



Reward-based training:

a guide for dog trainers

The Australian Veterinary Association (AVA) recommends the use of positive reinforcement training methods for dogs as the preferred method of training.



Introduction

The use of positive punishment (applying something the dog doesn't like to make behaviour less likely to occur in the future) is often a first approach used in dog training and for modifying problems in behaviour. However this method is not preferred by most behavioural specialists as dog training techniques that a dog doesn't like can be dangerous for both owners and dogs.



How dogs learn

It's important to recognise that learning is an adaptive process used by a dog to cope with a changing environment. When there is a change in the environment the dog will respond physiologically or with a change in behaviour.

Some responses are instinctive (such as a newborn pup seeking a nipple), some responses are due to the environment (such as drinking when thirsty), and

some responses are due to learning. The consequence of this response will influence the likelihood of the behaviour occurring again.

In many ways dogs learn the same way we do, by making connections between neurons. Pathways are strengthened through repetition and are weakened through lack of use.

Classical conditioning is an involuntary process that happens when a dog makes an association between a previously "neutral" object (such as a set of car keys) and a reflexive action or emotional response (such as the excitement of the possibility of going to the beach). The dog has no control over its behavioural response.

Instrumental conditioning takes place when an association is made between a neutral stimulus (such as the word "sit") and a voluntary response (placing bottom on ground). This type of behaviour is modified by the consequence of the dog's response. For example, if the consequence is rewarding, the behaviour is more likely to increase in frequency. If the consequence of the chosen behaviour is unrewarding to

the dog, the behaviour is likely to decrease in frequency. Dogs, like all animals, learn to respond to stimuli that enhance the possibility of a good outcome.

Rewarding means that the dog receives something it wants, or values, as a consequence of its behaviour. These are called "reinforcers".

Primary reinforcers are essential for survival, such as food, water and reproduction. Secondary reinforcers are neutral things such as words which have been associated with primary reinforcers to become desirable to the dog. For example, the words "good dog" or the sound of a clicker means nothing to a dog until the dog has associated it with a treat for example.



Punishment as a training method

Punishment uses the principle that if the consequence is painful or unpleasant, the dog is less likely to behave that way again. This can involve two strategies:

Positive punishment is applying something the dog doesn't like to make the behaviour less likely to occur again. For example, smacking a dog on the nose (an aversive stimulus) when it approaches to take a biscuit off the table reduces his scavenging behaviour around the table.

Pitfalls of positive punishment

- Positive punishment has to be delivered immediately and consistently and be of the appropriate intensity to be effective in reducing the likelihood of a behaviour occurring (Overall 2006). This can be very difficult to achieve.
- It stops a behaviour but fails to replace it with a desired behaviour, thus creating a "behavioural vacuum".
- The dog doesn't learn what is "right" or what is wanted from him.
- It's likely to increase anxiety in dogs (Schilder 2004, Overall 2007).
- It can lead to defensive aggressive behaviour in many species of animals, putting the person administering it or any person or animal near the dog at risk of being bitten or attacked (Hetts 1999).
- Animals can habituate to punishment so the owner may feel the need to escalate the intensity of the punishment or to cause physical injury in order to be effective (Landsberg 2005).
- Punishment may be used as a substitute for losing one's temper and lashing out.
- Punishment may elicit a strong fear response and this response can generalise to things that sound or look similar to the punishment.
- Learned helplessness can develop (i.e. depression, learning problems, decreased motivation) (Lindsay 2000).
- It doesn't support a healthy human-animal bond.

Negative punishment means taking away something the dog wants to make the behaviour less likely to occur again. For example, removing all biscuits from the table as the dog approaches the table (removal of something the dog wants) reduces the likelihood of the dog scavenging around the table.

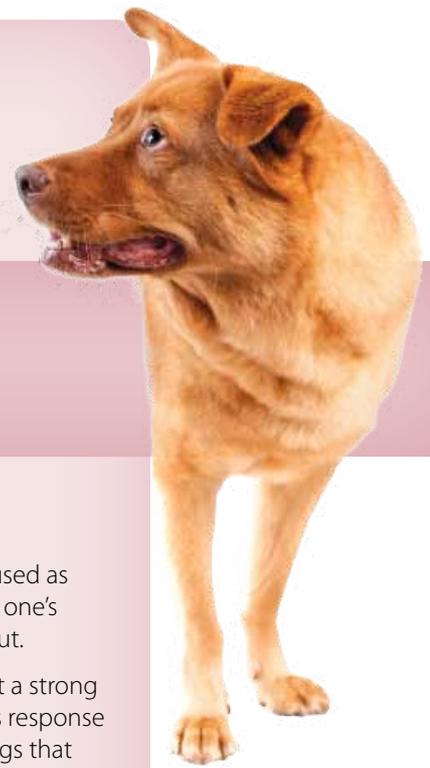
Reinforcement as a training method

There are two types of reinforcement techniques

Positive reinforcement involves giving the dog something it wants to make the behaviour more likely to occur again. This occurs if asking the dog to sit and stay and giving it a reward (something the dog wants) for staying away from the biscuit on the table increases his likelihood of doing as asked again.

Negative reinforcement involves removing something aversive to make the behaviour more likely to occur again. This occurs if holding the dog back from the table by a tight choker chain (an aversive stimulus), and releasing the pressure when the dog sits down and stops leaning in towards the biscuits. This results in the dog being less likely to try and approach food on the table in the future. Note that an aversive stimulus had to be present (the choker) for the dog to have to work to escape, so negative reinforcement can also be called escape or avoidance learning.

The use of positive reinforcement is the most humane and effective training method as it avoids undesirable behavioural side effects. It also makes training more enjoyable and helps to improve the bond with the pet.





Problems with using punishment in training

Training methods that use positive punishment and negative reinforcement have been linked with undesirable side effects for dogs and behavioural problems such as escape and avoidance behaviour (to avoid the punishment), aggressive behaviour (in self-defence), response suppression (habituation or learned helplessness) and fear of people or things in the environment where the aversive stimulus was present (fear conditioning and generalisation). (Blackwell 2008)

Further information about encouraging positive behaviour in dogs

It's much better to prevent behaviour problems than modify them. Behaviour is the result of the interweaving of genetics, learning and the environment.

Breeding from dogs with good temperaments is one way of reducing the likelihood of some behavioural problems, although "genetics influence the probability of a behaviour, rather than controlling it in an iron-clad way. Both genes and environment impact on the formation of temperament and the expression of behaviour." (Carter 2009)

It is quite clear that puppies benefit from appropriate (meaning positive and harmless) socialisation. This has been shown to decrease inter-dog reactivity and fearfulness of people, places and situations. (Lindsay 2000, Pageat 2007)

If they are deprived of this contact (as in some kennels or refuges) during the critical period for socialisation, there can be severe long-term effects on the ability of the pet to live successfully in a family environment. These dogs are more likely to develop antisocial behaviour, and many will eventually be referred to animal behaviourists or contribute to the number of unwanted problem dogs. (AVA policy 6.11)

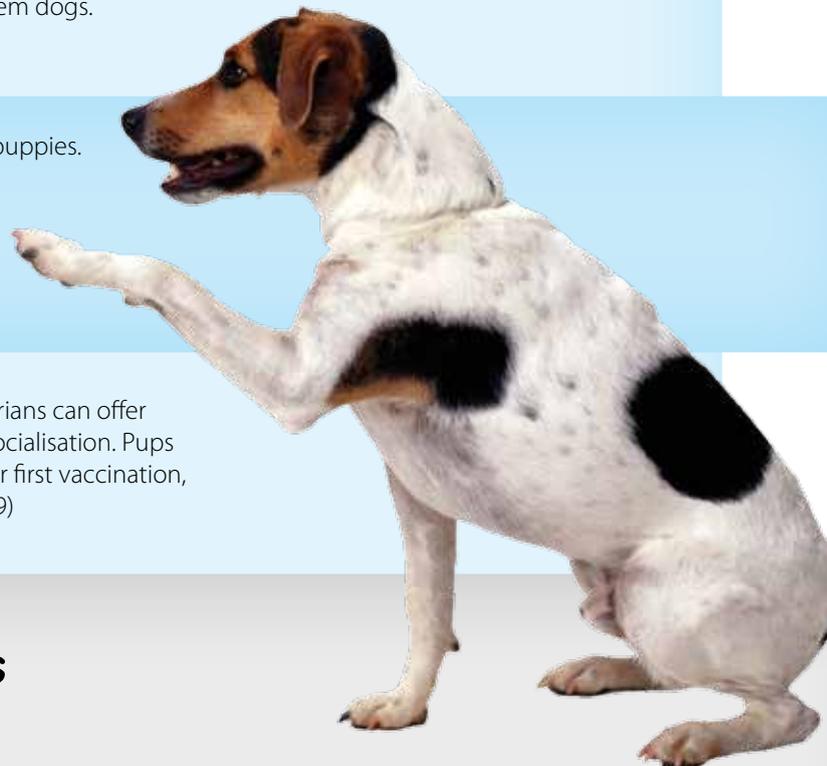
The first 16 weeks of life are a critical learning period for puppies. During this time, social and behavioural patterns are established. For optimum socialisation, it is essential that puppies have regular social contact with humans, with other dogs and with the mother and littermates.

Puppy classes are one of the most important services veterinarians can offer clients and their puppies to ensure effective continuation of socialisation. Pups attending puppy classes should be healthy, have received their first vaccination, and the environment should be thoroughly clean. (Seksel 2009)

Helpful advice for dog owners

Other strategies to modify behaviour include giving advice and help to owners such as:

- Seeking the help of a qualified trainer who uses reward-based training techniques.
- Having the dog medically checked by a veterinarian to rule out any underlying medical problem that might be contributing to the undesirable behaviour.
- Seeking further advice from a veterinary behavioural specialist or veterinary behaviourist if required so that a diagnosis can be established, and a behavioural modification plan can be tailored to the dog's needs.



Examples of reward based training techniques



1

Behaviour:

Sassy jumps up to greet people: her owners have tried pushing her down and kneeling her to knock her off balance when she jumps. This has not worked, in fact she now jumps from further away to avoid the knee.

Training technique:

Sassy should be ignored if she jumps and only receive attention (including eye contact) when she has four paws on the ground. Only when she is standing or sitting should she be rewarded with attention and treats.



2

Behaviour:

Fred likes to sit on the kids' artwork when they have it sprawled on the floor for colouring in, and often chews on the texts. They have tried pushing him away, saying "no" and chasing him when he chews on their texts.

Training technique:

Fred can be lured onto a special mat or cushion with food and rewarded when he gets on the mat. When he takes a texta they can ask him to come to them, sit and then swap the texta for a tasty treat or chew toy. Ultimately they can treat him to "go to bed" and to "give". Fred can be trained to go to his mat and stay there using lure and reward methods that will gradually build the duration he can remain settled there.



3

Behaviour:

Pumpkin growls and bites her owner's hand when she has her harness put on. The owner has tried pulling her hand away, saying "no" and smacking Pumpkin. The problem is getting worse and Pumpkin is biting sooner and harder.

Training technique:

The owner should consider trying a collar instead of a harness, to remove the source of the problem and start a program of counterconditioning and desensitisation to the harness. This involves giving Pumpkin treats whenever she sees the harness (a distance away from her that does not cause her to growl). Gradually the harness can be brought closer, with treats given for calm, non-fearful behaviour from Pumpkin. With correct timing and much repetition, Pumpkin will associate the harness with treats and be happy to see the harness. In tiny increments, the harness is brought closer and closer and eventually placed on Pumpkin. Pumpkin can also be taught with treats to enjoy being handled.

Summary

Animal welfare is paramount when training animals. It is part of the duty of care society owes each animal whose behaviour we seek to change. Reward-based training should be used as the primary method of training because of the benefits it offers.



References

Australian Veterinary Association; policy Compendium: <http://www.ava.com.au/about-us-1>. Accessed 8th August 2011

Blackwell EJ, Twells C, Seawright A, Casey RA. (2008). The relationship between training methods and the occurrence of behaviour problems, as reported by owners, in a population of domestic dogs. *J Vet Behav* 3, 207-217

Carter G. 2009: Genetics and Behaviour in dogs: Implications for Breed Specific Legislation. Presented at the Dog Bite Symposium presented by Australian Veterinary Behaviour Interest Group, Darwin Convention Centre, May 2009.

Farm Animal Welfare Council (U.K.) website <http://www.fawc.org.uk/freedoms.htm>. Accessed July 2011

Gershoff E T, Bitensky S H, (2007). THE CASE AGAINST CORPORAL PUNISHMENT

OF CHILDREN: Converging Evidence From Social Science Research and International Human Rights Law and Implications for U.S. Public Policy. *Psychology, Public Policy, and Law, Volume 13, Issue 4, November 2007*, Pages 231-272.

Hetts S. (1999). Pet Behaviour Protocols. What to say, What to do, When to refer. AAHA Press p 178

Horowitz D, Horowitz A (2008). A comparison of Dog Owner's Claims about their Pet's Guilt with Evidence from Dog Behaviour. Proceedings of the Canine Science Forum 2008, Budapest, Hungary

Landsburg G, Hunthausen W, Ackerman L (1997): Handbook of Behavior Problems of the Dog and Cat, Elsevier Saunders, p101

Lindsay SR (2000). Handbook of Applied Dog Behaviour and Training. Vol 1, Iowa State University Press.

McGreevy P D and Boakes R A (2007): Carrots and Sticks. Principles of animal training. Cambridge University press pp25-62

Overall, KL. (2006): Understanding how dogs learn: Importance in Training and Behaviour Modification. In: World small animal veterinary association world congress proceedings, 2006

Overall, KL (2007): "Editorial: Considerations for Shock and "Training" Collars: Concerns from and for the Working Dog Community" in *J. Vet. Behav.* : Clinical App Res 2 2007. p 103-107

Pageat P (2007). Preventing Behaviour problems in Puppies: Current Techniques in Veterinary Practice. In: SEVC Proceedings 2007. Southern European Veterinary Conference (Eds). Publisher: SEVC (www.sevc.info). Internet Publisher: International Veterinary Information Service, Ithaca NT (www.ivis.org).

Schilder, MBH and van der Borg JAM, (2004): "Training Dogs with the Help of the Shock Collar: Short and Long Term Behavioural Effects" in *Appl. Anim. Behav. Sci.* pp 319-34

Seksel K (2009). Why are puppy and kitten classes important to your practice? NAVC Conference Proceedings (North American Veterinary Conference) Jan 17 .

Straus M A, Donnelly D A, (2001). Beating the Devil out of them. Corporal Punishment in American families and its effects on Children. Transaction Publishers, New Jersey pp3-4

Further reading:

http://www.avsonline.org/avsonline/images/stories/Position_Statements/Combined_Punishment_Statements.pdf

http://www.avsonline.org/avsonline/images/stories/Position_Statements/dominance%20statement.pdf