Activity-Based Design and Management: New Opportunities for Apes and People

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Problems and Opportunities

Someone keeps raising the bar! Just when you're proudest of hard-won improvements for great apes in zoos, research centers or sanctuaries, we are confronted with demands to do even better. These come from regulatory agencies, advocacy groups and the apes themselves. But most of all they come from our own dissatisfaction between what we see and what could be. Here are some examples:

- The movement to more naturalistic immersion habitats has provided some fortunate apes with larger, greener outdoor yards. But they still often spend two-thirds of their lives in night cages, which have improved little since Victorian times.
- The public supports having apes in these large naturalistic habitats, but complains that they are too distant or inactive. We respond that the public is ignorant of the pace of life in nature, but inwardly we realize that we haven't left the apes much to do.
- We contend that naturalistic exhibits aren't animal shows and that the apes are under no obligation to entertain, yet decry the lack of funds (primarily visitor generated) to support our programs or provide ideal staff levels.
- Visitors appreciate seeing the apes as wild animals encountered along a trail in the wild. However, if asked, they would probably admit they'd rather be close to the apes, to experience them as Drs. Goodall, Fosse and Galdikás did.
- New back-of-house areas allow work to proceed without public scrutiny and distraction, but our guests miss the satisfaction of seeing the special relationships caregivers have with apes.
- Understanding and appreciation of behavioral enrichment and operant conditioning are more widespread than ever. Yet these are still commonly seen as expensive remedial therapies provided by specialists, rather than as an integral part of ordinary husbandry provided by ordinary keeper staff.
- New facilities are built with extraordinary construction budgets, while operating budgets and workforce may even be shrinking.

What is "Activity-Based Design and Management"?

Activity-based design and management is based upon the proposition that, on whole, animals' actively engaged in species-typical behaviors are better off than inactive individuals. Now that issues of disease control and diet have largely been solved, boredom and lack of exercise have emerged as major animal welfare issues. There is urgent need to replace wild ape occupations with suitable substitutes along with powerful, positive incentives for their use.

How is this different from "Behavioral Enrichment"?

Behavioral enrichment, as commonly practiced, is largely remedial, (Coe 1992) attempting to make up for deficiencies in husbandry or facility design. Activity-based design seeks to combine all forms of behavioral management, making them integral parts of a comprehensive approach to facility design and operation.

New Insights, New Opportunities

Instead of using a scatter-shot approach to problem solving, what if designers, trainers, enrichment specialists and husbandry people really came together? What if we designed a new facility and designed its operating plan at the same time? What if we thought of an exhibit area as a stage that looked like a habitat? Could we see the apes as unpredictable, improvisational actors? Humans and apes are all social species, with natural tendencies towards affiliation and social behavior. What if we designed facilities, which optimize such opportunities? Could back-of-house areas become front-of-house, designed and operated as public demonstrations of the very best in great ape life care? Do cages have to look and feel like cages? To what extent can we let the monkeys run the monkey house (Coe 1998)? New insights in facility design and operation are evolving around these opportunities.

Activity-Based Design and Management

"Activity-based design and management begins with the premise that the animals' long term well-being is paramount and that environments, programs and procedures which advance this goal are frequently of great interest to the visiting public. Healthy animals with stimulating behavioral choices tend to be active animals. Therefore, opportunity-rich animal environments, enlightened animal care and caretaker devotion should all be made visible to the public within a setting that demonstrates the animals' innate competence. Whether simulations of naturally or culturally derived habitats, or pure functional facilities, these environments are abundantly provided with appropriate behavioral opportunities for the animals, keepers and zoo visitors" (Coe, 1997).

The goal is to shape environments which immerse ape, caregiver and guest within significant, informative and pleasurable experiences, and which advance both the well-being and long term conservation of the individuals and species displayed.

Activity-based design facilitates ongoing, active husbandry, behavioral enrichment and training, recognizing the need for change, novelty and improvement. Activity-based design is not a "style," but rather a way of thinking. New and remodeled facilities utilizing this approach could be as naturalistic as imaginable or as synthetic as practical. The following are recommended characteristics of this approach:

1. Facility design and operational design are done together. While this seems obvious, I have seldom seen it happen. Animal care staff do review the architects drawings. But, how often do they develop staff work schedules, training protocols and enrichment

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programs before facilities are built as part of the design process? Operating budgets and construction budgets must be developed together. Why build in features you can't afford to operate?

2. There is acknowledgement of the following assumptions:

   a. The apes are competent to be active collaborators in their own care.
   b. The purpose of the facility is to serve the needs of the apes, the caregivers (including researchers, educators and other zoo needs) and the visiting public. These are not mutually exclusive choices, but are symbiotic opportunities. Unless a design works for all three, it doesn't really work at all.
   c. All facilities are equally important to their users. Back-of-house areas are as deserving of quality-of-life features as are public exhibit areas. Construction and operating budgets must be adequate to do all areas well or at least to equally improve all areas.
   d. Husbandry, operant conditioning and behavioral enrichment should become part of every ape caregiver's daily duties, supported by life long learning opportunities for both staff and apes.
   e. "Behavioral management" (training, behavioral enrichment, etc.), health care management, feeding, cleaning, security, conservation biology, public education and such are seen as inseparable, interactive parts of one whole. For example, feeding will be done in ways which benefit display appeal as well as ape activity and well-being. Training sessions can occur on display, so that they educate the public as well as the apes.
   f. Apes and other primates (including humans) are naturally sociable. Design and management should actively encourage affiliative behavior among apes, between apes and caregivers and between apes and zoo guests (Coe, 1999).

Where Have These Concepts Been Tried?

Individual examples combining several elements of activity-based design have been developed.

a. *Dallas Zoo's* gorilla exhibit developed exceptionally naturalistic outdoor areas and even introduced indoor plantings into back-of-house areas. Initially, public viewer values were not equally considered, but changes in husbandry practices now have improved this situation.

b. *Toledo Zoo's* "Kingdom of the Apes" developed four mesh-covered outdoor enriched activity areas, a large indoor dayroom and a good-sized outdoor gorilla habitat. Orangutans, chimpanzees and gorillas are rotated among these areas, greatly expanding the space available to each group. (Petiniot 1995).

c. *Louisville Zoo's* "Islands" exhibit has invested heavily in operant conditioning training, allowing them to rotate orangutans, tapirs, tigers and other species through a series of interconnected enclosures, including a high indoor dayroom area. Visitors can observe training sessions in both the dayroom and outdoor exhibit areas. This activity-based approach has resulted in generally more active animals. Four years of urine cortisol and behavioral analysis has confirmed that this active management approach and frequent close approach to traditional animal "enemies" has not resulted in excessive stress for the animals. This activity-based approach is being further advanced in Louisville Zoo's new "Gorilla Forest." Large, naturalistic outdoor habitats are combined with interconnected indoor dayrooms. Gorillas will be generally given free access in this "gorillas-in-the-round" concept, where the apes can circulate 360° around a central viewing area. A "training station" is centrally located, giving visitors a nose-to-nose view of some training sessions (Herndon 1998).

d. *Los Angeles Zoo's* "Chimpanzees of the Mahale Mountains" exhibit set out to optimize chimpanzee well-being and activity in ways which also facilitate caregiver operations and guest enjoyment. "Affiliative design" sought to improve affiliative behavior between chimpanzees and the viewing public, which had reached levels which could only be termed "mutual aggression" in their old exhibit. This facility, designed with exceptionally close collaboration between caregivers and designers, has proven to be very successful. Research carried out by Dr. Cathleen Cox and her associates (Cox 1999) has documented a substantial drop in aggression and rise in affiliative behavior between chimpanzees and the public in the new facility. Affiliative design concepts developed at the L.A. Zoo include:

   - Reduction of obvious, open territorial boundaries between apes and visitors (reduction of territorial defense opportunities).
   - Increase in covered, glass partitioned encounter areas, where boundaries are more ambiguous and one-to-one encounters are encouraged.
   - Giving the chimpanzees the "higher ground."
   - Locating many enrichment features and treat feeders near public viewing, associating behavioral rewards with proximity to public.
   - Providing enrichment opportunities which allow the apes to manipulate the public in ways which the public enjoys. Chimps can activate a water mist spray and a gong, which are located above the public.
   - The holding building features a rooftop "penthouse" where the apes can choose to sleep under the stars, contained within a light tent-like mesh. The public has views of this outstanding area, which would normally be considered "off-exhibit."

e. *Los Angeles Zoo's* "Red Apes of the Rainforest" exhibit, opened in the summer of 2000, features a 250 foot long by 35 foot high mesh enclosure shaped roughly like a doughnut, with public viewing in the center.

   - The orangutans will be able to circle the public, brachiating on a variety of limbs and vines, most of which can be raised and lowered by staff for cleaning or re-arrangement.
   - Training can be carried out on public view.

f. *Philadelphia Zoo's* "PECO Primate Reserve" further develops the affiliative and activity-based concepts in a northern climate, with extensive interconnected dayrooms. Key features include:

   - Public and nonhuman primate areas are finished with identical resilient flooring materials, and colors, and animals transfer overhead, all to reinforce the "behind-the-scenes" look and feel.
   - Smaller primates have access to the large dayrooms for the gorillas and orangutans when the great apes are outside.
   - All primates have extensive outdoor views.
   - Multi-level training and animal transfer chutes are positioned for presentations to the public.
   - Exhibit furnishings are designed for easy care and frequent change by staff, adding novelty and interest to the areas.

Is the Activity-Based Concept Dependent Upon Architectural Types of Exhibits?

Not at all. It happens that several of the previous examples have emphasized the more flexible "play room" approach because, with limited resources, zoo staff chose to put available funds where they thought would most benefit the apes. However, highly naturalistic facilities such as the Wildlife Conservation Park/Bronx Zoo's "Congo Exhibit" contains many activity-based elements, such as random treat feeders to encourage foraging and elevating the apes relative to the public. Again, activity-based design and management is an approach to husbandry, not an architectural style.

Could Apes Really Run the Ape House?

The following excerpt from my 1998 Chimpanzoo Conference Keynote Address (Coe 1998) may provide more questions than answers, but will hopefully present profound possibilities for a natural extension of the activity-based approach:

> "Are chimpanzees (and other species) competent to participate in their own care? It is estimated humans and chimpanzees split from a common ancestor over ten million years ago. Our common antecedents have thrived since the beginning of life on earth. This means, of course, that for virtually the entire vast space of existence our mutual ancestors thrived without our help. Chimpanzees have survived flood, drought, famine, leopards, parasites and plague, outsmarting even human hunters, at least until very recently. They not only survived, they prospered, creating varied regional subcultures with unique tool use and perhaps language variations. Throughout these millennia they were competent, overall, to make life and death decisions on a moments notice, as well as daily choices.
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> It is almost universally assumed that chimpanzees in "managed care" facilities need intensive care. Their fruit must be peeled and diced just so. Regulators ranging from the US Department of Agriculture to the American Association of Laboratory Animal Care prescribe uniform standards for lighting, ventilation and temperature. Just when did chimpanzees loose their competence to make such decisions for themselves? Such questions are never asked. One might as well ask how trees survived for so many millions of years before people came along with pruning, fertilizer and leaf raking to save them. We are simply too close to the trees to see the forest and most of us are too close to the apes to really see them. Perhaps some caregivers are so loving and protective of their "dependents" that they themselves have developed a dependence on being needed as caregivers. More likely, we are so used to our normal roles and routines that we can't picture other worlds, either of the past or of the future.
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> Why can't apes remotely operate lights, sound devices, humidity, temperature and other environmental systems within preset parameters? Perhaps they could also control lighting in adjacent public areas as well. Perhaps they could have access to a wide range of night shelters and enclosures just as they have in the better outdoor habitats today?
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> Design of such facilities is relatively easy. The hard part is to ask chimpanzee and other animal caregivers to fundamentally rethink their roles, to ask themselves, how many of the things we do for "our" apes could they do for themselves?" What kinds of facilities would we need to accomplish this? What sorts of husbandry policies would empower the chimpanzees to "be all that they can be"? What would we have to give up to enable our closest living primate relatives to return to their proud heritage as "other nations," voluntarily partnering with humans out of mutual interest. How far could we really go in letting the chimps run the chimp house?"

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