and content knowledge about history. These pre-existing ideas come from a variety of experiences, but visits to history museums are especially well-suited to studying this phenomenon. Compared to a video or textbook, the free-choice nature of museums means visitors often do not proceed in a linear and thorough process through an exhibit, developing a shared foundation of knowledge by reading every panel in a set sequence. Instead, museums are collections of examples that families navigate together, in which the onus is on caregivers to bring to bear their knowledge of their child's interests, understanding, and background to explain ideas or offer questions within their child's zone of proximal development (Leinhardt & Crowley, 2002).

Preliminary literature also suggests that museums can be sites of both personal memory sharing and historical thinking, but it is unclear whether personal memory sharing supports, detracts from, or does not affect historical thinking. Additionally, while historical thinking may have many benefits for young learners, it may not be the only, or best, learning goal for history exhibits. Rosenzweig and Thelen's (1998) in-depth study of history learning found that Americans felt connected to the past at history museums, suggesting a more affective role for

history museums. Alexander (2010) suggests that history museum visitors should “be inspired to pursue a new interest and learning adventure” (Alexander, 2010, p. 243-244). Perhaps rather than sites where young people focus on developing their historical thinking, history museums are better suited to be sites upon which young people develop interest in history, identify with the stories displayed, or build initial content knowledge around a time period.

In sum, this literature suggests that personal memory sharing is a frequent activity in family history museum visits. Yet more research is needed to better understand the nature of these memories and to what stimuli they are shared, which might help begin to answer some of these questions around the learning outcomes of personal memory sharing.

Chapter 3: Methods

This study aimed to describe, first, the ways in which family groups visiting history museums use personal memories to collectively make sense of history and, second, what exhibit content or components seem to prompt the sharing of these memories. To that end, this study was guided by the following research questions:

1. What is the frequency and nature of the memories that families share when visiting history museum exhibits?
2. What aspects of a history museum exhibit seem to prompt families to share their personal memories?

To answer these questions, this study used a qualitative survey approach, collecting data in the form of a) video recordings of the behavior and conversations of family members in history museum exhibits; and b) self-administered questionnaires to capture demographic and psychographic information about participants. This chapter describes in more detail the study's design, sampling, methodology, data collection processes, analysis, and limitations.

Design

This study used a qualitative survey design approach, as it examined the frequency, nature, and locations of visitor memory sharing in history museums. This study did not attempt to isolate the phenomenon of personal memory sharing, but rather attempted to describe it in context, including the relationship between memory sharing and other variables within the museum visit, such as exhibit content and social setting.

Sampling: Research Sites

Data were collected at three research sites, so as to sample from a variety of types of history museum exhibits: Minnesota History Center's (MHC's) *The 1968 Exhibit*, The Henry

Ford's (HF's) *Your Place in Time*, and Washington State History Museum's (WSHM's) *ToyTopia* (all detailed below). Research sites were selected based on the exhibit's personal content, and thus their likelihood to generate a large amount and variety of personal memory sharing amongst visitors, supporting a more thorough description of how and when families share personal memories.

- Minnesota History Museum's *The 1968 Exhibit* tells stories from that year in American history through objects and imagery, from a Vietnam War helicopter to oral histories from Civil Rights workers. The exhibit invites nostalgia from the subset of family members with memories of 1968, positioning them as experts and creating opportunities for them to share their personal memories.
- The Henry Ford's *Your Place in Time* explores how everyday technology has impacted each generation that came of age in the 20th century, from a record player to a cassette tape player. With everyday objects from a range of time periods, this exhibit affords more opportunities for adults of a varying ages to share their memories, without requiring expertise in a particular field (such as personal computing).
- Washington State History Museum's *ToyTopia* invites families to play with and learn about toys from throughout the 20th century, including Mr. Potato Head, Legos, and arcade games. The exhibit appeals less to visitors' nostalgia, but features a theme that family members of all ages might have memories around, providing a useful contrast.

As a trio, these exhibits featured content and objects that were likely familiar to a wide range of visitors. In addition, they are well-received exhibits from acclaimed institutions, capturing what is occurring at the leading edge of museum exhibit design.

Sampling: Participants

This study focused on family groups because this is one major resource through which young people learn about the past (Wineburg, 2000). They often include more knowledgeable adults who take on responsibility for children's learning, often using talk to further that learning. Family groups have shared knowledge of one another's cultures, interests, and identities, and therefore can bring up memories that they suspect will be relevant to other members of the group's learning.

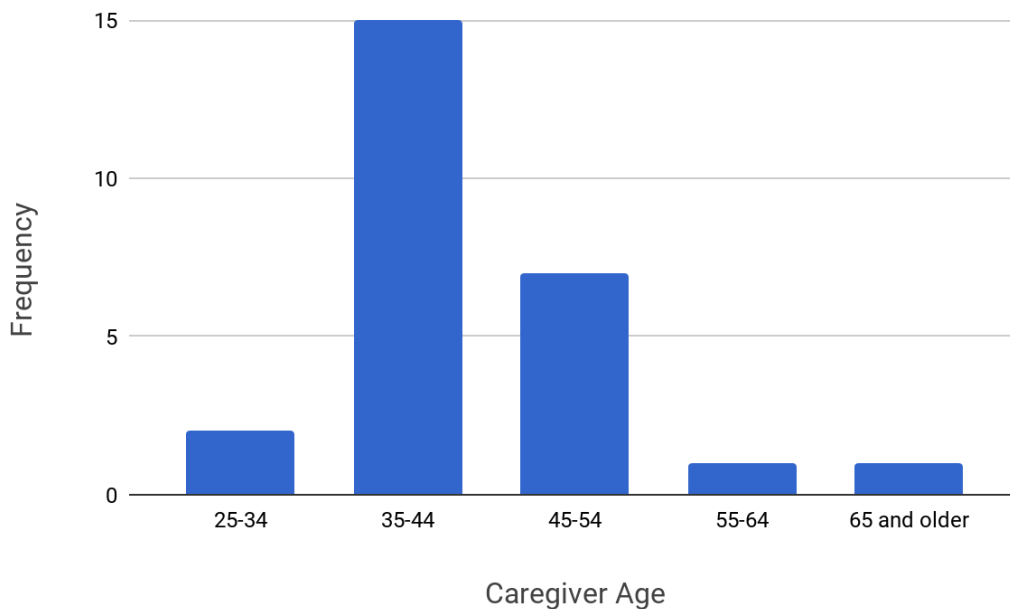
Participants were selected through convenience sampling, in an effort to collect a greater amount of data and focus on typical visitors to these exhibits. Adult participants were approached if they met the following criteria: they appeared to be in an intergenerational family group, they had at least one child that appeared to be between the ages of three and 12, and they seemed to be entering the target exhibits. Caregivers take responsibility for their children's history learning at many different ages. However, this study targeted families with one child that appeared to be between the ages of three and 12, as these children are beginning to learn about abstract concepts like "the past."

As there is little evidence to suggest that personal memory sharing is more or less common among a particular demographic group, there were no restrictions regarding the gender, race, or perceived ethnicity of the study subjects. However, this study did not include visitors who spoke to one another in a language other than English during their museum visit, as this study did not have translation capacity. (This also helped to ensure that families had enough facility with English to understand the consent process.)

The study collected data from 27 families, with 8 at the Washington State History Museum, 9 at the Henry Ford, and 10 at the Minnesota History Museum. Of these families, one

declined to fill out the self-administered questionnaire. Of those 26 adult caregivers that did fill out the questionnaire, 18 identified as female and 8 as male. Twenty-four self-identified as white/caucasian, one as hispanic and one as black. Most caregivers were 35-44 years old; see Figure 1 for the range of caregiver ages.

Figure 1: Caregiver Ages (N=26)



Twenty-four caregivers identified as a parent to at least one child in the social group, three identified as a grandparent to at least one child, and four offered another relationship (such as aunt or family friend) to at least one child.

Forty-eight children participated in the study, with a median age of 7 years. This varied by exhibit, with a median age of 5.5 years at the WSHM (n=16), 7.5 years at the HF (n=18), and 11 years at MHC (n=14).

Most families lived near the institution they were visiting, with 18 out of 26 living in a zip code that was a 30-minute drive or less from the institution. Many were repeat visitors, as indicated in Table 1.

Table 1: Frequency of Visitation to the Host Museum (N=26)

	Percent of Respondents
This is the adult's/caregiver's first visit to the institution within the last 12 months	46% (n=12)
Adult/Caregiver had made 1-2 visits to the institution within the last 12 months	31% (n=8)
Adult/Caregiver had made 3+ visits to the institution within the last 12 months	23% (n=6)

Caregivers rated their family's interest and involvement in the subject of history highly.

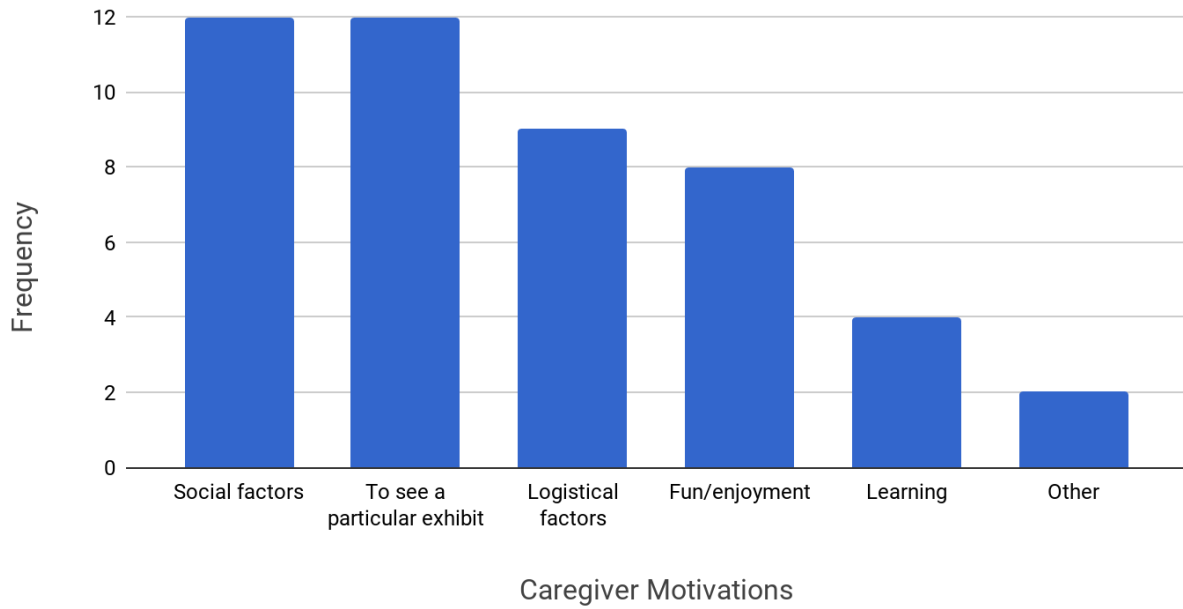
Caregivers were asked to respond to a series of statements on a likert scale, with 1=strongly disagree and 7=strongly agree. The distribution of caregiver responses is shared below in Table 2.

Table 2: Caregiver Self-Assessment of Their Family's Relationship to History (N=26) (scale is 1-7, where 1=strong disagree and 7=strongly agree)

Statement	Mean Rating	Range
1. As a family, we talk about history/the past.	6.2	Min. 5 Max. 7
2. I want my children to enjoy learning about history/the past	6.8	Min. 5 Max. 7
3. I know a lot about at least one of the following topics: history, the past, or my family's history.	6.5	Min. 5.5 Max. 7

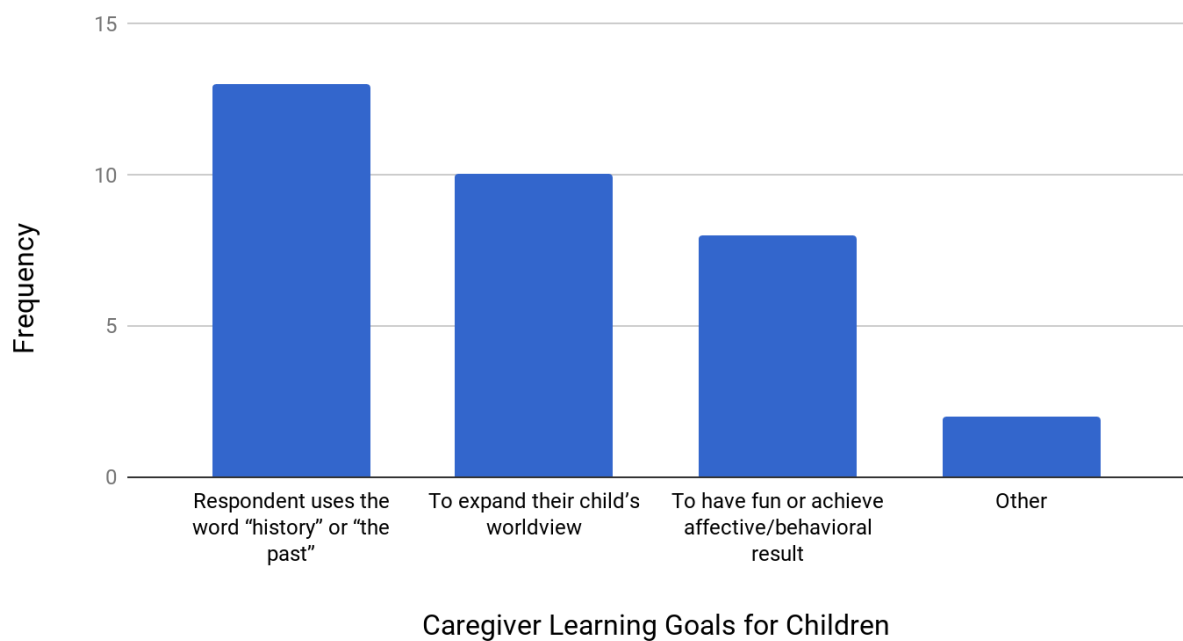
Adults' motivations for visiting the museum varied, as displayed in Figure 2. Caregivers rarely focused on learning or education as the primary motivator for their visit.

Figure 2: Caregiver Motivations for Visiting Host Institutions (N=26)



When asked specifically what they hoped the children with them learned at the museum, caregiver motivations centered on three themes, which are shown in Figure 3.

Figure 3: Caregiver Learning Goals for Children During Museum Visits (N=26)



Data Collection Methods

Data collection was done through two methods: video recorded observations and a post-visit self-administered questionnaire given to one adult caregiver per group. Video recordings allowed the researcher to more closely examine the frequency and nature of visitor learning through talk and interaction. This method measured visitors' direct behavior rather than relying on their self-reporting and recall. Additionally, this method allowed the researcher to closely map family talk to exhibit content, addressing the second research question.

Self-administered questionnaires were used to gather demographic and psychographic data from visitors. Demographic data were used to characterize the sample in terms of visitor ethnicity, gender, and museum visitation. Psychographic data were used to contextualize family talk and attitudes toward both history and museum learning. Questionnaires were self-administered in the hopes of getting more honest responses and to allow visitors the opportunity to self-identify regarding demographic information. These were given to adult caregivers after their visit, so as to not prime their behavior with questions about personal memories and history learning.

Data were only collected after visitors had given consent or assent. Adult visitors were asked to give consent verbally, on camera after listening to the researcher read the Verbal Consent Script and having the opportunity to ask questions. Child visitors were also asked to give assent verbally on camera after listening to the researcher read the Child Assent Script. (See Appendix B for Verbal Consent Script and Child Assent Script.)

Data Analysis

Data were analyzed using an emergent coding rubric (Patton, 1990; Miles & Huberman, 1984; Grbich, 2007). The researcher took quick field notes after each family visit. She then

reviewed portions of the video data and developed a coding rubric for both the self-administered questionnaire and video data (see Appendix D). The rubric for video data primarily focused on family talk, but also included gesture (such as a child pointing) where apparent. Inter-rater reliability was calculated by having another researcher code a subset of the data using this rubric. This resulted in an inter-rater reliability of 76%.

Event-Based Segmentation

This study used event-based segmenting, or coding according to the “physical movement and content discussions of the groups” (Leinhardt and Knutson, 2004, p. 80). Within this framework, an interaction is ended when a family has both stopped speaking for several seconds and has physically changed locations. This format focuses on visitors’ engagement with the exhibition elements, a focus of this study. However, it is limited in that it weights short stops and longer conversations equally.

Defining Personal Memories

Families often included talk that drew on information they knew prior to their exhibit visit. For example, one adult connected the 1968 Olympics to the 2018 Olympics, noting that while Peggy Fleming won a gold medal for ice skating when she was young, at 19, “There's a girl that just won this year for snowboarding who's 17.” However, the focus for this study was not on just memory, but on personal memories. Therefore, participants needed to not only employ some element of recall, but one with a personal connection. The example listed above did not include a personal connection, and thus was not coded in this study data. Personal connection alone was also not coded. A child saying, “This is bad” music quality when listening to AM radio is a personal opinion, but does not include recall or memory.

Therefore, the formula used for identifying a personal memory in this study was: Conscious recalling (often called declarative memory) + explicitly framed through a personal lens.

Examples of coded memories included:

- “My grandma had these dishes. That little tiny one was always here fruit dish.”
- “Did you see that billboard that says that Santana is having a concert here on March 17. That very band.” (This statement was coded as personal memory because it involves the personal experience of seeing a billboard and recall of that experience.)
- “Furbies. These are like Hatchables but from a long time ago.” (This statement was coded as personal memory because it required the speaker to make an explicit connection based on her personal opinion and prior knowledge of these toys.)

Limitations

This study was limited in scope to the three history museum exhibits selected. These were selected specifically for their potential to elicit visitor nostalgia or memories of common experiences, so may have resulted in more instances of personal memory sharing than the typical history museum exhibit. These sites all had content from the second half of the 20th century, a time period that, in all groups studied, at least one family member had lived through. It would be difficult to extrapolate this data to family memory sharing around an exhibit on the American Revolution or Ancient Egypt.

Additionally, the data collection method of video recording also limited this study by potentially influencing family members' behavior. While video recording aims to capture authentic learning in situ, people may feel some discomfort in being recorded. This may be compounded by the feelings associated with being a study participant, which could range from a

desire to please the researcher to a discomfort with the field of research and academia, depending on the visitor's background.

Finally, this study was limited by the quality of the data recording device. The image quality of the video recordings did not always capture the nuances of exhibit content. For example, label text was often not legible. Additionally, the audio recording quality was often quiet and difficult to hear, especially in these noisy museum spaces, which were filled with other visitors and interpretive video and audio. Doubtless some family interactions were not audible, and as a result were not captured in the data.

Chapter 4: Results and Discussion

This chapter describes the results of this study as they address the two key research questions: 1. What is the nature and frequency of the personal memories that families share when visiting history museum exhibits? and 2. What aspects of a history museum exhibit seem to prompt families to share their personal memories?

Research Question 1: What is the nature and frequency of the personal memories that families share when visiting history museum exhibits?

The 27 families included in this study shared a total of 245 personal memories in their visits to these exhibits.

Memory Frequency by Family. Families shared a median of 8 memories during their exhibit visit. Only one family did not engage in any personal memory talk. In this case, the family visit lasted only 5:35 minutes. The median amount of time families spent in the exhibit was 26:47 minutes. In all, the median number of memories shared per minute was 0.30; the median number of memories shared every 5 minutes was 1.5.

Memory Frequency by Exhibit. Personal memories were spread fairly evenly across the three exhibits, with 77 instances of personal memory sharing at the Henry Ford, 88 at the Minnesota History Center, and 80 at the Washington State History Museum. (The sample included 9 families at the HF, 10 at MHC, and 8 at WSHM).

Table 3 shows the median number of memories shared per minute spent in the exhibit, since families spent less time at *Your Place in Time* at the HF than at the other two exhibits.

Table 3: Median number of memories shared by the amount of time spent in the exhibit (N=27)

	Median Number of Memories Shared in Exhibit	Median Amount of Time Spent in Exhibit	Median Number of Memories Shared Per Minute
HF	9	16:21 min.	0.56 memories
WSHM	11	34:54 min.	0.28 memories
MHC	6.5	26:56 min.	0.22 memories

Several of the family visits during which personal memory sharing occurred less frequently were also visits in which visitors spent large periods of time playing with the interactive elements of the exhibit, such as Legos, tinker toys, puzzles, etc. These interactive elements were available at both the HF and WSHM.

Who Shared Personal Memories. Personal memories were shared by individuals (i.e., adult/caregiver or child) or by multiple family members (i.e., an adult/caregiver and a child together, or multiple adults together). Table 4 shows who shared personal memories during exhibit visits, with the majority of memories coming from a single adult/caregiver.

Table 4: Who shared personal memories shared in the exhibit (N=245)

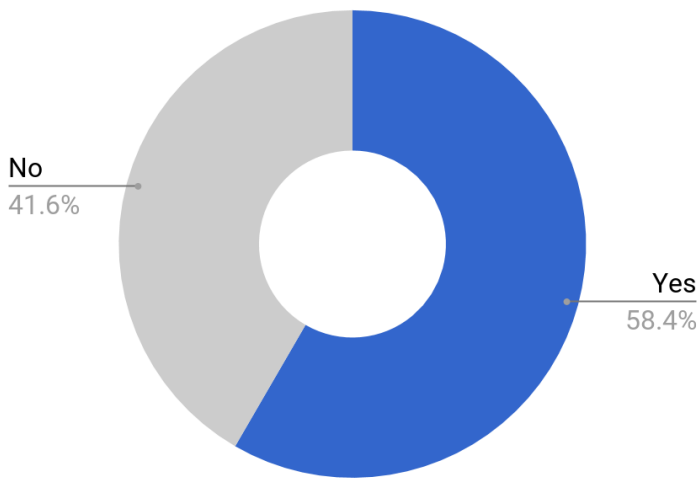
	Frequency of Personal Memories Shared
One Adult	56% (n=138)
One Adult and One Child	16% (n=38)
Multiple Adults	13% (n=33)
One Child	5% (n=12)
One Adult and the Researcher	5% (n=11)
One Adult and Multiple Children	2% (n=5)
Multiple Adults and One Child	2% (n=4)
One Adult, One Child, and the Researcher	1% (n=2)
One Adult and Museum Staff	0.5% (n=1)
One Adult, One Child, and Museum Staff	0.5% (n=1)

Often, personal memories were shared within a larger social group, including multiple other participants who did not contribute memories to the conversation. These other participants spoke, often questioning or adding additional thoughts, but did not share personal memories.

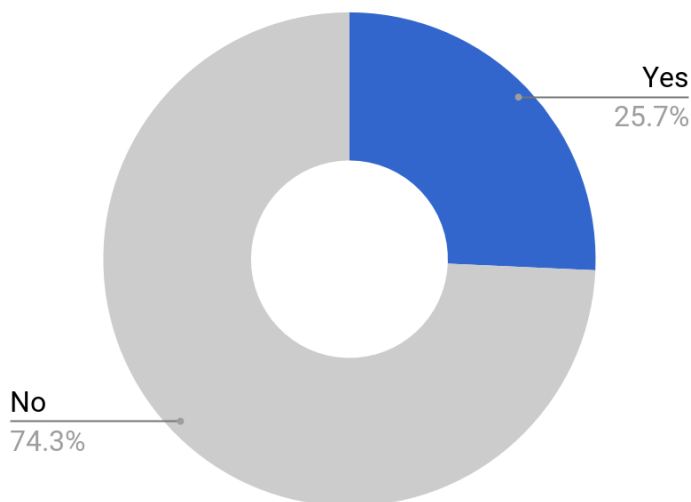
Figure 4 shows that these other participants were more often children than adults.

Figure 4: Who listened (but did not contribute) to personal memory sharing (N=245)

Is a child involved in the interaction, but does not share memories?



Is a caregiver involved in the interaction, but does not share memories?



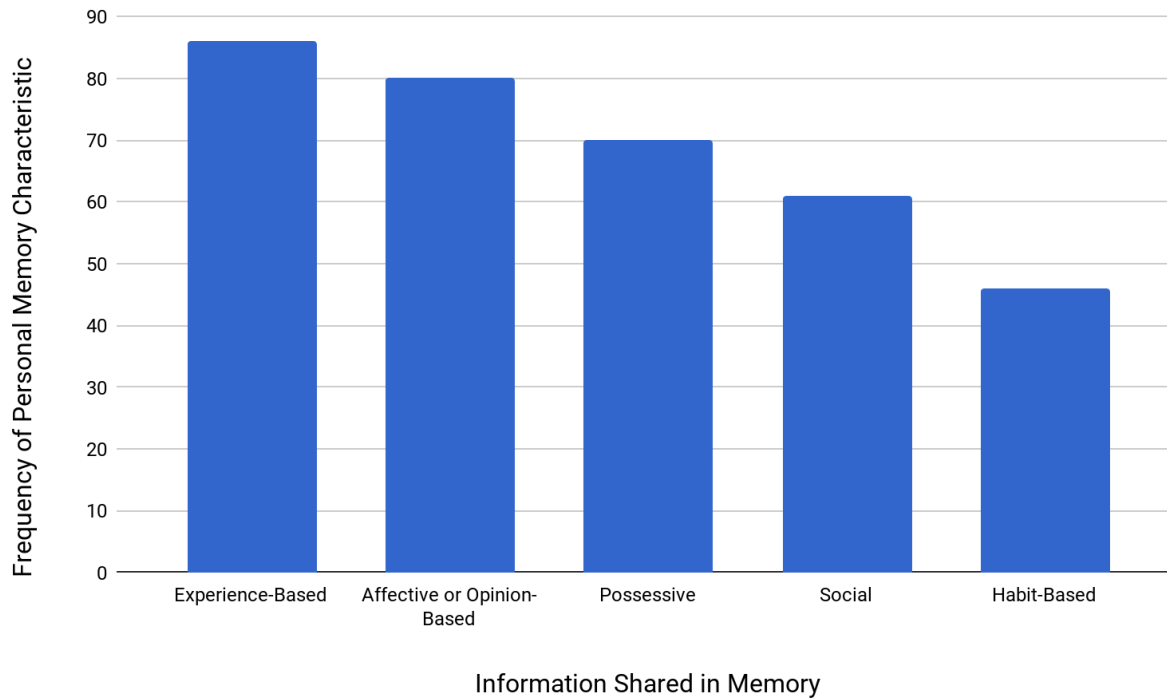
Personal memories shared during exhibit visits were either individual in nature, known by one person, or collective in nature, known by various permutations of the social group. Table 5 shows the distribution of individual vs. collective memories.

Table 5: Individual vs. collective personal memories (N=245)

	Personal Memories Shared
Individual, speaker only has this memory	40% (n=99)
Collective, everyone in the interaction know the entire memory	25% (n=62)
Collective, only a subset of the memory/memories are known to all participants	13% (n=29)
Collective, only some portion of the people in the interaction know the entire memory	9% (n=21)
Unclear	8% (n=19)
Individual, different speakers contribute memories, but none are collectively known	6% (n=15)

Types of Memories Shared. Memories were coded into five types of content, developed using an emergent coding schema (see Appendix D). These categories were a) experience-based memories; b) affective or opinion-based memories; c) possessive memories; d) social memories; and e) habit-based memories. Each content type is described below, with examples. In this study, all five types of memory sharing occurred fairly frequently, with habit-centered memories occurring least frequently and experience-centered memories occurring most frequently.

Figure 5: Types of Memories Shared, by Content of Talk (N=245)



The following is a more detailed description of each memory type.

Experience-based memories: A recollection of a particular one-time experience, either held individually or shared by multiple members of the group (“I did this”). For example, the following were coded as experience-based memories:

“I saw Jim Morrison's gravestone in France.” (MHC)

“They played [Jenga] at the fair.” (MHC)

“In the other exhibit me and dad saw...the donkey getting lowered into the mine.” (MHC)

Affective or opinion-based memories: A statement of emotion or opinion, including comparisons between one object and another, one event and another, or one time period and another (“I felt/feel this way”). For example, affective or opinion-based memories included the following:

“That was a good [TV] show.” (WSHM)

“Your Uncle Fred's friend's family went on vacation and they gave us the Atari for a few weeks to put in our house. I was in heaven. I thought it was the coolest thing.” (HF)

“For some reason this picture reminds me of Aunt ____.” (MHC)

“That was '68; they were protesting like that. Now we've got the NFL players taking a knee. Has anything changed?” (MHC)

Possessive memories: A statement of past or present ownership of the particular item being displayed, or something related to the item being displayed (“I had/have this”). Examples of possessive memories include the following:

“We have one [WWI helmet] in our utility room, don't we.” (HF)

“I used to collect horses like that. That one looks like mine.” (WSHM)

“I didn't have Depeche Mode on my wall. I had other boy bands.” (HF)

Social memories: Statement about another person, with whom the speaker has an ongoing relationship, outside of the social group visiting the museum that day. This could be another person's experience, affect/opinion, or knowledge/explanations (“I know someone”). For example, the following were coded as social memories:

“My grandma had these dishes. That little tiny one was always here fruit dish.” (HF)

“Ms. ____ just invited me to hear a lecture on that.” (HF)

“Daddy wanted to get you some [Lincoln Logs] but we thought [the dog] would eat them.” (WSHM)

Habit-based memories: A statement about repeated behavior. This includes statements of activities a person did not do, such as saying they were never very interested in a toy or topic (“I used to do this, or currently do this, habitually”). Habit-based memories included the following:

“I used to play with this all the time. Speak and Spell. Oh my gosh.” (HF)

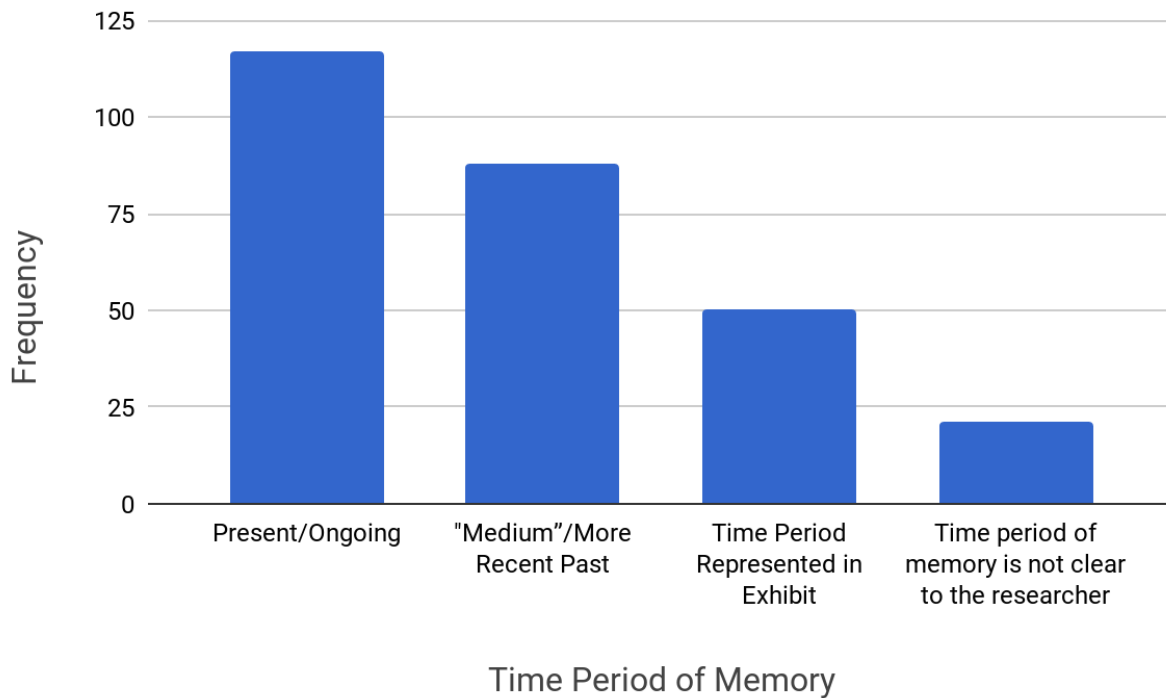
“I like all this history stuff because I didn't pay enough attention in school. I love it when you can see it and follow it.” (MHC)

“You have this [toy] at home and you never play with it.” (WSHM)

One instance of personal memory sharing often included multiple types of content. For example, a caregiver saying, “We had that TV. No remote. I was the remote,” was coded as both a possessive memory and a habit-based memory, to capture that they used to own a similar television and that the speaker was routinely tasked with getting up to operate the television.

Time Period of Personal Memories. Memories were coded based on the time period the speaker was drawing from. Four categories emerged from the data: a) present/ongoing; b) “medium”/more recent past; c) time period represented in the exhibit; and d) time period of memory was not clear to the researcher. Most memories shared included a segment within the present/ongoing or “medium”/more recent past categories, as shown in the figure below.

Figure 6: Time period of personal memories shared (N=245)



Each category is detailed below.

Present/Ongoing: Statements about things that are currently existent, informed by the speaker's prior knowledge about them, including facts about an object phrased in the present tense. For example, the following were coded as present/ongoing memories:

"We have lawn chairs like that, and I think grandma and grandpa still have a cooler similar to that." (MHC)

"My least favorite game in the world is Monopoly." (WSHM)

"Rubix cube. Those are coming back. My students play with them." (WSHM)

"Medium"/More recent past: Statements about memories that happened after the time period represented in the exhibit stimulus but that are no longer true/existent. This included

memories from the same day of the museum visit, or even from earlier in the museum visit. The following were coded as “medium”/more recent past memories:

“You've played with those before, at the boat museum.” (Given the age of the child, this could not have occurred in the 20th century.) (WSHM)

“Remember when we went to Disneyworld and you got to drive that car? Remember we drove around the racetrack? And you were the driver and daddy was the passenger?” (Given the age of the child, this could not have occurred in the 20th century.) (HF)

“The Monkees was one of my dad's favorite bands growing up, and I actually got to see them live in concert.” (Given the age of the caregiver, this could not have occurred in the 1960s.) (MHC)

Time period represented in exhibit: Statements about memories that happened during the time period being represented by the exhibit content at which the family member is currently looking. For *ToyTopia* at WSHM, the time period was not always clear, but was generalized to be 20th century in places not made explicit by the exhibit. Often coding this category included some general assumptions about the speaker's age, where not made clear by the self-administered questionnaire. Examples of memories from the time period represented in the exhibit included the following:

“I was probably your age when I was playing this [arcade game].” (WSHM)

“This was a huge deal. Kids had the lunchboxes with different themes and the matching thermoses.” (HF)

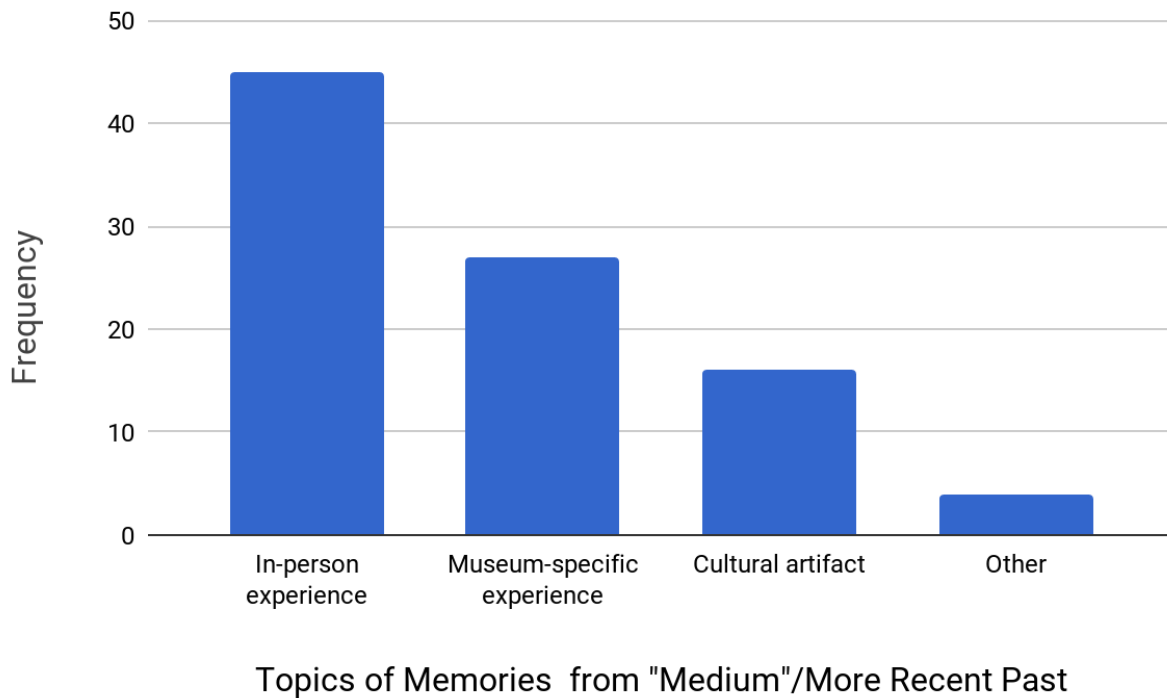
“My mom used to by [Kool-Aid] in the packets like that. They were 10 cents a packet. But then you had to add a cup of sugar.” (HF)

Time period of memory is not clear to the researcher: Statements about memories in which the time period was not clear. This category was frequently when the age of the speaker or context of the conversation did not specify a particular time period.

Memories occasionally received multiple codes. For example, in one interaction, a caregiver said, “This is stuff from when [other adult] was a kid...I had this (too).” In this interaction, the statement, “This is stuff from when [other adult] was a kid” was coded as a present/ongoing personal memory, as the objects represented will always be from the 1960s. The statement, “I had this too” was coded as a “medium”/more recent past memory, as it pulls from a particular time period, one more recent than the 1960s (given the age of the speaker) but, as the speaker uses the past tense, still in the past.

“Medium”/More Recent Memories. Adults often used memories from the “medium” or more recent past to help children understand exhibit content. For this reason, this study looked more closely at the sources or information shared in these memories, using 3 emergent codes: a) in-person experience; b) cultural artifact; and c) museum-specific experience. In these cases, in-person experiences were most frequently referenced, at 45 cases, with museum-specific experiences referenced 28 times and cultural artifacts referenced 16 times (n=99).

Figure 7: Topics of Memories from “Medium”/More Recent Past



In-person experience: An experience (other than watching/listening to a piece of media or in a museum) that the family member has had. Examples of “medium”/more recent personal memories that drew on in-person experience included the following:

“I wonder if they're going to mention that guy.” “Who?” “The guy who came to our church.” (MHC)

“Have you been down to the basement in the [inaudible] building?” (HF)

“Remember, like when we went to Disneyland and you drove me in that car.” (HF)

Cultural artifact: A piece of media or culture that the individual experienced in the past. This might be something that occurred more than once, such as a book that the family has read multiple times. For example, the following were coded as cultural artifact-based “medium”/more recent personal memories:

“This is what teens used to wear. So you know like you watch *Grease* and they have the big dresses?” (HF)

“I read this guy's book.” (MHC)

“Same time period of your [American Girl] movie *Molly*.” (HF)

Making Connections to Cultural Artifacts. Within exhibits, caregivers often drew upon cultural artifacts with which their child was already familiar, perhaps to explain a topic or perhaps to build on their child's knowledge and interests.

Example 1

At a display with models of bombs and a cart full of metal items, such as cans.

Caregiver: “Do you remember when we were watching that American Girl movie, the last one from the 1950s, when they had to go to war and everything, and they were saying, we need all the metal, so we can melt the metal, melt it into it into this (gestures to display of bombs). That is a thing they would do, they would ask for any type of metal, like cans for (inaudible) cans of food, anything, household items, that they could use to use for war.”

Example 2

Approaching a display with popular culture from the 1930s and 1940s, including

Pinocchio and Laurel and Hardy.

Caregiver: “Hey look, it's Pinocchio and the Hardy Boys. They like would bonk each other in the head and stuff on TV, like watching them and the Three Stooges.”

Child: “What are three stooges?”

Caregiver: “Oh you'll see, I'll play them later for you. You'd like them. They were always like hitting each other. Remember in um... remember in your Berenstain Bears book how

they talked about the bear stooges, and how basically they're stupid because they kept hitting each other on the head?"

Child: "Yeah?"

Caregiver: "It's those guys but the people version."

In these cases, referring to cultural artifacts allowed caregivers to explain a historical reference or movement quickly and reinforce the child's preexisting understanding or interest. However, each case also demonstrates the caregiver making a slight error in identification, stating that World War II was in the 1950s or calling Laurel and Hardy "The Hardy Boys."

Museum-specific experience: An experience with this museum or another, for example:

"You've played with those before at the boat museum." (WSHM)

"You know how we went and looked at a helicopter [in an earlier part of the exhibit]?"

That helicopter was used in a war." (MHC)

"Do you remember doing this [the last time we were at this museum]?" (HF)

Within the category of museum-specific experiences, caregivers often made connections between exhibit content and visits the family had made to other museums. At a display case of older household artifacts, one caregiver said, "We saw some of these things, remember at the Grand Rapids Museum?" At a magnetic wall of pipes, which the child could put a ball into, one caregiver said, "You've played with those before, at the boat museum."

Additionally, several visitors made connections to previous visits to the same institution or exhibit. One caregiver asked their child if she remembered interacting with the green screen at the HF in the past. After the researcher had turned off the camera, they enjoyed telling the researcher their favorite parts of the museum as a whole, including the names of particular animals in the outdoor section of the museum. Another family had seen *The 1968 Exhibit* at

MHC when it had originally been at the institution, before it toured other museums. Throughout their 2018 visit, the caregiver referenced their earlier visit, which the children did not remember. At one point, the caregiver noted that the last time they had been in the museum was probably the first time one child had seen a typewriter.

Data from the self-administered questionnaire indicated that many of these families were “museum superusers,” as over half had visited the host institution at least once before in the past year. This suggests that they may be frequent visitors to not just the host institution, but to museums in general. Perhaps for these families, museum experiences form an important series of memories and learning experiences within their learning trajectories.

Families also made connections within a single exhibit visit, particularly at *The 1968 Exhibit*, which featured references that repeated within the exhibit. For example, one family stopped to discuss the 1968 Olympics, featured at the timeline at the start of the exhibit. The caregiver explained the Black Power salute protest made by several American athletes at the games to their child, making comparisons to current protests by NFL players. Later on, the child drew the caregiver’s attention to a large image of the protests, saying, “That’s the thing we were talking about.” In another case, a family read an exhibit label text about feminist protests that used beauty products as symbols. This led the child to exclaim, “Oh, so that’s what this part of the exhibit is about.” The child then led their caregiver over to a trash can filled with bras, false eyelashes, and other beauty products.

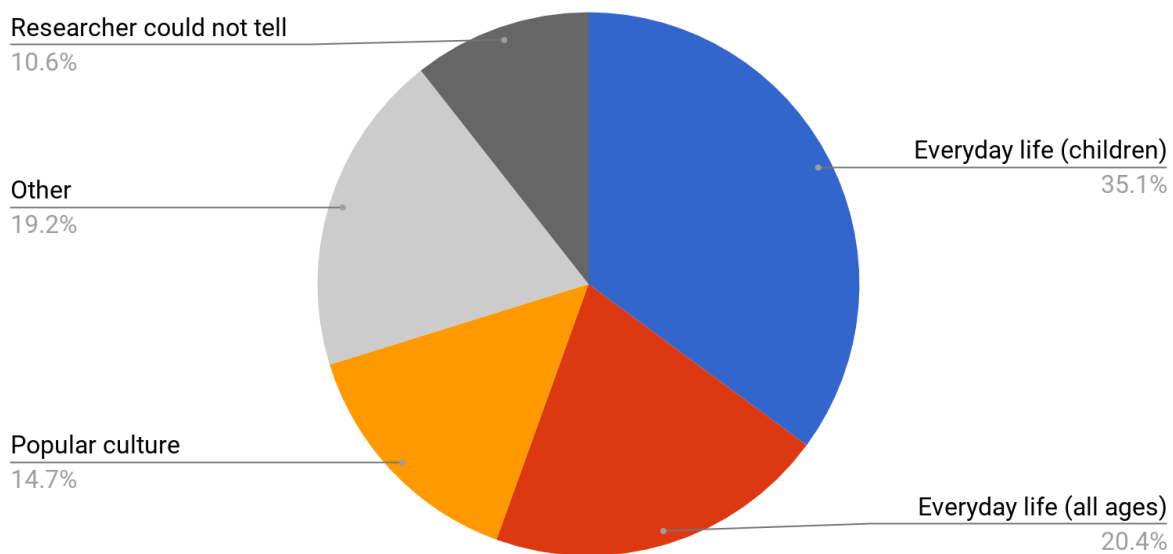
Research Question 2: What aspects of a history museum exhibit seem to prompt families to share their personal memories?

Visitors typically shared personal memories in response to an exhibit stimulus. In 90% of personal memory sharing interactions, it was clear to the researcher what had inspired the

personal memory; family members approached an exhibit element and then commented on it. In 10% of instances, the researcher could not ascertain the stimulus for the personal memory shared. In these cases, the personal memories tended to focus on the logistics of the museum visit as a whole or on participation in a research study, such as, “My dad used to go [to the same university as the researcher].”

Exhibit Content that Prompted Personal Memory Sharing. Exhibit content was coded into one of five emergent categories: a) everyday life (all ages); b) everyday life (children); c) popular culture; d) unique experiences; and e) national social, political, or economic forces, movements, or events. Figure 8 shows the distribution of exhibit topic/content across the 245 instances of personal memory documented in this study.

Figure 8: Topic of the exhibit stimulus (N=245)



These categories are detailed below.

Everyday life (all ages): Exhibit content featuring experiences that would have been fairly common, experienced by millions of people at the time. For example, the following were coded as everyday life for all ages:

- Model of camping trip, with multiple objects, images, and labels (MHC);
- Record player and records (HF and MHC).

Everyday life (children): Exhibit content featuring experiences that would have been fairly common, experienced by millions of children at the time. The following were coded as everyday life for children:

- Tinker toys (HF and WSHM);
- Arcade games (WSHM);
- Jenga (WSHM).

Popular culture: Music, movies, television, books, comic books, fashions: Exhibit content featuring aspects or objects of popular culture, for example:

- Audio recording of The Beach Boys (HF);
- Video of Mr. Rogers (MHC);
- Audio of the Super Mario theme song (WSHM).

Unique experiences: Exhibit content featuring experiences that would have been experienced by a certain subset of the population, for example:

- Oral history of soldiers in Vietnam War (MHC);
- Images of hippies or student protesters (MHC).

National social, political, or economic forces, movements, or events: Exhibit content coded not as general individual experiences, but rather national events or movements, for example:

- Image of the 1968 Olympics (MHC);
- A hat supporting Hubert Humphrey (MHC).

The final two codes consisted of “Other” and “Researcher could not tell.”

Exhibit Format that Prompted Personal Memory Sharing. Families often shared personal memories in response to various exhibit formats, stimuli, or types of display, as described in 6.

Table 6: Personal memories prompted by various exhibit formats (N=245)

	Examples	Frequency of Personal Memory Sharing
Everyday Object	<ul style="list-style-type: none"> ● A Furby (WSHM) ● A record player (MHC and HF) 	24% (n=59)
Interactive: Analog	<ul style="list-style-type: none"> ● Tinker Toys (WSHM and HF) ● Mid-century school desks (HF) 	17% (n=42)
Display with multiple objects, pictures, pieces of text	<ul style="list-style-type: none"> ● Model of camping trip, with multiple objects, images, and labels (WSHM) ● Display of teenager's bedroom (HF) 	17% (n=42)
Researcher could not tell what is being looked at	N/A	12% (n=29)
Interactive: Digital	<ul style="list-style-type: none"> ● Competitive trivia game with a screen and buttons for families to select an answer (MHC) ● Piano on which people could step on individual keys to play a note (WSHC) 	9% (n=21)
Image	<ul style="list-style-type: none"> ● Poster of The Beatles (MHC) ● Photo of the 1968 Olympics (MHC) 	6% (n=15)
Multimedia (Audio, Video) from the Time Period Represented	<ul style="list-style-type: none"> ● Recording of The Beach Boys (HF) ● Video of Mr. Rogers (MHC) 	5% (n=13)
Image and Text	<ul style="list-style-type: none"> ● Image of Peggy Fleming accompanied by text about her age when she won a gold medal (MHC) ● Map of 1968 election results with descriptions of candidates (MHC) 	5% (n=11)
Rare Object	<ul style="list-style-type: none"> ● A hat supporting Hubert Humphrey made out of buttons (MHC) ● Large Ferris wheel made from K'Nex (while K'Nex are a common object, this Ferris wheel is not) (WSHM) 	2% (n=6)
Interpretive Display or Multimedia	<ul style="list-style-type: none"> ● Video of Martin Luther King Jr. produced for the exhibit (MHC) ● Model of a stockpile of bombs (HF) 	2% (n=5)

Chapter 5: Conclusions and Implications

This study aimed to describe, first, the ways in which family groups visiting history museums use personal memories to collectively make sense of history and, second, what exhibit content or components seem to prompt the sharing of these memories. More specifically, this study looked at 1. the frequency and nature of the memories that families shared when visiting history museum exhibits; and 2. what aspects of history museum exhibits seemed to prompt families to share their personal memories.

To address these questions, this study used a qualitative survey approach, collecting video recordings of families in history exhibits and self-administered questionnaires. The results of this study contribute to the discussions of how families learn in history museums, how children learn about history out of school, and how history museum visitors relate exhibit content to their own lives.

Conclusions

Research Question 1: What is the frequency and nature of the memories that families share when visiting history museum exhibits?

Families Frequently Share Memories in History Museum Exhibits. The 27 families included in this study shared a median of eight personal memories during each exhibit visit, totalling 245 personal memories included in this study. Only one family did not share memories during their visit, which lasted 5:35 minutes. As this study takes personal memory to be a tool for and sign of learning, this frequent sharing of personal memory is yet another indication of family learning within museums.

Previous research on visitor talk in exhibits had suggested that families frequently make personal connections and share memories. In this context, none of these studies have looked

specifically at personal memory sharing. Additionally, these studies have rarely focused on history museum exhibits.

In their study of visitor talk within a variety of social groups and museum types, Leinhardt and Knutson (2004) found that visitors engaged in personal synthesis, or connecting museum content to personal circumstance or possession – a broad category that includes memory sharing – an average of between 1.69 and 6.74 times per exhibit visit, depending on the exhibit. In this study, which specifically looked at families and history museum visits, families shared a median of 8 memories per visit, or, to use the same metric as Leinhardt and Knutson, families shared personal memories a mean of 9.1 times per visit. Therefore, the personal memory sharing instances in this study were more frequent than in Leinhardt and Knutson's, whose sample included many different types of social groups and exhibit types. This might suggest that personal memory sharing occurs more frequently on family visits to history museum visits than in a mixed sample of social groups in a range of museum exhibits that includes history, art, and science. However, the exhibits included in this study were specifically selected due to the personal, relatable nature of their subjects. Therefore, it is unclear whether this difference in memory sharing frequency is due to the social makeup of visitor groups, the history focus of the exhibits, the specifically personal nature of these three exhibits, or other factors.

Families shared memories frequently in all three exhibits. Of note, families shared memories in *The 1968 Exhibit* at MHC even when all members were too young to have direct memories of the exhibit content. At the time of data collection, *The 1968 Exhibit* represented a time period 50 years in the past. Families in this exhibit in which the caregiver who filled out the self-administered questionnaire was 44 years old or younger (n=5) still shared a median of seven

memories per visit. This suggests that sharing and listening to personal memories is an important part of family visits to history exhibits on a variety of topics.

Caregivers are Central Figures in Personal Memory Sharing Conversations.

Caregivers shared personal memories in 95% (n=233) of interactions. In 70% (n=171) of interactions, they were the only members who shared memories. Other studies of visitor talk that included personal memory sharing (encompasses within a larger category) almost exclusively provided examples of adults sharing their memories (Anderson et. al., 2016; Fienberg and Leinhardt, 2002; Leinhardt and Knutson, 2004; Zimmerman, Reeve and Bell, 2009). Additionally, other studies of family talk in museums have found that adults often take on active mediator roles, speaking often to help their children make sense of exhibit content (Ash, 2003). This study adds to that picture by offering a more systematic analysis of how often the adult is the one to share memories in this process of meaning-making.

While caregiver involvement is frequent in these interactions, children still shared memories in 25% (n=62) of the conversations. In many cases, even when children did not share memories, they were the ones to initiate the conversation, often by directing caregivers' attention to an element of the museum, such as pointing or asking, "What's that?" Therefore, learning through personal memory sharing should not be characterized as a one-way street or purely caregiver driven.

Personal Memories Share a Variety of Information and Draw from Many Time Periods. Other studies of visitor talk in exhibits have created a single category of personally relevant or personal connection talk that encompasses memory sharing (Allen 2002; Leinhardt & Knudson, 2004; Zimmerman, Reeve & Bell, 2009). This study looked more closely at this type of talk and illustrates the diversity of types of personal memory talk. Possessive memories,

experience-based memories, habit-based memories, affective/opinion-based memories, and social memories each conveyed different information. Though memories that shared information about personal experiences were the most common, appearing in 35% memory-sharing interactions. The least frequent category, habit-based memory, was still represented in 19% of interactions. Memories also pulled from a variety of time periods, from decades prior to earlier within that day's museum visit. Given the variety of personal memories visitors shared, future studies of visitor talk may consider subdividing the category of "personal memory," depending on the focus of the study. Studies that look at the ways in which visitors connect exhibits to their lives, in particular, may consider using the emergent categories from this study.

Personal Memory Sharing and Historical Thinking. Personal memory sharing did not appear to correspond with most practices included within discussion of historical thinking, such as sourcing provenance or understanding historical significance. However, several personal memories included in this study illustrate change and continuity over time, one practice included in this discussion of historical thinking. Habit-based memories and possession-based memories often led families to discussions of changes in daily life, such as comparisons between civil defense drills in the 1950s and active shooter drills in the present. More research into the relationship between personal memory and learning is needed to understand whether this contributes to an understanding of continuity and change. Overall, given the variety of types of information shared in personal memories, from habits to social connections, it is difficult to make an overall claim of a consistent relationship between this entire type of talk and historical thinking.

This study also offers insight into the ways in which young people develop content knowledge about the past outside of school. Within exhibits, families often drew upon shared

experiences, cultural artifacts, or museum-specific experiences to make sense of new information about the past, such as families that referenced the American Girl movie, Berenstain Bears book, or visits to other museums. In addition, hearing family members' personal memories themselves may be another way young people develop ideas about a past period before they encounter it in school. Historical thinking scholars such as Barton (2004), Levstik and Barton (2005), and Seixas (2000) have all argued that educators should build upon students' pre-existing understandings of the past. Wineburg's (2000) work with teenagers indicates that one source of understanding is exposure to cultural artifacts such as movies like *Forrest Gump*. However, little other research exists to help educators think about where students' understandings about the past come from. This study may help educators in this work by offering broad categories of the ways in which these ideas develop (see Implications for Practice: History Educators in Formal and Informal Education).

Research Question 2: What aspects of a history museum exhibit seem to prompt families to share their personal memories?

Personal Memory Sharing Appears to be Prompted by History Exhibit Content.

Research is limited regarding what exhibit element types prompt visitor talk. Some evaluations and studies have suggested that there is a relationship between types of visitor talk and exhibit stimulus, but this is rarely documented in detail (Anderson et al., 2016; Borun et. al., 1997). To add to that literature, this study suggests that different exhibit components, both in terms of content and format, can prompt varying degrees of personal memory sharing. Exhibit elements on the topics of everyday life, all ages or specifically for children, were common stimuli for memory sharing, inspiring a total of 55% of the interactions. Across the three exhibits, the exhibit stimulus formats of everyday objects; analog interactive elements; and displays with

many items, pictures, and text were the most frequent formats to inspire personal memory sharing. Therefore, different types of exhibit content and format seem to prompt varying degrees of personal memory sharing.

Additionally, visitors to *Your Place in Time* shared memories at a rate of nearly double that of the other two exhibits (0.56 memories shared per minute at the HF compared to 0.22 at MHC and 0.28 at WSHM). This suggests it is possible to design an exhibit to draw out visitor personal memories, perhaps by using exhibit elements around the topics and formats listed above, such as from everyday life.

However, this study is limited in that each exhibit contained different proportions of display topics or stimulus types. For example, *ToyTopia* featured many toys, which fit in the content category of “Everyday Life (Children).” This exhibit had more instances of personal memory sharing inspired by content on children’s everyday life than the other two exhibits, and perhaps, than the typical history museum exhibit (if such a thing were to exist).

Implications

Implications for Practice: Museum Exhibit Design. This research provides a more detailed picture for museum professionals about the types of memory sharing families engage in while in history exhibit spaces and what type of exhibit content and format prompt memory sharing. Museum exhibit designers and interpreters might use this information to make design choices specifically meant to draw out personal memories. Perhaps museums could ask questions like, “What technology did you use as a child?” or “How does this relate to your experience?” within exhibits, scaffolding caregivers’ facilitation. Displays might also include more of the types of stimulus that this study found inspired memory sharing, such as everyday objects. Everyday objects with similar purposes, like telephones, might be displayed side-by-side to show

the evolution of the technology over time. At the same time, this study found that families are making these connections even without explicit exhibit design choices to point them toward personal memory sharing, so perhaps these design choices would not be necessary.

This study also indicates that families make connections across and within museum visits. What would it look like to design exhibits that specifically prompted visitors to make connections within an exhibit, or between exhibits in the same museum? By repeating images, cultural references, or mention of events, could exhibit designers help families better understand how historical actors interact and relate? Additionally, we know some families refer back to their memories of museum visits when trying to make sense of exhibit content. What would it look like to create an exhibit experience specifically designed to form memories that families will refer back to later? Given the differences in family agendas and learning trajectories, would this be possible?

Implications for Practice: History Educators in Formal and Informal Education.

This study offers insight into how young people's content knowledge ideas about the past develop. Within this study, caregivers often referenced shared outside memories as sources to help young people make sense of new exhibit content. This occurred often within the time period of "Medium/More Recent Memories," so that category was examined more closely. Of course, each young person's understanding of the past forms independently, based on different experiences. However, this study illustrates that, in addition to the cultural references identified by Wineburg (2000), young people's ideas about the past form through in-person experiences and museum-specific experiences. Educators might find this frame helpful. Perhaps they could begin a unit with a formative assessment in which students are asked to brainstorm all of their in-person experiences, cultural artifacts, and museum-specific experiences around a particular

history topic. This might help both teacher and student begin to recognize where ideas and, possibly, misconceptions, come from. However, the families involved in this study likely spend more time visiting museums than the average family, so this third category might be discarded, depending on the audience.

Implications for Research: Family Agendas, Family Interests, and Personal Memory Sharing. The emergent categories for information shared in each memory – such as social information or related experiences – suggest families often using these memories to co-construct meaning by making connections across contexts. Several instances of family talk observed indicate that families used personal memories to further specific learning goals, such as to build on one family member’s interests or islands of expertise or to strengthen social connections. However, this study did not have capacity to systematically code for or evaluate these learning impacts. Without knowing more about a family’s learning agenda and interests, it was difficult for the researcher to situate memory sharing interactions within a child’s larger learning trajectory.

As a result, a further study of the relationship between family members’ interests and personal memory sharing would help illustrate how, or whether, this talk supports their learning. Bricker and Bell’s (2014) ethnographic study of one child’s science identity development discusses her museum visitation at a local science center. However, this study does not look at how, in particular, her caregiver did or did not use talk, including personal memories, to facilitate or broker science learning in the museum context. One possible study might take a more ethnographic approach, in which the researcher developed a better understanding of a particular family’s history learning over time and across contexts. This study would use the researchers’

knowledge of family interests to contextualize family talk and personal memory sharing on history museum visits.

Another option might be to use a similar methodology to that of Stevens and Hall (1997), in which they invited visitors within a science exhibit to watch video of themselves within that exhibit, filmed earlier that day, then to reflect on their experiences and thinking with the researcher. This methodology would invite visitors to watch sections of their museum visit in which they had brought up their memories, then discuss their intentions and thought processes in semi-structured interviews. Both of these proposed studies would help develop a better understanding of how the museum visit contributed to young people's existing interests and broader learning trajectories.

Implications for Research: Better Understanding the Relationship Between Representation, Personal Memory, and Equity. This study used convenience sampling, approaching every family that appeared to be entering the target exhibits. Out of the 27 families involved, the caregivers in 24 self-reported as white/caucasian. Therefore, this study is not able to address whether culturally diverse visitors share different types of memories or respond to different aspects of a history exhibit. However, research suggests that these families might find some exhibits more or less resonant, depending on what and whose narratives are presented within the exhibit. Barton (2004) found that African American young people often have more nuanced ideas about progress than do white children. Rosenzweig and Thelen (1998) also found that African American and Native American people's understandings of the past were shaped by their ethnic identities.

Therefore, a study that follows visitors from both dominant and nondominant communities in exhibits might help illustrate the relationships between race and ethnicity,

memory sharing, and historical understanding. If the cultural references within an exhibit are primarily selected by white curators to tell the stories of dominant communities, does that lessen the frequency and nature of memory sharing among families from nondominant communities within an exhibit? Does it lessen the frequency and nature of memory sharing among white families if cultural references are selected by nonwhite curators and/or selected to tell the histories of nondominant communities?

A possible study could follow the same set of families with a range of ethnic backgrounds as they visit two exhibits, one telling the story of more mainstream, dominant cultures and one telling the story of an underrepresented community. Two possible exhibits could be the National Museum of African American History and Culture's *Taking the Stage*, which includes images of Redd Foxx and costumes from *The Wiz*, and The National Museum of American History's exhibit *T is for Television*, featuring Oscar the Grouch and Mr. Rogers' sweater. Video data collected in this second study could then be analyzed using the rubric developed in this study, looking at the frequency, nature, and stimulus for memory sharing. In this study, most family memories did not conflict with the narrative depicted in the exhibit. It would be interesting to examine whether this holds in a study with families from non-dominant communities. This proposed study would help the museum community better understand the equity dimension of seeing one's memories represented within an exhibit and a possible impact of the largely white museum workforce.

Final Thoughts

Throughout this study, families used personal memory sharing not only as an opportunity to feel nostalgia, but also to make meaning and support one another's learning. As museums continue to consider their role in 21st century society, discussions continue around what it means

for institutions to be “relevant.” It is my hope that this research will help add to that discussion by offering insight into how visitors are already making connections between their own lives and the exhibit. I hope that future research into this topic will suggest how exhibit designers can leverage these connections to create rich history learning opportunities or open up museums to be more relevant to under-resourced visitor groups.

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APPENDIX A: SAMPLING AND OBSERVATION PROTOCOL

Observation Protocol

Sampling and Recruitment

This study will select visitors to participate using convenience sampling of intergenerational family groups with at least one visitor above age 3 and under age 12. The researcher will approach visitor groups that include at least one adult and one child who appears to be anywhere between the ages of 3 and 12 once they have entered the exhibit space. There will be no restrictions regarding the gender, race, or perceived ethnicity of the study subjects. This study will not sample visitors who speak to one another in a language other than English during their museum visit, as this study does not have translation capacity. This will also help to ensure that families have enough facility with English to understand the consent process. The study will aim to collect data from 30 families, 10 at 3 different sites.

Video Recording Procedures

1. The researcher will have asked all participants to give verbal consent.
 - a. If a member of the party declines to give verbal consent, the researcher will ask if research could be conducted on the other members of the visiting party, so long as the declining individual is not recorded and none of his/her actions or verbal statements are used as data. If the individual assents to this, data collection will proceed as detailed below.
 - b. If more than one member of the party declines to give verbal consent, the researcher will thank the group for their time and encourage them to enjoy the exhibit, but will not collect data on their visit.
2. One adult in the group will be asked to complete the final self-administered questionnaire, selected based on which crossed an invisible line on the ground first.
3. The researcher will then encourage the visitors to interact with the exhibit as naturally as they are able.
4. The researcher will begin collecting video data of this social group, following at a slight distance so as to still capture interactions while aiming to mitigate disruption to the visit.
5. Video data collection will focus on a target adult participant, though may also capture audio of other family members.
6. As families are leaving the exhibit, ask the target adult participant to fill out the Self-Administered Questionnaire. By asking for this at the end of the visit, the researcher will be less likely to cue family behavior or talk toward history learning.
7. Thank families for their participation and give them the Contact Information Card, if that was not given to them after they gave verbal consent.

APPENDIX B: VERBAL CONSENT AND CHILD ASSENT SCRIPTS

Verbal Consent Script

“Hello, my name is Abby Rhinehart. I am a graduate student in the University of Washington museology, or museum studies program. I am at [Museum Name] today doing research for my master’s thesis, which is about how families talk to each other in history museum exhibits.

To study this, I’m videorecording families as they go through *It’s Raining Cats and Dogs*. Would you and your family be interested in participating? If so, I’d join your family – at a distance – to video and audiorecord you as you go through this exhibit. I’d also give you a short questionnaire at the end of your visit, which should only take two or three minutes to fill out. Otherwise, this will not require any extra time from you, as it will just last as long as your normal museum visit.

If no: “Thank you so much for your time, and enjoy the exhibit!”

If yes, continue with more information:

That’s great! There is some additional information you should know before you consent. By participating in this research, you will help museum exhibit designers better understand how to facilitate family conversations in history museums. There is a risk that you may feel uncomfortable being video recorded.

Participation is voluntary. You can also ask to stop participating at any time, at which point I will turn off the videocamera. If you decline to participate in the study or if you decide to opt out at any point, you will not undergo any penalty or loss of benefits to which you are otherwise entitled.

I plan to publish the results of this study. However, your participation will be anonymous, and your questionnaire responses or video recordings will not be seen by anyone outside of my university research group. I may use small clips of 1 minute or less for teaching purposes.

Do you have any questions about this research?

Do you agree to participate? If so, can I record you giving verbal consent on camera?

If you have any additional questions concerning this research or your participation in it, please feel free to contact me, my thesis supervisor or our university research office at any time. [Give Contact Information Card]

Child Assent Script

Hi, my name is Abby, and I'm a student at the University of Washington. I'm trying to learn more about what families talk about in this exhibit. To study that, I'm hoping to video record you and your family when you're in this space. It is okay for you to not want to be video recorded, and you can still visit the museum exhibit just as you would normally. You can also ask me to stop video recording you at any time. Are you willing to be video recorded?

APPENDIX C: SELF-ADMINISTERED QUESTIONNAIRE

Check the box identifying how much you agree or disagree with the following statements:

	Strongly disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly agree
As a family, we talk about history/the past.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I want my children to enjoy learning about history/the past.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I know a lot about at least one of the following topics: history, the past, or my family's history.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Why did you come to the [institution name] today?

What do you hope your child/children learn about at the museum today?

Please flip this paper over and fill out the information on the back.

Demographic Information**Age:**

- Under 18
- 18-24
- 25-34
- 35-44
- 45-54
- 55-64
- 65 or older

Gender: _____**Race/Ethnicity:** _____**Families:**

What are the ages of the children in your group? _____

What is your relationship to the children in your group? (e.g. parent, grandparent, family friend, etc.)

What is your Zip Code: _____**How many other times in the last year have you visited the Washington State History Museum?**

- Zero, this is my first visit.
- 1-2 times
- 3 or more times

Thank you very much for your time! Your answers will help us improve this and other exhibits!

APPENDIX D: CODING RUBRIC

Background

Purpose: This study aims to describe, first, the ways in which family groups visiting history museums use personal memories to collectively make sense of history and, second, what exhibit content or components seem to prompt the sharing of these memories.

Coding Rubric 1: Self-Administered Questionnaire*Demographic and Psychographic Information***Gender**

Codes are mutually exclusive

	Gender
1	Female
2	Male
3	Identified Differently

Age

Codes are mutually exclusive

	Age
1	Under 18
2	18-24
3	25-34
4	35-44
5	45-54
6	55-64
7	65 and older

Ethnicity

Codes are mutually exclusive

	Ethnicity
1	Caucasian/White
2	Hispanic
3	Black

4	Other
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Number of Children in Group

Ages of Children in Group

Researcher may select multiple codes

	Age Range
1	0-3 years old
2	4-7
3	8-11
4	12-15

Relationship to Children

Codes are mutually exclusive

	Relationship
1	Parent to at least one child in the group
2	Grandparent to at least one child in the group
3	Other

Zip Code

Codes are mutually exclusive

	Zip Code
1	Lives within a 30 minute drive of the museum (according to Google Maps)
2	Lives more than a 30 minute drive from the museum (according to Google Maps)

How many other times in the last year have you visited [Museum Name]?

Codes are mutually exclusive

	Visitation
1	Zero, this is my first visit
2	1-2 times
3	3 or more times

Psychographic around family’s interest in history:

As a family, we talk about history/the past	1=Strongly disagree, 7=Strongly agree
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I want my children to enjoy learning about history/the past	1=Strongly disagree, 7=Strongly agree
I know a lot about at least one of the following topics: history, the past, or my family’s history	1=Strongly disagree, 7=Strongly agree

Question: Why did you come to [Museum Name] today?

Researcher may select multiple codes

	Code and Description	Examples
1	Learning Respondent mentions wanting either themselves or another family member to learn	“Educational opportunity for my son” “Learn about history”
2	Fun/Enjoyment Respondent mentions wanting either themselves or another family member to have fun, or says something with a similar affective/enjoyment purpose.	“Adventures.” “We love it.”
3	Social Factors Respondent mentions socializing or another member of their social group.	“To see the '68 exhibit with my grandchildren.” “I was invited by a friend from Michigan.”
4	Logistical Factors Respondent mentions a factor related to family schedule, membership, money, etc.	“Dad was at work and we haven't been in a while.” “Cub Scout Event.”
5	To see a particular exhibit Respondent mentions a particular exhibit that the family came to see. This may not be the exhibit being studied.	“To bring my 4 year old to see Toytopia and the model train.” “Pixar exhibit.”
6	Other None of the above codes apply to any of the response.	

What do you hope your child/children learn about at the museum today?

Researcher may select multiple codes

	Code Title	Examples
1	History Respondent uses the word “history” or “the past”	“Military history. Pop culture.” “We wanted our children to see some history, and hands-on exhibits.”
2	To expand their child’s worldview Respondent mentions that they want their child to understand the differences between his or her experience and the ones in the exhibit	“Different perspectives.” “An awareness of the things, people, and events before and around us.” “That things were both different and the same as today.”
3	To have fun or achieve affective/behavioral result Respondent mentions a particular desired behavior, attitude, or enjoyment they hope their children achieve	“History is COOL.” “Expend energy.” “We are working on listening.”
4	Other None of the above codes apply to any of the response.	

Coding Rubric 2: Video Data of Family Visits

The researcher watched the video data and coded each conversational fragment that includes a memory.

What is Coded?

Event-Based Segmentation of Utterances

This study used “event-based segmenting, or coding according to the “physical movement and content discussions of the groups” (Leinhardt and Knutson, 2004, p. 80). Under this framework, an interaction is ended when a family has both stopped speaking for several seconds and has physically moved locations. Using this framework, if a family gathers around a display case and discusses multiple artifacts within this case, all without pause, this is coded as one interaction. In the Henry Ford, families often walked along long display cases with multiple objects. In these cases, if a family stopped talking, moved forward, and began talking about a different object within the case, this was coded as two interactions because of both change in physical location and pause in the conversation.

In this study, an interaction does not need to be a complete sentence, but rather can be an utterance, following Zimmerman, Reeve, and Bell's model. However, unlike Zimmerman, Reeve, and Bell, this study also included utterances related to the logistics of exhibit navigation or family peacekeeping.

This format focuses on visitors' engagement with the exhibition, a key question of this study. However, it is limited in that it weights short stops and longer conversations equally.

Gestures

While the video recorded does not capture all nonverbal interactions, if a gesture was clearly captured on video, it was included. This was most often the case when coding participants in the conversation. If a child nodded, this was taken as sharing memories in code A2ii. If a child pointed at an artifact to draw her caregiver's attention to it, this was taken as initiating the conversational fragment in code A2i. However, this study primarily focused on verbal interactions.

Conversations with the Researcher

As this study is focused on family talk within an exhibit, it was not meant to capture family interactions with the researcher. However, several families did talk with the researcher during their visits, as is represented in codes A2ii and A2iii. While in the exhibits, these were short conversations, meant to make family members feel comfortable. However, the Henry Ford's exhibit includes a playspace, and after visiting "Your Place in Time," children would often play while parents talked with the researcher. These conversations are not included in the data, as they are not the focus of this study. However, time spent in this playspace is included in the overall time a family spent in this exhibit.

Personal Memories

Families often included talk that drew on their previously known information. For example, before listening to oral histories from the Vietnam War, one father warned his six-year-old: "These are about war, so they might be sad." This indicates background knowledge on both the nature of war and his child's possible reaction to it. In another case, a family connected the 1968 Olympics to the 2018 Olympics, noting that while Peggy Fleming won for ice skating when she was young, at 19, "There's a girl that just won this year for snowboarding who's 17."

However, the focus for this study is not on just memory, but on personal memories. Therefore, participants needed to not only employ some element of recall, but one with a personal connection. The examples listed above did not include personal connections, and were not coded.

Personal connection alone was also not coded. A child saying, “This is bad” music quality when listening to AM radio would not be coded. Despite being an opinion, it does not include recall or memory.

Therefore, the formula used for a personal memory in this study is:

Conscious recalling (often called declarative memory) + explicitly framed through a personal lens

Examples of coded memories include:

- “My grandma had these dishes. That little tiny one was always here fruit dish.”
- “I used to play this [game] a lot”
- “Did you see that billboard that says that Santana is having a concert here on March 17. That very band.” (This is included because it involves the personal experience of seeing a billboard.)
- “Furbies. These are like Hatchables but from a long time ago.” (This is included because it requires the speaker to make an explicit connection, based on his or her personal opinion.)

Section A: Coding the memory

Coding A1i: What is the nature of the personal memory being shared

Researcher may select multiple codes

	Code and Description	Examples
1	Possession Statement of past or present ownership of the particular item being displayed, or something related to the item being displayed “I had/have this”	“We have this.” (present) “I had this!” (past) “I had his first album on vinyl.”
2	Experience Recollection of a particular one-time experience, either held individually or shared by multiple members of the group. By nature, can’t be present tense, but can be from both time period represented or a different period “I did this”	“Madonna was my first concert” “Remember that guy that came and spoke at our church?”
3	Habit A statement about repeated behavior. Might include things that a person did not do, such as saying they were never very interested in a toy or topic. “I used to do this, or currently do this,	“I played PacMan all the time.” “I never paid attention in history class.” “I was never very into horses.” “I watch enough TV at home.”

	habitually	
4	Affect/Opinion/Connection A statement of emotion or opinion. Might include a comparison between one object and another, one event and another, one time period and another. “I felt/feel this way”	“We love James Taylor.” “I’ve eaten one of these. They’re gross.” “This reminds me of a light bright.” “That’s still a problem today.”
5	Social Connection Statement about another person, with whom the speaker has an ongoing relationship, outside of the social group within the study. This could be another person’s experience, affect/opinion, or knowledge/explanations. “I know someone”	“Your dad would love this.” “Your uncle had an Atari.” (Past tense) (Note that this would be coded as 2 and 6) “My hairdresser has a Coke machine like this still.”

A1ii: Add-on Code:

Of the memories coded in A1i, do they also include either of the following two characteristics?

Researcher may select multiple codes

	Code and Description	Examples
1	Identification Naming the object or image being displayed Note that this must not be done from reading a label. “I know what this is”	“The Beatles!” “Do you know what that is?” “Yes, it’s Connect Four.”
2	Knowledge/Explanation Description or explanation to share more information about the exhibit content. This should not be information gained based on other exhibit content. “I know this”	“This is an etch-a-sketch. You turn the knobs.” (Present tense) “This is Simon. You would hit the colors in the right order.” (Past tense) “Oh, I remember how to play this game now.”

Coding A2: Who is involved?

A2i. Who initiates the conversational fragment?

Codes are mutually exclusive

	Initiator
1	Adult
2	Child
3	Researcher could not tell

A2ii. Who vocally (or with gestures) shares memories during this conversation?

Researcher may select multiple codes

	Speaker
1	One Adult in Study Social Group
2	Multiple Adults
3	One Child
4	Multiple Children
5	Museum Staff
6	Researcher

A2iii. Other than the person/people coded in A2ii, who is involved in the social group for the memory sharing?

Researcher may select multiple codes

	Audience
1	One Adult in Study Social Group
2	Multiple Adults
3	One Child
4	Multiple Children
5	Museum Staff
6	Researcher
7	Unclear
8	Nobody Else (Note that if a statement is said by one person when nobody else is around, it is coded as 8)

A2iv. Is this a memory/are these memories that the conversation indicates that everyone in the conversation remembers?

Codes are mutually exclusive

1	No, only the speaker
2	No, only some portion of the people in the interaction.
3	Yes, everyone in the interaction (This might be limited to the parent saying to the child, “Remember, you have one of these” and the child not disagreeing.)
4	Researcher Could not tell
5	Different memories are shared in the same conversational fragment, and they are not all held by the same person

6	Only some portion is shared
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Coding A3: Time period being remembered in the conversational fragment

Researcher may select multiple codes

	Code Title	Examples
1	<p>Present/Ongoing Statements about things that are currently existent, informed by the speaker’s prior knowledge about them. Includes identification, facts about an object phrased in the present tense.</p>	<p>“Oh, Barbie! We love Barbie.” “I remember how to play this game.” “Doesn’t this look like grandma’s house?” (While going to grandma’s house is an event, it is not a one-time occurrence, and grandma’s house continues to look a certain way.” “You know how Colin Kaepernick is protesting by taking a knee?”</p>
2	<p>“Medium”/More Recent Past Statements about memories that happened after the time period represented in the exhibit but that are no longer true/existent. Tends to focus on experiences, such as watching a movie or visiting Disneyland.</p>	<p>“Remember, like when we went to Disneyland and you drove me in that car.” “Like in the American Girl movie.” “I heard a podcast about this.”</p>
3	<p>Time Period Represented in Exhibit Stimulus Statements about memories that happened during the time period being represented by the exhibit content the family member is currently looking at. For ToyTopia, the time period is not always clear, but could be generalized to be 20th century, where not made explicit by the exhibit Often coding this category includes some general assumptions about the speaker’s age.</p>	<p>“I had one of these toys.” “Madonna was my first concert.” (While Madonna is still performing, the speaker is old enough to have seen the performer at more or less the time period being represented in the exhibit.) “I used to love this show.”</p>
4	<p>Time period of memory is not</p>	<p>“I visited a museum exhibit in Minnesota</p>

	clear to the researcher	once.”
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Add-On Code:

When visitors remember something from the more recent past (See above, Coding A3, Code #2), what type of information/experience is being remembered?

Codes are mutually exclusive

	Code and Description	Examples
1	In-person experience An experience (other than watching/listening to a piece of media) that the family member has had. (Note that museum-specific experiences, even if they were in-person, are expressed in code #4)	“Remember that guy that came and spoke at our church?” “Remember, like when we went to Disneyland and you drove me in that car.”
2	Cultural artifact A piece of media or culture that the individual experienced in the past. This might be something that has occurred more than once, such as a book that the family has read multiple times.	“Like in the American Girl movie.” “I heard a podcast about this.” “You know like the Berenstain Bears books you like, how they have the Three Stooze Bears?”
3	Current event A widely known social or political issue.	“You know how Colin Kaepernick is protesting by taking a knee?” “They wanted better healthcare. That’s still an issue.”
4	Museum-specific experience An experience with this museum or another that the family member has had.	“I saw this exhibit when it was here in 2011.” “They have this at the children’s museum.”
5	Other	

Section B: Coding the location of the memory

Coding B1: What is the format of the material the speaker looking at when they first initiate conversation?

Codes are mutually exclusive

	Code and Description	Examples
1	Image	Poster of The Beatles Image of an album cover

2	<p>Text</p>	<p>Entry in an all-text timeline Description of the Poor People’s Campaign</p>
3	<p>Image and Text (Note that if the family is not looking at the text, but just at the image, this is coded as #1)</p>	<p>Image of Peggy Fleming accompanied by text about her age when she won the gold medal.</p>
4	<p>Everyday Object A mass-produced object intended for ownership by millions of people. When in doubt, the author went on EBay to see if more than 50 were currently for sale.</p> <p>If there is an everyday object that visitors are able to interact with, such as a board game that they are able to play with, this is coded based on whether or not the visitor chooses to interact with it. If they comment on the object but do not interact with it, it is coded as an everyday object. If they interact with the object at any point, it is coded as an “Interactive: Analog.”</p> <p>Must be an object rather than a cultural artifact, which is expressed in code 5. E.g. a common TV show being displayed would be multimedia, not an everyday object.</p>	<p>A Barbie from 1968 A Furby A record player</p>
5	<p>Rare Object An object not intended for ownership by millions of everyday people. When in doubt, the author went on EBay to see if fewer than 50 were currently for sale. This also includes museum-built display, e.g. the reproduction of the Apollo 9 Spacecraft</p> <p>If there is an rare object that visitors are able to interact with, such as an old car that they are able to sit inside, this is coded based on whether or not the visitor chooses to interact with it. If they comment on the object but do not interact with it, it is coded as a rare object. If they interact with the object at any point, it is coded as an “Interactive: Analog.”</p>	<p>A hat supporting Hubert Humphrey made out of buttons. Large Ferris wheel made from K’Nex (while K’Nex are a common object, this Ferris wheel is not)</p>

	<p>Must be an object rather than a cultural artifact, which is expressed in code 5. E.g. oral histories would be multimedia, not a rare object.</p>	
6	<p>Multimedia (Audio, Video) from the Time Period Represented This may be of a commonly shown/played recording or of a one-time event</p>	<p>Recording of The Beach Boys Video of Mr. Rogers Video of the moon landing</p>
7	<p>Interpretive Display or Multimedia (Audio, Video) A visual display or piece of multimedia not from the time period being represented, included to help interpret the exhibit content. May or may not have been created for the exhibit. Visual displays should not be interactive and should not display daily life.</p>	<p>Recreation of Apollo spacecraft Model of a stockpile of bombs Audio recordings of oral histories Video of Martin Luther King Jr. produced for the exhibit</p>
8	<p>Interactive: Digital An interactive aspect of the exhibit that includes using digital technology, including video, computers, a green screen, or a motion-activated piano.</p>	<p>Competitive trivia game with a screen and buttons for families to select an answer Screen where families could create their own album cover Piano on which people could step on individual keys to play a note</p>
9	<p>Interactive: Analog An interactive aspect of the exhibit that does not include digital technology</p>	<p>Tinker Toys A car from 1901 Midcentury school desks Model train that starts and stops with a button Boards that can be lifted to reveal more information about the picture displayed</p>
10	<p>Display with multiple objects, pictures, pieces of text If a family is gathered around and discussing one</p>	<p>Model of camping trip, with multiple objects, images, and labels</p>

	element of a display, such as a telephone, this is coded based on the category of that particular element. However, this code is used if family members discuss multiple elements within a display or discuss the display as a whole.	Display of teenager's bedroom
11	Researcher could not tell what is being looked at	

Coding B2: What is the content of the material the speaker looking at when they first initiate conversation?

Codes are mutually exclusive

	Code and Description	Examples
1	<p>Everyday Life (all ages) Experiences that would have been fairly common, experienced by millions of people at the time. Experiences intended specifically for or primarily experienced by children are captured in Code #2. Discussion of popular culture are included in Code #3, not here.</p>	<p>Model of camping trip, with multiple objects, images, and labels Record player, records</p>
2	<p>Everyday Life (children) Experiences that would have been fairly common, experienced by millions of children at the time. Experiences shared by both adults and children are captured in Code #1. This code includes all toys, even if they include elements of popular culture. This also includes video and arcade games. This includes common toys, but not unique toys that children would not have seen before (e.g. a large model train set, an interactive piano), which are coded as 6, Other. Note that music from video games is coded as popular culture, but not the games themselves. Discussion of movies, television shows, etc. are included in Code #3, not here, even if they were/are intended for children. This extends up to life for 18 year olds, such as a display specifically of a teenager's bedroom or a high school yearbook.</p>	<p>Tinker Toys Toys that may feature characters from pop culture (Star Wars figures, etc.) Arcade Games Jenga</p>

<p>3</p>	<p>Popular Culture Music, movies, television, books, comic books, fashions. Note that music from video games is coded as popular culture, but not the games themselves.</p> <p><i>Much of the difference between codes 2 and 3 comes down to format – could children interact with the artifact, in its original state? If so, it is code 2, and if not, it is code 3.</i></p>	<p>Recording of the Beach Boys Video of Mr. Rogers Audio of the Mario theme song Sports (but not the Olympics, which are coded under #5, as they are rarer events)</p>
<p>4</p>	<p>Unique Experiences Experiences that would have been experienced by a certain subset of the population.</p>	<p>Oral history of soldiers in Vietnam War A car from 1901 (only owned by the very few) Images of hippies or student protesters</p>
<p>5</p>	<p>National social, political, or economic forces, movements, or events General individual experiences are not represented, but rather a national event or movement.</p>	<p>Image of the 1968 Olympics A hat supporting Hubert Humphrey made out of buttons</p>
<p>6</p>	<p>Other</p>	
<p>7</p>	<p>Researcher could not tell</p>	