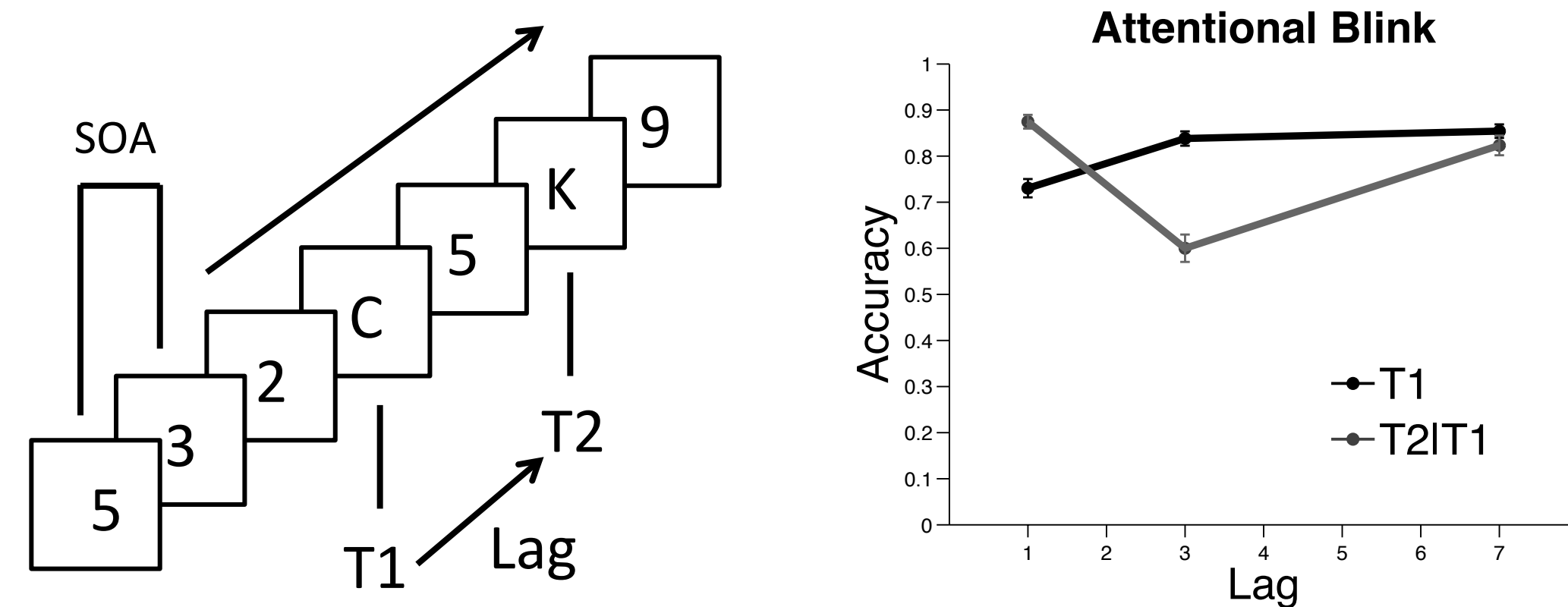




# Exploring Localized Attentional Interference in the Context of a Multiple Location RSVP Task.

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**Introduction:** Rapidly presented targets produce changes in the deployment of attention

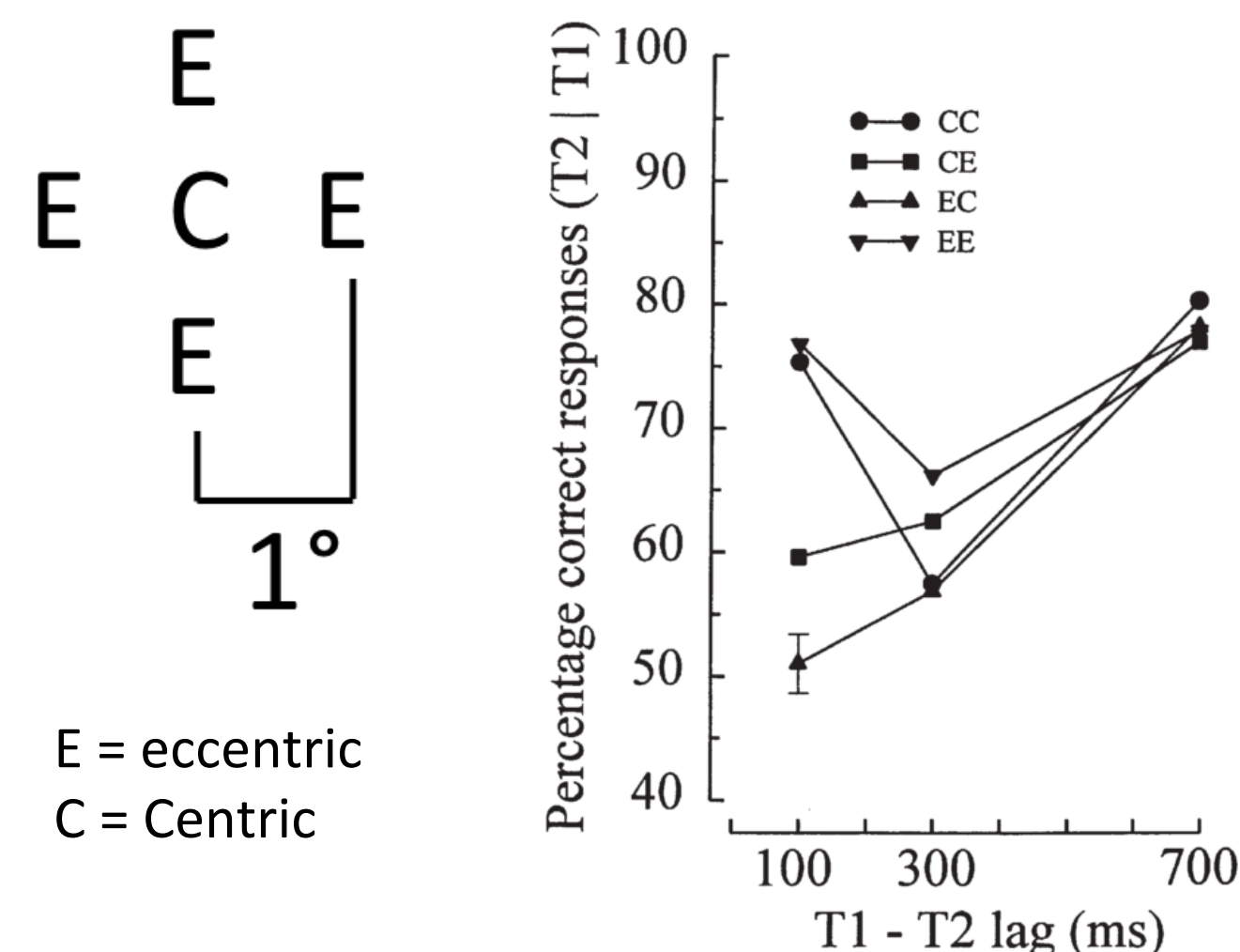


**Attentional blink:** T1 processing reduces T2 processing within 200 to 500 ms

**Is lag 1 sparing present in spatially offset stimuli?**

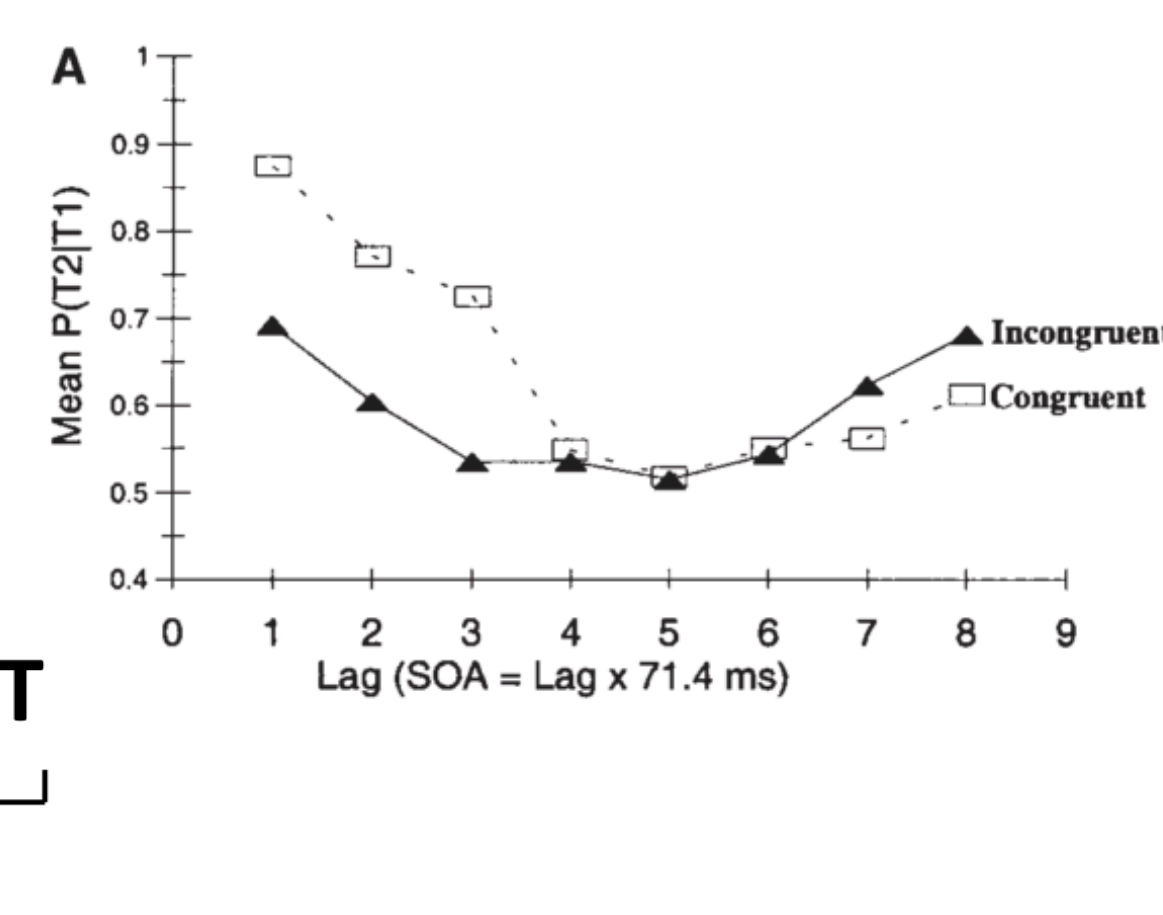
**Visser et al (1999)**

-RSVP stream  
 -4 conditions (CC, EE, CE, EC)  
 -Found no Lag 1 sparing with spatial offset

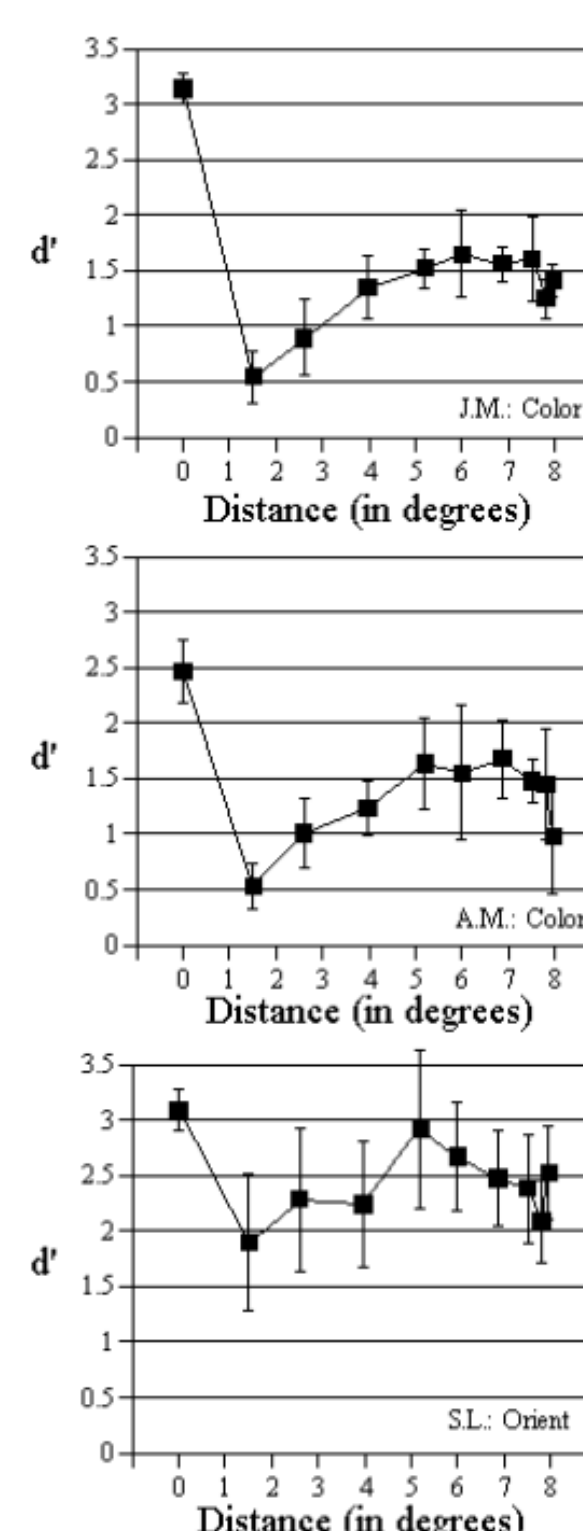
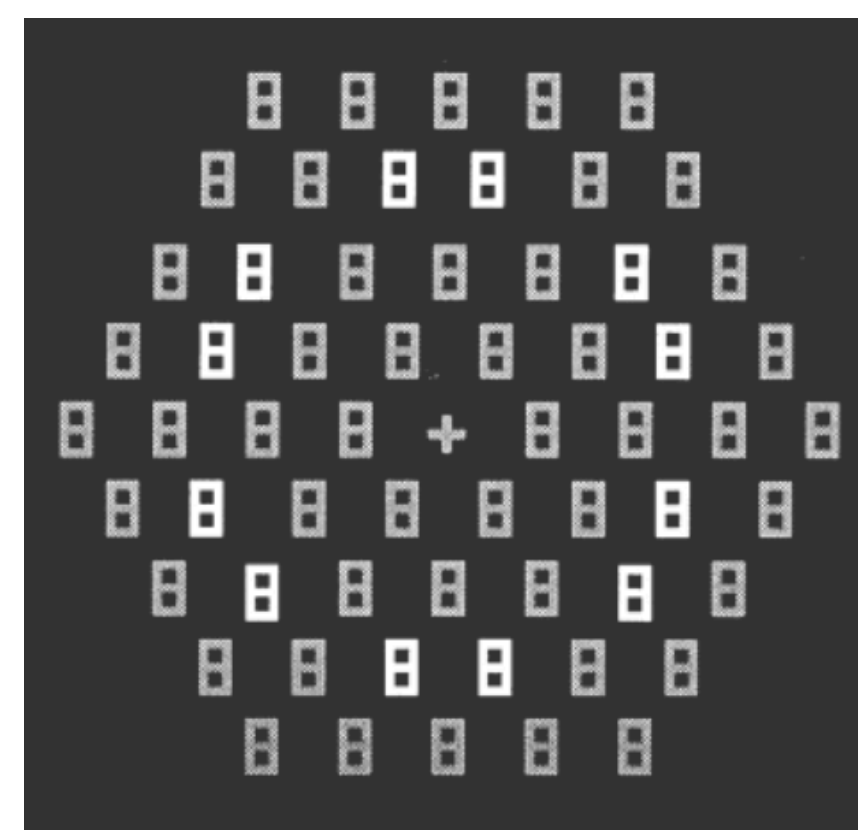


**Shih (2000)**

-Dual RSVP streams  
 -2 conditions (same or different loc.)  
 -Found Lag 1 sparing with spatial offset

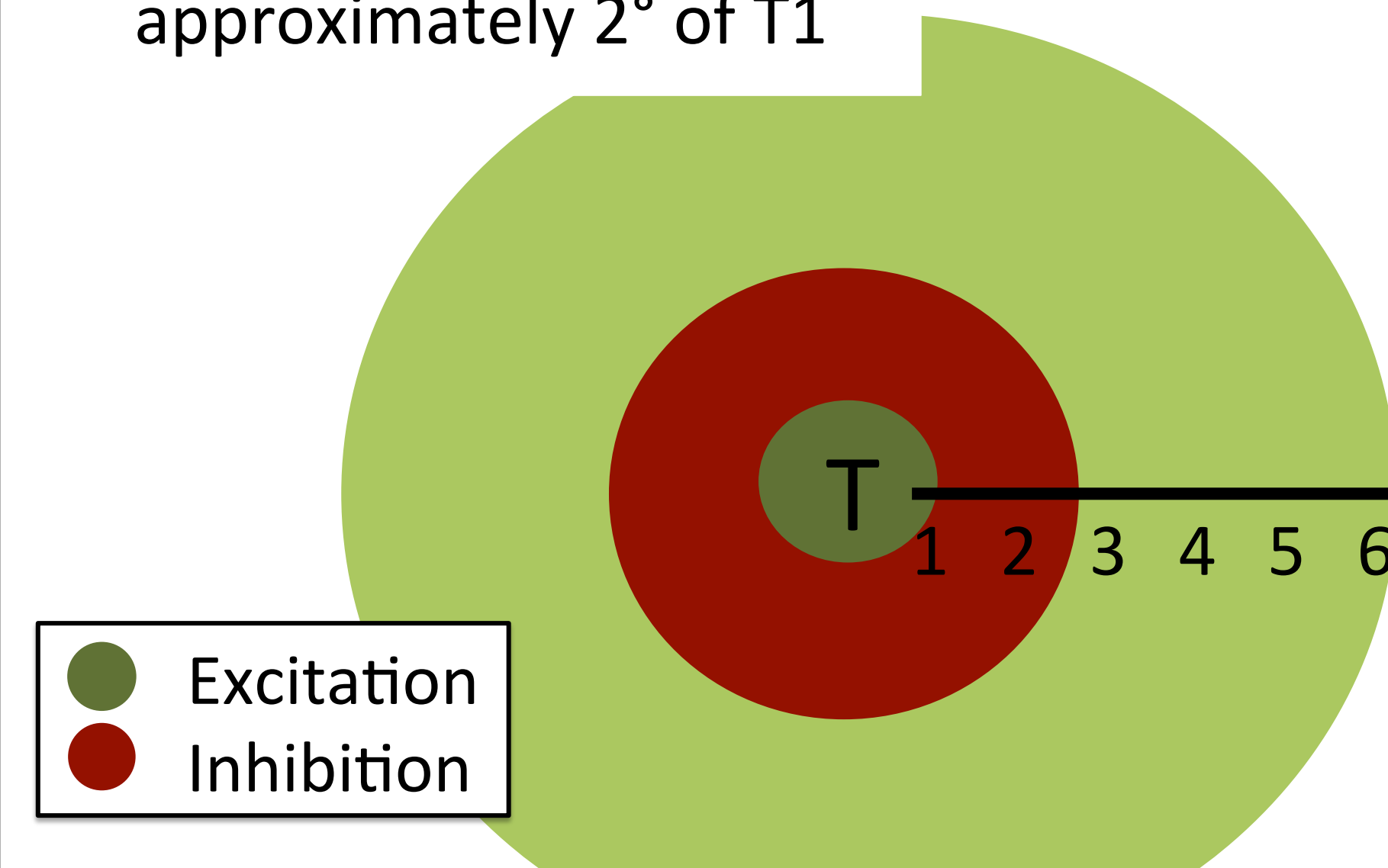


**One possible explanation: Localized attentional interference (Mounts 2000)**



-2 targets presented in highlighted locations at 67ms temporal offset  
 -T2 performance varied as a function of T1 proximity

**Hypothesis:** LAI interferes with T2 perception at lag 1 when T2 appears within approximately 2° of T1

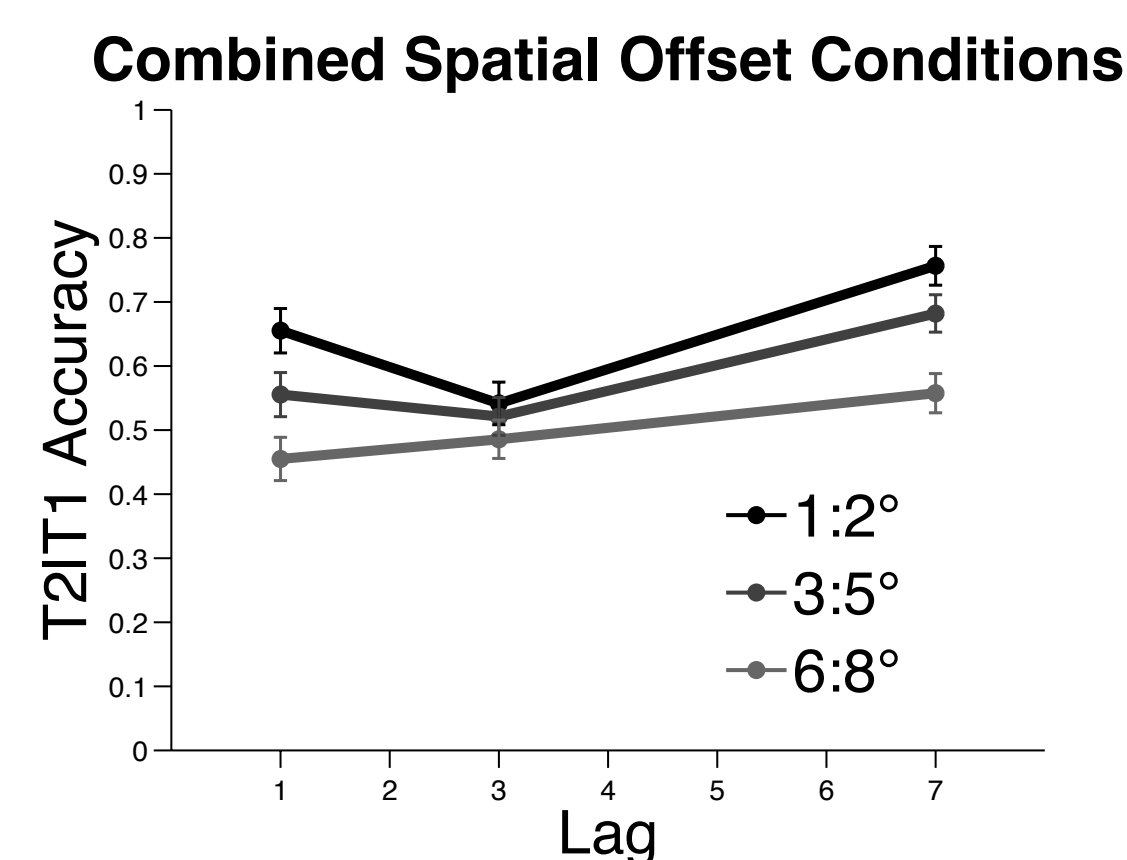


**Experiment 1:** Parametrically measure the extent of an attentional window

**Methods:** Replicated Visser et al (1999) paradigm with increased eccentricities (1-8°)  
 n = 51  
 SOA = 100 ms

**Results:**  
 Lag ( $p < .001$ )  
 DVA ( $p < .001$ )  
 Lag x DVA ( $p < .001$ )

**Conclusions:** LAI was not found with spatial offset at lag 1.

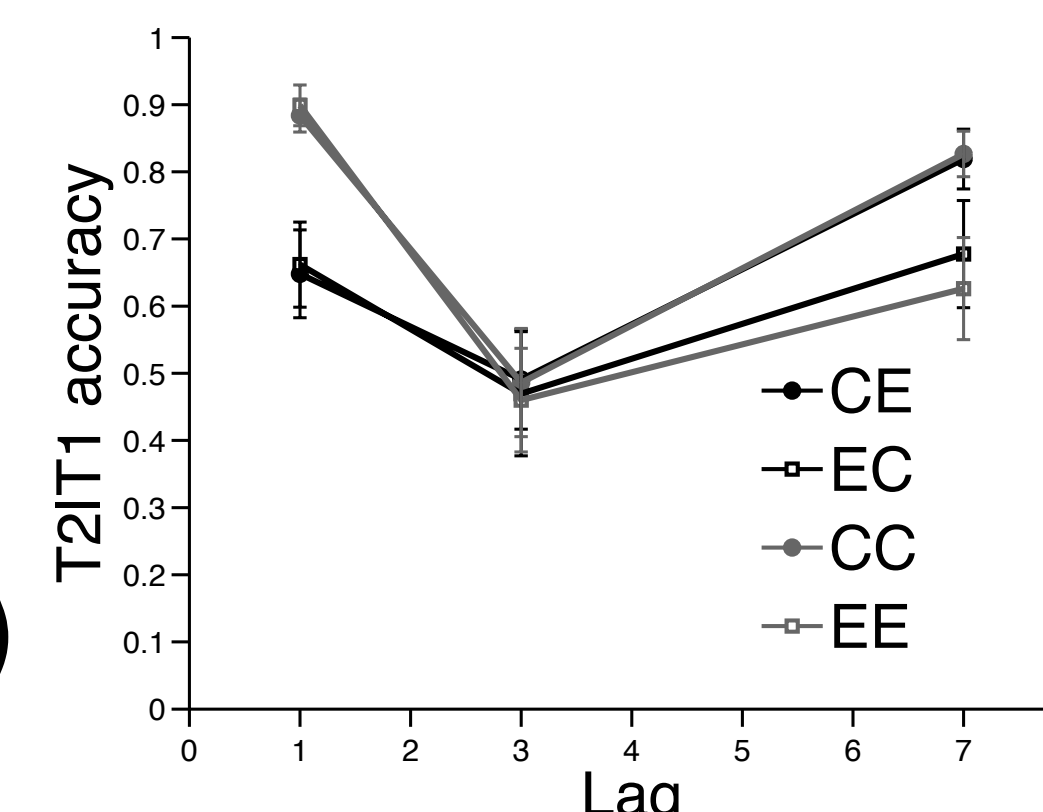


**Experiment 2:** Attempt to replicate Visser et al (1999)

**Methods:** White stimuli on dark background  
 n = 12

**Results:**  
 Lag ( $p < .001$ )  
 Condition ( $p < .007$ )  
 Lag x Condition ( $p < .001$ )

**Conclusions:** Failure to fully replicate Visser et al (1999). Found lag 1 sparing with spatial offset.



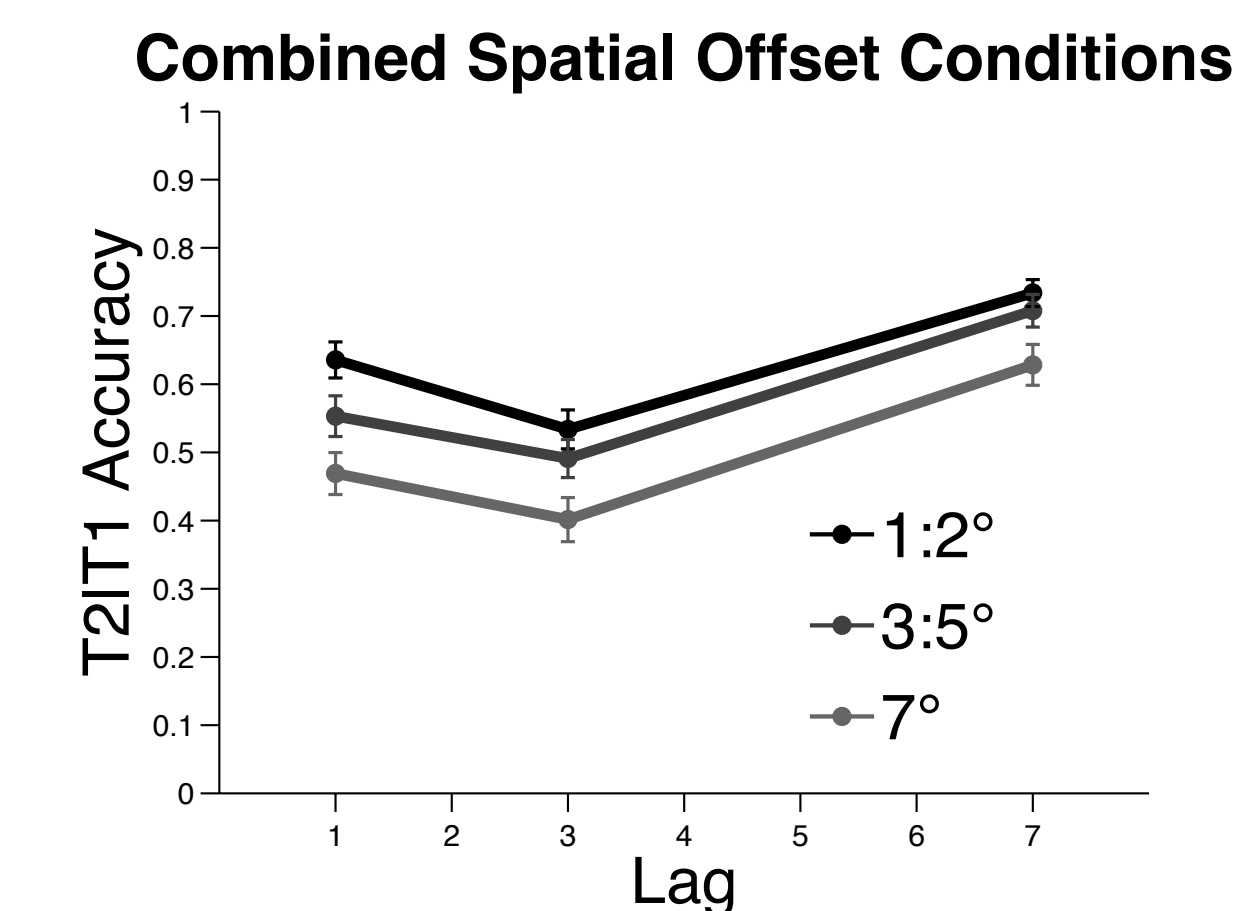
**Experiment 3:** Compensating for decreased perceptual acuity in the periphery

**Stimuli:** T T T T T  
 1° 2° 3° 5° 7°

**Methods:** n = 75

**Results:**  
 Lag ( $p < .001$ )  
 DVA ( $p < .001$ )  
 Lag x DVA ( $p = .38$ )

**Conclusions:** Increased stimuli size relative to eccentricity increases peripheral perception.

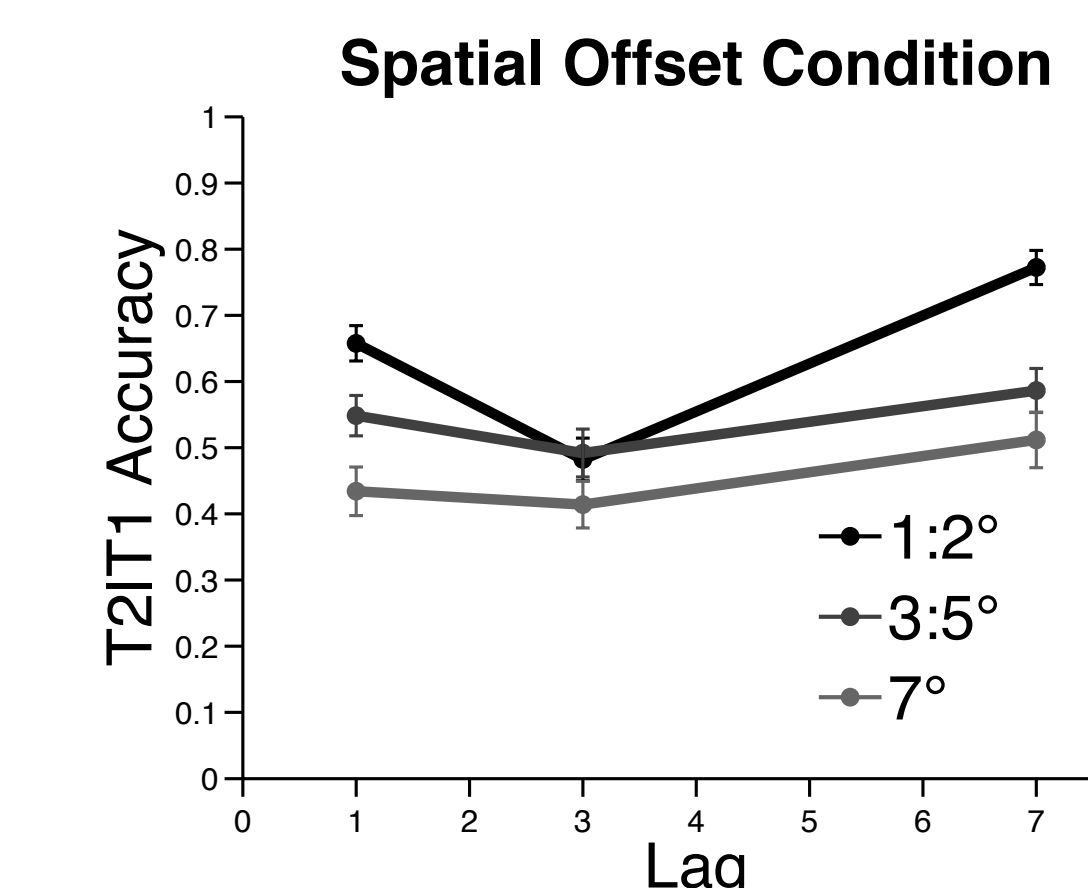


**Experiment 4:** Minimize potential practice effects from block design.

**Methods:** CE and CC appear within-block.  
 n = 54

**Results:**  
 Lag ( $p < .001$ )  
 DVA ( $p < .001$ )  
 Lag x DVA ( $p < .001$ )

**Conclusions:** In a within-block design, LAI was not found with spatial offset at lag 1.

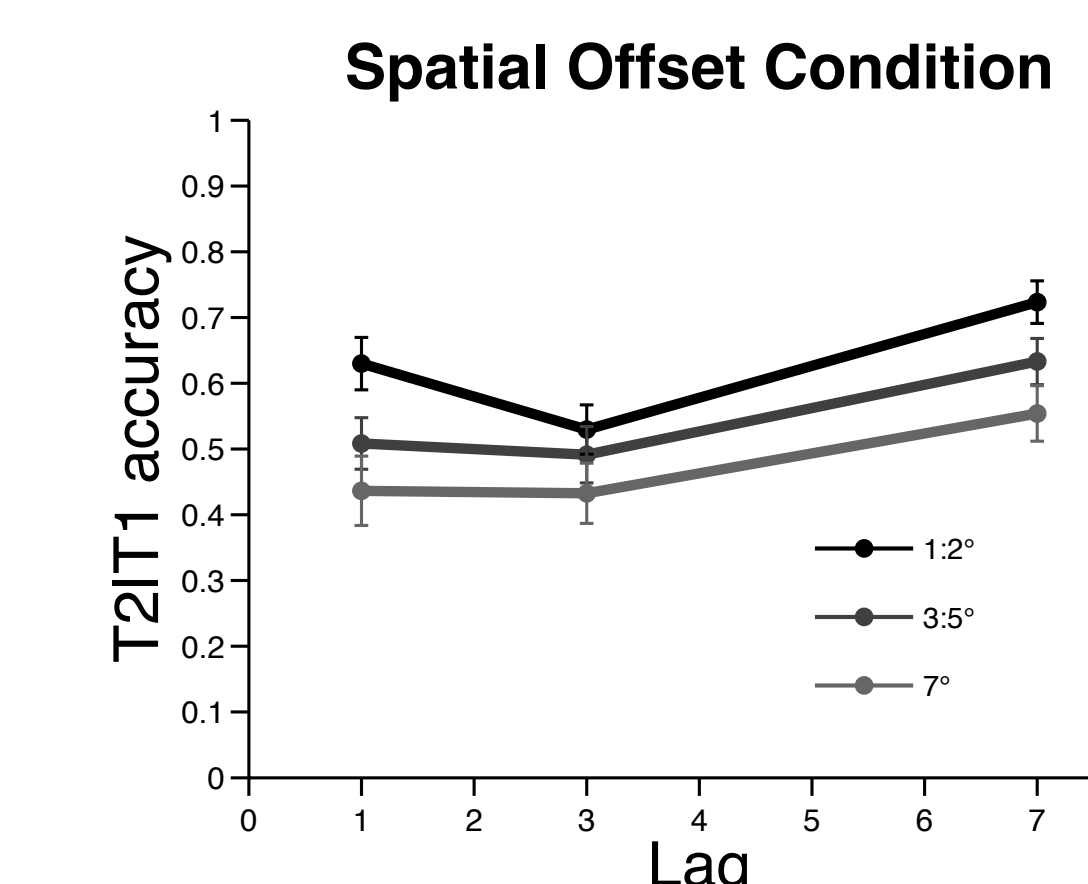


**Experiment 5:** Emulating Mounts (2000) which used a salient T1

**Methods:** Red T1

**Results:**  
 Lag ( $p < .001$ )  
 DVA ( $p < .001$ )  
 Lag x DVA ( $p < .007$ )

**Conclusions:** Saliency influenced the perception of peripheral targets, but did not decrease proximal target performance.



**General conclusions:**

- Experiments 1-5 no LAI with spatial offset at lag 1
- Experiment 2 failed to replicate Visser et al (1999)
- Experiment 3 found lag 1 sparing and Attentional blink in periphery
- Experiments 4-5 demonstrates that expectation did not produce LAI with spatial offset at lag 1
- Experiment 5 demonstrates that saliency did not produce LAI at lag 1

**Discussion:**

- In RSVP, categorically defined targets are not sufficient to produce LAI
- Lag 1 sparing is not limited by immediate spatial proximity
- In RSVP, salient targets are not sufficient to produce LAI

**Future Directions:**

- Add perceptual noise to paradigm to find the boundary condition of LAI

**References:**

Mounts, Jeffrey. 2000. Evidence for suppressive mechanisms in attentional selection: Feature singletons produce inhibitory surrounds. *Perception & Psychophysics* 62(5), 969 – 983

Shih, Shui-I. 2000. Recall of two visual targets embedded in RSVP streams of distractors depends on their temporal and spatial relationship. *Perception & Psychophysics*, 62(7), 1348-1355

Visser, Troy, Zuvic, Samantha, Bischof, Walter, & Di Lollo, Vincet. 1999. The attentional blink with targets in different spatial locations. *Psychonomics: Bulletin & Review*, 6(3), 432-436