

It has been predicted that dogs have unique social skills which allows for complex interactions with humans (Kaminski & Piotti, 2016). Various studies were used to understand the communicative abilities of dogs when interacting with humans. Through this, dogs could understand various signals, including verbal and gestural signalling, to perform various tasks (D’Aniello et al., 2016). Before performing these tasks, the dogs were highly attentive to the attentional state of the human (Call et al., 2003). Dogs were also able to communicate locations of objects of interest through gaze alteration and vocalisation (Miklósi et al., 2000). The research indicated dogs’ major cognitive capabilities arose from evolution, namely through domestication (Miklósi et al., 2009).

Researchers were interested in whether dogs understood various forms of signalling and performing an action (D’Aniello et al., 2016). To determine this, an experimental study was performed using multiple treatments (verbal signals, gestural signals, and contradictory signals) (D’Aniello et al., 2016). The experimental treatments consisted of commands: Sit, Come, Stay, Lie Down (D’Aniello et al., 2016). The results indicated that the dogs could understand the signals and performing the commands significantly above chance, where they had preference for gestural signalling over verbal signalling when provided with the contradictory signals (D’Aniello et al., 2016). These results were supported in other studies where the researchers wanted to determine if gestural signalling was impacted in more complex situations (Lakatos et al., 2012). In this experimental study, three separate tests were performed each with increasing difficult situations (Lakatos et al., 2012). The results indicated that the dogs still used gestural signalling in increasingly complex situations which resembled life-like situations (Lakatos et al., 2012).

Furthering understanding, researchers were interested in how the attentional state of the human impacted dog-human communication (Call et al., 2003). The study performed several experimental treatments involving remaining in or leaving the room and whether the experimenter looked at the dog, had their back turned or eyes closed (Call et al., 2003). It was observed dogs were attentive to the human’s attentional state as less dogs responded correctly to commands given when the human was not directly observing the dog (Call et al., 2003). Additional support was provided through the experimental study involving human’s nonverbal sensitivity while interacting with a dog (Meyer & Forkman, 2015). Students of varying nonverbal sensitivity interacted with the same dog and the behaviours were observed (Meyer & Forkman, 2015). The results indicated individuals with greater nonverbal sensitivity produced more positive interactions with the dog, providing evidence that human body language led to effective dog-human communication (Meyer & Forkman, 2015).

Researchers were interested in understanding how dogs indicated objects of interest (Miklósi et al., 2000). The dogs were subject to three experimental conditions in which the food was hidden while the human was outside the room (Miklósi et al., 2000). Upon return, the dogs performed showing behaviours to communicate locations of objects that were of interest to them (Miklósi et al., 2000). These behaviours included gaze alteration and vocalisation towards the container with the hidden food (Miklósi et al., 2000).

Through reviewing these studies, the communicative ability of dogs has a significant evolutionary aspect through domestication. This is due to the shared anthropogenic environment of dogs and humans creating convergent evolution of traits involved in communication (Miklósi, 2009). Further, in comparative studies with both dog's and human's closest relative, the wolf and chimpanzee (Kaminski & Nitzscher, 2013). Under the same conditions they were not able to utilize communicative signals as successfully as dogs (Kaminski & Nitzscher, 2013). Other experimental studies involving dogs from 6-weeks-old to 24-weeks-old provided evidence that communication is solely due to evolution as pointing behaviours were understood by dogs in the youngest age group (Riedel et al. 2007). However, Dorey et al. (2009), observed that dogs' capabilities of understanding communicative signals improved with the age of the dog, indicating development is involved.

A point for future research would be to replicate the study of Riedel et al. (2007) to determine if the results remain the same or indicate a learning component (Dorey et al., 2009). Also, through reviewing these articles, an ontological approach must be studied more in-depth to identify if and the extent a development component exists in dog-human communication.

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