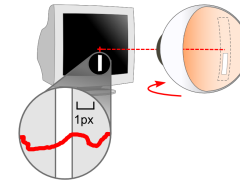


# Representing space in time during ocular drift

06/09/2014

## From the previous lab meeting...

- Control experiment with flashes (vs. motion of the gaze on the stimuli as retinal cue)

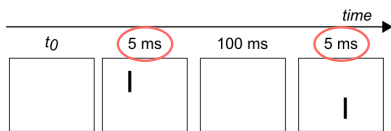


- Control experiment with 500 ms inter-stimulus interval

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## Control experiment with 5 ms flashes

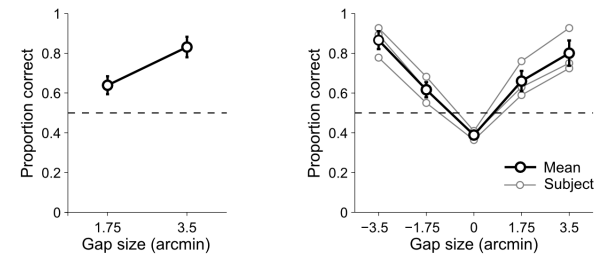
5 ms 100 ms 5 ms



3

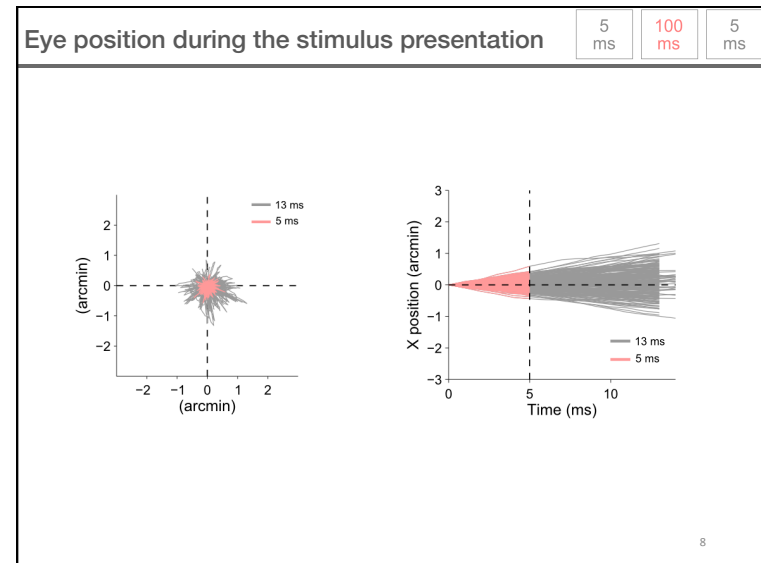
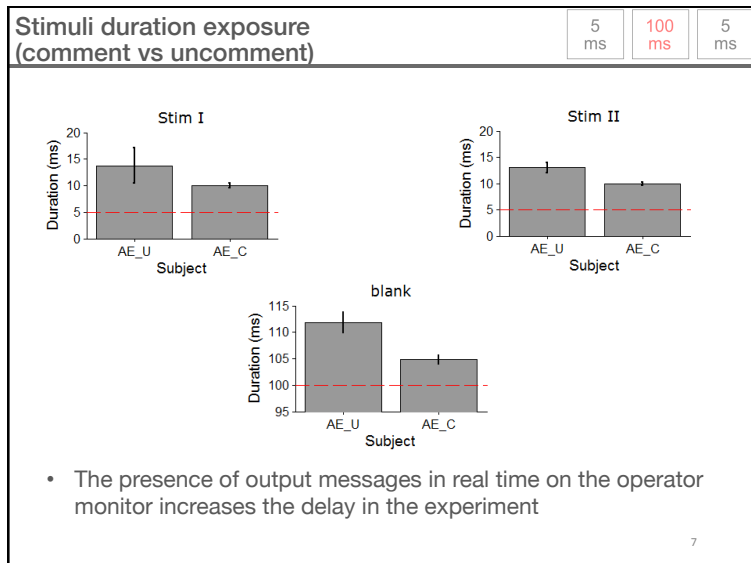
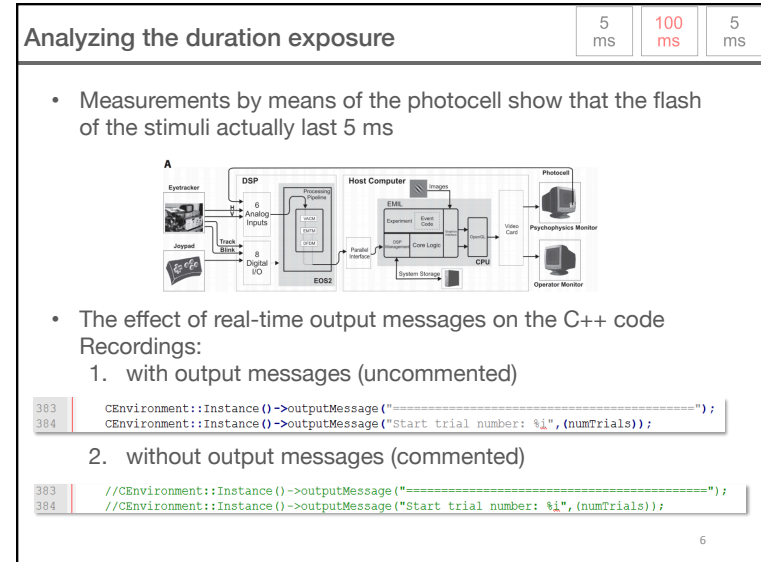
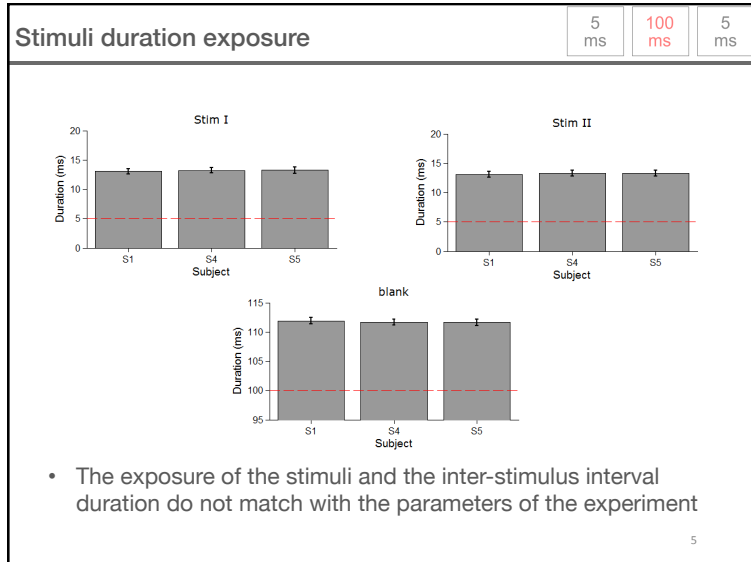
## Control experiment with 5 ms flashes

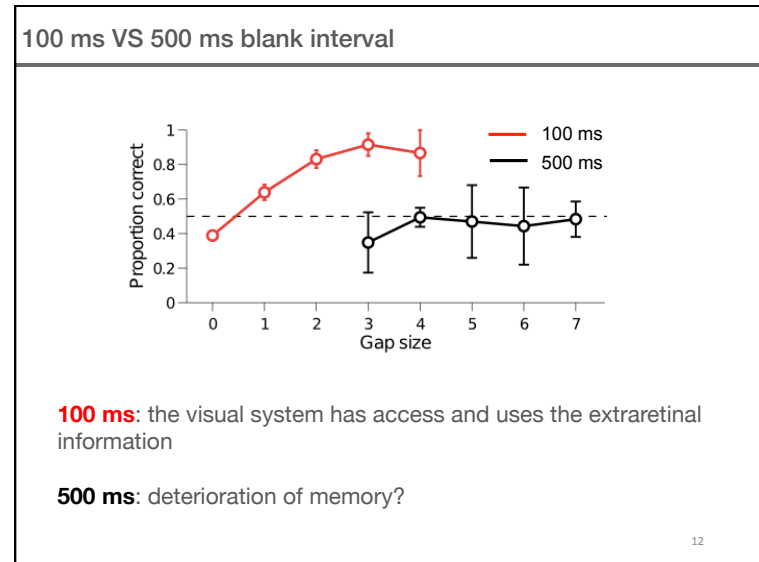
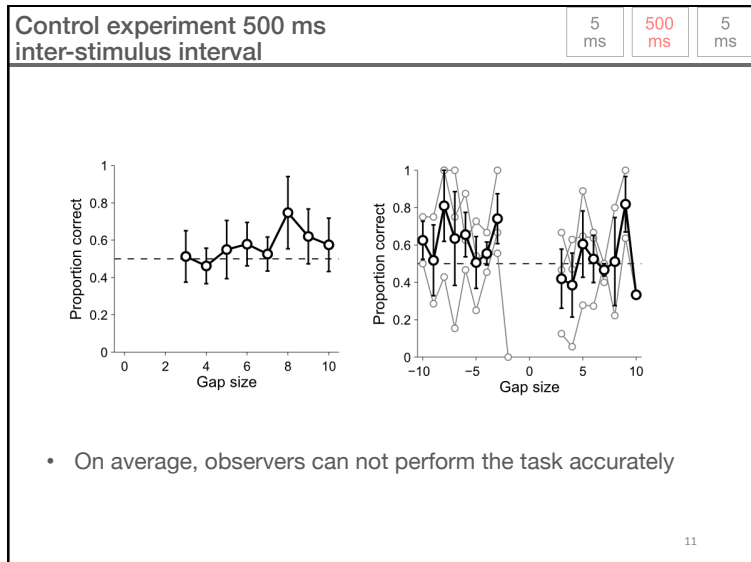
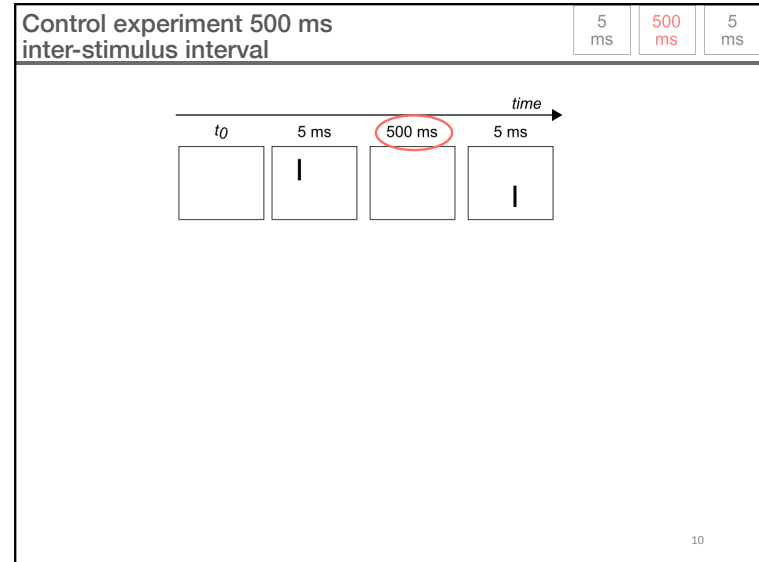
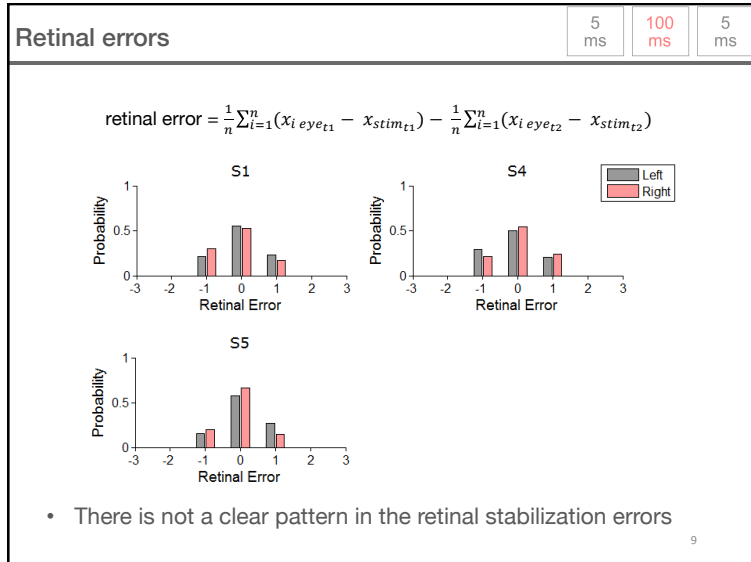
5 ms 100 ms 5 ms



- Observers were able to correctly discriminate the offset between the two bars

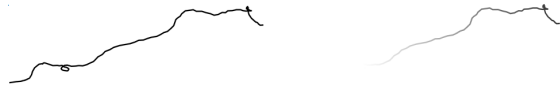
4





### Deterioration of memory?

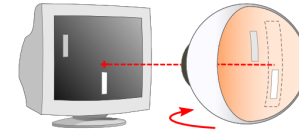
5 ms	500 ms	5 ms
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- The direction of ocular drift during the 500 ms blank interval is constant (low curvature)

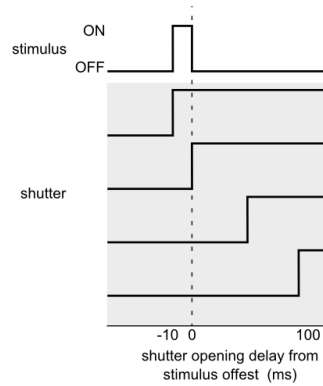
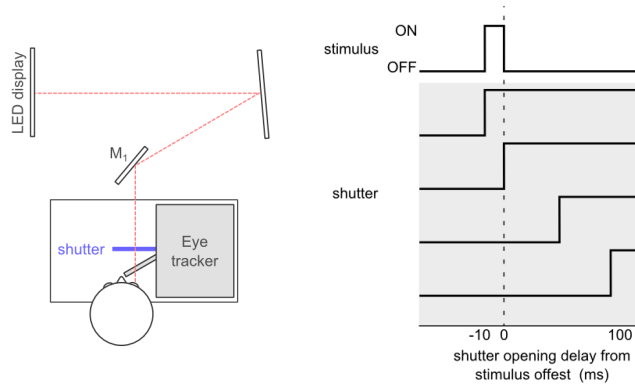
13

### Phosphor persistence



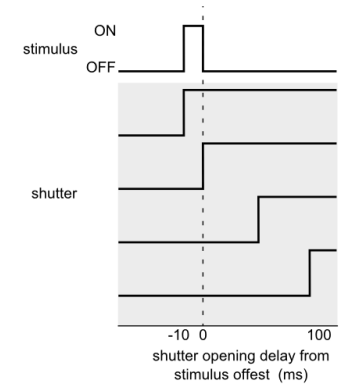
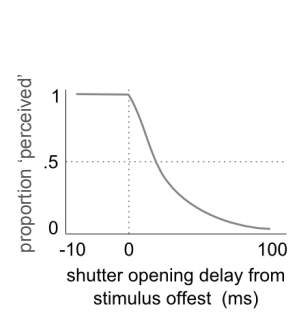
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### Possible solution: shutter



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### Possible solution: shutter



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## Shutters: examples



90 mm aperture  
70 ms time to open  
\$ 2350 (+ driver)

<http://www.uniblitz.com/product/CS90HS-shutter-system/>

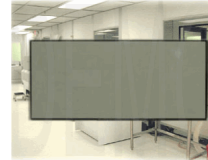


6.5 mm aperture  
29 ms time to open  
\$ 925 (+ driver)

<http://www.uniblitz.com/product/CS65-shutter-system/>

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## Shutters: examples



Up to 355 mm x 406 mm  
90-100 Hz ("pi" cell: 1000 Hz)  
95% light transmission  
\$ ??

<http://www.liquidcrystaltechnologies.com/products/LCDSutters.htm>

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## Future directions

- Determine the actual duration of the exposure of the stimuli and the origin of this mismatch
- Investigate the cause of the worsening in performance in the 500 ms condition
- Study the visibility of the stimuli by means of a shutter to finally determine the effect of monitor persistence

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