Handling and Restraint of Avian Patients

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The wild bird in its natural environment and in captivity

Ethologists traditionally are biologists who have mainly focused on unlearned behavior (innate) of animals in their wild habitat. Behavior analysts tend to be psychologists who have mainly focused on learned behaviors in the laboratory and special educational field settings. Both forms of analysis focus on scientifically explaining an animal or population of animal's ability to change their behavior in response to the environment in which they live. Behavior is the most direct tool a wild bird has to respond to its environment, and it ultimately determines whether it survives and breeds in its natural environment. There are two general functional categories of avian behaviors: Self-maintenance behaviors, and social behaviors. Self-maintenance behaviors are aimed at accomplishing some specific task to maintain the physical condition of the individual. Social behavior is intended to communicate information to another individual.

Daily maintenance behaviors of avian species are self-maintenance behaviors that are life-sustaining activities performed throughout the year. These behaviors include feeding, feather care, locomotion, concealment, communication and display. Birds engage in a large number of behaviors that are predominately undertaken for the purpose of communication or signaling. These behaviors, in general, rank among the most complex of all avian traits. A communication signal is a behavior of the receiver in a way that benefits the sender. A display is a ritualized signal intended to convey a specific message. With captive parrots, feeding, feather care, communication and display behaviors are commonly observed daily maintenance behaviors. The behavioral response that a captive bird has to its environment has importance for the maintenance of homeostasis, both physically and psychologically in its non-natural environment. Enrichment of these daily maintenance and social behaviors in captivity has been shown to be of great benefit to avian health and welfare. Conversely, abnormal behaviors in these general categories encompass most of the common behavioral disorders of companion parrots.

The ABC's of describing behavior

The simplest manner of describing and initial evaluation of a behavior is through the use of the ABC's of behavior. The letters stand for the three elements of a simplified behavioral "equation" which includes the antecedents, behavior, and consequences. With this simple descriptive and analytic strategy, we seek to identify through careful observation the events and conditions that occur before a specific behavior − antecedents, as well as identifying the results that follow the behavior - consequences. When paired with keen observation skills and creative problem solving abilities, the ABC's will help us clarify the way in which the basic components of behavior are interrelated. It is this clarity that leads us to important insights and more effective teaching or training strategies. The ABC's can also help us identify problem situations and consequences that have a formative role in some behaviors too. There are six steps to analyzing the ABCs: (1) describe the target behavior in clear and observable terms; (2) describe the antecedent events that occur and conditions that exist immediately before the behavior happens; (3) describe the consequences that immediately follow the behavior; (4) examine the antecedents, the behavior and the consequence in sequence; (5) devise new antecedents and/or consequences to teach new behaviors or change existing ones; (6) evaluate the outcome. A careful distinction needs to be made between behaviors and constructs. In this context, a behavior describes what a bird is doing and is defined as something that can be observed and measured. Alternatively, a construct is an idea or theory about the mental processes inside an individual that explains why or how they behave as they do. A construct cannot be observed or measured directly. For example, a parrot may bite when asked to step up from the hand from its cage, and this behavior may be described as such. A construct can be thrown in quite easily, however, stating that the bird is demonstrating dominance over the owner or "hates" the owner. The distinction between behaviors and constructs is part of a larger framework for understanding behavior that is relevant to a specific situation.

Careful distinction needs to be made between behaviors and constructs. A construct is an interpretive assessment of a characteristic of an animal, often used to describe and explain its behaviors. A construct can also function as an interpretive assessment of what one feels the animal feels your actions and behaviors represent to it. A behavior is a specifically described action, and would ideally be described in context with antecedents and consequences. The use of constructs can function as a trap of categorical thinking or interpretation that can very easily lead the best avian veterinarian astray from a more complete and multidisciplinary approach to integrating behavioral science into exam room experiences. These constructs or labels can result in the following liabilities for the animal: (friedman, 2007)

1. Labels are based on circular reasoning that is not scientifically verifiable.
2. Labels can become self-fulfilling prophecies
3. Labels can predispose us to using ineffective, forceful, or harmful strategies.
4. Labels create a false sense of having explained behavior, when all we've done is named it, thereby ending the search for actual causes we can do something about
5. Labels provide excuses to get rid of the animal.

By describing a behavior in the context that it is occurring, one is more optimally positioned to describe problem behavioral situations – and more opportunity to alter them. Friedman quotes the following example when comparing constructed labels with a more sound behavioral description:

"Consider the lack of useful information provided by a pet owner who describes his/her parrot as vicious. Exchange the label for a clear description of overt behavior, i.e., what the parrot does that can be observed: The parrot bites. Add to that description, the antecedent conditions that predict the behavior: When I put my hand in his cage, the parrot bites. Last, include the purpose for the behavior, that is, the consequence it produces for the bird: When I put my hand in his cage, the parrot bites, and I remove my hand. This summary statement is what is needed to further clients' understanding, ability to predict behavior and skills designing preventive and ameliorative behavior interventions. "

When applying your ABC's, start with a description of the behavior

- Eg: This parrot bites.
    - Then, sort out the antecedents
- Eg: This parrot bites when my husband approaches it while perched on my shoulder and presents his hand for it to step up onto
    - Then, describe your best hypothesis as to the consequence of the bird's behavior
- Eg: This parrot bites when my husband approaches it while perched on my shoulder and presents his hand for it to step up onto, and he removes his hand.

This type of a description is something that you can document in your medical records as a tangible observation, and begin to formulate some semblance of a more detailed investigation and ultimately a behavior change strategy for. Now, we have something to work with, rather than what we may have heard from this client at the onset: "My parrot hates men because it is hormonal"

Using food for reinforcement and motivation

Food is a primary reinforcer; any item which is necessary for the survival of the species. Secondary reinforcers are those that are dependent on their association with other reinforcers. (heidenreich, 2007) These secondary reinforcers may be referred to as conditioned reinforcers, in that there was conditioning or learning required in order for them to become effective, as opposed to the innate value of a primary reinforcer. Both primary and secondary reinforcers can be used as valuable training and behavior modification tools. Heidenreich describes several strategies for creating motivation for a food reinforcer without the use of deprivation:

1. Free feed a base diet and reserve preferred food items for training sessions
2. Manage the deliverance of food
3. Feed until satiated each training session
4. Use small reinforcements
5. Train just prior to a regularly scheduled feeding time
6. Avoid overfeeding by weighing the animal and diet to determine a range that works for that animal

Concurrently, when trying to optimize the use of food as a motivating reinforcer, one should be aware of factors that can reduce the bird's motivation:

1. New environment
2. New trainers/people
3. Other environmental distractions
4. Physical exhaustion
5. Illness
6. Excess heat or cold, rain
7. Wind: If training out of doors. Particularly influential to flying birds
8. Objects blocking the identified path animal is to take
9. Inappropriate paths or patterns (too angled, too far, etc)
10. Confusion, unclear cues, or too many people requesting behavior at the same time
11. Poor training strategies, reinforcing inappropriately

In the examination rooms, most veterinarians are "trapped" in many ways. There is a finite time in which a physical examination must be performed. There will be events that must occur which could be painful, will be frightening, and unpleasant. Many birds are physically ill, malnourished, confused, and have been sometimes pre-conditioned with inappropriate behaviors for this type of setting. With this in mind, our goals in this laboratory are to introduce the concept of Transition Skills. These are essential skills that allow us to be least invasive, less fear-evoking, and to add less to the functional working problem list for the patient and the client through learned fear or other undesired behavioral sequellae.

The current general state of veterinary healthcare delivery

The health and welfare of companion birds is directly tied to our ability to help owners meet their physical and psychological needs. Healthcare services provided by veterinarians are generally oriented towards these goals, however setting priorities and balance for all components of health and welfare is not easy. Behavioral science is often not a primary focus when wellness programs are delivered in practice, and a balance of the full complement of all components of wellness is required for best results. Components of the delivery of complete wellness healthcare for companion birds include the provision of a clean and sanitary environment, appropriate dietary support, security, and freedom from pain and persistent fear-inducing circumstances, In addition, training, enrichment and accurate address of behavioral problems is required. All of these are interwoven, interdependent and mandatory for complete healthcare to be delivered. In order for this to optimally occur, the establishment and maintenance of a healthy doctor-client relationship should be viewed as an important requisite.

Historically, bird keeping and human society have been interlaced for thousands of years. The interaction between veterinary medicine and aviculture is a relatively new event, as compared to the length of history between aviculture and society. Some of the statistics generated in a recent 2007 AVMA survey underline these points, with birds receiving comparatively very minimal per household and per individual animal veterinary expenditures, as compared to other companion species. In this survey, dogs were owned by 37.2% of US households, with cats owned by 32.4%, birds 3.9% and horses 1.8%. The average number of animals owned per household was 1.7 for dogs, 2.2 for cats, 2.5 for birds and 3.5 for horses. Mean veterinary visits per year per household was 2.6 for dogs, 1.7 for cats, 0.3 for birds, and 2.2 for horses. Veterinary expenditure per household per year was $356 for dogs, $190 for cats, $25 for birds and $360 for horses. Veterinary expenditure per animal per year was $200 for dogs, $81 for cats, $9 for birds and $92 for horses. With birds receiving 11-17% the number of veterinary visits per household of other companion species, 7-13% of the veterinary expenditure per household and 4-11% of the veterinary expenditure per household, it is reasonable to assume that veterinary delivery of healthcare to avian species still is not as commonly accepted by American society as it is with the compared domestic companion species. (www.avma.org/reference/marketstats/ownership.asp) Contrasted to these differences veterinary healthcare and expenditure, there is a large population of companion birds that are owned in the United States. According to the AVMA in 2001, there were estimated over 10 million birds owned. The American Pet Products Manufacturers Association (APPMA) survey from 2007-2008 concluded that there were 6.4 million US households owning a bird, and 16 million birds owned (www.appma.org/press_industrytrends.asp). These differences suggest there remains a significant number of birds kept as pets in the United States that receive no to minimal veterinary healthcare whatsoever. In the absence of veterinary healthcare influence, this data could easily suggest that there is potential for significant risk to the health and welfare of birds that are kept as companions. American society is changing. Dr Bernard Rollin points out that changing demographics are shaping a new type of "ethic" when it comes to thinking about how animals are treated in society. "Animals are becoming a part of the family". Dr Gail Golab backed this statement up, further saying that "animal welfare should be addressed in terms of thinking about the physiological, psychological and safety needs of an animal. It also requires an assumption that good welfare equals satisfying an animal's needs." It's a model she calls the "moral duty model," which she said is a combination of scientific and non-scientific methods of thinking about what's best for the animal. These moral and ethical issues are becoming increasingly pertinent to the keeping of companion birds. In part due to societal change, and in part due to the advancement of our scientific understanding of their cognitive and communicative abilities, changes in the moral and ethical nature of bird keeping and healthcare will be inevitable.(pepperberg 1999) It is exciting, as well as daunting, for us to be a part of these changes as veterinarians. Specific to this discussion, it is these changes in our scientific understanding of behavior that will likely shepherd us more efficiently forward.

"Capture and restraint" – What are these animals learning from us?

Most of the major veterinary textbook references have chapters or portions describing the methods of Capture and Restraint of birds for examination and/or treatment. Some describe more forceful techniques than others, but all tend to gloss over such an important and ethical/moral issue of "best practice" for handling and restraint of companion birds. The old-school approaches to the examination, diagnosis and medical treatment of birds typically included various forms of "Capture and Restraint", implied or described methods for physically overpowering the birds, with or without chemical immobilization, and often emphasized the need for speed to get the job done. When we did not look back and critically evaluate things, and when we discount the intelligence and learning capacity of the birds, we were historically quick but incorrect to pronounce those methods effective. In reality, however, our "successes" were in fact

often quite far from their ideal or intended mark. Problems associated with time and repetition using these approaches to restraint can include:

1. Increases in learned fear-eliciting stimuli
2. Increased probability of learned aggression
3. Increased risks to the bird and handlers when the birds are being examined
4. Increased risk of problems during medical procedures
5. Increased difficulty interpreting some laboratory diagnostics, due to iatrogenic and stress-influenced changes.

These sad types of experiences occur with companion and aviary birds around the globe on a daily basis, unfortunately.

Transitioning skills for the examination room

Handling and restraint

"Study principles rather than methods. The mind that grasps the principles can develop its most effective methods"

In current circles, and considering the depth of our scientific understanding of behavior, it has become increasingly known that many medical procedures can:

1. be performed with less restraint
2. result in less of an undesired and negative learning experience by the birds
3. result in less risk to bird and handler
4. result in less respondent conditioning of fear-eliciting stimuli.

With these points should be in mind and augmented with sound behavioral science when handling and restraining most companion parrots. Correctly done, this should result in increased sensitivity to their behavior and an earlier appreciation of fear-associated responses should lead to adjustment of technique for optimal comfort of the patient.

Getting the bird out of the carrier or cage

Set the stage for success. Environmental stimuli should be carefully controlled to minimize the generation of fear. This may include a reduction in the activity around the carrier and bird, and careful consideration about the placement of the carrier on the floor, table or elsewhere. Additional noise and sound should be minimized. An exam room with no windows is generally most desirable. Carefully reading and interpreting the bird's behaviors in the cage, fear-elliciting stimuli should be identified and minimized. The handler should be fully prepared: an appropriate perch should be available for determine what stimuli does the bird "likes" and responds favorably to, This may include some form of savory food item, social communicative signals or displays, or allopreening activity. Systematically, take a brief period of time to sort through all of the potential sensory portals for stimuli to help recognize fear-evoking stimuli as well as favorable stimuli to the bird. Work to see if the bird will be willing to come out of the carrier on its own, and to perch comfortably on the training perch.

Should the bird be unwilling to come voluntarily out of the carrier, you may need to progressively introduce your hand (with or without towel covering it), and to force the step up to your hand to enable you to move the bird out of the carrier and onto a training perch. In some circumstances, it may be more appropriate for an individual bird to be held with your thumb pressing its digit or foot, and to not release it to the training perch. It should be generally very infrequent that the initial and first contact with a companion parrot would be a rapid covering with a towel and physical restraint of the body and/or head. Overall, try to seek cooperation and acceptance from the bird, not domination. These goals should lead to the least intrusive, but most ethical methods of handling and restraint. Concurrently, it is important to be timely and efficient – there IS a job to do in a finite timeline

Shaping a restraint experience

Using a series of approximations, a restraint experience can be shaped relatively quickly. This requires quick "reads" on the bird's responses, and adjustments to technique. Should the ultimate goal be to have the bird comfortably restrained without struggling in a towel, and the closest starting point you have available is the bird mildly apprehensively perched on a training perch, a series of approximations may shape up something like this:

1. Bird is slowly approached with your hand covered by the towel
2. Bird steps up to the towel
3. Bird is allowed to step back to training perch
4. Bird is stepped up to the towel again and the P2 and P3 of one foot gently held with your thumb through the towel
5. Bird's digits are released from your thumb's grasp
6. Bird's digits are lightly held again and bird is moved into your chest slowly and gently. If fear or apprehension is noted, bird is returned to the point where comfort is again recognized.
7. Bird is moved slowly into your chest with toes held and towel is brought up over. If fear or apprehension is noted, bird is returned to the point where comfort is again recognized.
8. Towel is again brought up and allowed to drape over bird's back and/or head. If fear or apprehension is noted, bird is returned to the point where comfort is again recognized.

9. Towel is again brought up and draped over bird, and hand touches and applies light pressure over back and cervical area. If fear or apprehension is noted, bird is returned to the point where comfort is again recognized.
10. Hand is lightly applied over back of bird, bunching towel up towards the head, and pressure applied to the lateral aspects of the trunk.
11. Bird is gently rolled over to its back and allowed to rest with head unrestrained in towel on your lap. If fear or apprehension is noted, bird is returned to the point where comfort is again recognized.
12. Bird's head is held indirectly with the rolled edges of the towel bunched about the head, while a progressive physical examination is performed.
13. Bird's head is gently restrained with one hand through the towel to allow an examination of the head and neck if needed, and then bird is returned to a resting position on back in towel on your lap.
14. Bird's head is gently restrained with the rolled edges of the towel, rolled to expose it's right jugular vein and one hand is moved underneath the towel to restrain the head and neck more firmly for venipuncture. Immediately afterwards, bird is returned to a resting position on its back in the towel on your lap.
15. Bird is stepped up to your hand out of the towel and returned to its perch while blood samples are being processed.
16. Bird is again stepped to your hand and allowed to rest on your lap or hand while more communication with client occurs and some form of desirable stimulus is delivered.

This technique that is loosely outlined above should take only minutes with most companion parrots to complete. With others, however, some of these individual steps may need to be modified, broken down and adjusted to best meet the needs of the bird and the situation. This specific technique of shaping a restraint experience using the toweled hand to step to is commonly referred to by our nursing staff as the "potholder technique". Other techniques that you will see demonstrated and have a chance to apply that we commonly use are the "Butler technique", the "Yoda technique", and the "Lap dance". Although handling is indeed different from restraint, a mixture of both philosophies, properly balanced, should best serve the patient in most circumstances.

Training

Although the primary focus of this lecture is directed towards pouring a foundational understanding of the application of behavioral science to the handling, restraint and physical examination of pet parrots, its scope in many ways needs to include some of the principles of training. Training skills are necessary in the administration to the health and welfare of parrots, and enables us to teach better dietary habits and food items, to train enrichment activities such as play, exploration, foraging, and feather care. Training skills directly influence our ability to moderate the physical examination and restraint experience, often allowing the application of habituation and counter conditioning to make the experiences less fear-evoking and harmful to the birds. And, perhaps most importantly, training skills allow us to enrich the human-animal bond, better positioning us to enable our clients to appreciate and enjoy their companion birds more.

Heidenreich and Friedman have published a basic list of some basic Parrot Handling and Training Guidelines which fit well with the material already described in this manuscript. (www.goodbirdinc.com). This list is reprinted below, and will help clarify some of the principles necessary to optimize a training experience. Many of these can and do directly apply to the "wellness" veterinary examinations, physical restraint procedures, and some simple training pointers for companion bird owners and their birds.

1. Make it your goal to create an environment in which the parrot appears comfortable and relaxed. This can only be inferred from the bird's body language, specifically behaviors involving feather position, eyes, wings, head, legs and feet.
2. Approach unfamiliar parrots calmly and quietly to avoid creating any signs of anxiety, fear responses or aggressive behavior.
3. If a parrot shows any signs of fear, anxiety or aggressive behavior, discontinue the actions that helped generate those behaviors. This may include lowering your hands and/or stepping away from the parrot.
4. If a parrot exhibits aggressive behavior, immediately discontinue actions creating this response.
5. Keep your attention and your eyes focused on the parrot.
6. If you need to direct your attention away from the parrot for more than a few seconds, put it back in the enclosure or carrier if that is a location where the bird feels more relaxed.
7. Be aware of where you place or hold food in the presence of a parrot, as this can cause anxiety.
8. Be aware of how every action that you do influences a parrot's behavior, and adjust your behavior moment by moment to maintain a calm bird.
9. Be aware of moving objects and how they may influence a parrot's behavior.
10. Move crate, carriers, and cages with extreme caution to avoid bumping or jostling the bird. This could result in increased anxiety and a decrease in the effectiveness of your training efforts.

11. Prior to removing a flighted parrot from its enclosure or carrier, evaluate the surroundings for safety and address any potential safety issues (cover large mirrors, pull down shades, shut doors, etc)
12. If a parrot launches into flight, offer your steady, raised hand as a safe place to perch.
13. Be aware of the parrot's body proximity to adjacent objects. Avoid hitting tail, wings, or head on anything if possible.
14. Avoid creating a high level of excitement (eg: bobbing or crest raising) by talking loudly or using animated actions. This can sometimes result in the presentation of aggressive behavior.
15. While another person is working with a parrot, quietly observe as unobtrusively as possible to minimize distractions for both the parrot and the primary handler.

Conclusions

The time to include behavioral science as a part of routine avian medical practice and procedures is now. Behavior needs to be discussed, recorded and addressed as a component of most physical examinations. Consideration needs to be forefront in our minds that some of our commonly accepted and "routine" capture and restraint techniques are in reality causing significant behavioral problems in birds. Change is not easy, and it is hard work for us to learn to replace habit and complacency with scientific knowledge, and new methods.

With pet birds, many abnormal lessons are intentionally or unintentionally taught. With time, abnormal behaviors begin to develop from these foundational fertile grounds of inappropriate learning in the home or in our offices. These abnormal behaviors may include a lack of ability to explore, discover and enjoy toys or other new enriching items in their environment, an inability to enjoy or trust interaction with multiple people, development of a "one person bonded relationship, or increasing intolerance of caged existence or restricted mobility within the home. As these problems continue to advance, feather damaging behaviors, obsessive-compulsive behaviors, reproductively associated disorders, screaming, aggression, biting, and inability to accept new human interactions tend to increasingly appear. In our offices, increases in escape and avoidance behaviors, aggression, generalized fear and apathy all can be seen with inappropriate handling or restraint methods.

By thinking, talking and actually working towards the identification and address of behavior concerns with companion birds, the quality of healthcare for these animals can be dramatically improved, considering the current bleak reality of the delivery of sound behavioral guidance in practice.

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