SURGE: Week 1

Report: https://docs.google.com/document/d/1urmdSyMhoUjztjHd0saBuigsJ3soWe4LpNqYjt-8JWw/edit?usp=sharing

Peeusa and Khyathi

Basics of PyschoPy

We looked at the basics of PsychoPy including scheduling the onset and offset of different components, designing a trial, looping over a trail, etc. and implemented two simple tasks:

- The Posner task
- The Attentional blink task

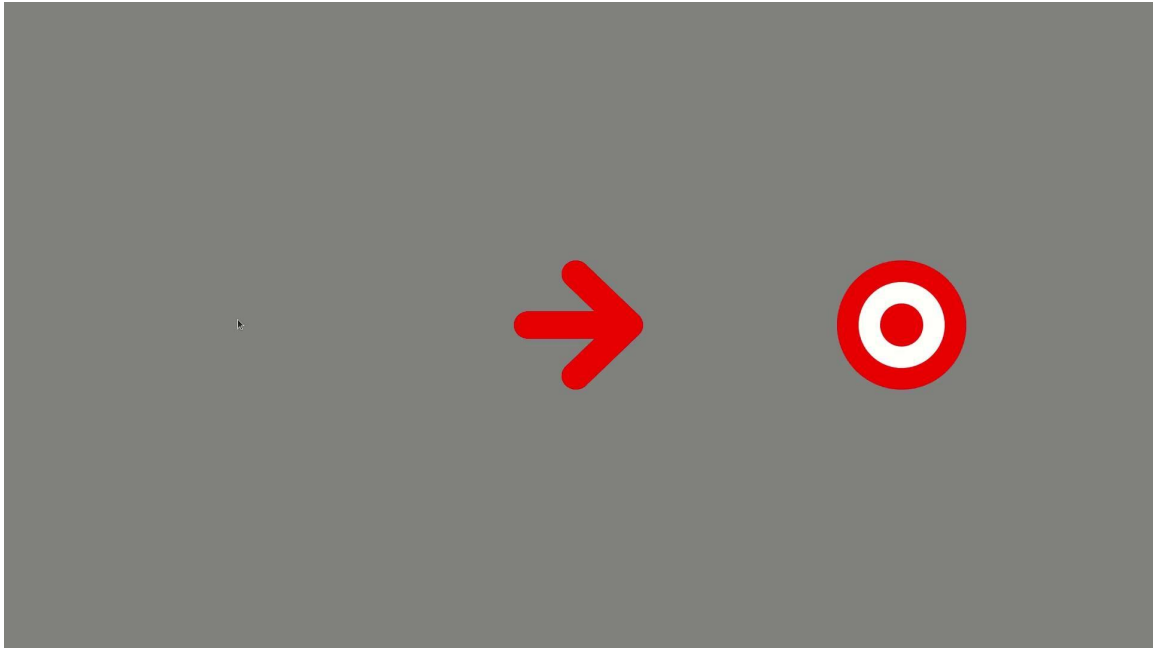
The posner task

The task is used to understand how cueing impacts decision speed.

OBSERVATION:

Wrong cues cause an increase in response time

Correct cues cause a decrease in response time

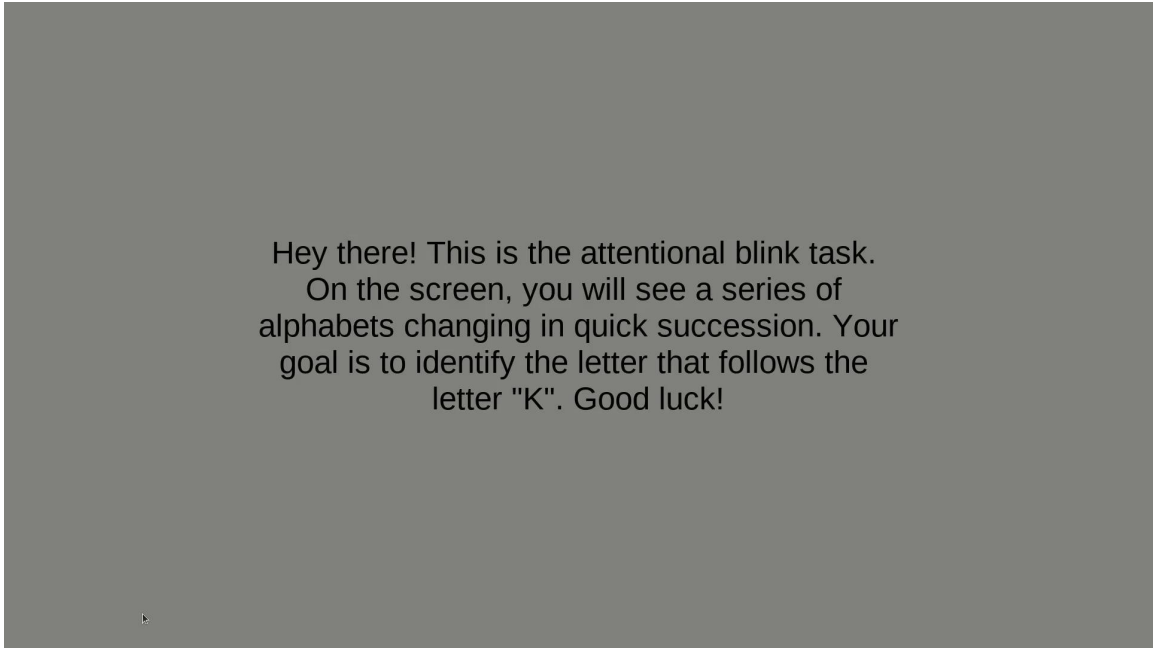


The attentional blink task

This task presents the inability to detect the second of the two targets presented on the screen in quick succession.

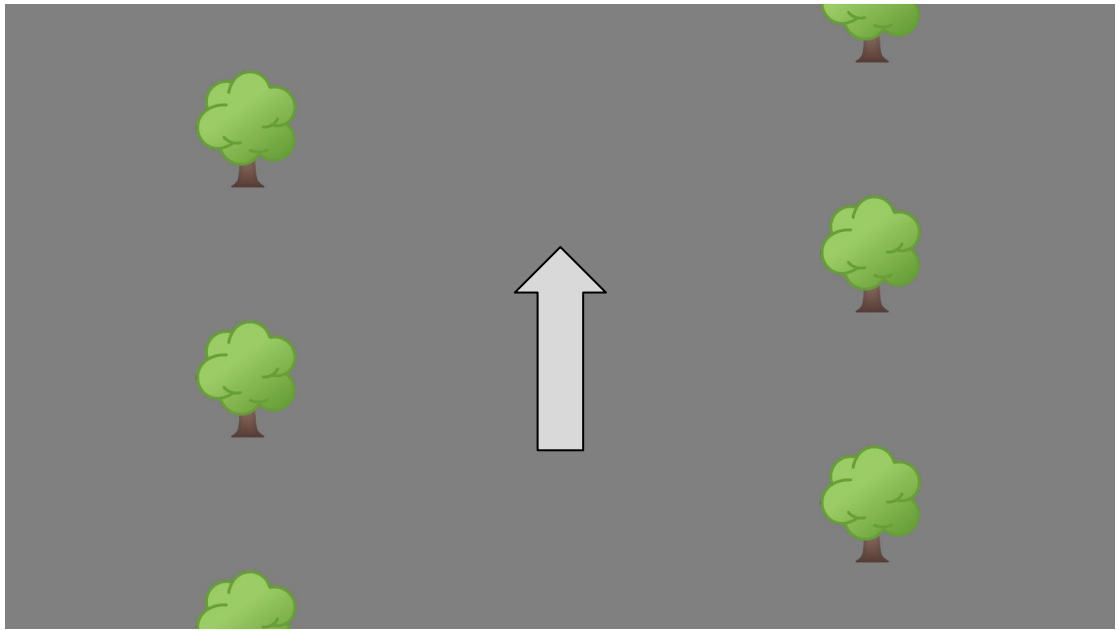
This inability to detect the targets in a timeframe of 200ms to 500ms (RSVP) is known as the attentional blink.

In case of participants with high anxiety however, the attentional blink is shorter, enabling them to notice both the targets.



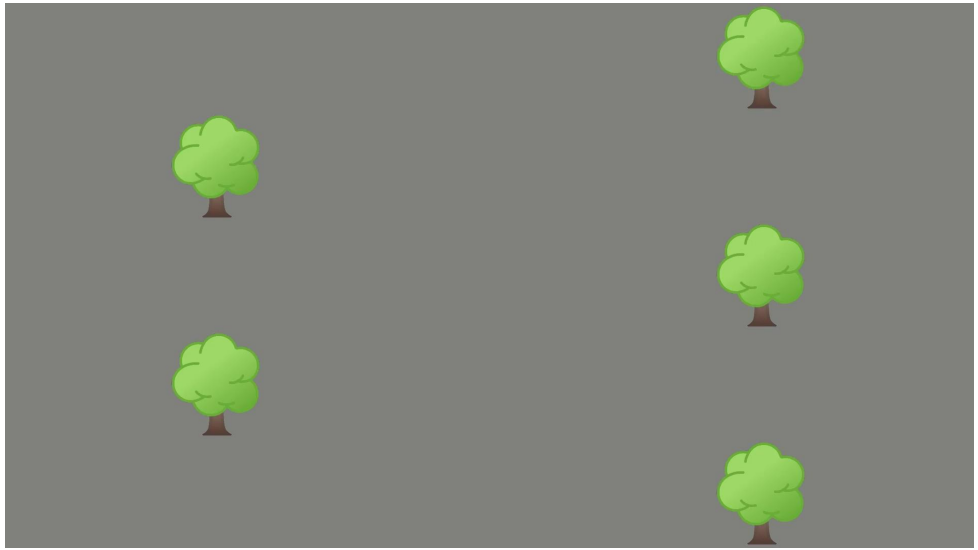
A brief idea of the foraging game

- For starters, we plan to replicate the basic foraging model.
- The game will contain parallel patches of trees. Foraging in done starting at the bottom and moving up across the screen.
- At each step, one has to decide whether to forage at the tree or to move on to the next tree.
- Foraging at the same tree (exploiting) will result in lesser reward each time.



Parameters to be considered

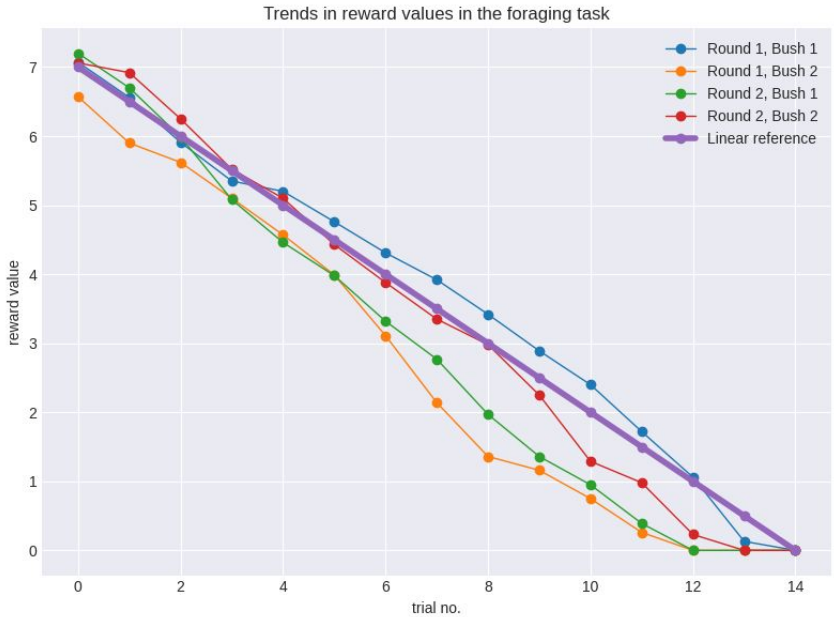
1. Rate of decrease in reward at each patch
2. Distance between patches
3. Travel time
4. Total time for the task
5. Moving patches (as depicted in the video)



Reward rates

The reward rate in the basic foraging task followed a almost linearly decreasing trend at depicted in the plot.

We plan to use a random number generating function to generate reward values in a fixed range who's mean follows the linear reference, i.e.,
$y = -x*(7/14) + 7$



Reading

Paper: Chronic and Acute Stress Promote Overexploitation in Serial Decision Making

The paper discusses in detail how stress affects foraging behavior through a virtual patch foraging task tested on subjects under stress.

The summary of the paper can be found here: https://docs.google.com/document/d/1V4UmkNpHqkYccPgerg30CNOs4FjMXYNfcmzLgaEspCc/edit?usp=sharing

Goal for next week

- Completion of the basic foraging game.
- Reading material: Papers on mental conditions such as PTSD, anxiety, etc as a result of COVID stress.

1. The prevalence of post-traumatic stress disorder related symptoms in Coronavirus outbreaks: A systematic-review and meta-analysis
2. Depression, anxiety, and stress and socio-demographic correlates among general Indian public during COVID-19

- We plan on going through task designs of Nathaniel D. Daw to further decide on the parameters to be used in our task.