

Recollections of Expo 70: Visitors' Experiences and the Retention of Vivid Long-Term Memories



David Anderson and Hiroyuki Shimizu

Abstract This study reports on outcomes of an investigation of visitors' long-term memories of the 1970 Japan World Exposition, Osaka. The paper reports in two parts the emergent outcomes of a study that provides understanding of the nature of visitors' **long-term memories of their experiences in an informal leisure-time context**. First, the paper discusses the common and most dominant recollections that emerged from 48 visitors' memories of this event 34 years ago. An overall explication of visitors' memories of their experiences of the event reveals an interesting mix of reactions: wonderment about the world and the amazing technological advances of the era, blended with personal discomfort and frustrations associated with the memories. These mixed feelings are presented against the backdrop of Japanese national identity re-emergent on the world stage. Second, an analysis and discussion of qualitative data provides case examples of how three psychological and behavioral factors (affect, agenda fulfillment, and rehearsal) shape the vividness of episodic and/or autobiographical memories of the episodes as they are recalled 34 years later. This paper vividly illustrates the power of qualitative data to illuminate understanding of visitors' long-term memories and presents some significant issues for museum staff to consider as they plan for visitor experiences that will have lasting impact.



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Introduction

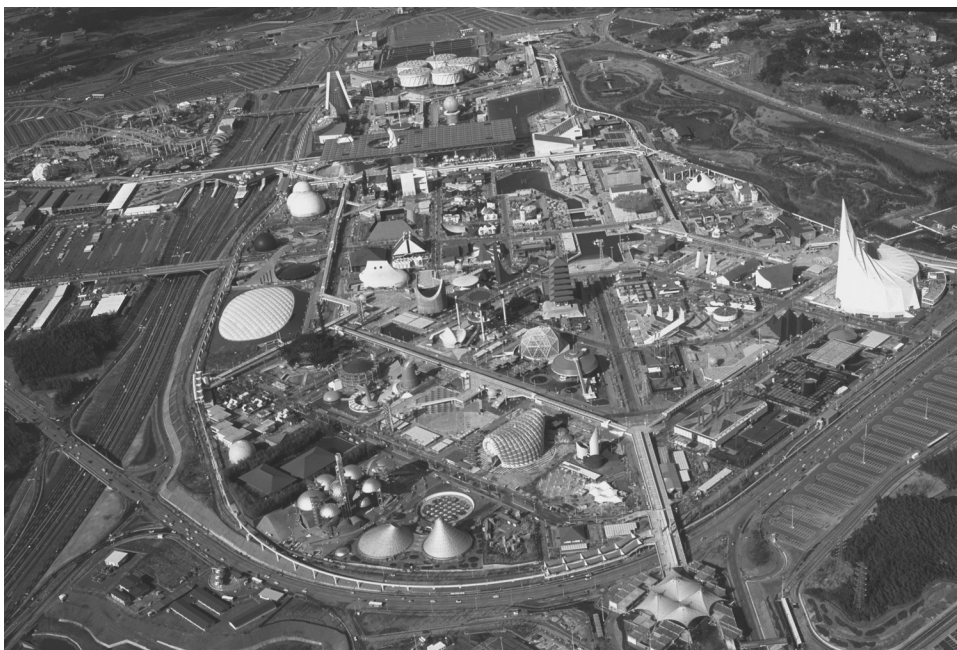
In the Museum and Visitor Studies fields, there is an increasing demand for research that demonstrates the longitudinal impact of visitors' experiences in leisure-time settings—such as museums, science centers, zoos, art galleries, and world expositions—that employ exhibition-based media (Anderson, Storksdieck and Spock 2007). However, there are but a handful of studies that have investigated long-term **impacts arising from experiences** in such settings. Most studies consider the longitudinal impact only over relatively short time frames: weeks and months after the visitor experience. Notwithstanding, there are several key studies that shed light on the impact of visitors' memories of experience in such leisure time settings (see Notes).¹ A contemporary review of the literature on memories of visitor experiences can be found in Anderson (2003); and Anderson, Storksdieck and Spock (2007). The value and importance of understanding the long-term impact of visitor experiences cannot be underestimated **and should be investigated both for theoretical and practical reasons. Such information is important not only for studying the basic mechanism of long-term memory in personal experiences, but also (practically speaking) for investigating how to improve the long-term impacts of visitor experiences in a multiplicity of dimensions and assist those who develop and plan exhibition-based experiences.**

The 1970 Japan World Exposition (Expo 70)

Expo 70 was a Category One Universal Exposition held on an 815-acre site in the Senri Hills in the City of Osaka, Japan, from March 15 to September 13, 1970. Universal Expositions are typically large-scale expositions hosting international member states. The theme of Expo 70 was "Progress and Harmony for Mankind." Seventy-six countries participated, representing themselves in national pavilions; there were a total of 32 local and corporate Japanese pavilions. Expo 70 was the first International Exposition to be held in Asia, and attracted a total attendance of over 64 million (64,218,770) visits—the largest attendance of any Worlds Fair since their inception in 1851.

The centerpiece of the exposition was *The Tower of the Sun* (*Sun Tower*) by Japanese sculptor Taro Okamoto (1911-1996). This 230-foot-tall sculpture, which still remains today in the Banpaku Koen (Expo 70 Commemorative Park), contained exhibits themed around the topic of the evolution of life. The *Sun Tower* was set within the Festival Plaza (Symbol Area) in which concerts and staged performances were conducted. The Festival Plaza was covered by the world's largest translucent roof: 100 feet tall, 350 by 1,000 feet in area, supported by six pillars, and weighing 6,000 tons. The other key icon of the Exposition was the extensive Japanese Gardens covering 64 acres and containing four thematic representations. The Expo also contained the Museum of Fine Arts, which showed works by Salvador Dali, Picasso, Gauguin, Renoir, Rubens, Van Gogh, Cézanne and Japanese artists Sesshu and Kano, whose installations were considered highlights of the museum.

The most popular pavilions on site belonged to the United States and U.S.S.R. The American Pavilion, which covered 86,000 square feet of floor space, displayed the moon



Aerial view of Expo 70 site. Photo courtesy of Commemorative Organization for the Japan World Exposition 70.



The Sun Tower today in Banpaku Koen (Expo 70 Memorial Park). Photo by David Anderson.

stone brought back to Earth from the Apollo 11 lunar mission only eight months before the opening of the exposition. The pavilion also featured as its centerpiece a large exhibition on the Apollo project containing the actual Apollo 8 spaceship, which in December 1968 made the first manned voyage around the moon. There was also a full-scale model of the Apollo 11 Lunar Lander. Like the American pavilion, the U.S.S.R. pavilion was a dominant architectural spectacle on the site. It was the largest foreign pavilion on site, containing 270,000 square feet of floor space, and was 360 feet high. Exhibitions were also themed



The Sun Tower at Expo 70. Photo by Michie Namita.

on space and space technology, in addition to the life of V. I. Lenin, the founder of the Soviet State, whose 100th birthday was commemorated on April 22, 1970.

Expo 70 featured numerous visions of the future. For example, the telecommunications pavilions offered “dream telephones”—wireless handheld telephones giving visitors an opportunity to call any part of the country. The Furukawa Pavilion presented a world of cashless shopping using customer voice prints. The Expo had a lost-and-found department utilizing “TV-telephones” that one could browse to find lost articles or communicate audiovisually when a child was located. And the Expo site was interlinked with moving sidewalks that were covered and air-conditioned.

The staging of the exposition was highly significant for Japan. It represented and demonstrated many significant things for the country, exemplified by three key themes mentioned by the participants of this study. First, there was a national self-realization of hope that Japan had emerged just 25 years after the complete devastation of World War II. There was a developing sense of being able to be on the world stage in a positive way, with pride in the country and connection with the world. Second, 1970 marked a time of unprecedented economic growth and development and a period of historic prosperity (see Nakamura 1995). Expo 70 was both a marker of the beginning of considerable prosperity and also a contributor to the rapid economic growth of the area, since the exposition opened up more business and trade opportunities between Japan and the rest of the world. Third, as a consequence of the association of Expo 70 and Japan’s rapid economic growth, most participants of working age (particularly males) have memories of the Expo 70 as a period when they were extremely busy in their business and work life, with little time for leisure activities. .



Dream Telephones (cordless phones) on display at the Telecommunication Pavilion. *Photo courtesy of Commemorative Organization for the Japan World Exposition 70.*

The *Japan World Exposition Official Report* provides some interesting statistics from a visitor study conducted at the time of the Expo concerning the movements and experience of visitors. For example, the average daily attendance on near-peak days was 641,000 people and the attendance on the peak day of the Exposition was 835,000 visits. Ninety-seven percent of all visits to Expo 70 were made by Japanese nationals, with foreign visitation accounting for only 2.7 percent. The exposition attracted Japanese nationals from all parts of the country: 31.1 percent visited in an organized group (a group from work or a tour group), 29.7 percent visited as a family group, 30.8 percent visited with friends or acquaintances, and 8.3 percent as individuals. The report also provides a description of the "average visitor's" experience: average time spent on site was 6.5 hours; average time spent in pavilions was 2.5 hours; average number of pavilions visited was 8; average time spent in pavilions was 15-20 minutes; and the average distance covered by foot was 15 to 20 kilometers. The report also indicates that 45.5 percent of visitors surveyed indicated that they had pre-planned or decided on what to see prior to their visit to Expo. Interestingly, the report indicates that 40.9 percent of Japanese visitors covered by the survey "were most anxious to see various structures and facilities [buildings] rather than to see the exhibitions inside, while 34.9 percent answered that the exhibits were what they were most eager to see". The report speculates that this was probably due to the fact that "widely varied images of many different pavilions had been well publicized to the Japanese people through various mass media" (Commemorative Association vol. 2 1970, 374).

The Study

This research study represents the third in a series of four case studies investigating the nature and character of visitors' long-term memories of experiences at World Expositions. The outcomes of these studies are providing new insights about visitors' long-term memories for the contemplation of developers of exposition experiences, large and small. The first two studies examined visitors' long-term memories associated with two contemporary expositions—Expo 86 (Vancouver, Canada) and Expo 88 (Brisbane, Australia); these were jointly reported in *Curator: The Museum Journal* (Anderson 2003). A quantitative analysis of the Expo 70 study was reported in *Memory* (Anderson and Shimizu 2007). The final case in the series considered Expo 67 (Montreal, Canada) and was undertaken in the winter of 2007.

In the study of the contemporary expositions (Anderson 2003), the long-term memories of a total of 50 visitors who attended either Expo 86 or Expo 88 were probed through in-depth, face-to-face interviews. The outcomes reported represent themes common to visitors' memories of two different expositions held in two different countries, yet the emergent themes regarding memories of these kinds of events were strongly confirmatory of each other. In particular, the study demonstrated that visitors' social memories of the experience were highly salient, their socio-cultural identities at the time of the experience critically shaped their memories of the experience, and the agendas that visitors recalled at the time of the experience influenced the vividness of memory. However, several questions remain unanswered from the contemporary expositions study: for example, how is retention of **vivid long-term memories influenced by the agendas visitors brought with them at the time of the experience?**

Are there other factors not evidenced in the contemporary expositions study that provide insights about the kind of experiences, exhibitions, or visitor psychologies that make for qualitatively rich, vivid long-term memories? The Expo 70 study aimed to further investigate, verify, and elucidate the nature of visitors' long-term memories associated with their personal experience of their visits to World Expositions—visits that remain vivid years later. In particular, the study sought better understanding of how visitors developed **and maintained vivid long-term memories of their experiences using the case of** a more chronologically distant exposition.

The study was in part phenomenographic in nature, in that it sought to interpret the phenomenon of the nature and character of visitors' long-term memories of World Expos (Holstwin and Gubrium 1998), while its theoretical location resides with the examination of episodic and/or autobiographical aspects of recall (Conway 2001; Squire 1992; Squire, Knowlton and Musen 1993; Tulving 1983; Tulving and Donaldson 1972). The study was not concerned about the accuracy of self-reported experience. Rather, the focus was on why the memory is vivid today (34 years later). Since reliability of memory was not the concern, the study looked at the qualitatively rich memories participants described during the study. These rich memories are considered people's "current reality" (or "subjective reality") of the recalled events, and they may or may not perfectly represent the original reality as constructed in 1970.

Procedure

In the summer of 2004, a total of 48 participants who had visited Expo 70 were individually interviewed face-to-face using a semi-structured interview protocol.² Interviews were on average 30 minutes in duration and sometimes as much as 45 minutes depending on the willingness of participants to continue to freely discuss their memories of their visit(s). All interviews were conducted by the researchers in the Japanese language, and all 48 participants were Japanese nationals. The sample comprised 18 males (37 percent), and 30 females (63 percent) who were primarily adults aged 20 to 54 years in 1970. Eighty-six percent of the sample attended Expo 70 on between one and three occasions.

The interviews took place in the Kansai Region of Japan—not far from the site where Expo 70 was staged and where several significant architectural elements of the exposition still remain today. Interviews were conducted in several places around the city in social clubs, which are centers of social activity in Japanese towns and cities; locals gather in these clubs for arts and crafts, singing, and other community-based events. Participants were voluntarily recruited to participate in the study by means of advertising posters placed in the social clubs. The advertisement cited the objectives of the study and called for participants of a diversity of ages who visited the exposition at least once. To help reduce complicating the study by self-selection by prospective participants' perception of memory quality, the advertisement stressed that participants need not have a highly detailed memory of the event in order to participate in the study. The interviews were conducted in a relaxed conversational manner and probed issues such as spontaneous recall of participants' Expo memories; episodic memories of events, occurrences and happenings surrounding their visit(s); social aspects of their visit including stories and events that participants could recall in relation to their social context; and their socio-cultural identity (or identities) in 1970, such as their stage of life, interests, and occupations.

Outcomes

The outcomes of this study are reported in two parts. The first part will discuss the dominant emerging themes of episodic and/or autobiographical memory common to many of the participants in the study. The second part will present an analysis and discussion of qualitative data that illustrate examples of how three psychological and behavioral factors (affect, agenda fulfillment, and rehearsal) shape the vividness of episodic and/or autobiographical memories of the event as they are recalled 34 years later. These factors and their influence on memory vividness were determined from a previously reported statistical analysis and modeling of 112 episodic memories held by these 48 visitors (Anderson and Shimizu 2007). However, the focus of this section of the paper is to illustrate the power of qualitative data to illuminate understanding of visitors' long-term memories and the influence of affect, agenda fulfillment, and rehearsal on the vividness of memories using five selected case exemplars.

Dominant emerging themes of episodic and/or autobiographical memory—All 48 interviews were transcribed and translated into English. Qualitative data analysis was conducted by viewing the videotaped interviews of the participants with the aid of the interview transcripts, and collectively identifying common emergent themes across the 48 participant cases. These common themes were discussed among the research team (authors and research assistant) to confirm our interpretation of the data sets (Strauss and Corbin 1988). These common themes then became a classification for which incidences were identified in the transcripts using Nivo Qualitative data analysis software in order to determine their frequency of occurrence across the 48 participant cases. The top six most common themes were identified as follows: Lines and crowding, frustrated agendas, the heat, the moon stone, foreigners, and the meaning of Expo for Japan in 1970. Each theme is discussed in the sections that follow, supported by verbatim quotes that are representative of the voices of the participants.

Lines and crowding—Since the overall attendance was 64 million visits over a six-month period, it's not surprising that visitors most commonly recalled the extent of the crowds and lines they had to endure. Eighty-three percent of participants spontaneously discussed the lines and crowding at Expo during their interviews. Most of these discussions centered on disappointment in not being able to see pavilions or exhibits that participants had planned to see (an agenda), or on feelings of discomfort and trauma of the experience (affect).

There were so many people, it was so crowded—just above and beyond what I expected—people and people and people. So many people in lines . . . It was just a long wait before you could even get into Expo. [P12]

In the middle of the visit, some people would say, "Oh, let's just go home! And come back another time." There were just so many people. There were lines of two hours or more! [P14]

Of course people told us that because of the crowds you wouldn't be able to see anything, but I just had to take the kids. But, anyway, even just to get into the park there were lines. So we went in early in the morning, and even then to enter the pavilions you wanted to you had to run from the entrance. [P24]

Frustrated agendas—A closely related and common theme to that of crowding and lines was frustration. Sixty-three percent of participants described a total of 60 incidents of frustrated agendas, including failed attempts to see certain pavilions, inability to find places to sit and rest, inability to find shade to escape from the heat, and inability to find places to eat lunch.

Our friends said that if you don't bring your lunch there you are going to have trouble finding places to eat. So, the second time we went we brought lunch there, but there wasn't any place to sit and eat. So, we ended up eating on the street. There was a Ferris Wheel . . . If we were able to line up and go into the Ferris wheel, since one round will take a long time, we can have our o-bento [lunch] up there. But, in fact I remember we had our food on the ground. [P30]



Crowds at Expo 70's main gate. *Photo courtesy of Commemorative Organization for the Japan World Exposition 70.*

We had heard that there were so many good things like the American Pavilion and so on, but the reality was that it was lined up everywhere. Even if you ran from the entry, you still had to line up. It was something like four hours at both the American and the U.S.S.R. pavilion. Just because of those long waits at the U.S.S.R. and U.S. pavilions we gave up and went elsewhere, but we were only able to see them from the outside. [P24]

The heat—Expo 70 was held over the spring and summer months of 1970. Summer months in Japan are notoriously hot and humid, especially in the prefecture of Osaka. Thirty-five percent of participants spontaneously recalled their experiences at Expo as being oppressively hot. Visitors also recalled their inability to find shaded locations at Expo to escape the heat.

As we stayed longer it became hotter and hotter. It was a really hard time in the heat. [P27]

I always ask myself, "Why did we go on the hottest day!" It was so hot and all of the attendees wanted to go into one of the large pavilions, such as the



Visitors to Expo 70 seeking relief from the oppressive heat in the Exposition water ways.

Photo courtesy of Commemorative Organization for the Japan World Exposition 70.

American Pavilion, and that's why everywhere was lined up. So, it was just people, people, people, and we couldn't really get in to see anything. My two biggest impressions were the heat and the people. [P28]

The image of visitors in the Expo waterways provides a vivid illustration of how oppressively hot conditions must have been at Expo in the summer months of 1970. This picture depicts unusual social behavior for Japanese citizens of the 1970s, in that it would not be considered typical of social norms to be wading in water in this way.

The moon stone—Undoubtedly the most popular exhibit at Expo 70 was the moon stone recently brought back by the astronauts of the Apollo 11 mission just eight months earlier. Sixty-three percent [30 participants] discussed the moon stone. Within this group of 30 people, 16 saw the moon stone, although only two remember the experience positively; 7 did not see the moon stone, and 7 were uncertain as to whether they had actually seen the stone at Expo. The *Japan World Exposition Official Report* describes the wait times for entry into the U.S. pavilion to see the moon stone to be often more than two hours. This is consistent with the self-report of the participants who described wait times of up to 5 hours for the moon stone. Despite the world significance of the moon stone, visitor recollection of seeing the stone was often colored with disappointment.

Probably the most popular place was for the moon stone. I saw it but it wasn't that big at all! So, I was SO disappointed! We saw it about two times, but the first time we saw it we were so shocked! And we said to ourselves, "This is the moon stone?" It wasn't any different to stones here on Earth. [P36]

The moon stone! We saw that with the people in my neighborhood. We lined up for such a long time, it was almost two hours . . . As you would imagine, it was the feeling that we [common people] would be able to go to the moon soon. But it was really a rare sight. [P42]

But, at that time everyone was talking about the moon stone, everyone was saying all around that there's a moon stone! There's a moon stone! So the lines were just enormous; the only things I can see are back and buttocks. When I saw the stone it seemed like it was quite a distance away, and it was just a stone. I was so disappointed. It was really just a normal stone. I thought if I saw it up close for real it would be either twinkling or glittering. I was very disappointed. I said to myself, "I lined up for this?!" I remember that well. [P45—a child at the time]

Foreigners—The general populace of Japan was still relatively culturally isolated from the rest of the world in 1970. Thus, the presence of foreigners among the general population was at that stage a relatively rare and novel phenomenon. **Twenty-seven percent spontaneously** talked about foreigners as a part of their interview.

It was also the first time to see many foreigners walking about. It was the first time for me to see the entire race of humans celebrating together. The thing that I was most surprised at was the fact that there were just so many different kinds/races of people there. I know their skin color was different. [P31]

At that time [1970 in Japan] it was very rare to see foreigners walking around. Knowing that you see many foreigners was an attraction in itself. [P8]

The meaning of Expo 70 for Japan—As previously discussed, the staging of Expo 70 was highly significant for Japan. Overwhelmingly, the participants in the study viewed Expo 70 as highly significant and a very beneficial event for Japan. Almost every participant associated Expo 70 with the transformation of Japan economically and socially, and felt that Japan was being welcomed back as a player in the world community.

That was probably the first time that it began to feel like it wasn't the period after the war anymore. Yes, so it did kind of feel like that theme of the advancement of the human race [was real]. It felt, "Wow... it wasn't the period after the war anymore!" [P1]

Nowdays we [in Japan] have a global mindset, but back then we weren't thinking about the outside world. And then suddenly, the world seemed close by, and everything seemed quite bright. [P6]

Expo 70 was the first time that Japan could join the world on the global stage. So that was the first time I felt that Japan was level to the West [part of the world with them]. [P7]

When an overview of the 48 participants' recollections of their experiences is considered, it is clear that there is a mixture and range of affect associated with the episodic and/or autobiographical memories they report. Wonderment about the world and the amazing technological advances of the era, and **delight that a Japanese national identity** was emerging again on the world stage, blended with personal discomfort and frustrations. This tension between personal experience and views about the national (or social) benefits and significance is evident in visitors' recounting of their memories.

Qualitative data that illustrate factors shaping memory vividness—The Expo 70 study, like the other expo cases, sought to better understand the factors that shaped vivid long-term memories of these kinds of events. Memory episodes that were episodic and/or autobiographical in character were identified for each participant by the research team. All the video recordings of each of the participant interviews were reviewed, and the transcripts were read several times in order to familiarize the research team with the memory episodes discussed by the participants. In total, 112 salient memory episodes were selected for analysis—roughly two or three memory episodes per participant.

During the data collection and subsequent familiarization phases of the study, factors emerged that were consistent with outcomes (reported in the literature) that were shaping the vividness of participants' memories: affect, agenda fulfillment, and rehearsal. With these factors in mind, each of the 112 episodes was rated independently in addition to the memory vividness of each episode. Table 1 details the descriptors and means of determining each of the factors, in addition to the number (fraction) of memory episodes able to be assessed based on the interview data for each factor.³

Anderson and Shimizu (2007) report that the influence of each of these individual factors on memory vividness demonstrated statistically significant curvilinear relationships for affect, agenda fulfillment and rehearsal.^{4, 5} Figures 1, 2 and 3 illustrate these

Table 1. Descriptors of factors used to assess memory episodes and corresponding fraction of memory episodes rated.

Factor	Descriptor of factor and means of determination	Number Rated
Memory Vividness	Defined on a 4-point Likert scale (1 = low, 2 = moderate, 3 = high, 4 = extreme) by the qualitative richness of the recalled episode based on the richness of descriptive evidence within the interview transcript, the voice and tone of interviewee, and non-verbal gestures and body language of the participant while describing memories of the episode.	112 / 112
Affect	Defined on a 7-point Likert Scale (-3 = very negative, -2 = moderately negative, -1 = slightly negative, 0 = neutral, +1 = slightly positive, +2 = moderately positive, +3 = very positive) by the associated emotional response, positive or negative, to an episode that participants described as having occurred as part of their visit to Expo 70.	112 / 112
Agenda Fulfillment	Defined on a 7-point Likert Scale (-3 = very unfulfilled, -2 = moderately unfulfilled, -1 = slightly unfulfilled, 0 = neutral, +1 = slightly fulfilled, +2 = moderately fulfilled, +3 = highly fulfilled) by the associated degree of fulfillment of a planned or intentionalized agenda associated with an episode that occurred at Expo 70.	92 / 112
Rehearsal	Defined on a 4-point Likert scale (1 = minimal evidence, 2 = moderate evidence, 3 = strong evidence, 4 = very strong evidence) as the degree to which visitors demonstrated evidence in their interview of the fact that they had reflected back on the episode they discussed since their visit to Expo 70.	81 / 112

independent relationships between affect, agenda, and rehearsal on memory vividness derived from the reported quantitative analysis. To illustrate the influence of affect, agenda, and rehearsal on memory vividness, five participant cases from the set of 48 are qualitatively analyzed and discussed. The five participant cases (A, B, C, D, and E)⁶ have been selected as vivid exemplars from the data set of 112 episodic memories to describe the mapping of the qualitative data cases onto figures 1, 2 and 3 to illustrate how these three factors can be interpreted as significantly influencing the vividness of visitors’ memories years later.

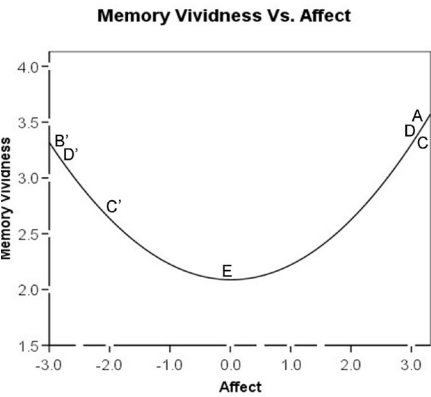


Figure 1

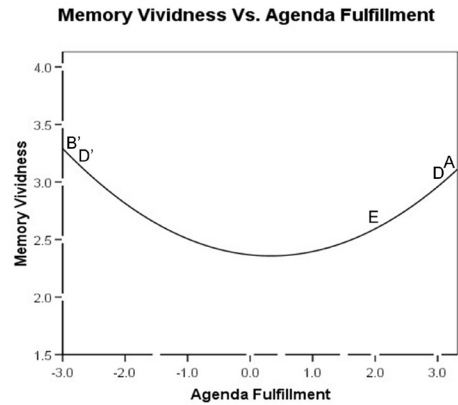


Figure 2

A. *The case of Mrs. Tomiko: Memories of the white tiger.* Mrs. Tomiko was 30 years old at the time of her visits to Expo 70. She visited Expo on two occasions, the first time in a group comprising her mother, sisters and brother, the second time with her own family: two children aged 4 and 11 years, her husband, and brother/sister-in-law. During the early stages of the interview, participants were asked to discuss their memories and impressions of their visit(s) to Expo unprompted by any cues, to allow the participants to discuss freely their spontaneous memories of the event. Mrs. Tomiko began the discussion with her recollections of the key icons of the Expo, including the *Sun Tower*, the U.S. and U.S.S.R. Pavilions, and the ever-present crowds. In relation to her second visit to Expo, she vividly remembers and describes in detail the visit she made to the Indian Pavilion with the intent of seeing the white tiger—a feature exhibit of an animal named Dalip, one of only 33 white tigers existing in the world at that time.



One of the memories that sticks with me the most is the Indian Pavilion. So we went into the Indian Pavilion. We had read in the newspaper that there was a white tiger exhibit. So, we were able to see it and it was so wonderful! Although it wasn't completely white! The newspaper had called the white tiger "God's tiger-dog" [God's pet]. Even now I can remember it perfectly. Even though the newspaper said it was white, it was more of a yellow shade. The white tiger was in a cage, and the on-lookers were about two meters away all around the cage. It wasn't a circular configuration—it was only along two sides of the cage, and inside there was one animal—so there was one large space devoted to this exhibit. The tiger is my most memorable experience of the Expo.

Mrs. Tomiko discusses her recollections of planning to visit the Indian Pavilion, and of having read about the white tiger in the newspaper and from other sources. In the above excerpt, she expresses some of her delight in seeing this rare specimen and in the course of the interview her body language, gestures, and gazes convey a rapturous wonderment and appreciation of recollection of the episode. She also drew a small sketch of the pavilion and illustrated the position of the tiger cage, and the flow pattern of the path that she took as she gazed on the animal. To Mrs. Tomiko, this experience was a highly

aesthetic experience that evoked a very positive emotional response.

We theorize that the vividness of Mrs. Tomiko's memories of this episode are accounted for in several ways. First, Mrs. Tomiko's memories of experiencing the white tiger exhibit are characterized by strong positive affect—it was a highly aesthetic experience that even to this day brings back pleasant memories as she recalls and relives the experience 34 years past. We see the strong positive affect as

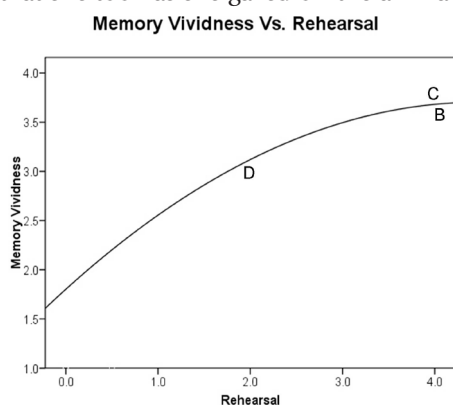


Figure 3

being partly responsible for the vividness of this memory. Second, there is some evidence that Mrs. Tomiko pre-planned to see this exhibit before coming to Expo, given that she read about this exhibition in the newspaper and other media and was subsequently motivated to visit the Indian Pavilion expressly with the purpose of seeing “God’s tiger-dog.” We believe that because this planned agenda was fulfilled beyond the expectations of Mrs. Tomiko it resulted in very strong positive affect and agenda fulfillment as represented in figures 1–A and 2–A. The case reveals that memory vividness is strongly encoded and leaves an impressive impact of the episode 34 years later.

B. The case of Mrs. Ikuko: Memories of failed attempts to see the moon stone.

Mrs. Ikuko was 44 years old at the time of her visit to Expo 70. She visited Expo only once with her husband, her son of 14 years and daughter of 12 years. In the early stages of the interview, Mrs. Ikuko describes the excitement in the media about Expo and how all the newspapers were running stories and giving information on the exposition. She describes vividly her memories of the crowds at Expo and having to line up and wait a long time just to enter the grounds. Her most salient memory of the event centered on considerable frustration and disappointment in not being able to see the moon stone in the U.S. Pavilion.



I took my children to the Expo, my oldest child had a cold at the time. We were all looking forward to going. On the day we went, there were so many people! Because of the long lines while we were waiting we were overwhelmed by all the people. That was the negative thing of the day. But so was everyone else [having to suffer the long lines], and finally we could get in [to the Expo site]. Next we wanted to go to the American pavilion but with so many people we said to ourselves “Where should we go?” and “What should we do?” We said to ourselves, if we go to the American pavilion we can see the moon stone—that’s the reason we were looking forward to going to the Expo, but because of the people and the time to wait we couldn’t get in! So, we went to the next pavilion and it was the same thing, and on and on. So, after giving up we decided to go to a park-area. The children were asking to go into some pavilions, but we had already tried to go into the American pavilion, and one other building, and had waited for hours and it was beginning to get late in our day. But, since we were in the shade of the park we went ahead and had lunch which we brought with us. We were exposed to a lot of information and hype in the media and press, such as the theme song, about the Expo and I often talked to the children about going to the Expo. We really didn’t get to do or see much at the Expo, and we didn’t get to see the moon stone, so we went home just having gone to the Expo. It would have been better to ask someone which pavilion we should devote ourselves to . . . I had made a promise to them [the children] that we would go again but it ended up that there just wasn’t a chance. I had made a promise that has irritated me for some time now. Of course many people told us that it was going to be hot and crowded but we did not listen or heed them.

Mrs. Ikuko describes the episodic detail of the day, pre-planned intentions of going to Expo to see the moon stone, of the lines to get in, the hopelessness of the line for the

U.S. pavilion, her considerable disappointment in not being able to see the stone, and her failed promise to her children. Even in the course of the interview, Mrs. Ikuko relived the disappointment of this frustrated plan to see the moon stone evidenced in both her body language and verbal accounts. In a real way she expressed a sense of guilt and remorse, which she still lives with today.

We theorize that the memory vividness of Mrs. Ikuko's recollection of this episode is accounted for in several ways. First, Mrs. Ikuko's memories of her day at Expo are themed by strong negative affect—negative experiences are strongly encoded (figure 1–B'). Second, Mrs. Ikuko clearly had a very strong expectation of all the wonder of seeing the moon stone that she and her family were going to experience at Expo, having been exposed to the media which promoted Expo. In this instance it is clear that this pre-planned expectation was dashed and frustrated, and resulted in considerable disappointment (negative affect) that results in strong encoding of the memory and in a highly memorable episode (figure 2–B'). Third is the issue of guilt, regret, and irritation about the fact that she promised to take her children back to Expo to see the things they had hoped to see in their original agenda. We speculate that this regret has been the source of unresolved conflict over the years, and Mrs. Ikuko has reflected on it over and over again. In this sense, she has rehearsed the event in an attempt to resolve the conflict or guilt, as evidenced by the fact that she laments that she should have asked for advice about which pavilions to visit (figure 3–B). Thus, rehearsal has also contributed to a strongly encoded memory (Atkinson and Shiffrin 1968; Cohen 1989)

C. The case of Mrs. Kyoko: Memories of the bonsai. Mrs. Kyoko was 48 years old at the time of her visit to Expo 70. She visited Expo only once with her husband. Mrs. Kyoko began to describe an incident of visiting the Japanese Gardens on-site, however, there was no evidence in the discourse of the interview to suggest that this was a planned event, but rather a pleasant surprise in the overall fabric of the experience of Expo.



In the Japanese garden it was very relaxed. I have a clear memory of my husband and I with the bonsai trees, we visited in the evening when there were less people. There were many sophisticated bonsai trees [on display]. This Japanese garden was special because it was made for this exposition and it was similar to gardens in Kyoto [a comparison of high regard]. In terms of our spirits, it felt very good to be in that setting. Also there were the bugs in the gardens—just looking at them gave me the creeps . . . I can see my husband wearing a white shirt with short sleeves, without a necktie. He was very happy, and on the way to and from Expo we were talking a lot. On the way home from the Expo [that evening on the train] was when my husband began talking about all the bonsai trees we saw. After the Expo when we would see a picture, when we would see a picture in a newspaper or magazine [of the bonsai] we would say “Oh yes, I saw this” or “Oh yes, I remember this!” And we talked about it some time after that again. Even today, when I came to this interview I spoke with my husband about that [and] we [both] remembered.

We infer from the interview with Mrs. Kyoko that the experience with her husband in the gardens was the antithesis of the experience on the rest of the Expo site. The gardens were calming and rejuvenating, while the crowding on line in the rest of the exposition was taxing and grating. This inferred view was also a common view of a number of the other participants in the study. The experience in the gardens was highly aesthetic in terms of the bonsai specimens and dominantly strong in positive affect through the shared social experience with her husband (figure 1–C). Also, a part of this episodic script is evidence of an element of strong negative affect—in particular, the recollection of the bugs in the gardens—“just looking at them gave me the creeps” (figure 1–C’). There is strong evidence that the pleasant experience of the Japanese Garden at Expo is a memory that has often been rehearsed since the event, both immediately following the episode on the train that evening, but also in other events in life that have occurred since Expo 70 (figure 3–C).

The memory vividness of this episode is explained in terms of the extremes of affect that are manifest in and constitute the experience. Moreover, we see the dominance of the positive affect manifest in the episode (incorporating peacefulness of the gardens, the aesthetic nature of the bonsai, and the enjoyable shared social experience) as being one of the key reasons for Mrs. Kyoko’s repeated reflection and rehearsal of this memory.

D. The case of Mrs. Kazuko: Memories of the lost car. Mrs. Kazuko was 19 years old at the time of her visit to Expo 70. She visited Expo on at least five occasions, with her friends, and other times with her mother. She had just graduated from university and had recently acquired a driver’s license and a car. In her spontaneous discourse Mrs. Kazuko recalled the crowds at Expo, seeing foreigners, the small taxis that shuttled people about the site. Dominant in her memory is an incident of losing her car in the parking lot on her third visit to Expo.



I had just gotten my driver’s license, and knew they had constructed roads all the way to the Expo. So I went with the thought that I would just drive there, park the car, and go in. Each time I went was by car, it was the first year I could drive so I wanted to take advantage of it. There was nothing we could do about it, but the parking lot was extremely spread out. So, we parked, we went as quickly as we could to the entrance area, and in that rush we completely forgot to remember where the car was. So, in the night time the park would close at 9 p.m. and we would wait until all of the other cars had left. So, by 10 p.m. by the light of the *Sun Tower*, we looked at the remaining cars. Finally, we were able to go home. It was amazing. It was also a little scary! That was the time I went with my mother, when I lost the car . . . my mother said “Oh my God” what should we do?” So, just the two of us waited. When we arrived we were so excited and said “Let’s go” . . . we were talking and chatting. We didn’t pay attention to where the car was. That was probably the third time we went to the Expo. For a while we weren’t even sure if we were in the right section, north or south or east or west. Finally, when all the cars had disappeared and we were speaking to each other we turned and under the looming face of the *Sun Tower* it [the car] was sitting right there! It was exactly in the direction that the *Sun Tower* was facing! It took about an hour to find the car . . . The family talks about it jokingly sometimes and we laugh about it.

This particular memory was perhaps Mrs. Kazuko's most vivid of the memories discussed during the interview. The episode was by no means a pre-planned agenda of her Expo experience, but clearly, the mission to locate the car emerged during the visit and became a highly intentionalized agenda in the later part of her day at Expo. She recalls in detail the negative affect surrounding the event, the tension of her mother (figure 1—D'), the frustration of not being able to find the car (agenda frustration, figure 2—D'), and the strategy for locating the vehicle. Additionally, she recalls the relief felt (positive affect, figure 1—D) when the car was located (agenda fulfillment, figure 2—D) and the details of where it was with respect to the surrounding scenery. Finally, she admits that this experience is a part of family allegory and hence we see this evidence of moderate rehearsal of the episode (figure 3—D).

E. The case of Mrs. Kuniko: Planning to see the moon stone but without affect.

Mrs. Kuniko was 28 years old when she visited Expo on just the one occasion. She reports planning to go to Expo to see the moon stone, but does not attribute any particular feeling or emotional response to the fulfillment of this agenda.



The moon rock was being displayed at the time that I went, and I came with the intention of seeing it. [In the U.S. pavilion] there were many people and I wasn't in the front, I was further from the back, and I thought what's that? I remember not feeling very impressed. I didn't feel disappointed, but I felt "this is what it is . . . hmmm!"

This is an example of agenda fulfillment (figure 2—E), with no or little associated affective or emotional response to the experience (figure 1—E).

These independent qualitative cases of memory episodes provide vibrant examples of how these three factors are influencing the vividness of visitors' long term memories. They exemplify and illustrate the relationships between the variables that both influence and shape long-term memories that are formed from experiences in informal settings.⁷

Conclusions

This study provides some valuable insights about the experiences of visitors to Expo 70. What they remember 34 years later is a telling account of what mattered most to them about their experience—their joys, wonderment, hope, and also their frustrations and traumas, which constituted their experiences then, and now live with them in their memory of that experience. It is a salient reminder to those of us who are concerned about visitor experience, that such experience does not merely last the length of a visit, but rather the experience lives on years after the visit in visitors' memories, conversations, and other life experiences.

Key among visitors' memories of the event were those exhibits and experiences which held cultural significance and/or high degrees of novelty, such as the moon stone or seeing foreigners. Additionally, events that were frustrations to their planned agendas (for instance, not being able to see an exhibit) or frustrations to attainment of needs (for

instance, inability to find shade or seating) or strong in emotional affect (for instance, the beauty of the Japanese gardens) were vividly remembered as illustrated by the cases of visitor accounts of the experience.

In this qualitative analysis and modeling of exemplar cases of memory episodes of visitors interviewed, we see how affect, agenda fulfillment, and rehearsal are key to the development and retention of vivid long-term memories. The explanation for strong memory vividness of episodes at extremes of affect, agenda fulfillment, and rehearsal are inter-related. Anderson and Shimizu (2007) speculate that memory episodes that have a strong associated affect and/or agenda fulfillment as they occurred 34 years ago are likely influencing the degree to which they are later rehearsed through life. Hence, this combination of factors ultimately incites memories to become rehearsed, and thus plausibly accounts for high levels of memory vividness many years later.

The outcomes of this research ought to provoke reflective questions among those concerned with visitor experience and developing exhibitions that promote vivid memories. For example, how do exhibition planners maximize the positive affect associated with (museum) experiences and ensure that we minimize the potential for negative experience? How do exhibit planners help visitors to realize and even surpass their planned agenda and minimize experiences that might result in agenda frustration? How do exhibit planners get visitors to revisit their experiences in the days and months (and years) following their visit? The answers to these questions are highly specific to the context of the institution, but nonetheless need to be considered as principles in the development and design of exhibitions and the holistic appreciation of visitor experiences in museums.

The study also speaks to the capacity of qualitative data to illuminate understandings and appreciations of visitors' long-term memories. The five exemplar cases represent vivid illustrations of how affect, agenda fulfillment, and rehearsal influence the vividness of memories of visitors years later. There are undoubtedly other factors that influence the vividness of long-term memories that have not been portrayed as the subject of this study, which leaves the door open to further investigative studies. However, what is abundantly clear for those who hold an interest in promoting the development of vivid (positive) long-term memories among their visitors is the need to consider the visitor experience in its entirety and to appreciate the influence of affect, agenda fulfillment, and rehearsal on memory development.

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Notes

1. See the following: Anderson 2003; Anderson and Piscitelli 2002; Anderson and Shimizu 2007; Falk and Dierking 1990 and 1997; Fivush, Hudson and Nelson

- 1983; Hudson 1983; Hudson and Nelson 1986; McManus 1993; Medved and Oatley 2000; Medved, Cupchik and Oatley 2004; Stevenson 1991.
2. A copy of the interview protocol is available from the authors.
 3. Not all memory episodes could be assessed in all five dimensions. For example, evidence of intentionality or agenda fulfillment could be detected in every memory episode based on the interview data. Intentionality was an additional psychological factor that was considered but proved to be not statistically significant against memory vividness in this study.
 4. Individual dimensions on memory vividness demonstrated statistically significant curvilinear relationships for affect ($R^2 = 0.229$, R^2 Change = 0.226, $p < 0.0001$), agenda fulfillment ($R^2 = 0.114$, R^2 Change = 0.106, $p < 0.05$) and rehearsal ($R^2 = 0.431$, R^2 Change = 0.03, $p < 0.03$).
 5. Anderson and Shimizu (2007) also report that participants' demographic characteristics, including age, gender, and frequency of visitation to Expo, proved not to be statistically significant variables on memory vividness.
 6. The participants A, B, C, D and E have consented to the use of pseudonyms and their photographic images in this publication. The use of real images is to emphasize that qualitative data is representative of data from the memories of real people, not divorced from context.
 7. Independent modeling of factors demonstrated that affect, agenda fulfillment, and rehearsal were all significant contributors to memory vividness. However, affect and agenda fulfillment are not significant factors when considered in the presence of rehearsal. Anderson and Shimizu (2007) statistical analysis of these quantitative data also employed a multiple regression analysis in which the effects of all factors were considered together in their influence on memory vividness. This analysis revealed that rehearsal of memories was the most significant factor shaping the vividness of memories, accounting for 85.9 percent of variance.

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