

Synchrony between self-reflection and social evaluation neural patterns during post-evaluation rest predicts internalizing what others think of us

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Introduction

Internalization of negative social feedback can be detrimental to self-perception and self-esteem.¹ Yet *how* feedback becomes internalized remains unclear.

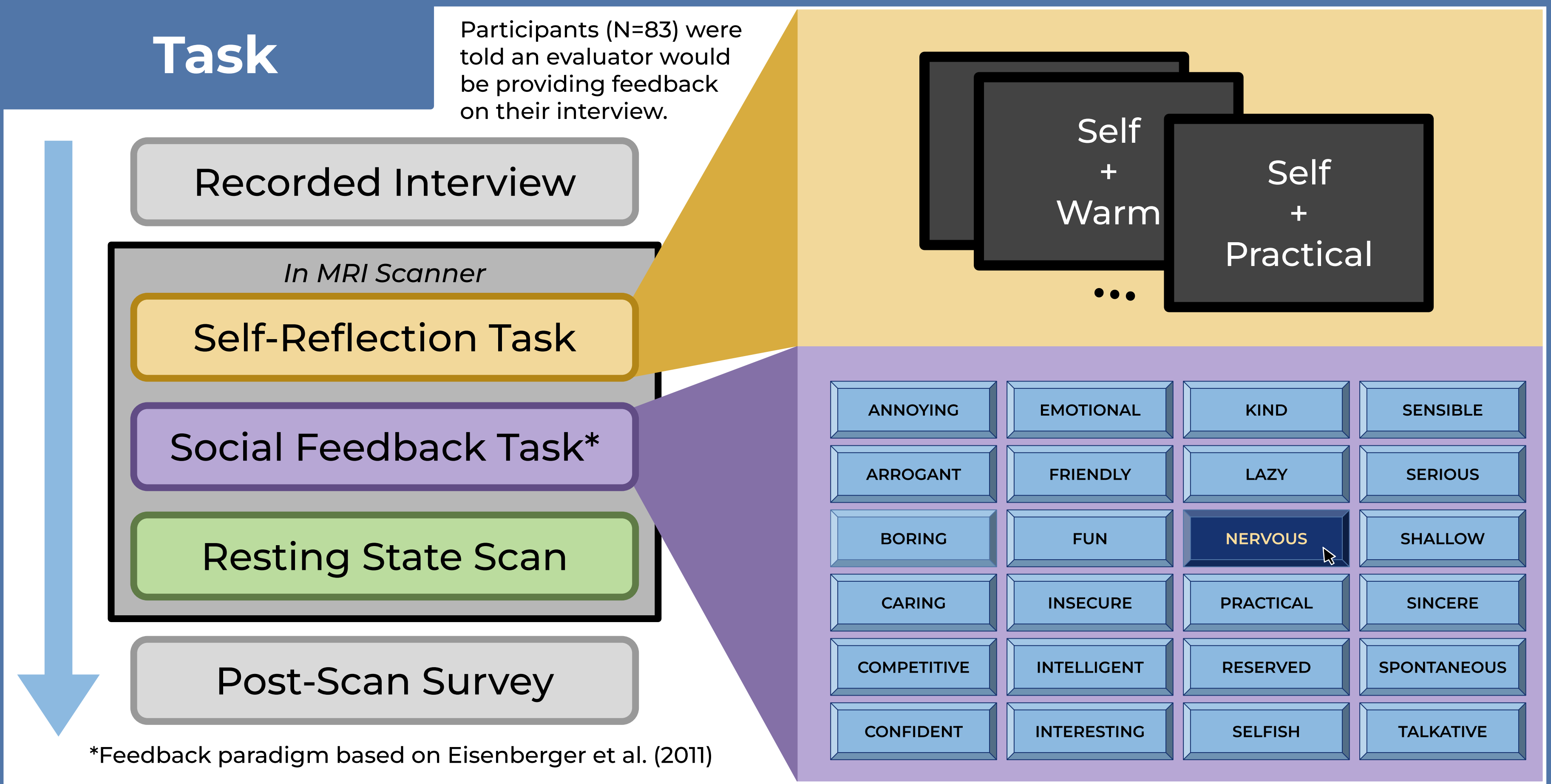
The default network is a neural system that may underpin the internalization process.

- The core subsystem is associated with self-reflection and the DMPFC subsystem is associated with social cognition.²
- Prior work has also shown increased activity in the DMPFC subsystem during social evaluation.¹

We examined how activity in these subsystems during post-evaluation rest may support internalization.

Task

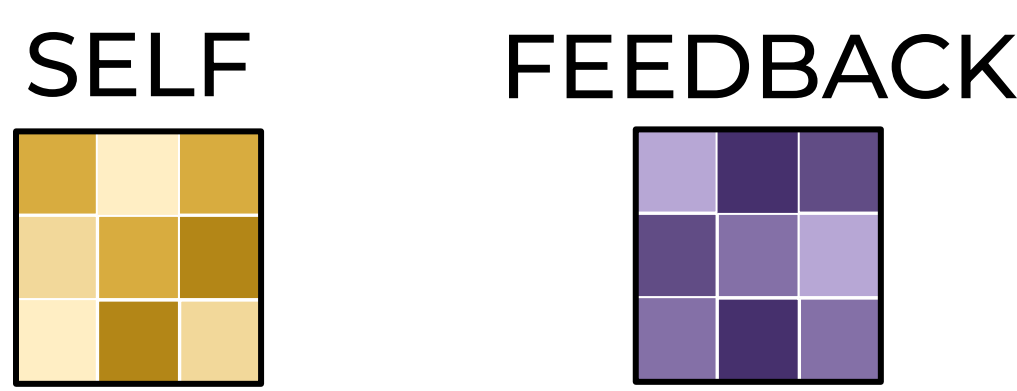
Participants (N=83) were told an evaluator would be providing feedback on their interview.



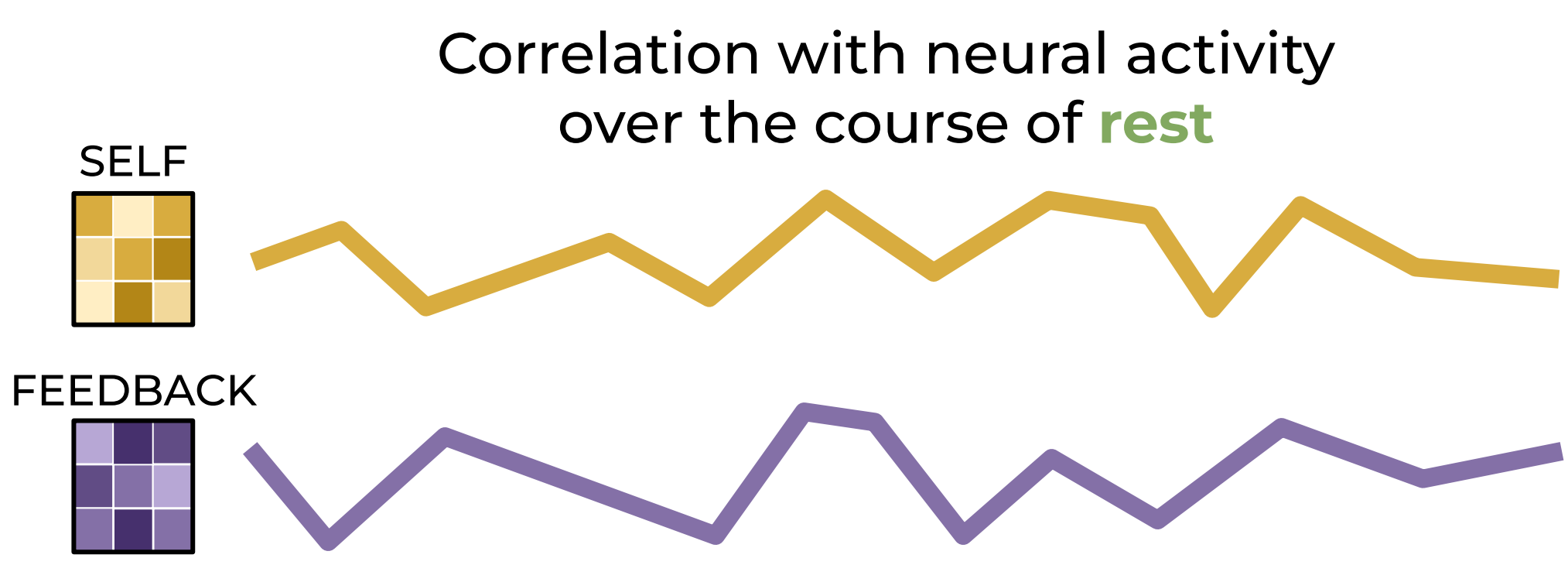
*Feedback paradigm based on Eisenberger et al. (2011)

Neural Templates

Patterns of neural activity during the **self-reflection** and **social feedback** tasks were used to establish neural templates for each participant.



We correlated these templates with **resting state** scan activity to quantify participant engagement in **self-referential thought** and **feedback reinstatement**.

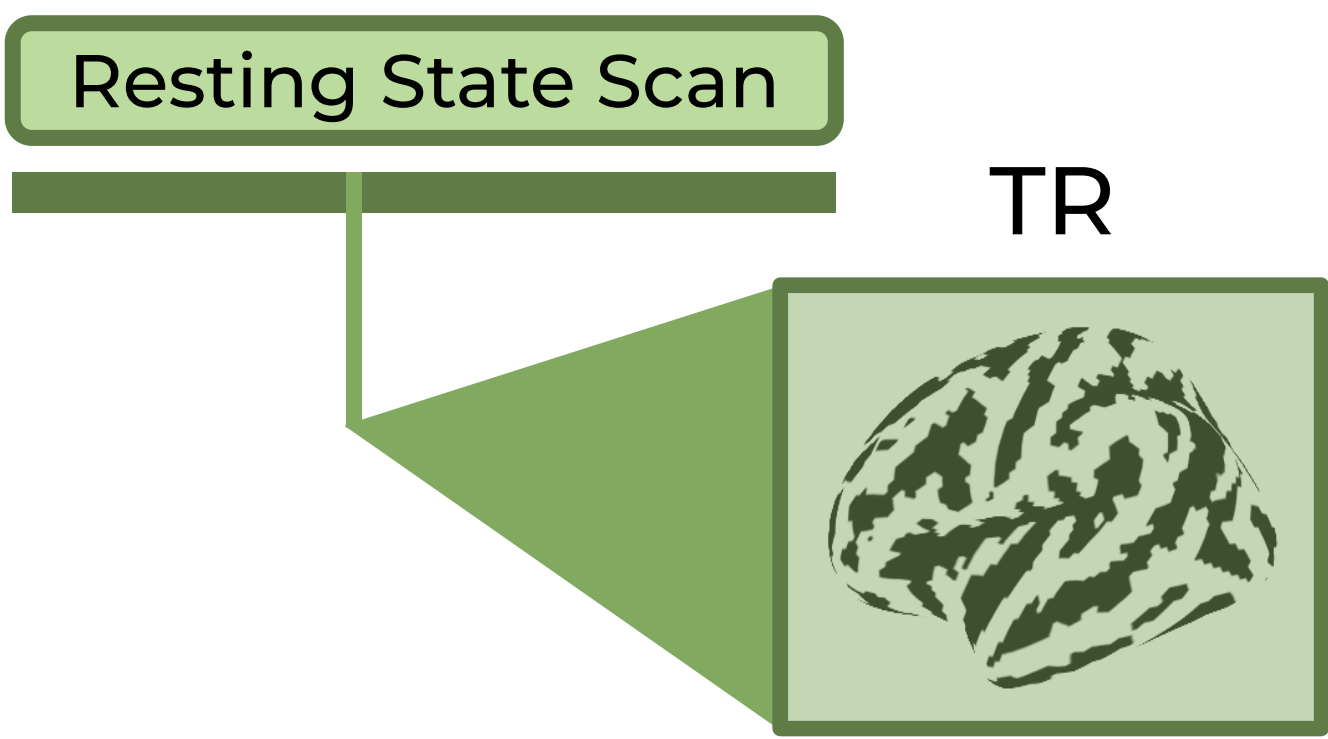


Metrics of Internalizing

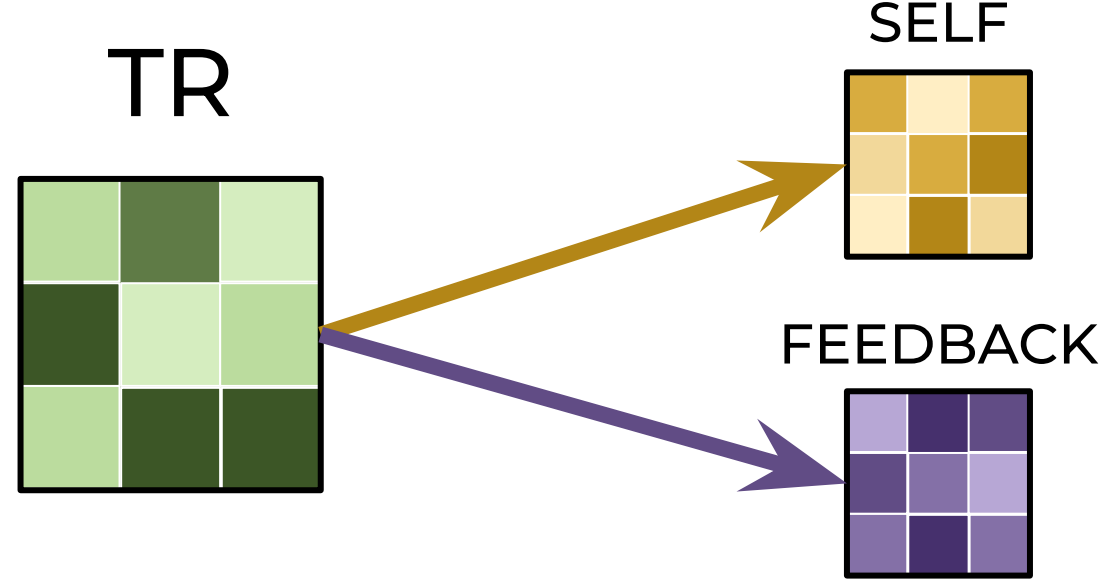
Subjective: Independent raters scored (0-4) the degree to which participants “took the negative feedback to heart” in free-response descriptions of their thoughts during rest.

Objective: We calculated the proportion of negative traits out of all traits recalled as a measure of participants’ memory bias toward negative social feedback.

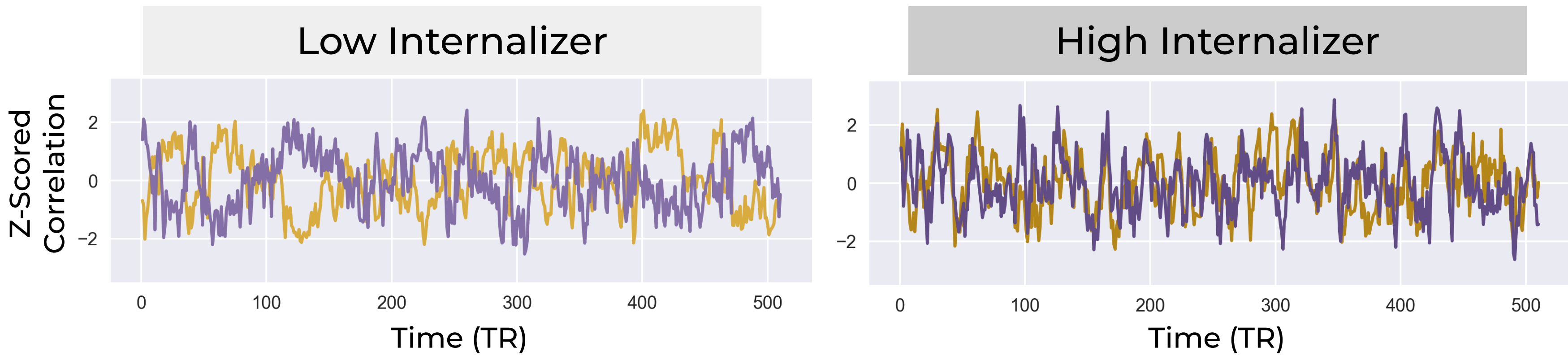
Results



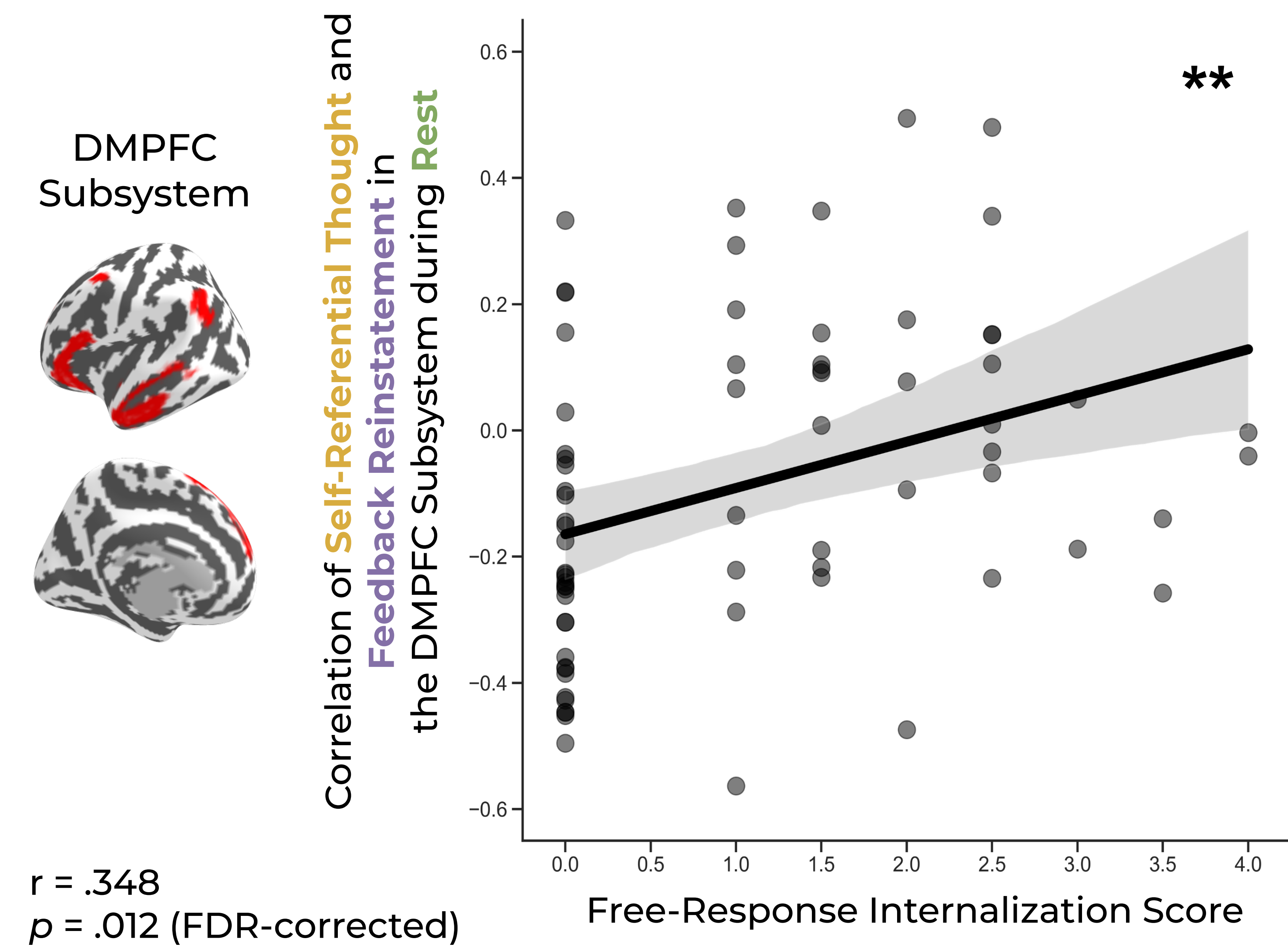
Correlation of **Resting State** Activity with Neural Templates



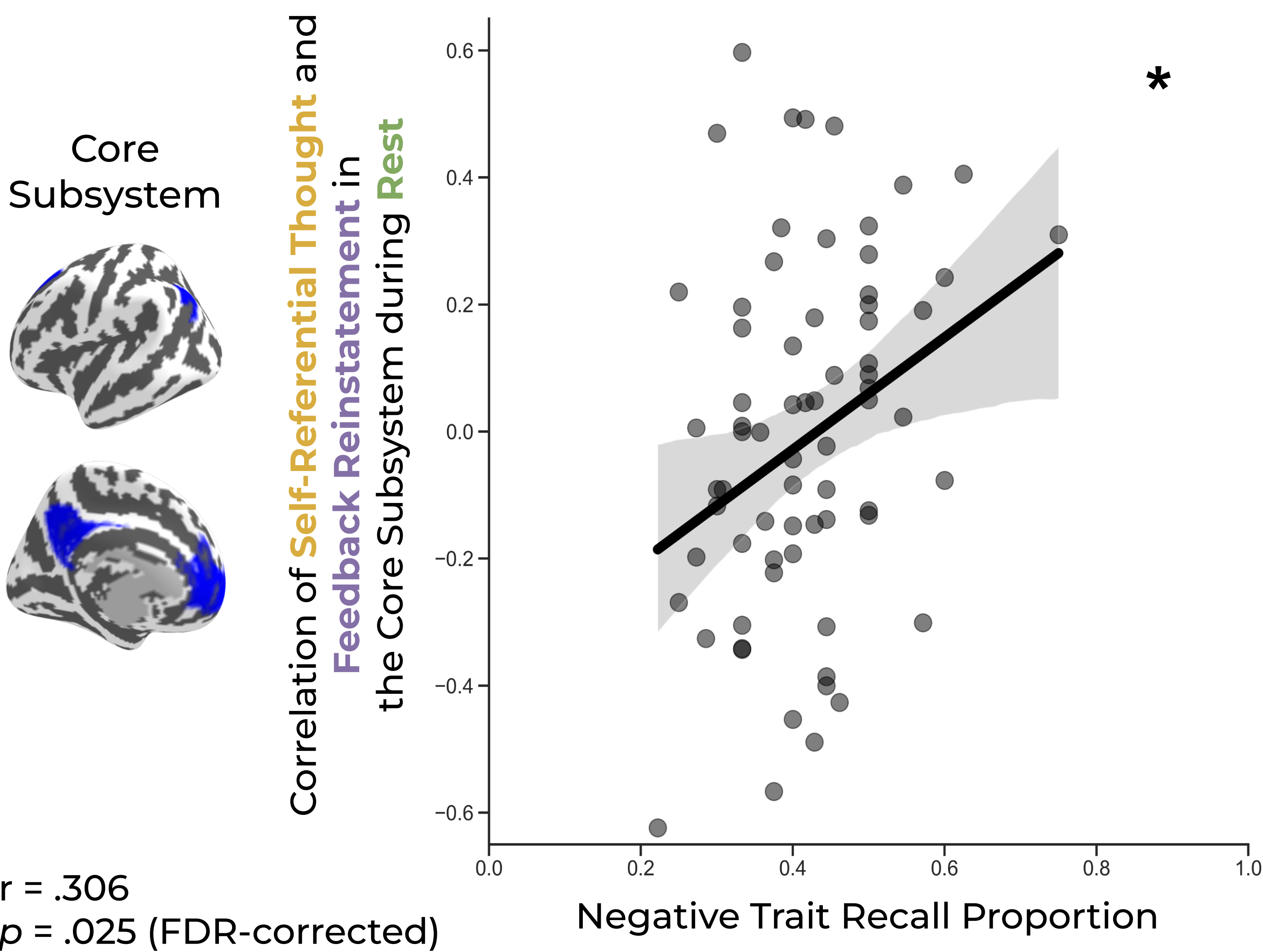
Correlations over the Timecourse of the **Resting State** Scan



Subjective



Objective



Conclusion

Collectively, these results provide insight into the internalization of negative social feedback and suggest distinct neural processes supporting the more objective social memory consolidation and recall process versus the more subjective affective reaction to the feedback received.

Citations

1. Eisenberger, N. I., Inagaki, T. K., Muscatelli, K. A., Byrne Haltom, K. E., & Leary, M. R. (2011). The neural sociometer: brain mechanisms underlying state self-esteem. *Journal of cognitive neuroscience*, 23(11), 3448-3455.
2. Buckner, R. L., & DiNicola, L. M. (2019). The brain's default network: updated anatomy, physiology and evolving insights. *Nature reviews neuroscience*, 20(10), 593-608.

Acknowledgments

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