

***Memories of Expo 70:  
Insights on Visitors' Experiences and the  
Formation of Vivid Long-Term Memories***

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# ***Memories of Expo 70: Insights on Visitors' Experiences and the Formation of Vivid Long-Term Memories***

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## **ABSTRACT**

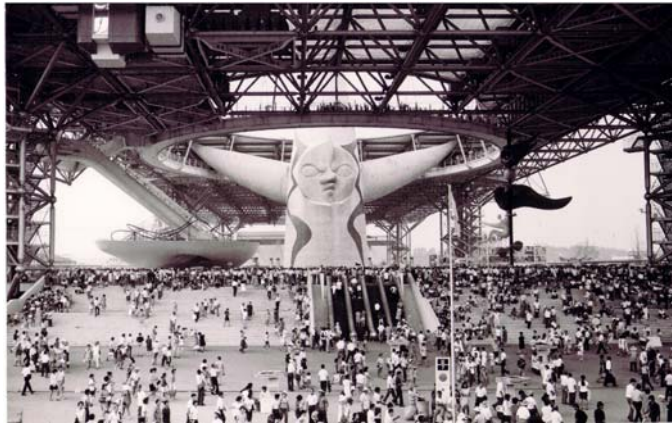
This study reports on outcomes of an investigation of visitors' long-term memories of the 1970 Japan World Exposition, Osaka. The paper reports in two parts the emergent outcomes of the study that sheds new light on the nature of visitors' long term memories of these kinds of events. First, the paper discusses the common emergent themes from 48 visitors' memories of this event 34 years later. Second, a statistical analysis and modeling of 112 episodic memories held by these 48 visitors' identifies four variables - *Intentionality, Affect, Agenda Fulfillment, and Rehearsal* - that appear critical in the formation of many vivid memories held by visitors 34 years after the event. The outcomes are significant for future Expositions as designers consider and plan for visitor experience. Moreover, the study provides critical insights about how to design experiences that will have lasting impacts on visitor to Expositions.

## **Introduction - Expo 70**

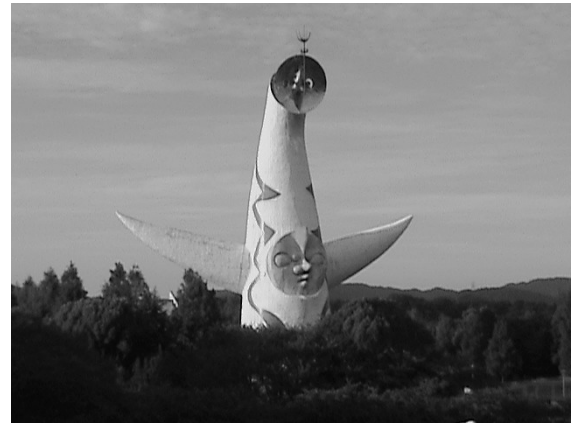
Expo 70 was a Category One - Universal Exposition held on an 815 acre site in the Senri Hills in the City of Osaka, Japan, over 183 days from March 15 to September 13, 1970. Universal Expositions are typically large-scale expositions hosting international member states. The theme of Expo 70 was *Progress and Harmony for Mankind* and drew 76 participating countries representing themselves in national pavilions and 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 World Fair since their inception in 1851.

The center piece of the exposition was the “The Tower of the Sun” (Sun Tower) by famous Japanese sculptor Taro Okamoto (1911-1996) (Figure 1a & 1b) – a 230 foot tall sculpture, which still remains today in the Banpaku Koen (Expo 70 Commemorative Park) contained exhibits themed about 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 weighed 6,000 tons. The other key icon of the Exposition was the extensive Japanese Gardens covering an area of 64 acres containing four thematic representation – *Garden of Ancient Times* (Heian Period – 8<sup>th</sup> to 11<sup>th</sup> centuries); *Garden of the Middle Ages* (Kamakura Period – 12<sup>th</sup> to 13<sup>th</sup> centuries); and *Garden of Modern Times* (Edo Period – 17<sup>th</sup> to 19<sup>th</sup> Centuries); and *Garden of Present Day* (Figure 2). The Expo also

contained the *Museum of Fine Arts* which had works by Salvador Dali, Picasso, Gauguin, Renoir, Rubens, Van Gogh and Cézanne.



**Figure 1a** – The Sun Tower at Expo 70  
(Photo by Michie Namita)



**Figure 1b** – The Sun Tower today in  
Banpaku Koen (Expo 70 Memorial Park)  
(Photo by David Anderson)



**Figure 2** – Japanese Gardens at Expo 70 (Photo by John Lawson)

The most popular pavilions on site were the United States and USSR. The U.S. Pavilion, which 86,000 square feet of floor space, displayed the “Moon Stone” recently 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’ center piece 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, in addition to a full-scale model of the Apollo 11 Lunar Lander.

According to the *Japan World Exposition Official Report's* study on wait times for entry into the US Pavilion:

*The time people had to wait on each day was longest immediately after the daily opening of the Exposition...The time was generally 40-50 minutes. For other popular pavilions [such as the USSR pavilion] the situation was about the same. During the last two months of the Exposition period, however, 45 percent of all visitors [to Expo] inspected the U.S. pavilion. Despite the hot weather, they formed long queues and suffered considerable fatigue so as not to miss seeing this popular pavilion. According to surveys conducted on the 10 days between August 24 and September 2, the number of visitors who had to wait in line for more than two hours before they could enter the US Pavilion constituted 38% of those surveyed. Vol 2, pp372-373.*

Like the US pavilion the USSR pavilion was a dominant architectural spectacle on the site (figure 4). It was the largest foreign pavilion on site containing 270,000 square feet of floor space and was 360 feet in height. Exhibitions were also themed on space and space technology, in addition to the life of V.I. Lenin the founder of the Soviet State whose 100<sup>th</sup> birthday was commemorated on April 22, 1970.

The exposition featured numerous visions of the future. For example, the telecommunications pavilions featured “dream telephones” – wireless handheld telephone where visitor could call any part of the country (Figure 5). The Furukawa Pavilion presented a world of cashless shopping using customer voice prints. The expo had a “lost and found” department utilized “TV-telephones” that one could browse lost articles or communicate audio visually when a child was located. And the site was interlinked with moving sidewalks that were covered and air conditioned.

## **The Typical Expo Experience**

The staging of exposition was highly significant for Japan. It represented and demonstrated many significant things for the country exemplified by three key themes emergent from the participants of this study. First, there was a national self-realization of hope given that Japan had emerged just twenty-five years later from the destruction and complete devastation of World War II. In this theme there was a reported developing sense of being able to be on the world stage in a positive sense, with a sense of pride in their country and connection with the world. Second, 1970 marked a time of the beginning unprecedented economic growth and development and a period of historic prosperity – this was manifest in the Japanese phenomenon of “*The Bubble Economy*” (c.f. Nakamura, 1995). Expo 70 was both a marker in time of the beginning of considerable prosperity, and also a contributor to *The Bubble Economy* as exposition opened up more business and trade opportunities between Japan and the rest of the world. Third, as a consequence of the association of the Expo 70 and *The Bubble Economy*, most participants of working age (particularly males) have memories of the Expo 70 as a time when they were extremely busy in their business and work life, with little time for leisure time activities.

As previously mentioned, Expo 70's total attendance was over 64 million visits over its six months of operation. According to the *Japan World Exposition Official Report* the average daily attendance on the site on peak days was 641,000 people and the attendance figure of the peak day of the Exposition was 835,000 visits. 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, 97.3% of all visits to Expo 70 were made by Japanese nationals, with foreign visitation accounting for only 2.7%. The exposition attracted Japanese nationals from all parts of the country: 48.1% from within 100km radius, 30.2% within 101 to 500km, and 21.7% from areas further away than 501km. By social group, 31.1% visited as an organized group (i.e. a group from work or a tour group), 29.7% visited as a family group, 30.8% visited with friends or acquaintances, and 8.3% as individuals.

The report provides a description of the "average visitors" 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 20km.

Forty-six percent (45.5%) 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% 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% answered that the exhibits were what they were most eager to see*". Vol 2, pp374. 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.*" Vol 2, pp374.

## The Study

This research study with its focus on the Expo 70 represents the third in a series of four 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 developers of exposition experiences, large and small, to contemplate. The first two studies examined visitors' long-term memories associated with two contemporary Exposition – Expo 86 (Vancouver, Canada) and Expo 88 (Brisbane, Australia) and was reported in *Curator* (2003), Vol. 46, No.4., (Anderson, 2003). The final in the series will consider Expo 67 (Montreal, Canada) and will commence in late 2006.

In the study of the contemporary Expositions (Anderson, 2003) the long-term memories of a total of fifty (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 two different expositions held in two different countries, yet the emergent themes of memory of these kinds of events were strongly confirmatory of each other. The outcomes of that study centered on three key themes concerning visitor memories of these events: 1) *Social memories are the most dominant* - The study demonstrated that memories of the social context of the visit to the Expos were the most dominant and vivid of all memories. 2) *The socio-cultural identities of visitors at the time of the experience was the critical factor that shaped memory of the expo experience.* The study also showed that socio-cultural identity acted as a powerful

enabler permitting visitors to see, perceive, and ultimately remember aspects of the Expos that others in different cultural groups could not. In short, who you are largely determines what you are able to see and perceive, and ultimately recall after the experience. 3) *Visitors' recalled agendas at the time of the experience influenced memory* - The study showed that visitors' agendas co-mediated and defined by their culture identity at the time of the experience, defined what governed their behavior and attention at the time of the experience and ultimately defined by the impact of the experience in terms of recall years later.

Several questions remain unanswered from the contemporary Expositions study – Do memories of the social context sustain in the qualitative richness over a larger longitudinal baseline? What is the role of visitors' recalled agenda on the encoding and qualitative richness of long-term memories? 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 long-term memories?

From the outset, the Expo 70 study had three key objectives. First, to further investigate, verify, and elucidate the nature of visitors' long-term memories associated with World Expositions that remain salient from more chronologically distant Exposition – namely, Expo 70. In particular, the study sought to interrogate how the themes of memory generated from experiences 34 years past. Finally, clarify the link between visitors' socio-cultural identity and recalled agenda of their Expos visits;

The purpose of this study was not to detail the lists of displays or specific physical exhibition elements that visitors were able to recall, but rather to qualitatively describe the themes of visitors' long-term memories. Furthermore, the study sought to document descriptive conceptual generalizations about these themes of memory, rather than to statistically generalize memory themes by the participants' demographic variables such as age and/or gender.

The study could most closely be characterized as a phenomenology, in that it sought to interpret the phenomenon of the nature and character of visitors' long-term memories of World Expos (Holstwin & Gubrium, 1998), while its theoretical location resides with the examination of declarative or explicit long-term memory, and in particular, the episodic and semantic aspects of recall (Conway, 2001; Squire, 1992; Squire, Knowlton, & Musen, 1993; Tulving, 1983; Tulving and Donaldson, 1972).

## **Procedure**

In the summer of 2004, a total of forty-eight participants (n=48) who had visited Expo 70 were individually interviewed face-to-face using a semi-structured interview protocol. 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 forty-eight participants were Japanese nationals. The sample comprised 18 males (37%), and 30 females (63%) which spanned a diversity of ages. Table 1 depicts the distribution of participants' ages at the time of their visits to Expo 70, while Table 2 depicts the distribution of participants' frequency of visits to the Exposition.

**Table 1 - Age of participants interviewed at the time of their visit to Expo 70 (34 years past)**

<i>Age</i>	7 years	10-19 years	20-29 years	30-39 years	40-49 years	50-54 years
No. of Participants	1 (2%)	7 (15%)	7 (15%)	17 (35%)	14 (27%)	2 (6%)

**Table 2 – Frequency of participants claimed visitation to Expo 70**

<i>Frequency of Visits</i>	Once	Twice	Three times	Four times	Five times	> Ten
No. of Participants	23 (48%)	10 (21%)	8 (17%)	2 (4%)	3 (6%)	2 (4%)

The interviews took place in the Kansai Region in city of Nishi Akashi, 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 *Rojin Clubs*, which are centres of social activity in Japanese towns and cities where locals gather for arts and craft, singing, and other community-based events. Participants were voluntarily recruited to participate in the study by means of advertising posters placed in the *Rojin 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 participants’: 1) spontaneous recall of participants’ expo memories; 2) episodic memories of events, occurrences and happening surrounding their visit(s); 3) salient memories; 4) spontaneous recall following focused stimuli such as sounds and images from the expo including scenes of exhibitions, and the inside and outside views of various pavilions; 5) social aspects of their visit including stories, and events participants could recall of their social context; 6) the sensory experiences and emotions of participants visits to Expo – tastes, smells, sounds, emotions/feelings and affect (both positive and negative); 7) events and incidents since Expo 70 which caused participants to think about their experiences at the Exposition; 8) Socio-cultural identity of participants in 1970, their stage of life, interests, and occupations; and finally, their views about the meaning and impact of Expo 70 on Japan.

## Outcomes

The outcomes of this study are reported in two parts. First, descriptions of the emerging themes of memory common to many of the participants in the study, and a discussion of the key variable identified that are critical to the formation of vivid memories of the experience visitors had and recall 34 years later. Second, a statistical analysis and modeling of 112 episodic memories held by these 48 visitors shows how variables shape the vividness of memories of the event inter-relate.

# 1) Commonly Reported Memories of Expo 70

## Line-ups and Crowding

It is little wonder with an overall attendance of 64 Million visits over a six month period, that visitors most commonly recalled experience of Expo 70 were the extent of the crowds and line-up they had to endure as part of the visits. Eighty-three percent (83%) of participants spontaneously discussed the line ups and crowding at Expo during their interviews. Most of these discussions centred on frustration in not being able to see pavilions or exhibits that participants had planned to see, or on feelings of discomfort and trauma of the experience.



**Figures 3** – Crowds at Expo 70's Main gate.

*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 line ups... 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 line ups of one to two hours or more, and people were fairly well behaved. There wasn't much cutting into line, people were waiting quite obediently. P14*

*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. 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 line ups. 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. So, that's why we ended up looking for the less crowded pavilions. Even if you ran from the entry, you still had to line up. We didn't want to spend all of our time doing that [lining up]. It was something like 4 hours at both the American and the USSR pavilion. Just because of those long waits at the USSR and US pavilions we gave up and went elsewhere, but we were able to see them from the outside. P24*



*Two things I remember the most were that there were so many people and also many people telling me not to get lost, so my father was holding my hand very tightly. I remember grasping onto my fathers shirt. P45 female 7 yo*

## **Frustrated Agendas**

A closely related and common theme to that of crowding and line-up were frustrated agendas. Sixty-three percent (63%) of participants described a total of 60 incidents of frustrated agendas, including failed attempted to see certain pavilions, inability to find places to sit and rest, inability to find shade to escape from the heat, and inability to finds places to eat lunch.

*I was full of expectations, I wanted to go to these important pavilions, like US, and USSR, but I couldn't! P21*

*Because, we brought along our children to expo, we also remembered to bring along o-bentos [for lunch]. But there weren't many places to sit! P24*

*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 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 in there. But, in fact I remember we had our food on the ground. P30*

## **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 city of Osaka. Thirty-five percent (35%) of participants spontaneously recall their experiences at Expo as being oppressively hot. Visitors also recalled their inability to finds 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 that all of the attendees wanted to go into one of the large pavilions, such as the American Pavilion, and that's why everywhere was lined up. So, it was just people, people, people, and we couldn't really get into see anything. My two biggest impressions were the heat and the people. P28*

## **Moonstone**

Undoubtedly the most popular exhibit at Expo was the Moonstone recently brought back by the astronauts of the Apollo 11 mission just eight months earlier, and indelibly etched into the world-cultural context of that era as a highly significant event and “trophy”. Sixty-three percent (63%) spontaneously discussed the moonstone. Of these 16/30 [54%] Saw the moonstone -only two people recall the experience in terms of positive affect; 7/30 [23%] Did not see the moonstone; and 7/30 [23%] Uncertain or could not detect from transcript

*Moonstone - disappointing!*

*Probably the most popular place was for the moonstone. I saw it but it was probably only about this big [gestures to suggest size of a walnut]. 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! [with disappointment] And we said to ourselves "This is the moonstone?" It wasn't any different to stones here on Earth. P36*

*I: What do you remember the most? P: The Moonstone! We saw that as a group of three. We went there with the people in my neighborhood - we went there on a bus. We lined up for such a long time, it was almost 2 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 moonstone, everyone was saying all around that there's a moon stone! There's a moonstone! So the line ups 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.*

*The Hope of the Moonstone*

*What I was feeling the most was that soon we would be making developments on the moon and moving forward toward there, and that many things would be happening soon! There was the feeling that although it was going to take a lot of money there was the feeling that soon people would be able to take trips there (to the moon) with more ease. Many regular people were talking that way [taking vacations to the moon] at that time. Just the feeling that this was a REAL moon-rock! And, maybe it was just my opinion at the time, because I hadn't been following any other current information, I felt that people would be able to be going there soon, but in the end it wasn't that way! [When I was in the Pavilion] I was saying to myself "it's real, it's real"! P40*

## **Foreigners**

Japan was still relatively culturally isolated in 1970, the presence of foreigners amongst the general population was at that stage a relatively rare and novel phenomena. Hence twenty-seven percent (27%) 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 colour was different. P31*

*At this expo there were many foreigners, and were able to realize that there are many varieties of people in the world. I remember always thinking ... Oh, there is a country out there like this!! P5*

*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 Paradox of Meaning and Experience of Expo 70**

Overwhelmingly the participants of the study viewed Expo 70 as highly significant and very beneficial event for Japan. Many associated Expo 70 with the transformation on Japan economically, social, and being welcomed back as a player in the world community. Yet,

interesting, most of the personal experiences that they described were negative in character – frustrations, loss, heat, and psychological discomfort. This tension between personal experience and national benefit and significance represents somewhat of a paradox of meaning.

*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 expo] of the advancement of the human race [was real]. It felt "wow... it wasn't the period after the war anymore!" P1*

*Nowdays we [Japan] have a global mind set, 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*

*Nowdays it's not a big deal to see things from other countries, but at that time it was very impressive for us to see aspects of many different countries. And, also that Japan could hold such a great exposition was a thing in itself. Now days it seems like we can easily hold these kinds of events with other countries, but back then it wasn't imaginable. P8*

*Expo 70 was the first time that Japan could join the world on the global stage. I was the first time for me to see how countries and people are so independent from one another. I had seen foreigners before, but not in that variety. So that was the first time I felt that Japan was level to the west [part of the world with them]. P7*

## **2) The factors the shape vivid long-term memories of Expo**

All forty-eight interviews were transcribed and translated into English. Memories that were episodic and/or autobiographic in nature 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 immerse and familiarize with the memory episodes discussed by the participants. A total of 112 salient memory episodes were selected for statistical analysis, which equated to roughly two to three memory episodes per participant.

During the data collection and subsequent familiarization phases of the study there seemed to emerge four factors consistent with outcomes reported in the literature that were shaping the vividness of participants' memories, namely, *Affect*, *Agenda Fulfillment*, *Intentionality*, and *Rehearsal*. With these factors in mind each of the 112 episodes were independently rated on these dimensions in addition to the *Memory Vividness* of each episode. Table 3 details the descriptors and means of determining each of the five dimensions, in addition to the number (fraction) of memory episodes that were able to be determined or assessed based on the interview data for each dimension<sup>1</sup>.

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<sup>1</sup> 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.

**Table 3** – Descriptors of dimensions used to memory episodes and number rated

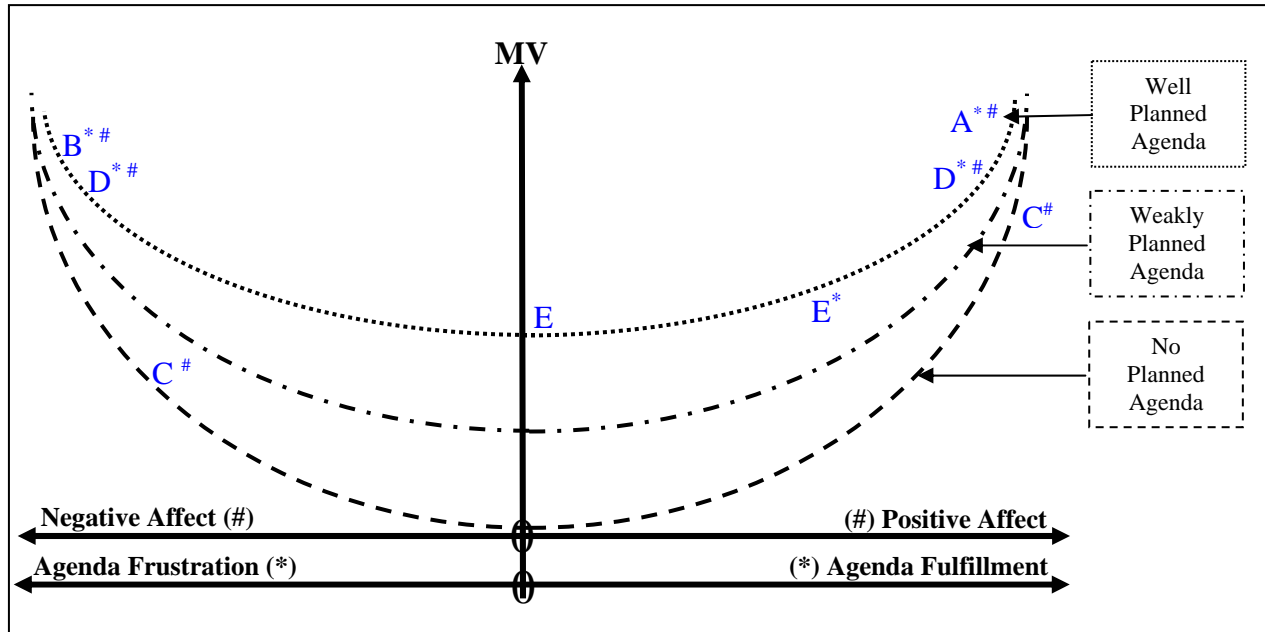
<b>Dimension</b>	<b>Descriptor of dimension and means of determination</b>	<b>Number Rated</b>
<i>Memory Vividness</i>	Defined on a 4-point Likert scale (1= low, 2 = moderate, 3 = high, 4 = extreme) by the qualitative richness of the recall episode based on the richness of descriptive evidence within the interview transcript, the voice and tone of interview except, and non-verbal gestures and body language of the participant as they described their memories of the episode.	112 / 112
<i>Affect</i>	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
<i>Intentionality</i>	Defined on a 3-point Likert scale (1= low, 2 = moderate, 3 = high) is defined as the degree to which participants demonstrated evidence in their interview of the fact that they had intentionalize plans to do or see something at the Expo.	84 / 112
<i>Agenda Fulfilment</i>	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
<i>Rehearsal</i>	Defined on a 4-point Likert scale (0= no evidence, 1 = minimal evidence, 2 = moderate evidence, 4 = strong evidence) is defined 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.	112 / 112

Data analysis demonstrated that the dimensions of *affect* ( $p < 0.001$ ), *agenda* ( $p < 0.01$ ), and *rehearsal* ( $p < 0.001$ ) are statistically significant factors in the development of vivid long-term memories. This study demonstrates and predicts how the variables of affect, agenda, and rehearsal vary as a quadratic function of the vividness of long-term memories. There appears strong evidence that the *intentionality* dimension is related to memory vividness and is seen most evident as a function of variation in affect and memory vividness, and is somewhat demonstrated as a function of variation in agenda fulfillment and memory vividness.

Figure 4 depicts a compound diagrammatic model illustrating the influence of 1) *affect* associated with the episodic experience, 2) fulfillment or frustration of agendas, and 3) the degree to which agendas are planned, on memory vividness (MV). For illustrative purposes, we hypothesize three levels of agenda – *well planned*, *weakly planned*, and *not planned*. The x-axis represents a continuum of the affect and fulfillment dimensions. We regard that *fulfillment* can be considered a sub-set of *affect*, that is, a fulfilled agenda often results in positive affect and vice versa. However, it is not always the case that a positive or negative affect is a function of

fulfillment or frustration – some visitors’ recollections are associated with negative affect, but not agenda frustration. To this end we see the continuums as they relate to memory vividness as being related and parallel and not the same. To illustrate the intersections of planned agenda, affect and memory vividness we discuss five cases from the data sets as exemplars of the interactions of these combinations of the variables.

The five cases (A, B, C, D, & E) described are mapped on Figure 4 as a means to illustrate the intersections and relations represented by the cases and widely seen throughout the data sets.



**Figure 4** – Relationship between Memory Vividness (MV) with Affect and Agenda Fulfillment as a function of Agenda Planning.

*(A) The Case of Mrs. Tomoko – Memories of the White Tiger*

Mrs. Tomoko 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, so as to allow the participants to discuss freely their spontaneous memories of the event. Mrs. Tomoko began the discussion with her recollections of the key icons of the Expo, including the Sun Tower, the U.S. and USSR Pavilions, and the ever present crowds of people. As part of 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 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. Tomoko discusses her recollections of planning to visit the Indian Pavilion, and about having read about the White Tiger in the newspaper and from other sources. From 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 that convey a rapturous wonderment and appreciation of recollection of the episode at expo. She also draws a small sketch of the pavilion and illustrates the position of the Tiger cage, and the flow pattern of the path that she took as she gazed on the animal. To Mrs. Tomoko, this experience was highly aesthetic experience that evoked a very positive emotional response.

We theorize that the vividness of Mrs. Tomoko memories of this episode are accounted for in several ways. First, Mrs. Tomoko 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 being partly responsible for the vividness of this memory. Second, Mrs. Tomoko clearly pre-planned to see this exhibit before coming to Expo, there is evidence from the above transcript, especially the effort she made to read about this exhibition in the newspaper and other media and was subsequently motivated to intentionalize the visit to the Indian Pavilion expressly with the purpose of seeing *Gods Tiger*. We believe that because this planned agenda was fulfilled beyond the expectations of Mrs. Tomoko and resulting in very strong positive affect, the memory vividness is strongly encoded and leaves a impressive impact of the episode 34 years later.

*(B) The Case of Mrs. Tsukahashi – Memories of Failed Attempts to see the Moonstone*

Mrs. Tsukahashi was 44 years old at the time of her visit to Expo 70. She visited Expo only once with her husband, her son 14 years and daughter 12 years. In the early stages of the interview Mrs. Tsukahashi describes the excitement in the media about Expo and how all the newspapers were running stories and portrayed 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 Moonstone in the US Pavilion.

*I took my children to the Expo, my oldest child has 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 line ups], and finally we could get in [to the expo site]. Next we wanted to go to such places as the American pavilion but with so many 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 moonstone - 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, that was too bad. So, we went to the next site and it was the same thing, and on and on. So, after giving up we decided to go to a park-area. So 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 waited for times such as 1 hour 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 moonstone, 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 [see]... 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 would irritate me for sometime. Of course many people told us that it was going to be hot and crowded but we did listen or heed them.*

Mrs. Tsukahashi describes in great detail the episodic detail of the day, pre-planned intentions of going to expo to see the Moonstone, of the line ups to get in, the hopelessness of the line up for the US pavilion, her considerable disappointment in not being able to see the Moonstone, and her failed promise to her children. Even in the course of the interview Mrs. Tsukahashi relives the disappointment of this frustrated plan to see the Moonstone 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. Tsukahashi recollection of this episode is accounted for in several ways. First, Mrs. Tsukahashi memories of her day at Expo are themed by strong negative affect - negative experiences are strongly encoded. Second, Mrs. Tsukahashi clearly had a very strong expectation of all the wonder of seeing the Moonstone that she and her family were going to experience at expo, having been exposed to the media which promoted at Expo. In this instance it is clear that this pre-planned expectation (agenda) was clearly dashed and frustrated, and resulted in considerable disappointment (negative affect) that results in strong encoding of the memory and results in a highly memorable episode. Third, is the issue of guilt, regret and irritation about the fact that she promises 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, to which Mrs. Tsukahashi has reflected 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. Thus, rehearsal has also contributed to a strongly encoded memory (Cohen, 1989)

### *(C) The Case of Mrs. Fugii – Memories of the Bonsai*

Mrs. Fugii was 48 years old at the time of her visit to Expo 70. She visited Expo only once with her husband. Mrs. Fugii 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's] 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 we [both] remembered.*

We infer from the interview with Mrs. Fugii that the experience with her husband in gardens was antithesis of the experience on the rest of the expo site. The gardens were calming and rejuvenating, while the crowding on line-up of the rest of the exposition were 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. 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*”. There is strong evidence of that the pleasant experiences 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.

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. Fugii repeated reflection and rehearsal of this memory. It is well established that repeated rehearsal of a memory more deeply encoded the memory itself. However, several psychologists would argue that the validity of the memory degrades with repeated reflection, as each reflection results in reconstruction of the memory itself.

#### *(D) The Case of Mrs. Yoshi - Memories of the Lost Car*

Mrs. Yoshi 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 drivers license and a car. In her spontaneous discourse Mrs. Yoshi recall the crowds at expo, seeing foreigners, the small taxis that shuttled people about the site, and 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 drivers licence, 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 park, 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 9:00PM and we would wait until all of the other cars had left. So, by 10:00PM 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 3<sup>rd</sup> 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 loom of the 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.*

This particular memory was perhaps Mrs. Yoshi'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 high 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, the frustration of not being able to find the car, and the strategy for locating the vehicle. Additionally, she recalls the relief felt (positive affect) when the car was located (agenda fulfillment) and the details of where it was with respect to the surrounding scenery.

*(E) The Case of Mrs. Takashi – Planning to See the Moonstone but Without Affect*

Mrs. Takashi was 28 years old when she visited Expo on just the one occasion. She reports planning to go to Expo to see the moonstone, 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 {planned agenda}. [In the US pav] there were many people and I wasn't in the front, I was it 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 intentionality, with no or little associated affective or emotional response to the experience.

## **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 that constituted their experiences then, and now live with them in their memory of that experience now.

Key among visitors memories of the event were those exhibits and experience which held cultural significance and/or high degrees of novelty, such as the moonstone or seeing foreigners. Additionally, events which were frustrations to their planned agendas (not being able to see an

exhibit) or frustrations to attainment of needs (inability to find shade or seating) were strong features of visitor's accounts of the experience.

The statistical analysis and modeling of the 112 memory events of visitors interviewed, revealed that there were four inter-related factors that were key to the development and retentions of vivid memories thirty-four years later. These were 1) *Intentionality* – planning to do or see something at the expo, 2) *Agenda Fulfillment* – the degree to which planned agendas were fulfilled or frustrated, 3) *Experiential Affect* – the extent of positive or negative emotion that was associated with the event or episode, and 4) *Rehearsal* – the degree to which the memories of the event were subsequently relived and brought back to memory over the years. Assuming the outcomes of this new research are generalizable, then there may be some lessons for ways future expositions might think about how to maximize the impact of visitor experiences. Put very simply, I think there are four questions exposition planners might ask themselves: How do exposition planners get visitors to intentionalize their visitation experiences in both general and specific ways? How do exposition planners help visitors to realize and even surpass their planned intentions and minimize experiences that might cause agenda frustration? How do exposition planners get visitors to revisit their experiences in the days and months following their visit? And finally, how do exposition planners maximize the positive affect associated with science centre experiences and ensure that we minimize the potential for negative experience.

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