

# Dogs are more expressive when someone is looking

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Dogs produce more facial expressions when humans are looking at them,

according to new research from the University of Portsmouth.

Scientists at the University's Dog Cognition Centre are the first to find clear evidence [dogs](#) move their faces in direct response to human attention. Dogs don't respond with more facial expressions upon seeing tasty food, suggesting that dogs produce facial expressions to communicate and not just because they are excited.

Brow raising, which makes the eyes look bigger - so-called puppy dog eyes - was the dogs' most commonly used expression in this research.

Dog cognition expert Dr Juliane Kaminski led the study, which is published in *Scientific Reports*.

She said: "We can now be confident that the production of facial expressions made by dogs are dependent on the attention state of their audience and are not just a result of dogs being excited. In our study they produced far more expressions when someone was watching, but seeing food treats did not have the same effect.

"The findings appear to support evidence dogs are sensitive to humans' attention and that expressions are potentially active attempts to communicate, not simple emotional displays."

Most mammals produce facial expressions - such expressions are considered an important part of an animal's behavioural repertoire - but it has long been assumed that animal facial expressions, including some human facial expressions, are involuntary and dependent on an individual's emotional state rather than being flexible responses to the audience

Dr Kaminski said it's possible dogs' facial expressions have changed as part of the process of becoming domesticated.

The researchers studied 24 dogs of various breeds, aged one to 12. All were family pets. Each dog was tied by a lead a metre away from a person, and the dogs' faces were filmed throughout a range of exchanges, from the person being oriented towards the dog, to being distracted and with her body turned away from the dog.

The dogs' facial expressions were measured using DogFACS, an anatomically based coding system which gives a reliable and standardised measurement of facial changes linked to underlying muscle movement.

Co-author and facial expression expert Professor Bridget Waller said "DogFACS captures movements from all the different muscles in the canine face, many of which are capable of producing very subtle and brief facial movements.

"FACS systems were originally developed for humans, but have since been modified for use with other animals such as primates and dogs."

Dr Kaminski said: "Domestic dogs have a unique history - they have lived alongside humans for 30,000 years and during that time selection pressures seem to have acted on dogs' ability to communicate with us.

"We knew domestic dogs paid attention to how attentive a human is - in a previous study we found, for example, that dogs stole food more often when the human's eyes were closed or they had their back turned. In another study, we found dogs follow the gaze of a human if the human first establishes eye contact with the dog, so the dog knows the gaze-shift is directed at them.

"This study moves forward what we understand about dog cognition. We now know dogs make more facial expressions when the [human](#) is paying attention."

It is impossible yet to say whether dogs' behaviour in this and other studies is evidence dogs have flexible understanding of another individual's perspective - that they truly understand another individual's mental state - or if their behaviour is hardwired, or even a learned response to seeing the face or eyes of another individual.

Puppy dog eyes is a facial expression which, in humans, closely resembles sadness. This potentially makes humans more empathetic towards the dog who uses the expression, or because it makes the dog's eyes appear bigger and more infant-like - potentially tapping into humans' preference for child-like characteristics. Regardless of the mechanism, humans are particularly responsive to that expression in dogs.

Previous research has shown some apes can also modify their [facial expressions](#) depending on their audience, but until now, dogs' abilities to do use facial [expression](#) to communicate with humans hadn't been systematically examined.

**More information:** Juliane Kaminski et al, Human attention affects facial expressions in domestic dogs, *Scientific Reports* (2017). [DOI: 10.1038/s41598-017-12781-x](#)

Provided by University of Portsmouth

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