Automatic Adjustment of Saccade Readiness

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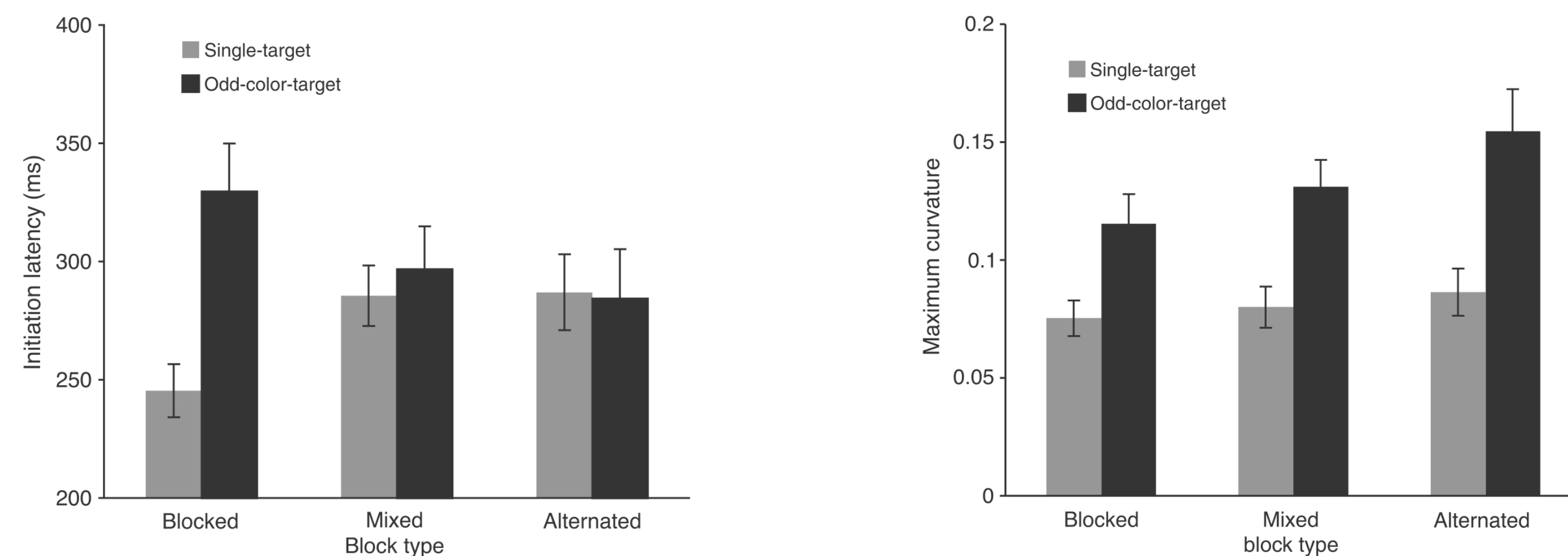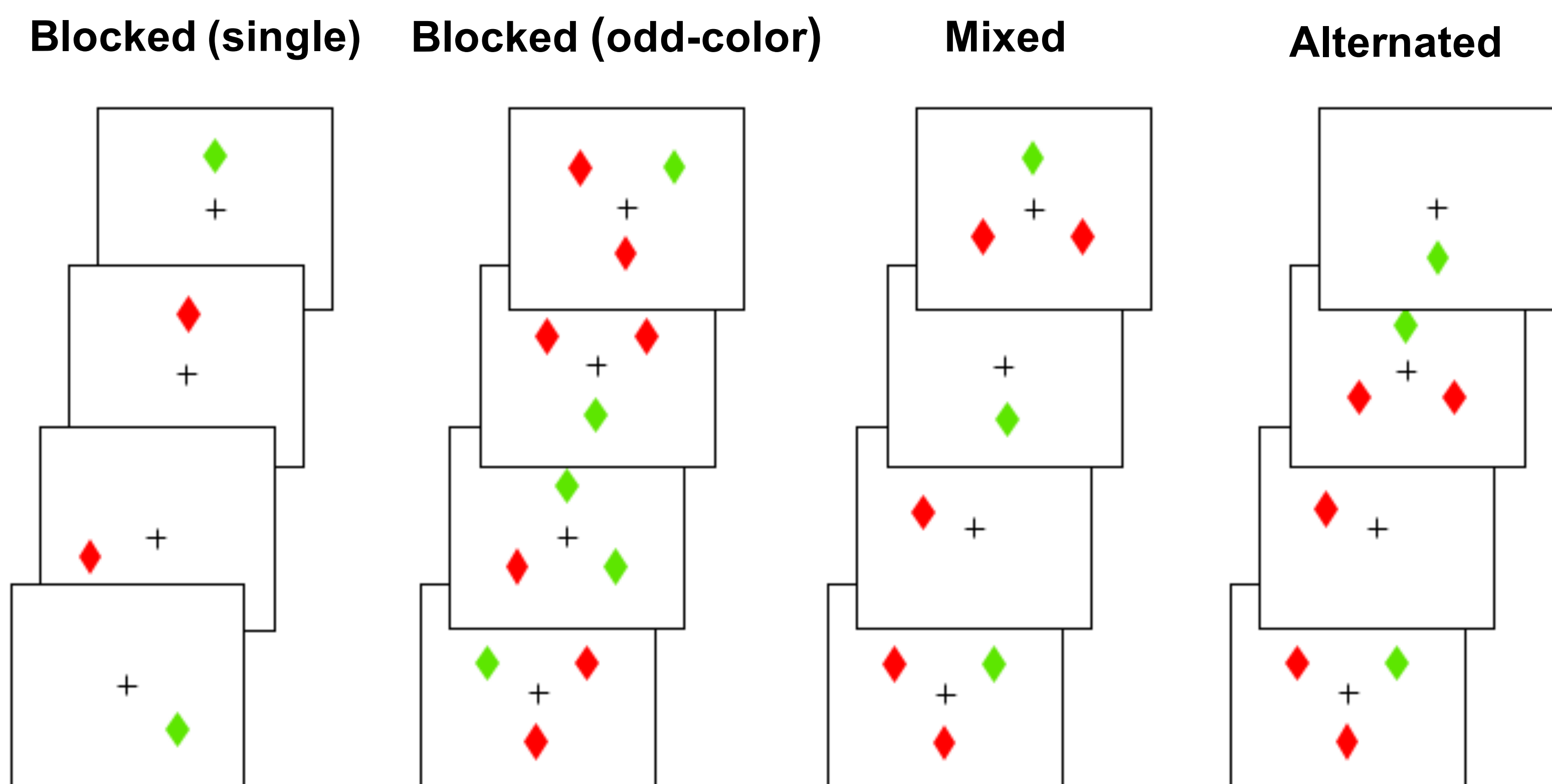Brown University, Providence, RI

Background

- Different states of readiness emerge for reaching movements in easy versus hard tasks[1]

- Initiation latencies homogenize when hard and easy tasks are intermixed[1]

- Shorter initiation latencies in hard (odd-color-target) blocks led to movement costs[1]
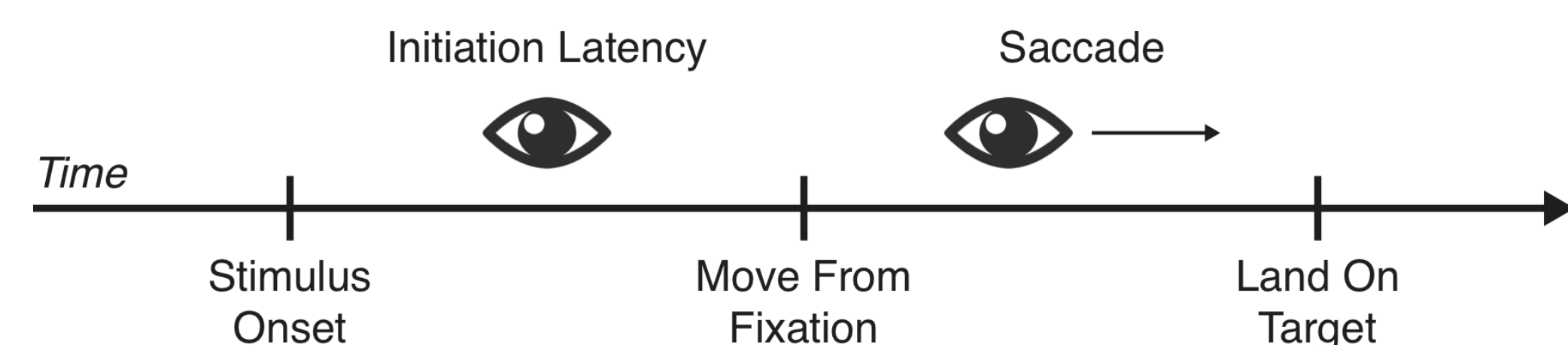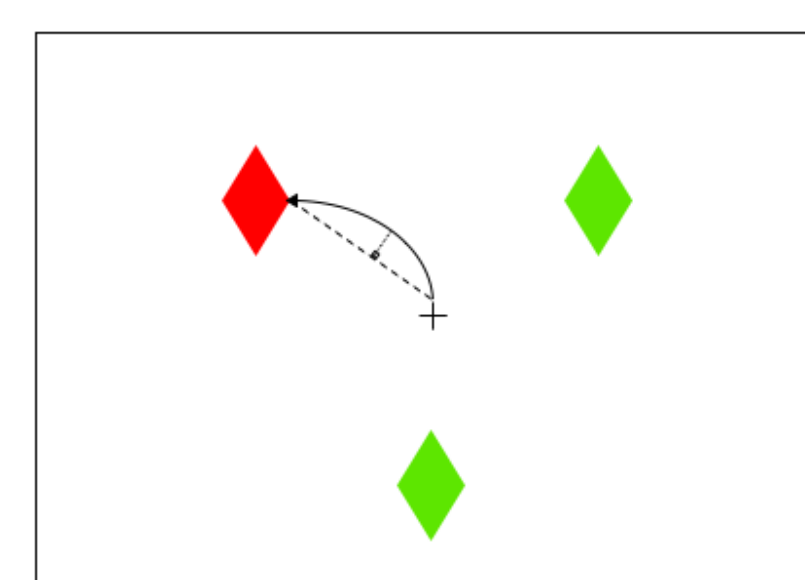

Is saccadic readiness also automatically adjusted based on current task demands?
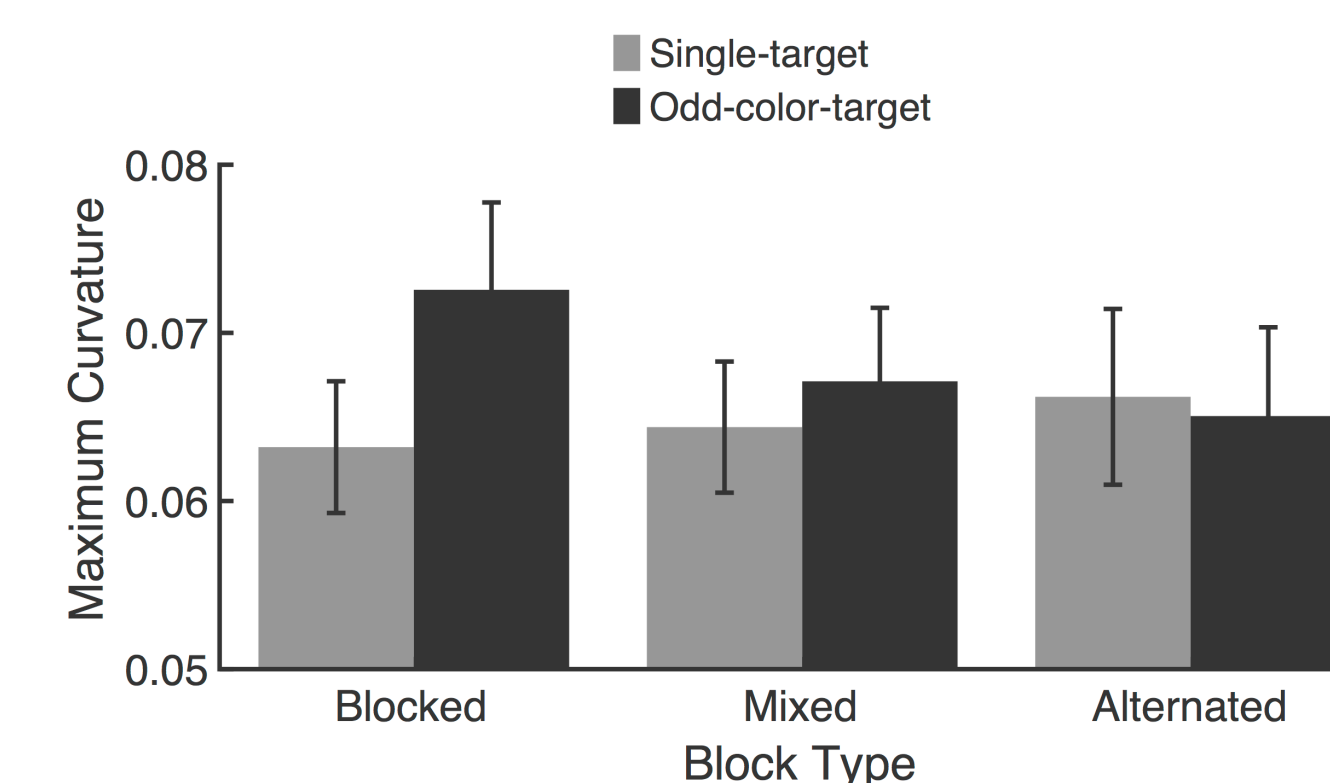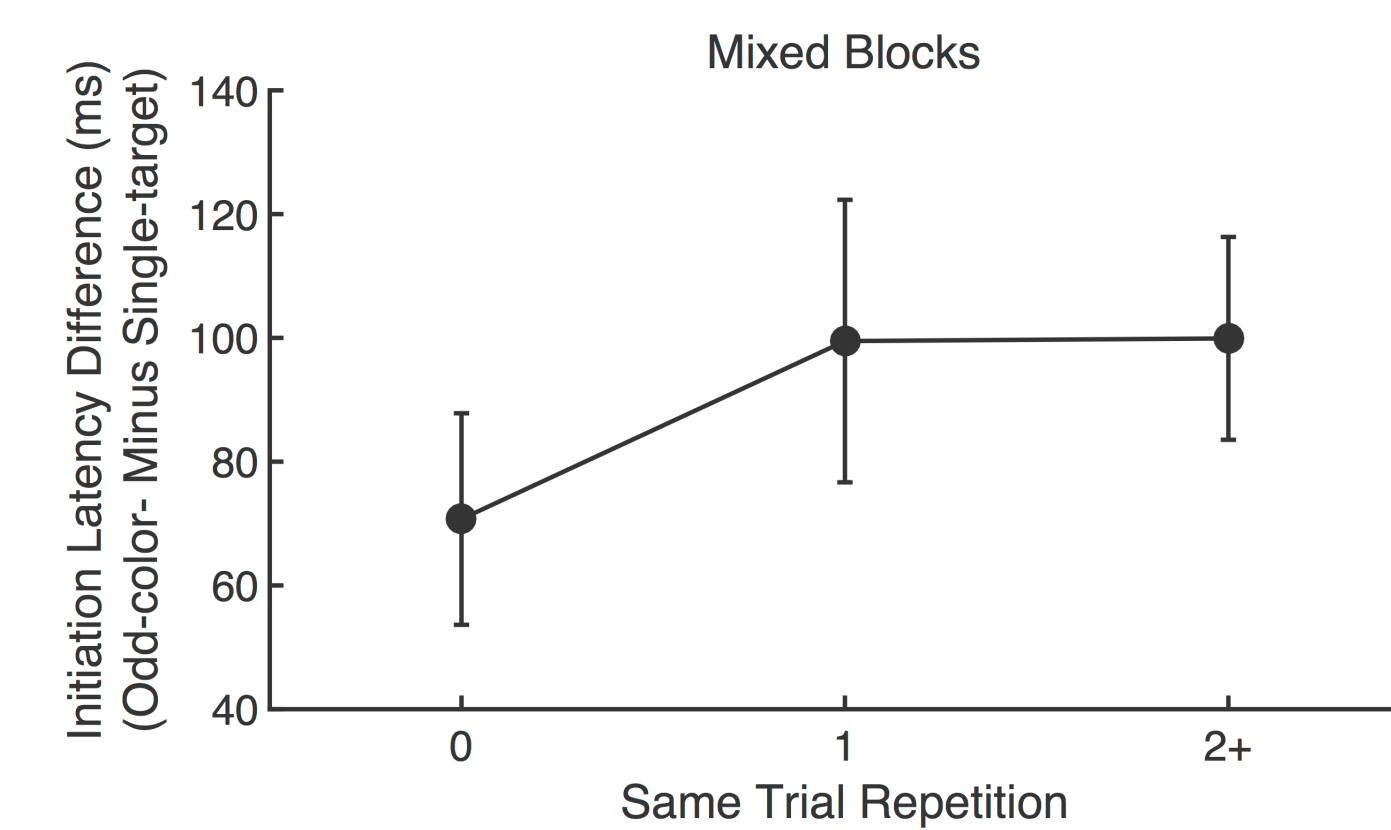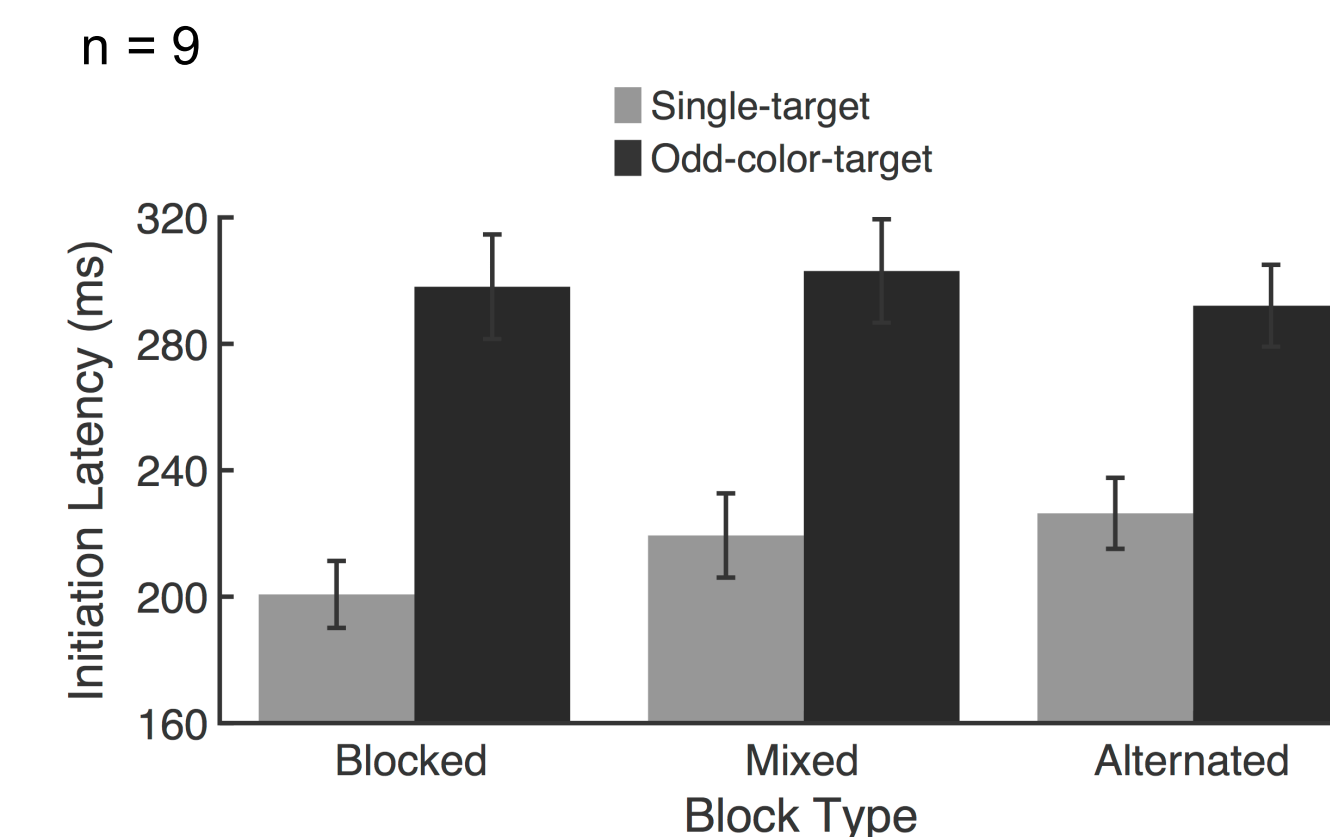
Methods

- Hold eye on center fixation cross until stimulus is presented

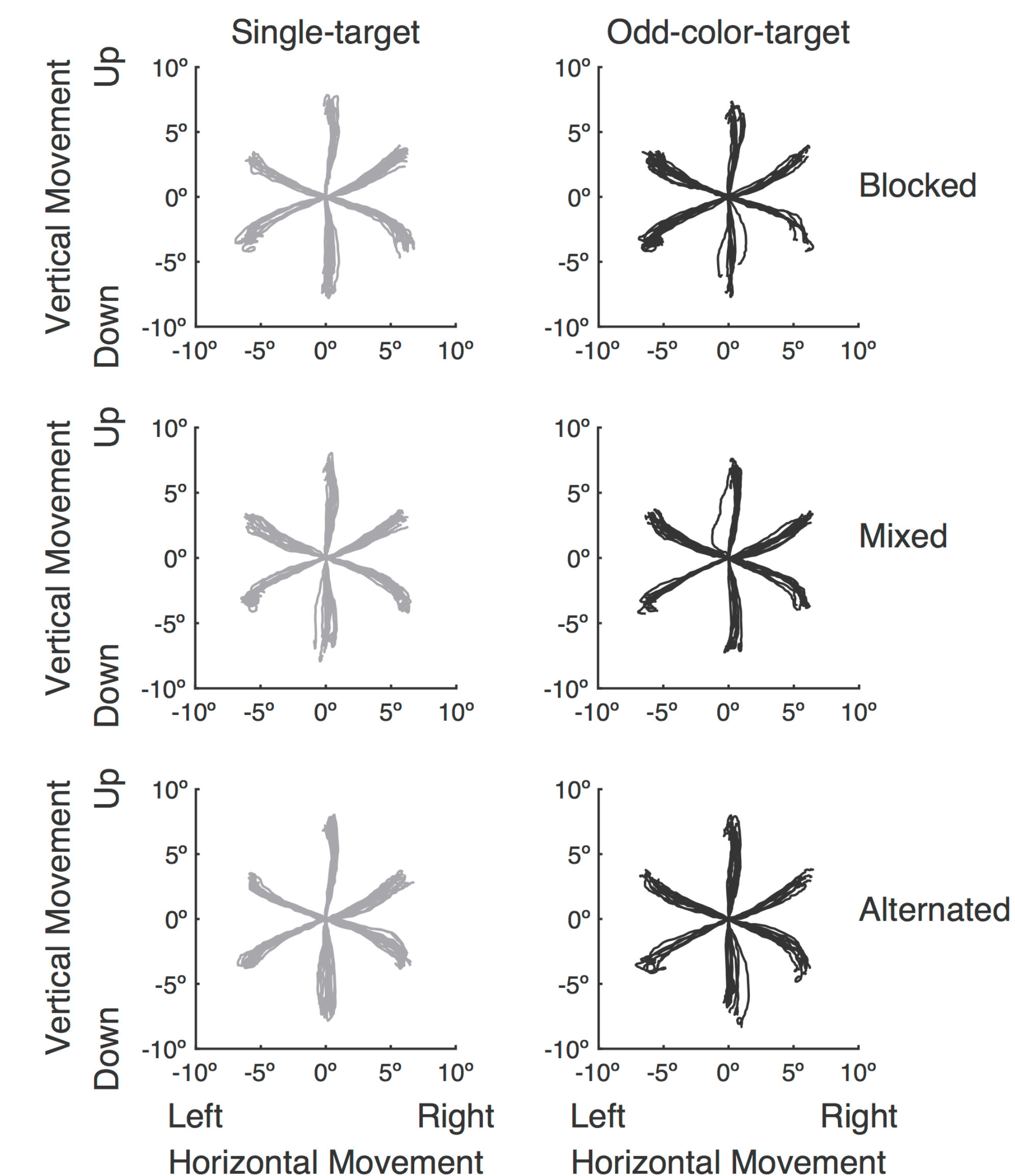- Make eye movement (saccade) to target (single or odd-color diamond)

Results

n = 9

Resampled Saccade Trajectories for a Representative Participant

Conclusions

- Initiation latencies were slower for odd-color-target trials in all block types

  - Contrary to reaching, no homogenization was observed in mixed or alternated blocks

- Repeated trial types increased initiation latency differences in the mixed block

- Saccadic curvature did not differ for number of targets across all block types

  - Movement costs offset by lack of initiation latency homogenization

References

[1] J.H. Song & K. Nakayama (2007). Automatic adjustment of visuomotor readiness. *Journal of Vision*, 7(5):2, 1-9.