Is the object or location inhibited when IOR is found in faces? Evidence from a dynamic visual orienting task.

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Introduction

• Inhibition of return (IOR) is a delayed response in orienting to a previously attended location. IOR applies separately to areas of space and objects and stays with moving objects [1]. This effect is also termed an inhibitory cueing effect (ICE) when eye movements are absent. [2]
• IOR appears to apply to faces [3-5], but this is not a consistent finding [6-8].
• One reason for this inconsistency may be that previous studies have used static displays only. Thus, they have not decoupled the contributions of location-based IOR and object-based IOR to inhibition for faces.
• By testing IOR for moving faces, location and object IOR can be studied separately.

Procedure

This example is a valid location trial in the face block of the experiment.

N = 38
Mean age = 24 (range 18-61)
27 females

Sample

• 6 left-handed
• All normal/corrected-to-normal vision

Results

Reaction times for each cue type in each block of trials. The graphs represent the order of task completion. Error bars represent ± 1 SEM.

Discussion

• This study failed to find significant ICEs for faces. However, there was evidence of ICEs for non-face objects.
• Peripheral cues produced:
  • Significant object-based inhibition when the object task was performed before the face task.
  • Facilitation when the object task was performed after the face task.
  • This finding suggests that the mere presence of a face may modulate subsequent object-based inhibition [9].
• We speculate that inhibitory cueing effects found in previous studies of faces [3-5] may reflect location-based effects.
• Although not significant, the data suggests object representations may also interact with location-based cueing effects, as location-based cueing effects varied in magnitude in the 2nd condition (by 20ms and 10ms in the object task first and face task first conditions respectively).

Summary of Findings

Object task first:
• Significant object-based and location-based ICEs for the object task.
• Significant object-based facilitation for the face task.
• Object-based cueing effects differed significantly between tasks: location-based cueing effects did not.

Object task:
Object Task 19ms*
Face Task 17ms*

Face task first:
Object Task 19ms**
Face Task 17ms*

Face task first:
Object Task 19ms**

*p < 0.05, **p < 0.01. First and second row represent first and second task completed. Red = inhibition, green = facilitation. N = 19 for both tables.

Conclusion: Faces do not generate object-based inhibition.

References