Lab Meeting

3/4/2015

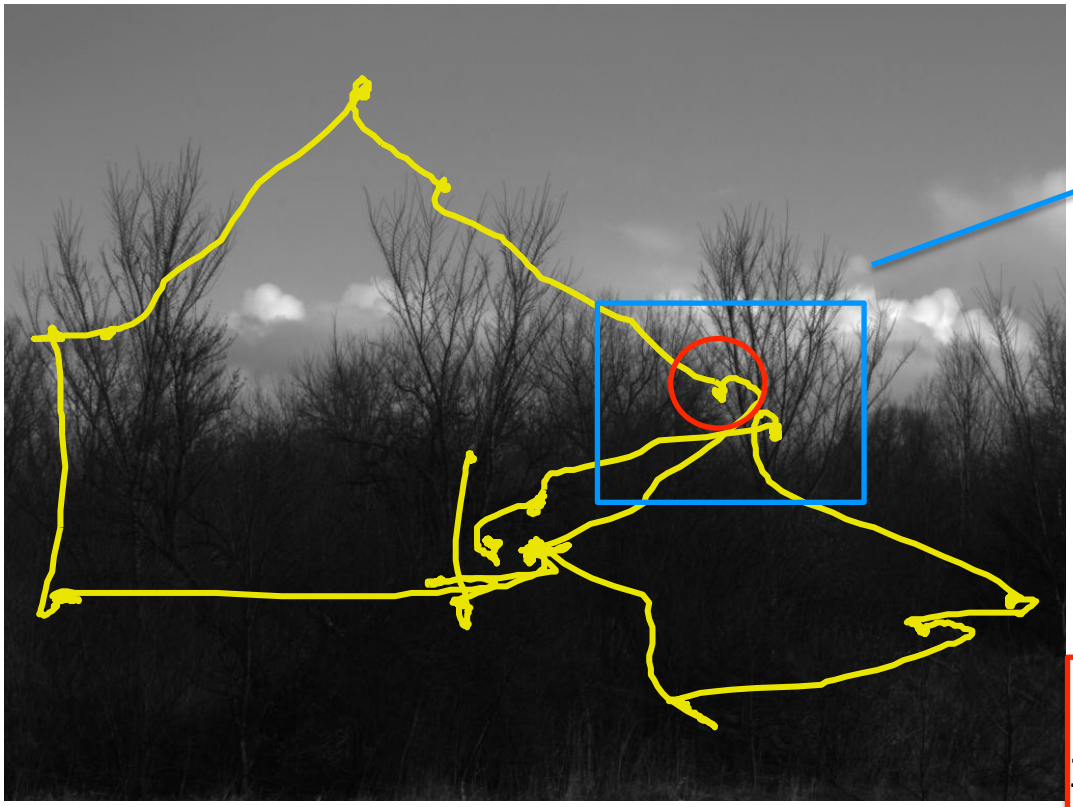
Eye Movement and Fixational Patches

- Data from 11 subjects from three different tasks:
  - Free Viewing
  - Visual Search with Low frequency target
  - Vsiual Search with High frequency target

- Objective:
  - Any differences between tasks
  - Any relation between characteristics of drifts and the visited patch

Analysis

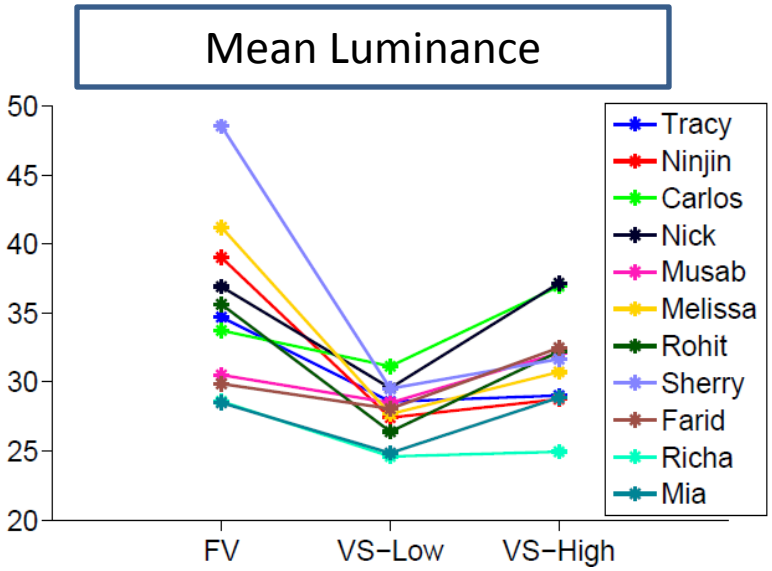
1024*768

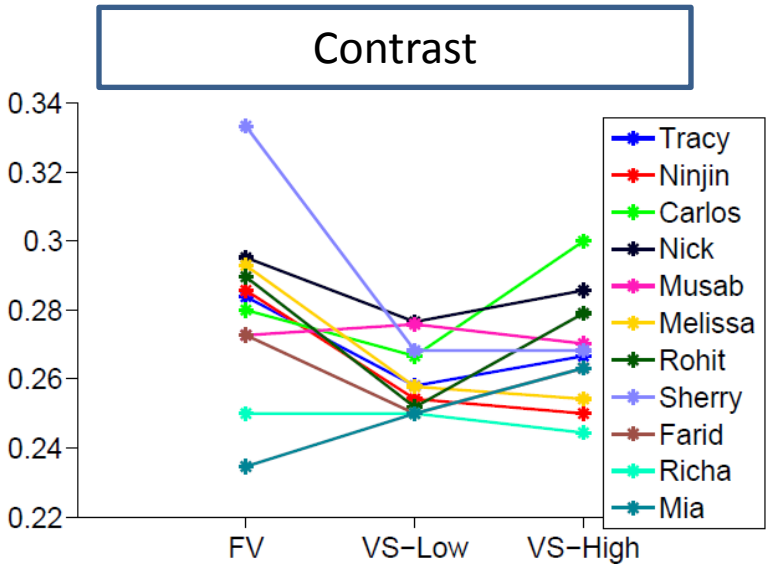


329 pixel (696arcmin)

1. Filtered with Sgolay (3,41)
2. 50 Samples removed from both beginning and end
3. A minimum length of 100

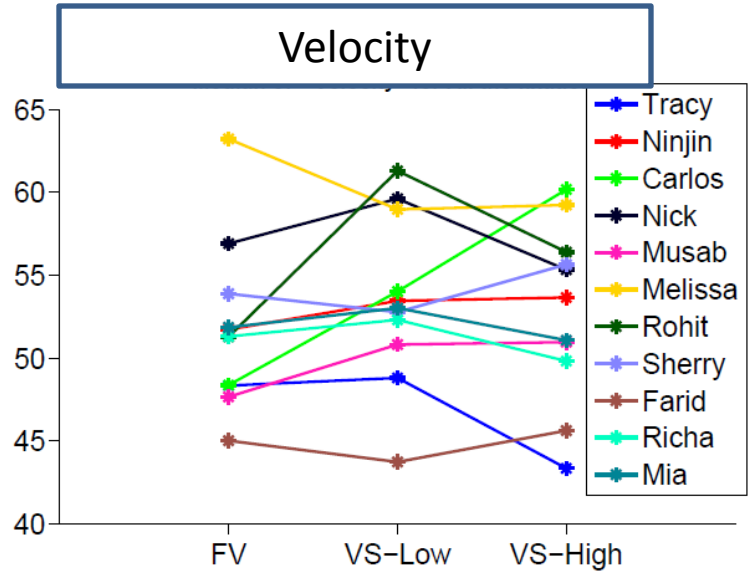
Results: Comparison between tasks

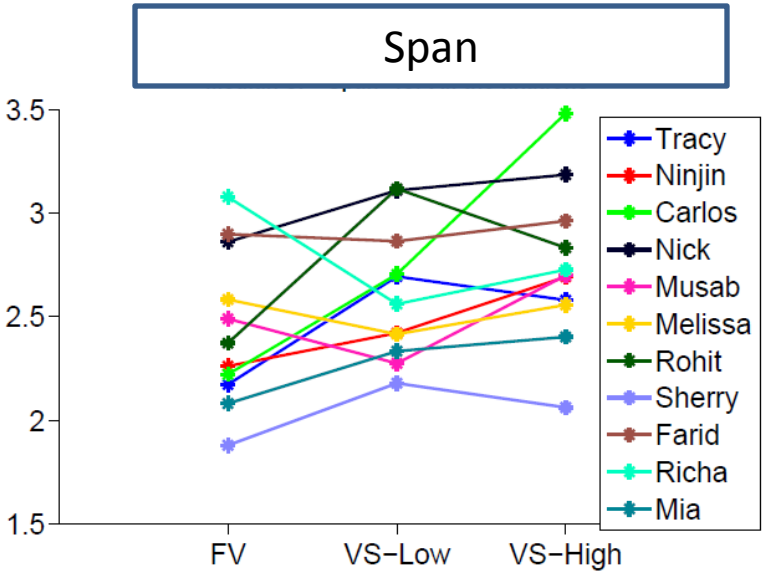


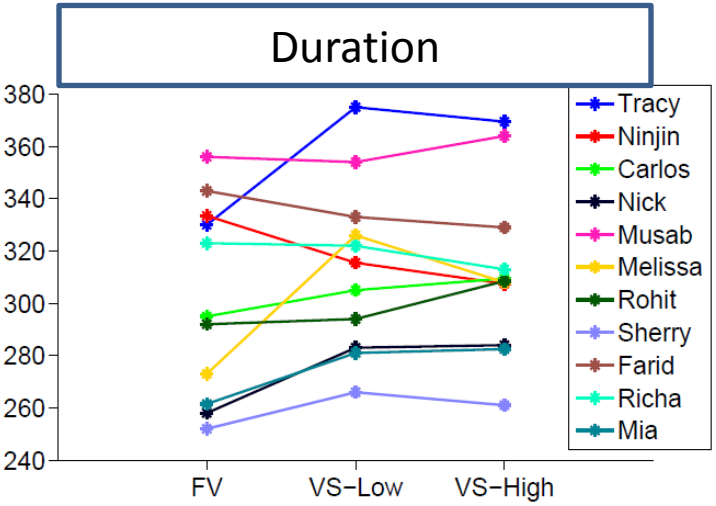


1) Higher Luminance and constrast for FV compared with VS-Low
2) Higher contrast for VS-High compared with VS-Low

Results: Comparison between tasks



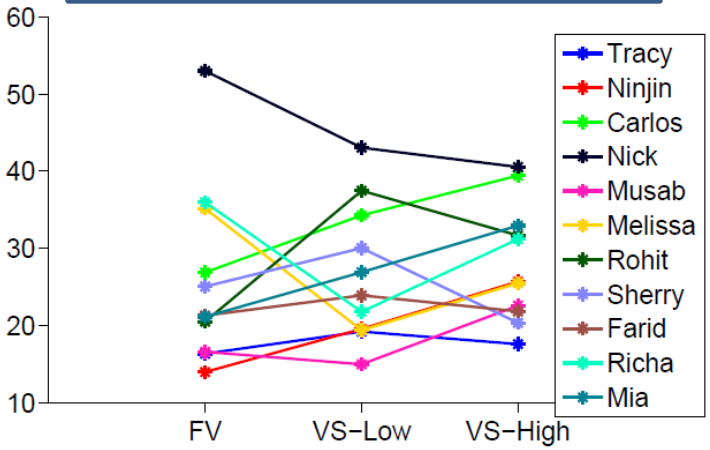




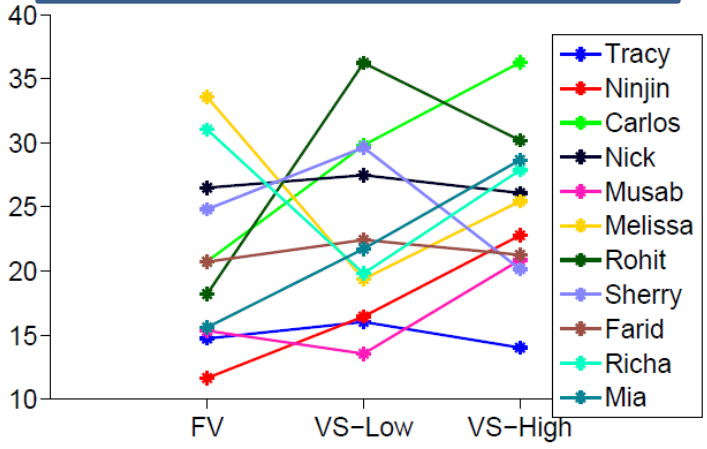
Higher Span for VS-High compared with FV

Results: Comparison between tasks

Diffusion Ceofficient



Unbiased Diffusion Ceofficient

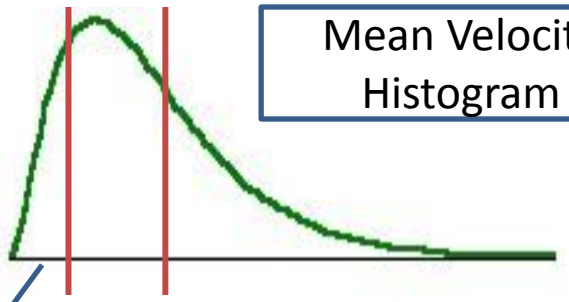


No Significant Patterns

Results: Comparison within taks

1) Eye movement characteristics as the basis:

velocity, span



Mean Velocity Histogram

2) Characterisitc of the patch as the basis:

Mean Luminance, Contrast

Slow Drifts: characteristics of the patch? Mean Luminance, Contrast

Fast Drifts: characteristics of the patch? Mean Luminance, Contrast

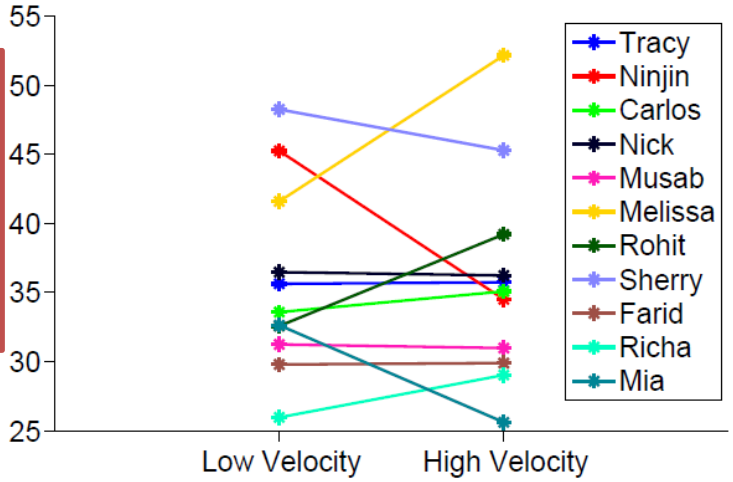
Free Veiwing

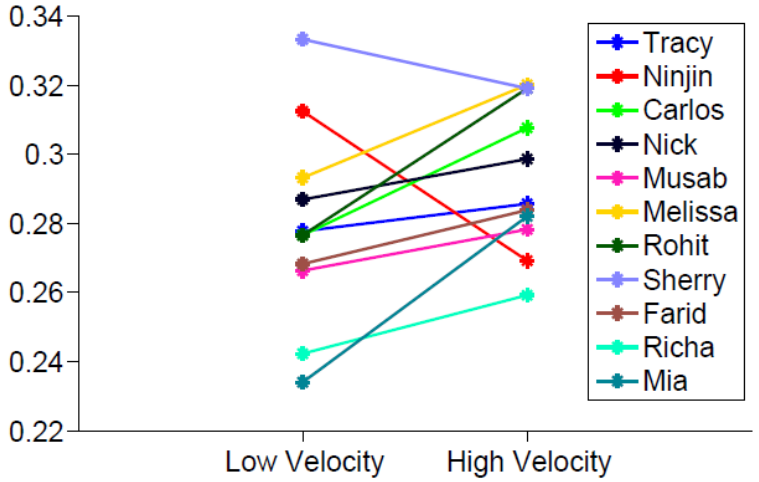
Free viewing

Mean Luminance

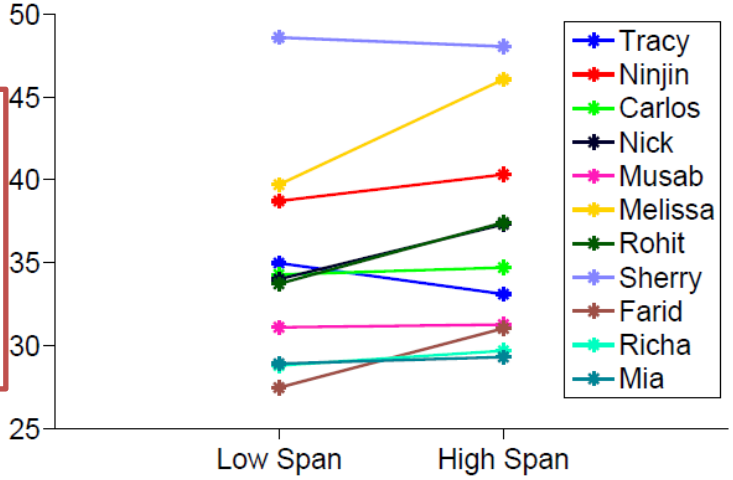
Contrast

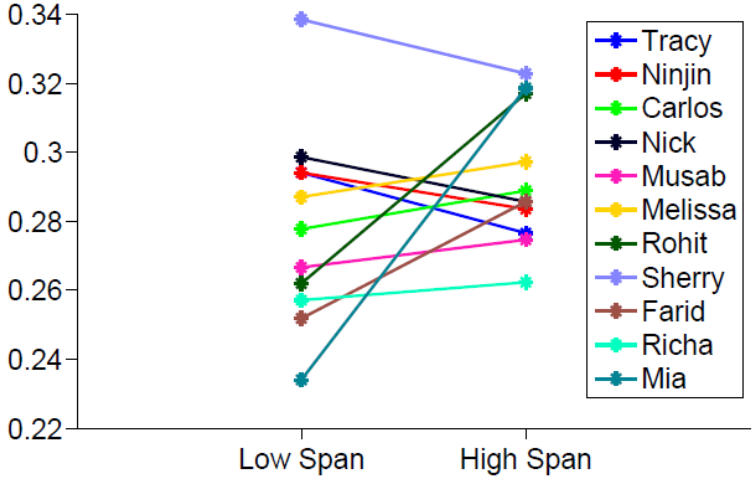
Velocity





Span





Free viewing

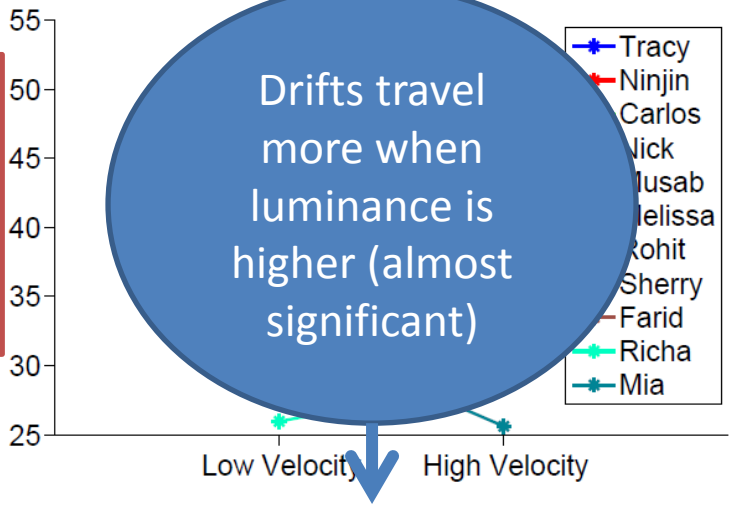
Mean Luminance

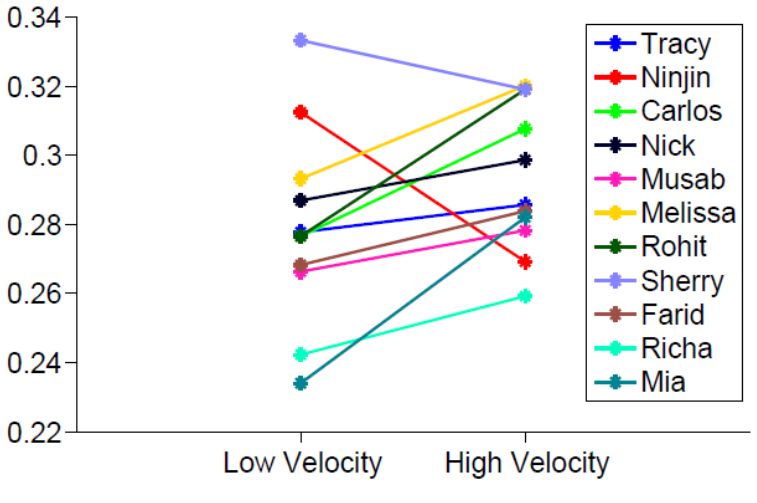
Contrast

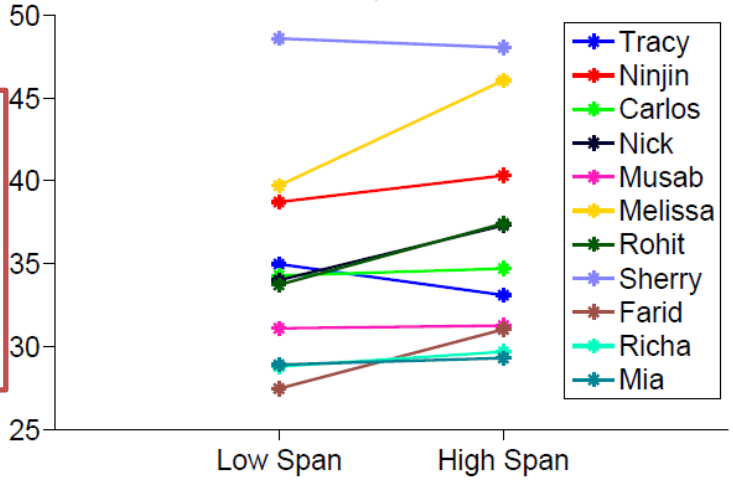
Velocity

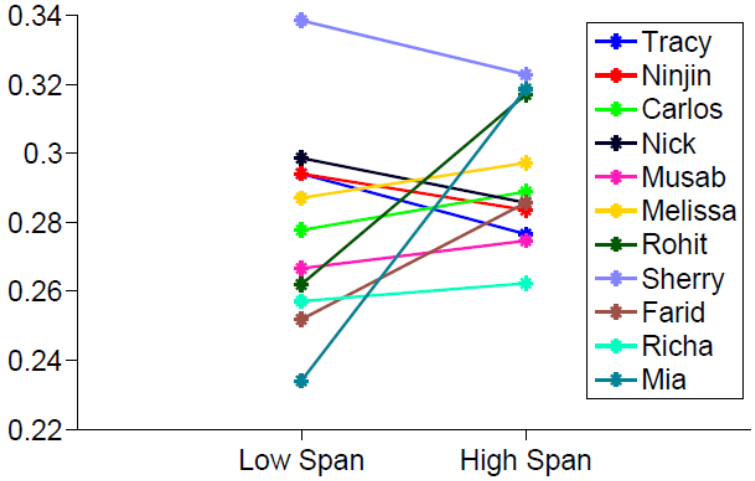
Span

Drifts travel more when luminance is higher (almost significant)







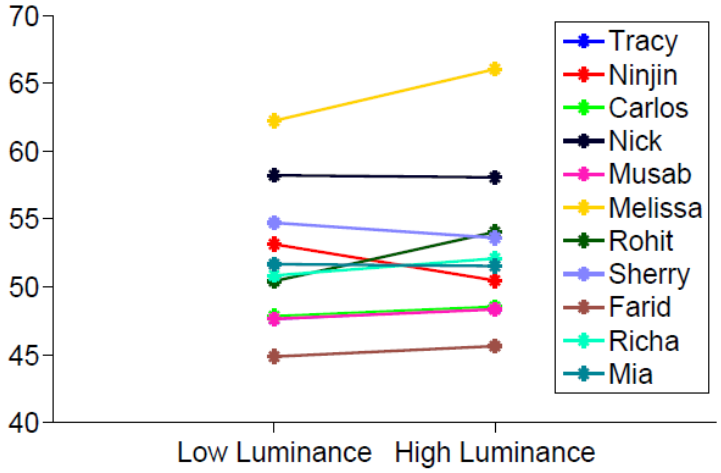


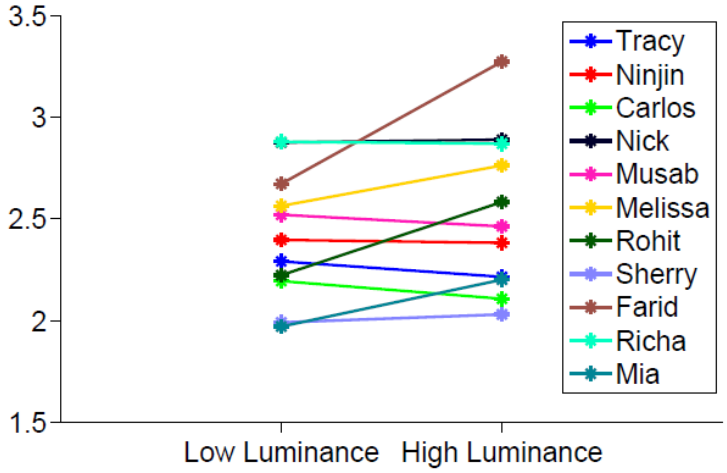
Free Viewing

Velocity

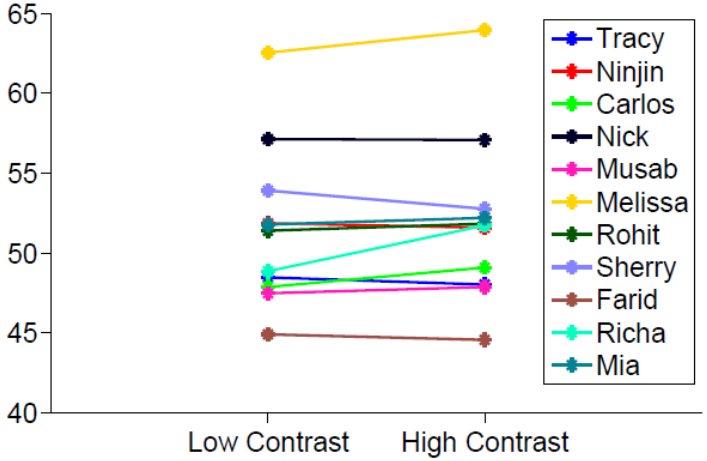
Span

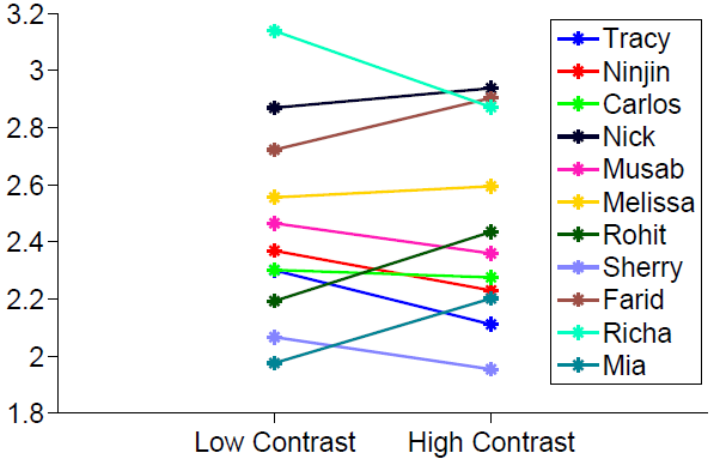
Mean Lumiannce





Contrast





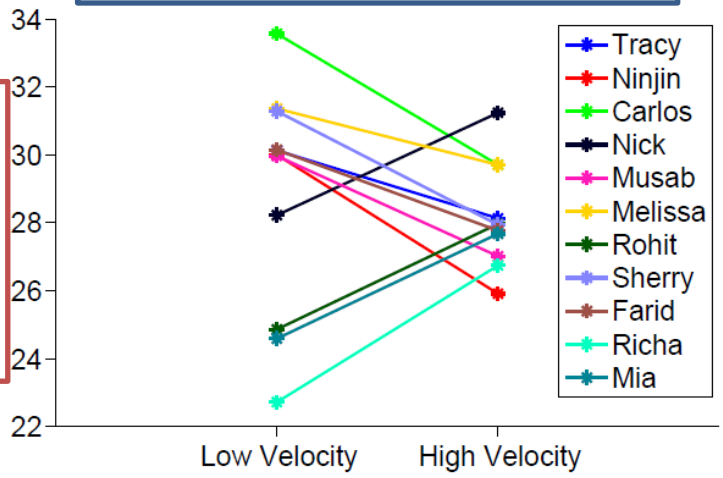
Visual Search - Low

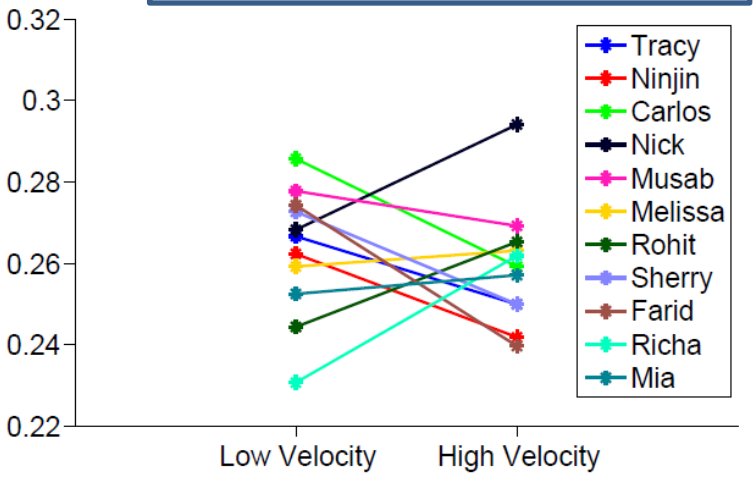
Visual Search-Low

Mean Luminance

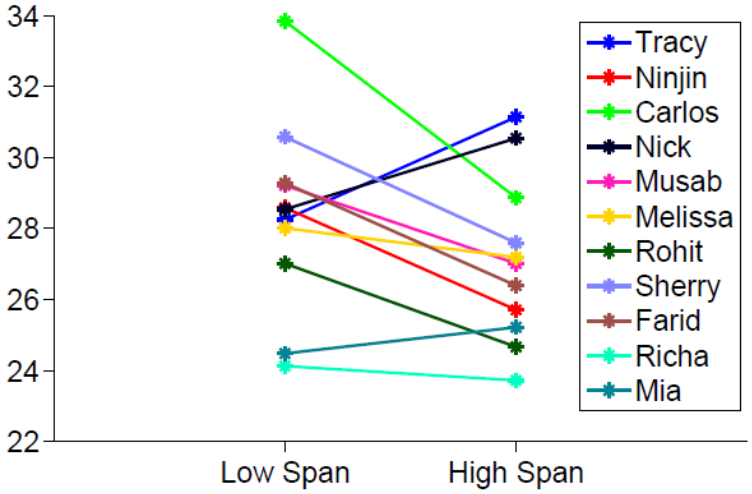
Contrast

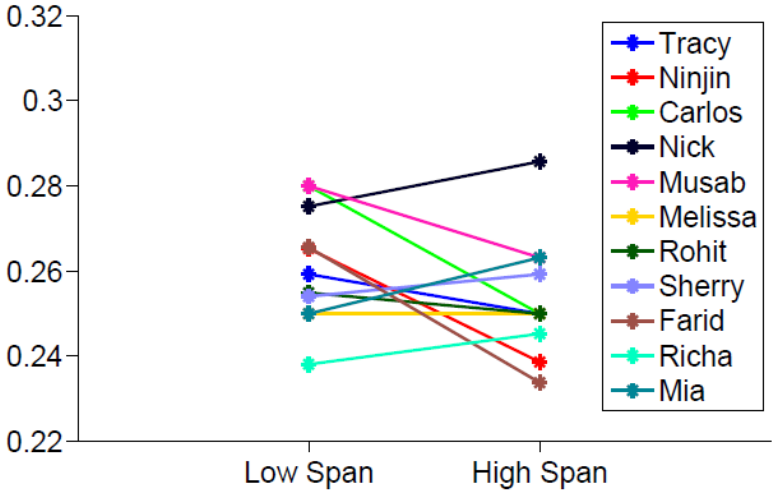
Velocity





Span



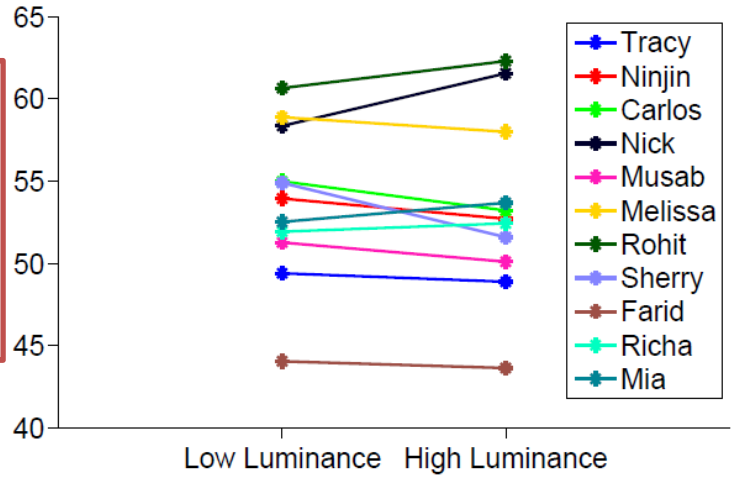


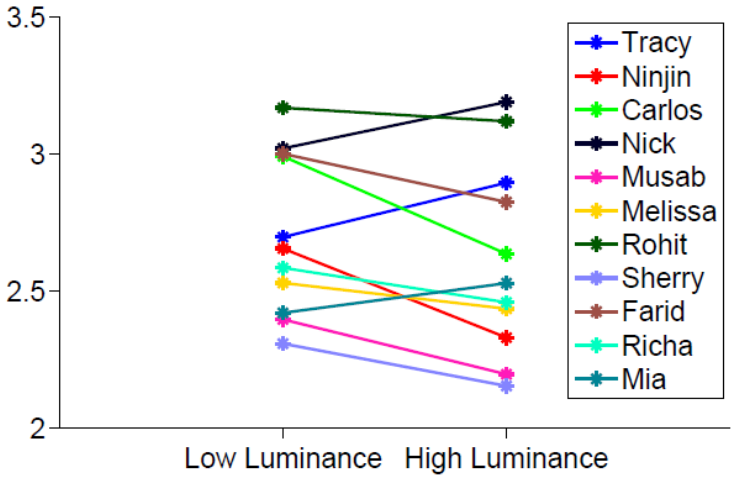
Visual Search-Low

Velocity

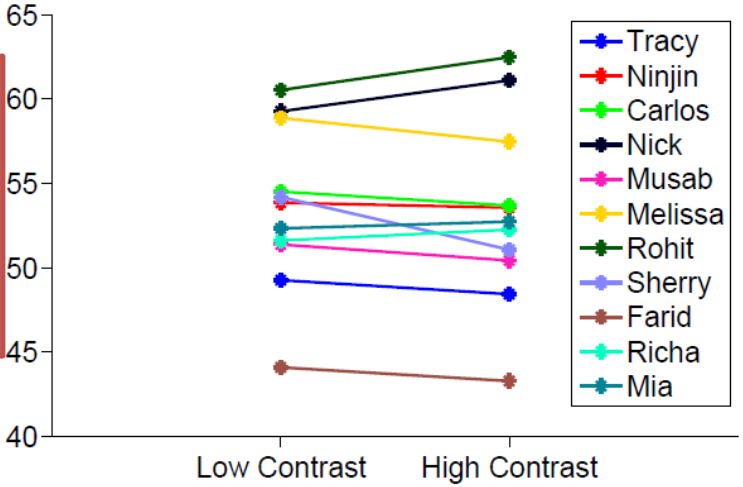
Span

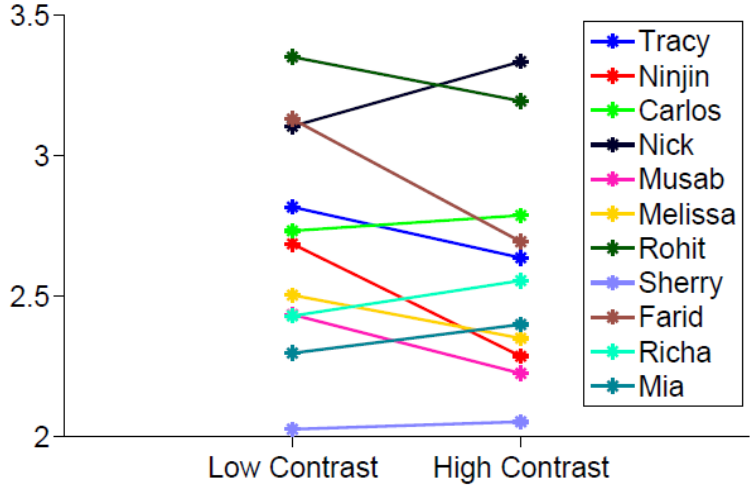
Mean Lumiannce





Contrast





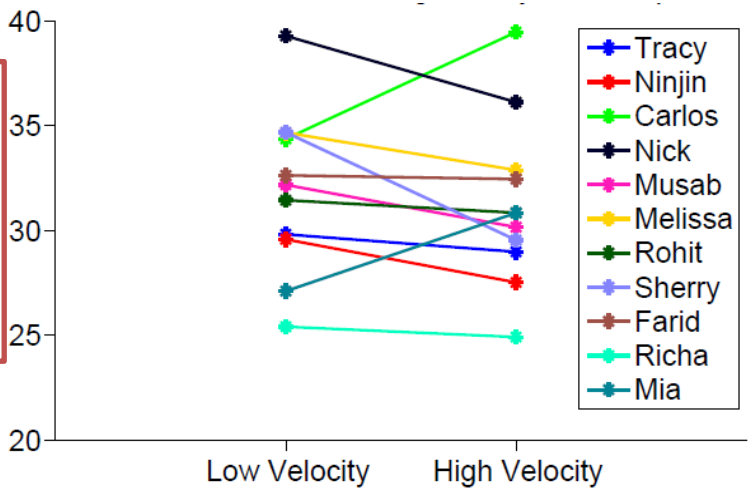
Visual Search - High

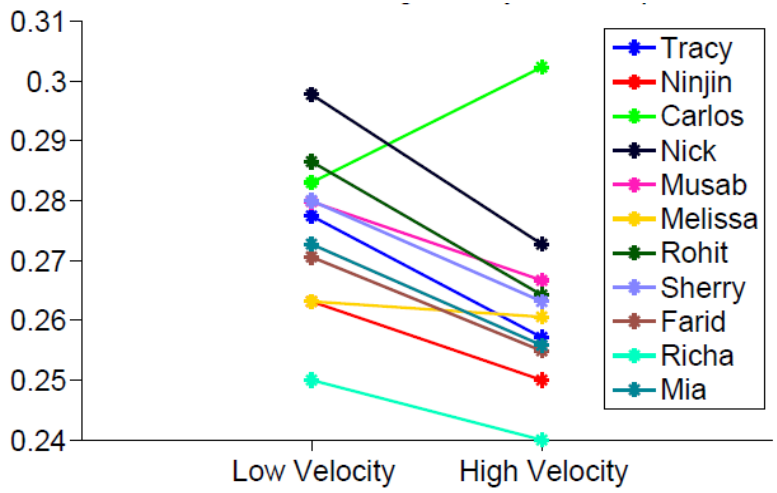
Visual Search-High

Mean Luminance

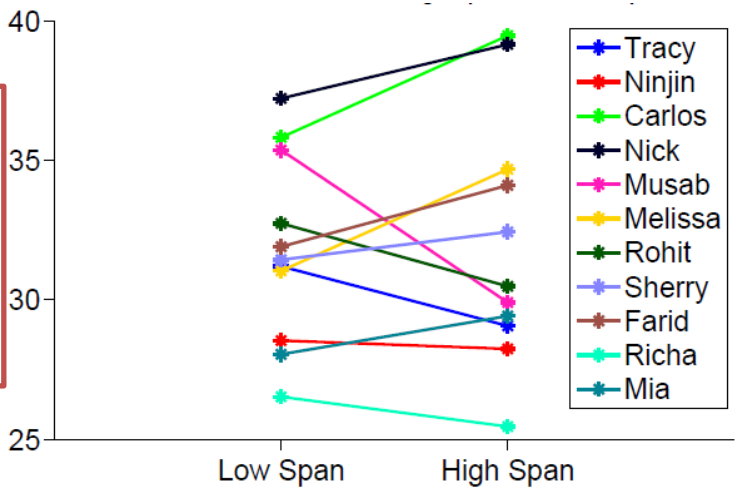
Contrast

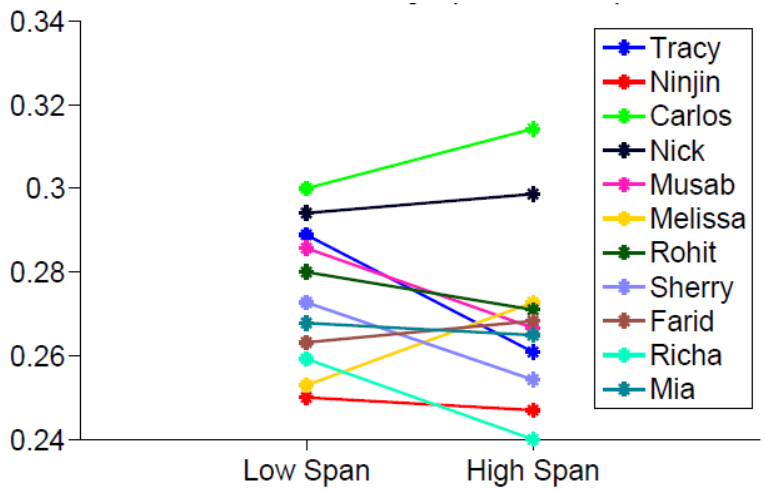
Velocity





Span



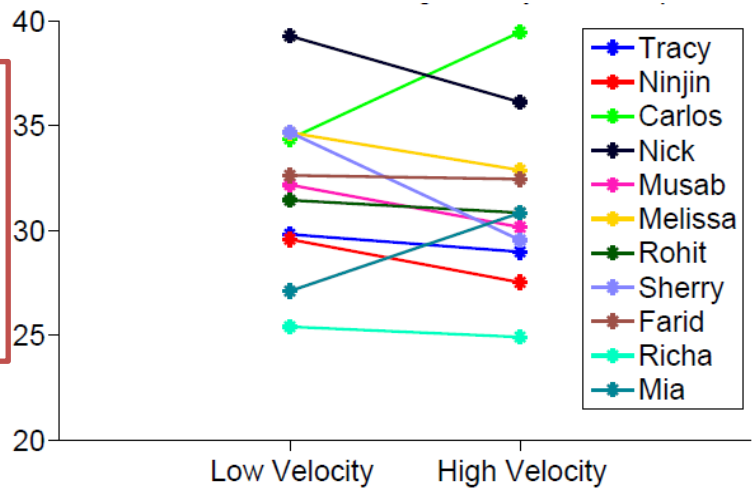


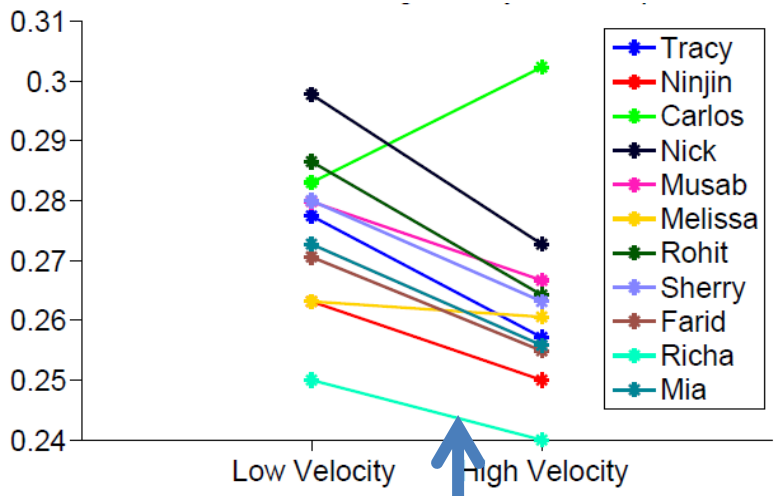
Visual Search-High

Mean Luminance

Contrast

Velocity





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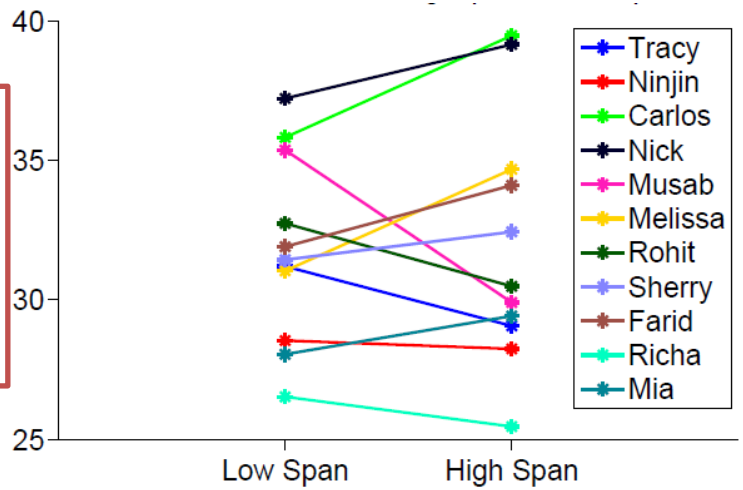
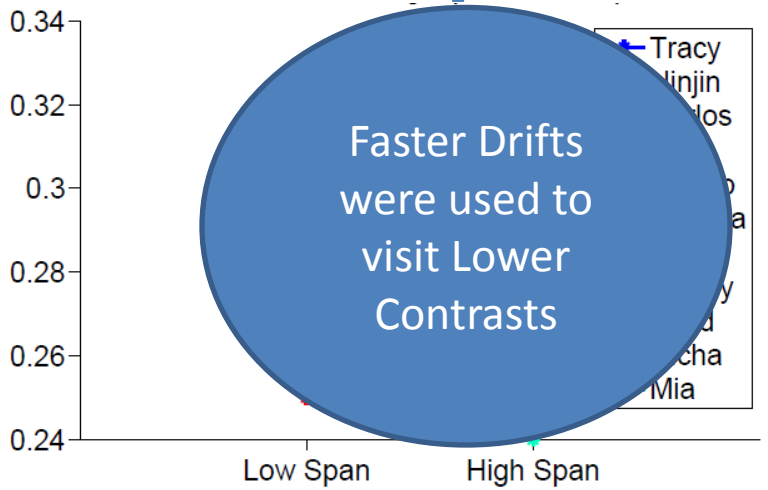


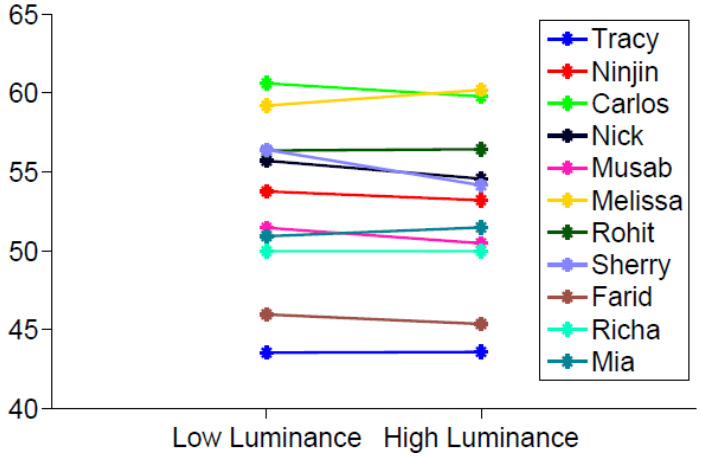


Faster Drifts were used to visit Lower Contrasts

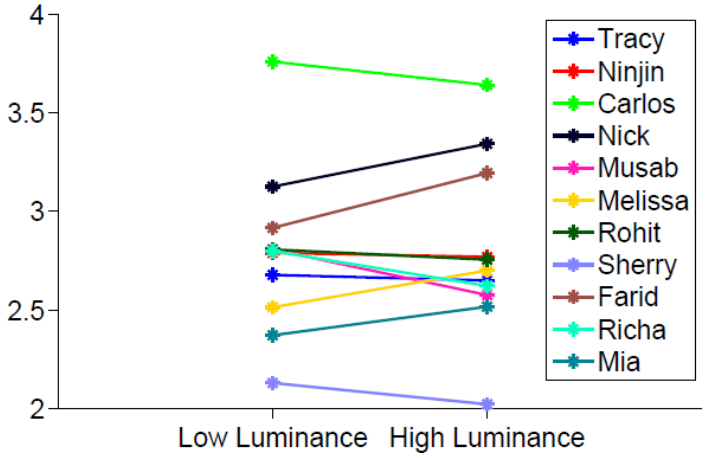
Visual Search-High

Mean Lumiannce

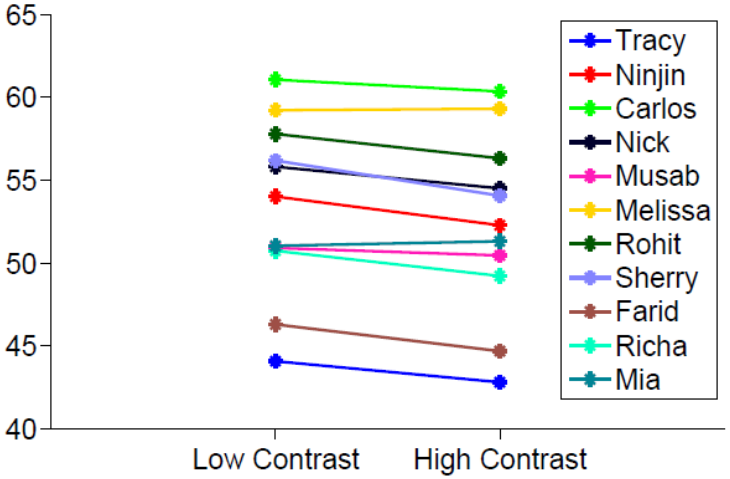
Velocity

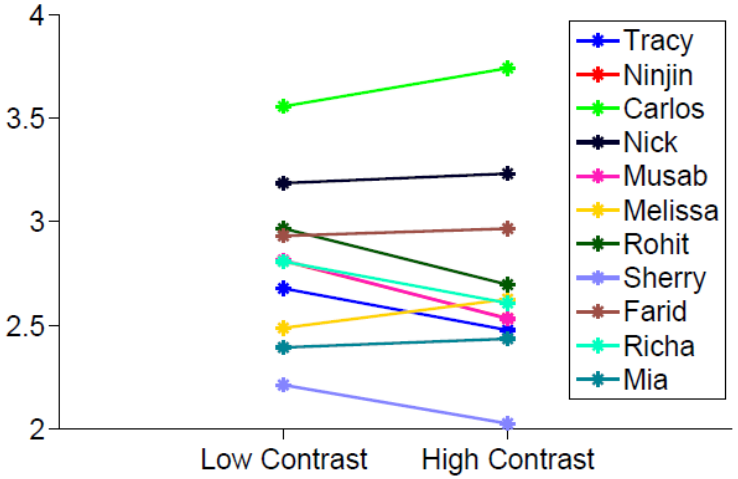


Span



Contrast

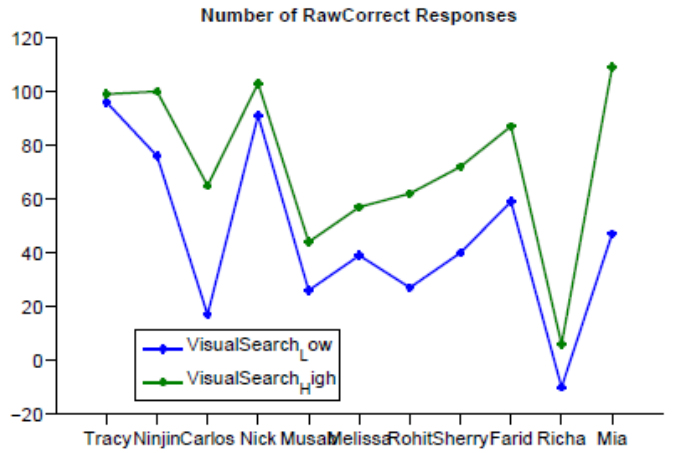




Future Direction

- Regression analysis: velocity and contrast, ...

- Keeping right trials (hard enough) and looking at the period before finding the target
- Considering variability of performances and reaction times: regression with different parameters



- Adding curvature

and frequency characteristics