

Environmental Enrichment and Facility Design — *Making it Work*

Jon Charles Coe
CLRdesign inc.
Since 2003: Jon Coe Design, P/L
jon@joncoedesign.com

Introduction

Most of the speakers here will address the technology or perhaps the theory of behavioral enrichment. Others will scold designers for not knowing enough about behavior or for not involving behavioral experts in the design. Yet more and more advanced animal display and maintenance facilities do have important designed-in enrichment opportunities. Here let me emphasize that I don't mean just automated gadgets, but rather features which facilitate varied opportunities for enrichment. (Coe 1992a)

The Problem

When such new models are in operation are they fully utilized? In my experience they are not. I do not have data to support this assertion, it is only my personal opinion, yet it is shared by other designers and evaluators. Why is it that when we finally accomplish some of our dreams of environmental enrichment they are not fully accepted and used?

While it may be inappropriate to be too specific in identifying examples, I will give some general instances.

1. **In their old facility** gorillas were brought fresh browse twice a day. Now that they have a state-of-the-art new facility they only get browse once a day - even though they spend the same amount of time in relatively sterile - albeit new - off exhibit facilities.
2. **A new facility** was designed so that family groups of primates could alternately rotate through a series of different outdoor habitats - greatly increasing the diversity of experience and more nearly simulating a natural "home range". The concept was developed with the concurrence of some of the most renowned experts in the behavior of these species. Yet this opportunity has never been utilized for enrichment.
3. **Many new elephant exhibits have spacious pools** and it is well known that wild

elephants find water irresistible on hot days. Yet in most new elephant exhibits I know of, elephants are not encouraged to use this great enrichment opportunity.

4. **Many new primate facilities** are designed to facilitate efficient use of deep bedding. Even though the behavioral and hygienic benefits of deep litter are well established by Chamove (1982) and others, deep litter is not used regularly in the new facilities. Why not? Reasons of inadequate staff time, etc. are given, but I suspect more fundamental underlying causes.
5. **Chimpanzees were provided with** an artificial tree to climb in. This tree had a buttress root designed for the chimps to drum on. This is a common behavior of wild chimps. The viewing public was also provided with a "drum tree" in hopes that the chimps and public would interact using their drums. No one ever showed the public or the chimps these devices and they are never used. In the same exhibit a termite mound feeder, although popular with the chimps, is seldom stocked by the keepers.

Possible Explanations

1. **Animals with new naturalistic enriched outdoor habitats** may be assumed to be well off. We forget they still spend sixteen hours a day in relatively sterile off exhibit spaces.
2. **When new exhibits open** we divert our attention to the remedial enrichment of older more archaic facilities, allowing the management of the new facility to back slide into older more "convenient" patterns.
3. **In old exhibits the caregivers are very close to the problems** and can actively participate in the solutions. In new exhibits, teams of "outsiders" - architects, engineers, special consultants, seem to take over. The old facility, bad as it was, was "our facility". The new exhibits may be thought of as "theirs".
4. **The old routine was familiar.** Some zoo staff even opposed the modest intervention of remedial enrichment activities. In the new facilities, everything is different. Enrichment opportunities add to the burden of strangeness. Caregivers are apt to fall back to familiar methods even when the new ones are better for the animals and easier for the keepers.
5. **Planning and construction takes time** - often several years. Frequently staff who participated in the design are no longer present to operate the new facility. The new operators may not even know of or value the innovations provided.
6. **More adventurous staff tend to participate actively** in the design process. More conservative staff may not be included or their objections discounted in the heady air of innovation. But guess who gets to operate the new facility? Guess who gets to prove those new ideas wouldn't work? Guess who gets the last word?
7. **When old institutions enter the road to renovation** small improvements tend to come from the bottom up. Minor changes come from the bottom up. Major changes come from the top down. Either way, someone important, bottom, mid-level or top-level, seems to get left out.
8. **Management policies** and procedures which insure quality of care often haven't been modified to support new exhibit concepts.

Possible Solutions

1. **Create a more inclusive process.** Make caregivers and experienced volunteers welcome at design meeting. Insist that architects and designers be able to communicate with staff without jargon or incomprehensible technical drawings. And of course insure that the animal behavior concerns are fully considered. This means that the design process will take longer and be more costly. There will be more last minute changes (improvements) so you must also provide more contingency funds. Importantly, there must be a much longer break-in period before the public opening.

A consequence of allowing full participation by more conservative staff will be a marked decline in the level of innovation. However, it could be argued that modest innovation which is operational is better than advanced innovation which is not used.

2. **Operating endowments** may be the only practical way to insure adequate funds for ongoing enrichment programs. If you can raise, say, \$2 million dollars for a new facility, twenty-five percent of that may have to go into an endowment for ongoing operations and improvements. This means of course that you will have to accept a smaller facility and maintain fewer species or individuals in order to give them better care.
3. **The attitudes of staff at all levels may need to change** if we are to move to the next level of behavioral enrichment. This will be necessary in order to give the animals more choices. We agree with Snowdon (1989) about the importance of choice in reducing stress. In many ways "choice" equates to "freedom". The organism with the most choices can be said to have the greatest freedom (Coe 1992c). In our society, incarceration (removal of choices) is deemed to be suitable punishment for the most serious crimes. Execution (total, permanent removal of choice) is reserved for extremely heinous crimes. Yet removal of most choices is a routine, although perhaps inadvertent, consequence of captive management. We decide what, when and where the animals can feed, breed and sleep. We decide what levels of light, temperature, humidity and acoustics are best for them. We chose their toys. Why do "we" always assume to know what's best for "them", even though these species have thrived for millions of years making their own choices? I believe our native homocentric perspective blinds us to other alternatives. I will refer the reader to previous papers (Coe 1992a, 1992b, 1992c) for more information on how this can be done and other speakers at this conference may also elaborate. My point is that if managers adopt a more biocentric and less patronizing attitude towards the animals in their care, they would immediately design facilities that offered the animals far more choices.

Then there is the case of the "Bull Keeper". You know about bull elephants and bull elk and gorilla silverbacks - creatures whose considerable self esteem and health seem to depend upon being socially dominant. Some people share this characteristic. And what happens when a bull keeper is in charge of a bull elephant? Well, the elephant won't be given a lot of choices.

We assume unquestioningly that a keeper must be dominant in order to control the animals - again because of our homocentric prejudice. Yet the new knowledge of training (Pryor 1984) demonstrated here by Tim Desmond and Gail Laule (1991) proves otherwise. They have shown that even bull elephants in must can be properly and safely

managed, while allowing the bull the dignity of asserting its native need for social dominance. Again, we need a major revolution in caregiver mindset to move into the next generation of behavioral enrichment.

4. **A formal review** of operating policies and procedures should be part of the design process. Dialogue with all staff involved may be necessary to make everyone aware of the operational impact of the new facility.
5. **What's the Message?** In the public areas of the new exhibits we go to enormous lengths to help the public suspend belief and pretend they are encountering the animals in their native habitat (Coe 1985, 1987). The "message" may be that animals and natural landscape are inseparable, that animals "... live in nature". We do this to help visitors learn to respect the animals for what they truly are.

What's the Message, the unspoken assumption, the underlying theme we experience when we enter even the newest animal night quarters? Human dominance. Homocentricity. This is a place built by and for people to take care of animals. Sights, sounds, smells, surfaces - all elements are foreign to the animals' native world. What therefore are we telling ourselves about these animals? Are we unconsciously reinforcing the old messages of the barred cages that primates are felons and big cats must be caged for crimes, past or potential, against humans? Are we unconsciously reinforcing stereotypes among ourselves that animals were created inferior and need our sympathy, that they should love us for our kindness or that they are incapable of making simple choices about their environmental preferences? The Dallas Zoo's new great ape facility is the only one I know of which set out to make the off display areas communicate a sense of habitat to both animals and keepers. This is a small but important beginning. Many other new facilities provide great apes, at least, with enriched, but artificial-looking group activity rooms for use when the animals cannot go outside. These great ape "gymnasiums" greatly benefit the animals, but still communicate a message of human dominance.

Conclusions

While we can justly congratulate ourselves for the advances that have been made for a few animals of a few species, we have far to go. The impression that even the most behaviorally advanced facilities are not fully utilized by staff indicates that the problems may stem from shortcomings in management philosophy, design process and human attitudes. These must be overcome if we are to move to the next generation of animal facilities, and we have no time to lose.

REFERENCES

- Chamove, A. *et al*, 1982, Deep Woodchip Litter Hygiene, Feeding and Behavioral Enrichment in Eight Primate Species, *INTERNATIONAL JOURNAL FOR THE STORY OF ANIMAL PROBLEMS*, 3:308-318.
- Coe, Jon C. 1985, "Design and Perception: Making the Zoo Experience Real", *ZOO BIOLOGY* 4: 197-208.
- Coe, Jon C. 1987, "What's The Message? Exhibit Design for Education", *AAZPA REGIONAL CONFERENCE PROCEEDINGS*. American Association of Zoological Parks and Aquariums, Wheeling, WV, pp. 19-23.

- Coe, Jon C. 1992a, "Plan Ahead for Behavioral Enrichment", ENVIRONMENTAL ENRICHMENT KALEIDOSCOPE: RESEARCH, MANAGEMENT AND DESIGN, AAZPA ANNUAL CONFERENCE PROCEEDINGS, American Association of Zoological Parks and Aquariums, Bethesda, MD.
- Coe, Jon C 1992b, "Training and Facility Design, A Collaborative Approach", PERSPECTIVES ON TRAINING IN THE ZOO - GREAT CHALLENGES, PROFOUND BENEFITS, AAZPA ANNUAL CONFERENCE PROCEEDINGS, American Association of Zoological Parks and Aquariums, Bethesda, MD.
- Coe, Jon C 1992., "Advances in Facility Design for Great Apes in Zoological Gardens", CHIMPANZEE CONSERVATION AND PUBLIC HEALTH, J. Erwin, John C. Landon, eds. Diagon Corporation/Bioqual, Inc.
- Desmond, T. & Laule, G. 1991, "Protected Contact Elephant Training", AAZPA ANNUAL CONFERENCE PROCEEDINGS, American Association of Zoological Parks and Aquariums, Wheeling, WV, pp. 606-613.
- Pryor, K. 1984, *DON'T SHOOT THE DOG!* Simon & Schuster, NY.
- Snowdon, C. 1989, The Criteria For The Successful Captive Propagation of Endangered Primates. *ZOO BIOLOGY Supplement*, 1:149-161.