What’s the purpose of perceptual averaging?

Jennifer E. Corbett & David Melcher

How do statistical representations affect visual search over time?

Results

Repeating statistics over 5 consecutive displays relative to 0-repeats unstable baseline:

Search speed/discriminability increased as statistical stability built, speeding correct RTs and decreasing the number of saccades necessary to find the target.

Summary

- Building statistical stability facilitates visual search even when there’s no predictable spatial relationship between the target and the background (“Statistical contextual cueing”).
- Paper under review – Sign the sheet for a pre/reprint

Discussion

- A similar benefit of building statistical stability in neglect patients suggests that statistical stability facilitates search for targets in regions where focal attentional resources are absent/severely compromised (Lanzoni, Melcher, Miceli, & Corbett, under review).
- SSVEP frequency tagging (SSVEP amplitudes as index of stimulus-directed attention): Building statistical stability decreased SSVEP amplitudes for both a central target Gabor (8.34 Hz) and background Gabors (12.5 Hz), suggesting that building stability reduces attention needed for processing target and background.

Statistical summaries of peripheral information play a central role in building visual stability.

Melcher Active Perception Lab

jennifer.e.corbett@gmail.com