

# State of the Art Lecture - Training Methods in Dogs: Welfare Implications of Different Approaches

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There is a common perception that owned dogs have a good state of welfare because they live in domestic settings and are generally well cared for and loved by their owners. However, life experiences for dogs are potentially very variable because they depend so much on the circumstances, knowledge, attitudes and lifestyle of their owners. For example, owners vary considerably in how they interpret behaviours shown by their dog: some regarding a dog that snaps at a person as being motivated by 'dominance' or 'status seeking' and others consider this type of behaviour to be precipitated by fear. These attitudinal differences are often related to variations in types of training technique selected - both with methods used to train puppies or newly acquired adult dogs new behaviours, and in the 'correction' of undesired responses.

Approaches to dog training vary from the use of rewards (such as attention, praise, play, or food) when dogs show a desired response, to the application of a punishment or aversive intervention (such as shouting, jerking back on the leash, or smacking) when they display unwanted behaviours. The different approaches used are often described by trainers using terminology from early research into learning. These terms were developed before the majority of research in neuroscience that now underpins our knowledge of how learning occurs in the brain, and the associations between emotional states and behavioural change. The terms used are therefore purely descriptive and relate to changes in the likelihood of specific behaviours occurring after an intervention without reference to emotional states.

If a dog shows a behaviour which results in a perceived positive outcome, he or she is more likely to show the behaviour again on subsequent occasions - this is known as reinforcement. If a behaviour results in a perceived negative outcome, the dog is less likely to show the behaviour again - this is punishment.

Simplistically, in order to change a behaviour, one could either punish an undesired behaviour or reinforce the desired one. 'Positive punishment' is where the probability of a behaviour occurring in the future is decreased on application of a stimulus; 'negative reinforcement,' where the probability of a behaviour occurring in the future is increased on withdrawal of a stimulus; 'positive reinforcement,' where the probability of a behaviour occurring is increased with application of a stimulus; and 'negative punishment,' where the probability of a behaviour is decreased with the removal of a stimulus. However, positive punishment and negative reinforcement always occur together in practice: one focal behaviour is positively punished as another is negatively reinforced within each context. For example, squeezing the paws of a dog that jumps up punishes

jumping, and stopping this stimulus when the dog gets down negatively reinforces standing on all four paws. Similarly, rewarding a dog with attention for sitting to greet people positively reinforces sitting, and withdrawal of attention if the dog does not sit would be negative punishment of the alternative behaviour. Previous studies have suggested that there is an association between the use of more aversive training methods with unwanted behaviours and an increased occurrence of aggressive behaviour where such techniques are used. However, it is difficult to be clear from these studies which way around the relationship is: whilst it may be that use of punitive approaches increases the risk of fear and aggression responses, it is also possible that owners whose dogs show such behaviours are more likely to resort to these types of techniques.

'Punishment' tends to be an emotive word, but in the terminology used above this just means a reduced chance of a behaviour 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, this 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 dog's fear or anxiety about the situation in which it is used
- Decreasing the dog's ability to learn
- Associating other coincidental events with a fear-provoking event
- Inhibiting behaviour, but leave the underlying emotional response unchanged increasing the chance of future problems
- Inducing a new avoidance, or aggressive response
- Causing confusion as to which behaviour is required
- Causing physical injury

In addition, since training techniques are widely available that do not require the use of severe punishment, it can be argued that there is no need to use techniques which impact negatively on the welfare of dogs. Indeed, research also suggests that training using positive-reinforcement-based methods is more likely to be successful than those based on punishment.

### **Increasing Fear and Anxiety**

It is widely accepted that most of the behaviours that owners find 'problems' are motivated by anxiety or fear - generally dogs learn to avoid events (e.g., by running away or showing aggression) that they find threatening. Application of a stimulus that causes additional anxiety can often therefore be counter-productive, either by leading to an increase in the avoidance behaviour, or the development of an alternative avoidance response.

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 behaviour temporarily. Often this kind of approach looks

effective and an 'instant fix' but does not resolve the cause of the original behaviour. 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 behaviour will often recur, or different behavioural responses to avoid the threat may develop.

### **Stress and Learning**

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. The application of severe punishers may therefore have a negative impact on dogs' ability to learn new or desired behaviours.

### **Risk of the Dog Associating the Punishment with Something Else**

Undesired consequences of punishment-based training techniques appear to particularly occur where the punishment is poorly synchronized with the action of the animal. After a significant event, such as the application of pressure on 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 a punishment is used may serve as a discriminative stimulus for the punishment. 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.

### **Increasing Aggression and Risk to Owners**

Another drawback of the use of punishment-based training methods for 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. The misplaced belief in 'dominance theory' can lead to owners using punitive types of training which predisposes to aggression, but studies have shown that over half of dog bites happen 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 behaviour 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 Behaviour Is Required**

Where owners rely mainly on punishment for inappropriate behaviours, it can be very difficult for dogs to work out what they are supposed to do. Repeatedly punishing undesired behaviours shown by a dog where a desired response is not obvious commonly leads to frustration-related behaviours, such as aggression, or may result in dogs no longer trying new behaviours and 'giving up' to avoid the risk of further punishment.

### **Risk of Physical Injury**

There is also an increased risk of physical injury to the dog where harsher techniques are used. For example, choke/check chains and prong collars can result in laryngeal, esophageal, thyroidal, and tracheal damage.

### **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 behaviour 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 behaviour. 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 behaviour. 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 behaviour. This is unlikely to be effective as animals can habituate to aversive stimuli when they are incrementally increased.

In order to effectively suppress a behaviour, the initial level of punishment needs to be of sufficient severity to suppress the behaviour 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.

### **Conclusions**

Accurately determining the underlying motivation for a behaviour requires specialist expertise, as does assessing the risk that an aversive experience might actually increase the severity of a problem behaviour or induce new ones.

Because of the serious risks of using punishment-based techniques, even when applied 'accurately,' most professional behavioural clinicians very rarely advocate the use of any punishment-based training techniques in the modification of dog behaviour. As owners, trainers or clinical behaviourists, we all share a responsibility to the welfare of our dogs to use the least aversive methods

available to us to change our dog's behaviour without the need for pain or fear.

## References

1. Arhant C, Bubna-Littitz H, Bartels A, Futschik A, Troxler J. Behaviour of smaller and larger dogs: Effects of training methods, inconsistency of owner behaviour and level of engagement in activities with the dog. *Applied Animal Behaviour Science*. 2010;123:131–142.
2. Blackwell EJ, Twells C, Seawright A, Casey RA. The relationship between training methods and the occurrence of behavior problems, as reported by owners, in a population of domestic dogs. *Journal of Veterinary Behavior: Clinical Applications and Research*. 2008;3:207–217.
3. Blackwell EJ, Bolster C, Richards G, Loftus BA, Casey RA. The use of electronic collars for training domestic dogs: estimated prevalence, reasons and risk factors for use, and owner perceived success as compared to other training methods. *BMC Veterinary Research*. 2012;8:93 doi:10.1186/1746-6148-8-93.
4. Brush FR. The effects of shock intensity on the acquisition and extinction of an avoidance response in dogs. *Journal of Comparative and Physiological Psychology*. 1957;50:547–552.
5. De Keuster T, Jung H. Aggression towards familiar people and animals. In: Horwitz DF, Mills DS, eds. *BSAVA Manual of Canine and Feline Behavioural Medicine*. 2nd ed. Gloucester, UK: BSAVA; 2009:182–210.
6. Hiby EF, Rooney NJ, Bradshaw JWS. Dog training methods: their use, effectiveness and interaction with behaviour and welfare. *Animal Welfare*. 2004;13(1):63–69.
7. Herron M, Shofer F, Reisner I. Survey of the use and outcome of confrontational and non-confrontational training methods in client-owned dogs showing undesired behaviors. *Applied Animal Behaviour Science*. 2009;117:47–54.
8. Hunthausen W. Preventative behavioural medicine for dogs. In: Horwitz DF, Mills DS, eds. *BSAVA Manual of Canine and Feline Behavioural Medicine*. 2nd ed. Gloucester, UK: BSAVA; 2009:65–74.
9. Johnson RL. Aggression in man and animals. Philadelphia, PA: Saunders; 1972.
10. Mendl M. Performing under pressure: stress and cognitive function. *Applied Animal Behaviour Science*. 1999;65:221–244.
11. Polsky RH. Electronic shock collars - are they worth the risks? *Journal of the American Animal Hospital Association*. 1994;30(5):463–468.
12. Reisner IR, Shofer FS, Nance ML. Behavioral assessment of child-directed canine aggression. *Injury Prevention*. 2007;13:348–351.
13. Schalke E, Stichnoth J, Jones-Baade R. Stress symptoms caused by the use of electric training collars on dogs (*Canis familiaris*) in everyday life situations. *Current Issues and Research in Veterinary Behavioural Medicine: Papers presented at the 5th International Veterinary Behaviour meeting*. West Lafayette, IN: Purdue University Press; 2005.
14. Solomon RL, Kamin LJ, Wynne LC. Traumatic avoidance learning: the outcomes of several extinction procedures with dogs. *Journal of Abnormal and Social Psychology*. 1953;48(2):291–302.
15. Vincent IC, Mitchell AR. Relationship between blood pressure and stress-prone temperament in dogs. *Physiology & Behavior*. 1996;60:135–138.
16. Walker R, Fisher J, Neville P. The treatment of phobias in the dog. *Applied Animal Behaviour Science*. 1997;52:275–289.

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