

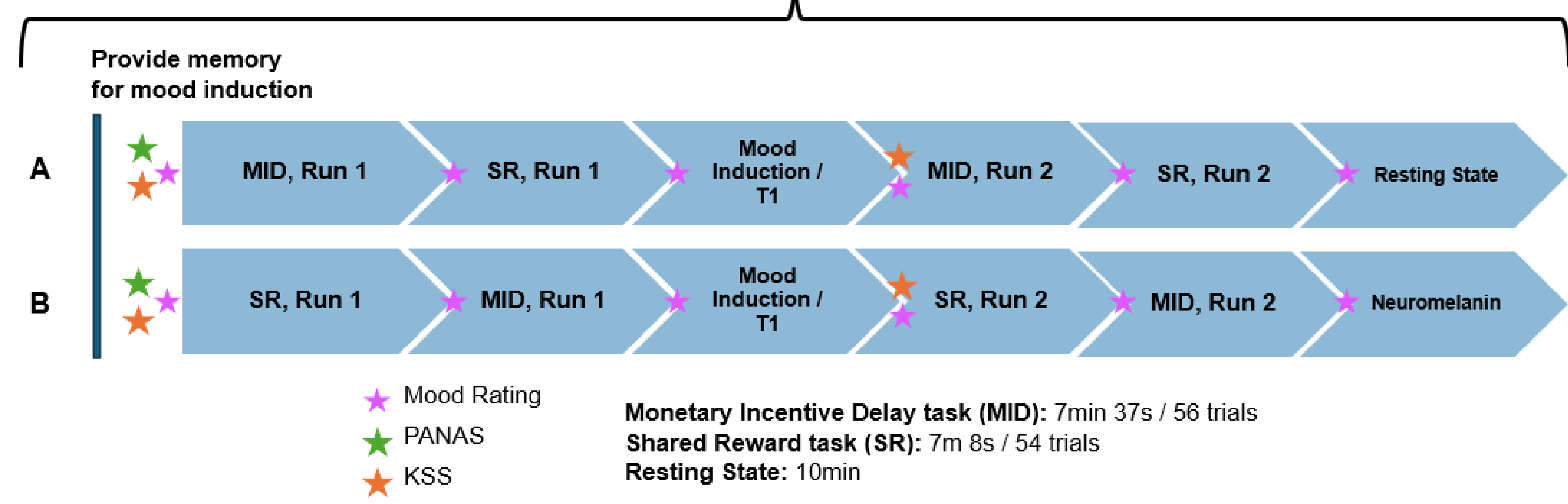
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Night Owls Scan Club

N=4
Every 3-4 days:



Research Questions

Does the fMRI Reward Response Reflect Trait or State Variance?

The reward response is frequently studied cross-sectionally as a biomarker for disorders like MDD or SUD.

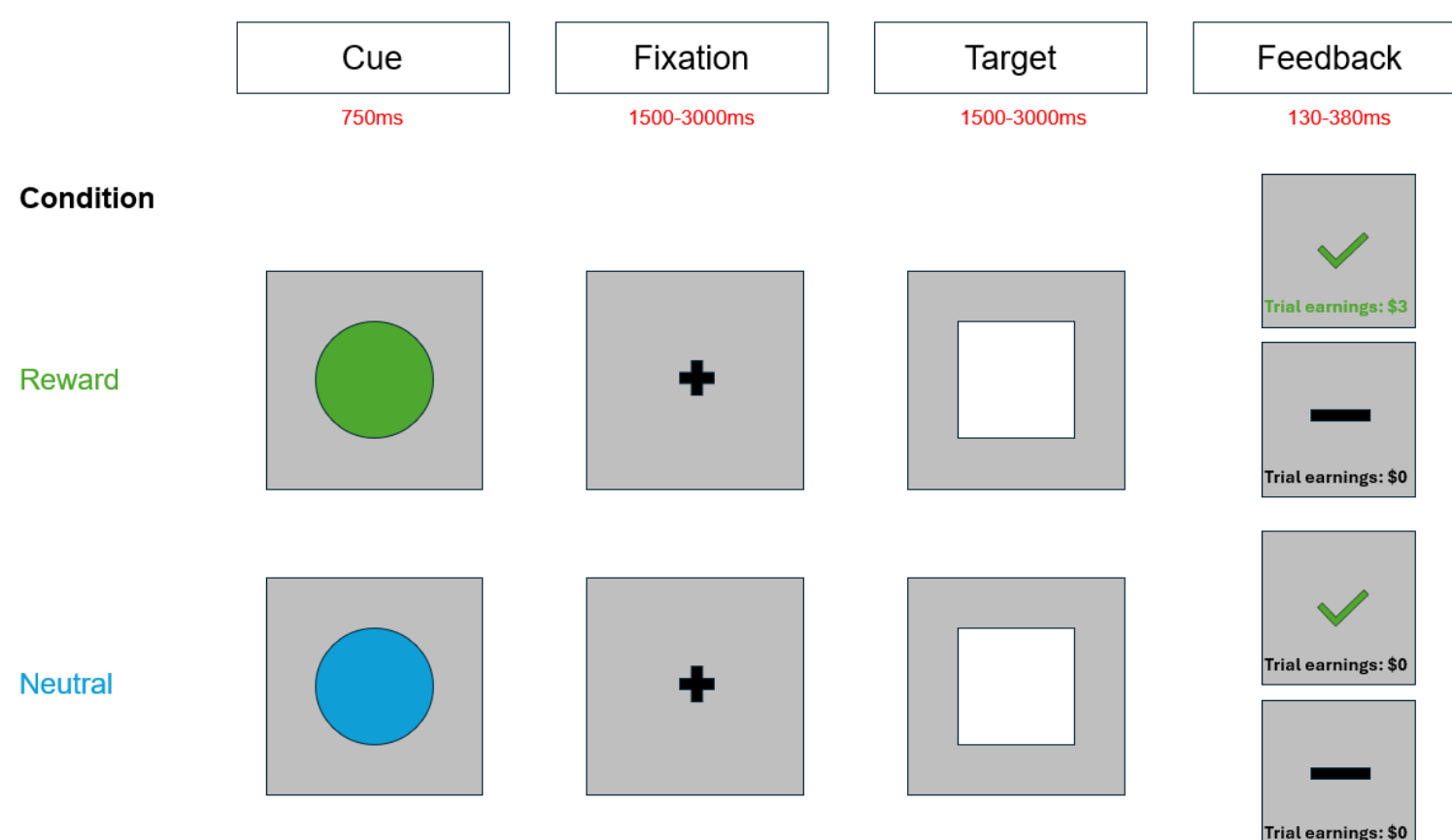
Trait Stability: To be a useful clinical biomarker, the reward response must be stable within individuals. Examined test-retest reliability and change over time.

State Factors: If not stable within persons, the reward response may reflect important intraindividual factors like mood and variance. Examined how the reward response changed across time and following a mood induction.

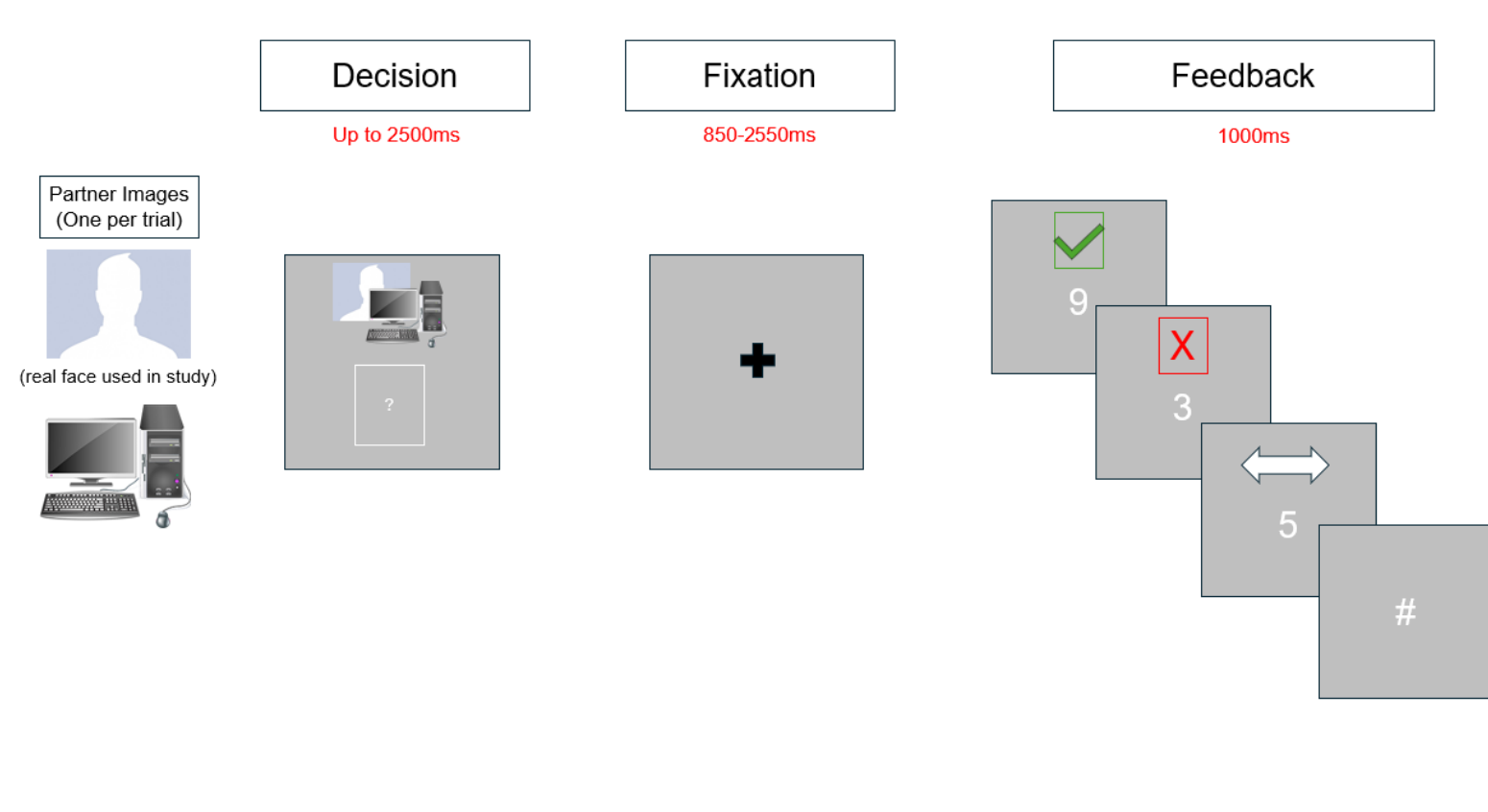
Precision Imaging Methodological Factors: Examined how multi-echo sequencing, a multivariate brain reward signature (BRS; rather than univariate mask), and number of trials within task runs influenced results.

fMRI Tasks

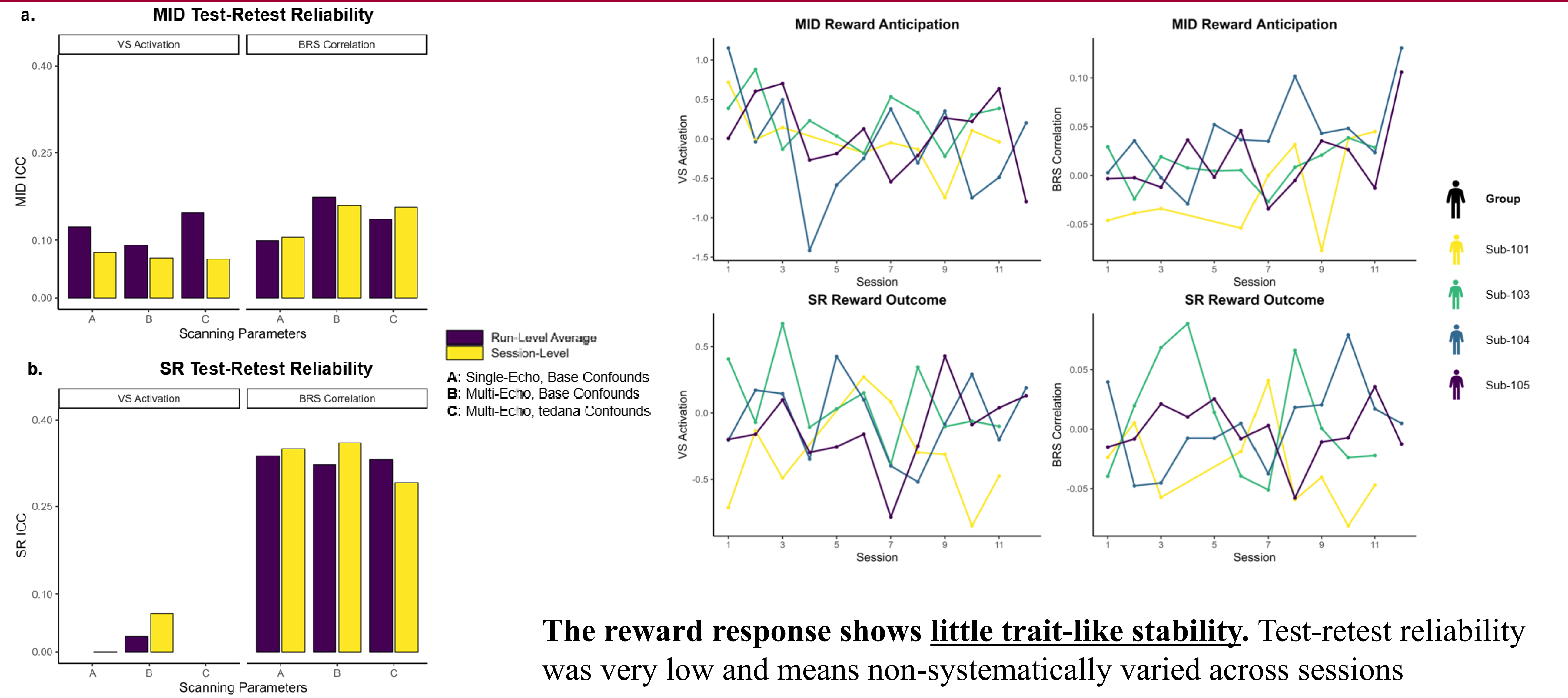
Monetary Incentive Delay: Reward Anticipation



Shared Reward: Reward Feedback

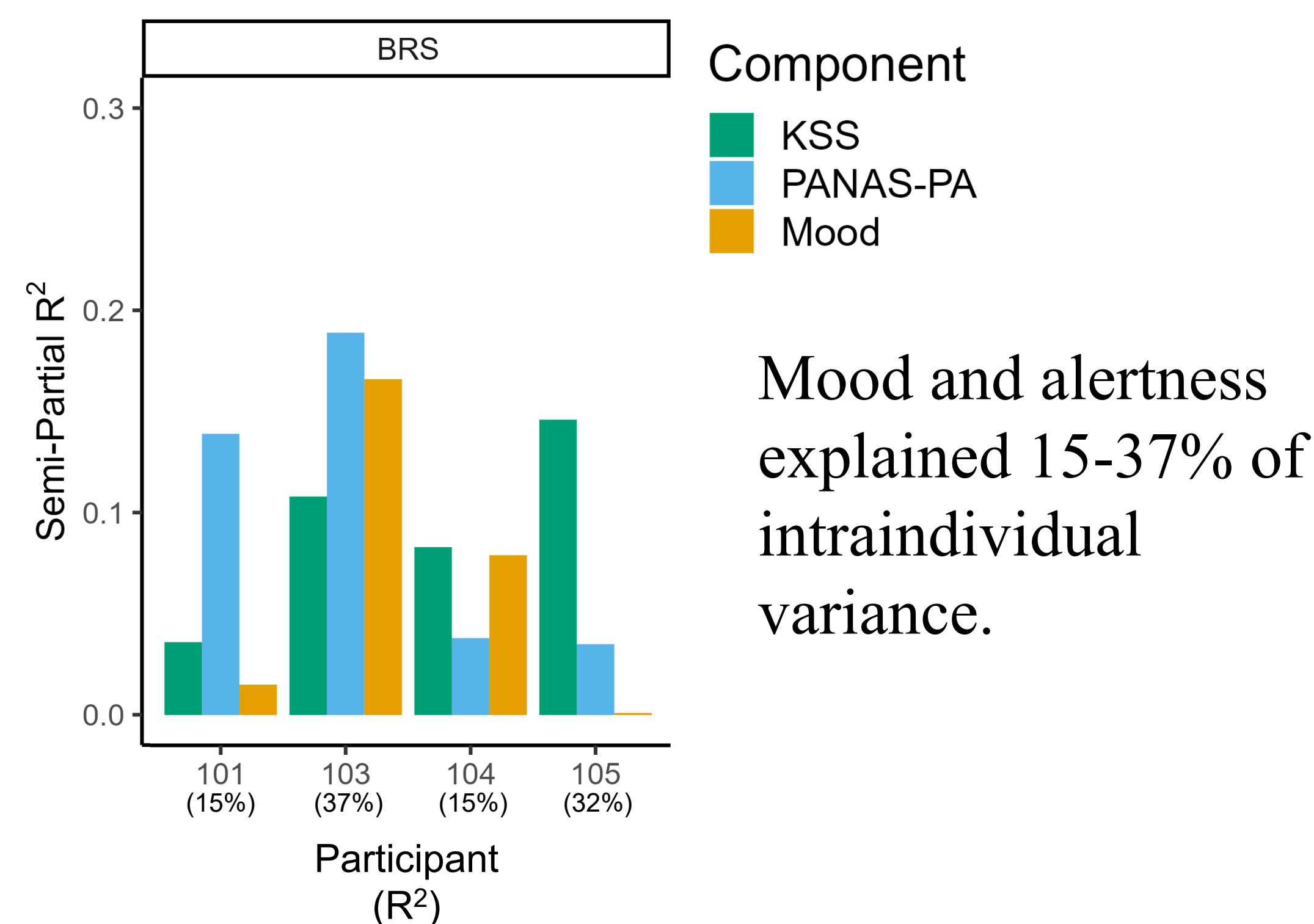


Trait-Like Stability

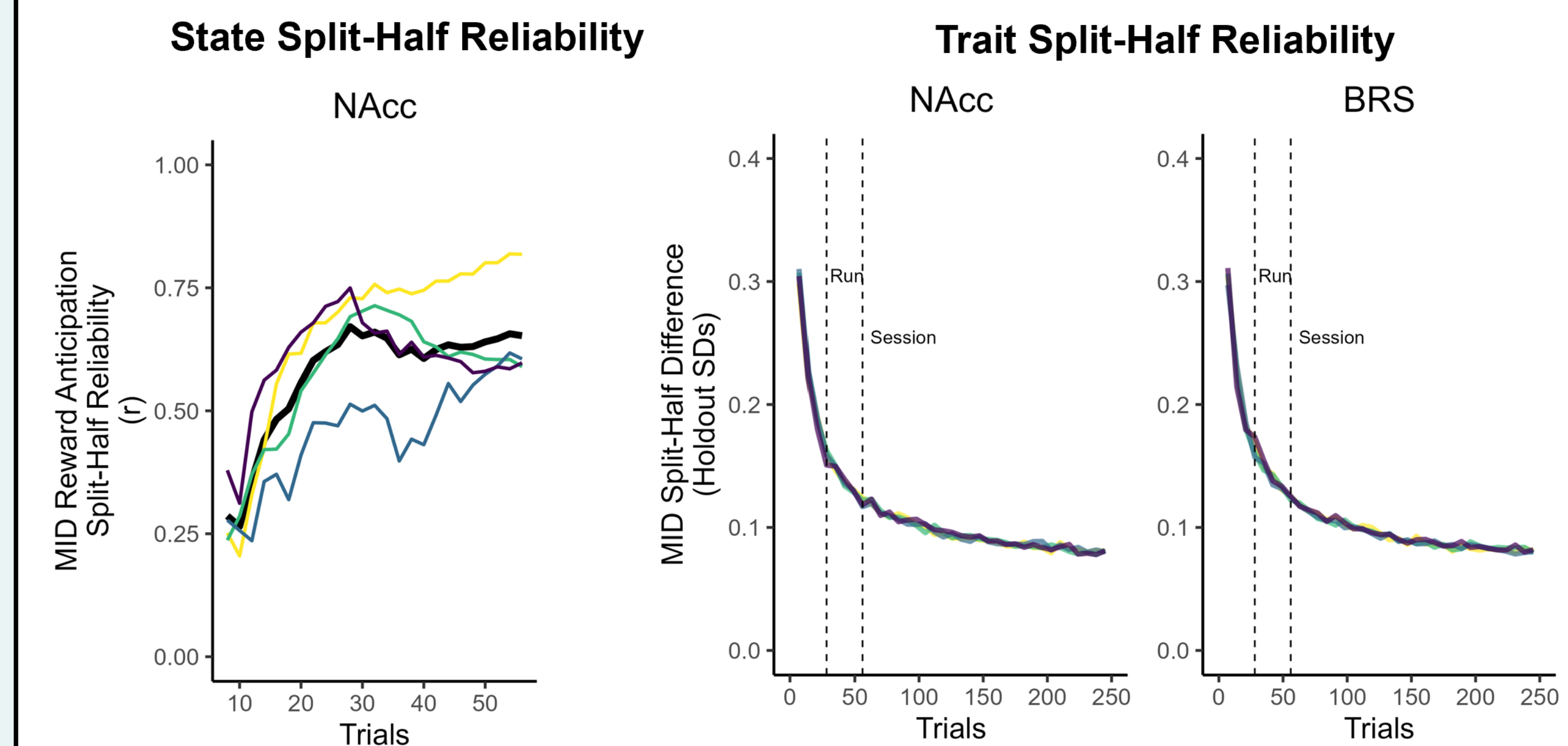


State-Like Intraindividual Variation

MID: Intraindividual Variance Explained



Trial-Level Split-Half Reliability



Precision Imaging Methodological Factors

Multi-Echo sequencing and denoising showed **no** measurement benefit, potentially due to focus on subcortical task response. The multivariate reward signature (BRS) was more reliable and had stronger behavioral associations than a univariate mask. 50-60 task trials are needed for adequate internal consistency, many more than typically collected