



Purpose

- Alexithymia is a personality characteristic related to malfunction in experiencing and expressing emotions
- The hypothalamic hormone oxytocin has been implicated in modulating emotional responses and pro-social behaviors.
- We hypothesized that high alexithymia would be related to decreased P300 amplitude, smaller baseline plasma oxytocin and a smaller difference score in plasma oxytocin before and after Cyberball.
- Lastly, we hypothesized that high alexithymia would be related to high meanness, high disinhibition, and high boldness

Discussion

- Alexithymia will be positively correlated to deficits in emotion processing. Participants who score higher on trait alexithymia would have lower average P300 amplitude. This is particularly due to them being deficient and lacking awareness and identification of their own emotions.
- Data from the P300 amplitude allows us to further hypothesize about the impact of high alexithymia on emotional awareness and emotional ambiguity in the broader public mental health context.
- We further hypothesize that high trait alexithymia will be correlated with lower oxytocin concentration. With this information we may further expand broader medical knowledge on ways to mitigate other mental health illnesses related to alexithymia.

Methodology

Cyberball Task

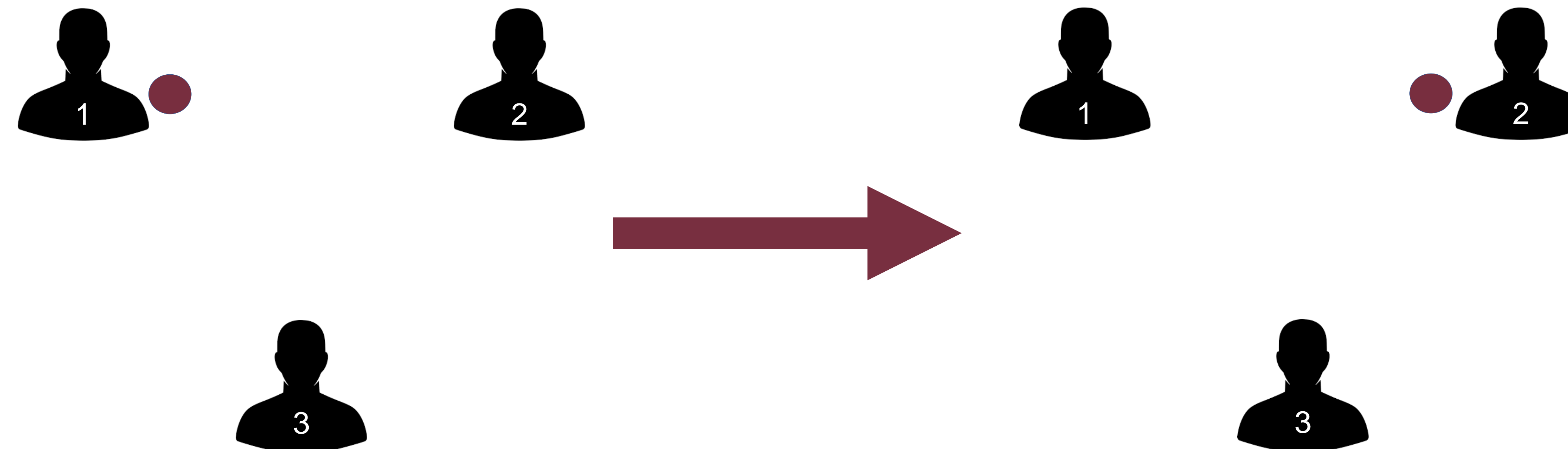


Figure 1: A representative image of a participant (#3) experiencing lab-based social exclusion (from players #1 and #2).

Methodology

Participants:

- Eligible college-aged men and women were recruited from Psychology Department's SONA mass screening survey

Measures:

Toronto Alexithymia Scale (TAS-20):

- A self-report questionnaire that assesses alexithymia level (identifying and describing feelings)

Triarchic-Psychopathy Measure (Tri-PM):

- measures aspects of antisocial behavior (i.e., boldness, meanness, and disinhibition).

enzyme-linked immunoassay (ELISA):

- measures hormone levels in plasma oxytocin

Tasks:

Participants were fitted into an electroencephalogram (EEG) cap while completing computer-based tasks. These EEGs were designed to measure electrical potentials at the scalp to best capture brain activity

Cyberball: A computer-based ball tossing task that experimentally creates a feeling of social exclusion.

- Oxytocin measure: plasma oxytocin levels before and after Cyberball

Anticipated Results

Proposed P300 Amplitude during Cyberball

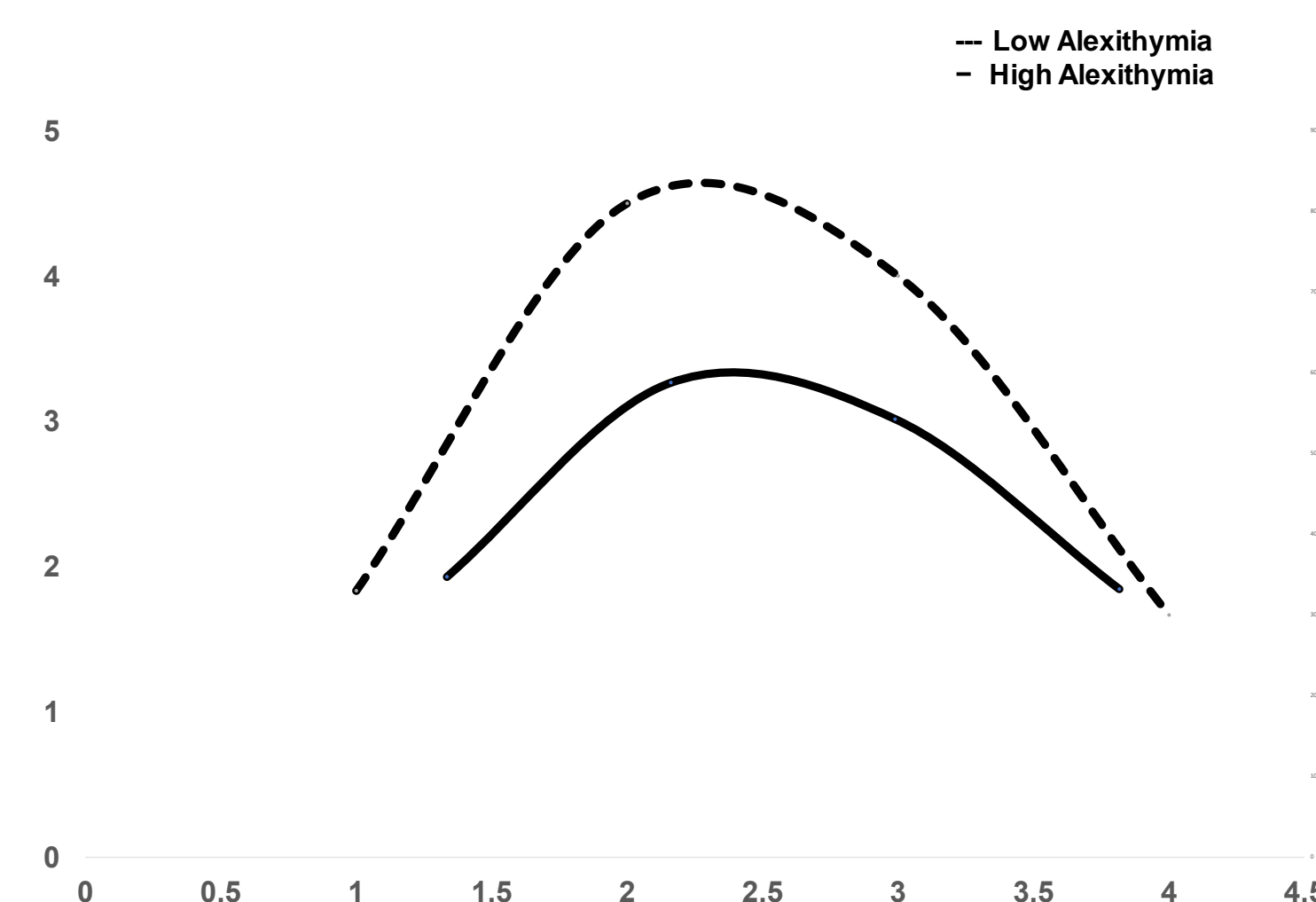


Figure 2: The anticipated P300 event-related potential time-locked to social exclusion conditions. High trait alexithymia associated with an overall decreased in average P300 amplitude

Proposed Results for Plasma Oxytocin Concentrations

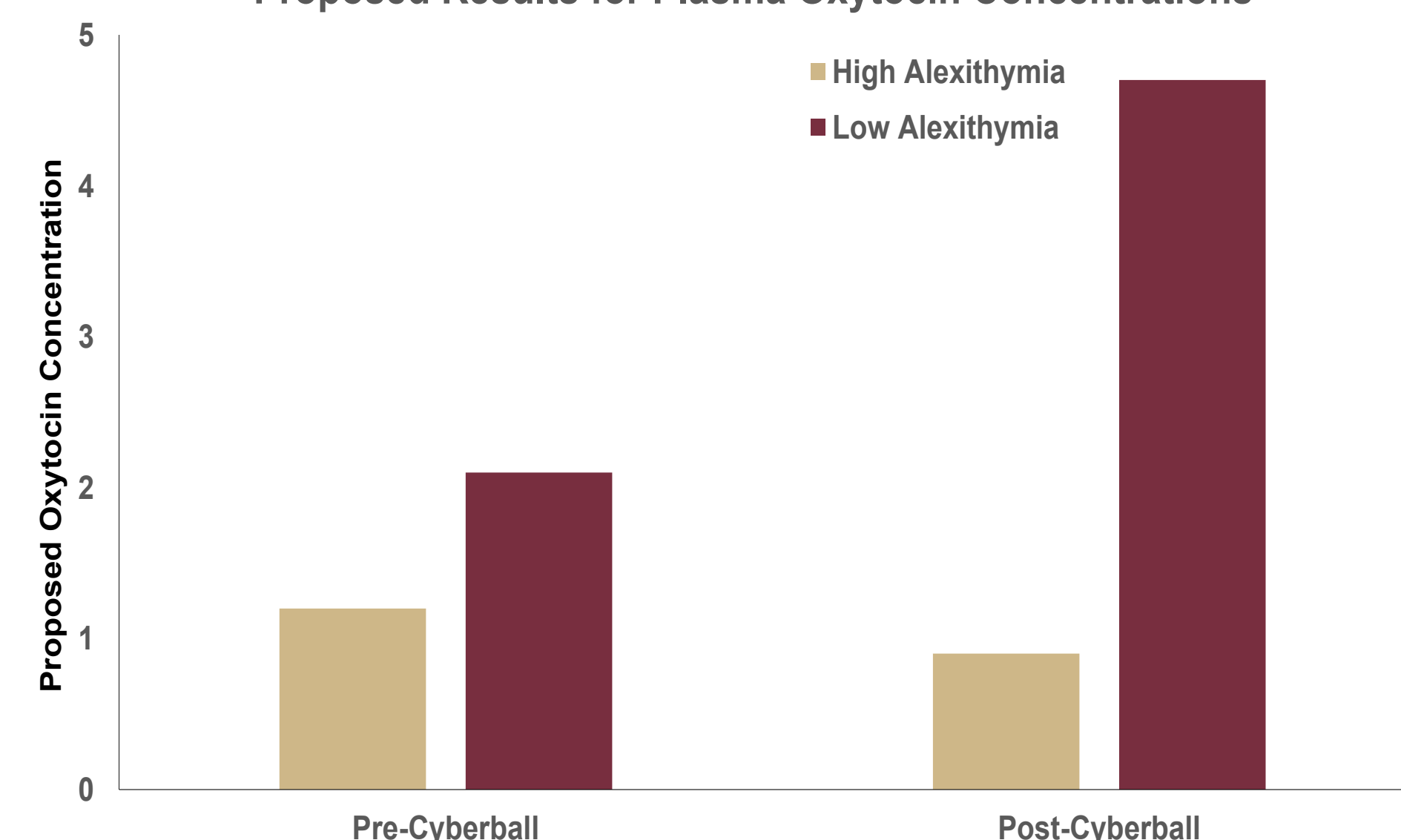


Figure 3: Research suggests that oxytocin enhances salience emotional contexts, we could also presume that low oxytocin is associated with high trait alexithymia. Additionally, high alexithymia would be associated with a blunted change in plasma oxytocin.

Proposed Alexithymia x TriPM Results

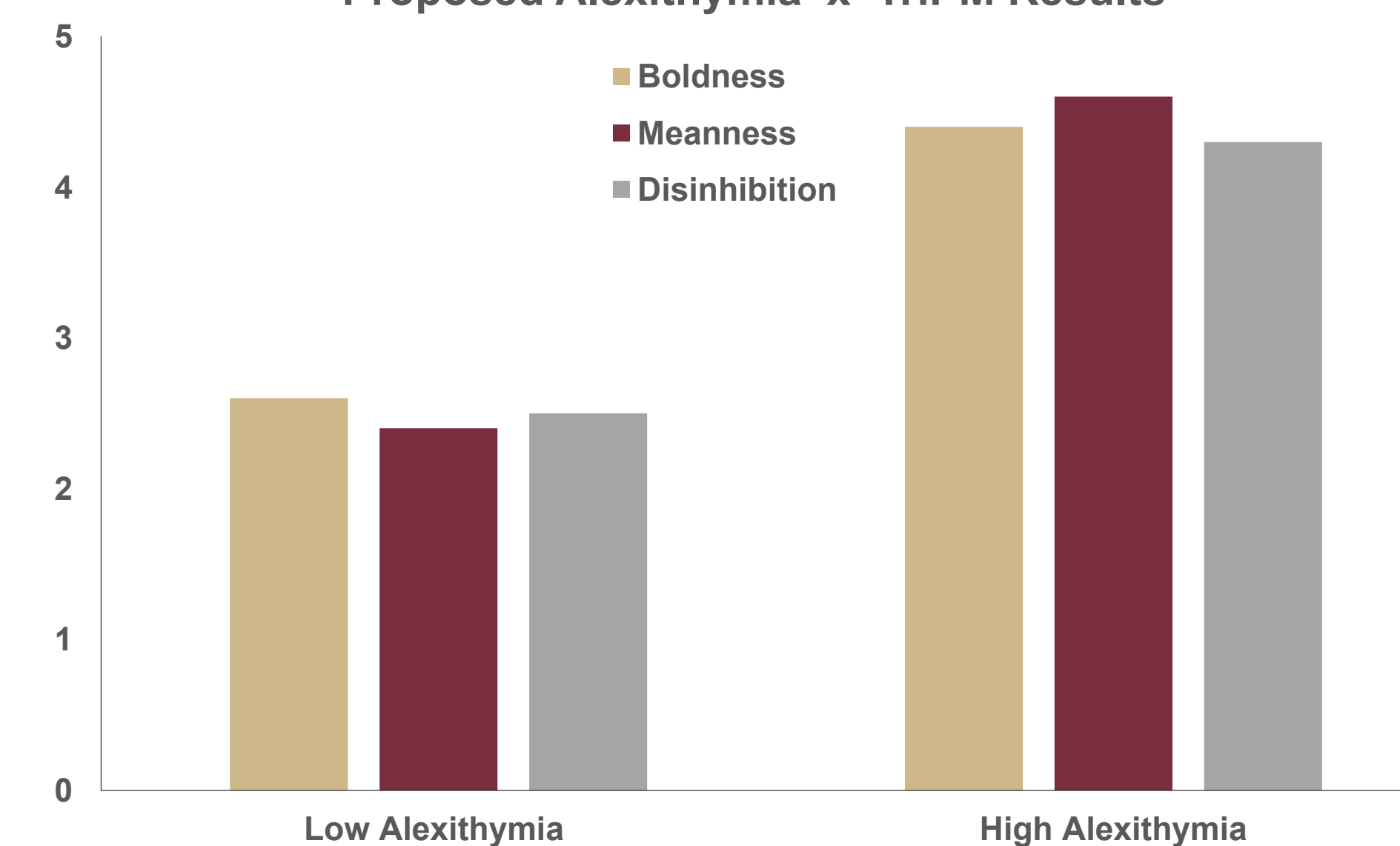


Figure 4: We generally predict that high trait alexithymia will be positively associated with psychopathic traits, including boldness (fearlessness and stress resiliency), meanness (lack of empathy and increased proactive aggression), and disinhibition (impulsivity and reactive aggression)

References



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