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SEMANTIC AND SYNTACTIC PREDICTION IN READING AND STATISTICAL LEARNING: AN fMRI STUDY IN DYSLEXIA



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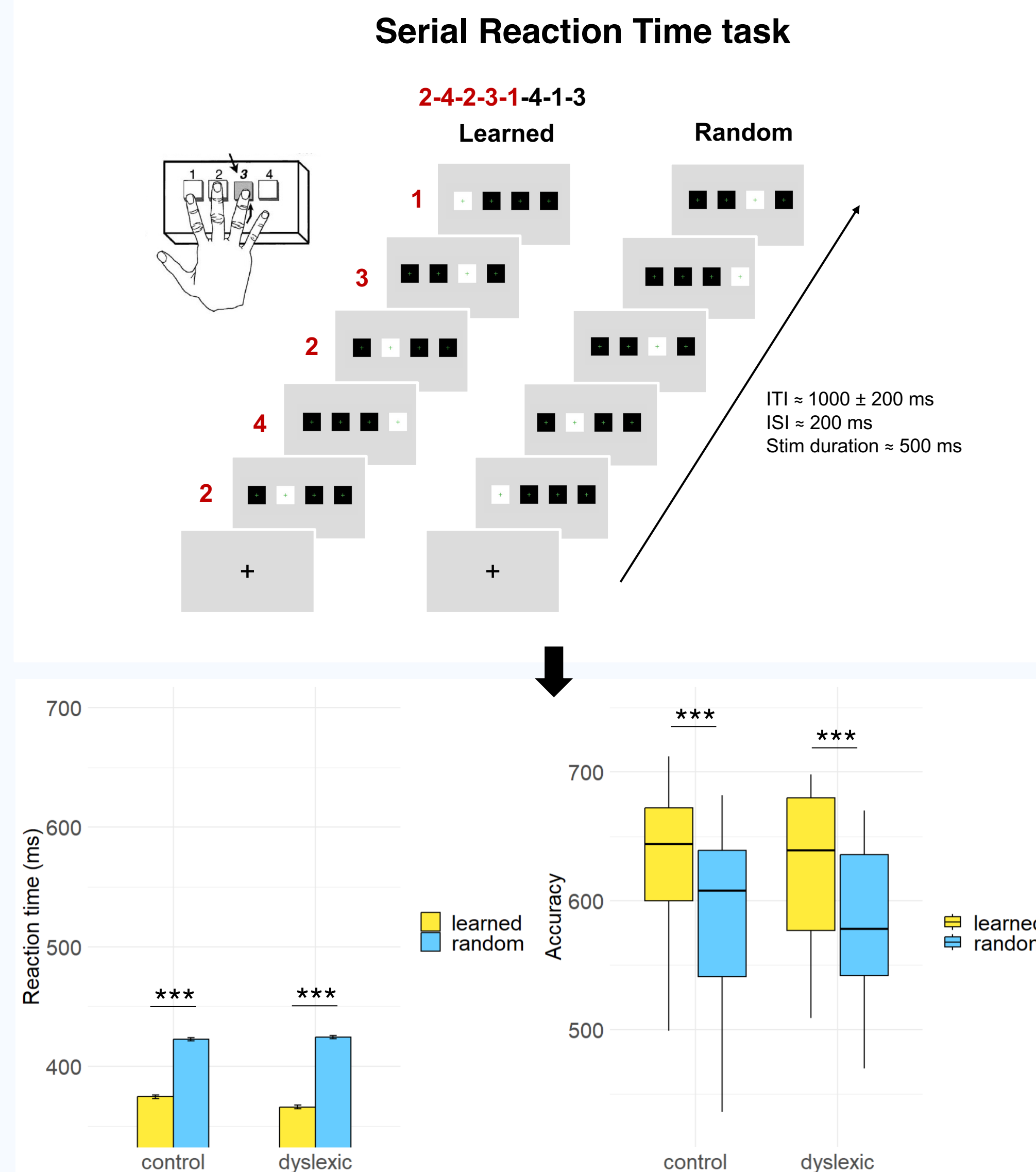
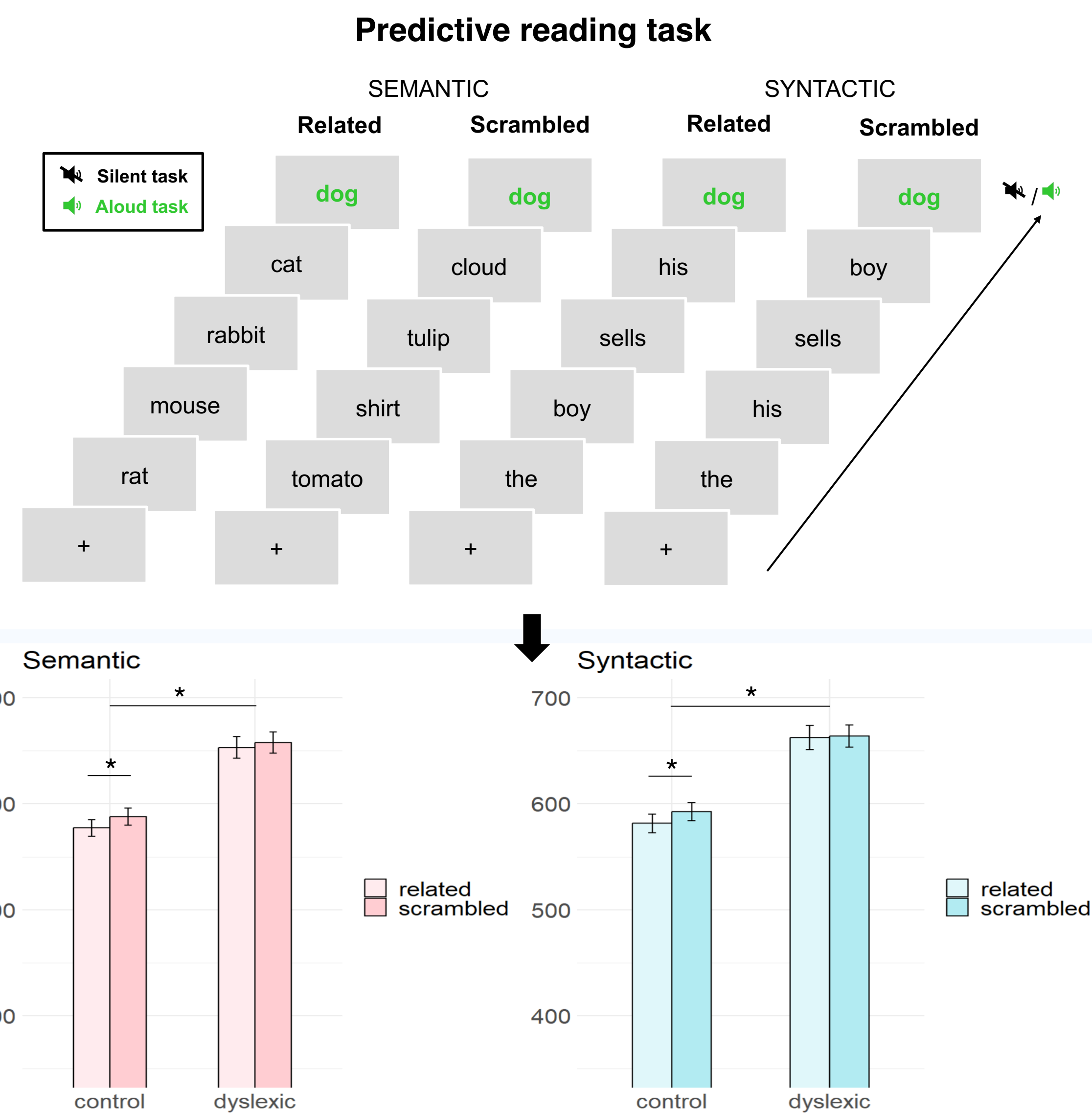
BACKGROUND

- The predictive brain has become a key concept in language research and a dominant theoretical framework for understanding how the brain works. Psycholinguistic and neuroimaging research highlights the importance of anticipatory mechanisms in language comprehension, language production, and reading.
- In addition, a growing number of studies have used statistical learning (SL) paradigms to investigate whether SL abilities can explain inter-individual differences in language processing and reading abilities.

- To focus specifically on the neural network underlying semantic and syntactic predictive processing in reading
- To understand whether making semantic and syntactic predictions in reading relies on domain-general SL abilities AND whether people with reading impairments (dyslexia) show deficits in these domains.

METHODS

BEHAVIORAL RESULTS

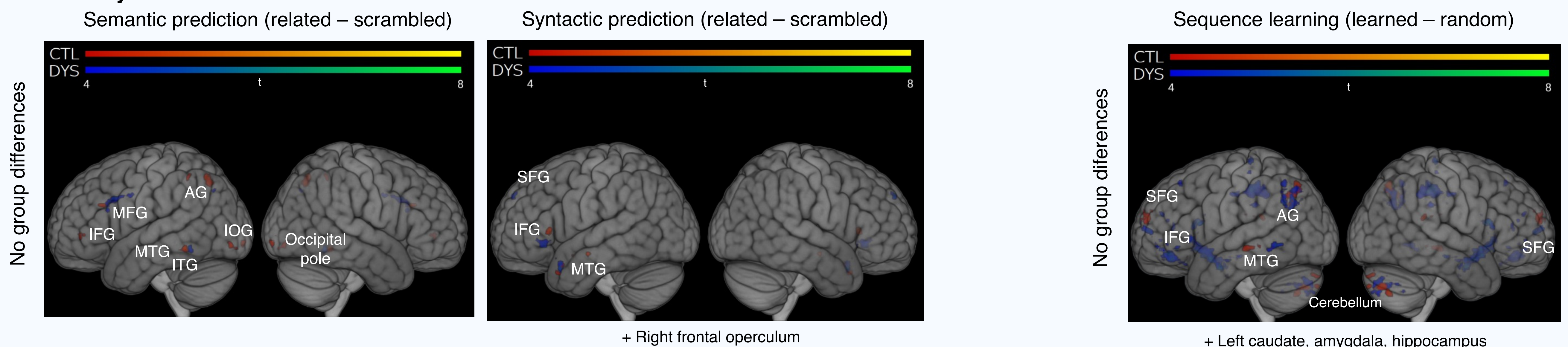


25 normo-reader students (CTL)
25 dyslexic students (DYS)



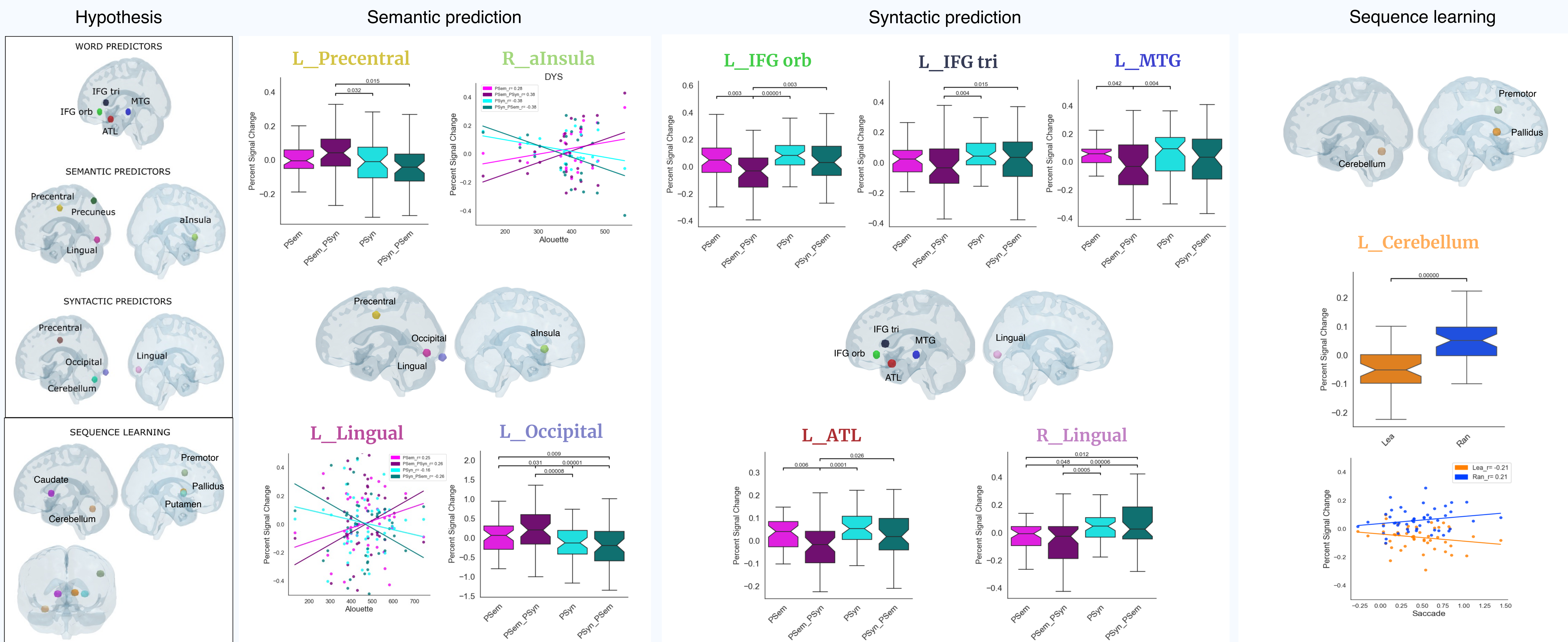
MRI Scanner 3T Tesla
Centre IRM-INT@CERIMED, Marseille

1 Whole brain analysis



fMRI (PRELIMINARY) RESULTS

2 ROI analysis



- Different neural networks underlying semantic and syntactic predictive processing in reading.
 - Dyslexic students seem to be as good predictors as control students in predictive reading and in the SL task.
- ❓ Making semantic and syntactic predictions in reading relies on domain-general SL abilities?

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Poster available on



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