Enhancement and suppression biases for target selection transfer across saccades and reaches

Jeff Moher 1,2 & Joo-Hyun Song 2,3
1Department of Psychology, Williams College
2Department of Cognitive, Linguistic, & Psychological Sciences, Brown University
3Brown Institute for Brain Science

Contact: jeff.moher@williams.edu

Method

**Experiment 1: POP**

- **Hand Cue**
  - 2 s
  - 1.5 s or until response
  - Hand Cue
- **Eye Cue**
  - 2 s
  - 1.5 s or until response
- Sample sequence of trials:
  - Eye Repeat
  - Eye Switch
  - Hand Repeat
  - Hand Switch
  - Eye Repeat
  - Eye Switch
  - Color Switch
  - Color Repeat

**Experiment 2: DPE**

- **Hand Cue**
  - 2 s
  - 1.5 s or until response
  - Hand Cue
- **Eye Cue**
  - 2 s
  - 1.5 s or until response
- Sample sequence of trials:
  - Eye Repeat
  - Eye Switch

Results

**Exp. 1 POP**

- Faster RT for eye and hand movements when target color repeated
- **POP** transfers from eye to hand and vice versa (no significant interactions)

**Exp. 2 POP**

- **POP** transfer again, interaction for eye movements
- **DPE** for hand movements, including transfer
- **DPE** for eye only marginally significant for response repeat, no effect for response switch (potential power issue?)

Discussion

- Effector-general representation of previous target features guides selection
- These representations can be enhancement OR suppression effects

**Prior selection biases current behavior across different actions**

- Smaller effect for switches across ALL measures; effector-specific contribution?
- NEXT: Changes-of-mind affect later responses; transfer across effectors?
- NEXT: Effector-specific vs. effector-general selection history: distinct neural representations?