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SHORT COMMUNICATION

Two Programs Educating the Public in Animal Learning and Behavior

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Two educational programs have been developed that teach basic principles of animal learning and behavior and how they can be used in day to day interactions with companion animals. The first program educates violators of animal control laws about animal learning and cat and dog behavior to help them resolve their problems with their animals and avoid future animal control violations. The second educates home service providers concerning basic principles of animal communication, dog behavior, and the causes of aggression to help them avoid dog attacks on the job.

The application of knowledge about animal behavior and learning has expanded greatly in the last twenty-five years. This increase is due in part to the great popularization of the science of animal behavior through newspaper articles, books, and television programs. This popularization has led to a greater recognition by the public that the science of animal learning and behavior has something useful to offer them. Most noticeable have been applications in the areas of companion animal behavior problems, enrichment and welfare improvement of captive wild and domestic animals, and in the conservation of threatened wild species. Surveys of these areas can be found in Voith and Borchelt (1996c), Shepherdson, Mellen and Hutchins (1998), Appleby and Hughes (1997), and Gosling and Sutherland (2000). However, this knowledge is beginning to be applied in other areas as well.

In this paper I will describe two programs with which I have been involved that have applied principles and techniques of animal learning and behavior to practical situations. Both are education programs designed to help people in their jobs or in their day-to-day lives with companion animals.

The Colorado Pet Management Workshop

Almost all communities in the United States have laws governing the keeping and management of animals. These laws are designed to protect the public from zoonotic diseases spread by animals, such as rabies, to protect them from dangerous animals such as biting dogs, to protect them from nuisance animals such as barking dogs, and to protect the animals from neglect and cruelty.

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It is common for people convicted of violating these laws to be given monetary fines, to spend time doing community service, to have their animals taken away from them, to be prohibited from owning animals in the future and/or to be incarcerated in jail. These penalties are not always successful in preventing future violations of animal control laws. To try a different way to address the problem, an educational program was created to help violators understand their responsibilities, to help them resolve the problem and to help them avoid future problems.

The program, called the Pet Management Workshop, consists of one six hour session and is led by a person specially trained to facilitate learning and discussion. Participants are ten to twenty people convicted of violating local animal control laws, who are referred by local judges. The program goals are addressed through lectures, group discussions, readings and exercises in a workbook, and the creation of individual action plans to resolve the pet behavior problem.

To help participants resolve their problems with animals and to prevent future problems, a large segment of the workshop is devoted to an understanding of the proximal causes of behavior in animals. The lectures and workbook focus on problem behaviors such as housesoiling, barking, roaming at large, aggression, separation anxiety, and destructiveness. The materials explain why the problem behaviors occur and suggest ways to change them. There is also material that teaches how to acclimate a dog to stay in a small crate, how to use punishment humanely and effectively and teaches alternatives to positive punishment.

Table 1
Animal Behavior and Learning Concepts and Principles Taught in the Pet Management Workshop and their Applications to Specific Behavior Problems.

Concept or Principle	How Applied and What is Taught	References
Anthropomorphism	Uninformed, it can lead to inaccurate interpretations of behavior	1
Social attachment	Explain the causes of separation anxiety	2
Submission, Threat	Explain behavioral functions of displays, why submission is not guilt	3
Response prevention	Use as an alternative to positive punishment	1
Extinction	Use as an alternative to positive punishment	4
Differential reinforcement	Use as an alternative to positive punishment	4
Antecedent Stimulus	Remove a cue leading to a behavior to prevent the problem	4
Conditioned emotional response	Use in counterconditioning and desensitization of fears and separation anxiety	5
Positive and negative punishment	Conditions necessary to make punishment effective; negative punishment as an alternative to positive punishment	6

Note. 1- Hetts (1999); 2- Voith & Borchelt (1996b); 3- Simpson (1997); 4- Burch & Bailey (1999); 5- Reid & Borchelt (1996); 6- Borchelt & Voith (1996b).

The information given the participants is based on what scientists have learned about dog behavior including elimination, vocal communication, courtship and mating, play, and aggression. A variety of studies have described these behaviors and summaries can be found in Overall (1997) and Serpell (1995). Participants are also exposed to basic concepts and principles of animal behavior and learning as well. A list of some of the concepts taught and how they are applied is given in Table 1. The references cited in the tables and in the following text refer to how these basic concepts and principles can be applied that provide the basis for the materials taught in the two programs.

Among the most important things participants learn are what techniques of teaching and communicating with their animals will not work and the correction of misinterpretations of dog behavior. It has been my experience and that of many other applied animal behaviorists (Hetts, 1999, Voith & Borchelt, 1996b) that many people misunderstand the motivations of their companion animals, misinterpret their communication signals and misunderstand how animals learn. This often leads them into inappropriate and ineffective dealings with their animals.

For example, a common misconception is that a dog “looks guilty” when confronted with a mess made some time in the past, such as garbage strewn across the floor (Hetts, 1999). Because people believe that the dog “knows that he has done wrong”, based on the “guilty looks”, they then proceed to punish the dog for the act long after it has occurred in the belief that this will stop the behavior. There are two errors here. First, a misinterpretation of the dog’s behavior, and second a lack of understanding of the conditions necessary for effective punishment. These errors lead people to ineffective attempts to change the behavior and often lead to abuse and cruelty to the animal.

The guilty looks are really canine submissive displays that communicate not guilt but rather the unwillingness of the dog to engage in confrontations with the person, and seem to be an attempt to terminate the threatening behavior of the angry person (Voith & Borchelt, 1996b). The concepts of threat and submission are explained to participants and the signals are described in dogs. The dangers of anthropomorphism in attributing human motivations to dogs are also explained. Given these ideas, participants can better interpret the behavior of their dogs.

Misconceptions about how animals (and people) learn are addressed in the workshop. Too often when people have a problem animal their first thought is of how they can get the animal to stop the problem behavior. This usually leads them to try various kinds of positive punishment as their first or only means to change behavior. This is not always the most effective or humane way to change behavior. Most people do not understand the conditions necessary to make punishment effective and/or they cannot arrange the situation to maximize the effectiveness of punishment (Azrin & Holz, 1966; Borchelt & Voith, 1996b).

For example, in many situations punishment cannot be delivered consistently, because the owners are not always present when the offending behavior occurs, such as when the dog is alone in the back yard barking at the neighbors. In addition, punishment often fails because it is not delivered quickly enough after the behavior, either because no one is present to deliver it or because no one can get to the dog quickly to deliver the punishment. An example is when a dog jumps a fence to escape the yard when the owners are inside the house. By the time the

owners have caught the dog, many seconds to many minutes have passed after the escape.

If people can think instead of how to get the animal to engage in desirable or acceptable behaviors, it opens up other possibilities for behavior modification. The workshop tries to focus participants on this more positive approach and to teach them alternative methods for changing behavior. For example, owners are told how to use differential reinforcement of incompatible behaviors (Burch & Bailey, 1999), such as teaching the dog to come to the owners and sit quietly for a treat rather than running to a window and barking when a person walks by outside.

The effectiveness of the Workshop in reducing future animal control violations was tested by comparing participants with a matched group of animal law violators who had not attended the workshop. The animal control violation records for 97 people who attended the workshop in 1998 were monitored for one year after the class and compared to violation records of a matched group of 97 people convicted of similar offenses in the same jurisdictions. Results showed that first-time offenders who were sent to the workshop were significantly less likely to re-offend than were first-time offenders who had not attended the workshop. Of the workshop attendees, only 6.7% reoffended within one year, while 23.5% of the nonattendees reoffended within one year (Estep, 2001). There was no difference in the likelihood of reoffending between workshop attendees and nonattendees if the offenders had three or more offenses prior to attending the workshop. This indicates that habitual offenders were not influenced by the workshop.

Bite Prevention Training Program for Home Service Providers

Injuries to delivery people, public utility workers and others who come onto private property as a function of their jobs are a serious problem in the United States. It is estimated that dogs bite about 4.5 million people in the United States each year (Task Force, 2001). While the exact figures for injuries to home service providers are unavailable, it is thought that dogs encountered in these situations bite thousands of individuals every year.

In an attempt to reduce these injuries, Animal Care Training Inc., a company that produces video training programs, contracted with two animal behaviorists (Suzanne Hetts and D. Q. Estep) to help design a program to help reduce these injuries. The program consists of two one-hour videotapes, a workbook and a written examination to test knowledge gained.

A primary goal of the program is to teach home service providers to be good observers. These workers need to observe the environment to discover if a dog may be present. If a dog is present they need to identify and interpret signals from the dog to help them predict what the dog is likely to do next. They also need to know enough about the causes of dog aggression to know what to do to protect themselves if a dog attacks them. A sample of the concepts and principles taught in this program are presented with their applications in Table 2.

The basic observational skills taught in the program are the same ones taught to all researchers and students in animal behavior and learning. The workers are taught to observe rather than just watch the environment and the behavior of the dog (in the sense of Lehner, 1996). They are taught when observing dogs to describe the behavior empirically in terms of body postures and movements (Lehner, 1996, Martin & Bateson, 1993) rather than presumed functions or conse-

quences. Many people jump to interpretations of the functions of an animal's behavior before they have adequately observed the details of the behavior (e.g. "I think he just wants to be friends with me"). As a result, they may misinterpret the behavior because they missed important details. For example, many people do not pay attention to the ear position or tail carriage of dogs. Yet the position and movement of these features can be useful in interpreting the behavior and motivation of dogs (Simpson, 1997).

Table 2
Animal Behavior and Learning Concepts and Principles Taught in the Bite Prevention Program and Their Applications in the Program.

Concept or Principle	How Applied and What is Taught	References
Agonistic behavior	Functional organization of behavior is stressed, patterns of threat, aggression and submission are likely to be seen together	1
Aggression	Causes and different kinds of aggression are explained	1
Antithesis of signals	Signals of fear or submission will look the opposite of threat	2
Displacement behavior	Occurs when animals experience conflicting emotions, can be an early warning sign of distress, fear or threat	3
Territory	Some dogs actively defend areas and are much more dangerous on their territories	4
Counter conditioning	Activities that change the emotional state of the dog, such as play, may reduce the risk of injury by the dog	5

Note. 1- Borchelt & Voith (1996a); 2- Simpson (1997); 3- Voith & Borchelt (1996a); 4- Overall (1997); 5- Reid & Borchelt (1996).

Workers are also taught how to interpret the behavioral signals of dogs, especially signals of threat, aggression, submission, fear, affiliative behavior, and displacement behavior. The program presents the idea that social conflict is organized into a functional system of agonistic behavior and that dogs have choices they can make when faced with a conflict with a person or another animal (Hetts, 1999). Observing signs of threat imply that aggression, submission, avoidance or further threat are all possible choices the animal may make. The principle of antithesis of communication signals is also presented to help workers more readily recognize and interpret the behavior of dogs (Darwin, 1965).

The notion that aggression is not a unitary concept is presented. Different kinds of aggression are described, and the idea that different kinds of aggression may have different motivations and may be seen in different contexts are also discussed (Moyer, 1976). The practical implications are that home service workers are more likely to see some kinds of aggression (such as territorial or protective aggression) than others (such as dominance or maternal aggression) and that they need to watch for signs of these kinds of aggression in their work.

The program teaches that the causes of aggression are complex, and that over-simplification can be dangerous. Breed stereotypes such as "Rottweilers are dangerous while Labrador Retrievers are friendly" are common, but unsupported by data (Wright, 1996). Any breed of dog can bite. The complex role of genetics in influencing agonistic behavior is discussed as are other factors known to influence aggression including, sex of the dog, reproductive status, age, medical factors,

early socialization experiences, and later experiences (Wright, 1996; Lockwood, 1995).

There are factors other than those related to the dog that can also influence the likelihood of an attack. The immediate environment and the behavior of the person are also important (Lockwood, 1995; Wright, 1996). A dog on her own territory may be more dangerous than one away from her territory, for example (Overall, 1997). Workers are taught to pay close attention to the environment and surrounding events when they encounter the dog.

Most people are not fully aware that subtle things they might do in the presence of a dog could influence the likelihood of an attack (Wright, 1996). Many do not recognize that dogs read and interpret human body language at the same time people are trying to read the dogs' body language. However, dogs will tend to interpret human signals as if they came from other dogs, and not according to the intentions of the human sender of the signal (Simpson, 1997). For example, people often reach down to pet a dog on the head as a sign of friendliness, yet dogs tend to interpret this as a threat, because standing over another dog is threatening (Simpson, 1997). Hediger (1965) was one of the first to point out that when different species try to communicate, miscommunication often occurs because of the tendency for each species to interpret the behavior of the other as if they were conspecifics.

The program also presents the concept of classical counter conditioning and how it could be used to change the emotional state and therefore the motivation of an animal. These principles have been described and applied to human behavior modification by Wolpe (1958). Voith and Borchelt (1996a) describe how they can be used with fearful and aggressive animals. Workers are taught that tossing a treat or a ball to a mildly fearful or threatening dog may dissipate the fear or aggression and make the dog friendlier and safer.

This program was introduced just prior to the writing of this article and thus there has been no evaluation of its effectiveness in preventing dog-related injuries. Evaluation of the program is planned for the near future.

These two programs illustrate how concepts of animal behavior and learning can be applied to problems outside the usual domain of applied animal behavior and learning. While the recent popularity of books, articles, films and video programs about animals has heightened awareness of animal behavior as an area of study and increased applications of scientific knowledge, it has also led to the propagation of myths, misunderstanding and pseudoscientific explanations of behavior. One example of such a misunderstanding is a prominent dog trainer who explains punishment as "...a penalty for misbehavior.' It shouldn't be confused with correcting, in which you stop a dog from indulging in an unwanted action and then show it what you want it to do." (Dibra & Randolph, 1994, p.247). Correcting such misunderstandings and providing scientifically accurate explanations to the public improves the likelihood that people will be able to deal with animals in effective, efficient and humane ways.

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