[The following lines are extracts for the purposes of this exercise]

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Humans Process Dog and Human Facial Affect in Similar Ways

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Abstract

Humans share aspects of their facial affect with other species such as dogs. Here we asked whether untrained human observers with and without dog experience are sensitive to these aspects and recognize dog affect with better-than-chance accuracy. Additionally, we explored similarities in the way observers process dog and human expressions. The stimulus material comprised naturalistic facial expressions of pet dogs and human infants obtained through positive (i.e., play) and negative (i.e., social isolation) provocation. Results extend existing work on cross-species similarities in facial emotions and provide evidence that these similarities are naturally exploited when humans interact with dogs.

Dog expressions were collected from 33 dogs (Table 1) that visited a large public dog run together with their owners. The dogs were videotaped using a Canon HF 10 High Definition video recorder. In the positive condition, a dog was presented with a piece of food or its favorite toy depending on whether the owner reported the dog to be food or play motivated. This condition derived from prior work demonstrating a link between reward, joy, and motivation [26]. The baseline image was selected from the period before the dog was exposed to the treat. The affective image was selected after the owner initiated a movement to deliver the treat, but before the dog received and consumed the treat. In the negative condition, the dog was placed in a crate located in a deserted area of the dog run. This condition was modeled on the finding that social separation produces sadness [20]. The crate was 106 Lx71 Wx79 H cm in size and appropriate for all the dogs used in this study (i.e., they could stand and move around in it comfortably). The baseline image was taken while the dog owner was still visible to the dog. The affective image was taken after the owner had left and while the dog was showing known signs of distress (i.e., whining/pawing, licking, heavy panting). The dog was left alone in the crate for 5 minutes only.

Visual inspection of the reaction time data suggested a comparable priming effect for human and dog faces (Figure 2). Statistical analysis confirmed this impression and revealed a significant Prime x Target interaction ($F(1,60) = 25.5$, $p<.0001$) that was qualified by a three-way interaction including Sex ($F(1,60) = 5.5$, $p<.05$), but not Species ($p>.3$). The Prime x Target x Species x Dog Ownership interaction merely approached significance ($F(1,60) = 3.4$, $p = .07$). An exploration of the Prime x Target interaction in men was significant ($F(1,30) = 4.3$, $p<.05$). However, follow-up comparisons were only marginally significant or non-significant for positive ($F(1,30) = 3.7$, $p = .06$) and negative primes ($p>.2$), respectively. An exploration of the Prime x Target interaction in women was also significant ($F(1,30) = 23.8$, $p<.0001$; Figure 3). Additionally, women responded faster to positive than to negative words following positive primes ($F(1,30) = 9.3$, $p<.01$) and they responded faster to negative than to positive words following negative primes ($F(1,30) = 13.3$, $p<.001$).