DISTRACTOR PROBABILITY CUEING

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Learning to shield visual search from salient distractors

The probability cueing effect with evidence from the N2pc component

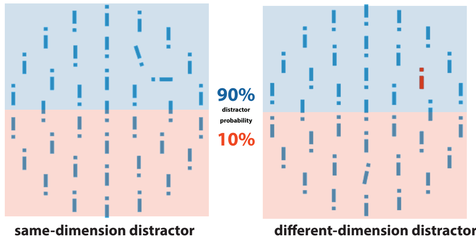
CONCLUSIONS

- **Probability cueing effect is persistent over time for same-dimension distractors only.**
- **Probability cueing effect is not due to target-distractor similarity.**
- **Same-dimension distractors are spatially suppressed, different-dimension distractors are dimensionally suppressed.**
- **Attending a 'suppressed' object requires more effort (reflected in larger N2pc).**

RESEARCH QUESTIONS

Distractors cause less interference when they appear frequently in the same region ("distractor probability cueing effect").

1. Is there a systematic differene between the suppression of same- vs different-dimension distractors?
2. Is the effect reflected in the N2pc?
3. Does the effect persist over time, i.e. 24h?
4. Is the effect just due to similarity?

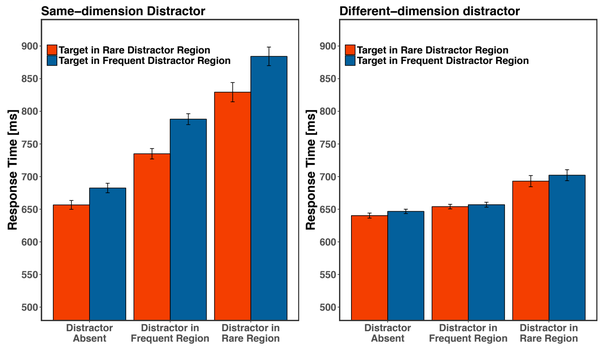


1 PROBABILITY CUEING

Sauter et al. (in review)

184 PARTICIPANTS

SAME- VS DIFFERENT-DIMENSION DISTRACTORS

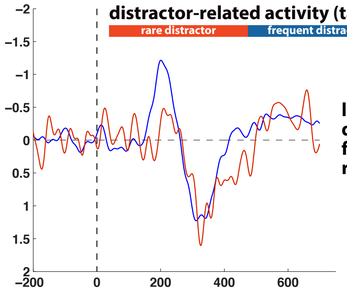


target location effect only for same-dimension (sD) distractors, but not different-dimension (dD) distractors

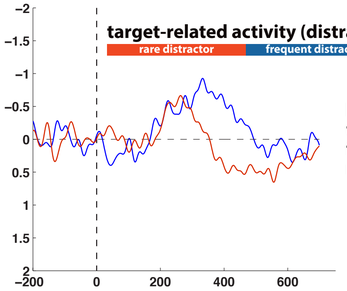
→ **sD are spatially suppressed**

dD are dimensionally supppressed

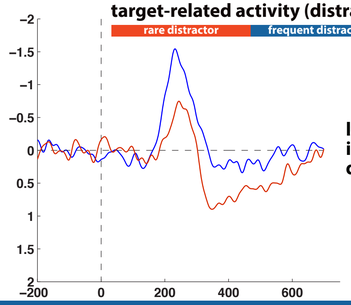
2 EVENT-RELATED POTENTIALS



larger N2pc for distractors in the frequent distractor region

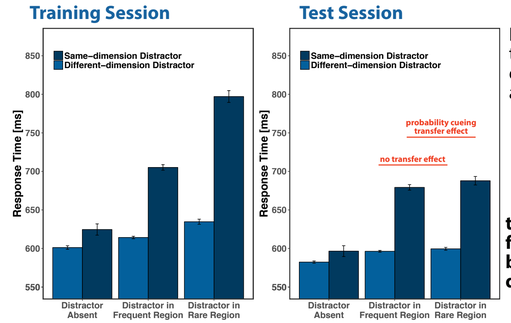


larger N2pc for targets in the frequent distractor region



later N2pc for targets in the frequent distractor region

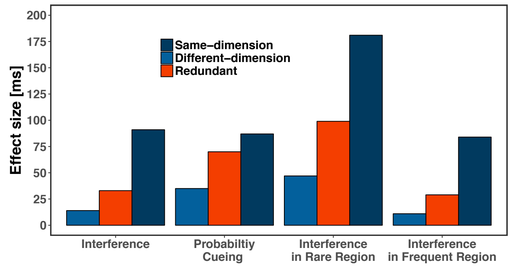
3 24 HOURS DOES IT PERSIST?



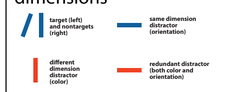
Is there a bias towards the frequent region in an equal 50/50 distribution after training?

transfer effect for same-dimension but not different-dimension distractors

4 DIFFERENCE NOT DUE TO SIMILARITY



Added distractor which is different in both dimensions



least similar (redundant) distractor shows medium effect sizes, not smallest

NEXT STEPS

- different-dimension N2pc experiment
- probing the distractor: 45° distractor, intermixed distractors
- generalizability: different set sizes, different dimensions

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