

# Identifying aggression in domestic dogs, risk factors and implications for welfare

*Discusses methods for detecting fear aggression in dogs as a means of improving the welfare of shelter dogs.*

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## Introduction

Behavioural problems are the most common reason for owners relinquishing healthy domestic dogs to animal shelters, where they are often euthanased (Salman *et al.*, 2000; RSPCA, 2014). Many of the behavioural problems cited involve displays of aggression toward humans (Salman *et al.*, 2000). Recent studies support the hypothesis that aggression in dogs is frequently a manifestation of fear, seen in various contexts involving both familiar and unfamiliar people as well as different environments (Casey *et al.*, 2014; Kis *et al.*, 2014). An efficient and effective test series to detect aggression in dogs (Klausz *et al.*, 2014) could identify potentially fearful dogs in an animal shelter context, and can prevent exposure of these dogs to fear- and aggression-inducing situations.

## Discussion

Numerous test series have been formulated to identify aggression in dogs, as a method of assessing suitability for rehoming from shelters, but these required large numbers of individual subtests (up to 43 in the Netto and Planta 1997 method) and generally had suboptimal sensitivity (Klausz *et al.*, 2014). Although these extensive tests are appropriate for detecting different types of aggression in many specific contexts, they are neither efficient nor practical for use in animal shelters (Klausz *et al.*, 2014). A four-minute test series consisting of subtests was formulated by Klausz *et al.* (2014) to detect human-directed aggression in domestic dogs, and these could be a minimal-stress-inducing method of identifying aggressive dogs prior to rehoming. Stress in dogs can be defined as stimulation of the sympathetic fight-or-flight response and is often associated with fear and anxiety, which can manifest as aggression (Kis *et al.*, 2014).

A study by Klausz *et al.* (2014) assessed the responses of 73 pet dogs to five subtests, but only three proved effective in detecting aggression – friendly greeting, taking away bone and threatening approach. Aggressive tendencies of the dogs were quantified by their biting history and owners classed them as having never bitten before, bitten once and bitten multiple times. However, biting history may be influenced by factors such as age, amount of exposure to other people and whether there were opportunities to bite, which clearly demonstrates the difficulty in measuring aggression quantitatively. Responses were scored in order of increasing severity – no aggression, growling, snarling, snapping and biting – and results were correlated with the aggressive tendencies reported by owners in both the original test series and one repeated a year later, which showed the consistency of the assessment method.

Animal shelters are able to use this minimal, but effective, series of tests to identify dogs prone to aggressive behaviour that may not be obvious until after adoption (Kis *et al.*, 2014), thus allowing for appropriate rehabilitation and socialisation of the animal, where possible, before rehoming it. This could reduce the number of dogs being placed in homes that are unprepared to deal with aggression, avoiding re-surrender or abandonment of the dog. These eventualities unnecessarily place already anxious dogs in multiple fearful situations, as fear-related aggression is common toward unfamiliar people and in unfamiliar environments (Casey *et al.*, 2014). Additionally, fearful responses, such as tail between legs, tense posture and dipped head, were noted by Klausz *et al.* (2014) and suggested that dogs with a biting history showed exaggerated amounts of fear and fear-related aggression, especially to a threatening approach. The body language used (staring, moving slowly) evoked fearful responses, demonstrating the importance of educating people about human-dog communication and how to prevent dogs becoming apprehensive.

Factors such as environment and presence of people significantly affect displays of aggressive behaviour in dogs. Using the above test series, Kis *et al.* (2014) demonstrated that dogs were less likely to respond aggressively in unfamiliar environments than when in familiar environments. Klausz *et al.* (2014) conducted all tests for aggression in an area unfamiliar to the dogs, which may have

produced biased results. Dogs are more likely to respond aggressively after being habituated to their environment (Kis *et al.*, 2014), supporting the idea that they are more withdrawn, cautious and favour the flight response in new surroundings (Klausz *et al.*, 2014). A study in the UK, involving more than 3000 owner questionnaires, also suggests that dogs more frequently show aggression toward strangers when in a familiar home environment (Casey *et al.*, 2014). It can be concluded that testing for aggression after dogs are allowed to settle into new environments, such as animal shelters, could significantly increase sensitivity of the tests (Kis *et al.*, 2014) and reduce the number of undetected aggressive dogs.

It is well known that dogs may show aggression toward unfamiliar people. Interestingly, the tendency to show aggression appears to be higher when a familiar person is also present (Kis *et al.*, 2014). In all tests performed by Klausz *et al.* (2014) the owner was present within 1m of their dog, although there was no active interaction between them. This reduces practicality for use in animal shelters, since relinquished dogs have no owner and the presence of an attachment figure was determined to be an important variable in effectiveness of the tests (Kis *et al.*, 2014). Displays of aggressive behaviour toward unfamiliar people were higher within the family home (Casey *et al.* 2014), further supporting the idea that human attachment figures provide a sense of security (Kis *et al.*, 2014). Aggression toward familiar people is less frequently seen, but is associated with training techniques that involve positive punishment or negative reinforcement (Casey *et al.*, 2014), suggesting that more positive training techniques should be used to train dogs. Training methods could be inducing a fear-related aggressive response from dogs.

## Conclusion

Aggression is a complex behaviour, influenced by many factors, including environment and human interaction, and is often a manifestation of fear. Identifying aggression and an understanding of the factors involved can improve the welfare of domestic dogs by reducing the amount of fear imposed on these animals. Furthermore, early detection of fear-related aggression in dogs from animal shelters can prevent unnecessary exposure to fearful situations such as adoption and repeated relinquishment.

## References

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