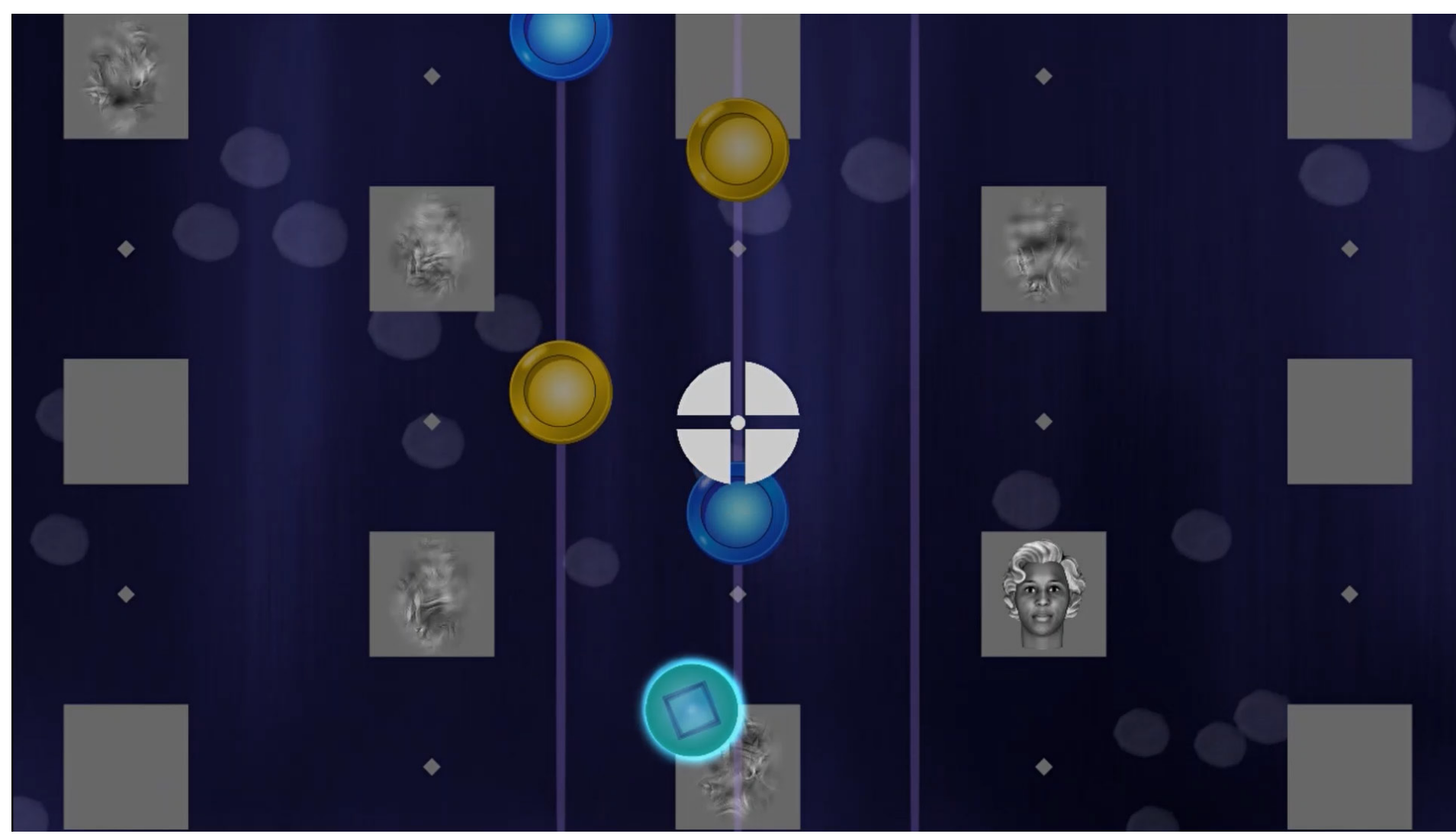


Introduction

- Uncovering genuine NCCs remains a challenge⁽¹⁾
- NCC confounds are prerequisites (e.g. attention) and consequences (e.g. report-related processes)⁽²⁻³⁾
- Attempts to dissociate report from awareness typically introduce task confounds
- Here, we suggest a classification-based approach
- SVM model trained on report trials is used to label no-report trials in a mixed report/no-report paradigm⁽⁴⁾

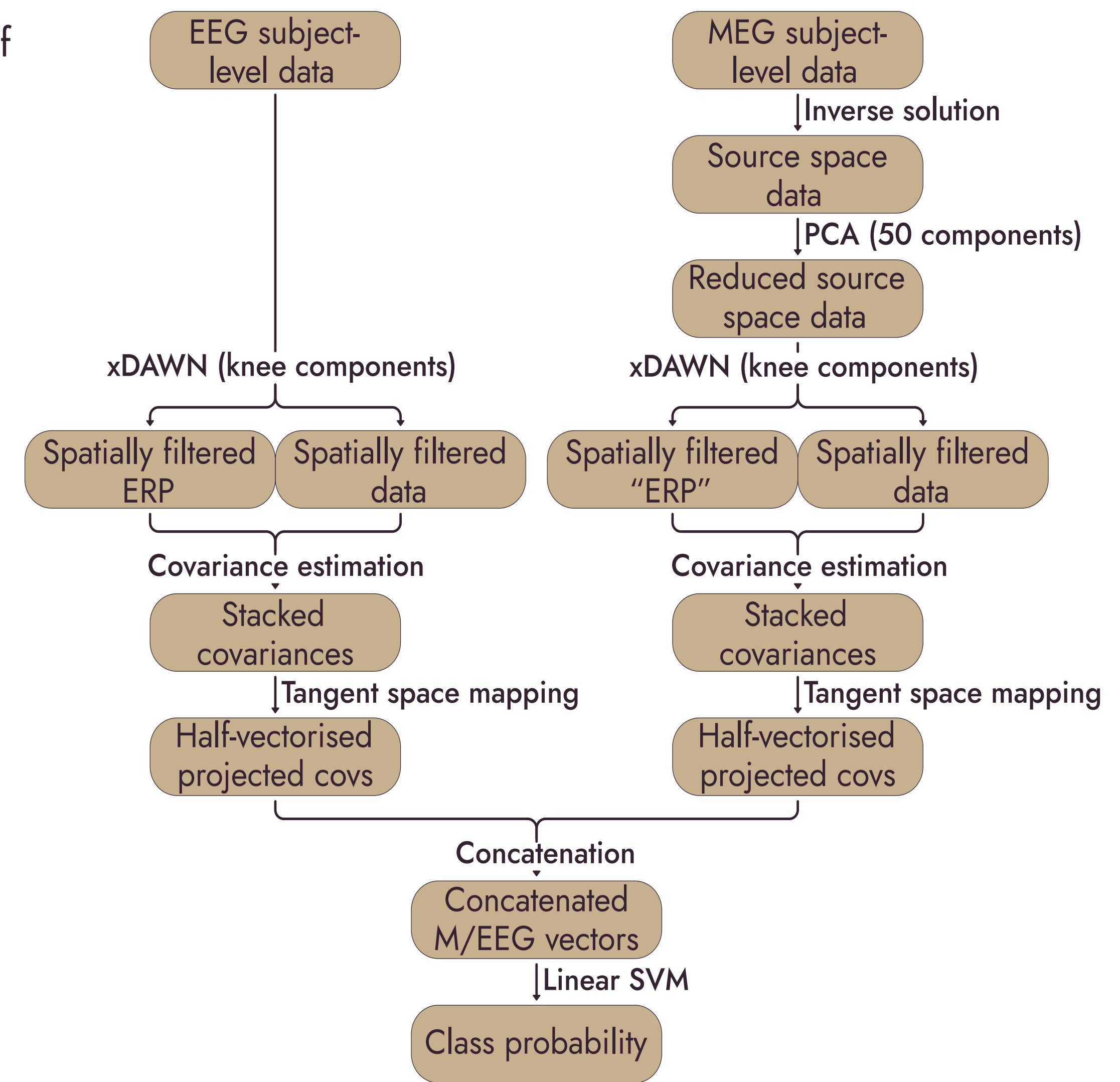
ARC-Cogitate Exp2 paradigm



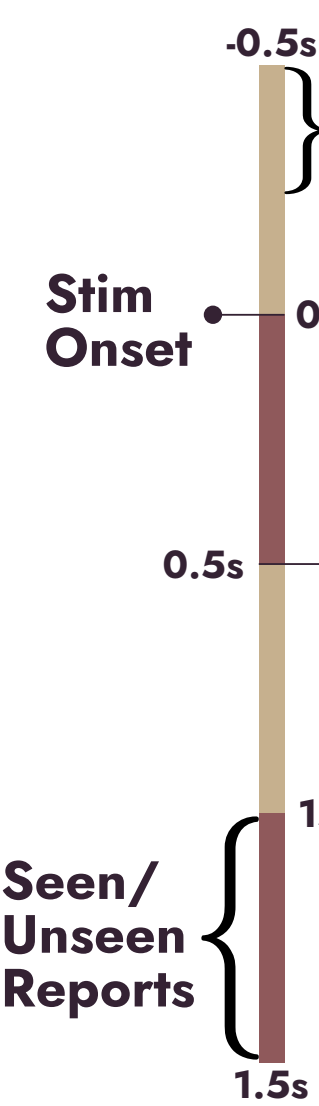
Methods

- M/EEG data from ARC-Cogitate's experiment 2
- Report: Cluster based permutation analysis (CBPA) of 0-1s interval for Seen-Unseen
- No-report: Permutation t-test on VAN, fcN2 and P3b clusters (from report CBPA)
- CBPA of Report-No-report difference waves
- VAN and fcN2 training intervals selected per participant to avoid mixing their signals

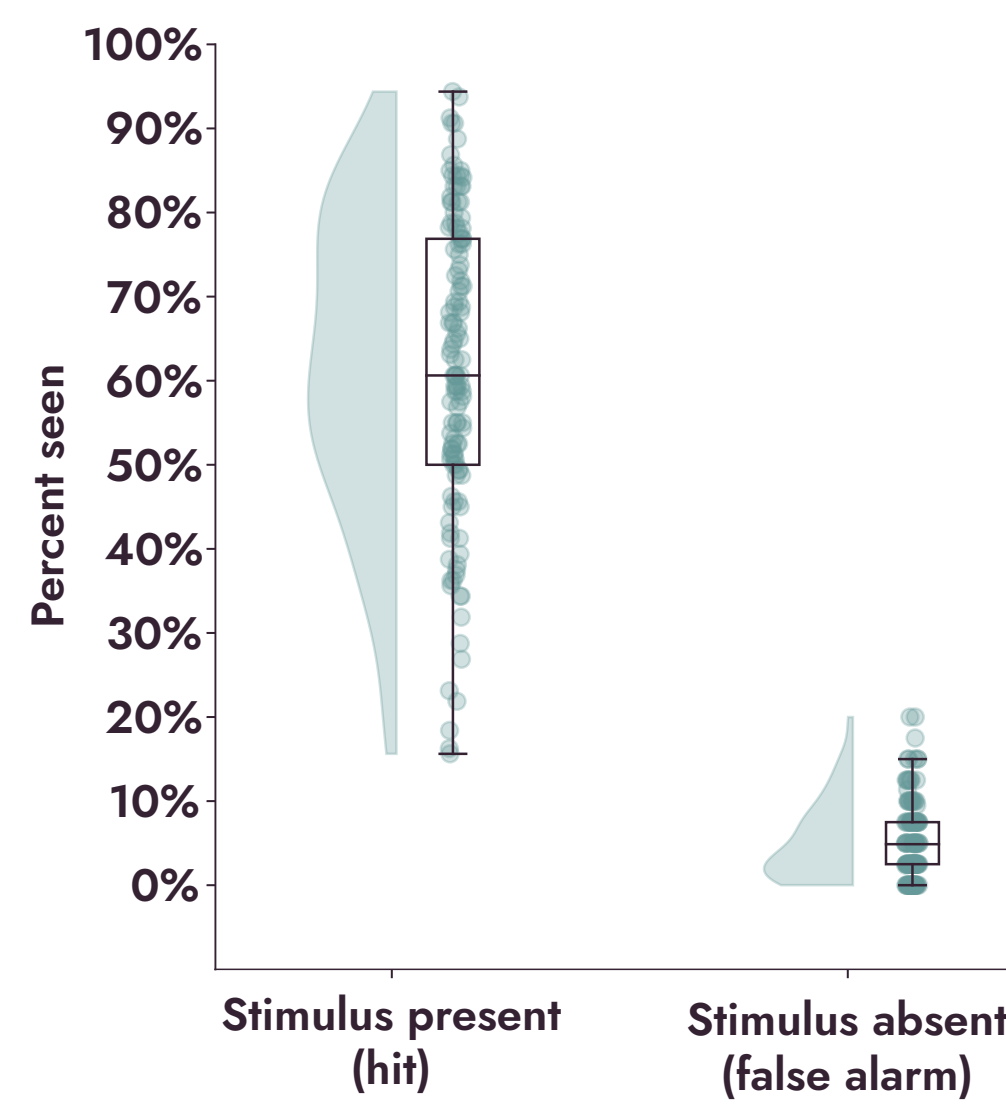
Classification pipeline



Stimulus flow

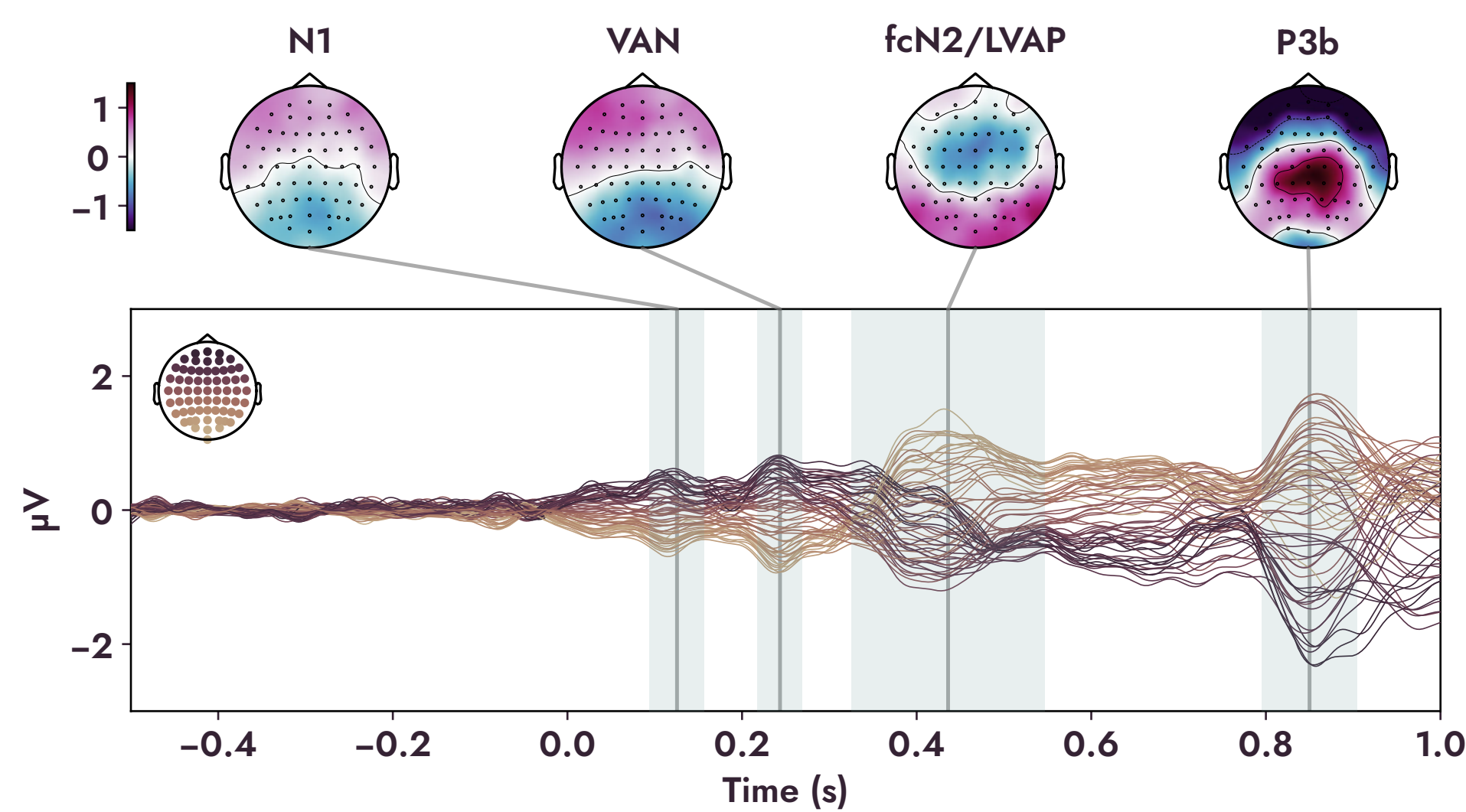


Seen response rate

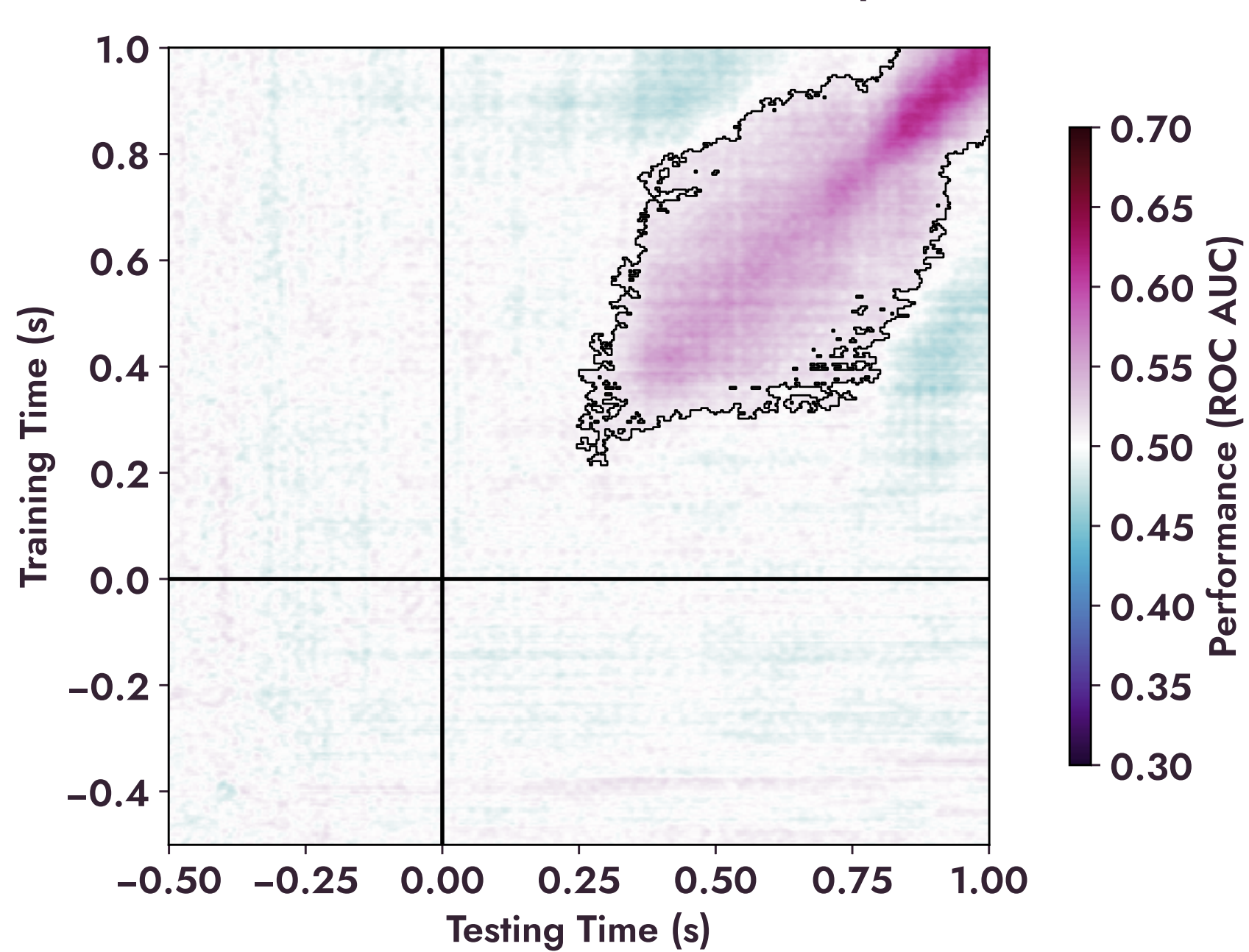


Results

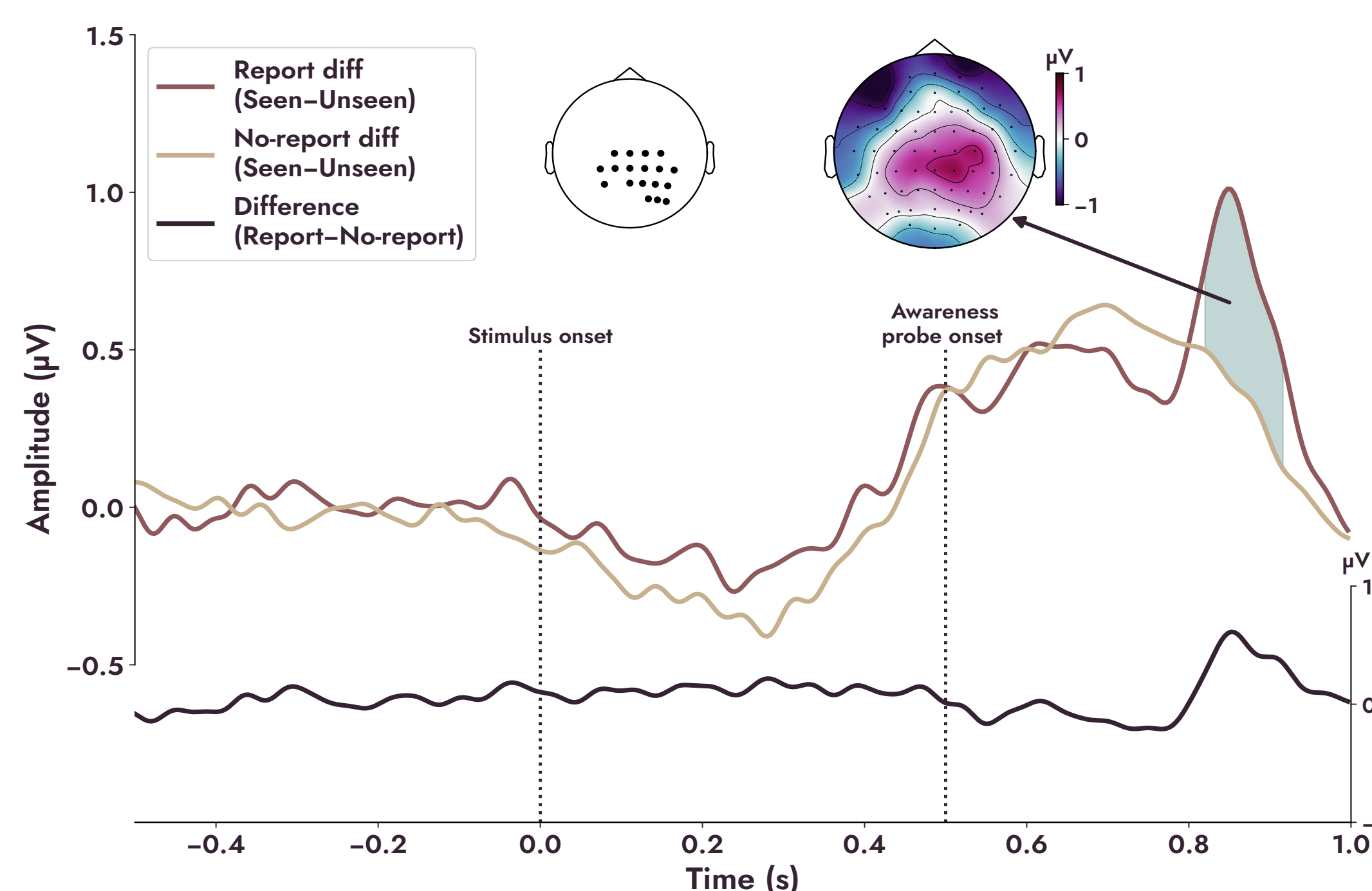
Seen - Unseen (report)



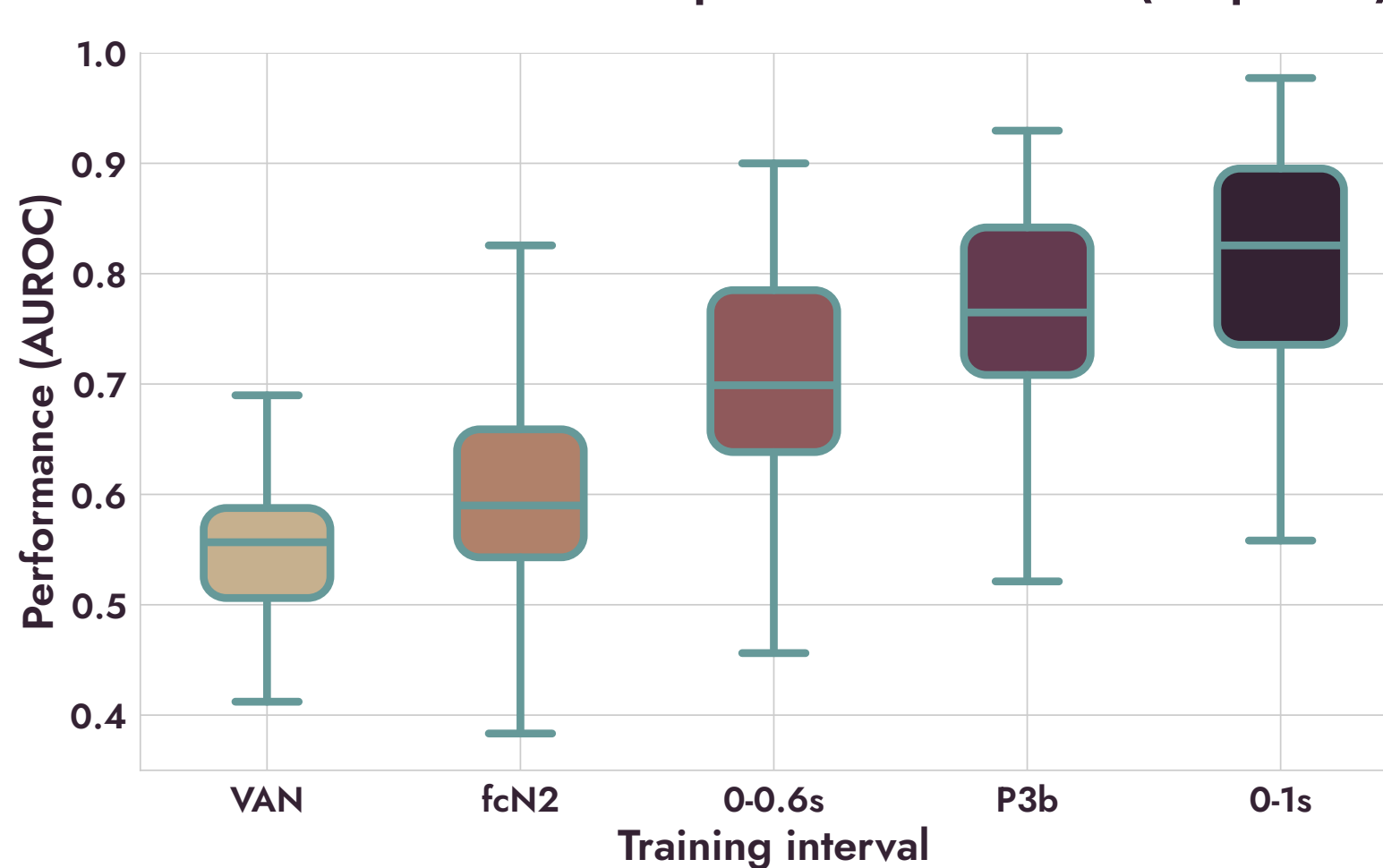
Seen vst Unseen (report)



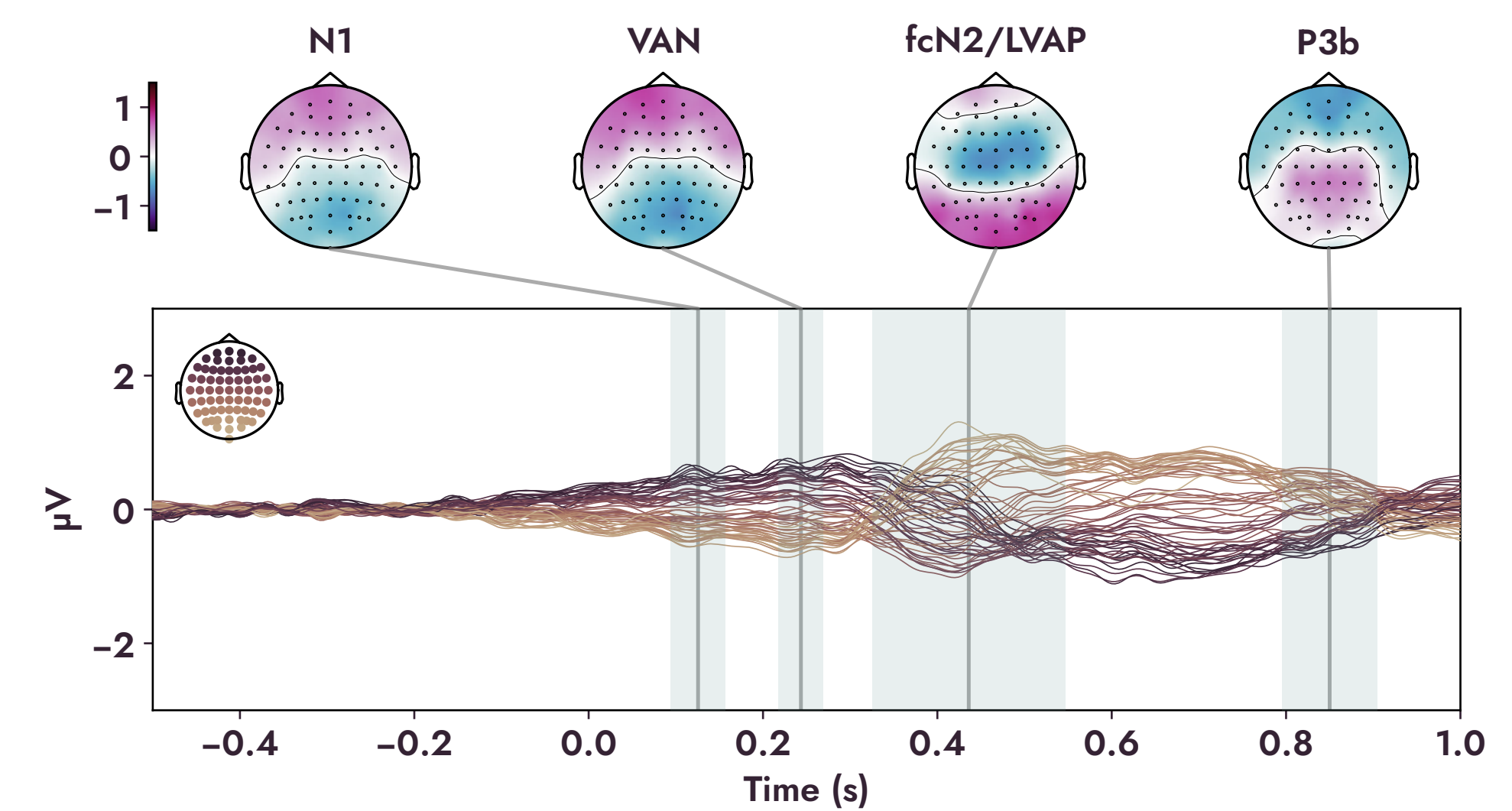
Report - No-report



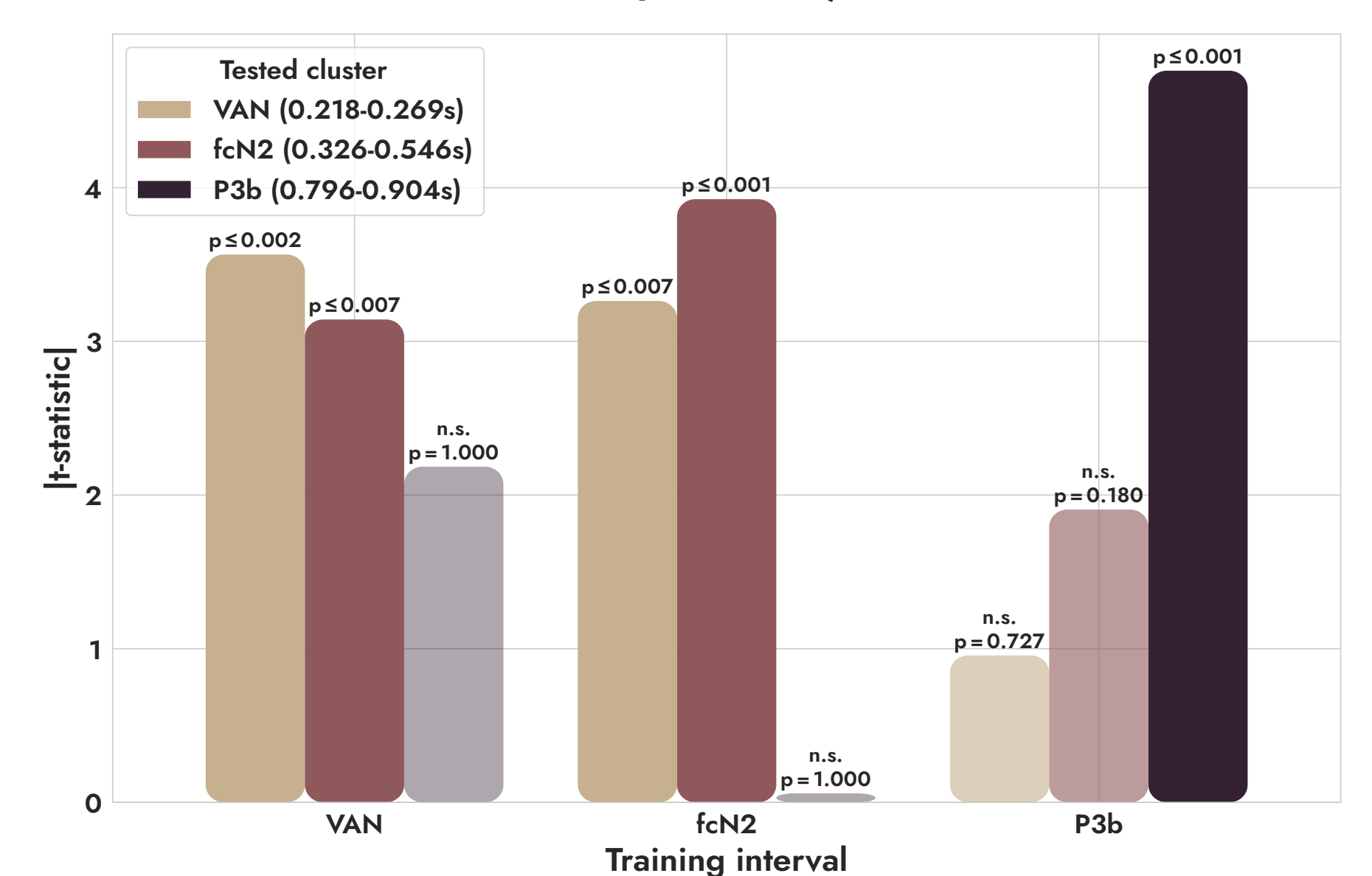
Model accuracies per interval (report)



Seen - Unseen (classified no-report)



Significant VAN/fcN2 clusters when trained on VAN/fcN2, but not P3b



VAN (🌊) and fcN2 (🌊) persist in no-report trials

Training model on VAN preserves fcN2 (and vice versa)

P3b (🌊) is probe-locked & vastly diminished in no-report

Classification approach dissociates report-related activity

References

1. Crick & Koch (1990), Semin. Neurosc.
2. Aru et al. (2012), Neurosci. Biobehav. Rev.
3. de Graaf et al. (2012), Neurosci. Biobehav. Rev.
4. Melloni et al. (2023), PLOS One

Poster PDF

