Lena’s NURA ‘24

History

Data Collection

Aa Status	# N
mTBI	12
Control	25

To-do List:

WRITING:

- [x] ~~Deliverable due May 31st~~

Q: VWM recognition and precision in mTBI...

Important Files/Links

lkemmelmeier_nura_2024.pdf

NURA proposal w/ references

MemToolbox

This is a toolbox dependent on Psychtoolbox: Used/modified their color recall task code (my task code largely mirrors this one)

Zhang and Luck 2008 supplemental methods

Has details about how they did their change detection vs. color recall task

Foster 2017.pdf

Used/modified their task code for Experiment 1 to make the wheel rotate b/w trials - also used their calculation for color offset (in degrees/offset) (OSF) They used MemToolbox to fit a mixture model to the distribution of response errors for color (-180 to 0 or 0 to 180 degrees for the 360 degree color space)

Zhang and Luck (2008) paper: https://www.nature.com/articles/nature06860

WM Recall & Recognition Task - Questions.pptx

Questions we asked MB (2/6/24) about task design

Scoring for BIS-Brief (has items 1, 2, 5, 8, 9, 12, 14, and 19) from BIS-11. Items 1, 8, 9, and 12 are reverse-scored.

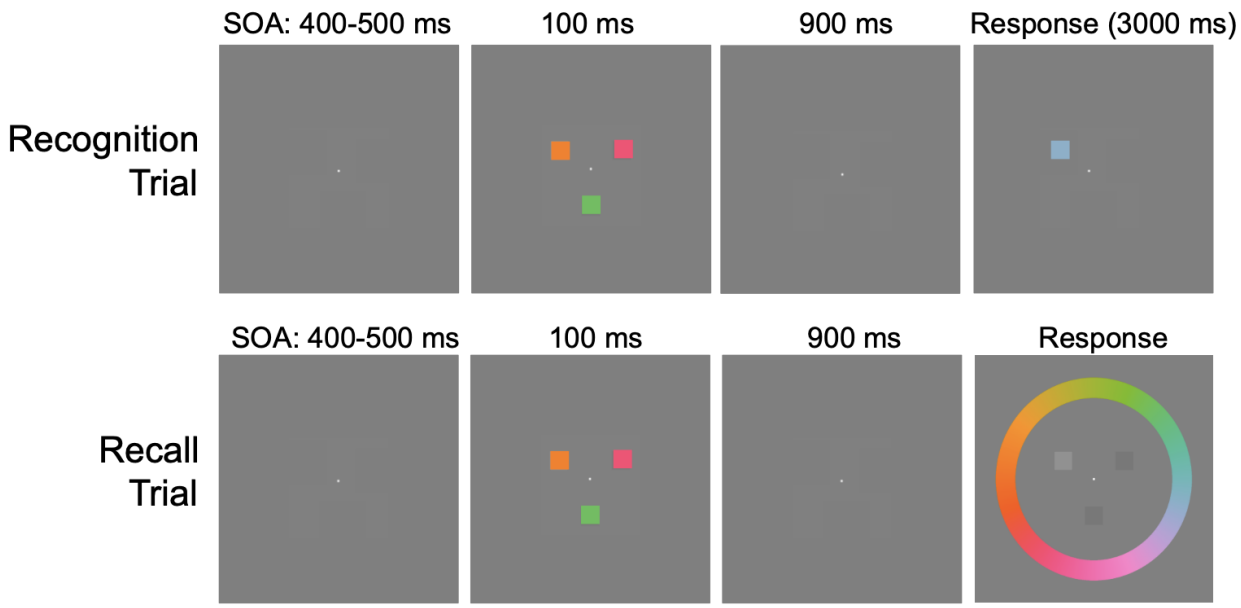
Lena_NURA_24_Key.docx

Key for GUI and final_data variables for practice and main files

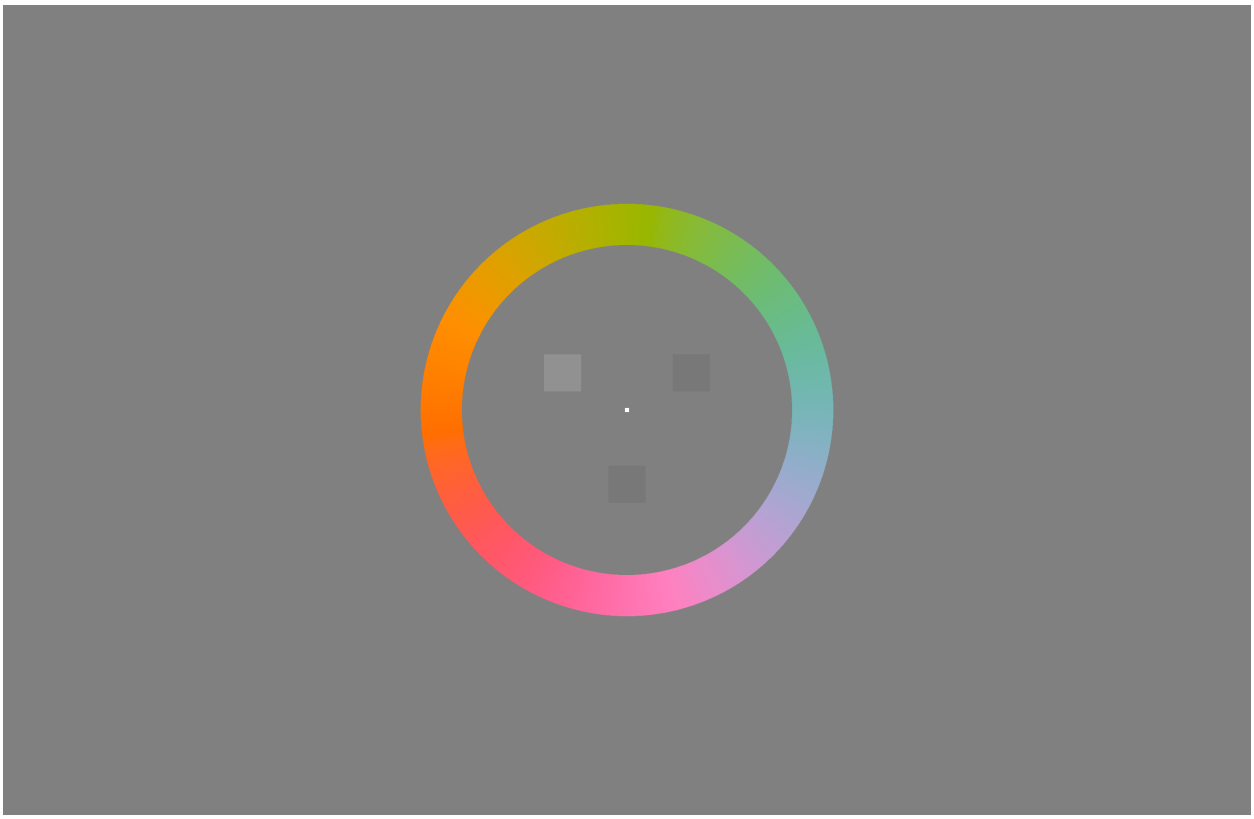
MouseOrderConditions.m

Code for pseudorandomizing mouse/order conditions across participants

Task Diagrams



Color Wheel (+ its parameters)



“It consisted of 180 colour values that were evenly distributed along a circle in the CIE *L*a*b** colour space. This circle was centred in the colour space at (*L* = 70, *a* = 20, *b* = 38) with a radius of 60. Its centre was chosen to maximize its radius and therefore the discriminability of the colours. All colours had equal luminance and varied mainly in hue and slightly in saturation” (Zhang and Luck 2008). **We are using 360 colors rather than their 180, though.**

Notes for Task Design

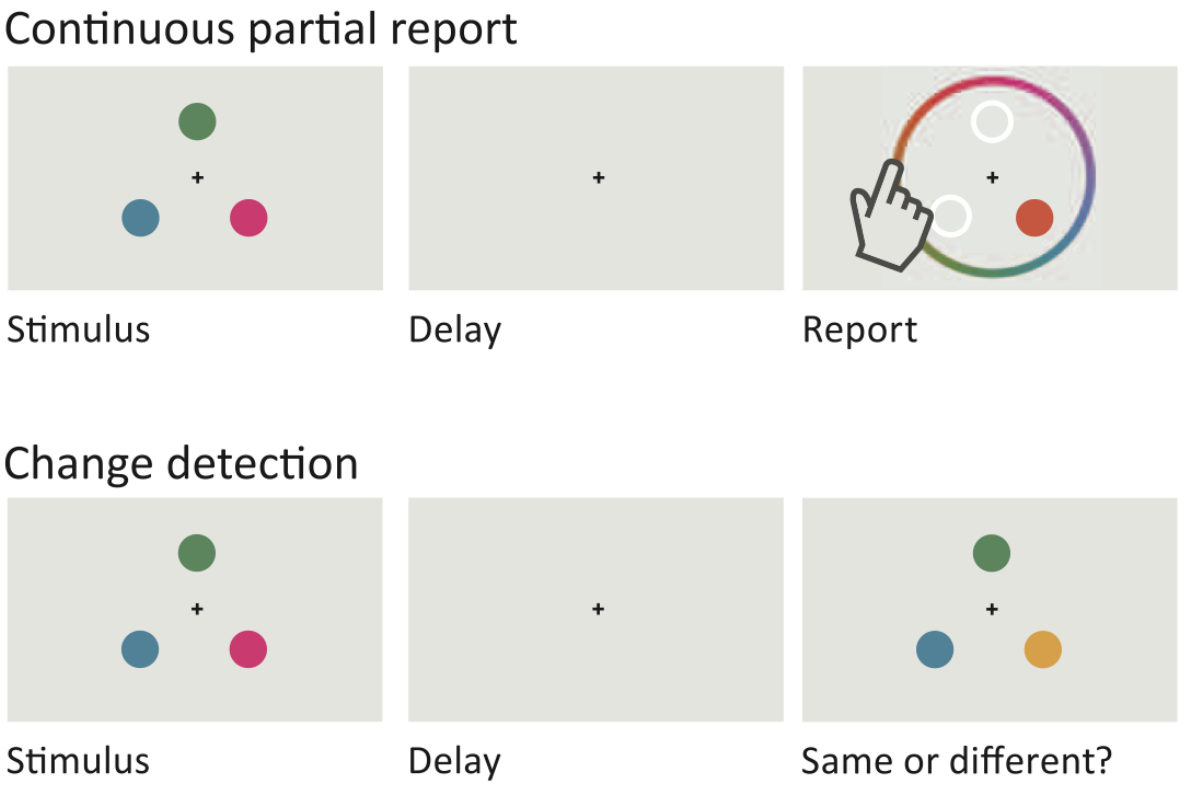
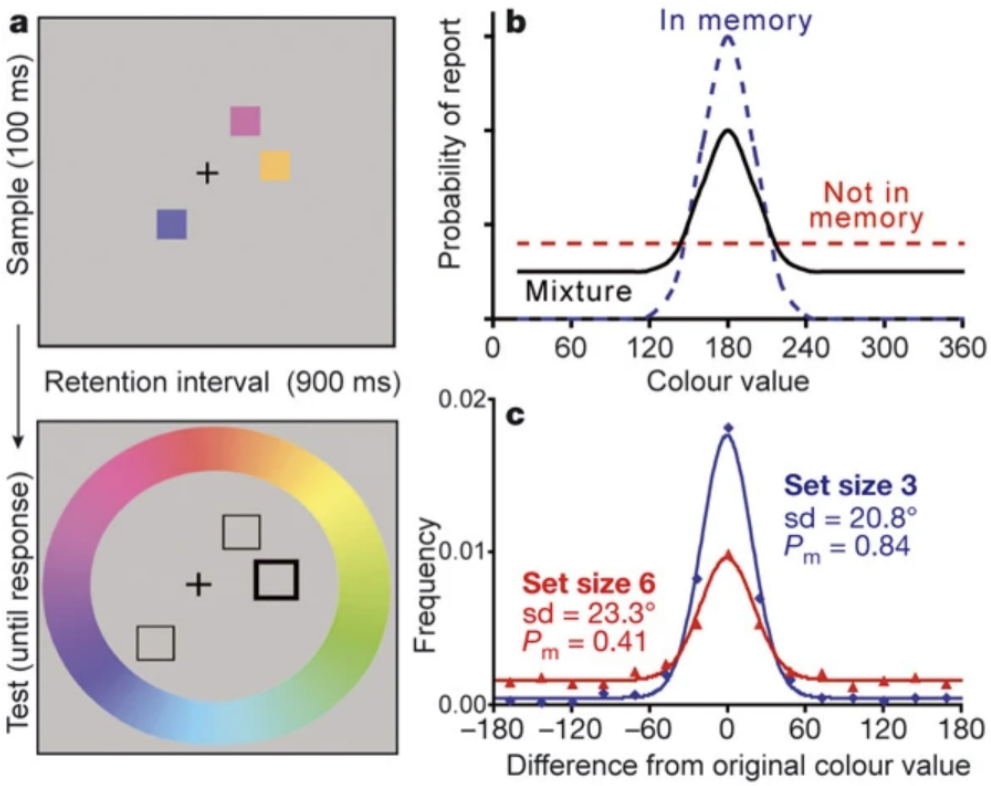


Figure 1. (top) A continuous partial-report task. The observer sees the stimulus display and then after a delay is asked to report the exact color of a single item. (bottom) A change-detection task. The observer sees the stimulus display and then after a delay is asked to report whether the test display matches.

From MemToolbox paper

Figure 1: Experimental approach and results of experiment 1.



a, Colour recall task. **b**, Mixture model of performance, showing the probability of reporting each colour value given a sample colour at 180°. When the probed item is present in memory, the reported colour tends to be near the original colour (blue broken line). When the probed item is not present in memory, the observer is equally likely to report any colour value (red broken line). When collapsed across trials, the data comprise a mixture of these two trial types (solid line), weighted by the probability that the probed item was stored in memory. **c**, Results of experiment 1 ($N = 8$). P_m and s.d. are defined in the text.

Full size image >

Zhang and Luck 2008