

Using judgement bias to measure positive affective state in dogs

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Abstract

Interest in the induction and measurement of positive affective states in non-human animals is increasing. Here, we used a test of cognitive (judgement) bias, based on the finding that individuals experiencing different affective states judge ambiguous stimuli differently, to measure whether a positive low arousal affective state (e.g. ‘satisfaction’/‘contentment’) could be induced in domestic dogs as a result of their experiencing a food-based rewarding event. In this rewarding event, subjects (1 year old female Beagles) had to search for small amounts of food randomly placed within a maze arena. Using a balanced within-subjects design, the dogs ($N = 12$) received a cognitive bias test either without experiencing the rewarding event (the ‘Neutral’ treatment), or directly after experiencing the rewarding event (the ‘Post-consumption’ treatment). In the test, dogs were trained that one visual cue (e.g. dark grey card) predicted a positive event (food in a bowl) whilst a different cue (e.g. light grey card) predicted a relatively ‘negative’ event (empty bowl). We hypothesised that dogs tested after experiencing the rewarding event, and in a presumed post-consummatory positive affective state, would be more likely to judge visually ambiguous stimuli (intermediate grey cards) positively, compared to dogs in the ‘Neutral’ treatment. In contrast, we found that they took significantly longer to approach an intermediate ambiguous stimulus, suggesting that they were less likely to anticipate food (a negative judgement) compared to dogs in the ‘Neutral’ treatment group. Various explanations for the observed results are discussed, in particular how reward acquisition and consumption may influence positive affective state induction in animals.

Keywords: Positive affect; Dogs; Cognition; Animal welfare

Article Outline

1.

[Introduction](#)

2.

[Methods](#)

2.1. [Subjects, housing and husbandry](#)

2.2. [Familiarisation period](#)

- 2.3. [Treatments](#)
 - 2.4. [Rewarding event](#)
 - 2.5. [Cognitive bias task](#)
 - 2.6. [Trial procedure](#)
 - 2.7. [Training stages](#)
 - 2.8. [Testing](#)
 - 2.9. [Data analysis](#)
- 3. [Results](#)
 - 3.1. [Rewarding event](#)
 - 3.2. [Cognitive bias training](#)
 - 3.3. [Cognitive bias testing](#)
- 4. [Discussion](#)
 - 4.1. [Rewarding event](#)
 - 4.2. [Cognitive bias training](#)
 - 4.3. [Cognitive bias task testing](#)
- 5. [Conclusion](#)
- [Acknowledgements](#)
- [References](#)

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