

Summative Evaluation Report

Open House:

If These Walls Could Talk

Minnesota Historical Society

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Executive Summary

Summative Evaluation of the *Open House* Exhibition

The summative evaluation of *Open House: If These Walls Could Talk* at the Minnesota History Center was a visitor-centered study of the kind of learning visitors experience in the exhibition. The study was conducted by the Science Museum of Minnesota's Department of Evaluation and Research in Learning, directed by Dr. Kirsten Ellenbogen. The study focused on three aspects of learning: personal meaning making, identity development and affirmation, and interactions with objects. In order to provide rich detail about the learning experience, data collection included audio recordings of visitors' conversations as they walked through the exhibition as well as interviews with visitors before and after they viewed the exhibition. A total of 172 randomly-selected visitors were interviewed, and 40 of them agreed to wear a microphone as they went through the exhibition.

Visitor conversations were transcribed and analyzed in two rounds. Analysis began with the three core concepts of the exhibition: place (one house), human experience (fifty families), and change over time (one hundred and eighteen years). Place was exemplified by topics such as architecture, structure, and the house itself. Human experience included topics like family, ethnicity, and life cycle. The third category, change over time, was exemplified by topics related to shifts, transformations, contrasts, and similarities over the years. The second round of analysis was conducted using finer-grained codes that emerged from the visitor data.

The median time spent in the exhibition was 33 minutes. Almost a third of the visitors had not visited or heard anything about the exhibition. These visitors came with a wide range of expectations that influenced their interpretations of the exhibition. Analysis showed that there were few significant correlations between demographic variables such as age and visitors' conversations or responses to questions. The rare exceptions were the tendency to talk about issues related to change over time and the popularity of the backyard and attic fire sections of the exhibition.

Meaning Making: Topics related to human experience dominated visitors' responses when they were asked about the exhibition's main idea. Analysis of visitors' conversations also revealed that topics related to human experience were more frequently mentioned than topics related to place and change over time. For example, conversation related to the exhibition's house inhabitants tended to occur an average of 4.3 times per transcript, in contrast with topics related to time period (2.9 times per transcript) or architecture and furnishings (2.8 times per transcript). Conversations related to place tended to occur most frequently during orientation moments of the exhibition. Conversations related to change over time tended to occur most frequently when visitors were making comparisons to modern day life.

Interactions with Objects: When asked to describe the most memorable part of the exhibition, about half of the visitors named a specific object. The most common response to this question was the collapsing bed, but it was never mentioned when visitors were asked about the personal connections they made with the exhibition. Analysis of visitor conversations revealed that the exhibition objects tended to elicit the same types of responses from visitors. For example, the collapsing bed tended to inspire affective or directive comments but not comments related to internal or external histories. The rare exceptions were the lantern slides, citizenship test, basement, and diabetes pillow, which elicited more varied responses from visitors.

Identity Development and Reinforcement: Almost three-quarters of the visitors were able to report a specific personal connection they made between the exhibition and their own lives. The objects that visitors felt strong connections to tended to relate to everyday experiences such as the bathroom or photos. Analysis of visitors' conversations revealed that comments related to internal histories, such as personal connections and stories, occurred on average, more than three times per transcript. This was significantly more frequent than conversations related to external histories, which occurred an average of one time per transcript.

Summative Evaluation of the *Open House* Exhibition

Open House: If These Walls Could Talk is an innovative interactive exhibition that opened at the Minnesota History Center on January 14, 2006. The exhibition focuses on the history of 50 families who lived in one house over the course of 118 years in the “Railroad Island” neighborhood on St. Paul’s East Side. As visitors walk through each room of the house, they explore another period in its history, from its construction by German immigrants, to its transformation into rental apartments where Hmong refugees have lived in recent years. The exhibition traces change over time in the house through the personal narratives of the immigrant families that have lived there in an effort to show the human side of history.

Approach

This summative evaluation focuses not only on how visitors respond to questions about the exhibition, but also on the conversations, or talk, that visitor groups (e.g., families, pairs, etc.) engage in during their visit. Talk refers to the group’s ability to weave disciplinary content and personal narrative into their conversations, construct arguments and explanations, ask questions, and challenge ideas. Talk is both a process through which people learn and an outcome of learning (Leinhardt & Knutson, 2004). Many recent studies of museum learning support the notion that differences in how people talk in museums are related to differences in what people learn. For example, parent explanations can change how children interpret the content of museum experiences (Callanan & Jipson, 2001; Crowley et al., 2001; Ellenbogen, 2002). Therefore a core component of this study was an open-ended examination of the kinds of talk visitors engage in during their *Open House* experiences.

This study was designed to take a visitor-centered perspective on understanding the kinds of learning that occur in the *Open House* exhibition. We have focused on three interrelated facets of learning: the ways in which visitors interpret and make personal interpretations or meaning from the exhibition; the ways in which visitors interact with

and reflect upon objects and in the exhibition, and the ways in which conversation reflects visitors efforts to shape and affirm their identity. Unlike an experimental project, this study began with a question, not a hypothesis. The primary research question guiding this study was “What kinds of learning do visitors experience in *Open House*?”

Our definition of learning is based on the understanding that museums both transmit accurate information and transfer authority for interpretation to visitors (Rowe, 2002). So an exhibition can be designed to transmit history information by teaching visitors how to decode it while at the same time inviting visitors into the meaning making experience. Meaning making is the essence of the constructivist museum (Hein, 1998; Roberts, 1997) where the learner actively participates in negotiating different knowledge and judging whether it makes sense. Family or other group members contribute previous experiences and together negotiate the learning experience (Borun, Chambers, & Cleghorn, 1996).

In history museums, objects are cues for institutional or official memories of past events, and cues for personal memories (Paris & Hapgood, 2002). History museums typically make an effort to place the object in context, evoking the time and place from which it comes. The goal is to help the visitor feel like they are there, or in the presence of the real object. Text and graphics may be designed to allow visitor interaction and increase the immersion, blurring the boundaries between objects and supporting media. Visitors are free to use and interpret objects in a variety of ways—some as intended by the museum and some not. Objects may be designed to support specific interpretations, but they do not limit visitors to only one interpretation or use. Visitors can and will use museum objects in unexpected ways (Rowe, 2002).

One of the most significant ways visitors use objects in museum is in support of identity development (Feinberg & Leinhardt, 2002; Paris & Mercer, 2002). Identity — an ever-changing network of background characteristics and interests — develops through conversation. “People tell others who they are, but more important, they tell themselves and try and act as though they are who they say they are,” (Holland et al., 1998, p. 3). Negotiating identity occurs through interactions with institutions as well as people

(Bruner, 1996). Conversations in an exhibition provide a measure of how visitors interact with people and objects to negotiate or confirm their identity.

Together, identity, object-based interactions, and meaning making comprise the focus of the study:

- Meaning Making: What kinds of objects and experiences do people talk about and reflect upon in order to make meaning from this exhibition experience? For example, are they reflecting on issues of immigration, aesthetics, themselves?
- Object-Based Interactions: Which objects are most memorable? Which stimulate particular types of conversations?
- Identity: Where do visitors make connections between themselves and this exhibition? Do they share personal narratives? Reflect upon their roles in the arc of history? Become more motivated to find the historic narratives that intersect with their own lives?

The amount and type of conversations among visitors to *Open House* not only reveals the diversity of learning experiences occurring within the exhibition, but also indicates the success of the exhibition itself. Human beings tell stories to define who they believe they are and where they believe they belong; interaction with a history exhibition that includes and elicits storytelling is a process of a visitor placing themselves within place, time, and sense of self. This allows visitors to place themselves within the larger historical narrative, and both internal and external histories simultaneously acquire relevance, which is key to constructing personal meaning from objects in an exhibition.

Open House provides a narrative structure — essentially, the story of a house and its inhabitants — and visitors' engagement with and interweaving of their own personal narratives and experiences with the exhibition narrative demonstrates a relevance of the exhibit and its historical content to visitors. The connections made by visitors between the exhibition and their personal histories, demonstrated by the conversational data captured for this study, shows a remarkable level of success with both engaging the public and with providing an educational experience for them.

Methods

Data collection began June 24, 2006 and was completed September 29, 2006. During this time, we conducted 132 pre-post interviews and 40 recording interviews (that included a pre-post interview). About two-thirds (67%) of the data was collected on weekends; the remainder was collected on weekdays. For the majority of the data collection (77% of the time), crowd levels in the exhibition were low. Less frequently, the crowd level was recorded as medium (16%) or high (8%). Data collection, transcription, and data entry was done by Kirsten Ellenbogen, Beth Janetski, Murphy Pizza, Patrick Smith, Levi Weinhagen, David Ordos, Katonya Gillard, and Stacie Redemacher.

For the recording interviews, data collectors used a random sampling technique to recruit a visitor (referred to as the target visitor), asking her or him to wear a wireless microphone as she or he walked through the exhibition to capture discussion with other group members. A second person in the group also wore a wireless microphone to better capture group dialog. (Throughout this report, transcript segments are identified by M or F to indicate a male or female visitor and a number to indicate the age of the visitor.) A short interview was conducted with the target visitor before and after viewing the exhibition.

For the pre-post interviews, data collectors used a random sampling technique to recruit visitors. This survey was similar to the pre-post survey used with the recording interviews, but included a few additional questions related to prior experience with the exhibition, expectations, and connections between the individual's life and the exhibition.

The interview was not designed as a pre and post-knowledge test. Instead, questions were split between the pre and post-interview as needed to gather initial data untainted by the exhibition experience, and to balance the amount of time visitors needed to spend with data collectors during the two data collection moments.

The audio recordings provided highly detailed insights into the kinds of meaning visitors made from specific interactions between themselves, the objects and stories of the exhibition, and other group members. The audio recordings were transcribed and analyzed for major themes that emerged from the data, as well as major themes identified in meetings with the project team. Interim reporting was used to check in with the project team and ensure that the evaluation team's analysis was consistent with the project goals.

In the end, two coding schemes were used with the transcripts: primary exhibition theme codes and object codes. Each transcript was essentially analyzed twice using both sets of codes. All data was first analyzed in terms of visitor understanding of the three categories of place, human experience, and change over time. These three primary categories grew out of discussions with the project team and represent the main idea of the exhibition: one house (place), fifty families (human experience) and one hundred and eighteen years (change over time). The first category, place, is exemplified by topics like architecture, structure, and discussion related to the house or neighborhood. The second category, human experience, relates to the human side of history and includes topics family, ethnicity, and life cycle. The third category, change over time, includes any comments related to shifts, transformations, contrasts, and similarities over the years.

In the second round of coding, these three main categories were then broken down into more fine-grained codes that emerged from the visitor data. These codes were developed to identify visitor reactions to objects within the exhibition. In this study, objects include three-dimensional items as well as text and media found in the exhibition. This coding scheme was used to identify conversation related to internal and external histories, affective reactions, comments that reiterated or clarified exhibit content, and statements or questions related to directing or clarifying object use. Transcripts were coded in a hierarchical manner giving priority to internal history codes over all other codes. The common codes included:

- *Internal histories* is defined as a person making a personal connection to an object or remembering a personal history.
- *External histories* comments focus on “big H” History events and do not specify a personal connection.
- *Affective reactions* to objects include comments relating to the initial encounter of an object, naming the object, verbal and nonverbal reactions to objects which may include laughing or crying.
- *Reiterative comments* describe objects or are read from exhibit text but do not offer any commentary or connections to internal or external history; visitors provided no opinions or additional information other than what is provided in the exhibition.
- *Directive comments* include simple comments that direct another visitor to interact with an object but do not reiterate content or make affective comments.

Visitor Profile

Demographic data was collected for all participants: about two-thirds (64%) were female and the remaining third (36%) were male. The age range of visitors is reported in Table 1. This includes both of the individuals who wore a microphone in the recording interviews and the respondents to the pre-post interviews. The ages of visitors included in this study are consistent with the demographics reported in two previous Minnesota Historical Society reports: “Audience Demographics Report, 2005” and “Demographic Characteristics of Exhibits Visitors, May 2004.” For example, in the two previous reports the percentage of visitors age 20-39 was 31% and 22% respectively. For this study we had a similar percentage for a slightly different age range: about a quarter (23%) of the visitors were age 17-34.

Table 1: Age Ranges of Visitors

Age Range	Percent of Visitors
Ages 8-12	11%
Ages 13-16	8%
Ages 17-24	9%
Ages 25-34	14%
Ages 35-44	16%
Ages 45-54	15%
Ages 55-64	17%
Ages 65+	11%

Almost all (>99%) of the respondents named English as the language primarily spoken in their home. Less than 1% named Spanish in response to this question.

About half (51%) of the respondents came with groups composed of both adults and children; the rest were in groups of adults only. About a third of the respondents (36%) came into the exhibition in a group of two people. Another two-fifths of the respondents came either as part of a group of three people (23%) or four people (21%). (Note that

visitors coming to the exhibition on their own could only participate in the pre-post questionnaire part of the study, not the recording.)

Table 2: Group Composition

Number of People	Percent
1	7%
2	36%
3	23%
4	21%
5	5%
6	4%
7	2%
8-13	2%

Visitors were asked if they or their family members were members of the Minnesota Historical Society or the History Center. About three-quarters (72%) of the respondents were not members. Visitors were also asked how many times they had visited the History Center in the past two years. More than half (57%) had not visited in that period.

Table 3: MN Historical Society/Museum Membership

Membership	Percent
Yes	27%
No	72%
Unsure	1%

Table 4: Visit Frequency: Past Two Years

Number of Visits	Percent
None	57%
1-2 times	26%
3-5 times	11%
6 or more times	6%

Visitors were asked to rate their knowledge of history and their interest in history on a scale of 1 to 10, where 1 = not interested/knowledgeable at all and 10 = very interested/knowledgeable. The most frequent responses for interest in history were between 6 and 8 (56%) and the next most frequent responses were between 9 and 10 (34%). Only 10% of respondents rated their interest low, between 1 and 5.

Table 5: Interest in History

Rating by Visitor	Percent
1-5	10%
6-8	56%
9-10	34%

Visitors generally rated themselves as more interested than knowledgeable, which is typical of museum visitors (Serrell, 1998). Responses about knowledge clustered between 6 and 8 (48%), and 3 and 5 (45%). A small percentage of respondents gave themselves a very high rating of 9 or 10 (5%) or a very low rating of 1 or 2 (2%).

Table 6: Knowledge of History

Rating by Visitor	Percent
1-2	2%
3-5	45%
6-8	48%
9-10	5%

The amount of time spent in the exhibition was noted for forty visitors taking part in the recording interview (see Table 7). The median time spent in the exhibition by visitors was about 33 minutes. For comparison purposes, the *Open House* exhibition is slightly larger than the *Transportation* exhibition in terms of square footage. Visitors in *Transportation* spent less time in the exhibition, averaging 28 minutes with minimum of 5 minutes and a maximum visit of 60 minutes. Overall, *Open House* visitors averaged seven minute longer visits than visitors to the comparably sized *Transportation* exhibition.

Table 7: Time Spent in *Open House*

	Time
Median	33 min 4 sec
Average	35 min 19 sec
Minimum	10 min 22 sec
Maximum	80 min 53 sec

The data collection team logged 62 refusals in a total of 234 visitors approached during random sampling. Although this number is high for standard surveying, it is consistent with studies in which visitors are asked to wear a microphone. When a visitor refused to participate in the study, the data collector noted the date, time, approximate age, estimated ethnicity, and reason given for refusal. Approximately 45% of the refusals came from individuals over the age of 50. There were no other significant patterns in the refusal data.

Results & Discussion

Visitor Expectations

Visitors participating in the pre-post survey were asked what they knew about *Open House* prior to entering the exhibition. Almost two thirds (61%) said they had not been to the exhibition or heard anything about it. A small percentage (9%) had been to the exhibition before.

Table 8: Experience with Exhibition

Experience	Percent
Haven't been or heard anything about it	61%
Heard or read about it	30%
Been to it before	9%

Coded qualitative responses revealed that 36% of visitors did not have any expectations about what they would see and do in the exhibition. These responses included comments like, “*I don't know,*” “*I have no clue,*” and “*I know nothing about the exhibit.*” Of the remainder, 27% expected the exhibition would emphasize things related to “place,” while 25% expected the exhibition would emphasize “human experiences.” Only a small percentage of the responses (6%) related to “change over time.” Another 8% of the responses were coded as other. Below is a representative sample.

Place

- F21: Recreation of a historical house.
- M13: Things about old houses. Architecture.
- M27: See period artifacts and decorations of the house.

Human Experience

- F33: Learn more about people who migrated to Minnesota.
- F42: Home life in Minnesota.
- F24: Learning about what life was like in an earlier time.

Change over Time

- F46: It suggests stages in time and the way people decorated and period appliances.
- F24: See different eras and families in those eras.
- F51: See slice of life over 150 years.

Other

- M44: Seeing what they have in the exhibit.
- M31: Be entertained.
- M8: Have fun.

We coded the responses a second time at a more detailed level and allowed for multiple responses provided by one person (resulting in a total of 111%). There was no majority response to this question. We found that 11% of the responses included an expectation about seeing how people lived in different eras, 11% included an expectation about seeing artifacts and objects from different eras, and 11% included an expectation about seeing Minnesota or U.S. history. In addition, 10% of responses included an expectation to see an old house or an exhibition about houses in general. Other responses included learning about different families (7%), architecture (6%), immigration (5%), changing families in one house (5%), different cultural groups (2%), how a house changes (2%), and other (6%). A representative sample of responses is below:

How People Lived in Different Eras

- M46: See how people lived over the 100+ year history of the house. Different ways they used the house.
- M50: Looking at typical living arrangements through the ages.
- M10: What life was like for families in this house.

Artifacts and Objects from Different Eras

- M58: Artifacts, house utensils, construction techniques, living style.
- F30: Photographs of different families who lived here. Furniture.
- F13: See stuff from depression age and 1940's.

Minnesota or U.S. history

- M34: See the different historical progress of homes in the United States.
- F36: A lot of things related to homes and the history of Minnesota.
- F49: To get a general feeling of the past century here.

Old House/Houses

- F19: Look at a house.
- M38: It's about houses I guess.
- M11: Old house.

Doering & Pekarik (1996) propose the notion of entrance narratives that include visitors' interest in the exhibition topic and their knowledge and opinions about it. These entrance narratives function as a personal storyline that guide the visitor through the exhibition. The range of responses to the question about what visitors expected to see and do in this exhibition reflect the diversity of knowledge and interest held by visitors as they entered the exhibition, and predict significant variation in personal storylines that will emerge in the recorded data.

The data shows that, as expected, visitors who had already seen the exhibition had more specific responses about what they expected to see or do than other visitors. The most common categories of responses among visitors who had already seen the exhibition were "how people lived in different eras" and "artifacts/objects of different eras." Generalizations about visitors who had already seen the exhibition are cautioned however, due to the small number of visitors (n=12) who fall into this category within the sample.

Responses from visitors who said they had heard or read about the exhibition were more variable and less specific. Responses from these visitors about expectations included "architecture," "old house (general)/houses," "how a house changes," "changing families in one house," and "different cultural groups." These categories of responses were distinct from the responses of visitors who had already seen the exhibition.

When we examined the data from just those visitors who had not been to the exhibition nor heard anything about it, the most common response was “I don’t know.” Notable differences between this group and those who had heard or read about the exhibit were that the latter group expected to see ideas presented about immigration, different cultural groups, and changing families in one house. All of these ideas were absent from the responses given by individuals with no experience with the exhibition. The most common ideas expressed by this group beyond “I don’t know” were “old house (general)/houses” (13%) and “Minnesota/U.S. history” (10%).

Visitor Understanding of the Exhibition’s Main Idea

In an effort to study the meanings visitors constructed from their exhibition experience, all visitors were asked to talk about the main idea(s) of the exhibition. Responses to this question were first coded into the primary categories of place, human experience, and change over time (Table 9) then coded into a wider range of categories that emerged from the visitor data (Table 10).

When coded with the three primary categories, about two-thirds (63%) of the responses related to the human experience. For example, *“To show how different families lived and their processes and experiences of getting to America”* (F24), or *“To show how a variety of people and way of life can exist in the same house”* (F33). About a quarter of the responses related to place (29%), such as *“The concept of one house and researching what went on there”* (F30), or change over time (24%) such as *“Changes through the years”* (F43).

Table 9: What would you say is the main idea...? (Primary Categories)

Code	Percent
Place	29%
Human Experience	63%
Change over Time	24%
Total	116%

Some responses included more than one idea and were consequently coded for multiple categories, resulting in a total percentage of 116%. Most of the responses that related to more than one of the three primary categories combined change over time with either human experience or place. A small number of responses were comprehensive and related to all three of the primary categories. For example: *“The house is one microcosm of society showing how changes over time in one house correlate to larger change. It shows that people and places that they live are intertwined”* (F31).

Responses to the question about the main idea of the exhibition were coded a second time using categories that emerged from the visitors’ responses. These categories were more specific than the three primary ones above, but strongly related. Ten themes emerged, but none dominated the data like the category of human experience in the first coding. The category of how life changes over time was represented in about a quarter (23%) of the responses, such as *“How times change”* (M38). About a fifth of the responses included comments that related to the history of a house (18%), or community and/or neighborhood changes (18%). These responses tended to be straightforward, such as *“History of a house”* (M8), or *“Show how a community changes over the years”* (M78). A complete tabulation of responses is in Table 10. Some responses included more than one idea and were consequently coded for multiple categories, resulting in a total percentage of 133%.

We examined this data to see if there was any correlation between the age of the visitor and his or her response about the exhibition’s main idea. Specifically, we focused on whether there was a correlation between the age of visitors who talked about immigration or diversity and those who talked about a melting pot. There were no significant correlations between age and response, due to the small number of visitors who talked about immigration or melting pot as the main idea. There were only two responses coded as melting pot; one individual was female, age 56 and the other was male, age 34.

Table 10: What would you say is the main idea...? (Visitor Categories)

	Code	Percent
Place	History of house	18%
	Changes to house	13%
Human Experience	Family life of different people	16%
	Diversity of people/ ethnicities living in house	13%
	Variety/number of people in house	11%
	Similar experiences of different people	11%
	Immigration	9%
	Melting pot	1%
Change Over Time	How life changes over time	23%
	Community/neighborhood changes	18%
	Total	133%

Visitor Conversation and the Exhibition’s Main Idea

In addition to asking directly about the exhibition’s main idea to examine visitors’ meaning making, we also analyzed the transcripts of visitor conversation for the existing exhibition themes (place, human experience, and change over time). We then developed an additional set of nine codes that emerged from the visitor data and fell within the three primary categories.

Visitor conversation that was coded as place included discussions about the house structure, architecture, or furnishings, where the house was located, and whether the display was the real house (authenticity). For example:

Place: Structure/Architecture/Furnishings

- M60: It’s a hologram, it changes...
 F62: So this is probably what it looks like now, and this is what... [inaudible]...so it hasn't changed much...Oh my... it has changed a lot, hasn't it?...Why would you suppose they would want to get rid of those gorgeous architectural details?

M60: Maybe they leaked, or...

F62: And these are all the families that lived there? Is that cool!... Do they know who lives there now?... Catronio [sic], Nancy? Catronio? It was something like that...

M60: This is a cool little book, with the shells...

F62: Grandma and Grandpa... Grandma Fuller used to do that... what is that, tatting?...It's like a memory box...They had huge, big rooms, didn't they?...They didn't have walls dividing any of this... would this have been the parlor?...

M60: Yeah...

F62: Yes, but there must have been a maybe a wall over there where the (?) changes...

- M31: And this is how it looks now. It looked better before... Here's how it used to look, now you see the new one...That's cool... I mean from a different angle.

F33: It looks much nicer there.

M31: So, what, they added a porch? I guess they built out that porch.

F33: Why would they change the whole porch?

M31: I don't know... Oh, so they could accommodate more people...

Place: Physical Location

- M34: I suppose that was what they could see out of their window? The Mississippi...
- F42: Okay, okay, 50 families in one house at 47, I mean 470/472... in Saint Paul, okay, interesting. I wonder where that is compared to where my...

F63: Okay, here, okay, very good, alright here's... no, because it... alright, there's the History Center so we're in Saint Paul, the State Capitol...

F42: And I would have to ask, think about, where is this in comparison to where my grandparents and where my dad grew up...

F63: ... Oh, there's 35E, so it's this way...

Place: Authenticity

- F25: Did they try to recreate what the house actually looked like?...
F60: I don't know, there's ...
F25: I'm reading this to find out. ...
F60: I think it's just a general representation
- M31: They did a really good job on this bathroom... This bedroom looks pretty good, too, but I wonder if this was actually the size of the bedroom. There's no way it could be, 'cause this is too big for a bedroom, especially in an old house... There's no way this is the right size...
- M8: Mom, was that a real fire?
F39: No, well, the real house. You see this is supposed to be a model of a real house that was built a long, long time ago and ummm...this is, this is just pretend to think what it would be like with a fire upstairs. Because one day, they really... They're trying to tell the story, that one day that had a fire in the house. There's not really fire up here though...

The discussions related to place tended to be a meaning-making mechanism for visitors as they clarified the meaning of, or connection to objects in the exhibition. Much of this place conversation helped visitors connect to the house and its neighborhood. Visitors also talked about place related topics when discussing change, such as change in house structure or furnishings. The conversations related to place tended to take place in the entryway and the first room of the exhibition as visitors oriented themselves to the house and neighborhood using maps, photos, and text.

Visitor conversation related to human experience included discussions about the house inhabitants, comparisons or contrasts of the exhibition's stories to personal stories, and ethnicity. For example:

Human Experience: House inhabitants

- M34: Albert was talented. In Germany he was a confectioner. In Henderson he was a saloonkeeper...
F59: (laughs)
M34: ... and in Saint Paul, a pharmacist.
- F42: Well, so Henriette died, and it doesn't say when she died. Well, in what year, I was wondering...
F63: 10 months she was confined to her bed. Wow!... Diabetic, oh!...
F42: She was diabetic.
F63: The treatment of diabetes... but see, they didn't have insulin to treat it...
Wow... Ugh... So, well, she was 60 years, 7 months, and 22 days... Okay, I'm getting unhappy... I'm wondering if they're going to give her name or just keep calling her "Mrs. Schumacher"...
- M66: In 2002, the Hmong owned the house...
F68: Yeah, there were a lot of children during that era... immigrants had a lot of children...

Human Experience: Compare or contrast to own lives

- ["Wie geht's?"] F59: Ah, that's what I wanted to hear again. 'Cause, when I was a little girl a man where we lived he would get the wrong number sometimes, and he'd get our number instead of his daughter's number, and every time we answered, he'd say "Wie geht's?"
M34: (Laughs) That's funny...
- F63: One of the things that was fun when I was a kid... is when milk was delivered, he had chunks of ice in the back of the milk truck, and in the summer if we were out, he would chip off and give you a piece of ice to suck on... Well, it was hot!...

Human Experience: Ethnicity

- F59: Yeah... now they're Italian? Yeah, the Tinnuccis... so it went from German to Italian...
- F14: What are these, are these their citizenships?...
F70: Oh, of course... They're so proud of this, Katie, we've been in some homes where they brought out when they were fighting with US forces, and they'll bring this out and show you... For. What'd I say?...
F14: Fighting the US...
F70: Oh, fighting with the US forces, I thought I said. And ... no, they helped, the CIA especially, in the war, the Vietnam War. And... they are so proud of that – they come and show us their pictures.... Don't be pulling on things... So that's a Hmong home?... A shaman altar, oh this is a shaman altar... He's a student of shamanism, but not a full-fledged shaman... I've not seen one of these in their homes, but maybe it's in a different room... Oh, this is 2004...
- F14: I'm guessing this is how it is in present day...
[several family members talking over each other]
F44: ...well there was the 60's and the 70's, where there was no ethnicity...and now, we're back to ethnicity...
[ambient noise of Hmong video]
F14: Now, lookit, you see this style again....
F44: Look at the TV— isn't this style closest to the present day?
F14: Look at the Hmong...
F44: The Hmong?
F14: Hmong children live in the house now... This is cool, look at the altar that they had...
- F43: Wow, lookit, now this is today...
F14: This is not today...

F43: Look at the family... Look how many people lived in that house...it's small...Oh, look at this one... They have all those shoes...Oh, wow... It's kinda like a temple thing.... A standing altar... (191 – inaudible mumbling)...Look at all they had to go through in order to get here...(can't discern 203), like the first people we saw...

The families most frequently mentioned by name were the Schumachers and Tinnuccis. The Kramers were mentioned by name and the Vang family was also discussed but they were usually referred to as the Hmong family.

Visitor conversation in the transcripts that related to change over time tended to focus on changes across time periods, changes observed in East St. Paul, or changes to neighborhoods in general. For example:

Change Over Time: Time period

- F14: What year is this?... 1960... This is an interesting room...
F44: Are you noticing how the furniture styles are changing. The wallpaper's changed...
F14: Oh, this is a new time period...
F44: Well, yeah, these are all different times, we're going through the different times...
F14: Ah, I got it...
- F25: Well, this has to be the seventies... (laughs)
F26: Did the paneling give it away?...
F25: Pretty much the colors, and then this...
F26: Yeah...
F25: The owl macramé...
F26: Yeah...
F25: I'm assuming that would be a mail holder...
[film audio]

F26: Ah, shoot...

[audio]

F25: I used to love horses like that, my god, they were so great...

[film audio]

- F35: Hey, Dora the Explorer....

F62: How did they get these people's furniture?

F35: I know because it's two thousand five now. I don't know how they got the furniture in?

F62: That's a pretty modern TV. Where are we?

F35: This is 2005.

F62: Oh okay. Looks like an older sofa.

F35: This is the family here.

[Staff: you might have this stuff in your house]

F62: No,... Oh, this dishware is so pretty. Isn't this pretty?... In Laos there was no shoes? Everyone had one pair of flipflops?...

F35: They moved out in September 2005 and this family moved in....

F62: Well, they can't have their furniture in this...

F35: Maybe it's a replica.... This is the end.

Change Over Time: East Side St. Paul

- F59: Looks like a very nice house...

M34: Not too bad...

F59: When you think of the East Side today...

- F36: Not the big city Dad fears today...

F59: No, but back then it's probably scary too...

- [Hmong video audio]

F59: Had you seen... how the East Side changed over the years?...

[video audio]

F59: It must have always been kind of cheaper housing, or something? Cheaper housing on the East Side or something?

M34: [inaudible 535]...

F59: Do they have pets?... I don't know... [name] used to live on the East Side, and she was... they weren't poor...

M34: No, even back before they built the house it was a poor neighborhood...

Change Over Time: Neighborhood Changes

- F30: Huh... I kinda forgot about that, you know, with all the families that lived ... yeah....

F34: You can see in this particular area, the different ethnic groups come and go...

The “change conversations” tended to occur when visitors were making comparisons to modern day life. Frequently, references to time period were made through verbal comments about furnishings. For example, a visitor might comment on a “modern TV” or an “older sofa” and compare it to objects in his or her own life. The “change conversations” also tended to overlap with conversations about the human experience as visitors talked about the changing ethnicity of neighborhoods.

Visitors tended to identify ethnicities or comment on the ethnicity of the house inhabitants in both the parlor and kitchen areas of the exhibition. By the time visitors reached the bedroom and back hall, conversations shifted to focus on objects within the rooms more so than the house inhabitants. One 44-year-old, female visitor quoted above even points out the void of ethnicity in the 1960's and 70's. Conversations about ethnicity and the house inhabitants generally reemerged when visitors entered the Hmong living room.

In order to provide an overall measure of the presence of the exhibition's main themes in visitor conversation, Table 11 details the frequency of the codes per transcript including the average number of times the code appears in a transcript, along with a minimum and

maximum. Visitors were significantly more likely to comment on issues related to the human experience elements of the exhibition than place or change over time. When visitors did talk about issues related to place, the comments tended to relate to the architecture or furnishings of the house. Comments related to change over time tended to relate to specific time periods of the house.

Table 11: Transcript Frequency of Place, Human Experience, & Change Over Time

Topic	Code	Min.	Max.	Average/ Transcript
Place	Structure/architecture/furnishings	0	9	2.8
	Physical location	0	7	.8
	Authenticity	0	3	.3
Human Experience	House inhabitants	0	13	4.3
	Compare with own lives	0	12	2.4
	Ethnicity	0	9	1.8
Change Over Time	Time period	0	12	2.9
	East Side of St. Paul	0	2	.1
	Neighborhoods	0	2	.1

It is worth noting that visitors' conversations related strongly to visitors' responses when asked directly about the exhibition's main idea. The amount of talk charted above roughly corresponds to main idea coded responses of place, human experience, and change over time reported in Tables 9 and 10. The notion of human experience dominated the data both in naturally occurring conversations and when prompted with questions.

Memorable Exhibition Elements

In an effort to understand which objects that had an impact on visitors' experiences, survey respondents were asked to describe the most memorable part of the exhibition. In response to this question, about half (49%) named an object, about a quarter (24%) named a specific room, and a small percentage (14%) named a family or specific time period. Other common responses included:

- *Change over time* (10%). "General feel of so much change in [a] relatively short period of time." (F55)
- *Interactive nature of the exhibition* (8%). "So many things. Just touch and it tells a whole story." (F95)
- *Personal connection to exhibit element* (8%). "Standing in front of the bathroom and he talked about the assembly line with bathing. My mother had four kids and I'm sure we did that." (F59)
- *Number of families living in the house* (7%). "Fifty families lived in that house ... surprised at that number." (F14)
- *Diversity of people living in the house* (6%). "Interesting changes of nationality through history." (M55)
- *Specific stories told in the exhibition* (3%). "I like hearing people talk about their experiences ... the putting on the dogs story." (M56)
- *Immigration* (3%). "The waves of immigration that continue today." (F60)

A number of the responses included more than one idea, for example: "*The first family from Germany. I liked the German living room. My father emigrated from Germany*" (M17). Responses like this one were coded for multiple categories, resulting in a total percentage of 143%.

Table 12: Most Memorable Part of the Exhibition

Code	Percent
Named Specific Object	49%
Named Specific Room	24%
Named a Family or Time Period	14%
Changes Over Time	10%
Interactive Nature of Exhibition	8%
Personal Connection to Exhibit Element	8%
Number of Families Who Lived in House	7%
Diversity of People Who Lived in House	6%
Specific Story in Exhibition	3%
Immigration	3%
Total	143%

We broke down the specific results of the three most frequent types of responses to provide detail about what percentage of visitors named each specific object (Table 13), each specific room (Table 14) and each specific family or time period (Table 15). The bed was, by far, the most frequently mentioned object. Most of these responses were simply “the bed” or “the bed that broke.”

Table 13: Object Responses to Most Memorable Part of Exhibition

Object	Percent
Bed	20%
Table with talking plates	7%
Photos/pictures	3%
Film strips/home movies	2%
Oven	2%
Piano	2%
3D viewer	1%
Projector	1%
Other artifacts from different time periods	11%
Total	49%

Table 14: Room Responses to Most Memorable Part of Exhibition

Room	Percent
First room/formal parlor	5%
Backyard	5%
Bathroom	4%
Attic/fire	4%
Basement	3%
Dining room	2%
Kitchen	1%
Total	24%

Table 15: Family Responses to Most Memorable Part of Exhibition

Family	Percent
German family	8%
Hmong family	5%
Italian family	2%
Specific time period	5%
Total	14%

Notable in these tables is that, while the bed is mentioned specifically as a memorable object, the bedroom is not. A closer examination of the data reveal the bedroom to be encompassed in the “specific time period” code. Of the nine total responses in this code, three mentioned the 1950’s and 60’s as the most memorable. Of these three, one individual specified the bedroom with this response, *“The bedroom from the 50’s/60’s.”*

When comparing age of the respondent to the most memorable responses, the data are fairly evenly distributed with a few exceptions. Older visitors (those over 45) were significantly more likely to name something coded as “changes over time” or “immigration” than younger visitors. Also, younger visitors (those under 34) named the attic fire and backyard as most memorable more frequently than older visitors.

Visitors cite a wide variety of objects as most memorable. There is a not a single object that dominates the responses. But everyone was able to name something. This suggests that different visitors connected with different elements of the exhibition. More importantly, the exhibition was able to reach a diverse audience by providing something for everyone.

Types of Visitor Reactions to Objects

Below (Table 16) is a breakdown of how many object codes were recorded on average per transcript. Also included are the minimums and maximums for each code. The maximum represents the largest number of times a single code was used in a transcript. Typical visitors were making at least 20 object-related comments during their visit to the exhibit. Again, it should be acknowledged that *object* in this sense may be a particular item, text, or media found within the exhibition. *Internal histories* describe objects that inspire personal connection and personal history. *External histories* refer objects eliciting “big H” History comments. *Affective reactions* include comments that name and react to objects without providing evidence of connection to an internal or external history. *Reiterative comments* describe object content without commentary. *Directive comments* includes simple comments that visitors use to lead others to try out an object.

Table 16: Types of Visitor Reactions to Objects

Code	Min.	Max.	Average/ Transcript
Internal histories	0	14	3.6
External histories	0	8	1.1
Affective reactions	0	23	11.0
Reiterative comments	0	20	5.5
Directive comments	0	13	1.5

This analysis indicates that, on average, visitors made verbal connections between exhibition objects and their own internal histories more than three times while viewing the exhibition. Visitors made affective comments in response to an object or had a nonverbal response such as laughter more than three times more frequently than internal histories. In fact, throughout the transcripts, the word “cool” was recorded 211 times, while “laugh” was recorded 281 times. Examples of these object-prompted comments include:

Internal Histories

- F56: Yeah... My dad had... this is what our dad used for a lunch box exactly like this, right [name]?
- M68: Oh, I've still got one of those in my place. Out in the hall... Anyway, what I was saying was Irene had a can that size full of silver dollars in her closet. And the lady that was taking care of her stole all of them, except one row on the bottom. Plus all the ones she had invested....
- M63: You saw the picture I used for my invitation to my 60th birthday party in the wagon.
M68: Yep, in the wagon...
M63: I threw myself a 60th birthday party several years ago, inviting nieces and nephews and family. And took a picture of myself at age three probably, in my Red Flyer. And went to Walgreen's and made that photo on the invite thing. And it was so fun to do because I remembered that wagon so much.
- F68: My grandmother. In fact, she came when she was three years old, and evidently they tied her – the story goes they had a washtub, and they tied them in the washtub, like a playpen, on the way, on the way here...
- F46: See these are like the phones that they used to have when I was a kid... They were stuck to the wall! You couldn't walk around with them... (laughs)... She's amazed at the phone... (laughs)... It's stuck to the wall! You can't walk anywhere! (laughs). And you had only two, and you fought over them.
F51: Yeah...
F46: One upstairs and one down...
F51: Dialing, yes...
F46: Kids don't dial the phone... (laughing)

- F70: I like the crocheted tablecloth...[cabinet noise] ... I must have twenty of them. Yeah, blankets like that. But I had four daughters and a son, and nobody cares about the [inaudible over slide noise]... I use some of them...
- F44: Natalie, look at this...
 F14: What?
 F44: See this icebox?... and then it would stay cold, and then you could put your milk and everything in it...so you'd have to go get the ice...
 F14: How would you feel if we had to rely on this for our air conditioning?
 ...Obviously ... no wonder they were all...strained...
 F44: ... they probably had chickens and that sort of thing...
 F14: Fatty Joe the Iceman. Oh, that's nice...
 [lift]
 F14: Oh my gosh... each kid carried one of these? Holy Schmoley!
 F44: .. the ice used to be delivered down the river...so they would cut ice, and then store it, there, and in the summer you'd go and you'd get your ice and they'd charge you for it...cold...This is the kind of stone that Uncle Bryce had a on his farm, still...

External Histories

- F34: ...'cause I thought, isn't that Hmong? Isn't the Hmong people from Laos, that helped in the Vietnam War?...
 F30: The whole area turned into like a Hmong area... But I think it's...
 F34: They've been more successful, economically...
- F34: Cocaine, yup...
 F30: That's interesting...
 F34: Uh-huh, it was very common back then.
 F30: Yeah, it was...
 F34: They talk about, there's something called "soothing syrup", which is like liquid codeine, that they'd feed to babies...

F30: Yeah, I know...

F34: ...you know, like when they're teething... (laughs)

- M57: This is Prussia, see. This was Germany until the start of World War I. And they cut in and this became Poland.

F26: Atilla?

M57: Huh?

F26: Atilla started World War I?

M57: No, *until*.

F26: Oh, *until* the start...

M57: Until the end of World War I and they made the Peace of Paris by then.

This became Poland and they named it Danzig because it forked. The Poles couldn't get a drink. They wanted to get the port on the Baltic Sea.

Affective Reactions

- F33: Crazy. What is this?... The deed?...
- M31: They've got the original building permit right there... Copy of the original building permit. So they made it into a duplex and started renting it... Oh look at this, this is the first people... This is so sweet! ...
- F33: So he moved in and the hat maker... I'll bet there's some weird stories here.
- M31: That's crazy! That's so cool.
- F33: Then who did?... Brewery. I'd like to be his friend because I bet he brought good beer home...

Reiterative Comments

- F60: So the first family, the Schumachers, rented the house out?
- F25: ...and then they sold it in 1933.
- F60: Okay, so they were just using it as rentals.... All those nice options...

- M66: See the window with the picture of the Northern Pacific Car Repair Crew, 1923. And behind it you have a sound effect of a diesel locomotive. That is, what's the proper word for, chronographic mismatch? That's a steam engine right there...
- M66: Here... your needlecraft. They use it to sew statistics into the clothing of the time. It's the census, age...
M68: Look at that, hmm...
M66: That's pretty cool! 54 hour work week, six nine-hour days. For this lady working in the hat factory...
- M14: Look at these questions: "What are the colors of our flag?"
M46: Red, white, and blue.
M14: "How many stars are on our flag?"
M46: 50
M14: "What color are the stars on the flag?"
M46: White.
M14: "What do the stars on our flag mean?"
M46: One for each state.
M14: "How many stripes are on the flag?"
M46: 13.
M14: "What color are the stripes on the flag?"
M46: Red and white.
M14: "What did the stripes on the flag mean?"
M46: I can't remember.
M14: You don't?
M46: I don't remember.

Directive Comments

- M41: Step on the scale...

- F39: Okay, now the way... oh, you got to skip that one. No-no-no, come here, come on back. Like this, sweetie, you can't jump on the square that has it on there, so you got to... Skip over that one. Ahhhh...! And then I think you probably pick it up on the way back. So now you got to throw it on the two.
- F9: You guys, we're playing pin the tail on the donkey. Close your eyes. Spin around four times. Like upside down.... 1,2,3,4,5... Let me try...

Visitor reactions to objects were coded in a hierarchical manner so that dialog coded as “directive comments” did not include affective reactions to objects but only on their direction and use. This ensured that internal and external histories would be fully captured and not hindered by intermittent affective or reiterative comments breaking up the codes.

Reiterative codes frequently captured visitors reading content from labels. Visitors were either recorded as reading labels to themselves or reading out loud to other group members. The objects that most frequently led to reiterative comments were the doors with time period and resident information. These doors were frequently used as orientation points by visitors who would pause and read the dates and names of residents and identify them as renters or owners of the house:

- F14: It is still split in three's.
F46: African-American, American Indians, Latino and Hmong... ‘These residents shared an address [reads door label aloud]...instead of staying 20 years, many did not stay 20 months.’ Man!...
- F39: Did you read what it said on the kite? Hold on, let me read it... it says ‘I would probably have three or four rolls of string and that kite [continues to read label]...confectionary store.’ Do you know what that is?
M8: What?
F39: Candy store. [Continues to read]... There goes the kite... (giggles).

Most objects elicited a consistent type of response. For example, the bed tended to elicit either affective or directive comments from people but not internal or external history connections. A typical response to the bed was “(F34) *I’m the guinea pig... [bed audio] (laughter)...*; (F30) *How funny!... (laughter)...*” This is consistent with results from the visitor interviews where the bed was frequently mentioned as the most memorable exhibit element, but not mentioned when respondents described personal connections they made to the exhibition.

There were a few objects that were exceptions to the rule. Visitors had multiple types of responses to these objects: lantern slides, citizenship test, ice box, basement, and diabetes pillow. These objects all elicited internal history responses, as well as at least two other types of comments. For example, visitor responses to the lantern slides included:

Internal Histories

- F34: Okay... This reminds me of the Powerpoint we’re teaching you to make...
F30: Yeah...
F34: ... it’s a picture and noise with it... (laughs)... Low-tech Powerpoint... What’d you do? (laughs) What’d you touch?... (laughs)... I think the bulb just went “poof”...
F30: Yeah...

Affective Reactions

- F49: Wie geht’s! That’s German... Wow... Upside down...
[lantern slide audio]

Directive Comments

- F34: Okay ... (both laugh)... upside down... Oh!... We need to try to keep them in order? I suppose, they are numbered, we should try to do the first one first...

These different reactions to the lantern slides are typical of the variety of visitor responses. The icebox provides another example:

Internal Histories

- F70: Oh, an icebox..... you know, [name] lived in a house on Lyndale Avenue, and they had one in her house.

F14: That would be cool.

F70: Yeah, they used to bring the ice, chunks of ice were put in here...and it would keep things cold...

Affective Reactions

- F44: Ohh, look at this icebox...[name], look at this...

Reiterative Comments

- F59: That's why they call it an icebox.

M34: Huh?

F59: Instead of a refrigerator.

M34: That this is... so that... We're opening the....

F59: Yeah, yeah... that's why they call it an icebox. ...

There is one final type of visitor reaction to the exhibition objects: silence. A tally of conversations by room revealed that most visitor discourse occurred in the porch area, the Schumacher parlor, and the kitchen. Over half of the recorded visits have a pattern of silence in the last hallway, the Vang living room, and the basement. This suggests a significant shift in visitor interactions during the last part of the exhibition. Some of the lack of conversation is easy to explain. For example, observations showed that many visitors walked past the basement without seeing it. The data does not provide any conclusive reasons for the silences in the other room, but it does suggest a significant shift in learning experiences at the end of the exhibition.

Personal Connections to the Exhibition

In order to understand how *Open House* influenced visitors' efforts to define and confirm their identity, the survey included a question about whether visitors found any connections between the exhibition and their own lives. Of the 132 responses, 71% reported that they found connections, 26% indicated they had not found connections, and 3% were unsure. The respondents that found connections between the exhibition and their own lives were asked to describe the connection. In general, the responses fell into one of three categories:

- Personal connection to an object or room from the exhibition (78%),
- Personal experience that was similar to overall exhibition or an experience described in the exhibition (61%)
- Other (4%)

Some responses included more than one idea and were consequently coded for multiple categories, resulting in a total percentage of 143%. Tables 17 and 18 break down the responses about personal connections to the exhibition into detailed categories.

Table 17: Connections (Object/Room)

Object/Room	Percent
Bathroom	10%
Pictures/photos	7%
Icebox	5%
Activities in backyard	4%
Basement	3%
Radiator	2%
Fire	2%
Clothes	2%
Piano	2%
Lunch boxes	2%

Meat grinder	2%
Chickens	1%
Dining room (table)	1%
Objects of different eras	35%
Total	78%

Note the differences between the objects and rooms that were mentioned most frequently as the most memorable part of the exhibition and those that were mentioned in response to the question about personal connections. Although the bed was clearly a memorable object, there was little elaboration about it when respondents answered the earlier question and no mention of it when respondents talked about personal connections. This highly kinesthetic and amusing object had a strong impact on visitors' memories of the exhibition, but more common experiences like assembly-line bathing were the connection points for visitors linking their own lives to the lives of the families in the exhibition.

Table 18: Connections (Experience)

Experience	Percent
Experiences similar to stories told	13%
Grandparent's house	13%
Lived in an old house/architecture	11%
Growing up experiences	9%
Family were immigrants	8%
Moved a lot	7%
Total	61%

Also notable is the small variation in percentages in the objects and experiences visitors mentioned as connections. The great variety of objects and experiences mentioned indicates that the exhibition was broadly appealing. Most visitors were successful in finding a connection point among the diversity of objects and stories presented.

Conclusions

This study provides compelling evidence of the successes of the *Open House* exhibition. The exhibition is most successful at getting visitors to make personal connections between objects and themselves. Objects throughout the exhibition reliably elicited personal stories or internal histories from visitors. There was a notable consistency in the types of responses visitors had to particular objects, despite differences among the audiences. There was also a wide range of objects that elicited personal connections, indicating that everyone was able to find something of relevance. Analysis showed that there were few significant correlations between demographic variables such as age and visitors' conversations or responses to questions. In other words, the exhibition experience was engaging for visitors, regardless of demographic factors. The rare exceptions were the tendency of visitors over 45 to talk about issues related to change over time and the popularity of the backyard and attic fire sections of the exhibition with children.

The exhibition was less successful at engaging visitors in external or official histories. But when directly asked about the main idea of the exhibition, visitors' responses did reflect the importance of change over time and place, concepts that are central to historical disciplinary perspectives.

Analysis of the data was directed toward assessing visitors' learning experiences in terms of meaning making, object-based interactions, and identity development and confirmation. Efforts to assess meaning making were designed to identify the topics and types of objects visitors talked about. Topics related to human experience dominated visitors' responses when they were asked about the exhibition's main idea. Analysis of visitors' conversations also revealed that topics related to human experience were more frequently mentioned than topics related to place or change over time.

The study also assessed object-based interactions, specifically examining which objects were most memorable to visitors and which stimulated specific conversation topics.

When asked to describe the most memorable part of the exhibition, about half of the visitors named a specific object. The most common response to this question was the collapsing bed; but the bed was not mentioned when visitors were asked about the personal connections they made with the exhibition. Analysis of visitor conversations revealed that the exhibition objects tended to elicit the same types of responses from visitors. For example, the collapsing bed tended to inspire affective or directive comments but not comments related to internal or external histories. This did not apply to a handful of objects, including the lantern slides, citizenship test, basement, and diabetes pillow, which elicited more varied responses from visitors.

Future exhibitions should include a range of objects to ensure that there are ample opportunities for a diverse audiences of visitors to make personal connections. There are also interesting contrasts between objects that elicit personal connections and those that are mentioned as most memorable. The collapsing bed, for example, is amusing, kinesthetic, and unusual (everyone has a bed, but few have a collapsing bed). The collapsing bed is likely to be considered an icon — not representative of the overall exhibition, but one that has to be experienced. In contrast, the more familiar objects and experiences are most successful at eliciting personal connections from visitors: the crowded family bathroom and the collections of family photos. Future exhibitions should include a mix of the ordinary and extraordinary in order to both provide memorable experiences and to prompt personal connections.

Finally, the study assessed identity development and reinforcement. Almost three-quarters of the visitors were able to report a specific personal connection they made between the exhibition and their own lives. Analysis of visitors' conversations revealed that comments related to internal histories, such as personal connections and stories, occurred on average, more than three times per transcript. This was significantly more frequent than conversations related to external histories, which occurred an average of one time per transcript.

The dominance of internal, rather than external histories is evidence of the exhibition's success at helping visitors make personal meaning from the objects and see themselves in the arc of history. It does raise questions about how to engage visitors more in external histories or "big H" Histories. Typically, one of the goals of museum exhibitions is to engage visitors in disciplinary practices, for example, to help visitors appreciate how a historian interprets an historic object. This requires a disciplinary epistemology or authentic frame to be integrated into the exhibition. Different approaches have been proposed for this, including scaffolding software (Bain & Ellenogen, 2002), assuming an "investigatory stance" (Hapgood & Palinscar, 2002), or regarding objects as text (Van Kraayenoord & Paris, 2002). Although this study did not emphasize disciplinary practices, these and other approaches would prove useful for future exhibitions that have a more central focus on external histories.

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APPENDIX 1: Pre-Post Interview Instrument

Open House Pre-Post Matched Interview

(Random sample.)

Excuse me, my name is _____ and I am working with the museum to get feedback from visitors about a new exhibit. Today we're asking people who are about to visit the Open House exhibit to answer a few questions before and after they go into the exhibit. It should take about 5 minutes each time. Would you be willing to do that?

1. How would you rate your interest in history on a scale of 1 to 10 if 1 is "I have absolutely no interest in history" and 10 is "I am extremely interested in history"? (CIRCLE ONLY ONE NUMBER)

1	2	3	4	5	6	7	8	9	10
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2. How would you rate your knowledge of history on a scale of 1 to 10 if 1 is "I know absolutely nothing about history" and 10 is "I am an historian"? (CIRCLE ONLY ONE NUMBER)

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

3. Are you or your family a member of this museum or the MN Historical Society?

Yes No Unsure

4. Before today, how many times have you visited this museum during the last 2 years?

- None
- 1-2 times
- 3-5 times
- 6 or more times

5. This is a multiple-choice question. Which one would best describe your experience with this exhibit?

- a) I've been to the exhibit before
- b) I've heard or read about the exhibit
- c) I haven't been to the exhibit or heard anything about it

6. What sorts of things do you expect to see and do in this exhibit?

Just a couple more questions to help the museum better understand its audience...

7. What is the primary language spoken at your home? _____

8. What is your age? _____

9. What are the ages of all the other people you are with here at the museum (not including yourself)?

Observed Data

Sex: Male Female

Crowd Level: low medium high

Hi, now that you've gone through the exhibit, I'd like to follow up with a few questions about your experience. It should take about 5 minutes.

1. What was the most memorable part of the exhibit for you? *(If they mention a specific room or an object, probe to identify which one.)*

2. Did the exhibit remind you of anything in your own life? (*probe*: Did you find any connections between the exhibit and your own life?)

Yes No Unsure

2a. (*If yes*) What sorts of things did the exhibit remind you of in your own life? (*probe*: What were some of those connections?)

3. What would you say is the main idea – or ideas – of this exhibit? (*probe*: What do you think the museum is trying to get across?)

4. Anything else you want to say about the exhibit?

Open House Recording Interview

(Random sample, skip anyone who is alone.)

Excuse me, my name is _____ and I am working with the museum to get feedback from visitors about a new exhibit. Today we're asking families to visit the Open House exhibit and wear a wireless microphone. We'd like to tag along and see the kinds of things you talk about while you visit that exhibit. You can stay for as long or as little amount of time in the exhibit as you'd like. We just have a few questions for you to answer before and after your visit. Would you be willing to do that? (Your target person wears microphone 1. Microphone 2 goes to anyone else in the group. From a recording perspective, is usually best to put it on a child or soft-spoken person.)

PRE INTERVIEW *(with target person)*

1. How would you rate your interest in history on a scale of 1 to 10 if 1 is "I have absolutely no interest in history" and 10 is "I am extremely interested in history"? (CIRCLE ONLY ONE NUMBER)

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

2. How would you rate your knowledge of history on a scale of 1 to 10 if 1 is "I know absolutely nothing about history" and 10 is "I am an historian"? (CIRCLE ONLY ONE NUMBER)

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

3. What is the primary language spoken at your home? _____

4. What is your age? _____

5. What are the ages of all the other people you are with here at the museum (not including yourself)?

6. Are you or your family a member of this museum or the MN Historical Society?

Yes No Unsure

7. Before today, how many times have you visited this museum during the last 2 years?

- None
- 1-2 times
- 3-5 times
- 6 or more times

ENTRY TIME _____

Crowd Level: low medium high

RECORDING DATA

1. Number of people in group: _____

2. (*circle one*) Adults Only Adults and Kids

3. Microphone 1: Male Female Age: _____

4. Microphone 2: Male Female Age: _____

POST VISIT INTERVIEW

EXIT TIME _____

(Again, for person with Microphone 1)

1. What was the most memorable part of the exhibit for you? (*If they mention a specific room or an object, probe to identify which one.*)

2. What would you say is the main idea – or ideas – of this exhibit? (*probe: What do you think the museum is trying to get across?*)

3. Anything else you want to say about the exhibit?