New trends in shelter welfare research: Can training reduce stress and increase adoption rates in shelter dogs?

By Devon O'Rorke-Wieneke

Introduction

According to the ASPCA, 8 million to 12 million pets are surrendered to shelters every year in America; less than half are adopted (ASPCA, 2007). The welfare of these animals is of concern, as many studies have identified links between entering shelters and increases in stress-associated hormones and problem behaviours. Previous research has largely focussed on the physical environment and the provision of enriching objects and visual and olfactory stimuli (Wells, 2004). Researchers have also investigated social distress in shelter dogs, showing that a lack of conspecific and human contact is detrimental (Hennessy *et al*., 1998). Ways of enhancing the shelter experience are important but the best welfare improvement for these dogs is permanent adoption. Current research is beginning to explore this issue, addressing some of the ways in which behaviour modification can decrease shelter distress and increase adoption rates.

Discussion

Three recent papers address behaviour and stress in the shelter environment. Coppola *et al.* (2006) tested how a human interaction session, including leash-walking, grooming and basic obedience training, affected salivary cortisol measures. The detailed experiments described in Thorn *et al.* (2006) illustrate that a simply trained sit behaviour reduces unwelcome behaviours in the shelter and increases adoption rates. And Hennessy *et al.* (2006) assessed a program in which decreased stress levels were observed in dogs allocated to prison inmates to train.

Coppola *et al*. (2006) measured salivary cortisol concentrations to compare stress in two groups of shelter dogs. In the treatment group, a researcher spent 45 minutes with each dog grooming, playing with toys, walking on a leash, and practising obedience commands. On the next day, this group had lower cortisol concentrations than the control group, which had had no human interaction. While this report did not specifically address behaviour modification as a stress reducer, it included training-based interactions (leash-walking, reviewing commands). The authors concluded that a human interaction session can reduce stress in newly arrived shelter dogs. Although the study was well designed, differentiating between simple contact (petting, grooming) and training activities, a more in-depth analysis that observed differences in behaviour or adoption rates post-treatment would have been valuable.

In contrast, a detailed study by Thorn *et al*. (2006), which demonstrated that shelter dogs could be quickly and easily trained to sit, offered impressive welfare implications: the dogs became calmer in the shelter and adoption rates increased. The authors were initially interested in the speed and ease of training, retention of the sit response over time, and transference of behaviour to novel people and environments. Non-professional volunteers used food rewards to train dogs to sit when a stranger approached. The authors found that shelter dogs could be trained in less than 30 minutes, the behaviour was retained over days and it was transferable to new situations. As a result of this study, the shelter implemented a policy requiring shelter staff to wait for dogs to sit before releasing them from their kennels, petting them and feeding them. Staff found that this reduced unwanted behaviours in the kennels, including barking, jumping, and lunging at visitors. The shelter now has a higher rate of adoption and lower rates of return and euthanasia, but exact numbers were not reported.

Exploring the notion that training may reduce stress and unwanted behaviours, Hennessy *et al*. (2006) assessed a prison-socialisation program for shelter dogs. Each shelter dog was assigned to live with a prison inmate trained and experienced in dog handling for two weeks, during which time the dogs were intensively trained and socialised with other dogs and prisoners. At the end of the treatment period, the dogs were more obedient to a stranger's commands and exhibited fewer stress-associated behaviours

than those in the control group. While the authors concluded that such training programs can improve behaviour and adoptability, there was no follow-up assessment to determine whether the behaviour was retained or if the dogs actually had increased adoption rates. Additionally, most shelters do not have the time or resources to implement such a rigorous training program, and it is unclear whether intensive training would increase adoption rates more than simpler training methods.

Coppola *et al*. (2006) and Hennessy *et al*. (2006) measured hormone concentrations in an attempt to assess stress. While the first paper had a statistically significant result on one day of the trial, no baseline measures were taken so it is difficult to analyse the importance of the result. Hennessy *et al*. (2006) expected to find a decrease in plasma ACTH indicating lower stress levels, but instead there was a significant increase. These two papers suggest that measurement of stress-related hormones in shelter dogs may not be as informative as previously thought; other current studies agree. Stephen & Ledger (2006) reported that cortisol concentration changes in shelter dogs are non-specific and can be related to many emotions, including fear, chronic stress or frustration. Upon finding that individual cortisol concentrations varied greatly in shelter dogs, Hiby *et al*. (2006) concluded that cortisol concentrations may not be a reliable indicator of welfare.

Thorn *et al.* (2006) demonstrated that welfare in shelters can be evaluated more clearly through different and more immediately relevant indices, such as decreased stress-related behaviours and increased adoption rates. More important, all shelters can make these observations without specialist personnel. Staff at this shelter reported other benefits from their new training program: dogs were easier to handle, noise levels decreased, potential owners were motivated to learn more about dog training and staff became more confident in explaining positive reinforcement training techniques.

Conclusion

Studies have shown that dogs are adopted on the basis of their 'personality' and behaviour (Wells & Hepper, 2000). Dogs perceived as 'calm' and 'friendly' are most likely to be adopted (Marston *et al.*, 2005). Dogs that approach the front of the kennel and sit quietly when a stranger approaches are seen as friendly and well-behaved, increasing their chances of adoption. A shift in the focus of shelter welfare research toward behavioural training and observation could lead to dramatic changes in the experience and adoption success of shelter dogs.

References

(ASPCA, 2007).

Coppola, C., Grandin, T. & Enns, M. (2006) *Human interaction and cortisol: Can human contact reduce stress for shelter dogs?* Physiology & Behaviour. 87(3):537-541.

Hennessy, M., Morris, A. & Linden, F. (2006) *Evaluation of the effects of a socialization program in a prison on behavior and pituitary-adrenal hormone levels of shelter dogs*. Applied Animal Behaviour Science. 99(1-2):157-171.

Hennessy, M., Williams, M., Miller, D., Douglas, C. & Voith, V. (1998) *Influence of male and female petters on plasma cortisol and behaviour: can human interaction reduce the stress of dogs in a public animal shelter?* Applied Animal Behaviour Science. 61:63-77.

Hiby, E., Rooney, N. & Bradshaw, J. (2006) *Behavioural and physiological responses of dogs entering re-homing kennels.* Physiology & Behaviour. 89(3):385-391.

Marston, L., Bennett, P. & Coleman, G. (2005) *Adopting shelter dogs: owner experiences of the first month post-adoption*. Anthrozoos. 18(4):358-378.

Stephen, J. & Ledger, R. (2006) *A longitudinal evaluation of urinary cortisol in kennelled dogs,* Canis familiaris. Physiology & Behaviour. 87(5):911-916.

Thorn, J., Templeton, K., Van Winkle, M. & Castillo, R. (2006) *Conditioning shelter dogs to sit.* Journal of Applied Animal Welfare Science. 9(1):25-39.

Wells, D. (2004) *A review of environmental enrichment for kennelled dogs* Canis familiaris. Applied Animal Behaviour Science. 85:307-317.

Wells, D. & Hepper, P. (2000) *The influence of environmental change on the behaviour of sheltered dogs*. Applied Animal Behaviour Science. 68:151-162.