Interactive Exhibit Elements
In the National Zoo’s Elephant Community Center

Observations and Visitor Interviews

September 2014

Smithsonian Institution

Office of Policy and Analysis
Washington, D.C. 20013
Introduction

In July and August 2014, a Smithsonian Office of Policy and Analysis (OP&A) study team observed and interviewed visitors in the recently renovated Elephant Community Center (ECC) at the Smithsonian’s National Zoological Park (NZP). OP&A engaged visitors in conversations about their experiences in the space, emphasizing their use of and reactions to interactive exhibit elements. The evaluation team focused on activities inside the Center; interviewers did not ask questions about the outdoor areas.

The goal was to determine how well selected elements worked for visitors and why, and to identify improvements NZP might consider to enhance the effectiveness of similar elements in future. NZP was especially interested in audience reactions to the following elements:

1. “What Is an Asian Elephant?” elephant cutouts;
2. “Extreme Elephants Weigh In” scale;
3. “Meet Our Elephant” flip books;
4. “Sound Off” elephant vocalization interactive; and
5. “In and Out” display on elephant food consumption and elimination.

Methodology

OP&A interviewed 37 visitors on July 11 through to August 13, 2014. The study team observed and spoke with visitors of all ages; when interviewing visitors age 17 or younger, the team members first asked permission from adult guardians.

Interviewees were limited to individuals who were not visiting with an organized tour or school group. Smithsonian employees and volunteers, unaccompanied youth, and non-English speakers were also excluded. Participation was voluntary, and no personally identifiable information (e.g., names) was collected.

Interviews ranged from five minutes to a half hour in length and were recorded. Audio recordings were transcribed selectively and analyzed. Where appropriate, visitors’ own words are included in this report to illustrate points. The research protocol received approval from the Smithsonian’s Internal Review Board.
Findings

The Elephants Were the Main Attraction

It should come as no surprise that when elephants were present in the ECC, most visitors focused on them. When elephants were not present, the exhibit elements received much more attention. Some visitors also turned to the displays and interactives after having spent some time observing the elephants, but it was rare for entering visitors to be drawn to the exhibit elements in preference to the elephants.

- In one case, the OP&A study team noted a family that was preoccupied with the interactives while most other visitors were watching the elephants. When queried about this unusual behavior, a family member indicated that they had already seen the elephants outside.

- One interviewee, a mother of three, appreciated that there was something for her family to do even if elephants were not present in the ECC. She reflected that in some of the other animal houses, there was nothing to do when the animals were not there.

Visitors Focus on the Elephants When They Are Present

Levers and Buttons Appealed to Children

The OP&A study team observed children as young as two years old pulling levers and pushing buttons such as the ones on the “What is an Asian Elephant?” elephant cutouts. Although young visitors were highly attracted to these knobs and levers, few read the corresponding text. This was true not only of the youngest children who could not read yet, but also of many older children who may have been able to do so. In other words, for children, this appeared to be predominately a physical activity, rather than an educational one.
• One mother acknowledged that her youngest child, a three-year-old, could not read but still loved touching the elephant displays. She was not concerned that her child could not read the messages.

Visitors Interacting with the “What is an Asian Elephant?” Display

Some Levers Were Heavy and Cumbersome

The study team watched both young and old visitors struggle to lift panels on the “Elephants at the National Zoo” timeline and to pull open panels on the elephant cutouts.

• Opening the lever on the side of the small elephant’s head was tricky for many visitors.

• One visitor complained that the timeline panels were so hard to pull that he got tired and gave up.

• Another visitor believed that children lost interest in the “What is an Asian Elephant?” panels because they were too difficult to pull. (However, he appreciated this, because it allowed him to read the panels without children crowding his space!)

Exhibit Elements Encouraged Visitors to Reflect

Some visitors reflected on their own lives and lives of elephants when using the interactives.

• One interviewee related the dates of the major elephant events on the timeline to major events in her and her daughter’s lives.
• Another mentioned how the “Epic Elephant Stories” reminded her of the heartlessness of elephant poaching.

• Upon examining the display detailing the renovation process and reflecting on his own memories of the old NZP Elephant House, one interviewee marveled at the transformation: “The other building looked like ... a museum piece[.] [The new] building was designed with the elephants in mind.”

• One interviewee who used the photo booth liked the fact that in addition to reminding her of her visit, the photo would remind her to donate.¹

• The scale activity got one family to think about what it would be like to be so big. A visitor commented that her husband asked her, “How would you like to give birth to a 250 pound baby?” She also associated this information with other facts she picked up during her NZP visit: “[My family] just saw the panda, who weighs four ounces at birth, and we were thinking, ‘what happened here with mother nature?’”

Visitors on the Scale

¹ The interviewee also critiqued the photo booth, stating that she “wasn’t aware that there were different background images that you could choose,” and wished there was “a little bit more of a walk-through” of the different options available. She added, “The interface might be a little bit clearer.”
Visitors Generally Liked the “Meet the Elephants” Flipbooks

The “Meet the Elephants” flipbooks provided visitors with interesting information in an attractive, concise way. For some interviewees, the flipbooks conveyed a sense of becoming personally acquainted with the Zoo’s elephants.

- One interviewee noted, “It helped a lot. I had some questions and the answers were all right there.”

- Another noted, “I thought the information was good because it’s brief. If it is too long, people are not going to read. They’ll just walk by.”

- Another visitor loved the design, noting “it’s big, bright, and colorful; so it grabs your attention.”

- Another interviewee agreed the information presented in the flipbook was interesting, but complained that it was still difficult to identify the elephants after reading it.

- One interviewee discussed how he enjoyed learning about the elephants’ life stories and personalities:

  It just personalizes the animal. You’re here and you see [the elephants] out there, and it’s just an elephant. But [with the flipbooks] you can hear what the keepers say and [learn] that it has a personality … it is a being.

“Meet the Elephants” Flip Books
**Visitors Differed on the Age-Appropriateness of Exhibits**

Visitors had differing opinions about whether the written information accompanying the ECC elements was easily comprehensible for children who could read it or have it read to them.

- One interviewee described the information presented in the “Epic Elephant Stories” as “very informative,” but better suited for adults than children. She wished there was more kid-friendly content for her daughter.

- Another mother, however, commented that her seven-year-old daughter was able to understand the information in the “Elephants at the National Zoo” timeline, and that the child found the information “very interesting.”

- Similarly, a visiting 5th grade teacher thought the exhibits would work for her students, and that the information was “very readable, very easy to understand.”

**The Vocalization Interactive Had Issues with Design and Purpose**

The OP&A interviewers spoke with several visitors who used the “Sound Off” elephant vocalizations interactive. As documented by NZP’s own tracking studies, relatively few visitors used this interactive, and the OP&A personnel noticed that many who did were drawn to it only after hearing the sounds, like the “trumpet” noise, when someone else was using it.

**Vocalization Interactive**

![Vocalization Interactive](image)

The interactive also did not appear to work well in a purely mechanical sense. Almost everyone the study team observed started by pushing the mike, which looks like an activation button. For kids who used the interactive, generally with the assistance of an adult, it became a game of making noises and listening to the sounds. This may have engaged them at some level, but—
as in the use of slide panels by children unable or uninterested in reading the resulting text—it appeared unlikely that much learning was taking place.

The interactive included several activities that visitors were either unaware of, found too complicated, or had a hard time operating. For example, some visitors found it frustrating that they had to touch the arrow symbol to get a button to work, rather than just touching the button itself. Visitors generally did not notice the instructions and information screens to the right, but tended to focus on the spectrogram screen, which in itself was difficult for visitors to comprehend. Similarly, when they played an elephant sound, they usually did not notice the explanation on the right-hand screen.

- A group of three teens stopped because of the colors and the sound. They did not, however, understand how to compare their voices to the elephant sounds.

- A mother with two young children stopped because she thought she would hear sounds, but she could not get it to work. The kids could not read anything, but kept pushing the mike. The mother commented that she found the science confusing, and was not sure what to do with it. She thought it was better suited for older people than children—but at the same time, wondered if older people would be willing to roar into the mike. She wanted more variations of sound.

- One college student seemed to have no problem operating the controls; he found the interactive to be “pretty cool—how you can change the speed, that was pretty cool.”

Overall, the purpose of the interactive was unclear—specifically, whether it was about the science of sound, about how elephants communicate, or something else. Visitors were not sure what the voice comparison between visitors and elephants was supposed to convey, and did not understand the rationale for speeding up and slowing down the sounds.

**Visitors Connected to Non-Text Learning Elements**

As noted above, young visitors rarely read (and often could not read) the written information accompanying the elements, and many older visitors did not take the time to read texts either. One visitor quipped, “If there’s too much text, I just walk by.” However, several visitors discussed their engagement with non-textual elements.

- One visitor noted, “I’m a visual person. I don’t read as much. It doesn’t capture my interest. But a picture is worth a thousand words.”
A visiting mother with boys ages two and five stated, “I think it’s easier [to explain to children] things they can measure, or sounds, or videos and visuals.” When asked whether she had read the information on the elephant cutouts to her children, she replied, “No, they are very visual; so I’m trying to explain something more concrete.” At this point, she indicated the “In and Out” food and waste display.

Another visitor shared, light-heartedly, that her children had a visceral reaction to the “In and Out” display: “They got grossed out by the poo.”

Another commented that the food and dung on display resonated with him more than any of the information he had read on the “What is an Asian Elephant?” interactive.

Yet another added that larger pictures would have enhanced the “Elephants at the National Zoo” timeline.

Visitors Enjoyed Immediate Feedback

The strength-test tire interactive, part of the “Extreme Elephants” display, was popular with visitors. It provided the gratification of what one visitor called “instant feedback.” Visitors could push the tire to test their power and compare their strength to that of elephants and fellow humans.

“Extreme Elephants” Strength Test

---

• One family of visitors was observed competing to see which family member was the strongest. In reflecting on this competition, the mother suggested displaying the “strongest visitors of the day” on an electronic screen above the tire. (When asked about the overhead video of the elephant playing with the tire, she said that she hadn’t noticed it because her family was “drawn in by the super strength component.”)

“Extreme Elephants Weigh In” was another interactive that gave visitors immediate feedback, in this case by displaying their weight. While many visitors used the scale individually, some used it as a group.

• One young boy gathered his family members, explaining to them that they “all had to go on together”—presumably to have any chance of measuring up to the weight of a younger elephant.

• One interviewee explained that her family was “trying to see how close we can get to [the weight of] a baby elephant.” When asked if she learned anything at the ECC, the interviewee cited, “the weight of a one-year-old elephant—650 pounds.”

• Interviewees who used the scale were intrigued and amazed by the gap between their own mass and that of an elephant. One interviewee suggested, “I think if it asked you first, ‘how many people do you need to get on that scale [to equal the weight of an elephant]?’ people would be surprised. I don’t think people would be able to estimate very well.”

• Several interviewees were able to recall the weight of an elephant several moments after they used the scale, suggesting that the presentation of an elephant’s size through this activity made an impression.

Suggestions

Several of the findings above suggest the value of presenting content and messages in multi-sensorial ways, and conveying essential information in ways that are immediately understandable. Text should be used strategically, and important learning concepts should be reinforced through non-textual channels—visual, tactile, participatory, aural, and so on.
Some of the displays and interactives in the ECC follow this model to good effect. For example, the life-size food and dung replicas in the “In and Out” display give visitors an experiential grasp of elephants’ enormous dietary needs. The “Weigh In” scale does something similar with respect to the animals’ massive size.

“In and Out” Display

By contrast, the “What is an Asian Elephant?” elephant cutouts appear to come up somewhat short in terms of these presentational ideals. To be sure, there are tactile elements on the cutouts (tassels on the tail and a swath of imitation elephant skin), as well as a participatory dimension (the movable information panels themselves). However, much of the potential learning payoff is lost, particularly on children, because it relies exclusively on reading text beneath the panels.

Ideally, interactive elements with educational objectives would function like pop-up books in which visitors pull a handle or swing a flap to access a “reveal” that is both immediate (an image, rather than text to read) and multi-sensorial. For example, a page may show a bird’s nest with eggs, and pulling a flap reveals the same nest with cracked shells and hatched chicks.

---

3 In the case of a pop-up book, pulling a flap or opening a fold-out spread is the tactile part, while the resulting image may be tactile as well (three-dimensional). In an exhibit, the reveal could also include sound, touchable models, and other non-text elements.
The study team noted that far more visitors were interested in photographic souvenirs of their visit to the ECC than actually used the photo booth. Many were observed taking pictures of themselves in front of the elephants, a tendency that could be further encouraged to an educational end. For example, the ECC team could experiment with setting up photography-friendly zones that, like the booth, give visitors a message along with their photographic mementos—say, a photo beside the amount of food that an elephant eats that could be shared via social media with the caption, “An elephant can eat 150 pounds of food a day!”

In the interviews, the study team also noticed that visitors tended to objectify the elephants, describing them in terms of “it” rather than “he” or “she,” and suggesting that they tended to lump the elephants together—perhaps as cool animals in general, but with little individual personality. However, the flip book was successful in providing some visitors with a sense of the elephants’ individual life stories and temperaments. The study team would suggest the ECC could do more to evoke robust emotional responses from visitors by communicating additional details about the intelligence, curiosity, and sociability of the Zoo’s own elephants, and highlighting the depth and individuality of their personalities. Details about the seven elephants could be incorporated into the existing interactives; for example, the “Weigh In” text could include the actual weights of the different elephants, or could show how Kandula has grown over his years at the Zoo. Cultivating visitors’ compassion for the individual elephants would reinforce the Zoo’s conservation messages by potentially turning visitors into advocates for the welfare of elephants, both in and outside the Zoo.

Acknowledgments

The Office of Policy and Analysis would like to thank Cheryl Braunstein of the National Zoo’s Exhibits Department, who served as the main contact on this project, and her colleagues Scott Posey and John Davis (also of the Exhibits Department) for their active engagement with this project and their genuine interest in understanding the experiences of the Zoo’s visitors.

James Smith steered the study as the Principal Investigator of OP&A’s assessment of the Elephant Community Center. Claire Eckert managed the data collection, conducted interviews, analyzed transcripts, summarized the findings, and drafted the report. A capable team supported her: Kelly Richmond, Syeda Ahmad, Jarred Small, Alexa Sonnenfeld, and Whitney Watriss observed and interviewed visitors. Jarred and Alexa, in particular, played major roles in conducting interviews, analyzing the transcripts, and writing sections of the report. OP&A thanks them all for their hard work and contribution to the study.
OP&A Core Team Members

James Smith, Senior Social Science Analyst
Claire Eckert, Program Analyst
Kelly Richmond, Contractor
Syeda Ahmad, Summer Intern, University of Calgary
Jarred Small, Summer Intern, Ohio State University
Alexa Sonnenfeld, Summer Intern, Dartmouth College