



Background

Working memory prioritizes action-relevant information (Trentin et al., 2023, 2024; Heuer & Schubö, 2018).

However, it is unclear whether action plans prioritize retrieved long term memory (LTM) representations.

If so, this would reveal that:

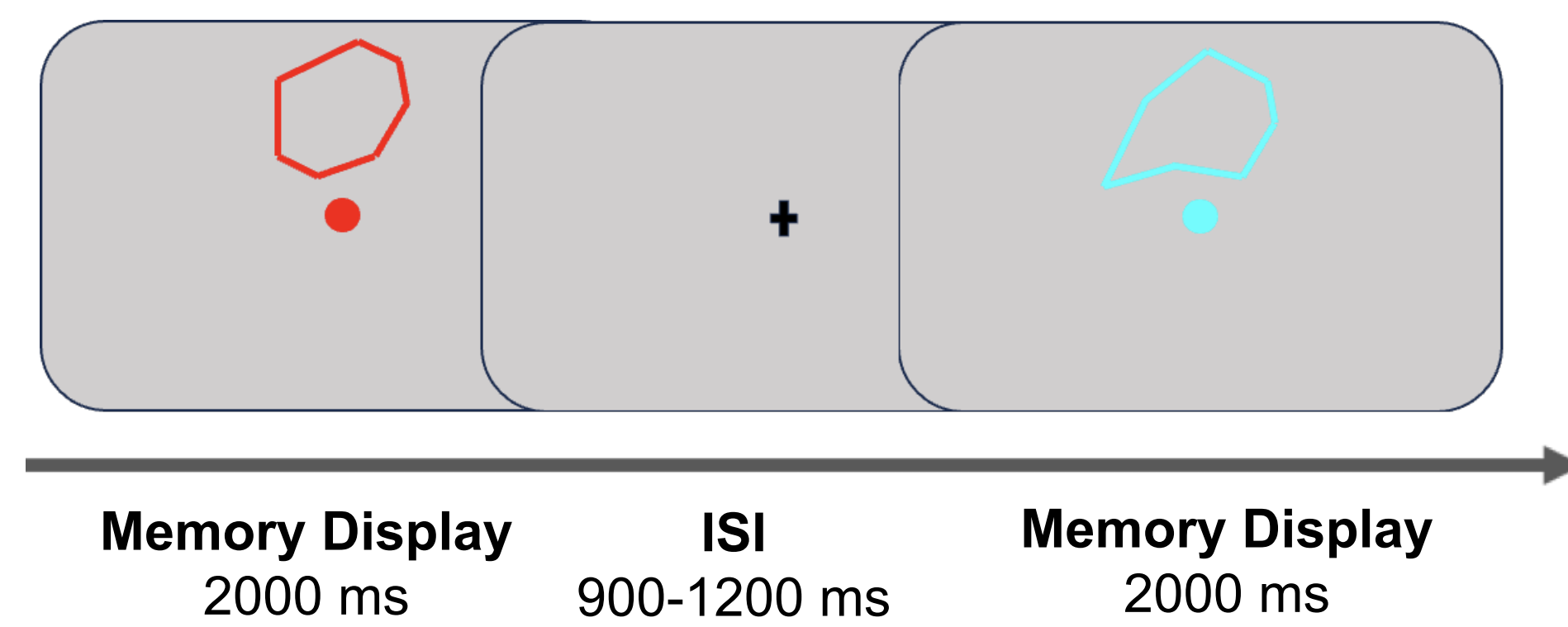
- 1) Action plans serve as a control signal for memory prioritization beyond WM.
- 2) Memory reactivation can be modulated not only via explicit instructions regarding what to retrieve (e.g., retrieve vs. suppress; Anderson & Green, 2001), but also via implicitly inferred task demands.

How do action plans affect LTM?

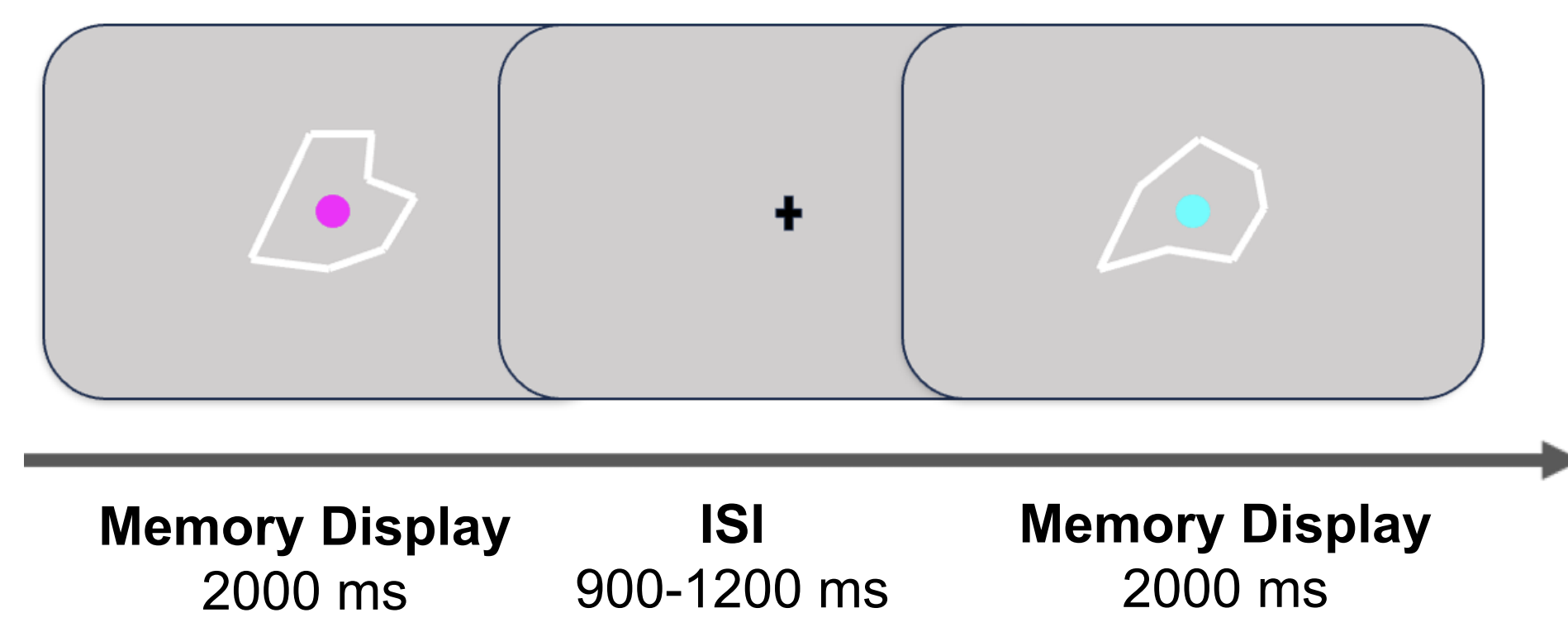
Experimental Procedure

Learning Phase

Experiment 1



Experiment 2

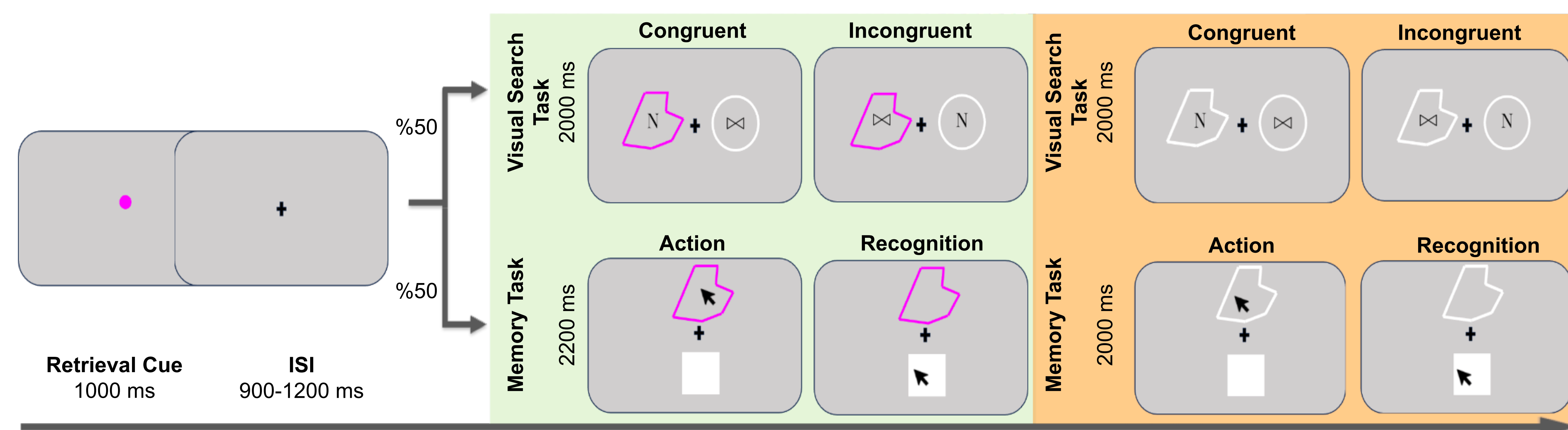


Experimental Phase

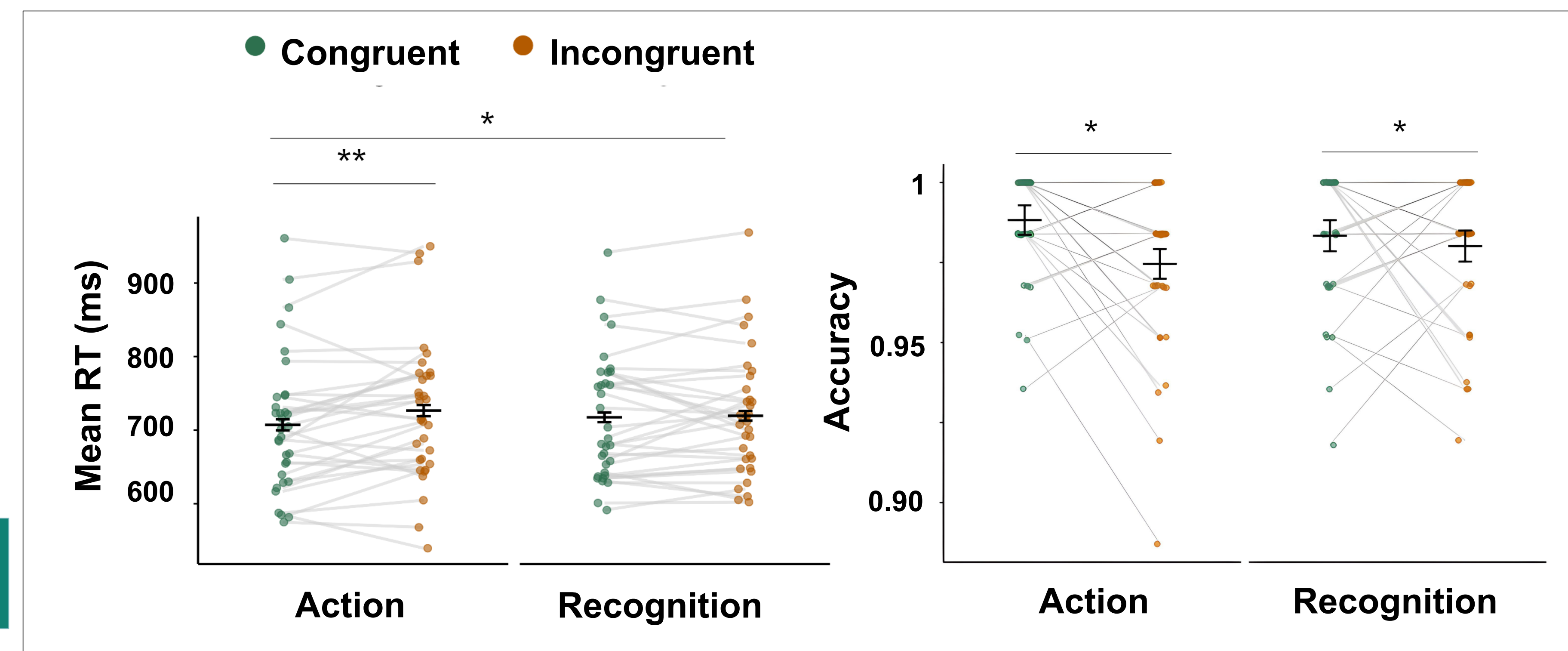
2x2 Design
Block Type: Action vs Recognition
Congruency: Congruent vs Incongruent

Experiment 1

Experiment 2

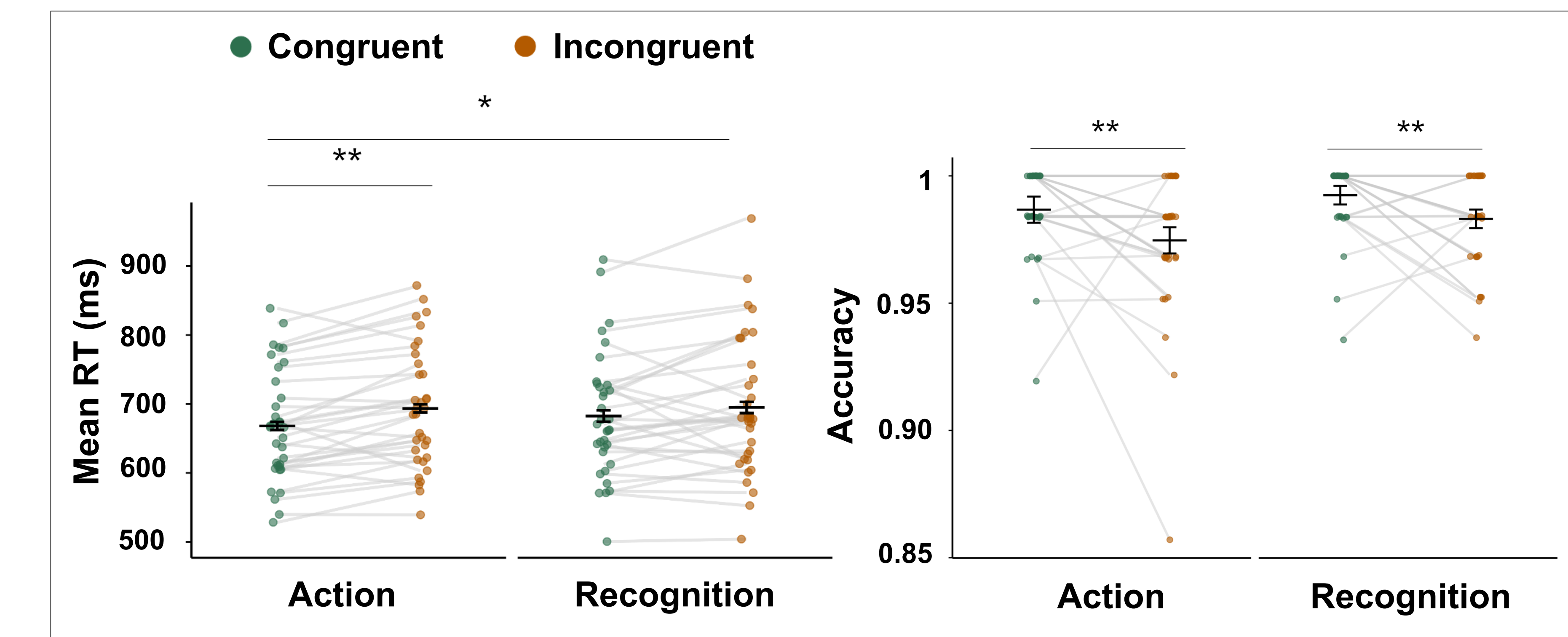


Experiment 1 Results (N = 34 each)

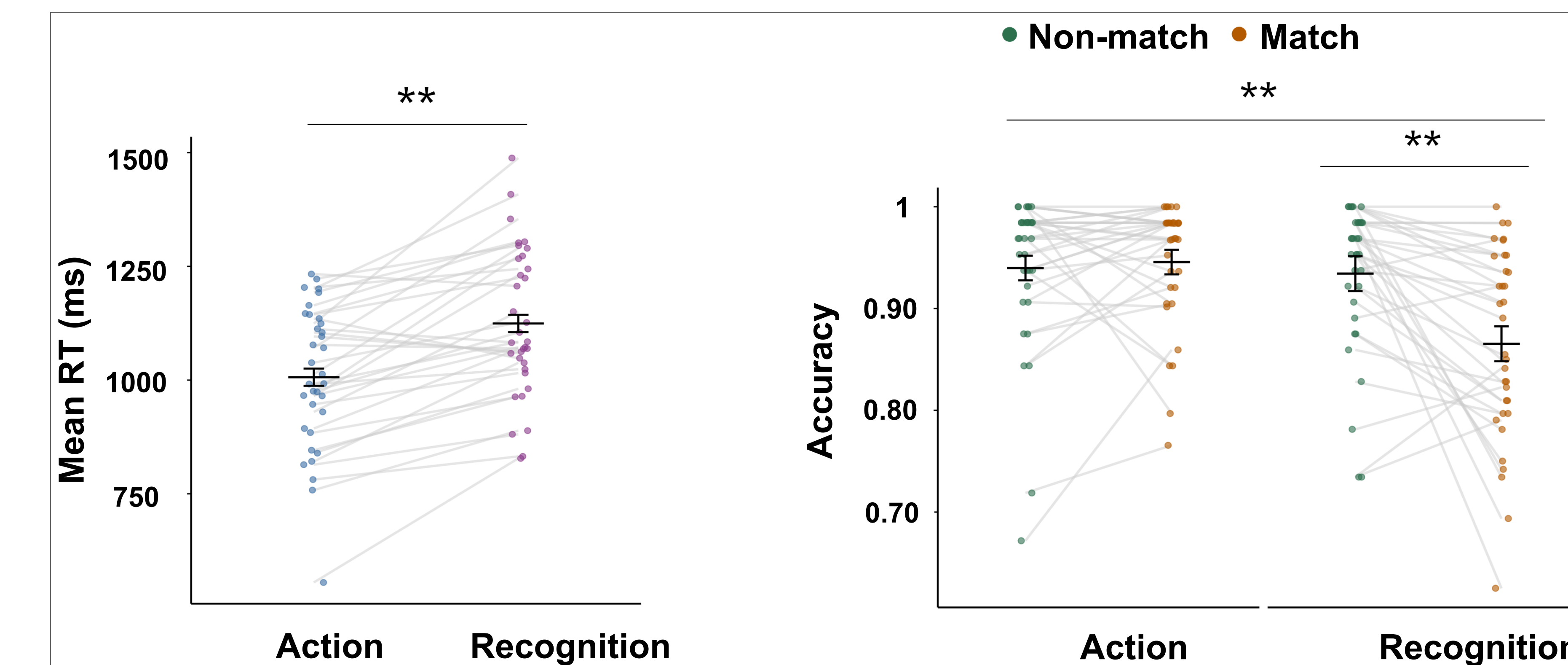
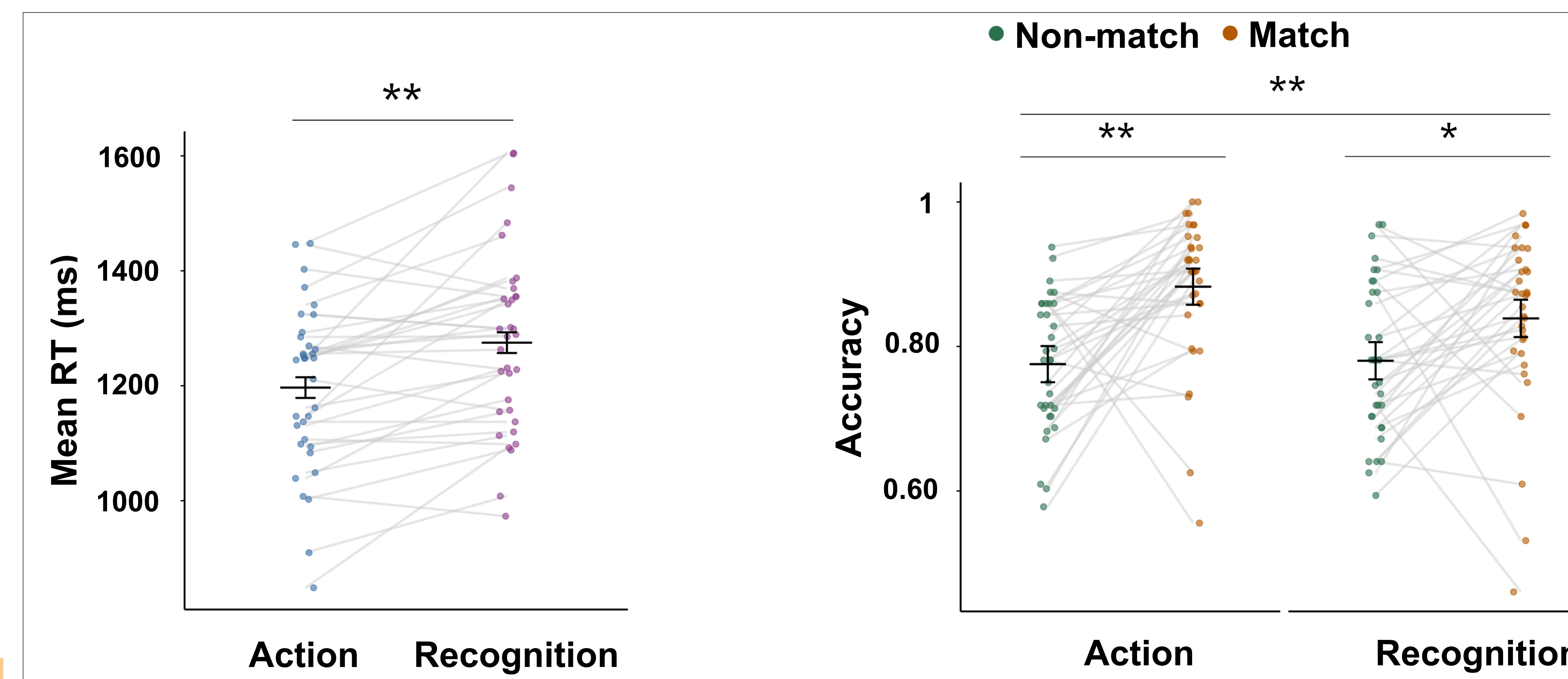


Experiment 2 Results (N = 34)

Visual Search Task



Memory Task



LTM items associated with action plans more strongly bias attention.
No speed-accuracy trade-off.

Action plans selectively improved accuracy on match trials.

Conclusion

Action plans **prioritize** retrieved LTMs.

Action-relevant memories **biased** external attention more strongly.

This effect emerged without explicit retrieval instructions.