

Ethanol Induced Conditioned Place Preference in Japanese Quail: Pilot Study

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INTRO

Stimuli (e.g., beer bottle, bar sign) related to alcohol have been shown to elicit relapse in persons with substance use disorders. Therefore, it is important to understand the relationship between these stimuli and their ability to elicit alcohol consumption.

METHODS

- For this study, conditioned place preference (CPP) was used. CPP is a behavioral procedure that can be used to gauge the rewarding and aversive components of alcohol using visual cues.
- The study utilized 11 adult quail (mixed sex).
- The quail were administered ethanol (alcohol) (1 g/kg [ethanol=5; water=6]) and confined to a chamber with one colored light for 3 days (days 1,3 and 5).
- On alternate days quail (n=6 male; n=6 female) were confined to a different chamber and administered water with a different colored light for 3 days (days 2,4 and 6).
- Following conditioning, the quail were given free access to both chambers and lights.

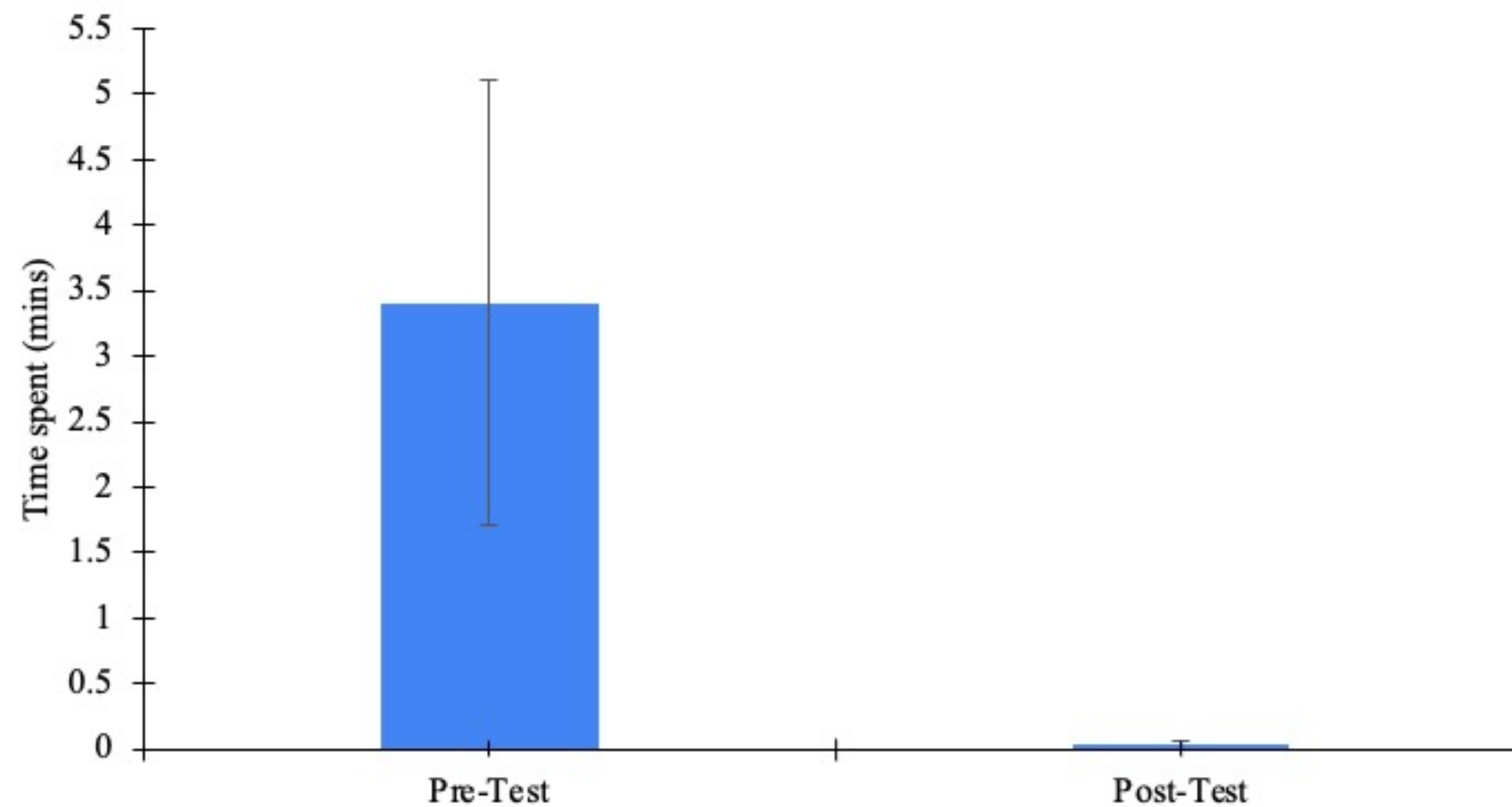
RESULTS

	Mean	Standard error
Pre-Test	3.41	1.77
Post-Test	0.04	0.01

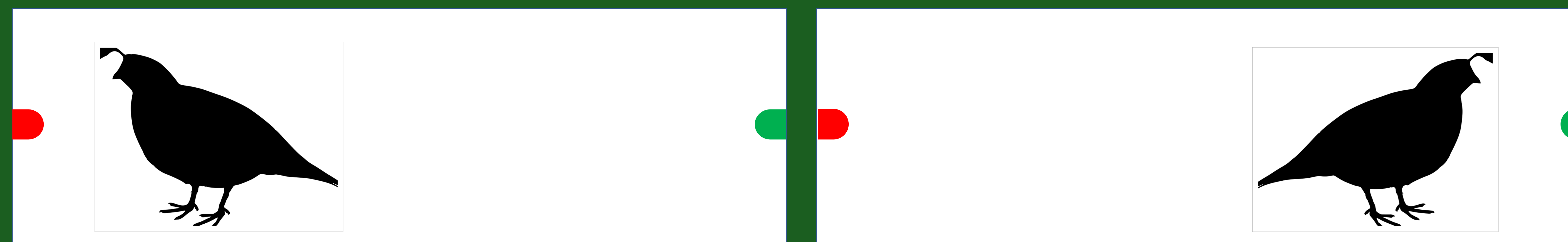
The paired sample t-test with the subjects that received ethanol found a significant difference between the time they spent orientating to the least preferred paired light from the pre-test and the post-test indicating a possible aversion to ethanol, $t(4) = -3.183 = p = 0.03$.

Figure 1

Time Spent Orienting to the Ethanol Paired Light



Note. This figure demonstrates there were 5 subjects that received ethanol. A paired sample t-test was run with the subjects that received ethanol and found a significant difference between the time they spent orientating to the least preferred paired light from the pre-test and post test indicating an aversion to ethanol. Pre-test = least preferred light during first preference test; Post-test = ethanol paired light on last preference test



Note: Figures presented are an example of time spent orientating to the paired light during the pre-test (left) and post test (right).

DISCUSSION

- It was hypothesized that the behavior of the quail would be comparable to that of humans because they are visually orientated and have, similar to humans, been shown to develop associations between cues predictive of rewards. However, there was no significant difference between the subjects that received ethanol versus those that received water.
- Some limitations of this study include the sample size and the background of the quail. Therefore, we looked at just the ethanol group and found an aversion which may indicate too high of a dosage of ethanol.
- This model may be important for future research in behavioral and pharmacological treatments for cue induced relapse of alcohol treatment seeking users.
- This study is a first step at developing a visual model of discrete cue CPP.

References

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