

Companion Animals Symposium: Comparative Enrichment: Implications for Health and Behavior

933 The role of training and enrichment. C. Dikeman*, *Omaha's Henry Doorly Zoo, Omaha, NE.*

Animal scientists have an extraordinary burden to promote the health and well-being of all animals in their care. With more than 100 million guests visiting zoos, and the US companion-animal population extending to well over 350 million, the role humans play in promoting the health and well-being of companion and exotic animals in captivity is increasingly important. Additionally, an estimated 6–8 million dogs and cats enter US animal shelters annually, with many of those animals surrendered by owners for behavioral problems. Promoting species, or breed appropriate behaviors through proper training and environmental enrichment, regardless of animal housing, should be a paramount concern for all animal scientists working with livestock, exotic animals, laboratory animals, shelter animals, or privately owned pet animals. Improving the psychological well-being of an animal can improve the viability that animal has to a program and could aid in the reduction of owner surrendered animals to shelters. The objectives of this symposium will be to explore the important role that training and environmental enrichment provide to captive and companion animals including shelter animals, laboratory animals, pets, and zoo animals, and to encourage and promote the development of training and enrichment protocols and ideals within animal science and husbandry programs.

Key Words: training, enrichment, behavior

934 Animals make us human: A look at the emotional lives of animals. T. Grandin*, *Colorado State University, Fort Collins.*

Some scientists may question if animals have true emotions similar to humans. Research clearly shows that the emotional systems in all mammals are similar. Human psychiatric drugs such as Prozac have similar effects on dogs. All mammals have the same neurotransmitters and similar subcortical brain structures where the emotional systems are located. The basic emotional systems in mammals have been extensively mapped. Unfortunately, most of these studies are in the neuroscience literature that is seldom read by animal scientists and veterinarians. The emotional circuits for fear have been the most studied. Lesioning the amygdala will block both conditioned and unconditioned fear behaviors. Jaak Panksepp has identified 3 other core emotional systems of seeking (approaching a novel stimulus), rage, and panic (separation anxiety). He also lists 3 additional emotional systems of play, lust (sex drive), and care (mother young nurturing behavior). Neuroscientists have located the specific subcortical brain regions that control these emotional systems. Animals in barren environments will often engage in repetitive stereotypical behavior. Figuring out which emotional system is driving their behavior will make it possible to design more effective environmental enrichments. For example, a gerbil will often engage in repetitive digging that still continues after the gerbil is given more substrate to dig in. The digging behavior stops when the gerbil is given a shelter so it is hidden from aerial predators in the sky. This behavior is driven by an instinctual fear of predation. The gerbil futilely keeps digging unless it is given enough substrate to form a hiding place. An understanding of the emotional systems that are driving a behavior will greatly improve animal welfare.

Key Words: environmental enrichment, animal welfare, emotion

935 Bringing out their wild side—Enriching the lives of captive exotic animals. M. S. Edwards*, *California Polytechnic State University, San Luis Obispo.*

Enrichment is a dynamic process for enhancing animal environments within the context of a species' behavioral biology and natural history. The goal of environmental changes is to increase the animal's behavioral choices and draw out species-appropriate behaviors, thus enhancing animal welfare (AZA Behavior Scientific Advisory Group, 1999). Application of management techniques encouraging species-typical behavior is not a recent phenomenon among animal care professionals, yet significant expansion in the field began in the 1980s (Mellen and MacPhee, 2001). Not unlike the integration of animal health, reproduction or nutrition sciences into exotic animal husbandry, current application and systematic review of environmental enrichment practices is objectively based in disciplines of ethology, psychology and animal science (Shepherdson, 1998). The inherent value of enrichment to captive exotic animal welfare is recognized by both regulatory and professional organizations. USDA regulation of environmental enhancement to promote psychological well-being of nonhuman primates was adopted in 1991 (9 CFR 3.81). Institutions accredited by the Association of Zoos and Aquariums are required to have a formal written enrichment program that promotes species-appropriate behavioral opportunities (AZA, 2010). Potential enrichment techniques are as diverse as a species' behavioral repertoire. Success of enrichment efforts are enhanced when approached systematically. Goal definition, program implementation, documentation of response criteria to facilitate objective evaluation and continued refinement are hallmarks of a self-sustaining enrichment program (Mellen and MacPhee, 2001). Complex environments and enrichment techniques are not inconsistent with visitor recreation, wildlife conservation, and conveying an education message. Methods based in enrichment implementation and evaluation have been utilized to enhance visitor experience and advance institutional goals (Kuhar et al., 2010). Natural history and biology define physiological and psychological boundaries within which science-based enrichment, inseparable from animal husbandry, operates.

Key Words: nondomestic, zoo, welfare

936 Improving the lives of laboratory dogs and cats through enrichment and training. B. M. Vester Boler*, *University of Illinois, Urbana.*

In 2007, over 22,000 cats and 72,000 dogs were used for animal research in the United States. Current housing guidelines are written for the welfare of these animals, but some undesirable behaviors persist. Providing supplemental enrichment may help lessen unwanted behaviors, such as destructiveness, aggression toward humans and other animals, stereotypies, and self-mutilation. Because the animals are in a research setting, however, toys used for enrichment must meet a specific set of standards, including being able to be cleaned and sanitized, not influencing study results (e.g., consumption during nutritional studies), and safe for the animal to play with while unsupervised. Social interaction within the colony and with humans also appears to be beneficial, leading to decreased stereotypies, less vocalization, reduced stress for the animal and caretakers, and even beneficial effects in cognitive health of aged animals. It is suggested, but not well studied, that training of laboratory animals for routine procedures and as a means of social interaction with humans also may be beneficial. Training of simple commands has been

used in shelters to decrease return relinquishments; as such, laboratory facilities that put their animals up for adoption upon completion of studies may benefit from similar training. In conclusion, more can be done beyond the minimum standards required for laboratory dog and cat housing and socialization that will benefit the animal caretakers and the animals themselves. Finding behavioral and social enrichment activities that meet the requirements of the animal facilities and the research program are vital for sustainability and success.

Key Words: laboratory dogs, enrichment, laboratory cats

937 Do our pets live enriched lives? C. Dikeman*, *Omaha's Henry Doorly Zoo, Omaha, NE.*

With over 170 million cats and dogs residing in US households, it seems a contradiction that the question about their husbandry should even be considered a topic for discussion. An estimated 8 million pets enter animal shelters annually with a high percentage of those facing euthanasia. Studies have indicated behavior problems in pets as main causes of owner relinquishments to shelters. Aggression (51%), and inappropriate elimination (43%) were reported as the main causes of owner relinquishments of dogs and cats, respectively (Salman et al., 2000). Both problems may be attributed to the misunderstanding and mismanagement of natural species-appropriate behavioral development. While humans have evolved to share an increasing social bond with these species, we have not mastered the husbandry of living with species of the order Carnivora. While this order is diverse, all carnivores are predatory. Innate carnivorous behavioral patterns include communication, social and territorial, and predatory behaviors (Case 1999, 2003). Carnivores have evolved with keen visual, olfactory, and auditory senses, in addition to musculoskeletal adaptations, that support their predatory ancestry. If one considers the natural history of the canine and feline, including the deliberate breeding to produce breeds displaying unique phenotypes, and temperaments, it becomes clear that our pampered pets live typical lifestyles that fail to support the innate behavioral patterns that naturally dictate their behaviors. Many behavioral problems in pets may be prevented by providing environments that support their species-appropriate natural behaviors. Environmental enrichment is a process for enhancing environments that support behavioral biology (Young, 2003). The concept of providing for psychological well being has been a focus of captive animal management for the last several decades; however, its application in the management and husbandry of domestic pets has not been well studied or applied. Five types of environmental enrichment (social, occupational, physical, sensory, and nutritional) can be utilized in common households to enhance the well-being of our pets, thus promoting the human-animal bond.

Key Words: behavior, enrichment, companion animals

938 Bird Enrichment—Above and Beyond. E. Insalaco*, *Denver Zoo, Denver, CO.*

Enrichment is a process through which changes to an environment are made with the goal of modifying behavior in an animal. This usually

involves encouraging natural, species specific behavior, or discouraging inappropriate behavior. At Denver Zoo, the purpose of our facility wide behavior program is to ensure that behavioral components are incorporated into all animal care. Advances in enrichment and other behavioral practices are often seen in mammal care programs more often than those of other taxa, including birds. However, there are opportunities for avian enrichment and behavior management that are equally as effective and advantageous as those we have seen in mammalian programming. This presentation will talk about the Denver Zoo behavioral husbandry framework and philosophy, and how it applies to all taxa. In addition, the presentation will focus on behavior programs that have been implemented with several bird species both at Denver Zoo and other facilities, and will look at not only enrichment, but at training and behavior research opportunities as well.

939 Training and enrichment: Stepping into the future. N. Irlbeck*^{1,2}, ¹*Colorado State University, Fort Collins,* ²*Denver Zoological Gardens, Denver.*

Several years ago I had the privilege of working with Dr. Temple Grandin on a project at the Denver Zoo. The goal of the project was to determine vitamin E status of nyala and bongo at the zoo. Temple wanted to develop a crate to restrain the animals so they could be bled. For valid samples the animals needed to be bled in a stress-free state. When requesting permission to work with the 2 antelope, zoo administrators argued with Temple that they were wild animals and that what she wanted to do could not be done. Temple persisted and eventually they acquiesced to letting her try. Temple and her students use operant conditioning to gradually coax the animals into the crate and allow them to be bled. If the animals allowed this behavior without avoidance, they were rewarded with a food candy treat. It worked! Fast forward 15 years and the students of today have grown up in an environment where Animal Planet and Walt Disney are household phrases. Because less than 2% of today's population has anything to do with animal agriculture, these young men and women may have experiences with a dog, cat or at most a horse. And yet, the yearnings to work with animals cannot be denied and under the influence of media many seek to work with exotic species. Because of minimal animal experiences in other than home or family settings, young people tend toward a more anthropomorphic attitude when handling animals. These anthropomorphic tendencies have the potential of creating a more emotional response when working and dealing with animals. Public outcry over horse slaughter is a perfect example. The protection of animals was originally legislated in 1966 under the auspices of the Animal Welfare Act. With the merging of a population of young men and women that view animals as part of their family, along with a greater public awareness of animal handling, the animal-human bond has become increasingly important. There is a need to facilitate a safe interaction between human and animals. Training and behavioral enrichment are just 2 steps on the path to creating a more mentally stimulating environment for animal species.

Key Words: training, enrichment