The background is remapped across saccades

Oakyoon Cha & Sang Chul Chong
VCC Lab., Yonsei University
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(Burr, 2005; Burr, Morrone, & Ross, 1994)
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(Melcher, 2007)
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Adaptation

Probe before Saccade

Probe after Saccade

Magnitude of Tilt Aftereffects
**RF Shifting vs. Activation Transfer:**

**Physiological Studies: LIP, FEF, SC**

(Duhamel, Colby, & Goldberg, 1992; …)

**A**

- Pre-saccadic (Current) RF
- Post-saccadic (Future) RF
- Fixation
- Saccadic Target
- Eye Position
- Neural Responses

**B**

- Fixation
- Probe
- Saccade Cue
- Saccadic Onset
RF Shifting vs. Activation Transfer: Superior Colliculus Frontal Eye Field

(Sommer & Wurtz, 2006)
RF Shifting vs. Activation Transfer: Horizontal Connections in LIP

(Cavanagh, Hunt, Afraz, & Rolfs, 2010)
RF Shifting vs. Activation Transfer: Comparison of Behavioral Studies
Exp. 1: Remapping of Background

Eye Position

Displacement of Fixation

Saccade

Time

Adapter

3 sec

Experiment 1

Probe on FIGURE

300 – 500 ms

50 – 150 ms

41 – 52 ms

Probe on BACKGROUND

Experiment 2

Experiment 3

FIGURE Adapter

5 sec, 1 Hz (flicker)

1 sec, 1 Hz (flicker)

DISAPPEARING Manipulation

APPEARING Manipulation

SAME Orientation Probe

DIFF. Orientation Probe

BACKGROUND Adapter
Exp. 1: “Background is Remapped”
Exp. 2 & 3: Modulation during Remapping
Exp. 2 & 3

Threshold Elevation Index

Adapter

Probe

.12

1.5

.08
Exp. 2 & 3: “Figure Can Be Modulated”
Summary:

“RF Shifting & Activation Transfer Work Together”
Summary:

“RF Shifting & Activation Transfer Work Together”
Summary:

“RF Shifting & Activation Transfer Work Together”
Thank you!