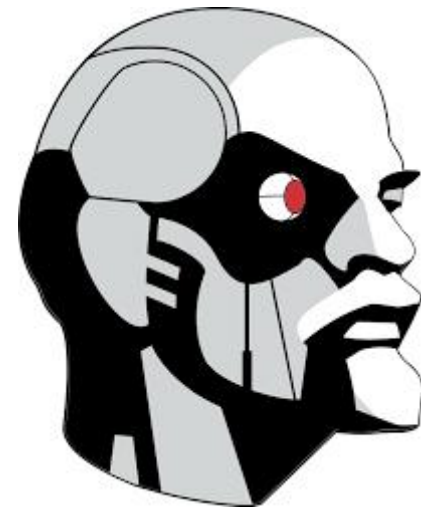


Untethered Covert Attention

Credit to cyberleninka.org

I love this image



Open Lab Day

- Vladimir, Natasha and Kseniya will run this
 - Three computer stations in the hallway of CDM
 - One person each table
1. Eye tracking table. This will be moved to the hallway for extra room.
 - perhaps the eyelink demo with gaze contingent or reading
 2. Visual demos on a laptop.
 - This could even be powerpoint
 - Where's wally. Image first, then circle wally
 - Change blindness
 - *Maybe* something more controlled like non-eyetracking remapping study? (matlab)
 3. Computer model demo
 - The 2006 Itti&Koch model is downloadable and has nice visuals.
 - Show the input image and where the model predicts based on saliency

conferences

- ECEM, Alicante Spain. Aug 18-22
 - April 1st deadline, 250 word abstract
 - Student posters possible
 - We will all go as a lab
- ECVF, Leuven Belgium. August 25-29
 - April 1st deadline
 - Student posters possible
 - I will NOT attend this year because of Russian Visa, but Arni will and may let you hang out
- ESCOP, Tenerife Spain
 - September 25-28
 - I will not attend, but there is a cool workshop on Opensesame
- Psychonomics, November 19-22, Montreal, Canada
 - I will attend
 - Abstracts due June 1
 - I can sponsor ONE student poster that has me as co-author
 - I can sponsor ONE extra student paper that does NOT have me as coauthor
 - **APPLICATIONS FOR FUNDING DUE APRIL 15**
 - Let me know soon if you have something you would like to present!!!!
- Machine learning
 - Georgii, could you search for an interesting option in AI, computer vision, machine learning?

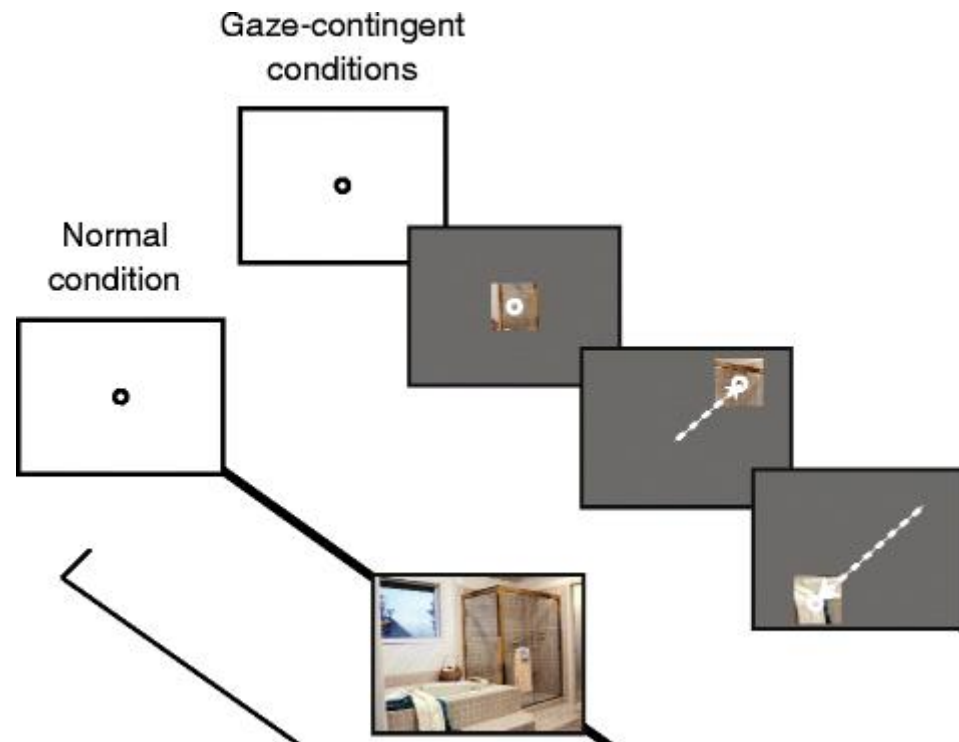
Awareness

- Does fixation lead to awareness?
- Evidence from change blindness
 - Unnoticed changes are still processed to a degree
 - (Rensink, 2004: forced choice)
 - Overt attention improves change detection compared to eyes restricted
 - (Hollingworth et al, 2001)
 - Fixations near the change are good predictors of finding the change
 - (Henderson & Hollingworth, 2001)
 - But direct fixations do not guarantee detection
 - (Treisch et al, 2003; Caplovitz et al, 2008)
 - ‘attentive blank stares’



Covert

- Shift our focus without moving our eyes
- Can be tested experimentally by asking participants to attend to one of many items
 - Usually track eyes to make sure attention is not overt
- Or manipulate covert with gaze contingent

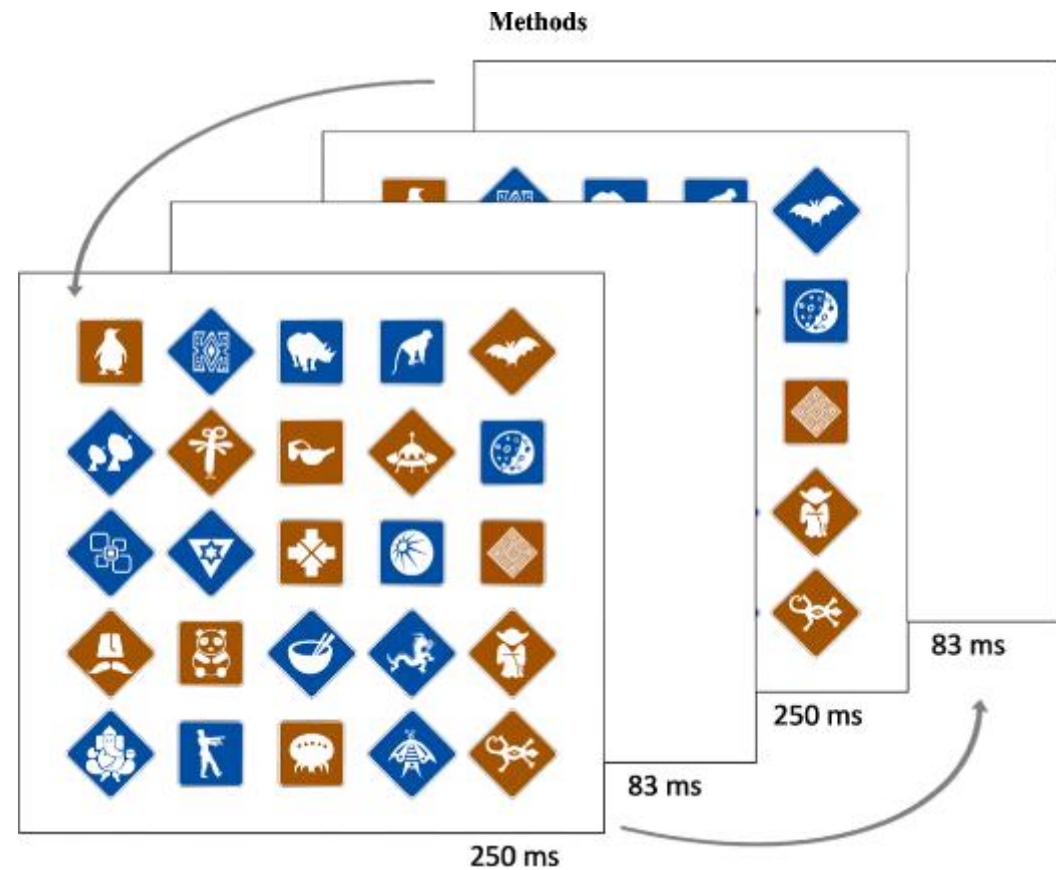


Andrey's experiment

- Started out as a test of implicit processing in change blindness
- Ended up with an extra story on covert attention

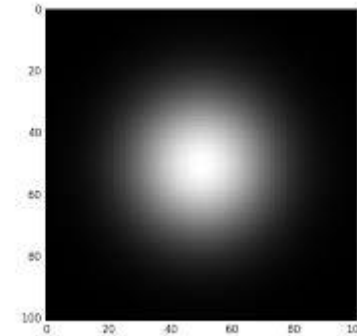
Chetverikov, A., Kovaldina, M., MacInnes, W. J., Jóhannesson, Ó. I., & Kristjánsson, Á.
Implicit processing during change blindness revealed with mouse-contingent and gaze-contingent displays. *APP, 2018*

- I love these stimuli
- Complex, difficult search
- Allows colour and shape guidance
- Fun signs are always good for participants



E2: Gaze contingent

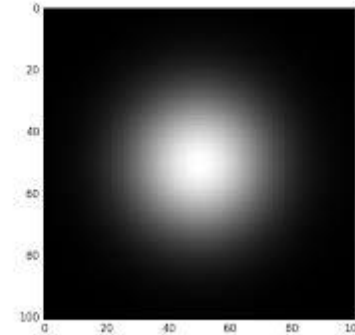
- 3.6 degree gaussian mask
- Shrinks gradually during fixation to discourage fixations longer than 800ms
- Click item when change detected
- Trial could also end if Ss fixated the target without noticing change
 - This was followed by 2AFC 'liking' procedure to determine implicit processing



Gaze contingent means this Aperture was always 'tethered' to the centre of gaze

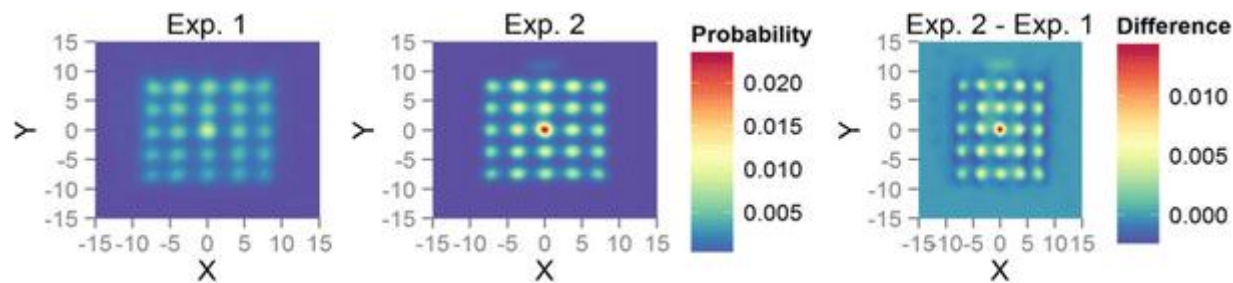
E1: Mouse contingent

- Same aperture, but controlled by mouse
- Mouse aperture allows the aperture (covert attention) to be untethered from the centre of gaze!



Did it work?

- Search was faster for E1 (unthethered)
 - Accuracy was the same, no speed accuracy trade-off
- Ss did change strategy to look less directly on the stimuli in E2



Implicit processing

- Tested by comparing fixations on change trials vs catch trials
- We did find evidence of implicit processing, but I will focus on covert attention here.

Fresh data!

- Does untethering attention also help search?
 - Hopefully MacInnes et al 2019?