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What are the Implications of Using Training Techniques Which Induce Fear or Pain in Dogs?

If a dog shows a behavior which results in a perceived positive outcome, he or she is more likely to show the behavior again on subsequent occasions – this is known as reinforcement. If a behavior results in a perceived negative outcome, the dog is less likely to show the behavior again – this is punishment. Simplistically, in order to change a behavior, one could either punish an undesired behavior or reinforce the desired one.

'Punishment' tends to be an emotive word, but scientifically this just means a reduced chance of a behavior occurring again. Hence, depending on the characteristics and experience of the animal, and the choices of the trainer, a 'punisher' could vary from a mild 'no' to a very aversive stimulus such as a tightened prong collar around a dog's neck. Punishment has been used in animal training since animals have lived in close proximity with people. However, just because training techniques based on the induction of fear or pain have been used for a long time, does not necessarily mean that they are the best option in terms of efficacy or animal welfare. In fact, training a dog using such techniques carries a number of risks. These are:

- Increasing the dogs fear or anxiety about the situation in which it is used
- Decrease the dog's ability to learn
- Associate other, coincidental events with a fear provoking event
- Inhibit behavior, but leave the underlying emotional response unchanged increasing the chance of future problems
- Induce an new avoidance, or aggressive response
- Cause confusion as to which behavior is required
- Cause physical injury

In addition, since training techniques are widely used that do not require the use of severe punishment, there is no need to use techniques which impact negatively on the welfare of dogs. The relative safety and effectiveness of using reward based or punitive training techniques must also be taken into consideration.

Increasing Fear and Anxiety

Most problematic behaviors, including aggression, develop because the dog learns to show an effective response to a perceived threat. Causing further anxiety to the dog by applying a punishment will not achieve the aim of making the dog less worried about whatever it is responding to: in fact it will almost inevitably make it more fearful in that context.

When a dog shows aggression to something that is perceived as a threat, it is possible to do something to it which is even more aversive (e.g. by pinning to the floor with your foot on its throat, or blasting an air-horn in its face), that may inhibit its expected behavior temporarily. Because people often look for 'instant fixes' this approach may look like a cure, and appear impressive on TV, but it does not resolve the cause of the original behavior. Because the dog remains fearful of the original perceived threat, and indeed will often be more anxious because they are now worried about the original threat

and what their owner will do to them in that context, the behavior will often recur, or different behavioral responses to avoid the threat may develop. This makes sense if you think about it from a human perspective. For example, if you are scared of spiders, you will respond to this fear by trying to avoid close contact with them. Now imagine that someone dragged you up to a spider by pulling you up to a spider by the neck-tie so that it was choking you, and held you there until you stopped struggling – would you feel any different about spiders? Or would you now be worried about spiders and by the presence of the person who tried to 'cure' you?

Stress and Learning

Using harsh punishment based techniques to change behavior is frequently counterproductive. There is a complex relationship between physiological stress responses and learning ability, but in general mild stress tends to enhance learning, but higher or more chronic levels of stress actually inhibit the ability of animals to learn, and particularly to consolidate and retrieve memories (Joels et al. 2006; Mendl, 1999). Research suggests that high levels of stress may influence a dog's ability to learn (Walker et al.,1997), therefore the application of severe punishers may also result in a stress response that impedes learning.

Risk of the Dog Associating the Punishment with Something Else

Anxious and fearful responses appear to particularly occur where the punishment is poorly synchronized with the action of the animal (Schalke et al., 2005), in other words when the punishment is poorly timed. After a significant event, such as the application of pressure from a choke chain, the dog will try to identify what events might have predicted this occurrence, either related to its own activity, or things happening in the environment. This means that although the trainer may intend the dog to associate pulling on the lead with the pressure on the neck, the dog may associate the latter with something completely different. Quite often, for example, dogs will associate the pressure from a choke chain with the word 'heel', but not with their pulling. So, when they hear 'heel' they tense up and brace themselves for the anticipated pressure. In practice, anything else present when the punishment is used may serve as a discriminative stimulus for the punishment (Polsky, 1994). In other words there is a real danger of an unwanted association being made between the unpleasant punishment and some coincidental stimuli, such as the presence of a person or other animal.

Even when a dog is 'caught in the act' and punished, he or she may still not associate the punishment with the undesirable behavior. This is commonly seen, for example, when puppies are smacked by owners for toileting indoors: they don't associate this with where they are peeing, but instead with the presence of the owner, so simply find a place to pee away from the owner rather than learning to go outside. In addition inappropriate levels of punishment may result in an intense fear and avoidance of the location e.g. the back garden.

Of course unintended associations, due to poor trainer timing, or the chance association with another, random, stimulus, occurs as frequently with reward based training as it does with punishment techniques. For example, if an owner recalls their dog, but takes a while getting the toy out of their pocket when he or she returns, they may end up throwing the toy when the dog happens to be turning in a circle, resulting in a dog that comes back and then turns a circle for its reward. However, the long term consequences of these 'reward mistakes' is much less serious than when punishers are associated with unintended stimuli. Avoidance response to things that are perceived as aversive are likely to be long lasting and resistant to change compared to those occurring as a result of positive reinforcement (Brush, 1957; Solomon et al., 1953). The difficulty in correcting errors when using aversive methods is significant considering the opportunities for unintended associations, and the potential development of fear.

Increasing Aggression and Risk to Owners

Another drawback of the use of harsh punishment in training dogs is the risk of eliciting or worsening aggression. For example, puppies that are trained using punishment based approaches will have an increased risk of being fearful of hand movement as adults, and have an increased risk of biting (Hunthausen 2009). Although some authors have advocated the use of punishment in the treatment of certain types of aggression in dogs, as pain is a primary cause of aggression (Johnson, 1972), it is clear that the potential exists for a dog to respond aggressively to a nearby person or animal on application of a painful stimulus. The misplaced belief in 'dominance theory' can lead to owners using punitive types of training which predisposes to aggression (De Keuster and Jung 2009). Reisner et al. (2007), for example, found that 59% of dog bites happened as a consequence of owners attempting to discipline their dogs.

Owners should be particularly cautious of using confrontational or punitive techniques with dogs that have an established aggressive response. Aggression develops as a response to perceived threat either to itself or a valued resource. However, once established, dogs will often have a strong expectation that their aggressive behavior will be successful to avoid the perceived threat. Trying to stop or interrupt such a response has a high risk that the dog will show an increased level of aggression.

Confusion as to Which Behavior is Required

Imagine that you needed to learn a new behavior as a new employee, but in order to teach you this behavior, your new colleagues only shouted at you when you did the wrong thing. You might try a whole range of different possible responses, but may never identify the exact thing that they wanted you to do. Where owners rely mainly on punishment for inappropriate behaviors, it is very difficult for a dog to work out what it is supposed to do. As would also happen to you in your work-place, dogs will tend to either end up becoming very frustrated and showing one of the behavioral consequence of this emotion, such as aggression, or give up entirely and stop trying any behaviors at all.

Risk of Physical Injury

There is also an increased risk of physical injury to the dog where harsh handling is used. Choke/check chains and prong collars can result in laryngeal, esophageal, thyroidal, and tracheal damage (Brammeier et al. 2006).

Efficacy of Different Training Approaches

In order for any form of training to be successful, it is important that the reinforcer or punisher is applied very quickly after the animal's action, in order for the animal to make an association between its own behavior and the consequence of it. In addition, the reinforcer or punisher must be applied at such a level that it either increases or decreases subsequent displays of the behavior. In the case of positive reinforcement, this requires the reward to be something that the animal values, and which creates a positive emotional response. Where punishment is used, it must be aversive enough to create a negative emotional response.

A further problem with the use of aversive stimuli, therefore, lies in the trainer's ability to achieve the optimum level of pain/discomfort required to suppress the target behavior. Understandably, owners tend to begin with a low level of punishment and gradually increase the level of punishment to find the level required to stop the behavior. This is unlikely to be effective as animals can habituate to aversive stimuli when they are incrementally increased.

In order to effectively suppress a behavior, the initial level of punishment needs to be of sufficient severity to suppress the behavior and avoid immediate reappearance. There are ethical concerns and practical problems that arise from this as there is no way of knowing in advance how intense the initial punishment should be for each individual animal, due to

large individual differences between dogs. Even within a single breed, dogs have been shown to have a variable capacity for coping with aversive stimuli (Vincent & Mitchell, 1996). This leads to the problem of determining and administering an appropriate level of punishment (high enough to suppress the behavior, but not so high that it causes a prolonged fear or anxiety response) for each individual dog.

Research also suggests that training using positive reinforcement based methods is more likely to be successful than those based on punishment (Hiby et al., 2004). The study also found that the use of punishment techniques in the training of dogs was associated with an increase in the incidence of problem behaviors.

Conclusions

Accurately determining the underlying motivation for a behavior requires specialist expertise, as does assessing the risk that an aversive experience might actually increase the severity of a problem behavior or induce new ones. Because of the serious risks of using punishment based techniques, even when applied 'accurately', most professional behavioral clinicians very rarely advocate the use of any punishment based training techniques in the modification of dog behavior. As owners, trainers or clinical behaviorists, we all share a responsibility to the welfare our dogs to use the least aversive methods available to us to change our dog's behavior without the need for pain or fear.

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The following books are good sources of information on training techniques and their application:

Excel-elerated Learning by Pamela Reid.

How Dogs Learn by Mary Burch and Jon Bailey