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Round Table Discussion

Avian Behavior: An Evolving Discipline

Perspectives on bird behavior have changed dramatically in recent years. Magazines directed at bird owners are featuring more articles on how to enrich birds' lives, and pet stores and bird-related websites are focusing more attention on environmental stimulation with toys, food, etc. The avian veterinary community is abuzz with discussions about foraging, and more avian field research has focused on the differences between wild and captive bird behavior. Keeping abreast of these new perspectives on bird behavior—such an important aspect of veterinary medicine that affects all other aspects of avian practice—can be especially challenging to us veterinarians who were taught little originally about avian behavior in veterinary school. To help us better-understand recent changes in thoughts on bird behavior, I have asked 6 individuals who work regularly in the field of avian behavior to participate in a round table discussion. The participants work in both clinical practice and teaching facilities with a variety of species. They are Todd Driggers, DVM, Avian and Exotic Animal Clinic of Arizona, Gilbert, AZ, USA; M. Scott Echols, DVM, Dipl ABVP (Avian Practice), Director of Avian Medical & Surgical Services, Westgate Pet and Bird Hospital, Austin, TX, USA; Thomas Edling, DVM, MSpVM, Director, Veterinary Medicine, PETCO Animal Supplies, Inc, San Diego, CA, USA; Susan Friedman, PhD, Department of Psychology, Utah State University, Logan, UT, USA; Julie Ponder, DVM, Executive Director, The Raptor Center, College of Veterinary Medicine, University of Minnesota, St Paul, MN, USA; and Lynne Seibert, DVM, MS, PhD, Diplomate ACVB, Veterinary Behavior Consultants, Kirkland, WA, USA. I think that this discussion will be interesting to anyone who owns or works with birds and will, I hope, make us all want to learn more about the ever-evolving body of knowledge on bird behavior.

Laurie Hess, DVM, Dipl ABVP (Avian Practice)
Associate Editor

Question: In what context do you deal with avian behavior problems?

Dr Driggers:

I deal with them in clinical practice in the office or occasionally in house calls. During a discussion on behavior, I reference the gold standard—what a particular species does “in the wild.” Many behaviors in captivity are normal behaviors expressed in abnormal settings.

Dr Echols:

I primarily deal with a lack of understanding between an owner's expectations and the bird's normal behavior. However, there are many problems that represent clearly abnormal bird behavior (feather damaging behavior, for example).

Dr Edling:

I deal with avian behavior problems as they occur in retail pet stores across the country.

Dr Friedman:

As a psychology professor, I deal with avian behavior problems mainly in an educational context. I teach both live and Internet courses, workshops, and presentations and write for popular and professional publications about parrot and animal behavior. My goal is to disseminate to veterinarians, other animal professionals, and pet owners the contemporary behavior-change technology known as applied behavior analysis (ABA). The basic tenet of behavior analysis is that behavior is dependent on environmental conditions. Thus, the main focus of disseminating ABA is on teaching people how to redesign the environment they provide so that the “right” behavior is easier and more rewarding for their animals to do than the “wrong” behavior. As a result, animals do the right behaviors more often.

Dr Ponder:

We have a unique situation in that we deal with behavior problems in captive wild birds that are

kept for educational purposes or falconry. Most often, we deal with medical issues secondary to behavioral problems. In fairness, the behavioral problems we see are the result of inadequate training or lack of understanding of birds' natural biology.

Dr Seibert:

I see avian patients with behavior issues in my behavior-referral practice in Washington. I also serve as a source of information for colleagues managing avian behavior issues, offering free consultations for practitioners with questions about behavioral management, environmental enrichment, and medication options.

Question: What percentage of your annual case load is composed of bird behavior cases?

Dr Driggers:

One hundred percent of my cases have behavioral components. Most clients don't realize it. Preventive behavior discussions, including environmental and social enrichment, are a big part of what I do to prevent behavior problems, when possible. More than 50% of my cases present with specific behavior concerns.

Dr Echols:

This is difficult to answer because many cases do not initially present as "behavior problems." Rather, the "behavior problem" becomes apparent after collecting a thorough history. Approximately 10% of the cases presented to our hospital are primarily centered on a "behavior problem."

Dr Edling:

Less than half of 1% of my cases are behavior-related.

Dr Friedman:

Approximately 50% of my teaching and consulting time is spent on nonhuman animal behavior, about 40% of which is dedicated to parrots.

Dr Ponder:

A fairly small percentage of our total caseload relates to bird behavior issues, and when it does, it generally involves privately owned birds.

Dr Seibert:

My practice is limited to behavior problems of any species. Bird behavior cases comprise about 5-10% of my caseload.

Question: What are the most common avian behavior problems on which you are consulted?

Dr Driggers:

The most common problems are feather picking, biting of the spouses (in human pair-bonded birds), and chronic egg-laying.

Dr Echols:

I see feather damaging behavior, biting, screaming, stereotypic behaviors, persistent egg-laying, and general sedentary behavior ("perch potatoes" with no underlying medical problems).

Dr Edling:

The most common, by far, is feather picking/plucking.

Dr Friedman:

The 2 most common avian behavior problems I deal with are environments in which parrots have too little control over their own outcomes; the use of forceful and coercive management strategies and the limited knowledge of more positive, less-intrusive management strategies; and too little mental stimulation and physical activity because of the difficulty, in captivity, of simulating activities comparable to those parrots have evolved to do.

Dr Ponder:

In wild birds, our number one behavioral problem is human imprinting. This occurs intentionally or accidentally. Human-imprinted wild birds cannot be released because their behavior is very abnormal. Depending on the level of imprinting, birds may attack humans in defense of their territory or food or may display mating behaviors to humans. Captive, imprinted birds are much more vocal and more likely to scream than nonimprinted birds, occasionally pick feathers, and may have unusual molts. Human-imprinted raptors cannot be kept in captivity with other conspecifics because they will often attack them. Some captive Harris hawks feather-pick, whereas other species, such as caracaras and California condors, destroy their surroundings if not provided with an enriching environment. We see a number of medical problems, including tibiotarsal fractures, soft tissue wrist injuries, feather breakage, and bumblefoot, as a result of inadequately trained birds. Although we treat the presenting medical condition, we also discuss changes in training and husbandry with the clients to prevent future recurrence.

Dr Seibert:

Referrals are primarily for feather picking and self-mutilation, but I also see problems involving excessive vocalization, human-directed aggression, fear and anxiety, seasonal reproductive behaviors, and failures to wean.

Question: Which bird behavior problems, in your opinion, are most difficult to treat? Why?

Dr Driggers:

Feather picking is the most difficult, because it is multifactorial and often cumulative. Owners want to hear about a single cause for feather picking. Medical issues are usually secondary to behavior problems; so owners focus on fixing the dermatitis but forget about solving the feather-picking problem leading to the dermatitis. Wild birds fly, forage for food, prune trees, avoid predators, alloprene, etc. They have choices that vary seasonally. Captive birds may go for 8–12 hours choosing only which perch to stand on, what piece of food to consume, or which feather needs a little extra attention. The difficulty in treating birds' behavior problems is that treatment involves changing the caregivers' behaviors to accommodate birds' evolutionary biology. Birds need choices to fly, forage, chew, and communicate. They need to know how to behave, not just how not to behave. Training repertoires using positive reinforcement are critical to behavior change. Treatment of bird behavior problems requires active owner participation through education about bird behavior, observation of their birds, financial investment in appropriate caging, and commitment to enriching birds' interaction with their environments and with other birds and caregivers. After picking starts and is reinforced, the primary cause for picking may become secondary, and the picking, itself, becomes a tool for coping with stress. Early socialization is key to dealing with stress. Pulling a baby away from its mother and isolating it from its peers may affect the hypothalamic-pituitary-adrenal (HPA) axis. The ability of captive birds to cope with stress as a result of poor early socialization and an abnormal HPA axis may play a role in long-term psychological wellness.

Dr Echols:

Chronic stereotypic and feather damaging behaviors that began at an early age are most difficult to treat. Some of these problems involve physical and chemical changes to the brain that

originate in deprived early socialization and other learning. These birds have poor skill sets that would otherwise allow them to function normally in captivity. These birds can improve, but many are never normal.

Dr Edling:

The most difficult behavior I treat is any behavior that has become ingrained over time. In retail settings, we deal with behavior problems in young birds, generally less than 1 year of age. Because of the birds' young age, it is generally easier to correct the behavioral issues, because they have not yet become deep rooted.

Dr Friedman:

Each case is a study of one. What is straightforward for some relationships is complicated for others. Generally, it is easier to address a behavior whose function (ie, the purpose served for the bird) is understood than a behavior whose function is elusive. Once the function is identified, it is often possible to teach a new behavior to serve the same function but in a more appropriate way. It is also more difficult to change a behavior maintained on a lean, intermittent reinforcement schedule due to behavioral momentum (persistence) even after appropriate environmental changes have been implemented.

Dr Ponder:

Clearly, behavioral problems secondary to imprinting on humans are the most difficult to change because that is an age-related, permanent-learning process.

Dr Seibert:

Feather-picking and self-mutilation problems are the most challenging cases in my practice. As a specialist, I see the patients who have not responded to the traditional therapies, so behavior-referral practices select for the most difficult cases. Feather-picking disorder is likely a multifactorial problem, and there are limits to our ability to assess the influences of allergies, hormones, developmental factors, and environmental influences. Based on my dissertation work, feather picking in pet birds most closely resembles an impulse-control disorder, and these are frustrating problems to resolve even in the best of circumstances. The causes and outcomes of conflict-induced, compulsive, or habit disorders in pet birds are poorly understood, which limits our ability to develop effective and humane treatment options. The other behavior problems

commonly observed in psittacine patients—screaming and biting—can often be addressed with environmental management and operant conditioning (behavior modification) programs.

Question: Have you ever faced a bird-behavior problem you could not change?

Dr Driggers:

Yes. I have had birds that have mutilated themselves to death.

Dr Echols:

Yes, especially when the owner is not willing to change his or her own behavior or adapt the environment for the bird.

Dr Edling:

Not in the retail setting. Generally, moving the bird to a new environment, such as a different store, takes care of the problem.

Dr Friedman:

I have faced behavior problems that I could not change but never one that I considered unchangeable. Behavior never occurs in isolation of environmental conditions—the Gordian knot. Behavior and conditions interact in astonishingly dynamic and flexible ways. We now know that input from the environment produces both functional and anatomical changes in the brain. And, of course, we are surrounded by the impact behavior has on our environment. All this leads me to have faith that, given a physically healthy bird and a behaviorally healthy environment, behavior change is always possible. We can't always control all the variables that contribute to a behavior problem, but we don't usually need to in order to have some positive effect on a behavior problem.

Dr Ponder:

It is probably unfair to consider most of the behavioral issues we face as problems; although many of them are associated with inadequate training, a large number are normal behaviors that are causing a problem because of inappropriate selection of species or individual for the purpose desired. For example, the natural behavior of a Cooper's hawk is to be very active, moving frequently, and responding quickly to external stimuli. Although training can mitigate some of the risks associated with keeping a Cooper's hawk in captivity, these birds have a very high incidence of injury and are generally

unsuitable education birds for public display. Although we can train new behaviors that are incompatible with undesirable behaviors in imprinted birds to create safe and appropriate situations, the underlying imprinting is not changeable. For example, screaming associated with food-begging in an imprinted peregrine falcon is often resistant to change.

Dr Seibert:

My success rate with feather picking patients is approximately 60%, which means that a percentage of patients do not respond fully to treatment. One challenge of assessing treatment responses with feather picking is the cyclic nature of the problem, and success is more likely when owners are patient and willing to try a variety of approaches to the problem and to maintain long-term treatment plans. I have been successful controlling soft tissue mutilation with custom-designed sock sweaters, particularly with cockatoos. In these cases, the bird's behavior was not changed, but the self-inflicted damage was controlled in a way that was acceptable for the owner and bird.

Question: How has the veterinary approach to avian behavior issues changed in recent years?

Dr Driggers:

Fortunately, we are not focusing on single causes or simple solutions. We are using fields of psychology to attain pieces of the complex puzzle. Dr Susan Friedman and Barbara Heidenreich have spoken to my clients about how to understand behavior from a scientific perspective and how to begin a training program with their birds. Our approach is multidisciplinary and includes ruling in or out medical conditions that can be associated with behavior. We get a complete medical history and data on early and current socialization. We use functional assessment as a fundamental tool to deal with problems in a systematic manner. Functional behavioral assessment uses identification of not only the behavior (B) but also the antecedent (A) conditions that occur before the behavior and the consequences (C) of the behavior. The ABC technique uses the assumption that all behavior has a purpose. Functional assessment allows the observer, caretaker, or trainer to have appropriate interventions at A or C and avoids labels that limit behavior change. By using positive reinforcement, we can change behavior to enable longer, happier relationships with birds.

Dr Echols:

Veterinarians have improved the way they deal with behavior problems in that now, behavior problems are better classified, and therapy is more directed.

Dr Edling:

It is very exciting to see changes in avian behavior issues over the past several years. Veterinarians have started to use training/modification methods based on the actual science of behavior as opposed to the anecdotal misinformation of years past.

Dr Friedman:

This is a golden age for behavior science in so many ways, not the least of which is a great coming together of expertise from different fields of study. Veterinarians distinguish themselves by being at the crossroads of many of these sciences—a demanding location for any professional. In recent years, I have seen greater interest in positive-reinforcement training, functional assessment, empowering animals to make behavioral choices, and behavioral enrichment. Another welcome change is that I rarely hear the cliché misunderstanding that ABA is the study of simplistic, mechanistic stimulus-response relations by icy scientists working in irrelevant laboratory settings who believe that animals have neither thoughts nor emotions!

Dr Ponder:

It has been wonderful to see the dramatic increase in veterinary interest and understanding of avian behavior problems. We are recognizing that behavioral problems underlie many major medical problems and are also quality-of-life issues for our avian patients. A large-scale understanding of appropriate ways to analyze and address behavioral change, as well as how to effectively use those methods with clients, has occurred more slowly. Many of us started extrapolating our knowledge of training from other companion animals; whereas techniques relying on negative reinforcement and punishment are less than ideal when training dogs, they are totally inappropriate and ineffective with birds. For wild birds, however, the reliance has always been on positive reinforcement. After all, a bird that can fly away has options. The recent movement toward applied behavioral analysis has truly brought a level of scientific understanding to addressing behavioral change.

Dr Seibert:

I am not certain that a lot has changed, except that perhaps more avian practitioners attempt to address owners' questions about behavior and the mental health of their patients. Because of the influence of husbandry on exotic pet species' physical health, exotic animal practitioners are far more educated about the behavior of the species they treat than are small animal practitioners. In my referral practice, dog and cat owners frequently receive misinformation about behavior from their primary veterinary hospital, and often, there has been no attempt to address mental health concerns. However, bird owners come with information from their primary veterinarians about enrichment, training methods, and natural behavior. It would be wonderful if more avian practitioners would consult with and enlist the help of veterinary behaviorists. Residencies in behavioral medicine are required to include training with all pet species, as well as wild ancestors of domestic species and zoo and laboratory species. The behavior board examination also includes medicine, neurology, welfare, sociobiology, behavioral ecology, and learning-theory concepts. Board-certified behaviorists are the best source of information about animal behavior, psychopharmacology, and applied-learning theory. There is no reason to encourage and promote misinformation when a specialty college exists with individuals who can provide accurate information. There is increasing respect for the intelligence of avian species and the need to provide both social and intellectual stimulation.

Question: How have clients' expectations/demands changed in regard to bird behavior problems in recent years?

Dr Driggers:

I think, for the most part, they haven't. I often find I want more for them than they know that they need.

Dr Echols:

It seems that one group of more informed clients are tuned in to bird behavior and are willing to work to improve the problem or accept it (especially with rescued birds). The other group still has little or no understanding of abnormal behaviors in birds and is generally learning about issues for the first time during their veterinary visit. The first group clearly is keeping up with current literature.

Dr Edling:

As clients have become more knowledgeable about bird behavior, their demands for veterinary services for bird behavior problems have increased. Behavior modification is no exception, and as an avian veterinarian, I have found that clients expect advice about bird behavior as part of routine veterinary care.

Dr Friedman:

Many clients are beginning to question past recommendations to overwhelm parrots with forceful and coercive strategies. They are becoming aware of practical alternatives to meet their behavior goals including reading and heeding a bird's body language, empowering birds to make choices in more enriching environments, and shaping new behaviors by reinforcing small improvements toward the final goal. They are also learning to proactively preempt problem behaviors. This increases the need for veterinary professionals to become proficient disseminators of the science of learning and behavior and procedures for positive behavioral support.

Dr Ponder:

Behavior and management have always been major topics for us when dealing with clients who have captive raptors. Although the rigors of the selection process for ownership of a captive raptor assures a client has baseline knowledge before acquiring a raptor, the number of volunteers and degree of staff turnover in educational facilities can present unique challenges.

Dr Seibert:

In my practice, bird owners have always been the most educated about their pets and the most devoted to their physical and mental health. Because I see cases only on a referral basis, I generally have excellent clients. I have seen a trend to attempt to create more natural environments for pet birds and to promote more species-typical behaviors, such as allowing birds to fly rather than keeping them trimmed, housing them in groups or flocks rather than individually, and enabling them to spend more time out of their cages than in them. Diets have improved, as well. The dominance myth (the belief that pets challenge the status of their human caregivers) is unfortunately rampant in the dog-training world and has resulted in inhumane, dangerous, and cruel interventions for dogs with behavior problems; however, despite this lack of understanding

of the meaning of dominance, pet bird owners appear to be using more appropriate training tactics with their birds.

Question: What resources would you recommend a veterinarian interested in avian behavior seek out to learn more about methods of avian behavior change?

Dr Driggers:

I recommend spending some time reading and listening to Drs Susan Friedman and Brian Speer and to watching the intricate details of training by Barbara Heidenreich. Barbara has some excellent videos to watch and sell in a practice setting. I have also used Dr Scott Echols video on captive foraging.

Dr Echols:

Attend animal behavior (even with nonavian species) and avian continuing education courses. Veterinarians should work with mentors skilled in avian behavior.

Dr Edling:

Read books, book chapters, and peer-reviewed papers written by authors who have backgrounds in the science of behavior. Look for authors with advanced degrees in behavior or trainers who have a deep understanding and knowledge of the science of behavior. Another excellent source of information is animal behavior organizations, especially those dealing with behavior modification in zoological settings. A great method to sharpen your skills is to attend or sponsor a workshop by an avian-behavior specialist.

Dr Friedman:

There are many resources available for veterinarians interested in gaining expertise in behavior-analysis solutions, although at this time, it will likely require connecting the dots to other professions, including psychology, special education, and even contemporary animal training. *Learning and Behavior*, written by Paul Chance, is an excellent overview text for professionals. The Cambridge Center website (see www.behavior.org) is an interesting repository of relevant information. My articles for caregivers may be helpful for clients; veterinarians are welcome to reprint them and distribute them freely in their practices and newsletters. These articles can be downloaded from www.thegabrielfoundation.org/html/friedman.htm. Barbara Heidenreich's DVDs, books, and *Good Bird Magazine*, which can be found at www.goodbirdinc.com, also provide very

effective instructional opportunities for professionals and clients.

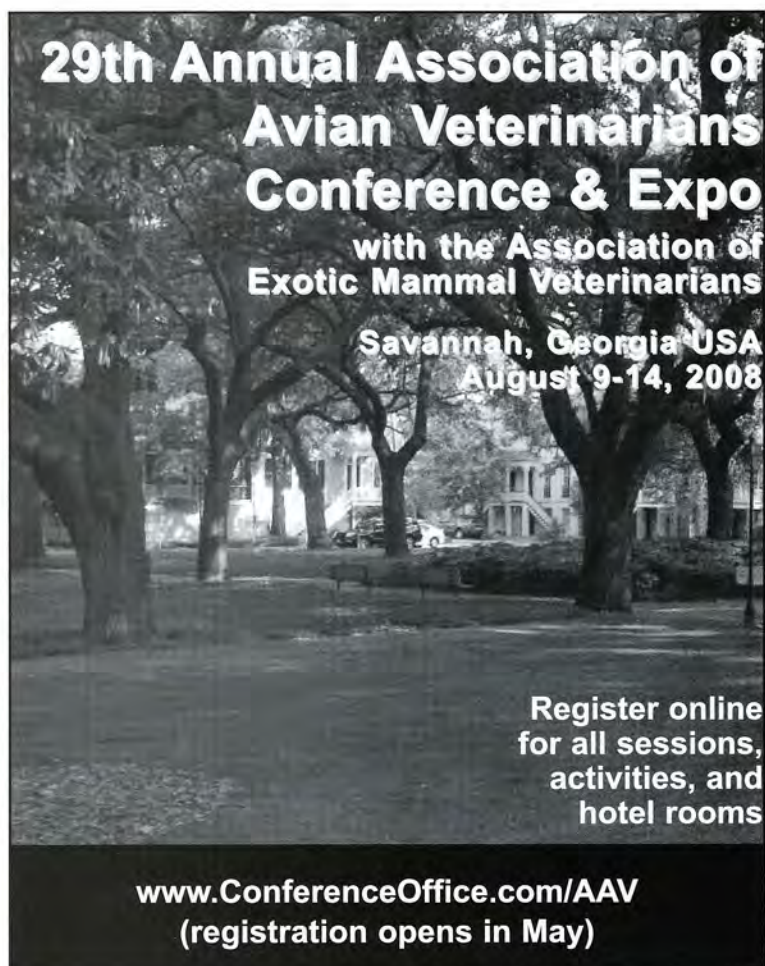
Dr Ponder:

There are a number of excellent resources on avian behavior. The University of Minnesota Raptor Center has several experts in raptor behavior, captive management, and treatment of medical problems that arise. The staff also relies on networking with other members of the International Association of Avian Trainers and Educators, which has an annual conference on avian training with professional trainers, such as Steve Martin, Karen Pryor, and Barbara Heidenreich. I have personally benefited immensely from participating in Dr Friedman's online course and seminars on applied behavioral analysis, learning the scientific basis for behavior change.

Dr Seibert:

Veterinarians interested in avian behavior, learning theory, terminology, and how to apply reinforcement and punishment humanely and

effectively should consult a psychology or learning text or a veterinary behaviorist. There is a wealth of misinformation in print in both veterinary references and in the common vernacular, and it is important for veterinarians to understand the science behind behavior modification and the accurate use of these terms. There are a number of scientific meetings that focus on applied behavior topics, including conferences by the American College of Veterinary Behaviorists (held every year in conjunction with the AVMA convention), Animal Behavior Society, International Society for Applied Ethology, and International Veterinary Behavior Meeting. Behavior problems are one of the most common causes of death of companion animals and an important cause of suffering, yet the number of veterinary schools offering even minimal instruction in behavioral medicine by board-certified behaviorists is shrinking. More research is needed in the area of avian behavior, and continuing education meetings need to include presentations by behavioral scientists and veterinary behaviorists.



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