

## Background

- Metacognition in humans refers to the ability to reflect upon one's own state of knowledge.
- Research has found evidence of metacognition in rats:
  - Information seeking to find location of food rewards
  - Long vs short sound discrimination – better performance when chose to take test vs forced

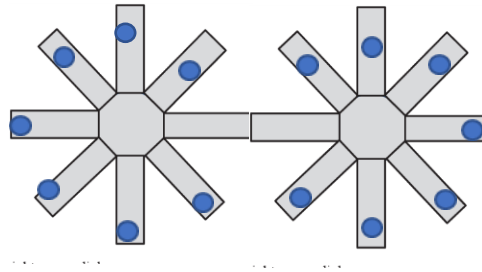
## Objectives

- Will rats become more efficient at locating food on a maze with the same reward location vs random location?
- Will rats 'know what they know' and use this information to locate food on free choice trials?

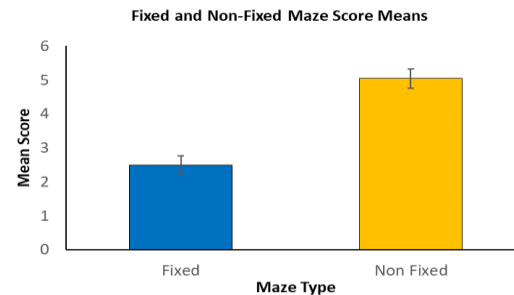


## Method

- 12 Long Evans rats
- Two interconnected 8-arm radial mazes with potential food reward at end of each arm
- Right or left maze (varied between rats) had one fixed arm with reward, opposite maze with random alternating arms
- Rat makes free choice, followed by forced choice trials
- Scores represent number of arms travelled before reaching food reward

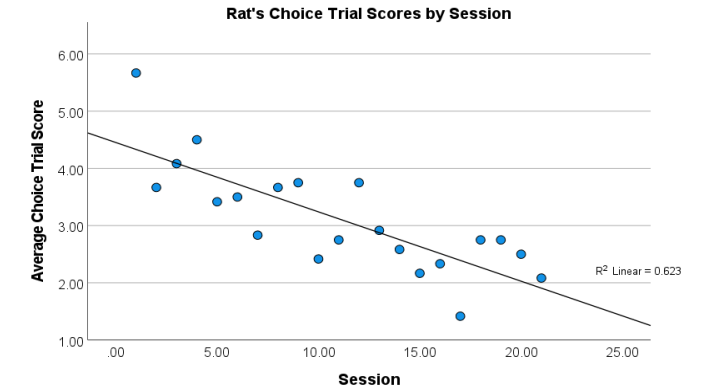


## Results



Average fixed maze scores were significantly lower than non-fixed maze scores ( $t = -10.76, p < .001$ ).

## Results Cont.



Session was a significant predictor of avg. choice score ( $B = -0.12, p < .001$ )

## Conclusions

- Rats became more efficient at locating food on fixed maze during forced trials
- Rats began to choose the fixed side at above chance level (50%) suggesting they utilized information about which maze they were more familiar with (long-term memory)
- Findings converge with previous work suggesting metacognition in rats

## References

- Kirk, C. R., McMillan, N., & Roberts, W. A. (2014). Rats respond for information: Metacognition in a rodent? *Journal of Experimental Psychology: Animal Learning and Cognition*, 40(2), 249-259.
- Roberts, W. A., McMillan, N., Musolino, E., & Cole, M. (2012). Information seeking in animals: Metacognition? *Comparative Cognition & Behavior Reviews*, 7, 85-109.