

Incorporating Behavioral Enrichment into Husbandry

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Abstract

The evolution of human education has helped in recognizing the needs for humane animal care. Animal welfare became a topic focusing on the morality of human actions (or the lack thereof) when it comes to proper animal care. As a result, institutions started to recognize they had an ethical and legal obligation to research and provide for the needs of the animals in their collections.

Keeping up with animal welfare standards, breeding species for exhibition, and reintroduction requires well conducted behavioral management. Behavioral enrichment is one of the main methods to induce species-appropriate behaviors which can improve the physical and psychological well-being of captive animals and elevate it to required levels. Zoos, laboratories and other institutions recognize the need for creating and incorporating behavioral enrichment into their husbandry programs.

This paper is an adaptation of an informal presentation given during the ChimpanZoo Conference, *When Apes and Humans Communicate*, 2007.

1. Providing Enrichment for Captive Animals

a. The need for proper maintenance of animal collections.

A lot has changed from the time when animals were kept as curiosities, as entertainment, and pleasure for royalty.

The evolution of human education helped recognize the need for humane animal care.

- A shift in the focus of animal welfare to the morality of proper animal care.
- Criticism of zoos, laboratories, and other animal facilities that their husbandry and exhibition techniques only maintained their collections.
- Recognition that housing and social settings of captive animals are inappropriate, causing aggression and boredom, as well as physical and psychological illness.
- Establishment of effective enrichment programs both in terms of increasing the well-being of animals and improving the educational value of zoo exhibits.
- The need to document enrichment.
- The formation of legal requirements for primate collections. In 1985, Congress passed amendments to the Animal Welfare Act that directed the Animal Plant and Health Inspection Service (APHIS) to promulgate regulations that provide for psychological well-being of nonhuman primates. In February 1991, the United States Department of Agriculture (USDA)/APHIS issued a ruling that states: "Dealers, exhibitors, and research facilities must develop, document and follow an appropriate plan for environment enhancement adequate to promote the psychological well-being of nonhuman primates."
- Zoo studies proved that behavioral enrichment decreased abnormal behavior.

As a result, institutions recognized they have an ethical and legal obligation to research the psychological needs of animals in their collections and fulfill those needs.

b. The need for behavioral management programs.

- With the unprecedented rate of habitat destruction and vanishing animal and plant species, our generation faces the greatest challenge ever - keeping harmony between nature and modern life.
- Zoos collect fewer animals from the wild, relying primarily on breeding species themselves.
- Zoos often now breed and release endangered species back into the wild.

- Keeping up with standards, providing proper well being for collection animals, and breeding animals for exhibition and reintroduction to the wild requires well conducted behavioral management programs.

2. Incorporating Enrichment into Husbandry by Self-Sustained Programs

Isolated enrichment or training events do not constitute programs. As an example, providing veterinary care or adequate nutrition to captive animals should not be done in a haphazard way. Veterinary care and nutritional plans should be integrated programs and there is an expectation at the director, curator, and the keeper levels that animals will be medicated and fed in a prescribed and consistent manner.

A successful enrichment program is dependent upon three important components:

“SOLID FRAMEWORK, ATTITUDE AND TRAINING, and perhaps most critically, LEADERSHIP”
(Sevenich MacPhee and Mellen, Disney’s Animal Kingdom, 2000)

A. Solid Framework

Management should promote behavioral enrichment by providing a successful, goal-oriented, self-sustained program that integrates into the daily management of the animals.

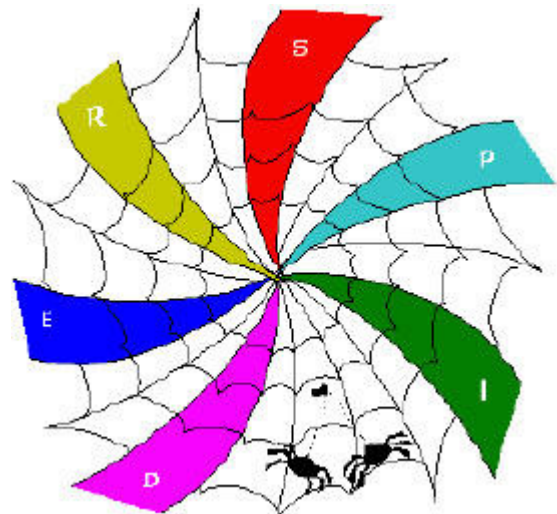
a. Laying down the Foundations

The first step of designing a program is to outline the institutional plans by creating written documentations such as protocols. There is no self-sustained system without the complete circle of the SPIDER method suggested by Association of Zoos and Aquariums (AZA).

SPIDER is an acronym for:

Setting goals
Planning
Implementing
Documenting
Evaluating
Re-adjusting

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Setting Goals and Planning

During the period of setting goals and planning, management can decide what kind of resources they have available and what additional resources they could provide to support the master plan. The foundation and logistics of a plan can be outlined via enrichment protocols. Enrichment protocols should follow USDA and AZA guidelines, contain a master plan from goal setting to re-adjustment, address safety issues and provide resources.

Create Support Systems

Once the written foundation is laid down the organization needs to consider its current and future resources that can aid the program. Problematic areas such as the dilemma of what should be done and what can be done as well as time, money, and manpower issues need to be resolved prior to starting any program by organizing a support system. Support system examples:

Behavioral Enrichment (BE) Committee, working in cooperation with keepers, has the responsibility for developing enrichment strategies for the animals.

Special Events Committees allow additional keepers to participate outside of the BE Committee. There can be participants from each area. Once the event is over, they will be disbanded and a new group will be formed for the next special event.

Behavioral Management Curator, Manager, or Coordinator positions supervise or advise keepers in training and enrichment planning and problems.

Training and Enrichment Resource Office provides available publications and videotapes in training and enrichment.

Enrichment supply sheds or centralized areas provide enrichment items for daily use.

Funding for behavioral enrichment - keepers have the opportunity to organize fund-raiser events in their area.

Time - providing enough time to perform sufficient enrichment for the collection. Each supervisor has to make a commitment to schedule their staff for a daily routine in a way that enables everyone to service their animals in the proper way, including behavioral management.

Implementing the Program

The way a new program is implemented is critical. Management must enforce new roles and responsibilities (who will do what by when) keeping in mind that the program may receive some initial resistance. All team members must be aware of what new methods are to be employed and within what timeframes. The implementation of enrichment programs should be:

- Scheduled in small increments
- Flexible
- Easy to follow
- Easy to update

Documenting - How and What to Document?

Experience shows that keeping up with the second half of the SPIDER model (documenting, evaluating and re-adjusting) is the hardest task in any self-sustained program. When it comes to inventing and implementing new ideas, creativity almost always bypasses resource issues (time, money, staffing). However we often seem to lack resources when it comes to documentation (paperwork).

Documenting enrichment can seem like a daunting task. Staff often claims that there is no time to document enrichment. By using the veterinary care or nutrition analogy however, we always document medications received and diet given (Shepherdson and Carlstead, 2000). Documenting behavioral enrichment is just as important and should be an integral part of programs.

Examples of documentation forms at The Phoenix Zoo (online or hard copy):

1. Daily Section Reports. Enrichment ideas should be noted daily when:
 - Presented the first time
 - Enrichment was unsafe
 - Unusual behavior observed
 - Item was removed

2. Weekly/Monthly Behavioral Enrichment Logs.

For every species that receives enrichment there should be a Weekly/Monthly Behavioral Enrichment Schedule in the keeper area.

Weekly Enrichment Log, The Phoenix Zoo

_____ Week of _____ Trail _____ Species _____

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Type of enrichment group:							
Item used:							
Keeper's initial:							
Rating:							

Type of Enrichment Group:

1. Foraging
2. Social Enrichment
3. Manipulanda
4. Structure and Substrate
5. Stimulating the Five Senses
6. Training

Rating scales:

Indirect

- A. No evidence of interaction
- B. Minimal evidence of interaction
- C. Moderate evidence of interaction
- D. Substantial evidence of interaction
- E. Significant evidence of interaction

Direct

- a. Actively avoids enrichment item
- b. Interacts inappropriately
- c. Interacts tentatively
- d. Interacts appropriately, but not with intended goal
- e. Interacts appropriately with goal behavior

Using these logs, enrichment can be documented and evaluated daily.

Forms need to contain quantitative and qualitative documentation of changes in animal behavior. Creating short, easily understood, and fast to complete documentation forms is essential for moving a program along in a timely manner. Computerized forms and data storage should be utilized if possible.

3. B.E. Proposal Log Books (The Phoenix Zoo)

All approved enrichment items are combined into an excel sheet for easier review by species or by blanket proposals.

a. Species Enrichment Proposal Log Book

The log book contains the following data:

B.E. Proposal	Trail	Trail keeper	Approval date	Implementation date	Evaluation date	Miscellaneous
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The Phoenix Zoo proposals are color coded:

Green= approved, implemented and evaluated	Black= approved and implemented	Red= Disapproved or discontinued
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b. Blanket Enrichment Proposal Log Book

Blanket proposal log book contains all blanketed enrichment items by classification such as phylum, class, order, or family.

Enrichment Proposal	Category	Submitter	Approval date	Comments
1 Insect feeders	Chordate	Hilda Tresz	8/23/2007	
2 Insect feeders	Arthropods	Hilda Tresz	8/23/2007	

4. Photos and Videos

Photos and videos are one of the most efficient, objective, and easiest way to document enrichment. They help to provide consistency and are easy to track, share and evaluate.

Evaluating Effectiveness

Staff needs to routinely discuss progress and look for trends in the data such as the frequency of delivery, animal's response, and relative success.

Evaluation is significant in order to:

- Know that behavior improvements have occurred.
- Allow all involved to be consistent and objective.
- Provide a basis for revision and improvement.
- Justify procurement of resources.

Enrichment logs should follow rating scales to ensure objective evaluations.

Re-adjusting

Based on the evaluation of trends in the data, the goals and their plans can be re-adjusted and the process started over again.

Readjusting includes:

- Using conclusions from evaluation reviews and other information to refine and improve enrichment activities.
- Changing the program to be more effective.

Managers should meet monthly, quarterly, or bi-annually to discuss the effectiveness of an enrichment idea and to decide if it should continue. It is important that all decisions be communicated to all involved staff.

B. Attitude and Training

Not even the best programs can be implemented without the staff buying into it. Staff must to feel that there is managerial support for their extra efforts.

Changing Staff Attitudes

Animal husbandry and behavioral management is something that has always been part of the keeper's job (whether it is recognized or not) and therefore should require no extra effort from them. On the other hand keepers may sometimes feel that they are being asked to perform an extra task with no assistance, compensation, or recognition. Although the techniques of enrichment are simple, they do require being imaginative and having a flexible approach to husbandry. They also require a certain level of initiative by the staff, something they might not be accustomed to (Shepherdson, 1991).

Managers need to change people's attitude toward "what can be done" as opposed to the frequent answer of "it cannot be done".

Attitude can be changed by:

- Working with staff in mutual understanding. Changes should not filter down the chain of command as "this is what was decided, now go ahead and do it". Managers need to work together with staff to debate the logistics of new ideas, listen to staff reasoning, and try to come to mutual understandings. Management should provide help whenever possible to make new ideas happen and inform staff of that commitment.
- Supplying staff with resources to help with their work (Behavioral Management Coordinator; Training and Enrichment Resource Office)

- Finding adequate incentives to motivate staff: fully incorporating behavioral enrichment into the keeper's job description. Participation in the enrichment plan is closely related to one's personal evaluation.
- Individual involvement in a behavioral enrichment program expands the diversity of responsibilities, provides more daily stimulation, and therefore, creates more opportunity for professional growth. This in turn allows staff to contribute more to the overall goal or mission of the organization.
- Recognizing and rewarding the extra efforts (Personal Evaluation, Excellence Reward System).

Training Staff

To implement a new program all team members need to be aware of which new methods will be employed.

1. Education

New programs and new ideas cannot be successfully implemented without the staff fully understanding the reasons and logistics behind them. They need to accept that these ideas are plausible, and be trained to understand the final outcome as well as all the details that will lead to accomplishing it. If resentments emerge, allow the staff to come up with solutions. Problem solving meetings/workshops are the key to full understanding of the problems. Limit criticism and encourage team work and problem solving.

2. Training to develop technical skills

Developing technical skill leads to self confidence, personal and institutional successes, consistency, and stability.

Ensuring professional development is critical and can be accomplished on several levels such as:

- Regular meetings
- Printable training handouts
- Email courses
- In-house training seminars
- Workshops
- Conferences

C. Leadership

Leadership and management are not the same concepts! Leadership is an asset a good manager must have. Without the right leadership a program will not be successful. Managers have to be able to switch between being leaders and managers. They need to lead their people to achieve success, but at the same time when needed, they need to be able to make decisions as well.

What constitutes a good leader?

- Instead of doing things right, they do the right things (Richard Pascale, 1990).
- They may not have the most experience in the field, the best organizing abilities, or the best technical skills, they could even be new to concepts, BUT they have a vision that unites people to follow them through their own choice.
- Confident enough to try new ideas that may stand out or be different.
- Look for innovations.
- Do not dominate and control, but lead.
- Create teams. Choose subordinate leaders based on their specific talents and let them lead their groups towards the goal.
- Take responsibilities for errors.
- Give credit for other's achievements.
- Not afraid of taking risks when pursuing their vision, they consider it natural to encounter problems, they will foresee and take routes others will not in order to achieve their vision

Institutions need to train their managers to be successful leaders!

A successful management program requires active leadership from A to Z.

Leaders need to provide visions, outline program framework, communicate at all times to all levels (set expectations, clarify roles, prioritize), follow up, get feedback, and give feedback of the status of progress.

To successfully incorporate enrichment into husbandry requires knowledge, patience, trust, communication, willpower, and teamwork at every level within an institution.

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