

# Approaches to behavioural problems in dogs and their impact on animal welfare

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## Introduction

Introduction The pet dog (*Canis familiaris*) remains one of the most popular pets in Western society. A significant number of human-canine relationships fail, with the animals abandoned or relinquished to animal shelters (Marston and Bennett, 2003). Behavioural problems, including excessive barking, are often implicated in dog relinquishment and euthanasia (Salman et al., 1998), therefore addressing these problems is important to the welfare of domestic dogs. Obedience training has been found to both strengthen the owner-pet bond and reduce behavioural problems (Clark and Boyer, 1993). This paper examines three recent studies which investigate methods of training domestic dogs, and how these affect, and may be changed to improve, dog welfare.

## Discussion

Historically, pet dogs have been trained using mainly negative reinforcement (i.e. the removal of aversive stimuli) or positive punishment (i.e. application of aversive stimuli). The use of certain aversive stimuli in training may impact negatively on dog welfare (Beerda et al., 1997) and recently positive reinforcement (i.e. rewards to increase the likelihood of a particular behaviour) has gained popularity (Hiby et al., 2004). Surveying 364 dog owners, Hiby et al. (2004) attempted to establish the training methods in use by the pet-owning community and whether these interacted with obedience or 'problematic behaviours' of pet dogs.

They found 20.2% of respondents used reward-based training methods only, 9.8% used punishment-based methods only, 60.4% used a combination of reward and punishment, and 9.6% used miscellaneous methods (i.e. providing alternative objects). Reward-based training correlated positively with owner's pet obedience rating, however, no correlation (positive or negative) was established between owner's pet obedience rating with punishment or with miscellaneous training methods. This fails to support Christiansen et al. (2001) who found punishment to be the most effective training method for some canine tasks. Hiby et al. (2004) also listed 13 problematic behaviours, of which 97.2% of respondents' dogs displayed at least one. They found that punishment frequency correlated positively with the number of problematic behaviours.

Dog-owners using punishment may have either declined to answer the survey or understated their use of punishment owing to the negative image associated with these training methods (Fisher, 1993), thereby biasing the sample towards persons using reward-based training methods. Individual variation in perception of one's pet, complicated further by the emotional attachment, makes the obedience score highly subjective, and therefore compromises the positive correlation between obedience and reward-based training methods observed. Without experimental studies, it is impossible to separate whether the use of punishment increases the likelihood of an animal developing problematic behaviours (i.e. by creating a state of anxiety or conflict in the dog that is later expressed as a problematic behaviour), or if owners incorporate punishment into their training regime after the animals display problematic behaviours. Despite the limitations, this study's animal welfare implications lie in the suggestion that positive, reward-based training methods may be more useful to the pet-owning community.

The specific "problematic behaviour" of excessive barking, reported to comprise up to 35% of owners' complaints regarding their dog's behaviour (Campbell, 1986), is often dealt with by extreme measures such as surgical debarking, euthanasia, or the application of electric shock collars (Cronin et al. 2003). The following studies examine welfare-enhancing solutions to this problem.

Cronin et al. (2003) tested the effectiveness of an anti-barking muzzle made from elastic and cloth. The muzzle is designed to impose pressure on the jaws of the barking animal and thereby tire the jaw muscles and inhibit barking. Over two separate 4-day periods, experiments involving 16 dogs (paired on sex and age) examined the risks to the welfare of dogs wearing the anti-barking muzzle. Using a functionally-based or homeostatic approach, behaviours indicative of maladaptation and an element of the stress response (i.e. cortisol saliva concentration) were measured. One dog per pair was allocated to the Muzzle Treatment or the Control Treatment.

They found the anti-barking device to significantly reduce the occurrence of barking. While the initial response of dogs with muzzles was to display submissive behaviour, there were no significant behavioural differences indicative of a painful or aversive stimulus, nor was there evidence of physiological stress responses.

The study used only Australian Kelpies. This limits the generality of the findings, as breed differences in dog behaviour are well documented (Svartberg and Forkman, 2002). Furthermore 7 of the 16 dogs had been surgically debarked approximately 1 year previously, thereby clouding the findings should debarking alter the motivation to bark.

Anti-bark collars use principles of positive punishment and negative reinforcement to train dogs. Citronella collars have shown to be effective in reducing the incidence of barking (Juarbe-Diaz and Houpt, 1996). However, some degree of habituation has been found (Wells, 2001) suggesting their usefulness may lie in short-term solutions to excessive barking such as a veterinary hospital.

Moffat et al. (2003) studied the effectiveness of two anti-bark collars, one citronella, the other scentless spray, in a veterinary hospital. They tested 41 dogs weighing greater than 6kgs and of varying anxiety levels and showed the citronella and scentless collar significantly reduce barking compared to a control. Unfortunately, the results are compromised due to a poor experimental design where the same animal was used for a control, citronella and scentless spray collar. In this design, a collar used previously may influence the behaviour of the animals to subsequent collars. It was also not known whether any of the animals had previous exposure to the collars, a potential influence owing to the habituation mentioned above, however, one favouring the null hypothesis of no significant reduction in barking. Despite limitations, these findings suggest that the use of either a citronella or a scentless collar in a veterinary hospital environment may reduce the level of barking thereby improving the welfare (i.e. decreased disruption and anxiety) of other animal patients.

## Conclusion

The results of these studies suggest the welfare of pet dogs may be enhanced by the use of: (1) positive reinforcement methods for training dogs; (2) an anti-barking muzzle as an alternative to more extreme solutions; and (3) citronella and scentless spray collars to decrease stress for patients in a veterinary hospital setting. The data collected from these studies should be used as a basis to design further investigations into methods to enhance the welfare of domestic dogs.

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