Curiosity ignored the cat: How exploration promotes context-dependent distractor suppression in visual search through real-world scenes

Justin L. Frandsen & Brian A. Anderson

TEXAS A&M UNIVERSITY

Introduction

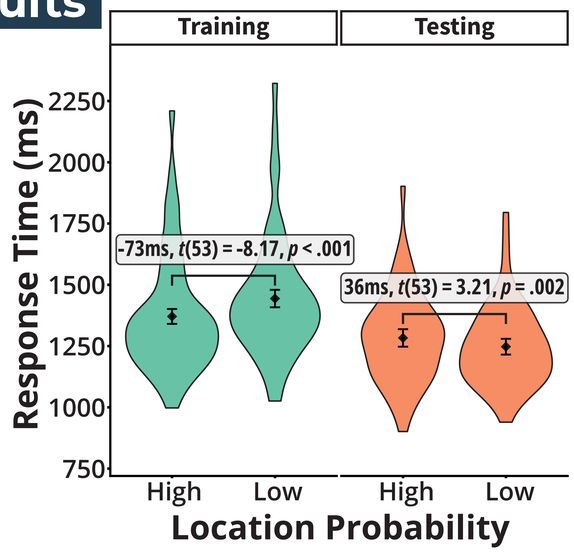
- **Statistical regularities** of where **targets** occurred guide search in **naturalistic scenes**[1].
- **Statistical learning** often facilitates learning of **irrelevant distractor information**[2].
- However, **fixating a distractor** during search for a different target **does not speed** subsequent search for said **distractor**[3, 4].

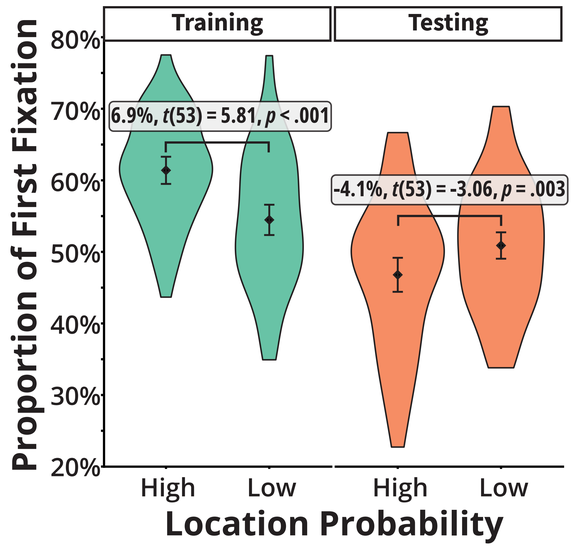
Can statistical regularities of where a distractor occurs guide following searches?

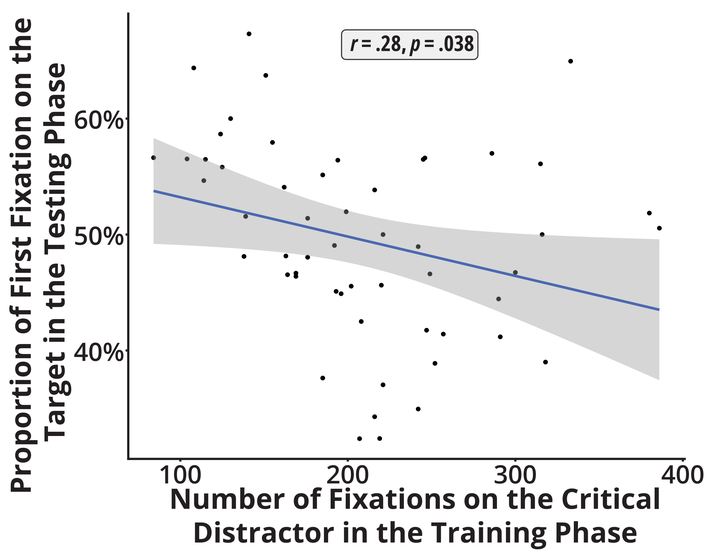
Method

Results

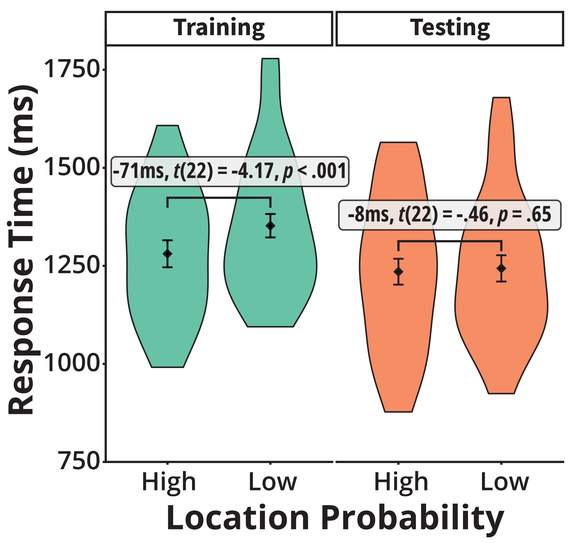
Experiment 1

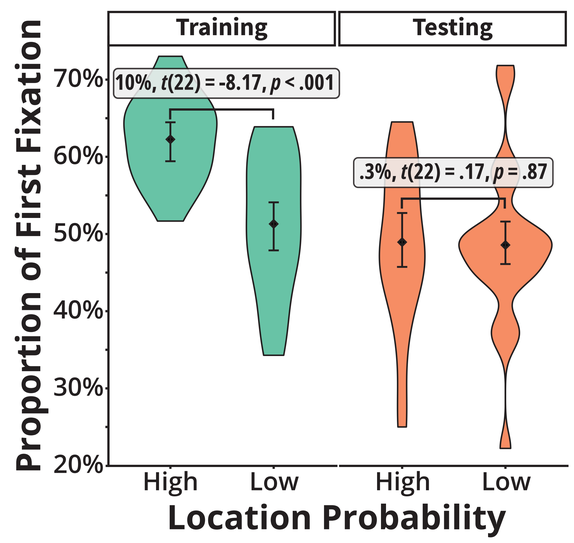


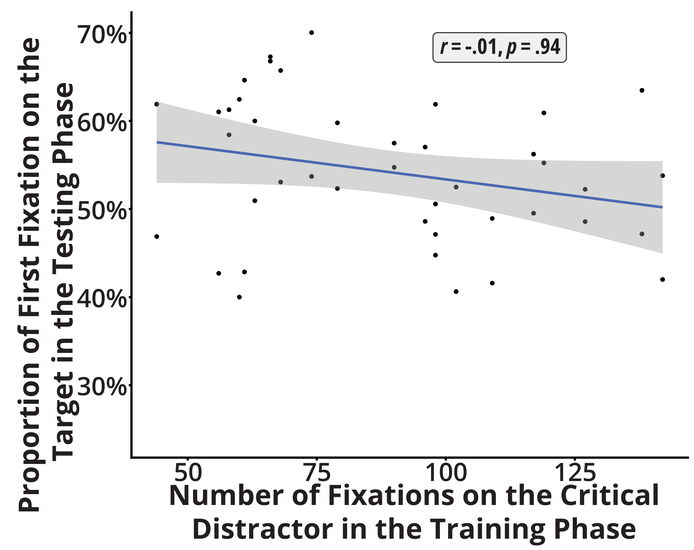




Experiment 2







Discussion

- Experiment 1 found that **statistical regularities of distractors** were learned in the training phase and **later suppressed** when searched for in the testing phase.
- In Experiment 2, when the **post-search viewing period was removed**, this **learning went away**. This suggests that participants are **unable to learn** these regularities **during the task**.

People learn to suppress distractors in frequently encountered locations in scenes through post-search exploration.

References

1. Frandsen, J. L. & Anderson, B. A. (2026). *Journal of Experimental Psychology: Learning Memory and Cognition*
2. Wang, B. & Theeuwes, J. (2018). *Journal of Experimental Psychology: Human Perception and Performance*
3. Võ, M. L.-H., & Wolfe, J. M. (2013). *Cognition*
4. Võ, M. L.-H., & Wolfe, J. M. (2012). *Journal of Experimental Psychology. Human Perception and Performance*