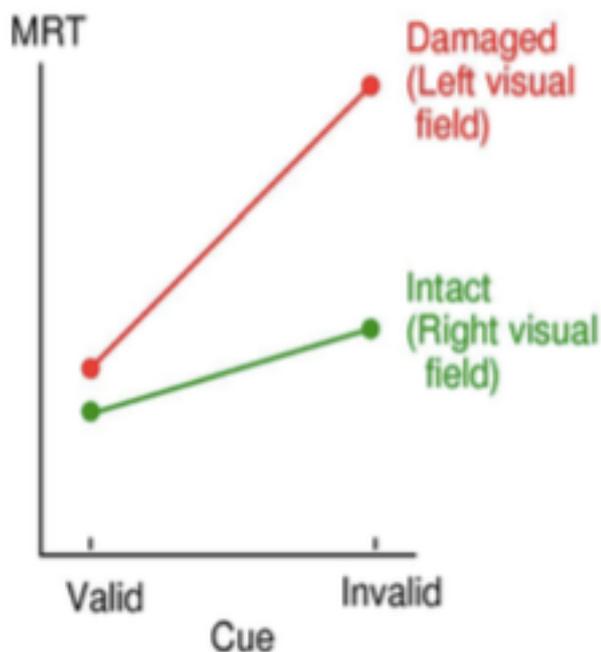


Cuing Deficits with Right Parietal Damage (Posner)

- compare intact and damaged hemispheres, use intact hemisphere as control- patient acts as own control
- Posner: normal attention involves engagement, disengagement and shift (reorienting) of attention
- Ability to voluntarily engage attention not impaired, difficulties in disengaging and shifting in response to new information
-



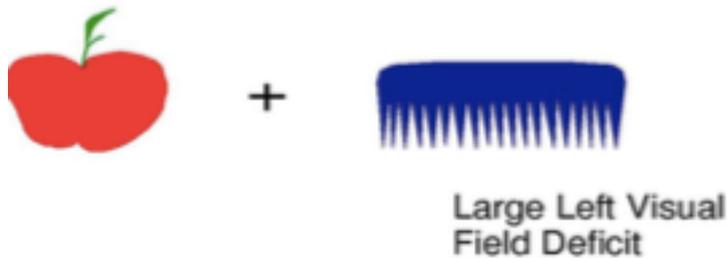
Symptoms of Neglect: Extinction

- simultaneous identification of two stimuli
- unimpaired with only one stimulus
- left visual field deficit with two simultaneous stimuli
- perceptual response to stimulus extinguishes response to the other

Why does extinction occur?

- cf. Moray (1970): Normal poor in identifying two weak simultaneous signals
- late selection theory- only one signal can get through filter to consciousness at a time
- extinction: two competing perceptual representations can't coexist

- recognition, identification require activation of neural structures
- damaged hemisphere chronically underactive, stimuli doesn't provide activation they should
- effects strongest with activity in other hemisphere (invalid cue, competing stimulus)
- additional cost with two targets- late selection theory



Balint's Syndrome (RM)

- bilateral lesions in parietal and/or occipital cortex
- inability to focus on individual objects and to see more than one object at a time (simultanagnosia) – prone to illusory conjunctions
- occurs even when objects overlap (object based)



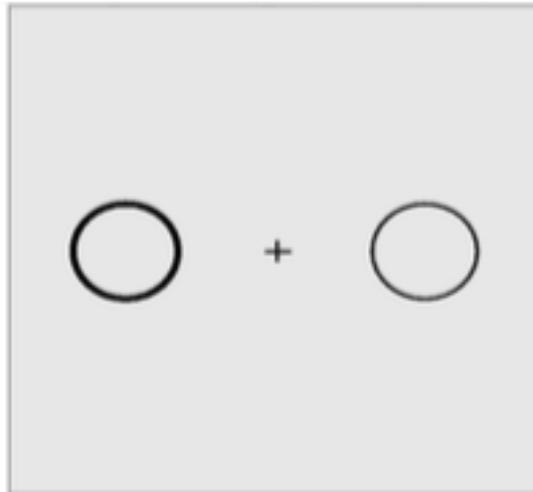
Space Based and Object Based Attention

- attention seems mainly associated with 'where' pathway
- spotlight view: movement of attention through space
neglect associated with left of perceptual space
- object based view: attention keeps track of objects (can ignore/ shouldn't ignore)

- inhibition of return: cued spatial location tagged as uninteresting so slower RT there
- tagging association with objects, not just the space they occupy

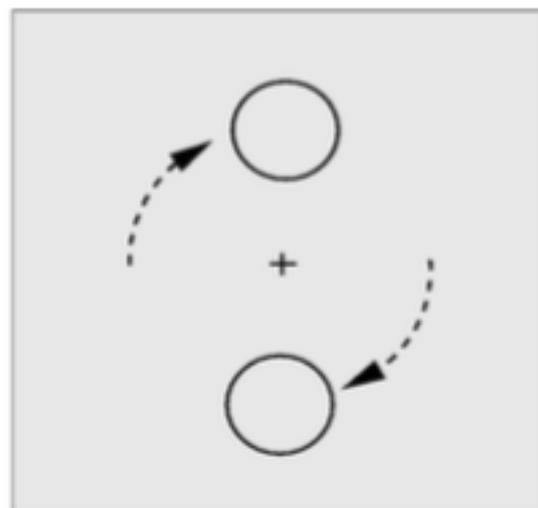
Object Based **Inhibition of Return** (Tipper, 1991)

- standard IOR: peripheral cue, wait long SOA, flash target, slower RT at cued location
- object based IOR: peripheral cue, then rotate display

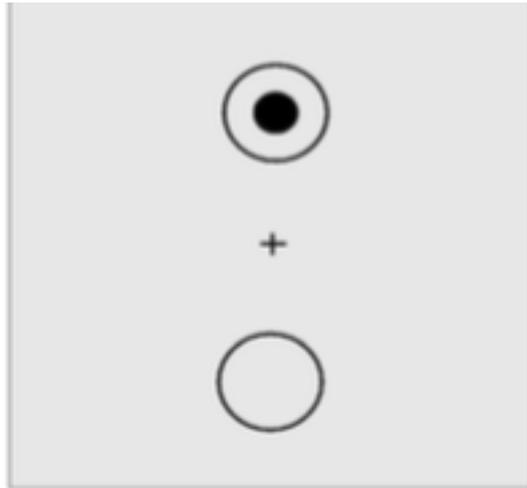


Flashed peripheral cue

- markers move to new locations

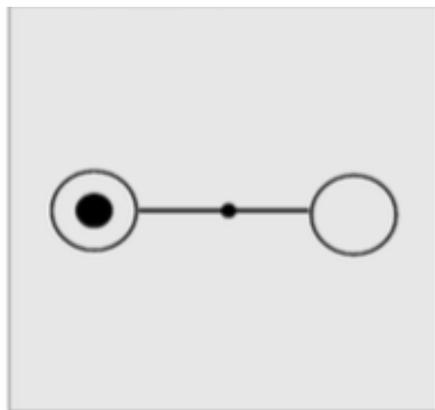


Rotate to new position
(SOA > 300 ms)



$MRT_{valid} > MRT_{invalid}$

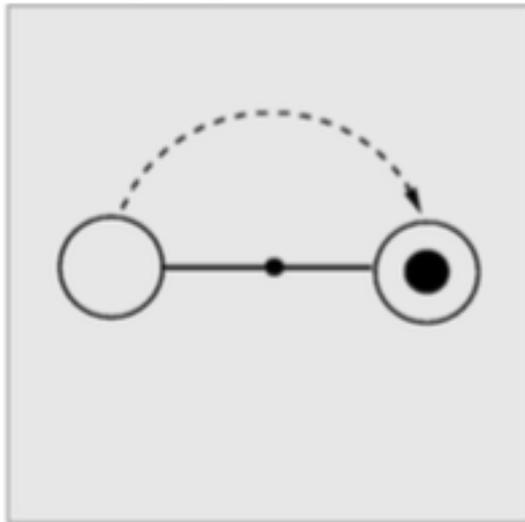
- Measure RT to target previously cued or miscued marker circle
- Find slower RT at previously cued marker
- Inhibition of return tracks cued marker to new location
- IOR follows the cued object, not confined to one region of space



Poor (Neglected side) Good

- l
- v
- l
- l
- l
- r
- i
- l

- neglect: left visual field deficit with right parietal damage
- neglect of space or neglect to left side of object?
- Barbell stimulus: two location
- markers and connector combine into one perceptual object
- longer detection RT on left



Good

Poor

- Behrman and Tipper's display: present barbell, rotate 180 deg. Present target to be detected
- Longer RT's on right
- Neglect tracks marker to opposite visual field
- Neglect on left side of objects not just left side of space
- Allows space based and object based effects to be distinguished
-
- * if they have neglect then how can they perceive the left side of the object to then be able to track it?