

## Boredom functions as a call to action.

State boredom signals rising opportunity costs pushing us to act.

Trait boredom prone individuals show increased impulsivity and risk-taking.

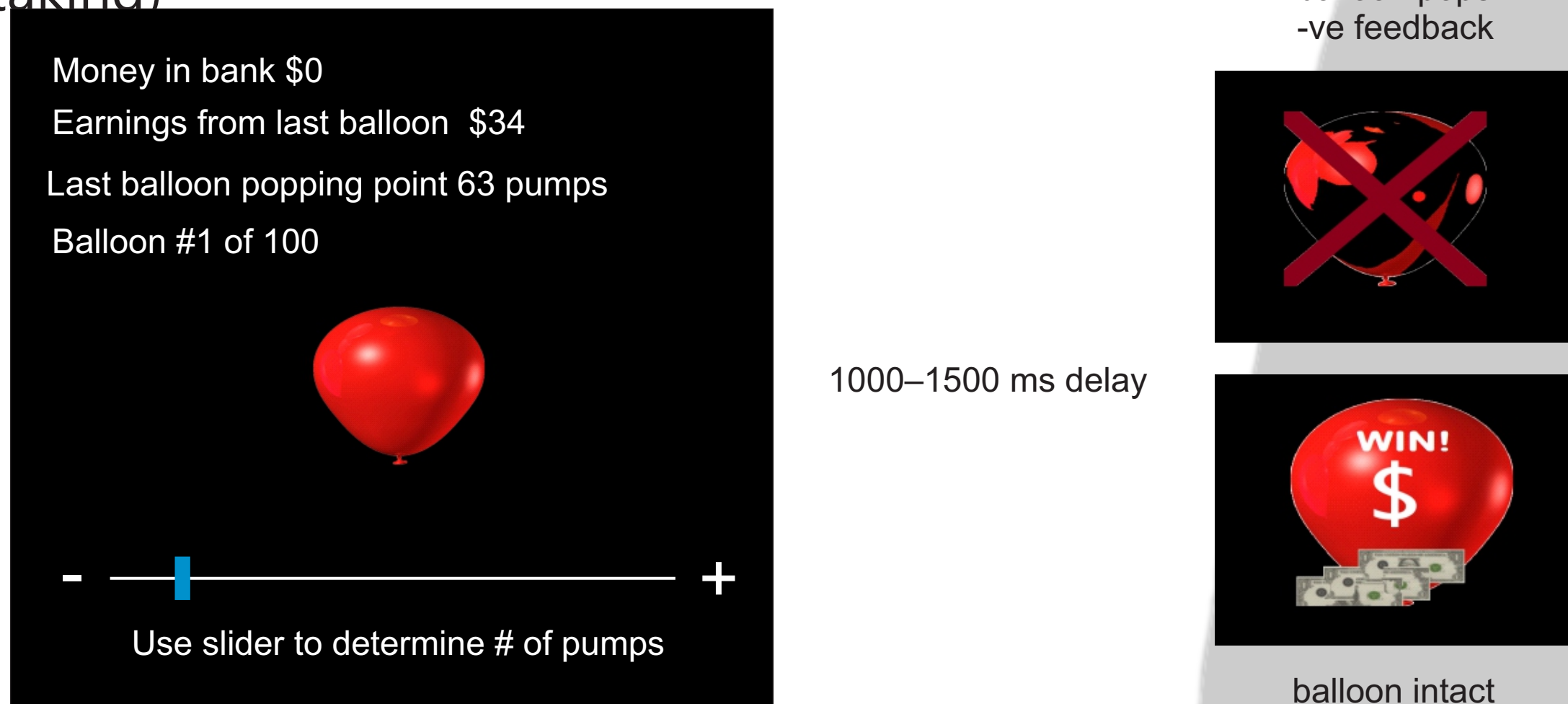
Risk-taking is not ubiquitously maladaptive.

All evidence to date comes from survey data.

## Investigating risk taking and impulsivity

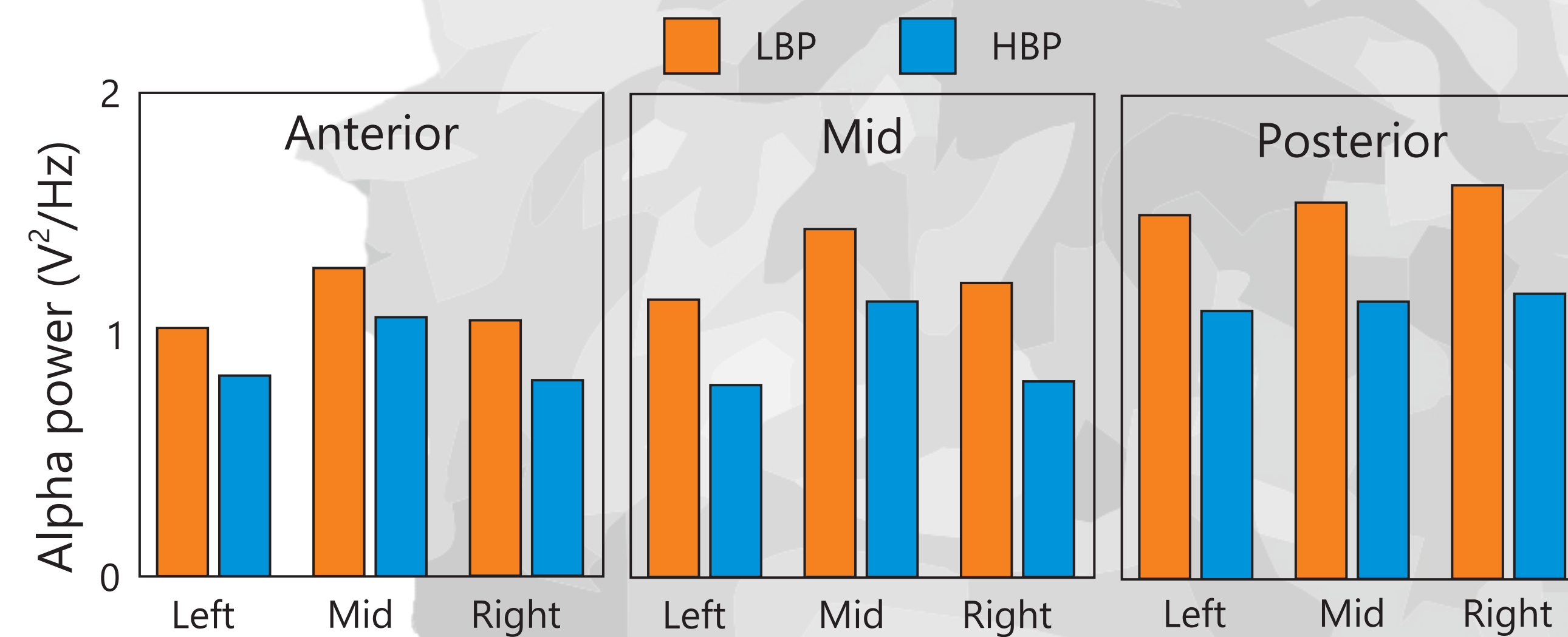
### Balloon Analogue Risk Task

Choose # of pumps without bursting the balloon (shorter RT=higher impulsivity/ more pumps=increased risk taking)



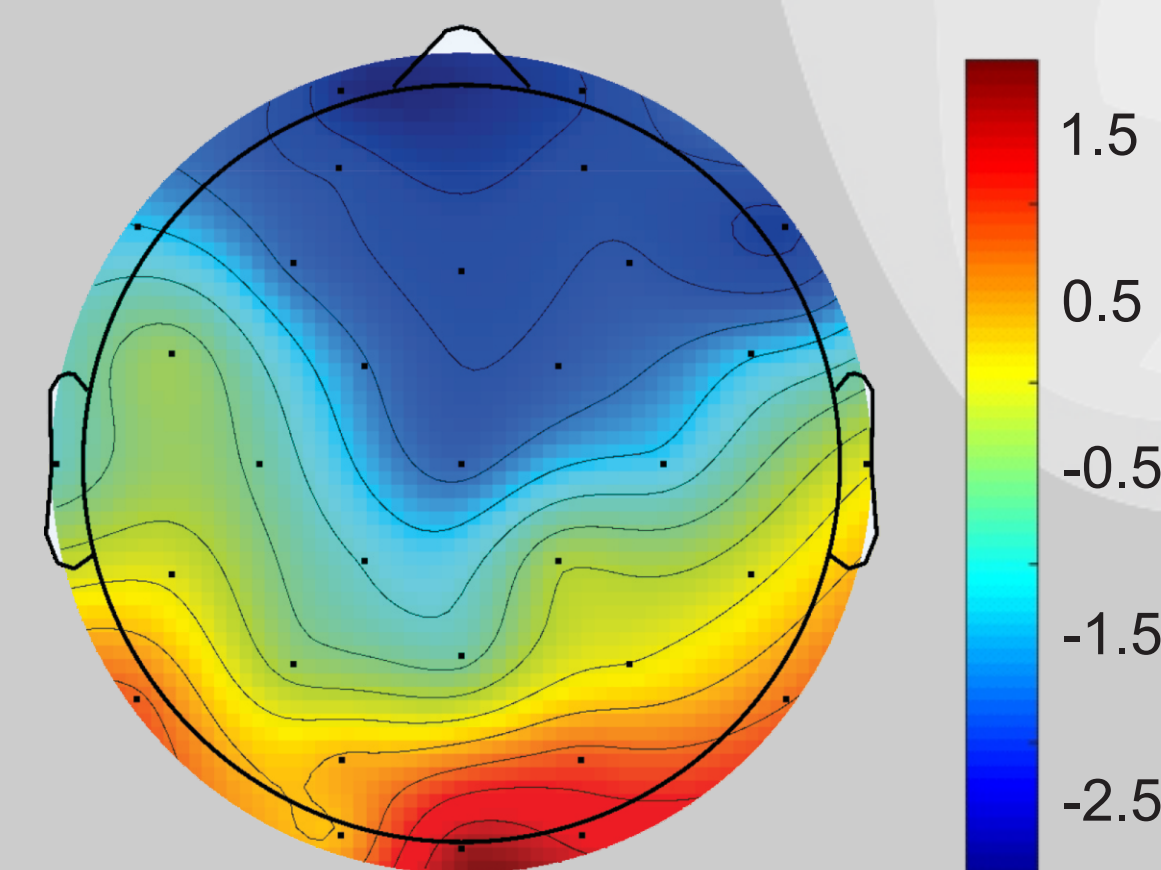
## EEG and trait boredom proneness (n=81).

Boredom proneness is associated with attention deficiencies and ADHD symptomology [1]. Resting state alpha power is known to be related to attention [2].

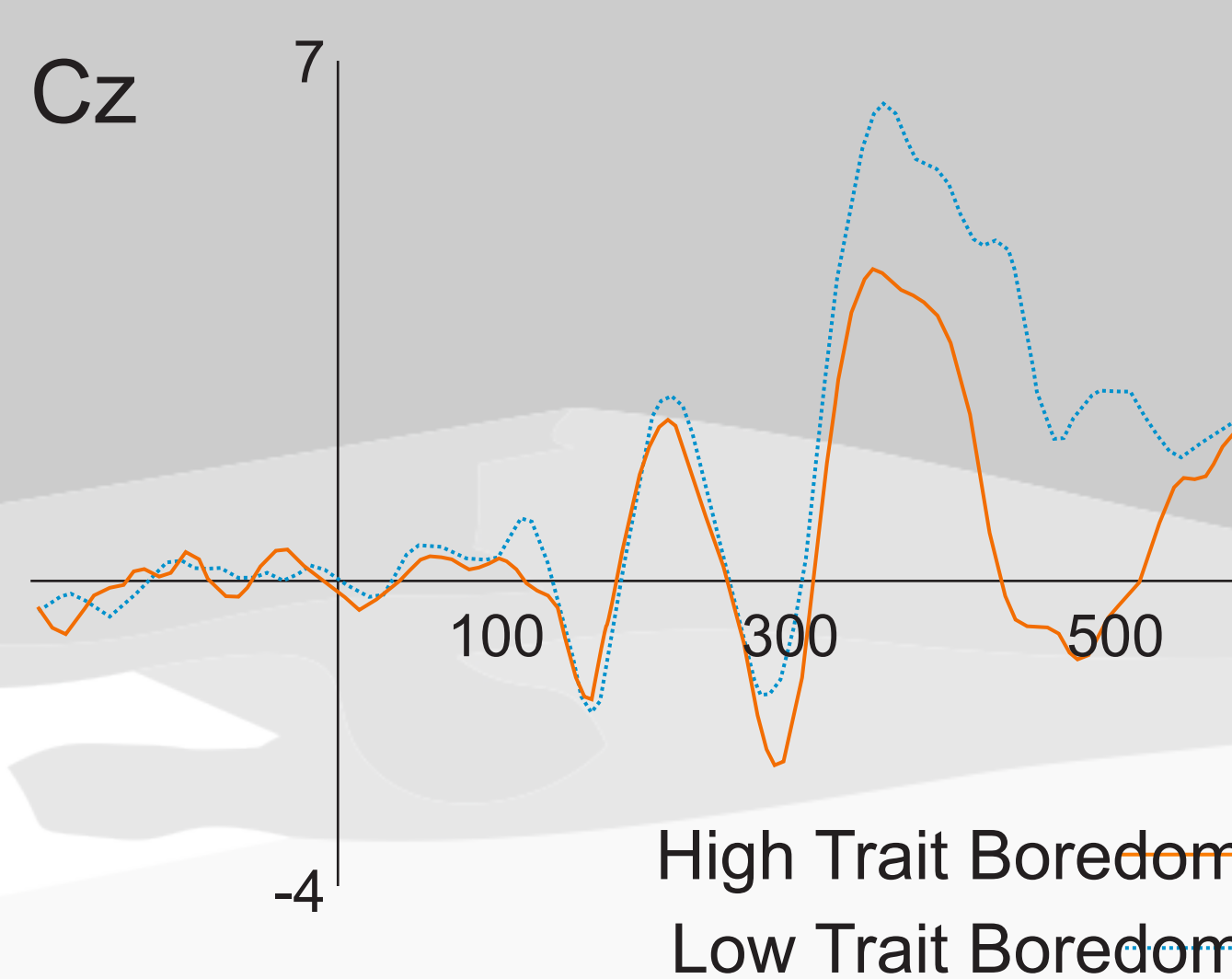


Alpha power levels were negatively correlated with boredom proneness and were consistently lower in the highly boredom prone.

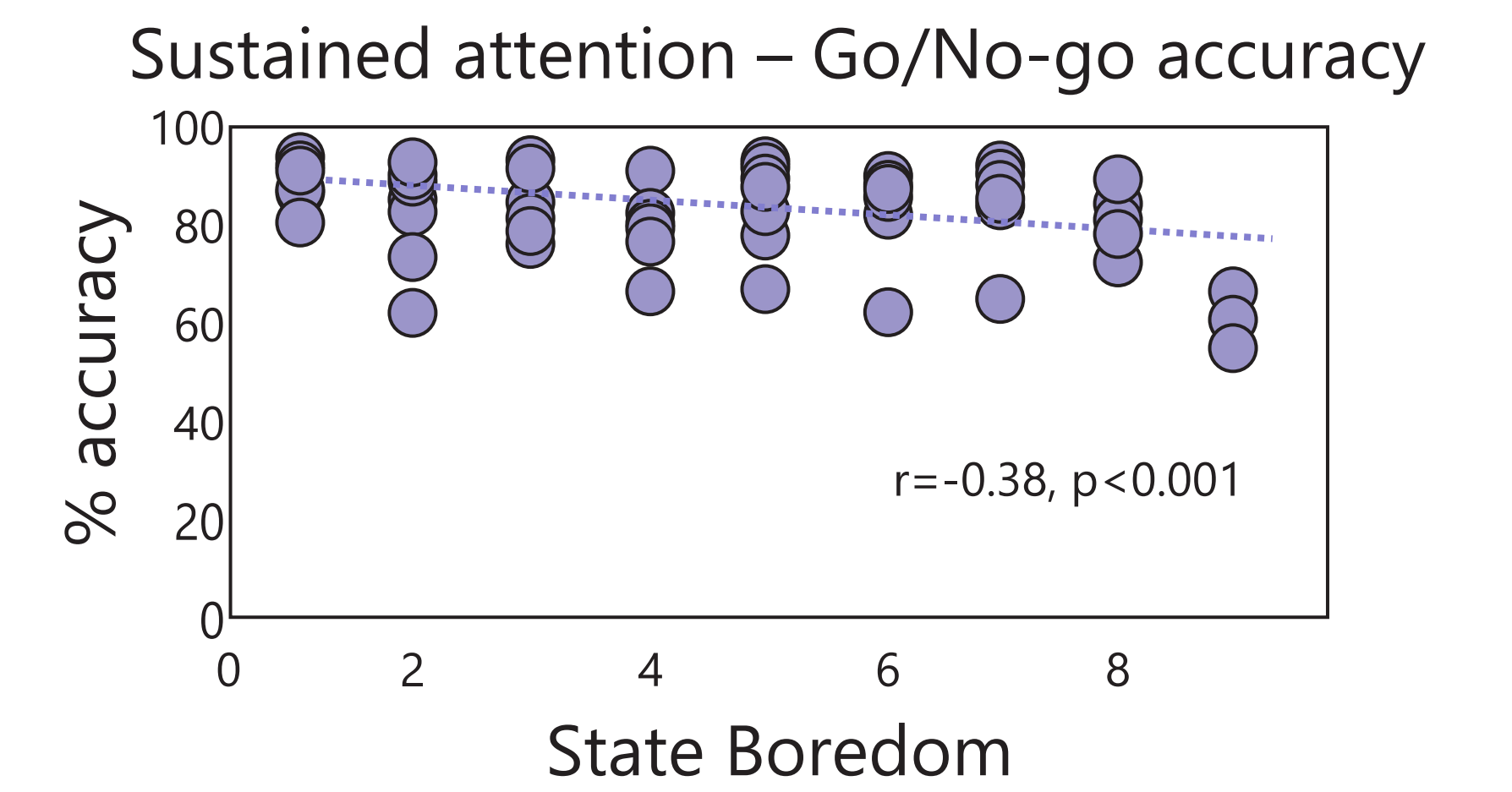
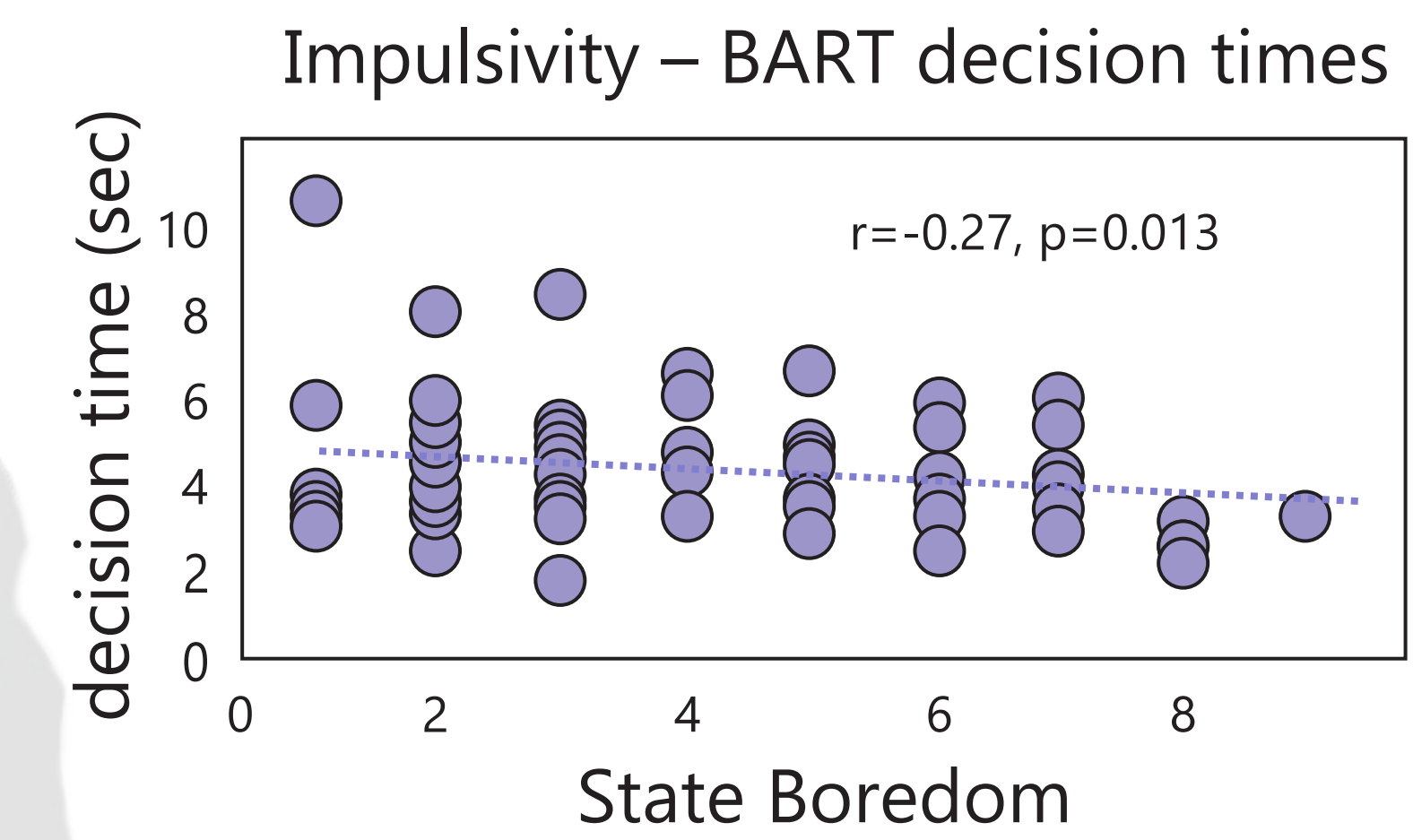
Feedback related P3 in the BART also suggested poor feedback processing associated with higher levels of boredom proneness.



BART-Feedback related P3



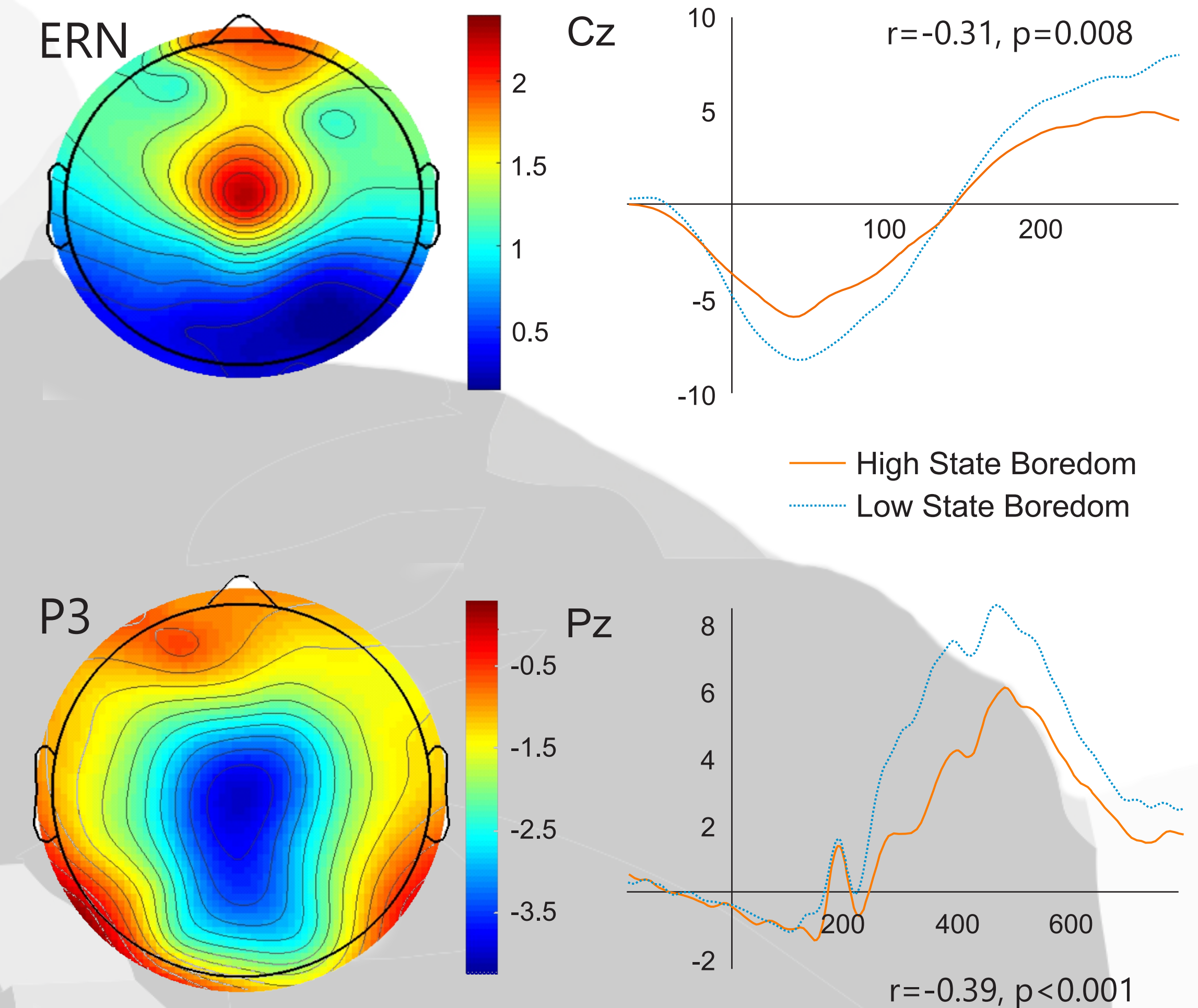
## State boredom influences on behaviour, the ERN and P3



State boredom ratings at end of the go/no-go task were associated with decreased magnitude of stimulus-locked P3 and response-locked error-related negativity (ERN).

These results support the notion that state boredom is associated with poor attentional control [3, 4].

### Go/No-go ERPs and State Boredom



## State and trait boredom, attention and decision making.

Results indicate that both trait and state boredom have associated differences in electrical brain activity.

Trait boredom was associated with decreased resting state alpha power and reduced feedback P3 in the BART.

State boredom on the other hand was associated with reduced P3 and ERN on our go/no-go task.

State boredom also showed moderate behavioural relations with impulsivity (shorter BART RTs) and poor attentional control (decreased accuracy on go/no-go task).

Future research will explore ways to differentiate impulsivity and risk-taking behaviourally.

## References and Acknowledgements

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[2] Doppelmayr, M., Klimesch, W., Stadler, W., Pollhuber, D., & Heine, C. (2002). EEG alpha power and intelligence. *Intelligence*, 30, 289–302.

[3] Hunter, A., & Eastwood, J.D. (2018). Does state boredom cause failures of attention?

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[4] Eastwood, J.D., Frischen, A., Fenske, M.J. & Smilek, D. (2012). The unengaged mind: Defining boredom in terms of attention. *Perspectives on Psychological Science*, 7, 482–495.