The Role of Statistical Learning in Attentional Guidance During Search Through Naturalistic Scenes

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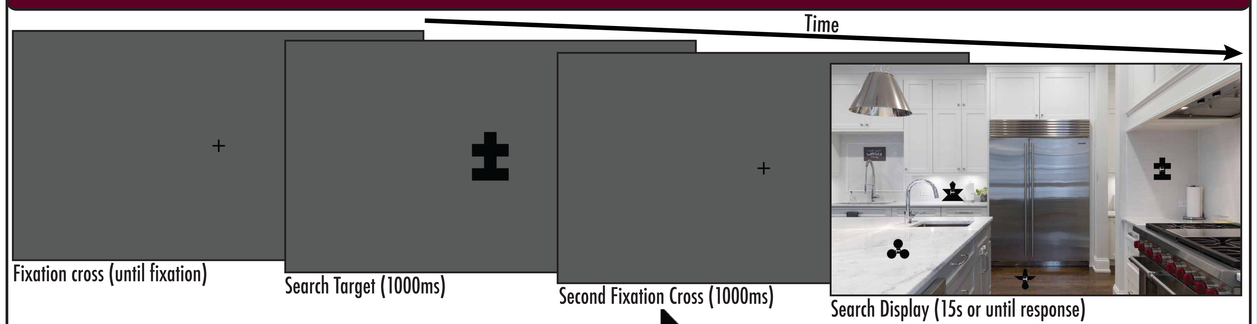
Introduction

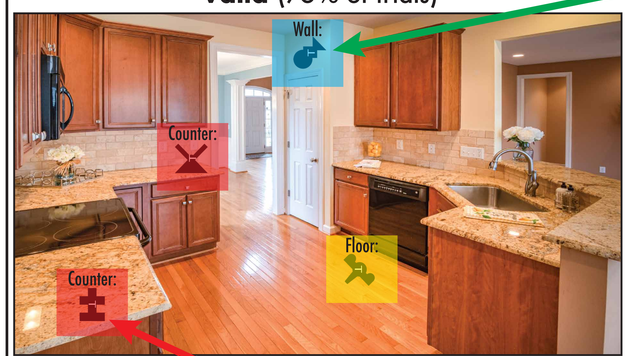
- **Statistical learning** is a form of learning in which people unconsciously extract **environmental regularities and patterns.**
- **Semantic learning** is a form of explicit learning where people use **prior knowledge** to guide search.
- The purpose of the current study is to examine if statistical learning concerning the likely position of specific objects can be used for guidance in naturalistic scenes in the absence of semantic information.

Methods

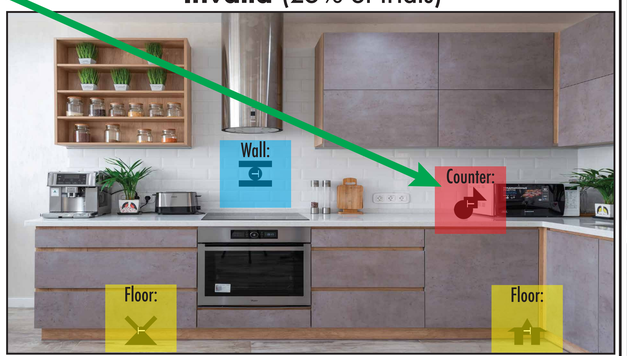


Target: **Association: Wall**

Valid (75% of trials)

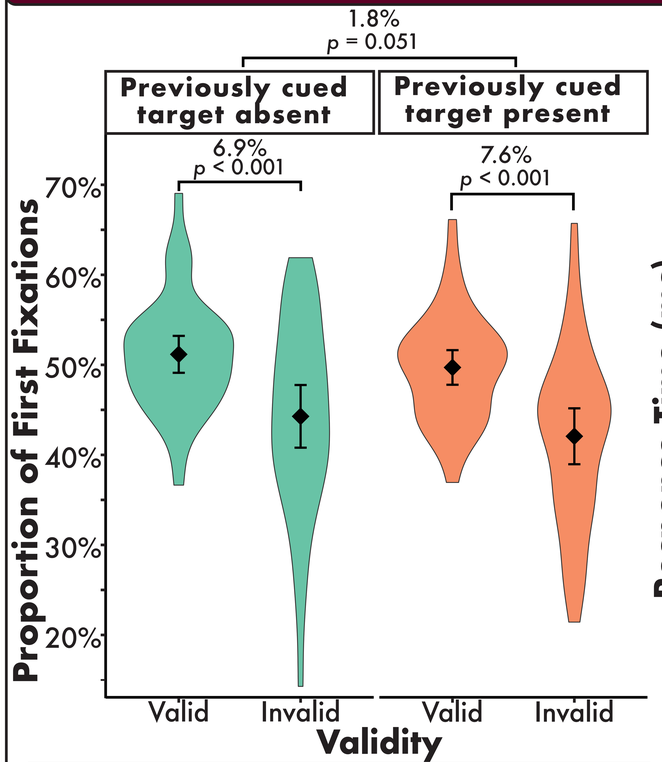


Invalid (25% of trials)

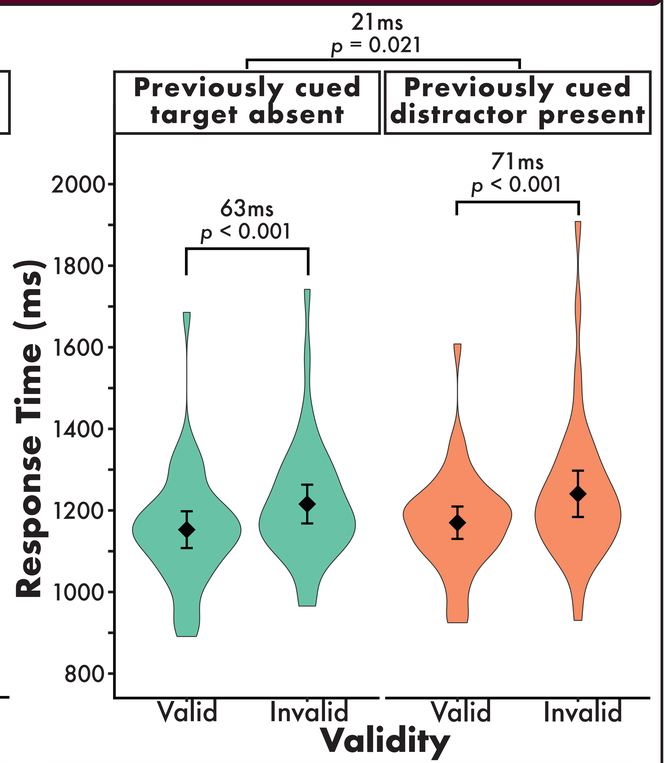


Previously cued target, now a distractor

Results



- Participants made a **greater proportion of first fixations** to the target on **valid trials** than invalid trials.
- No reliable difference between when the previosly cued target distractor was present or absent was observed.



- Participants were **faster to respond** to the orientation of the T within the target on **valid trials** than invalid trials.
- Participants were slowed in their responses when the previously cued target distractor was present.

Conclusion

- These results show that statistical learning can be used to form object-location associations.
- This object-location statistical learning seems to be independent from learning semantic information. (e.g., learning that blenders appear on counters).

References

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