

Communicating Behind-the-Scenes Research to Museum Visitors: Evaluations of Temporary Exhibitions at The Field Museum

Eric D. Gyllenhaal, Ph.D., The Field Museum, Chicago, IL

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Abstract

This paper summarizes evaluations of two temporary exhibitions that attempted to communicate with museum visitors about the Field Museum's research and collections missions. *Building Collections for Snail Research* consisted of four glass cases mounted in a visitor lounge. Tracking studies revealed that only 10% of visitors to the lounge stopped at the exhibition. In response to open-ended questions, about half of respondents who had stopped at the exhibition discussed one or more of the collections and research messages, and many of these respondents seemed to personally identify with the volunteers or donors portrayed in the exhibit. The *Curator's Office* was an in-house component about a museum scientist added to the large traveling exhibition, *Spiders!* Visitors to the *Office* paid as much attention to the exhibits about collecting, extracting, and sorting spiders as they did to the adjacent displays of live spiders; however, they paid less attention to the exhibits on spider collections and research. Most respondents understood that the person portrayed in the exhibition was a scientist who captured and studied spiders; however, only about a third of the respondents realized that she was employed by the Field Museum.

Introduction

The Field Museum is a large research institution which focuses on the study and exhibition of "the Earth and its peoples." As such, it employs a large staff of research scientists who conduct studies covering a wide range of topics and issues. Many of the museum's recent exhibitions attempt to communicate with museum visitors about museum scientists, their research, and the collections that support their work. This paper describes evaluation studies of two of these exhibitions, conducted during the summer of 1996 as part of a continuing effort to assess and improve how we communicate with the public about the research functions of the Field Museum.

Building Collections for Snail Research was a small exhibition mounted in a visitor lounge. The lounge was an open space on the mezzanine above the main hall, and it also served as a major passageway between exhibitions and as access to restrooms. The exhibition included three glass-fronted wall cases and one floor case. Each case focused on a person or group of people who had helped the museum build its research collections. These people included (1) an amateur snail collector who donated his very extensive, scientifically collected specimens to the Field Museum; (2) non-professional volunteers who helped catalogue and care for the museum's snail collections; (3) book

collectors who donated rare books about mollusks to the museum's library; and (4) a philanthropist who funded a research expedition earlier in this century. Each case included labels and photographs telling the stories of the people, as well as snail specimens and related artifacts that supported the theme of the case.

The *Curator's Office*, a 1000-square foot exhibition about a Field Museum spider scientist, was added to the much larger *Spiders!* exhibition, from the Smithsonian Institution Traveling Exhibit Service. The *Curator's Office* was located about two-thirds of the way through the larger *Spiders!* exhibition; visitors might encounter anywhere from 50 to 70 exhibit components before entering the *Curator's Office* area (depending on what choices they made), and there were 20 exhibit components after the *Office*. The *Office* itself included about 20 major components. The *Curator's Office* exhibition stepped visitors through a sequence of stages in a research project about spiders, including collecting, extracting, preserving, sorting, identifying, and storing spider specimens; researching an aspect of spider biology; and publishing the results. Each research stage was exhibited within a recreated environment, including a field site, a spider preparation lab, a collections storage area, and a spider research lab. Large photo cutouts of the curator of the *Spiders!* exhibition, Petra Sierwald, helped guide visitors through the *Curator's Office*. Large label panels using Petra's voice described the research activities that took place within each environment. Live and preserved spider specimens, interactive exhibits, and field, laboratory, and collections equipment were incorporated into the environments.

Background

This evaluation study was an outgrowth of the *Exploration Zone* project at the Field Museum. The *Exploration Zone* was originally envisioned as a large-scale, multi-million-dollar permanent exhibition about the Field Museum's research and collections missions. During its pre-planning phase, the *Exploration Zone* project team commissioned a front end evaluation study that has helped us realize where Field Museum visitors are starting from in their understandings about behind-the-scenes at the museum (Perry & Forland, 1995). Perry and Forland discovered, among other things, that:

- Visitors thought of behind-the-scenes primarily in terms of exhibits rather than scientific research.
- Visitors didn't think very much or very accurately about the scientific research that goes on at the Field Museum, and weren't very curious about it on their own.
- Visitors didn't understand that the Field Museum employs a large staff of full-time scientists.
- Visitors speculated that any scientists found behind-the-scenes might be visiting from colleges or universities, and probably were consulting on exhibits
- Visitors vastly underestimated the size of the collections.
- Visitors thought about the collections primarily in terms of exhibition use, rather than research.

Based on these front-end findings, we developed a set of basic goals for communicating with museum visitors. We wanted to help visitors understand that:

- There are scientists working behind the scenes at the Field Museum.
- These scientists are employed by the museum to do basic, scientific research.
- There are huge collections behind the scenes at the Field Museum.
- These behind-the-scenes collections are used primarily for research by Field Museum and other scientists.

Simultaneous with this front-end evaluation study, the *Exploration Zone* team began a series of small-scale evaluations of existing Field Museum exhibitions that attempted to inform visitors about the museum's research and collections. These studies started in 1995 with the general research question, "What aspects of this exhibition could serve as a useful model for the *Exploration Zone*?" Among other exhibitions, we looked at earlier incarnations of the visitor lounge exhibit and the *Curator's Office* discussed in this report. Although the *Exploration Zone* project has officially been on hiatus since January, 1996, the basic goals of the project are still important to the Field Museum. The project team received support for continuing evaluation studies through the summer of 1996 in order to examine the public's response to the exhibitions described in this report. Because we were able to compare two iterations of the same basic exhibitions, we were able to expand the research question to ask, "Do some exhibit approaches appear to do a better job at achieving the *Exploration Zone*'s goals?"

It is important to note that these studies were not summative evaluations in the usual sense of the term. We studied the two temporary exhibitions in light of the goals developed during the *Exploration Zone* project, listed above. Although these goals were shared, to a large extent, by both temporary exhibitions, each exhibition also had a broader set of goals related to its specific content. We largely ignored these content-specific goals in our studies. Instead, we focused on learning about *visitors* by understanding the ways in which they responded to these varied attempts to communicate with them about the research and collections missions of the Field Museum.

Methods

Both studies utilized tracking and timing of randomly selected adult visitors and exit interviews with a separate sample of randomly selected adult visitors.

Tracking and timing involved following randomly selected adult visitors from the time they entered a pre-determined exhibition area until they left the area. The evaluators recorded where visitors stopped (both feet motionless on the floor for at least a second), what they looked at, how they interacted with others in their group, and how long they stayed in the exhibition. We tracked 81 visitors through *Snails* and 53 through *Spiders!* In addition to the tracking data collected by our team, for the *Spiders!* exhibition we also had access to tracking and timing data collected by Beverly Serrell and Associates as part of a nationwide study of visitors' use of time in museum exhibitions (Serrell, 1996).

Face-to-face exit interviews were conducted with randomly selected of adult visitors as they left the pre-determined exhibit area. Because the vast majority of visitors walked through the *Snails* exhibition area without stopping, we only interviewed visitors who were observed to stop and look at one or more exhibit cases. Refusal rates were 26% for the *Snails* exhibition and 18% for *Spiders!* In all, we conducted 50 interviews at the *Snails* exhibition and 55 interviews in the *Spiders!* exhibition.

The interviews were structured and used two different questioning strategies. The interviews began with **open-ended** questions. When necessary, follow-up questions were asked to elicit more detailed responses. Examples of open-ended questions included:

- What were you thinking about when you were looking at this part of the exhibit?
- What was one thing that you found out in this part of the exhibit that you didn't know before?

We hoped that these questions would get at visitor's top-of-mind understandings and reactions to the exhibit, without revealing what *we* were most interested in knowing about (which might pre-dispose visitors to respond in certain ways).

The interviews ended with questions that were **directed** at specific elements and messages in the exhibition. Examples of directed questions included:

- Did you notice the big cutout photos of the woman in the sweatshirt? [in the *Curator's Office* exhibition]
- [If “yes”], who do you think she was?

There were both advantages and disadvantages to the directed style of questioning. On the one hand, some visitors who understood the themes of the exhibition may not have been inspired to talk about their understandings by the open-ended questions. On the other hand, the directed questions sometimes inspired visitors to think and speculate about aspects of the exhibit that they had not thought about while they were in the exhibition. It was obvious that some visitors were guessing their answers to the directed questions, sometimes rather wildly. When these visitors guessed correctly, it seemed as if they had developed a fairly complete understanding of the theme of the exhibition. However, that understanding might not have existed before the question was asked.

The interviewer recorded visitors' answers by hand and conducted a preliminary analysis of visitors' responses on the spot, before soliciting the next interview. To further analyze the interview data, we constructed knowledge hierarchies of visitors' understanding of such concepts as the themes of the exhibitions, the setting of the *Curator's Office* in *Spiders!*, and the research and collections missions of the Field Museum (Perry, 1993). A knowledge hierarchy presents a range of visitor understandings about a certain topic, but it is more than just the range of things that visitors know about the topic, and it is more than just the range of things that exhibit developers hoped to communicate. A knowledge hierarchy emerges as the data, in this case visitor interviews, are analyzed *within the context* of the conceptual information that is included in the exhibition. A knowledge hierarchy usually describes six or seven levels of understanding which characterize the full range of how visitors think about a topic, generally by increasing levels of sophistication. It represents, in a manageable form, virtually all visitors' understandings about that aspect of the topic (Perry, 1993). As such, these hierarchies helped us appreciate the broad range of visitor understandings that we found during interviews. A detailed hierarchy is included in the results section on the *Curator's Office*.

Results

Building Collections for Snail Research

The tracking and timing study revealed that most visitors were using the lounge as a hallway and rest stop rather than as an exhibition space. Only 10% of visitors were observed to stop at any of the cases, and most of the visitors who stopped only viewed one or two of the four cases. Some of those who stopped at *Snails* were apparently occupying their time while others in their group used the adjacent restrooms.

Of those visitors who did stop in the exhibition, about half of the respondents spoke about one or more of the collections and research themes of the exhibition. These visitors often discussed their respect for

or identification with the donors or volunteers portrayed in the exhibit. Several respondents said they were amazed that amateurs could still make significant contributions to science.

The other half of the respondents talked *only* about the shell specimens or the books in the cases, and never mentioned the research and collections-related themes of the exhibition. These visitors often found personal relevance in the shells, talking about their personal shell collections, purchases of artifacts made from shells, interest in musical instruments, observations of shells near their homes or on vacations, or childhood memories about shells.

When visitors were asked what new things they had found out in the exhibition, about a quarter of the respondents mentioned something related to the collections and research themes, but only one visitor said he found out for the first time that research is done behind-the-scenes at the Field Museum. Most other respondents said they had found out details about the names and geographic distributions of shells, or about their uses by other cultures.

Curator's Office

During tracking and timing, 85% of visitors stopped and attended to at least one of the exhibit elements in the *Curator's Office*. Visitors paid as much attention to the exhibits about collecting, extracting, and sorting spiders as they did to the adjacent displays of live spiders. However, their attention waned as they encountered the later sections on the museum's spider collections and research. Four out of five visitors stopped at least once in the first section of the *Curator's Office*, about collecting spiders, but only half stopped in the final sections about collections and research.

The tracking and timing data collected for the entire *Spiders!* exhibition helped us understand how visitors rationed their attention to the many elements within the overall exhibition (Serrell, 1996). Although there was the usual decline in visitors' attention from the beginning to the end of the *Spiders!* exhibition, visitors' use of the office was comparable to their use of other *Spiders!* components immediately before the *Office*. On average, visitors stopped at about a third of the exhibit components in the area just before the *Office*, and they stopped at about a third of the components within the *Office*. There was a rather precipitous decline in attention to the later parts of the *Spiders!* exhibition. Visitors stopped at an average of only one in five components in the last area of the *Spiders!* exhibition, immediately after the *Curator's Office*.

During exit interviews, most visitors seemed to have understood at least some of the collecting and research themes of the *Office* exhibition. In response to the open-ended questions, four out of five respondents discussed at least part of the collecting-through-publishing sequence of spiders research. Most respondents spoke about the earlier parts of the sequence (collecting, extracting, and preserving spiders), but relatively few discussed the storage of spider specimens or the types of research conducted in the museum. A few respondents told us that the spiders had been collected solely for inclusion in this particular exhibition.

Many visitors didn't seem to realize that the laboratory work and research portrayed in the exhibit took place at the Field Museum. When asked specifically about the setting of the exhibition, two-thirds of the respondents said that it was some kind of recreated workspace, but some visitors were rather vague

about what kind of work took place there. About half of the respondents specifically stated that the exhibition was a recreation of a spiders research lab, but less than a quarter said specifically that the recreated lab a behind-the-scenes look at the Field Museum.

The large photo cutouts of the spider's curator apparently made an impression on visitors. Three-quarters of respondents said they remembered seeing the photos of the woman, and almost all of these respondents understood that she captured and studied spiders. One in five visitors specifically called her a curator, and comparable numbers called her a researcher or a scientist. Several respondents remembered Petra's name, and one respondent jokingly referred to her as a "spider poster child." However, when asked directed questions about where this woman was employed, only half of these visitors said that she worked for the Field Museum (slightly more than a third of the total sample). About one in five visitors guessed that she probably worked for a college or university, and smaller numbers speculated that she might work for a government lab or be paid to collect spiders through grants or contracts.

The exhibition's messages about the use of collections seemed to reach about half of the audience. When asked about what happened to the spiders after they are stored at the museum, about half of the respondents mentioned some sort of continuing research or study, and a quarter mentioned that they might be used by other scientists or museums. Another quarter of the respondents *only* mentioned exhibit or educational uses for the preserved spiders. Several respondents mentioned medical uses (especially venom extraction), and several others mentioned feeding the spiders to other animals. One in five respondents said they didn't know of any ways in which the preserved spiders might be used.

When visitors were asked if they had found out something they hadn't known before, three-quarters of the respondents said yes. The most common responses were about collecting, extracting, and preserving spiders. A third of the respondents *only* mentioned finding out something about the collection or preservation of spiders, and one in five specifically mentioned the large funnels used to extract spiders from soil and leaf litter. One in five respondents mentioned finding out something about the research or study of spiders, and only two respondents said specifically that they had found out that "spiderologists" work at the Field Museum.

To summarize all this data, we constructed a knowledge hierarchy for the *Curator's Office* that included eight levels of visitors' understandings about the content of the exhibition. These levels were organized by increasing levels of sophistication. Note that, on the four lowest levels, visitors demonstrated little or no understanding of the stated purpose of the *Curator's Office*.

Level	Characteristics of Visitors at that Level
0	These visitors didn't know much about spiders, and they didn't care to learn more. (They were often being dragged through the exhibition by other members of their group.)
1	These visitors didn't know much about spiders, but they were interested in learning more.
2	These visitors knew some things about spiders, but they had incomplete understandings, or some of what they knew was incorrect.
3	These visitors knew quite a bit about spiders -- they had a pretty good idea about how spiders live their lives, and how spiders fit into the worlds of nature and humans. But they hadn't recognized the collections and research themes of the <i>Curator's Office</i> .
4	These visitors knew about spiders in general, and they also knew how the spiders that were on display in this exhibition had been captured. However, their knowledge didn't go much beyond the techniques used to capture spiders in the field.
5	These visitors knew that the scientists who caught spiders brought them back to labs where they separated them, preserved them, and categorized them. However, they didn't know much about the later stages of research, and they don't know that the labs are at the Field Museum.
6	These visitors knew that the spider labs were at the Field Museum, and that the scientists who caught and categorized spiders worked there, behind the scenes. They also realized that the museum stored at least some of the spiders for use in later exhibits and for educational programs, but they did not understand that these collections mostly were used for research.
7	These visitors knew that the scientists who caught and stored spiders used them mainly for research. They also knew that the museum's behind-the-scenes collections were very large and used mainly for scientific research.

We talked with only a few visitors who seemed to be at level zero or one in the hierarchy. Almost a quarter of our respondents seemed to be at level three or four. Almost half seemed to be at level five in the hierarchy. About a quarter seemed to be have reached level six or seven.

Discussion and Conclusions

General lessons

Although the museum built these exhibitions, at least in part, to communicate with visitors about the research and collections functions of the Field Museum, many visitors didn't appear to recognize these aspects of the exhibitions. Given the perspective of the *Exploration Zone's* front-end evaluation

(Perry & Forland, 1995), perhaps it's not surprising that many visitors failed to notice these collections and research themes. Several features of these evaluation results reverberate with findings from the *Exploration Zone* front end study, mentioned in the Background section at the beginning of this report (and repeated in italics here). Note, however, that the picture is not completely bleak; many other visitors did respond to at least some of the collections and research themes.

- *Visitors didn't think very much or very accurately about the scientific research that goes on at the Field Museum, and weren't very curious about it on their own.* Although most visitors to the *Curator's Office* recognized at least some of the collecting and research themes of this exhibition, only a quarter of them recognized that these activities were taking place behind-the-scenes at the Field Museum. However, most visitors did stop and attend to exhibit components in the *Curator's Office*. They were open to the experience, despite the fact that they probably didn't walk in the door curious about the museum's research program.
- *Visitors didn't understand that the Field Museum employs a large staff of full-time scientists.* Even when visitors to the *Curator's Office* recognized that a spider scientist was being portrayed in the exhibition, half of them did *not* realize that she was employed by the Field Museum.
- *Visitors speculated that any scientists found behind-the-scenes might be visiting from colleges or universities, and probably were consulting on exhibits.* *Curator's Office* visitors who did not realize where Petra was employed often speculated that she worked for a college or university.

The overall lesson seems to be that it's difficult, but not impossible, to get visitors thinking about behind-the-scenes collections and research. Visitors may not be naturally curious about these museum activities -- in part because they have no idea that they are actually happening. However, once visitors are exposed to these messages, a fairly large percentage of the audience seems to be open to learning about research and related collections.

Lessons from *Building Collections for Snail Research* and other lounge exhibits

Building Collections for Snail Research provided evidence that a visitor lounge exhibition can successfully communicate about the museum's research mission to about half of those visitors who stop and view the exhibition. Unfortunately, only a small percentage of the potential audience stopped and paid attention to *Snails*. It's interesting that many of those who got the messages about research and collections also expressed some sort of personal connection with the people portrayed in the exhibition. Those visitors who didn't get the research messages in *Building Collections for Snail Research* at least managed to find some personal meaning in the specimens themselves.

During the earlier stages of the *Exploration Zone* project, we did tracking and timing studies in two other exhibitions mounted in the same visitor lounge as the *Snails* exhibition (one exhibition on the broad range of museum-sponsored research in Madagascar and a second on a collection of trilobites donated to the museum). Typically, only 5 to 15% of visitors stopped at any individual case in these exhibitions. The only exhibit case that attracted more visitors contained a study skin of a large eagle, which attracted a third of the visitors whom we tracked. However, interviews revealed that visitors who stopped at this case were focusing solely on the study skin and its origin, rather than on the accompanying messages about collections and research. Large and flashy specimens can inspire visitors to stop at an exhibition, but they apparently didn't help achieve the exhibition goals.

Interviews with visitors who stopped at the Madagascar exhibition indicated that visitors were focusing almost entirely on the specimens in the cases and where they came from, rather than on the research discussed at length in the exhibition's labels. Significantly, the Madagascar exhibition focused on research and research results, rather than on the scientists who did the research. By comparison, the people-focused *Snails* exhibition communicated at least some of its collections and research messages to half of those who stopped. It's interesting to note that the Perry and Forland (1995) front end study specifically recommended emphasizing a scientists-as-people approach, so that visitors would be more likely to make a personal connection with the scientist's research.

Lessons from *Curator's Office*

The *Curator's Office* in *Spiders!* was the second incarnation of this in-house exhibit component, and the earlier version was much less successful. The earlier version of the *Curator's Office* was added to a 1995 summer exhibit on bats, and it was also the subject of an evaluation study. Based on tracking and timing data, visitors paid comparable attention to the two versions of the *Curator's Office*. However, during exit interviews, only *one* of 50 respondents in the bats study discussed how Field Museum scientists study bats. In comparison, *one quarter* of the respondents in *Spiders!* showed a comparable level of understanding about Field Museum research on spiders. The two incarnations differed in three major ways: The *Spiders!* office was twice the size of the bats office, was much less densely packed with exhibit elements, and was given the personal touch embodied by the cutouts of Petra Sierwald. Although all of these changes probably contributed to the increased success of the *Spiders!* office, we should once again note that the Perry and Forland (1995) front-end study specifically recommended emphasizing making personal connections to scientists-as-people. Many visitors to *Spiders!* did seem to connect to Petra's images and words.

One final thought about the *Curator's Office*. Reading through the interview forms, it was obvious that many *Spiders!* visitors were, by nature or circumstance, interested in spider scientists and how they do their work; however, it seemed that far fewer visitors were naturally curious about *where* spider scientists work, and who paid their salaries. The interviewers had to really probe to get opinions on those subjects, and even then many respondents seemed to be guessing.

There were many indications that the question, "Where does this scientist work?" didn't occur to most visitors as they walked through the *Curator's Office*. If this is generally true, then communicating to visitors that researchers work *here*, at the Field Museum, will always be a challenge.

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Author Note

Eric D. Gyllenhaal, Exhibits Department (now at Selinda Research Associates).

Eunice Hoshizaki conducted the 1996 interviews with skill and grace, and both Eunice and Sharon Shoji helped with the 1995 evaluations. Beverly Serrell supplied tracking and timing data for the entire *Spiders!* exhibition, which she had collected as part of a nationwide study funded by the National Science Foundation. This project was supported, in part, by the people of the city of Chicago, through the Chicago Park District. Opinions expressed are those of the author and not necessarily those of the funders.

Correspondence concerning this article should be addressed to: Eric D. Gyllenhaal, 1003 South Elmwood, Oak Park, IL 60304 USA. Electronic mail may be send via Internet to EGyllenhaal@SelindaResearch.com .