Do domestic dogs recognize emotional incongruence in human faces and voices?

Author: Allison Hagley
Project Advisor: Dawn Kitchen

Dogs have had a close relationship with humans for more than 10,000 years, but the effects of artificial selection on canine cognition are only recently being studied. Studies have confirmed the beliefs of pet owners – dogs recognize human faces and voices – and that dogs are sensitive to human emotions. We therefore hypothesize dogs should be able to recognize incongruence between emotions displayed on human faces and emotions expressed in human voices. To test this, we are comparing the reactions of 24 shelter dogs in 48 habituation-dishabituation experiments (one week apart per subject). At the beginning of each trial, dogs face a human demonstrator who displays either a happy or a sad facial expression. Simultaneously, an audio recording of the congruent emotion, laughter or crying, is played. Once habituated to the congruent pairing (measured by a decrease in attentive responses), one of the following occurs: 1) both the facial expression and audio recording are changed to the other congruent pair (e.g., happy-happy becomes sad-sad); 2) either the facial expression or the audio recording is changed to create an incongruent pairing (e.g., happy-happy becomes happy-sad). The dogs' reactions are measured as changes in gaze, ear and tail position, posture, and vocalizations. We predict that dogs will have a significantly stronger reaction to the incongruent pairings compared to the congruent pairings, demonstrating that they use multiple cues to interpret human emotion. Our results will have implications in training companion and therapy dogs and will contribute to a deeper understanding of canine cognitive abilities.