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## **The Reward Positivity is Enhanced in Individuals with Alcohol Use Disorder**

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## INTRODUCTION

- The Reward Positivity (RewP) is a component of the event related brain potential (ERP) that is sensitive to reward receipt.
- The RewP can be augmented with affective imagery manipulations, suggesting an additional sensitivity to affective valuation (“liking”).
- This study examines Reward Positivity into alcohol cue rewards individuals with alcohol use disorder (AUD).

## METHODS & MATERIALS

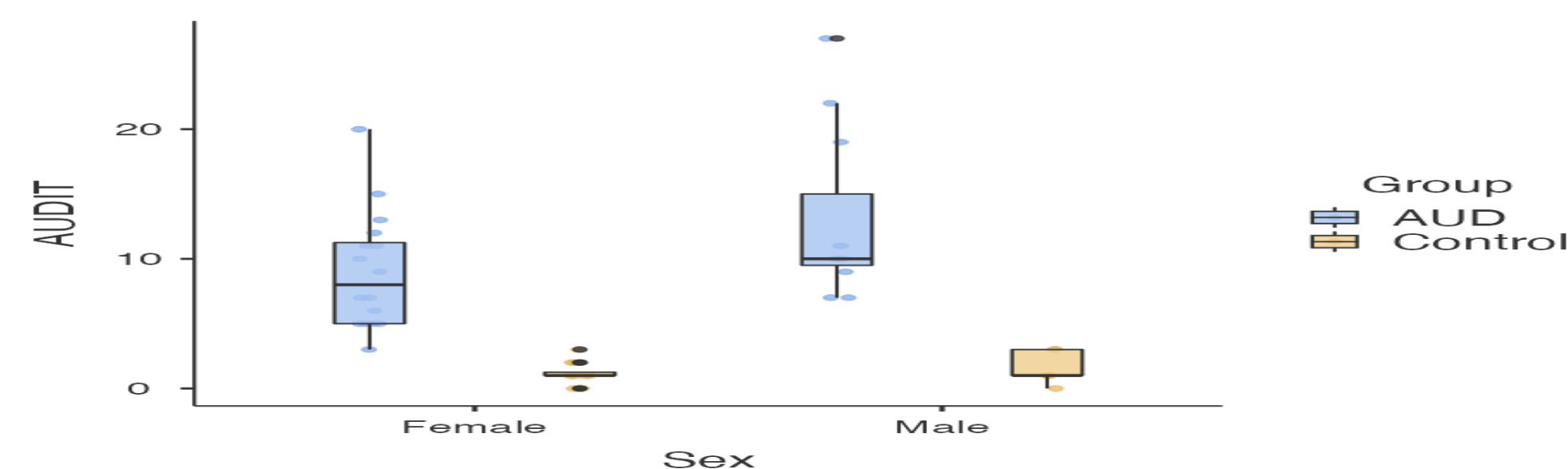
### Participants

- Community Participants, 18-55 years old
- Expected N=60; For this analysis,
- $N_{AUD}=26$  (Female= 15, Mean age= 39)
- $N_{CTL}= 20$  (Female= 14, Mean age= 33)

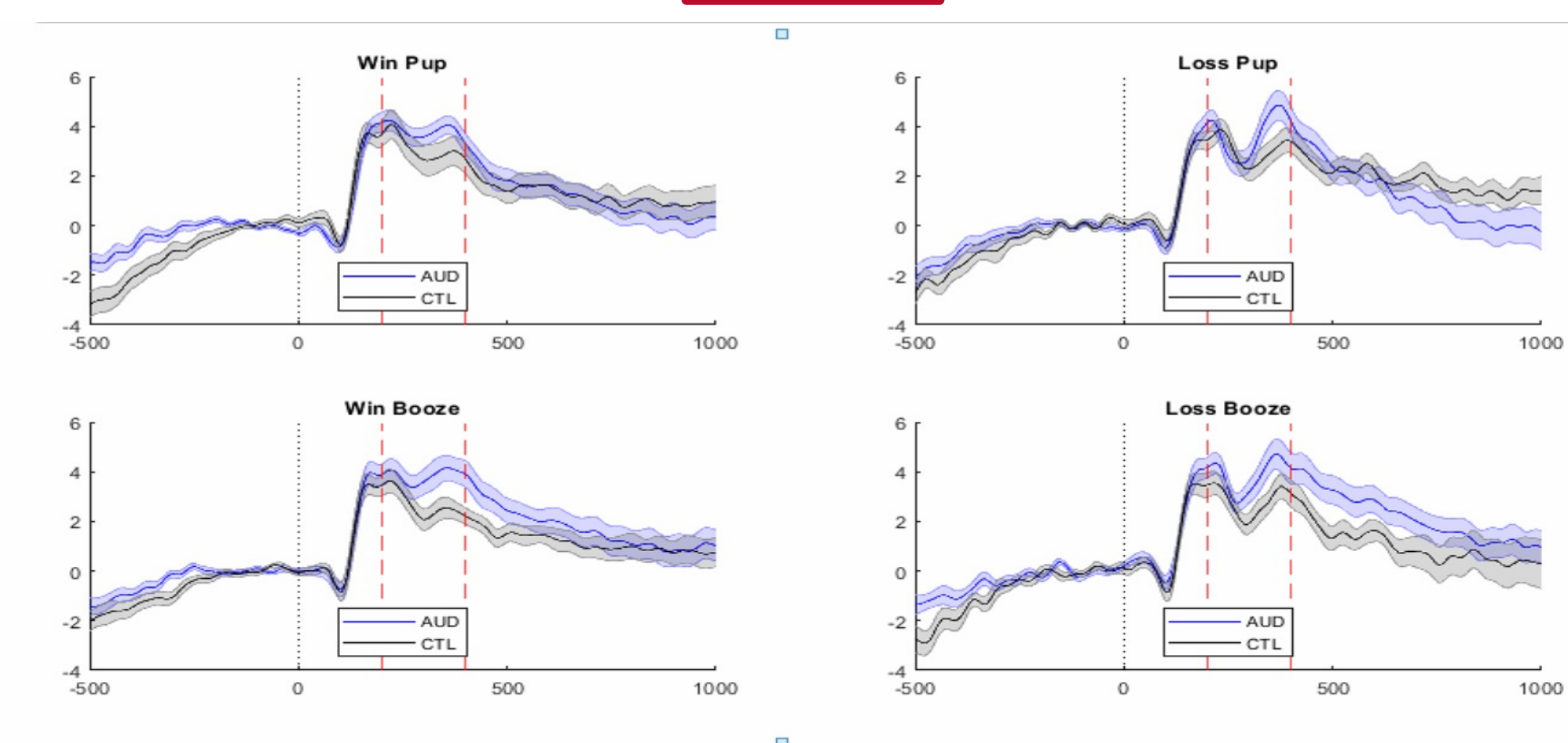
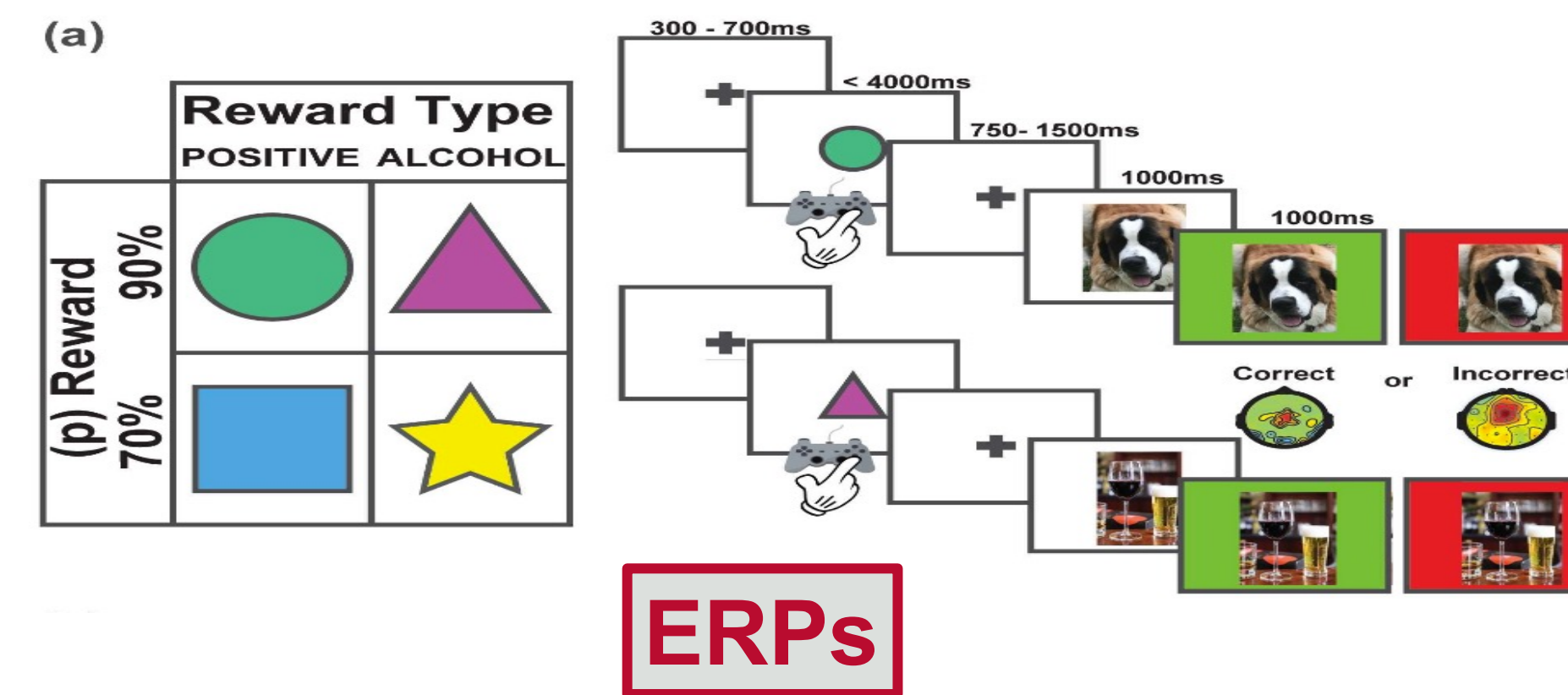
### Materials & Procedures

- Phase I: Clinical SCID and AUDIT assessments for AUD group
- Phase II: In-lab pen and paper administration of self-report questionnaires of demographics, BIS/BAS, AUDIT, BDI
- EEG assessment during the Reinforcement Learning (RL) Affective State Task
- Probabilities of reward were orthogonal to the affective cue type.

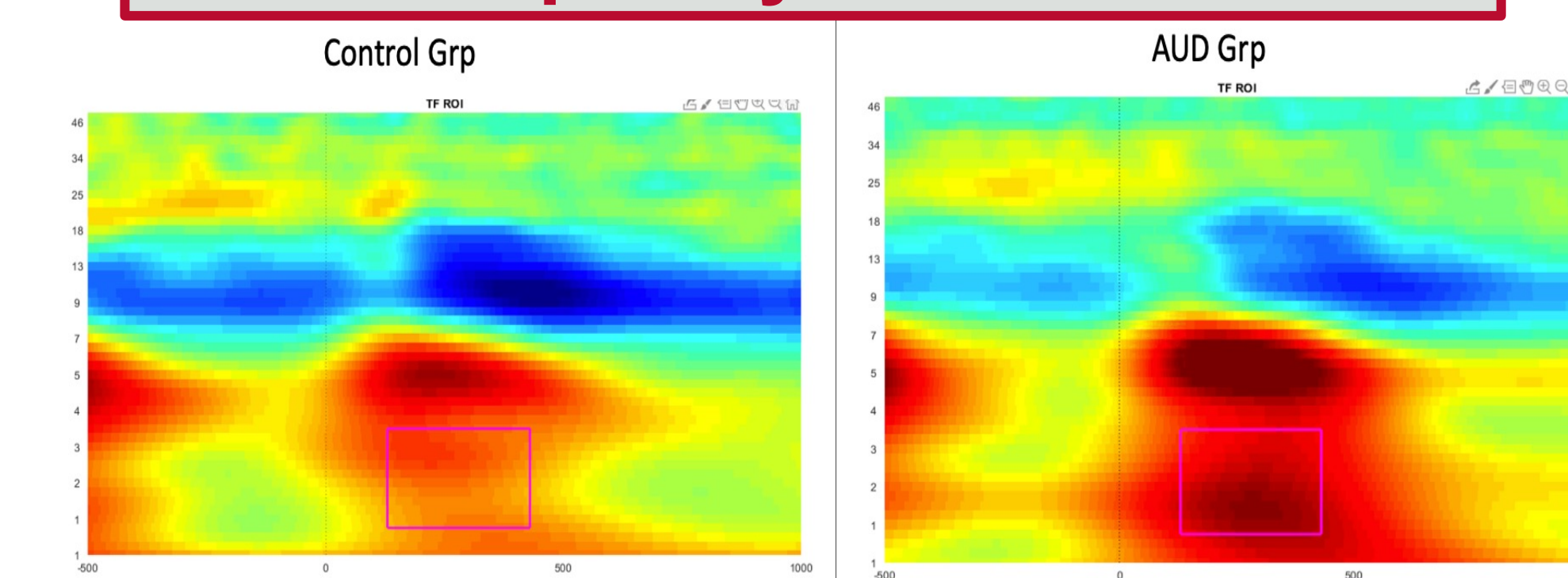
## AUDIT Range



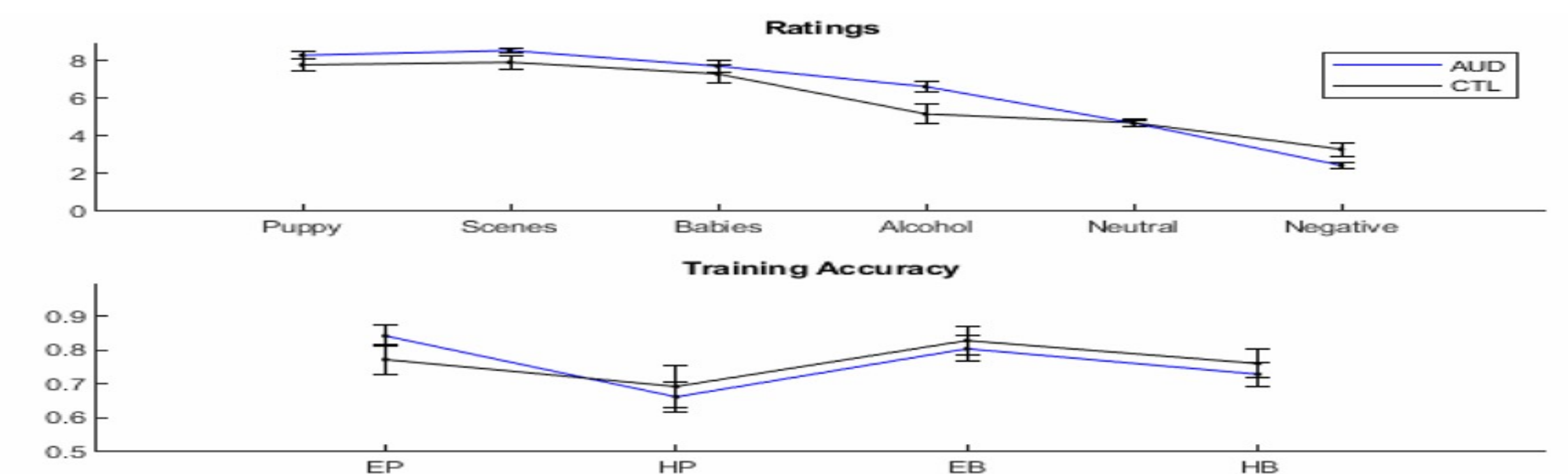
## Affective State Task



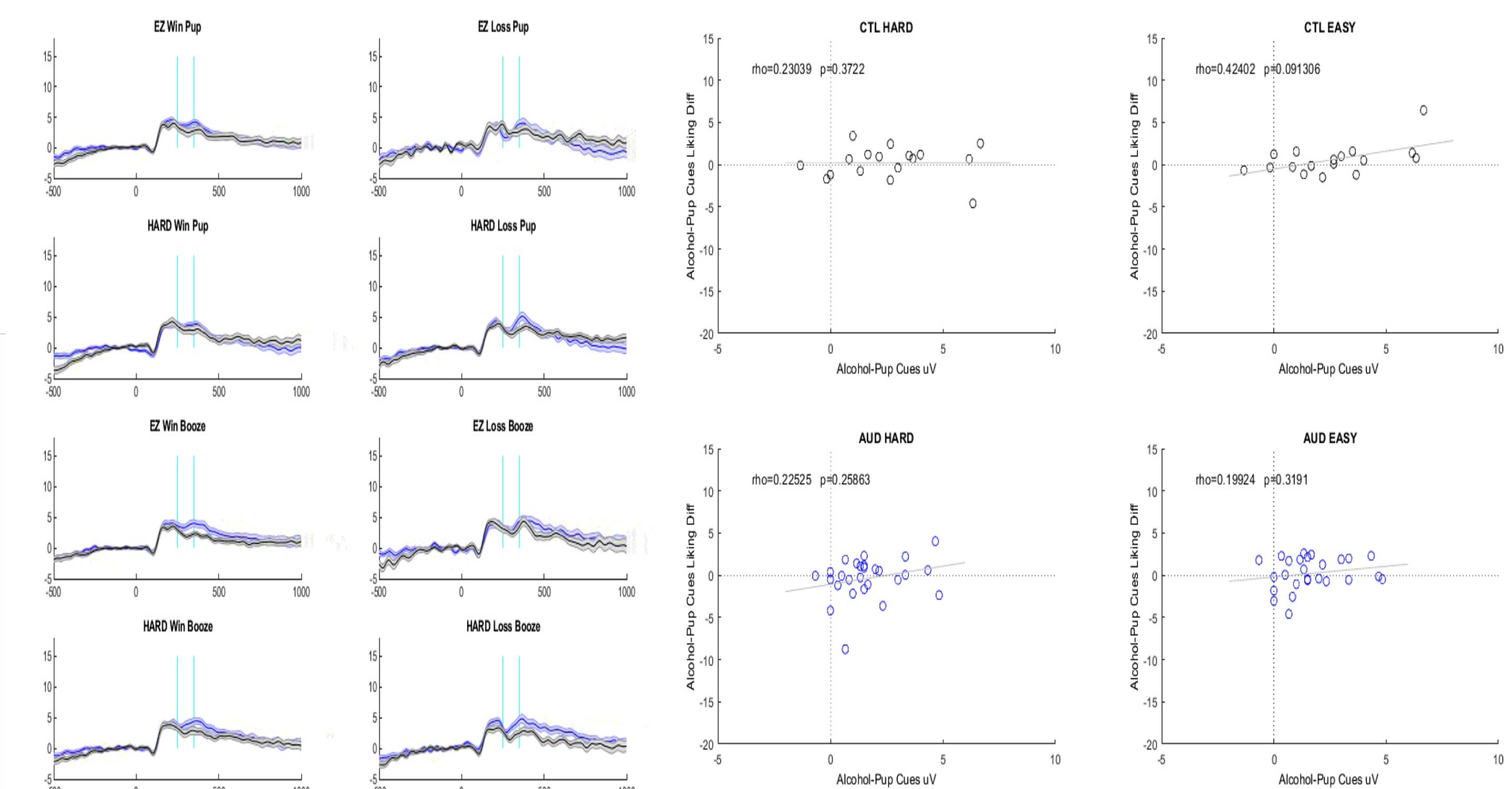
## Time Frequency Plots of Reward



## BEHAVIORAL DATA



## ERPs By Conditions & Correlations



## RESULTS

- AUD group appears to have a larger RewP, although it does not seem to be modulated by alcohol conditions.
- The behavioral data shows that affective images of alcohol was rated more pleasant by the AUD group
- A delta burst was observed for RewP for the AUD group and not for the Control group.

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