Investigating Canine Cognition Using an Infant Violation of Expectation Task

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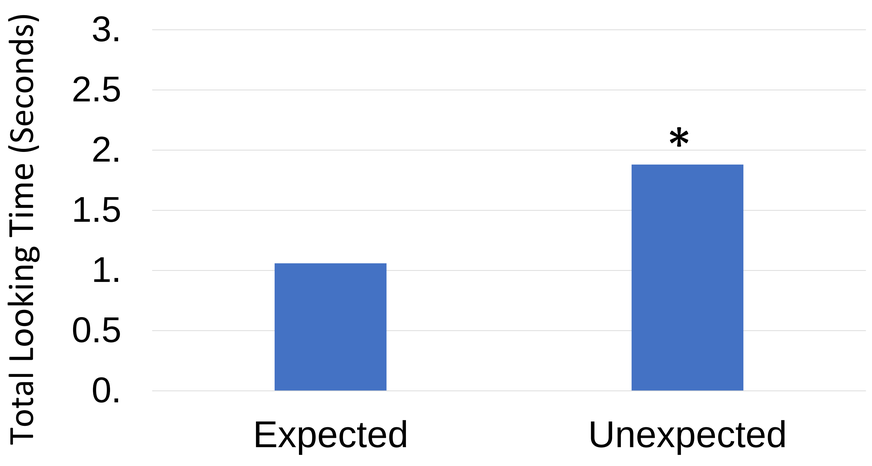
INTRODUCTION: Infants have demonstrated object permanence understanding during violation of expectation tasks. During these tasks, infants are shown expected (e.g., ball stops at wall) or unexpected events (e.g., ball rolling through a solid wall). Infants look longer at the unexpected event versus the expected tasks (Stahl et al., 2015). Studies have shown that dogs also looked longer at an unexpected events during object permanence tasks (Pattison et al., 2010). In the current study, dogs were presented with a violation of expectation task commonly used with infants to investigate their object permanence abilities. It was hypothesized that dogs participating in the experiment would look longer at an unexpected event than an expected one.



CANINE COGNITION PROJECT
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METHOD: Two familiarization trials were conducted, followed by two test trials: an expected and unexpected event. The test trial presentation was counterbalanced. During all trials, a ball was squeaked and dogs watched the ball roll down a ramp to stop next to one of two walls. A barrier was put in front of the ramp, forcing the dog to track the ball without being able to see the ball the whole time. On expected trials the ball stopped in front of the first wall. During unexpected trials the ball appeared to go through the first wall, while an assistant behind the apparatus placed the ball on the other side of the first wall, and nearer to the second farther wall. The looking times were recorded for each of the four trials.

CONCLUSION: The hypothesis was supported. Dogs looked longer at the unexpected rather than expected trials, demonstrating dogs have knowledge of object permanence. This study also supports the validity of using human methodology to assess cognition in other species.

RESULTS: Paired t-test results indicate that canine subjects looked longer at unexpected event versus expected event, t (13) = 3.07, p = .009