

Individual differences in children's response to explicit instruction: Effects of age and memory ability

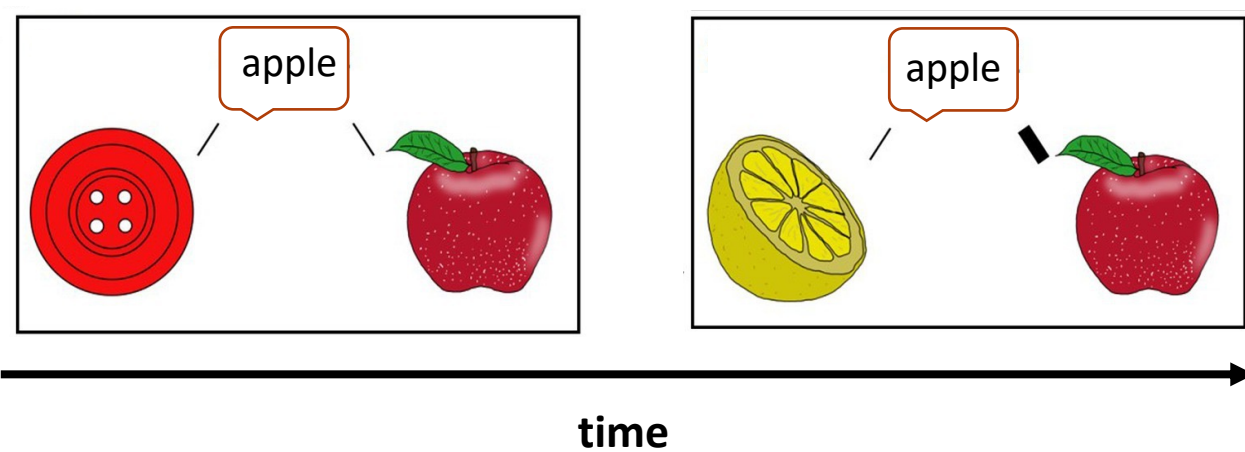
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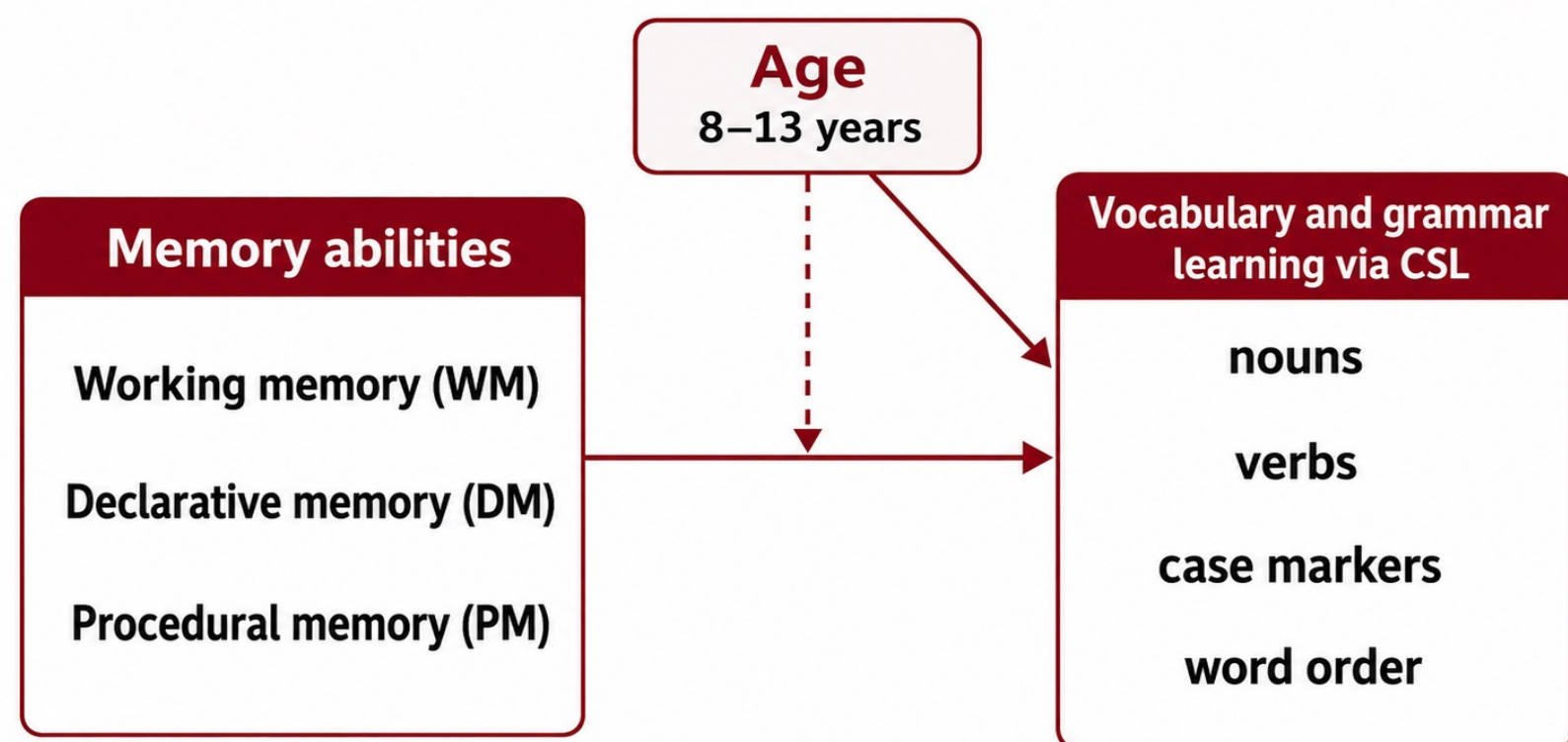
INTRODUCTION

➤ Cross-situational statistical learning (CSL) contributes to vocabulary and grammar acquisition (Rebuschat et al, 2021).



➤ “The-older-the-better” trend observed in previous CSL studies (e.g., Zhang et al., in press)
 ➤ **Ages 8-13** represent a key developmental period marked by substantial cognitive growth.

➤ Aim : **Under explicit instruction**



MATERIALS & METHODS

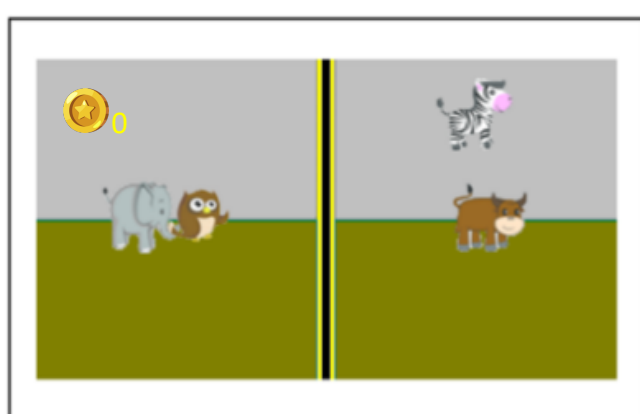
1 N = 50; Age 8-13

Pre-exposure Explicit Instruction on grammar (the verb-final word order) and a recall check



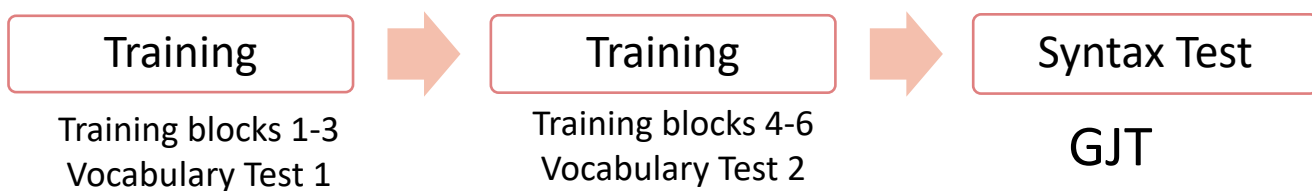
Task1: CSL task

Observe trial example



Hear artificial sentence example

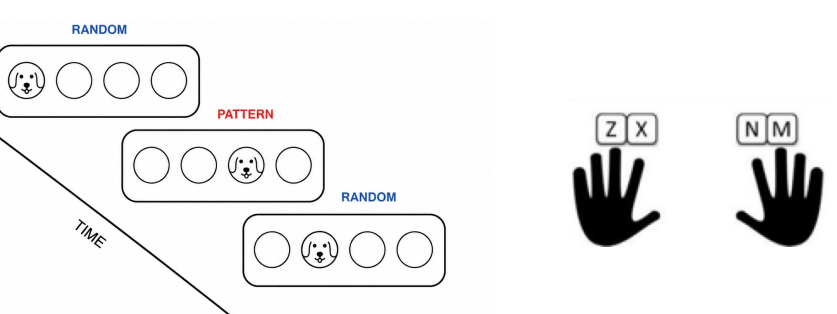
cheelow tha bimdah noo dingep.
 Animal₁ SUBJECT Alien₂ OBJECT pushes
 'Animal₁ pushes animal₂'



Task2: CVMT task (DM) Old or new?

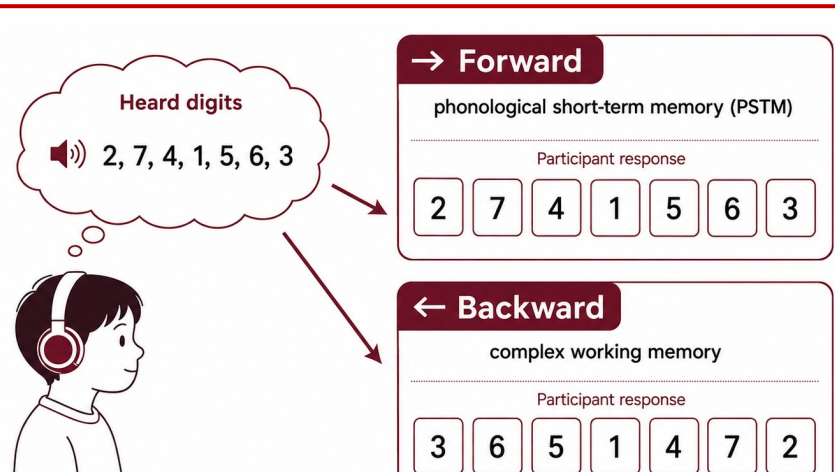


Task3: ASRT task (PM)



Task4: Digit span forward and backward (WM)

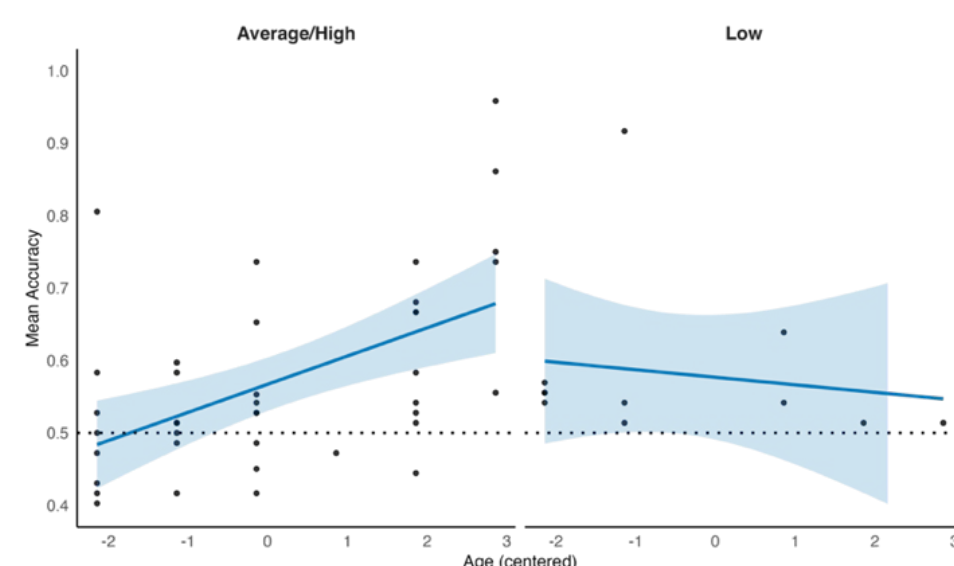
Forward: Phonological short-term memory (PSTM)
 Backward: Complex WM



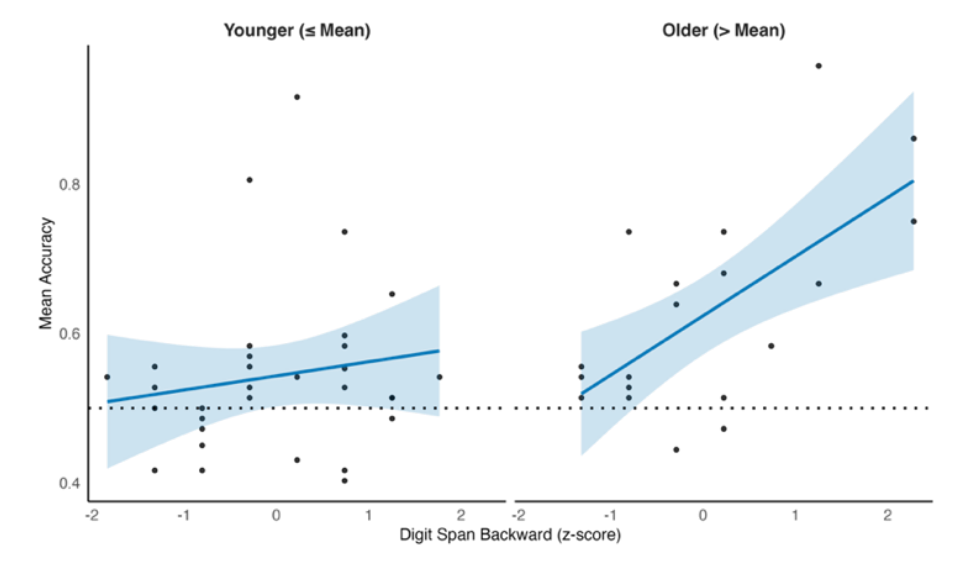
RESULTS

➤ What predicted overall learning?

- ✓ Block
- ✓ Age × PM

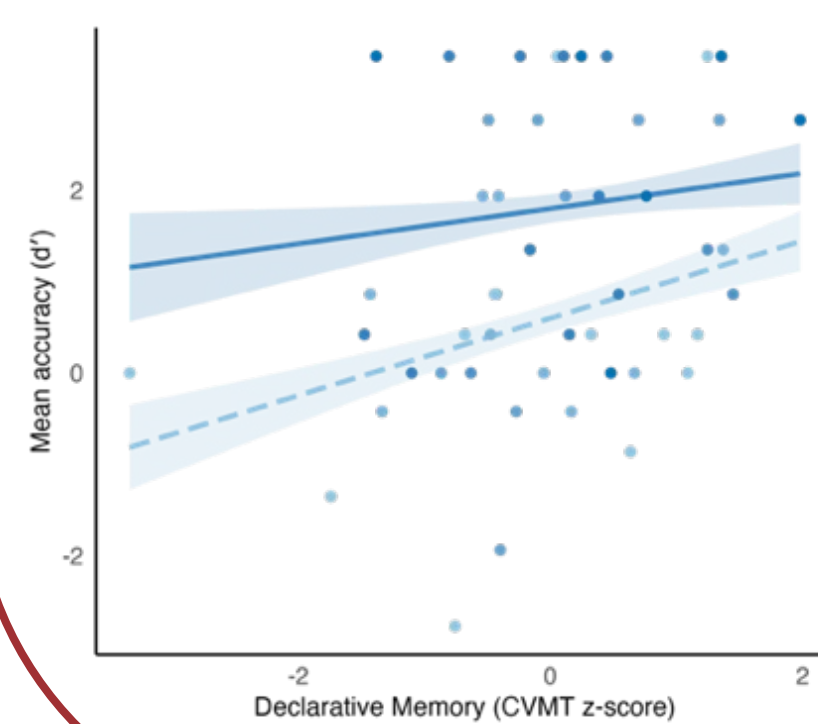


✓ Age × complex WM



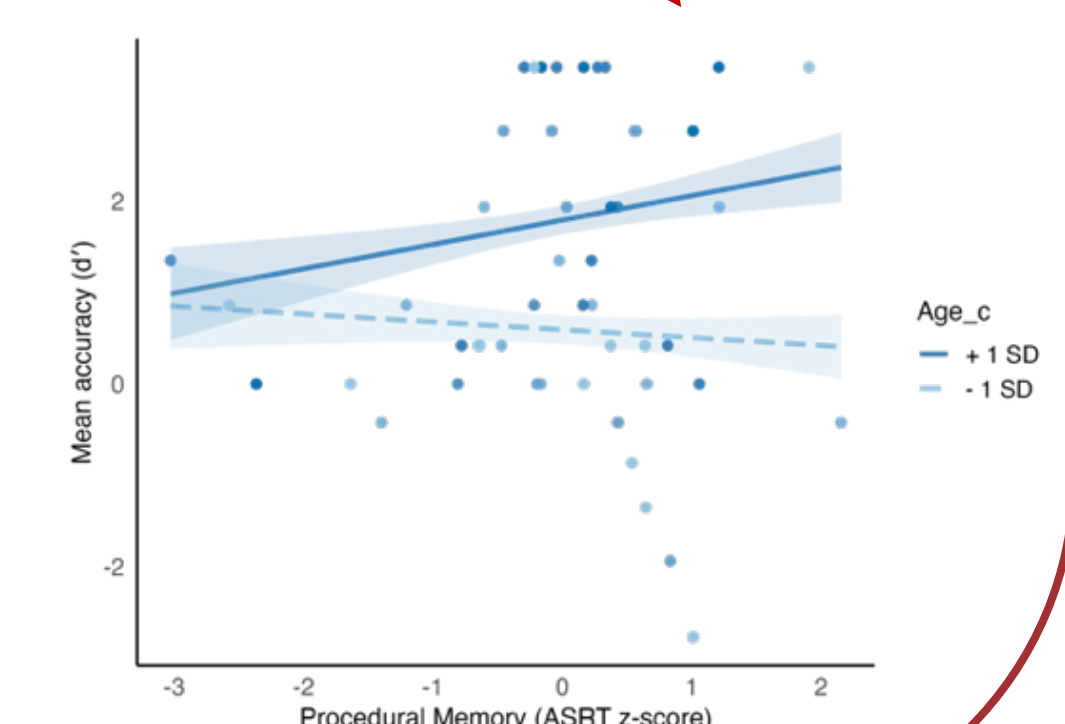
➤ What predicted vocabulary?

- Verbs: Complex WM
- Nouns and markers: none

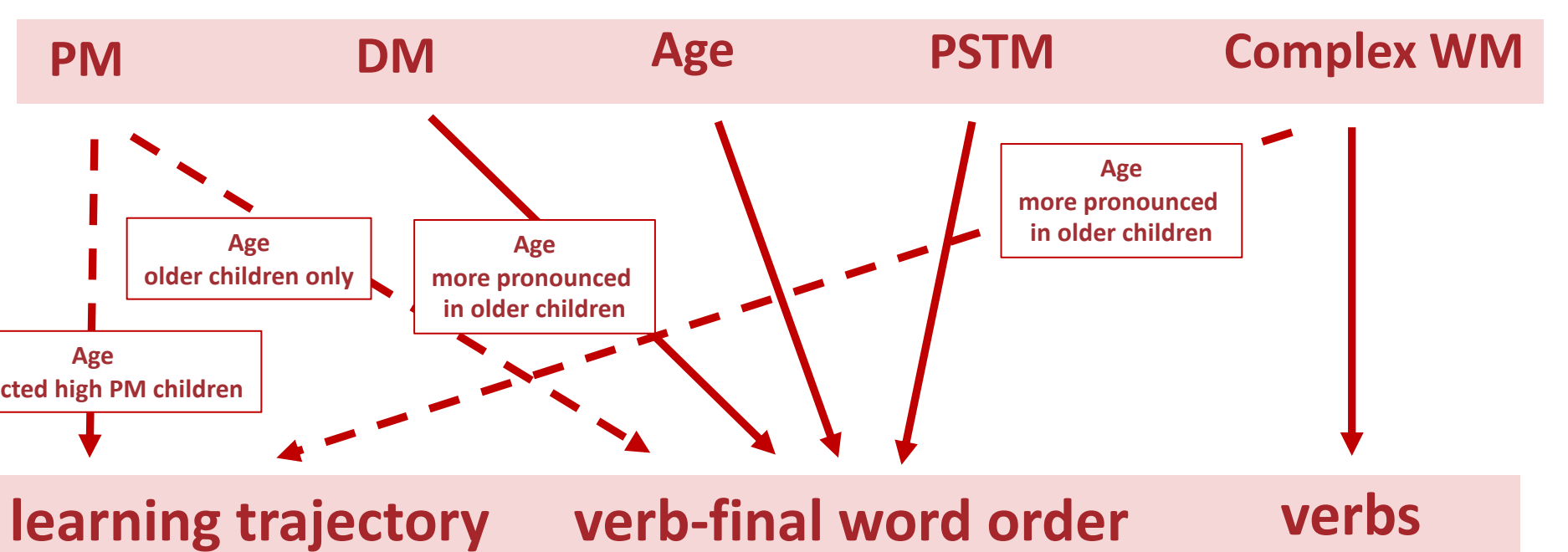


➤ What predicted syntax?

- ✓ Age
- ✓ DM
- ✓ PSTM
- ✓ Age × PM
- ✓ Age × DM



TAKE AWAY



Results are task-specific

Results highlight that IDs in memory abilities may shape how children engage with learning tasks particularly when explicit instruction is provided.

Reference

1. Rebuschat, P., Monaghan, P., & Schoetensack, C. (2021). Learning vocabulary and grammar from cross-situational statistics. *Cognition*, 206, 104475.
2. Zhang, W., Rebuschat, P., & Monaghan, P. (in press). The role of age and instruction in children's learning of vocabulary and grammar. *Language Learning*.

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