

Chapter 11

CHILDREN'S DRAWINGS: NEW TOOLS FOR ZOO EXHIBIT EVALUATION

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Abstract

How can we test if the subjective goals of exhibit designers are realized in the completed exhibits? Preliminary analysis of children's drawings of completed exhibits at Woodland Park Zoological Gardens show they have promise as diagnostic tools.

"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." (Akeley, 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." (Beston, 1928)

Introduction

It had been estimated that about \$300 million were spent on capital improvements to exhibits at zoological parks and aquariums in North America in 1987 (Wagner, 1988). 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 either based 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 a possible evaluative tool—children's drawings—which appears to meet these needs, but which requires refinement and development by educational/behavioral experts.

Background

For three consecutive years, 1979-81, I led tours for two first grade classes from Commodore Bainbridge Elementary School to Woodland Park Zoological Gardens in Seattle, Washington. The teachers had their students draw pictures of what they had seen at the zoo, during the class following the visit. 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 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 (see drawings 6, 7, & 8).

The Designer's Goals for the Exhibits

My 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 look unkept, are appropriate and in their own way, beautiful and educationally instructive (Coe, 1982, 1987).
4. That appreciation of strange, wild (appearing) places require 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

1. **African Plains** (drawings 1 & 2), 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 other animals which were not illustrated by the children. The land form was created to give the impression of a large flat plain cut by dry watercourses. (Jones, Coe, & Paulson, 1976). The exhibit had been completely landscaped when the first student group visited in 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.

2. **The Gorilla Exhibit** (drawing 5) 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).

3. **The Orangutan Exhibit** (drawings 3, 4, 6, 7 & 8) in the old Great Ape House was a large barren room with a concrete floor, painted masonry walls, painted 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 saw it and as they would like to see it (drawings 6, 7 & 8).

My Interpretations of the Children's Drawings

Drawing 1. 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.

The brilliant use of color and the swirling patterns, to me, suggest a high level of arousal (even the day after the visit) and an awareness, doubtless unconscious, of vital process and flows in a natural system.

Drawing 2. 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.

Drawings 3 & 4. These show the orangutans in their indoor exhibit, sitting on the concrete shelf with cardboard on their heads. 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 in drawing 3 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.

Drawing 5. 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, as they were in the exhibit. I don't recall if 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.

Drawings 6, 7 & 8 all show orangutans in their indoor enclosure and the students impressions of what their outdoor exhibits should be like. Note that drawing 6 only uses color for the outdoor exhibit and even includes a rainbow there. Drawing 7 has 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. Drawing 8 shows what, to me, appears to be violently aggressive, angry animals in the old enclosure and happy, active animals in a colorful landscape above a brilliant yellow color field.

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. For these reasons the children clearly cannot be considered uninfluenced research subjects.

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 or physically connected. Since the design goal 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, colorless indoor habitat of the orangutans was usually rendered without color, though again the drawings faithfully represented the 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, at least for naturalistic exhibits. Do they provide conclusive proof? 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

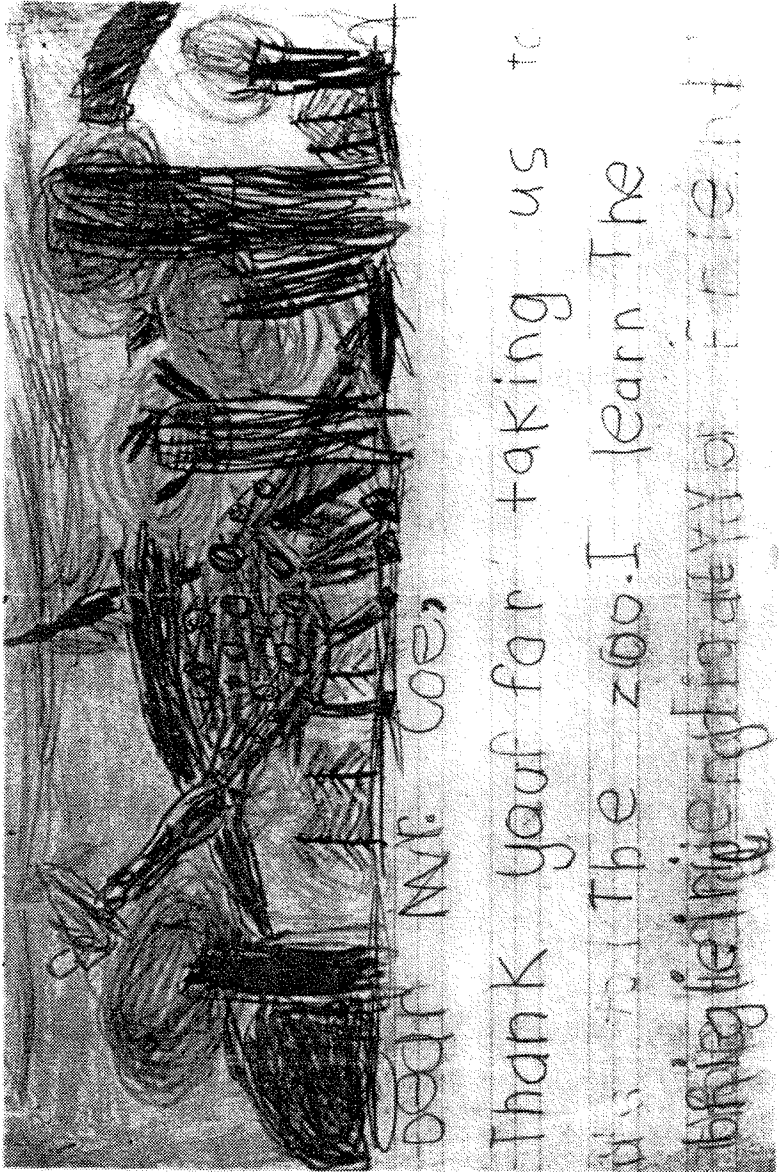
evaluative tools for assessing the effects of zoo exhibits upon children. Children's drawings may provide valuable insights in evaluating exhibits. However, proper procedures must be developed to minimize bias, to provide enough examples for a useful sample size and to standardize evaluation techniques. The resulting studies will have to deal with very subjective materials. However, since the exhibits were originally designed to communicate at a subjective level (Coe, 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.

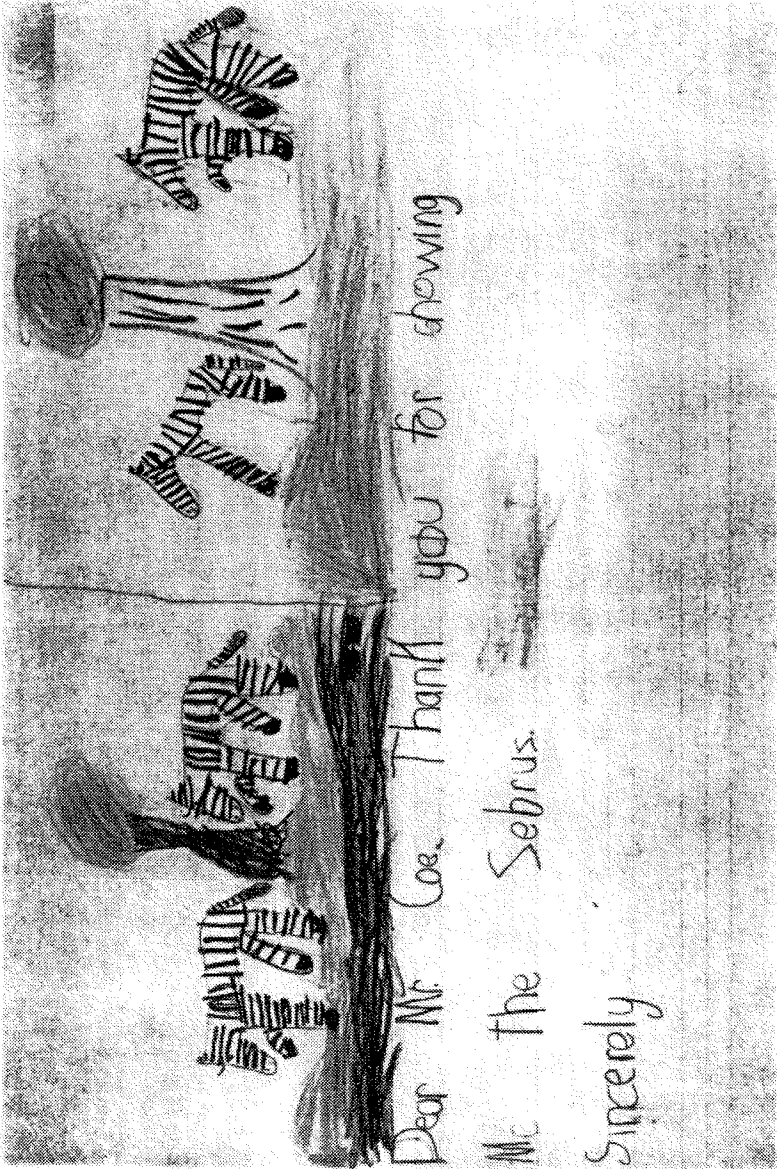
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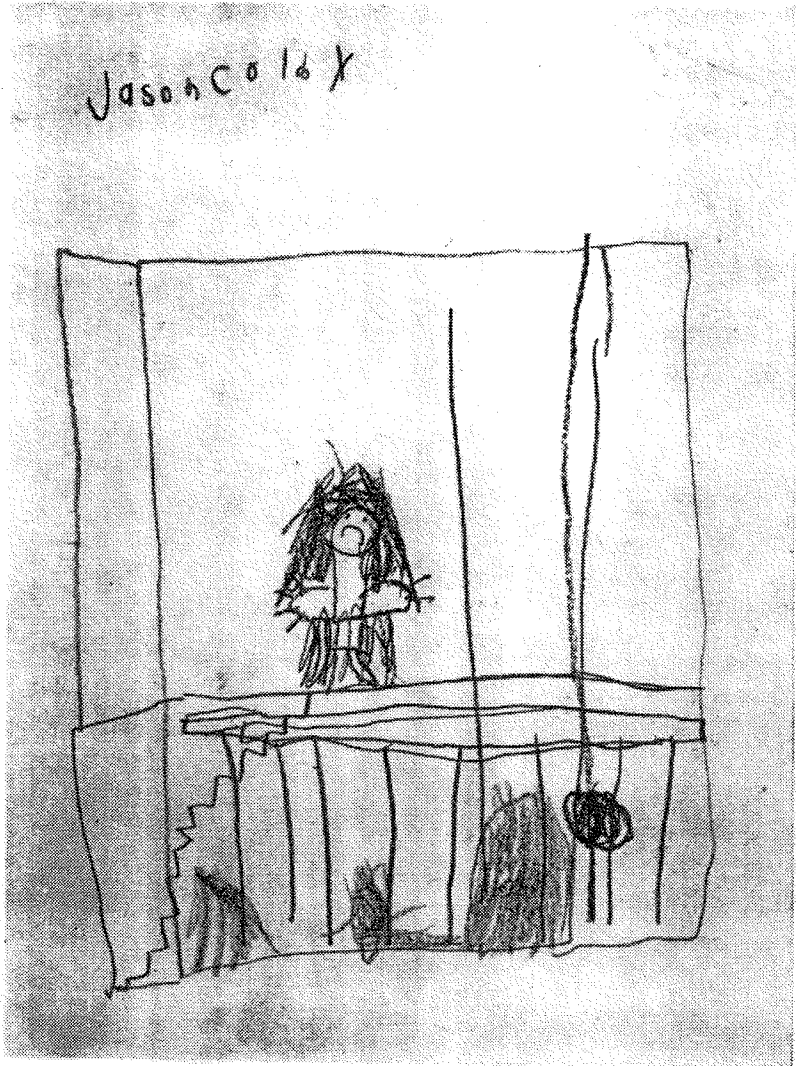
Drawing 1



Drawing 2



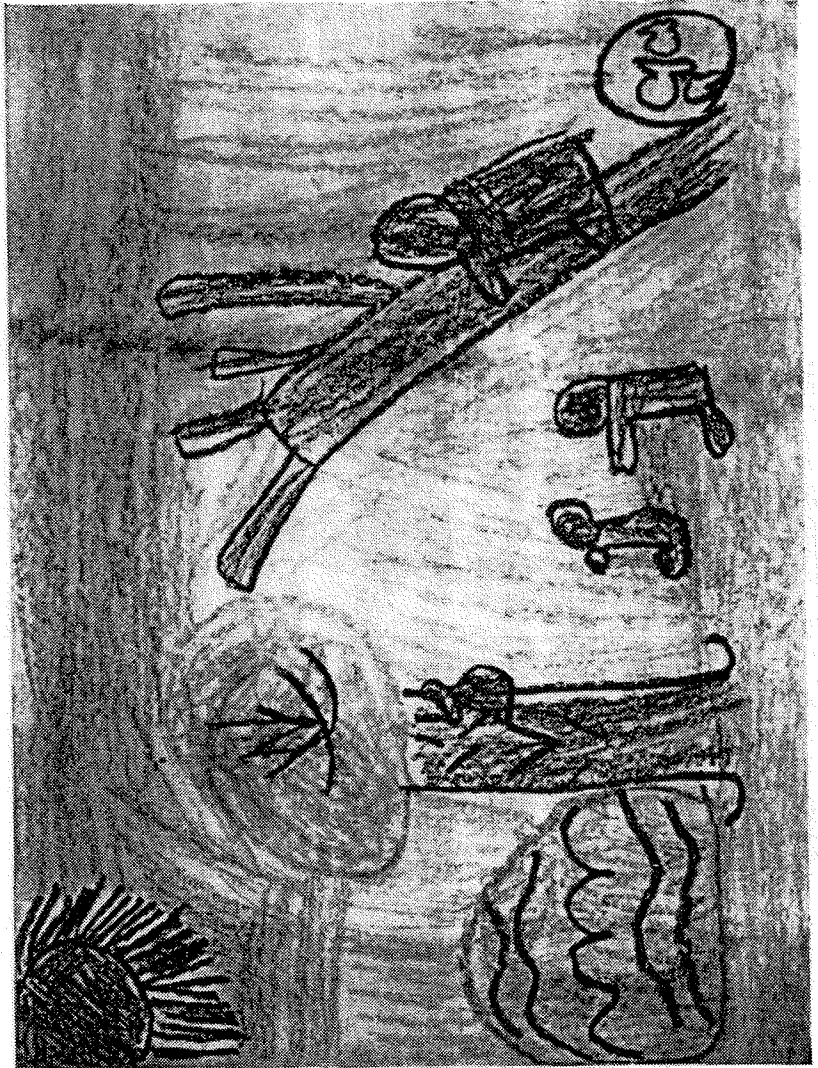
Drawing 3



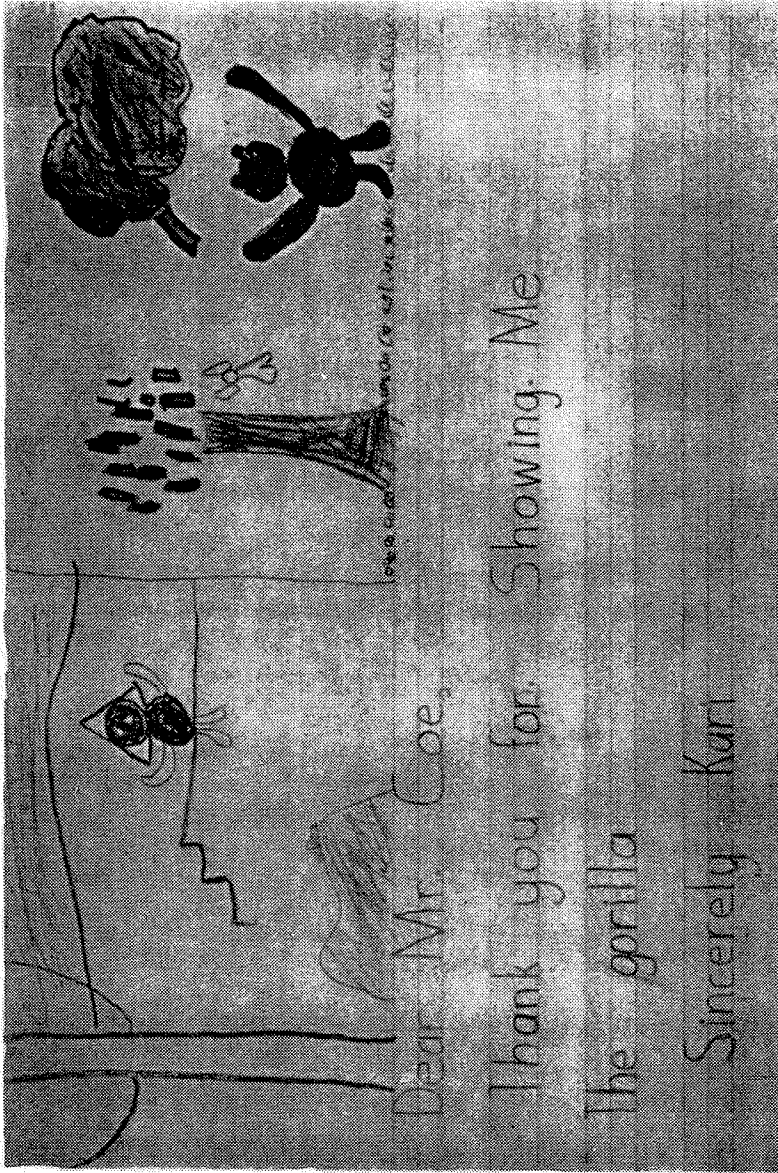
Drawing 4



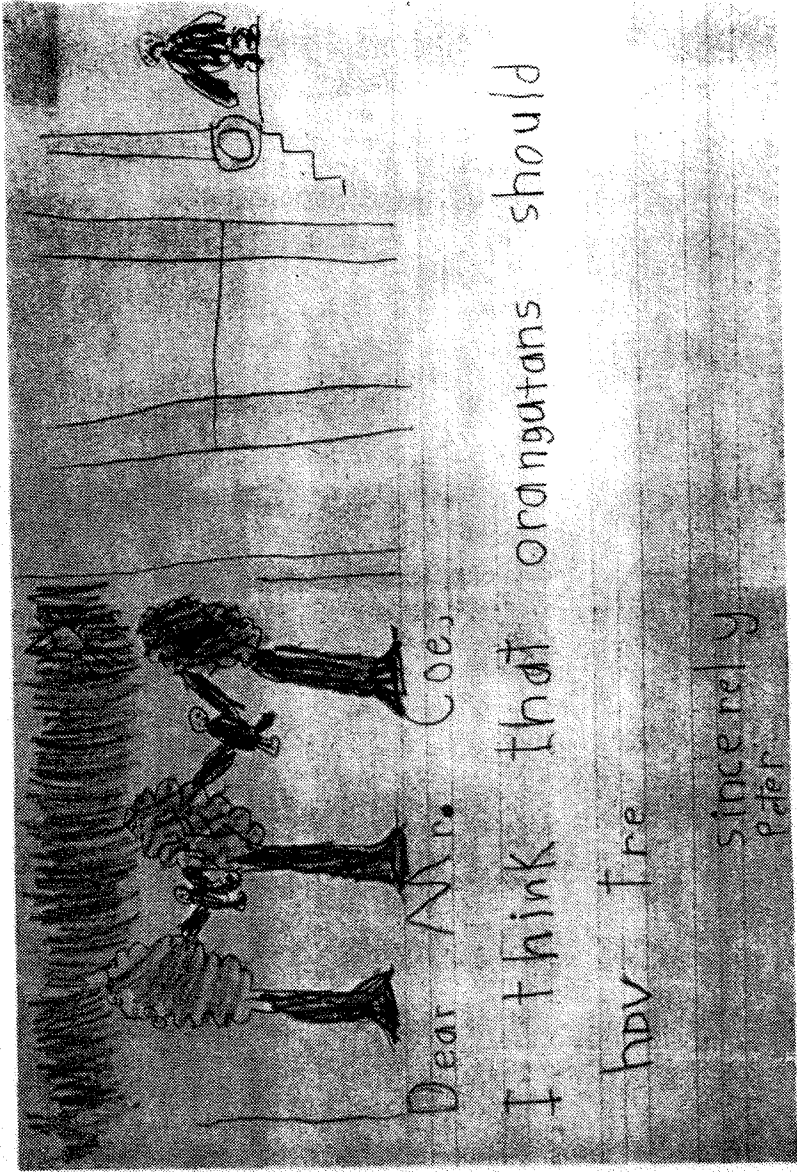
Drawing 5



Drawing 6



Drawing 7



Drawing 8

