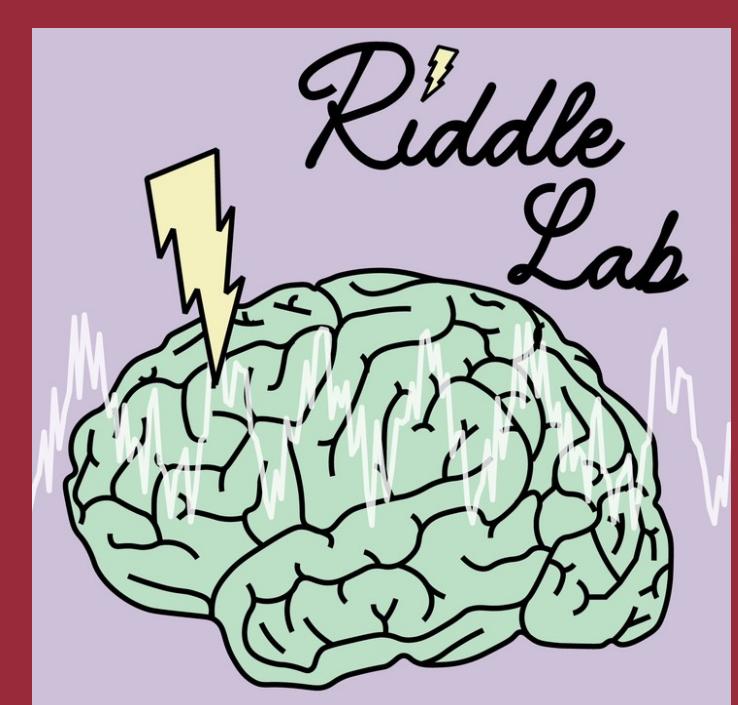




# Social Judgement and Approach-Avoidance Behavior in Social Anxiety Disorder

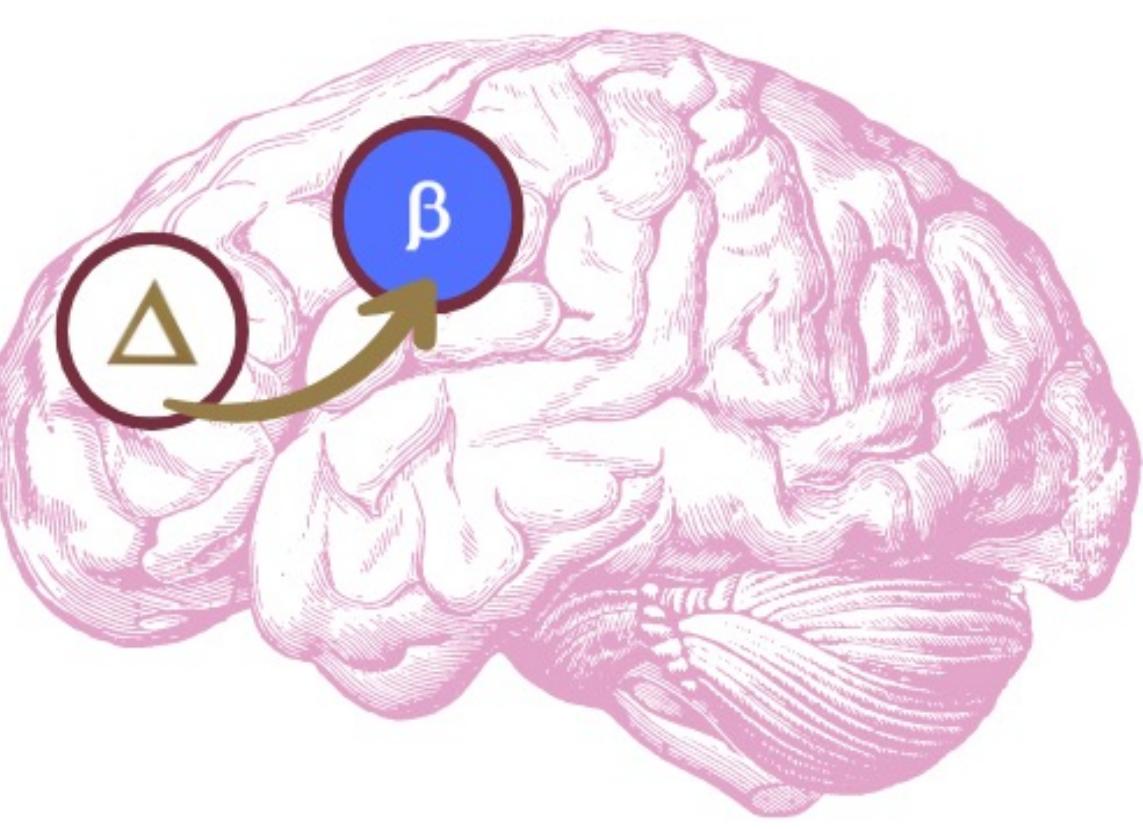
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## Introduction

- Social anxiety disorder (SAD) is characterized by excessive fear of embarrassment when engaged in social interactions, which affects overall quality of life. (Horenstein et al., 2018).
- It was shown that individuals with SAD present impairments in the ability to evaluate the level of social judgement in facial expressions (Forscher et al., 2016; Forscher & Li, 2012; Meynadasy et al., 2019).
- Previous research used approach-avoidance tasks (AATs) to investigate exaggerated impairments in approaching angry individuals in participants with SAD (Bramson et al., 2023).
- Prefrontal control over the motor cortex might be elevated in people with SAD. A relevant control signal is delta-frequency electrical activity (1-4 Hz) in prefrontal cortex coupled to beta activity (12-30 Hz) in motor cortex.
- Our prior work shows how delta-beta coupling strength increases during situations that require greater cognitive control or the translation of abstract goals into motor actions during decision-making (Riddle et al., 2020, 2021, 2022). Preliminary research suggests that this coupling could be altered in SAD (Harrewijn et al., 2017; Knyazev, 2011; Knyazev et al., 2006).



## Methods

Our experiment consists of a single session study that lasts about three hours. Prior to the session, individuals complete an online social phobia scale that determines whether they qualify for the study. The first part of the in-person session consists of a clinical interview and self-report questionnaires. Then, we collect EEG data while participants perform a computerized social judgement approach-avoidance task (SJ-AAT).

## Experiment outline



## Objective

Our goal is to investigate the role of delta-beta phase amplitude coupling in participants with social anxiety disorder (SAD) as they perform a social judgement approach-avoidance task.

## What do we predict will happen?

- We hypothesize that:
- Participants with SAD will display increased delta-beta coupling for social judgements on incongruent trials.
  - Participants will have increased response time for social judgements on incongruent trials.
  - Participants will have reduced accuracy for anger evaluation between SJ-AAT faces as a function of social anxiety severity.

## Societal relevance

- This study will allow us to better understand the role of prefrontal cortex in socially relevant judgements and avoidance behavior in SAD.
- The long-term goal is to develop novel approaches for the treatment of SAD.

## Previous tasks

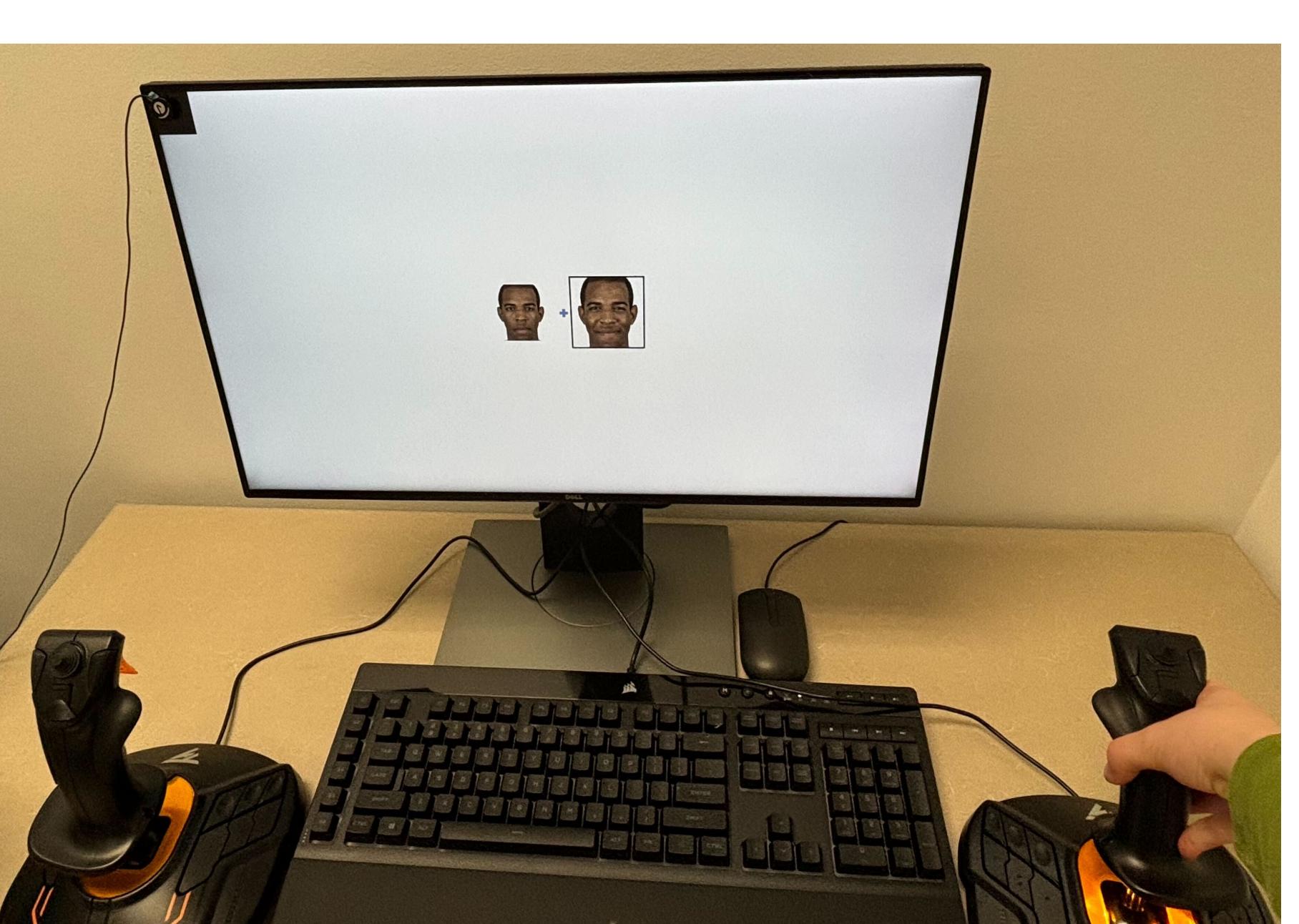
- Dr. Wen Li, a collaborator on this project, recently administered a task where participants with self-reported social anxiety symptoms evaluated anger levels in faces and found that those with greater social anxiety symptoms were less accurate at identifying anger levels (Li et al., in prep.).
- Bramson (2023) utilized an experimentally manipulated approach-avoid congruency in motor response and investigated neural activity using functional magnetic resonance imaging (fMRI).

## The task

Novel task: Social judgement approach-avoidance task (SJ-AAT)

### Trial Conditions

Congruency	Valence	
	Angry	Happy
Congruent	Avoid	Approach
Incongruent	Approach	Avoid



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