

# Decreasing Undesired Aggression in Military Working Dogs and Improving their Welfare

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## Introduction

Military working dogs (MWDs) are employed worldwide to assist in law enforcement and military operations. They are trained to display controlled acts of aggression during defence situations, such as in the case of a serious threat or attack. However, some MWDs may direct aggression toward humans or animals outside the working context and this type of aggression is deemed undesirable (Haverbeke *et al.*, 2004). Furthermore, MWDs are usually housed individually in kennels, an environment associated with high cortisol concentrations and stress-related behaviours such as stereotypies (Taylor & Mills, 2007). When under stress, dogs may react to otherwise neutral situations, showing fearful behaviour that can often lead to aggression (Rooney *et al.*, 2009).

Undesired aggression can have significant effects on the welfare of MWDs. It may result in the relinquishment of the dog from military operations, with subsequent rehoming as a pet, or in more extreme cases, euthanasia (Moore *et al.*, 2001; Burghardt, 2003). This review examines recent research assessing the prevalence of undesired aggression among Belgian MWDs (Haverbeke *et al.*, 2009) and considers how enrichment and training can be used to improve MWD welfare (Lefebvre *et al.*, 2009; Haverbeke *et al.*, 2010).

## Discussion

Recent research has assessed undesired aggression among Belgian MWDs through the use of an aggression test modified from Netto and Planta (1997). The aggression test is composed of challenges that could potentially occur outside of guard duty, using stimuli such as a large doll. As this test is conducted outside a defence situation, any aggressive behaviour elicited by dogs toward stimuli is deemed undesirable.

Haverbeke *et al.* (2009) used this test to assess the prevalence of undesired aggression among 31 Belgian MWDs. Aggressive behaviour was measured in terms of aggressive threatening and biting, and a low posture was deemed to be indicative of fear-related behaviour (Beerda *et al.*, 1998). Most dogs (84%) displayed at least one act of aggressive behaviour during the test and these dogs expressed a lower posture compared with non-aggressive MWDs. Therefore, some MWDs may have become fearful during the test and consequently displayed aggression. By demonstrating undesired aggression among MWDs, these authors highlighted the need for intervention to mitigate this unwanted behaviour and improve MWD welfare.

In an attempt to reduce fearful behaviour and undesired aggression, Haverbeke *et al.* (2010) trained 36 Belgian MWDs using a novel Human Familiarisation and Training Programme (HFTP). Training methods used as part of the HFTP involved mainly positive reinforcement, which differed from the punishment training methods currently used by the Belgian Defence (BD) (Haverbeke *et al.*, 2008). The HFTP strongly emphasised the importance of the dog–handler relationship and included increased human interaction outside the guard-duty regimen.

Dogs exposed to the HFTP (experimental group, EG) were tested with the aggression test used by Haverbeke *et al.* (2009). Results of EG dogs were compared with those of a control group (CG) of 31 MWDs trained using current BD methods. During the aggression test, EG dogs expressed significantly higher postures and lower levels of aggression compared with CG dogs, suggesting that EG dogs were less fearful and subsequently less aggressive. This finding could be explained by the increased human interaction EG dogs received during the HFTP. Previous research has shown that increased human interaction can create a stronger

dog–handler relationship, contributing to decreased fear (Lefebvre *et al.*, 2007). The use of positive reinforcement may have also contributed to this finding, as positive reinforcement has been found to reduce aggressive responses more successfully than punishment (Haverbeke *et al.*, 2008).

Many MWDs are housed individually in kennels and as a result may have decreased welfare due to stress (Taylor & Mills, 2007). To reduce stress, Lefebvre *et al.* (2009) compared the effects of two schedules of enrichment on 14 Belgian MWDs. They measured changes in plasma cortisol concentrations and stereotypic behaviours, which are indicative of impaired welfare (Taylor & Mills, 2007). Both enrichment schedules consisted of human interaction coupled with exercise and training. These schedules were deemed to be enriching for MWDs, as both human interaction and exercise have been shown to decrease cortisol concentrations (Taylor & Mills, 2007). All dogs were exposed to the same amount of enrichment for 7 consecutive weeks. However, some dogs were assigned to a regular schedule (RS), receiving two 20-minute walks each weekday plus additional training sessions outside the guard-duty regimen. The remaining dogs were assigned to an irregular schedule (IS) that consisted of either 16 or 24 continuous hours in which they were walked for 20 minutes every 2 hours.

Results revealed that cortisol concentrations, and therefore, presumably, stress levels of RS dogs significantly decreased throughout the study, whereas no such reduction was found in IS dogs. However, all MWDs displayed stereotypic behaviours regardless of either enrichment schedule. Future studies may consider prolonging the enrichment schedule in an attempt to reduce this stereotypic behaviour, along with increasing the sample size, since only a small number of dogs were used in this study.

Lefebvre *et al.* (2009) showed that regular exercise coupled with additional human interaction outside of guard duty may be effective in reducing MWD stress. Haverbeke *et al.* (2010) also found that human interaction outside of guard duty may decrease unwanted MWD aggression. Therefore, additional human contact outside working contexts may improve MWD welfare by reducing both stress and undesired aggression.

## Conclusion

Recent research has highlighted the need for intervention to reduce undesired aggression among MWDs and improve their welfare. Most MWDs are kennelled, so may have high levels of stress that could contribute to unwanted aggression (Rooney *et al.*, 2009). Studies have shown that stress may be reduced by providing regular exercise, coupled with additional human interaction outside of guard duty (Lefebvre *et al.*, 2009). The HFTP showed that increased human interaction and positive reinforcement may decrease undesired aggression among MWDs (Haverbeke *et al.*, 2010). Although still in the preliminary stages, the HFTP has the potential to increase MWD welfare not only within the Belgian military, but also within other military organisations worldwide.

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