Topic Summary

Dogs and humans need a form of communication in order to cooperate. A form of non-verbal communication that dogs use is gazing which consists of staring intently at their human companion (Koyasu et al., 2020). Scientists have done many studies which focus on the behaviour's purpose, psychology and evolution as well as factors that influence the behaviour (Koyasu et al., 2020).

Scientists studied the purpose and the psychology behind gazing (Marshall-Pescini et al., 2013; Petró et al., 2015). One study compared the behaviour between toddlers and dogs when faced with an unsolvable task and found that they both gazed at the caretaker (Marshall-Pescini et al., 2013). Another study used remote control vehicles to collect food and found that when the cars did not move, dogs would gaze more at the vehicle that previously collected the food (Petró et al., 2015). This suggested that gazing was used for requesting assistance from humans and that they knew which person to ask for assistance based on the experience with that person (Marshall-Pescini et al., 2013; Petró et al., 2015).

Scientists wanted to determine the evolutionary timeline of a dog's gazing behaviour towards humans by using dingoes which existed 5000 years ago (Johnston et al., 2017). They were brought into the testing area with a handler and were able to wander and interact with the handler (Johnston et al., 2017). Researchers would measure the duration of eye contact with the human duration of touching (Johnston et al., 2017). Comparing these results to wolves and dogs showed similar gaze initiation to dogs but the gaze duration fell between the wolves' and dogs' gaze duration (Johnston et al., 2017). The result suggested that initiation of gazing to humans occurred earlier in time before or during the existence of the dingo but prolonged gazing occurred after the existence of the dingo (Johnston et al., 2017).

One factor that influenced gazing was a dog's lifestyle (Passalacqua et al., 2011). Researchers compared the dog's behaviour when faced with an unsolvable task (Passalacqua et al., 2011). The first study compared age groups and different breeds types and found that the older dogs and the breeds that did cooperative work like hunting had stronger gaze behaviour (Passalacqua et al., 2011). Other studies compared trained and untrained dogs living with humans or living in kennels and found that dogs living with humans gazed stronger (D'Aniello and Scandurra 2016; Scandurra et al., 2015). The last study compared dogs participating with animal-assisted intervention (AAI) and pet dogs and found that AAI dogs had stronger gaze behaviour and gazed at strangers more (Cavalli et al., 2019). Overall these results suggested that gazing develops as a dog gets older and lives with humans (Passalacqua et al., 2011; D'Aniello and Scandurra 2016; Scandurra et al., 2015). Dogs would also gaze more at people they interact with the most, like how AAI dogs work with strangers more so they gaze more at strangers (Cavalli et al., 2019).

Another factor that influenced a dog's gazing behaviour was biological factors like genetics and hormones (Dzik et al., 2020; Persson et al., 2018). One article studied how oxytocin administration influenced gazing behaviour (Dzik et al., 2020). Comparisons were

made between oxytocin administered and non-administered dogs by measuring gaze duration (Dzik et al., 2020). Dogs administered with oxytocin had increased gazing (Dzik et al., 2020). However, intact dogs were found to be affected by oxytocin more than neutered dogs (Dzik et al., 2020). Another article studied two regions on chromosome 26 in dogs and found that they changed as dogs were domesticated (Persson et al., 2018). They also found that they were associated with certain aspects of gazing behaviour like frequency and duration (Persson et al., 2018). These results suggested biological factors like oxytocin and the gene regions in chromosome 26 influenced the dog's gazing behaviour (Dzik et al., 2020; Persson et al., 2018).

There are some suggestions for future research. Reviewing some studies identified that only retrievers were used so using other breeds can determine if it changes the behaviour. Reviewing the articles only showed oxytocin as a hormonal factor so other social hormones like arginine vasopressin can be studied.

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