

# Communication between Humans and Dogs, Implications for Future Selection and Training of Dogs

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## Introduction

It is known that a number of species use facial cues to communicate crucial information to other members of the same species. This occurs in humans (Ethofer *et al.*, 2011), goats (Kaminski *et al.*, 2005), wolves (Range & Virányi, 2011) and non-human primates (Tomasello *et al.*, 1998). Domestic dogs (*Canis familiaris*) have a distinct ability to communicate effectively with members of other species, specifically, humans. The communicative ability of dogs is a significant factor in their use by humans. Dogs are used in a variety of ways, including as companions, guides, by police, as sniffer dogs and to assist in livestock management. All of these activities rely on communication between humans and dogs. Surveying studies by Jakovcevic *et al.* (2012), Lakatos *et al.* (2012) and Somppi *et al.* (2012), this paper examines different aspects of dog–human communication that affect training and consequently the selection process.

## Discussion

“Sociability of dogs is defined as the interest and attitude of an animal toward another member of the same species or a human” (Svartberg, 2007, in Jakovcevic *et al.*, 2012, p. 218). Jakovcevic *et al.* (2012) tested the sociability of dogs (n=39) prior to their experiment to gain an understanding of the dogs’ temperaments. Dogs were then put into trials where food could be seen, but was out of reach. The dogs would then gaze at the human experimenter and the gaze duration was recorded (Jakovcevic *et al.*, 2012). Dogs that were more sociable were found to have a longer gaze duration. This was also found to be true in dogs subjected to gazing extinction trials, where gazing was not rewarded with food. Their results showed that despite having an unknown human present and undergoing gazing behaviour extinction trials, more-sociable dogs still gazed longer at the human. The authors proposed that the presence of the human in these tests was intrinsically reinforcing for the dogs. This has implications on the future selection and training of dogs, suggesting that more-sociable dogs are more readily able to communicate with a human, indicating that more-sociable dogs are more trainable, where trainability is defined as “the willingness of the dog to listen to the owner and obey simple commands, while ignoring distracting stimuli” (Serpell & Hsu, 2005, in Jakovcevic *et al.*, 2012, p. 221).

Lakatos *et al.* (2012) used gestures to communicate with dogs, and three methods were used to determine the dogs’ ability to interpret human signals. The aim of the first method was to determine whether dogs (n=16) could differentiate between two possible food locations on the same side of the human. This contrasts with previous studies that implemented a two-way object-choice task (Miklósi & Soproni, 2006). The authors showed that dogs did not differentiate between two locations on the same side of the human, and instead chose the location closer to the human in both control and test trials. The second method (using 23 dogs) involved a human pointing toward another human pointer. This indirect gesture was found to be complex, and it was suggested by Lakatos *et al.* (2012) that this skill was restricted to individual dogs and, overall, the ability of the dogs to locate the correct food bowl was only at chance level. In the third method, dogs (n=12) were provided with indirect information about the location of an item, then the dogs’ ability to effectively communicate this to another human was assessed. Lakatos *et al.* (2012) found that dogs were able to perform this task.

These methods are useful in different working-dog industries. The first has implications for sniffer dogs being directed to investigate a particular item in a group of items. The dog must be directed further if investigating a specific item is time-crucial. The second shows that dogs with the capacity to complete complex tasks are more suited to working in positions with highly directional signals, for example, a police dog being directed toward a target by a number of policepersons in a high-stress environment. The third is useful in situations such as a farm-hand indicating a cast sheep and sending the dog to contact another farm-hand for aid.

Investigations into specific eye movements of dogs was performed by Somppi *et al.* (2012). They investigated whether dogs spontaneously look at certain parts of an image of a human face. Direction of vision is shown to be linked to attention (Buswell, 1935, cited in Somppi *et al.*, 2012) and affects various cognitive processes (Henderson, 2003). It was shown that dogs focused on informative regions of the images without any pre-training. The term “informative regions” was not defined in the publication, which causes confusion as to the authors’ intended meaning. However, the specificity of looking at distinct regions of human faces has important implications in dog training, considering the degree of change in many aspects of the human face (Wallraven *et al.*, 2008).

## Conclusion

Considering the level of integration of dogs in multiple aspects of human society, it is vital we endeavour to understand how to select and train these animals effectively, in order to achieve the best possible outcomes for dogs and trainers. These three studies provide insight into the human–dog relationship and provide valuable information about the selection and training of working dogs. More-social dogs were shown to be more communicative with humans, which suggests that they would be more trainable (Jakovcevic *et al.*, 2012). Implications for trainers were found by Lakatos *et al.* (2012) that will lead to the development of more efficient training techniques with regard to their communication with dogs. Dogs were shown to direct their vision toward specific regions on the human face, demonstrating their degree of familiarity with humans as a species and the ease with which dogs receive communication from humans (Somppi *et al.*, 2012). With further research into the communication between dogs and humans, the selection and training of dogs would be improved greatly to the benefit of both species.

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