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Vortragseinladung

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Thema: "Searching with and against each other:
spatiotemporal coordination of visual search behavior in
collaborative and competitive settings"

Ort: Universität Regensburg, PT 4.0.40

Referent: Dr. Diederick C. Niehorster, The Humanities Laboratory, Lund
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Although in real life people frequently perform visual search together, in lab experiments this social dimension is typically left out. Here we investigate individual, collaborative and competitive visual search with visualization of partners' gaze. Participants were instructed to search a grid of Gabors while being eye-tracked. For collaboration and competition, searchers were shown in real-time at which element the paired searcher was looking. To promote collaboration or competition, points were rewarded or deducted for correct or incorrect answers.

Early in collaboration trials, searchers rarely looked at the same elements. Reaction times were roughly halved compared to individual search, although error rates did not increase. This indicates searchers formed an efficient collaboration strategy. Overlap, the proportion of fixations that landed on hexagons that had already been fixated by the other searcher, was lower than expected from simulated overlap of two searchers who are blind to the behavior of their partner. Overlap of a collaborating search correlated strongly with ratings of the quality of collaboration. During competition overlap increased earlier, indicating that competitors divided space less efficiently. Analysis of the entropy of the fixation locations and scan paths revealed that in the competition condition, searchers searched less systematically than in the collaborate and individual search conditions.

We conclude that participants can efficiently search together when provided only with information about their partner's gaze position by dividing up the search space. Competing searchers searched less predictably, potentially to stay one step ahead of their competitor.