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Children's Drawings May Make Good Evaluation Tools for Zoo Exhibits

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Abstract

First grade children's drawings of new landscape immersion exhibits at Seattle's Woodland park Zoo were collected over a three year period. During the final year some children were also asked to draw an old exhibit as well. While these children's drawings were made from memory the day after their zoo visit, the drawings were remarkably detailed and explicit. Furthermore they seem to reflect the designers' pre-determined design intent and confirm that subjective messages embedded in the exhibit landscapes were clearly communicated to the children during their visit. These examples suggest children's drawings be used as evaluation tools for other exhibits.

Introduction

It has been estimated that about \$250 million were spent on capital improvements at zoological parks and aquariums in North America in 1986 (Wagner 1987). A significant amount of this money is spent developing animal exhibits. Zoos and aquariums list education in general and wildlife conservation in particular among their highest goals. Yet the present effort spent evaluating the effectiveness of these exhibits is insignificant compared to effort and funds expended building them. Exhibit designers need feedback. As a designer, I am extremely aware that most

design decisions are based either upon tradition, personal or anecdotal experience or intuition. It seems to us that we are making great progress, yet we are hardly disinterested observers. We need more substantive input and we need help. We need to work with qualified evaluators in developing evaluative methodologies sensitive to our interpretive goals and to the types of exhibits being designed.

This paper suggests use of children's drawings to evaluate exhibits. This approach appears to meet these needs, but requires refinement and development by educational/behavioral experts.



Background

For three consecutive years, 1979-81, I lead tours for two first grade classes from Commodore Bainbridge Elementary School to Woodland Park Zoological Gardens in Seattle, WA, USA. The teachers had their students draw pictures of what they had seen at the zoo during the class following the visit. That is, the drawings were done from memory. These drawings were sent to me from the teachers by way of thanks. These tours had been initiated by the teachers who first approached me because my daughter, Alyssa, was in the first class group.

When I first saw the quality of the children's drawings I began to envision their usefulness as possible evaluation tools for judging the effectiveness with which zoo exhibits communicated to the public, at least to the large numbers of children who visit zoos.

During the first two years, I only toured the children through new exhibits I had helped design. This usually took most of the time they had available. During the third year, I asked the teachers to have some of the children do drawings of old exhibits as well to serve as comparisons with the new exhibits. Specifically, some students drew the old orangutan exhibit while others drew the new gorilla exhibit. It appears that one of the teachers asked her students to draw the old orangutan enclosure and do a second drawing showing what a new orangutan exhibit should be like (Figures 13-14).

Designer's Goals for the Exhibits

"An animal cannot be isolated, even conceptually, from the particular environment to which it has become adapted during eons of geologic time without a serious misunderstanding of its true nature."

Mary Akeley
Wilderness Lives Again, 1936

"We need another and a wiser and perhaps a more mystical concept of animals. At present, we see their whole image in distortion. We patronize them for their incompleteness, for their tragic fate of having taken form so far below ourselves. And therein we err, and greatly err. For the animal shall not be measured by man. In a world older and more complete than ours, they move finished and complete, gifted with extension of the senses we have lost or never

attained, living by voices we shall never hear. They are not brethren, they are not underlings; they are other nations, caught with ourselves in the net of life and time, fellow prisoners of the splendor and travail of earth."

Henry Beston
The Outermost House, 1928

The co-workers and I wanted very much for the public to realize, perhaps intuitively, the following messages simply by moving through and looking at the exhibits.

1. These are natural landscapes with natural animals and that the two are interdependent and "belong together" (Akeley 1936).
2. That the animals are beautiful, exciting, complete (in the sense used by Henry Beston 1928) and independent of humankind.
3. Natural landscapes are different from the highly altered urban landscapes found in most cities and most zoological gardens and that these natural landscapes, though they may a look unkempt, are appropriate and in their own way, beautiful and educationally instructive (Coe 1987).
4. That appreciation of strange, wild (appearing) places requires heightened perception and that zoo exhibits of this realistic type may even help heighten people's sensory awareness (Coe 1985).
5. That the messages and images of effective exhibits should be remembered days after the visit.

Descriptions of Exhibits Represented and Children's Drawings

1. **African Plains** are represented by a large flat-topped area with turf slopes surrounded by hidden fencing. Several large trees are maintained within the area. Animals exhibited include giraffe, zebra and antelope. The land form was created to give the impression of a large flat plain cut by dry watercourses (Jones, et al 1976). The exhibit had been completely landscaped when the first student group visited, (1979) but animals had not yet been relocated to the exhibit. Therefore these students were able to actually walk within the animal area, but they had to imagine the animals that would be there.





Figure 1. African Plains Exhibit.



Figure 2: Giraffes had not yet been moved to the exhibit when this student visited it. Nevertheless, the student completely integrated the animal into the landscape of his drawing. Note that some trees are in front of and some trees are behind the animal. Clearly this student got the message that animals and landscape are integrated in this exhibit.



Figure 3. African Plains Exhibit.

The brilliant use of color and the swirling patterns, to me, suggest a high level of arousal (even the day after the visit) and also are suggestive of vital process and flows in a natural system. Also the child remembered evergreen trees in the background. This degree of remembered detail seems surprising.



Figure 4. The African Plains exhibit as remembered by first grade student, Amy. This student visited the exhibit after animals had been released into the area. Note the detail with which the topography and other landscape features were recalled. Amy's hand written note was "This is the African savannah. Two spring-boks are testing their strength. A giraffe is having his lunch. The zebra is with its baby. They walk together all the time. It's a good place for the animals to live. They feel as if they're really at home."



Figure 5. This student visited the exhibit the following year when the animals were in the exhibit. The zebra often moved in procession around the exhibit for the first several months until they became habituated to the exhibit. These two drawings, while simple, are very literal, with nothing extraneous introduced by the student.



2. **The Gorilla Exhibit** (Figure 6) attempts to recreate an early successional landscape where cleared farm plots are reverting to forest in Rio Muni, West Africa. Barriers between the gorillas and the public are largely invisible and both areas are lushly landscaped with tall grasses and herbs, shrubs and trees. Large dead trees and several living trees are provided for the gorillas to climb (Jones, et al 1976).



Figure 7. This student showed a fully colored landscape for the gorilla exhibit. Again it is quite literal with the dead tree on the right and the living tree on the left. At the time of the sketch the dead tree was upright as the drawing shows. It fell to the ground before the photo was taken several years later. I don't recall if the gorillas were actually in the two trees at the time of the visit, but they did have access to them. The pool on the left was actually in the foreground of the exhibit (lower right in the photo).

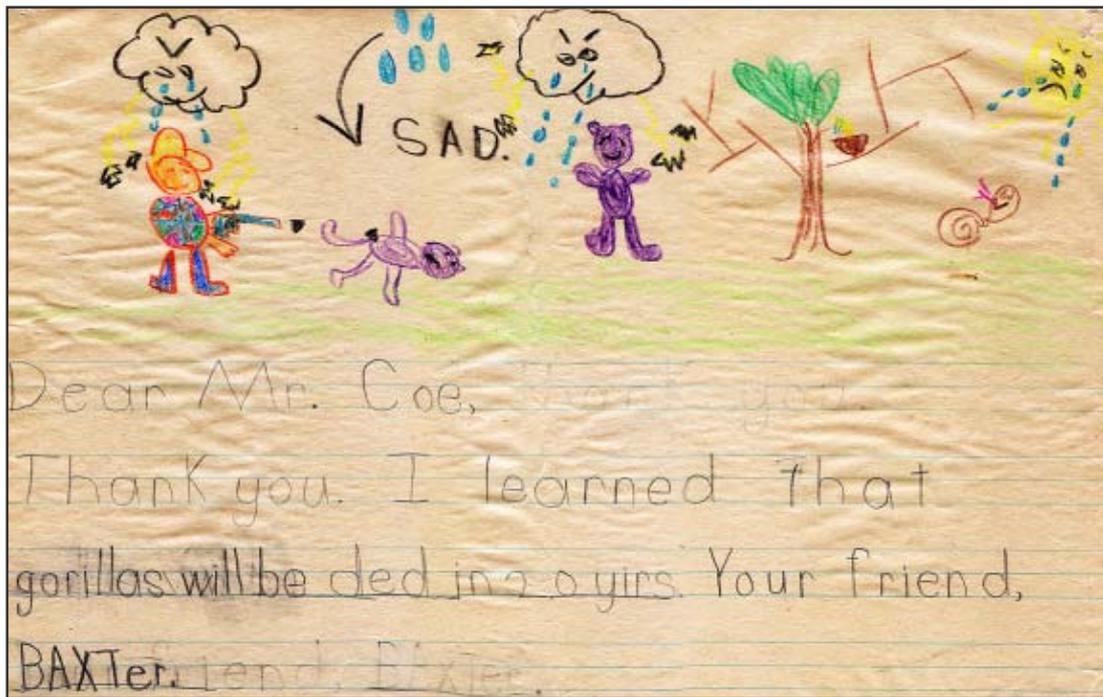


Figure 8. During one of the visits I told the children that gorillas in the wild were threatened with extinction because of poaching. This student apparently personalized this information by showing gorillas being shot.



Figure 9. Gorilla Exhibit.



Figure 10. On a happier note, this child showed her happy friends at the gorilla exhibit, showing a successful integration of zoo apes, landscape and visitors in her memory.

3. **The Orangutan Exhibit** in the old Great Ape House (here shown with a gorilla) was a largely barren room with a concrete floor, painted masonry walls, pipe climbing apparatus and a long, stepped concrete shelf upon which the young orangutans were perched at the time of the visit. They were holding pieces of cardboard boxes on their heads. As mentioned, some students drew the orangutan exhibit both as they remembered seeing it and as they would like it to be.



Figure 11. While this photo shows a gorilla rather than the orangutans the children saw, the exhibit area was very similar. Note the concrete platform and steps remembered by the children. Also note the painted landscape on the back wall was not remembered by the children, although the living landscapes in the newer exhibits were recalled vividly.



Figure 12. This drawing shows the orangutan in its indoor exhibit, sitting on the concrete shelf with cardboard on its head and hay on the floor. Again the elements are rendered literally, but the background, in contrast to the outdoor naturalistic exhibits, totally lacks color and there is no feeling of space. The sad face on the orangutan drawing may show the influence of comments made by me or by one of the teachers, or the child may have believed that the animal would be unhappy in such an enclosure.

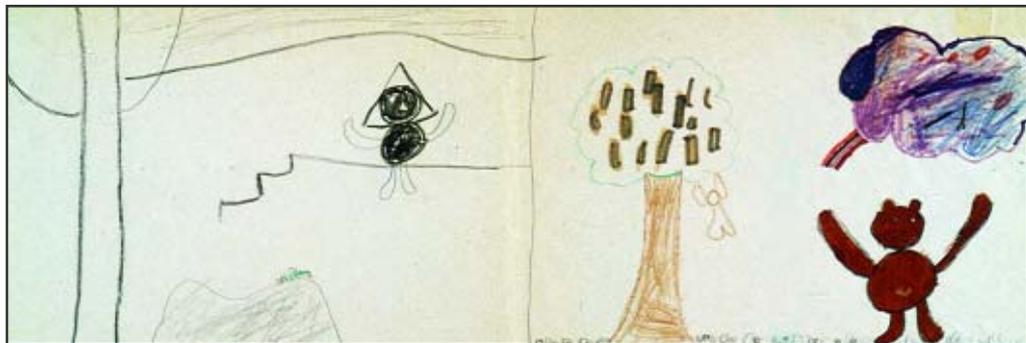


Figure 13



Figure 14

These drawings show orangutans in the students' impressions of what their outdoor exhibits should be like. Note that Figure 13 only uses color for the outdoor exhibit and even includes a rainbow . Figure 14 uses much more color in the outdoor exhibit and shows the outdoor animals interacting with their habitat and smiling while the indoor animal is not interacting with its play structures and frowns.

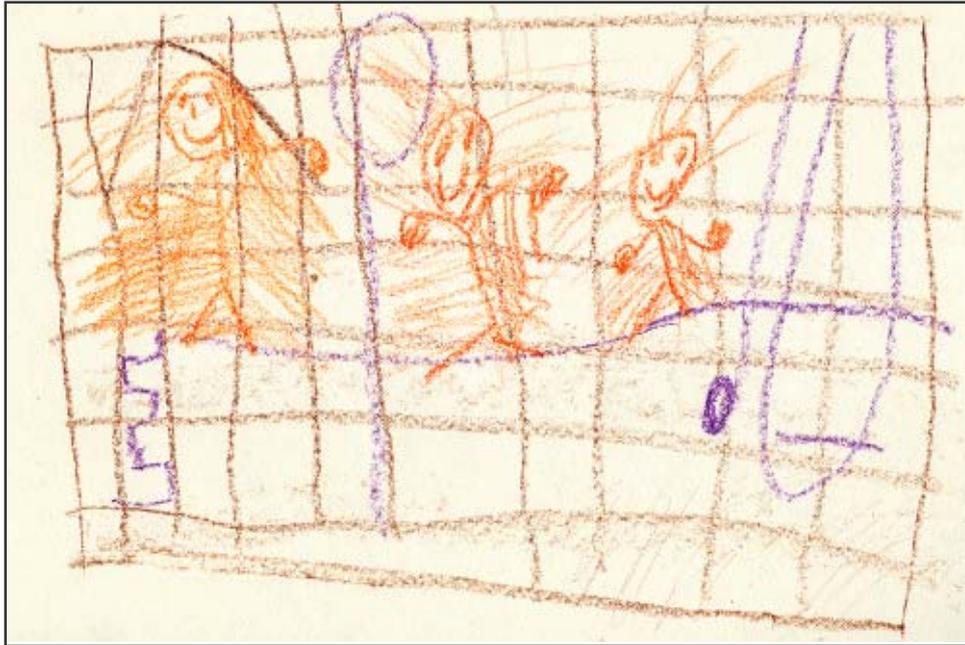


Figure 15. The old orangutan exhibit was viewed through glass. Nevertheless, this student recalled seeing the apes behind bars. Details inside the enclosure, such as the concrete bench and step and climbing ropes are remembered more or less accurately.

Factors Influencing the Children's Observations and Drawings

In leading these school groups I acted as an interpretive guide to the children, giving them insights into the design and construction of the exhibits and impressing upon them the importance of wildlife conservation. These presentations surely influenced the children's attitudes towards the exhibits. However, I did not give any instructions or hints about what or how to draw. The teachers may, however, have influenced the children while they were doing the drawings. However, the teachers too would have to rely on their memories of the exhibits.

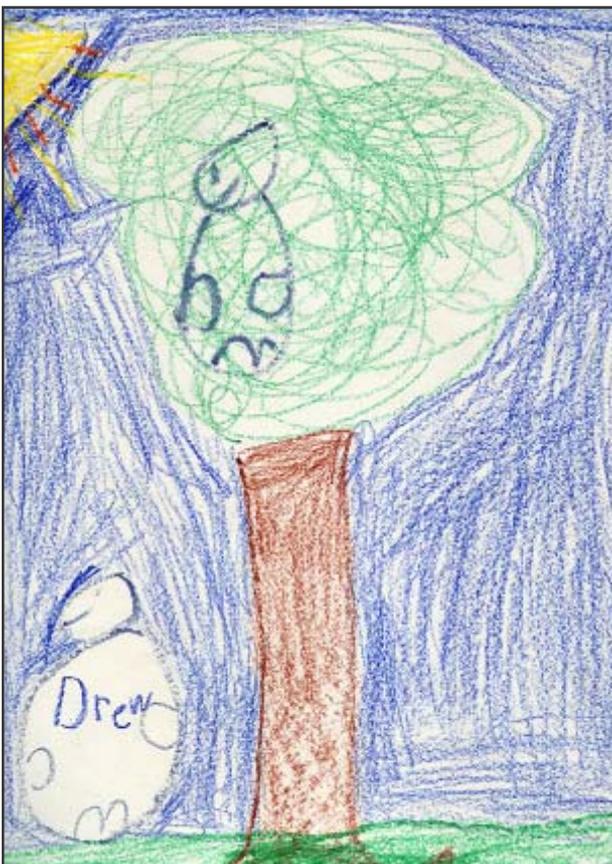


Figure 16

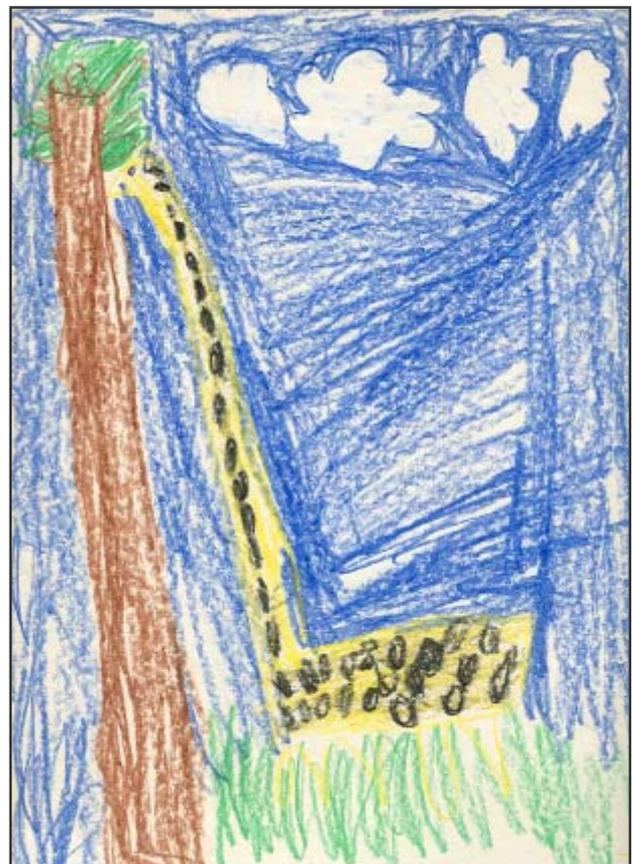


Figure 17

Conclusions

The children's drawings are to me remarkable for the literalness and accuracy with which they recalled and represented the scenes, showing that they must have observed the exhibits with great attention. Since getting and holding the public's attention is the exhibit designers' first responsibility, these exhibits clearly succeeded with these subjects. Also, the exhibits were obviously memorable enough to be recalled in detail by the children the following day.

The students all paid as much attention to rendering the plants as they did in drawing the animals and in many cases show both integrated into the landscape and physically connected. Since the goal of the original exhibit design was to present animals integrated with a simulation of their natural landscape, this message was apparently communicated to the children. In contrast, the more sterile indoor habitat of the orangutans was usually rendered with little color, though again the drawings faithfully represented elements which were present. Therefore, the children did fix sufficient attention on these exhibits to remember them well.

Do these drawings represent a valuable means of evaluating whether zoo exhibits communicate the desired message to young viewers? I believe they do. Are passive naturalistic exhibits enough to convey the zoo's desired message of habitat and wildlife conservation? Certainly not, for the students were undoubtedly influenced by my presentations and also perhaps by their teachers. Also, both the drawings and their interpretation are highly subjective.



Recommendations

Evaluation tools are badly needed to test the effectiveness of zoo exhibits upon the visiting public. Since over 50% of zoo visitors are children (Joslin et al 1986) and since it is widely believed that teaching positive wildlife conservation attitudes to children is essential for the long-term preservation of wilderness, then it is especially important to find evaluative tools for assessing the effects of zoo exhibits upon children. Children's drawings may provide valuable insights in evaluating exhibits. However, proper procedures must be developed to minimize bias, to provide enough examples for a useful sample size and to standardize evaluation techniques. The resulting studies will have to deal with very subjective materials; however, since the exhibits were originally designed to communicate at an emotional level (Coe 1982, 1985), a non-verbal approach such as drawings may be quite appropriate to their evaluation.

I encourage others to consider the possibilities of using children's drawings in exhibit evaluation to help develop and test a suitable methodology and to communicate their findings to each other and to exhibit designers.

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