

Capturing Syntactic Learning in Children: A Novel Test

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INTRODUCTION

~7% of children have Developmental Language Disorder (DLD)¹.
➤ DLD involves **syntactic difficulties** and has **long-term impacts**^{2,3}.

Understanding how children learn language (especially syntax) is therefore essential.

➤ But most research on language focuses on **static knowledge**, not **dynamic learning**.

Existing syntactic learning tests have **important limitations**:

- lengthy⁴;
- poorly generalizable⁵;
- novel words → lexical confounds⁴.

OBJECTIVE

Develop a novel test capturing syntactic learning in children.

Expected outcomes

- Increasing performance across trials
- Great interindividual variability

METHODOLOGY

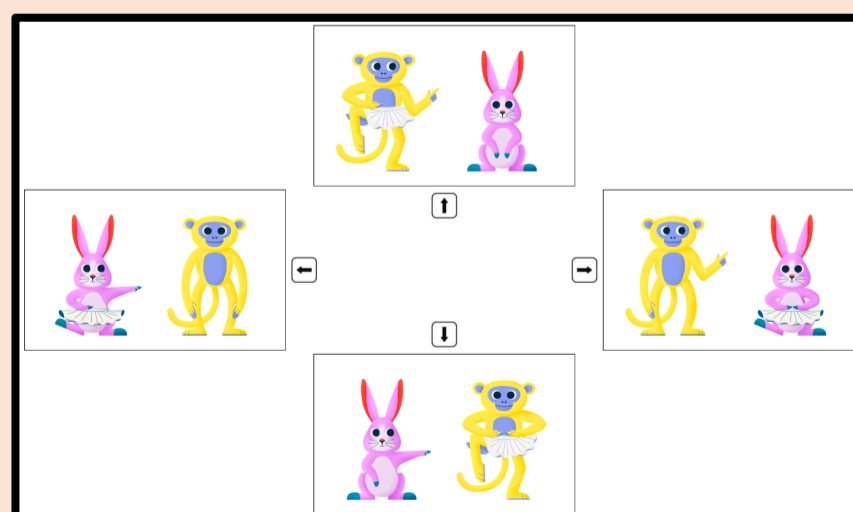
Participants

36 French-speaking children (5–8 years old; $M = 7.55$, $SD = 0.85$)
19 boys and 17 girls; 19.44% with language or neurodevelopmental concerns

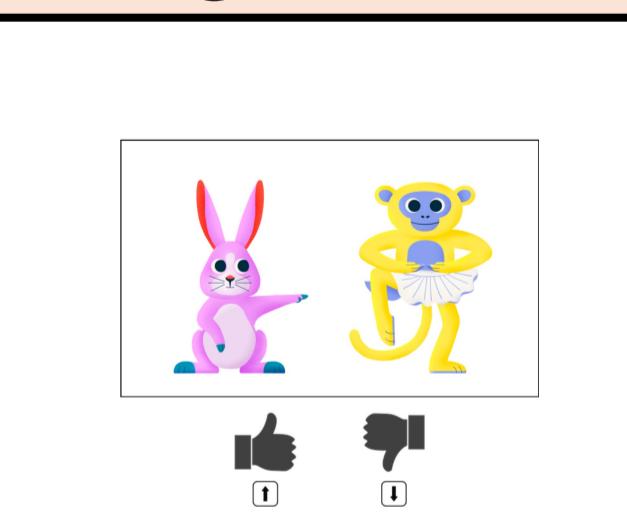
All sentences followed a novel syntactic structure:
(modifier) + subject + (modifier) + object + verb

Easy	La vache la tortue écoute. The cow the turtle listens to.	
Intermediate	Le joueur lion le canard regarde. The playing lion the duck looks at.	
Difficult	La poule qui chante la souris salue. The chicken who is singing the mouse greets.	

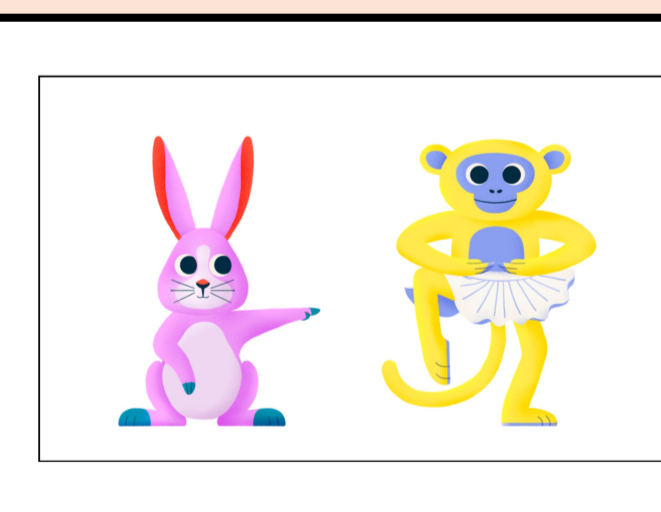
Comprehension task



Judgment task



Production task



Session 1 (S1)

16 easy
16 intermediate
16 difficult

Session 2 (S2) after a delay of 7 days

8 easy
8 intermediate
8 difficult

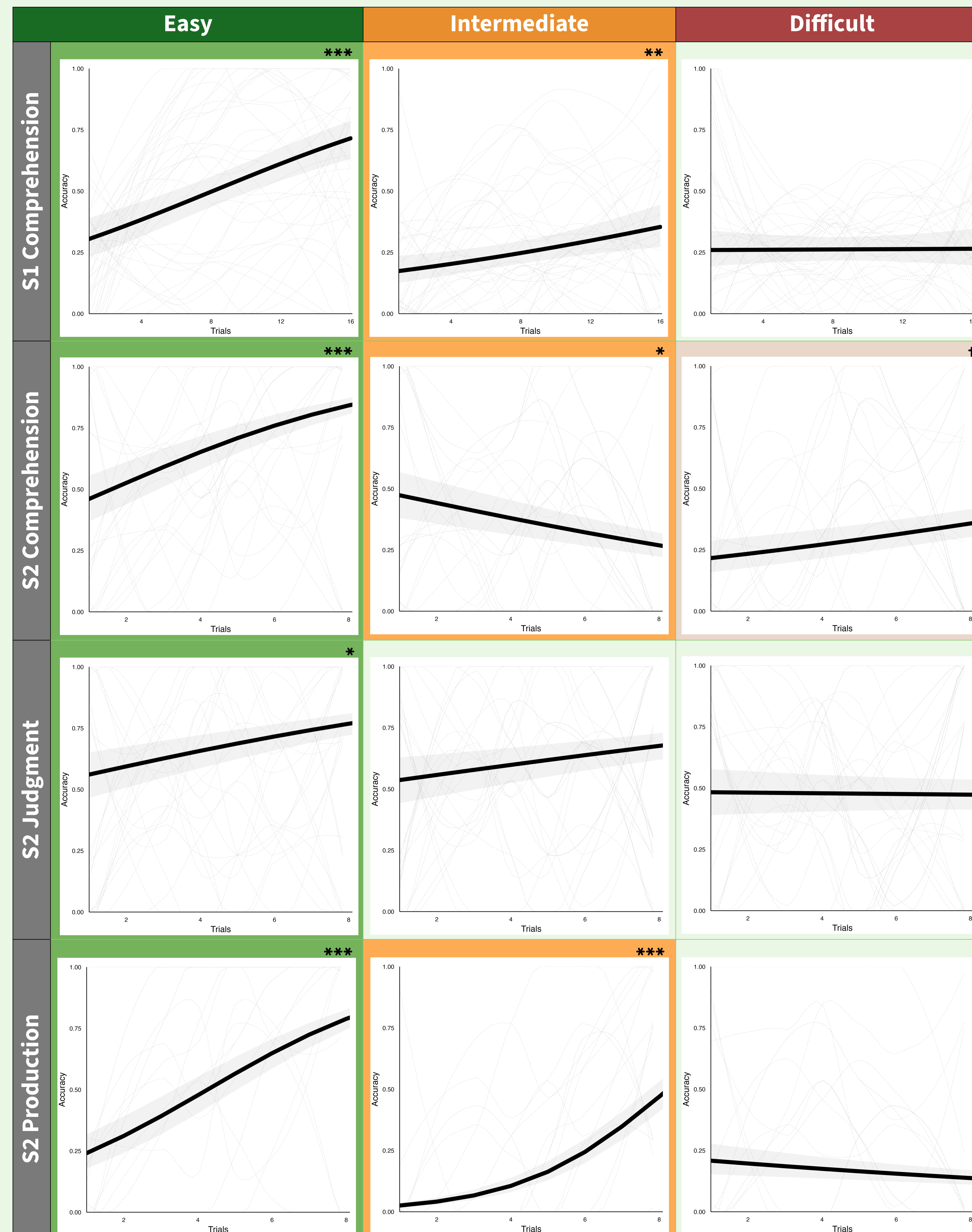
8 easy
8 intermediate
8 difficult

8 easy
8 intermediate
8 difficult

✓✗ Feedback is provided after each trial to enable learning.

Learning across trials was examined using binomial mixed-effects models.

RESULTS



*** $p < .001$ ** $p < .01$ * $p < .05$ † $p < .10$

KEY FINDINGS

Overall, children's performance **improved across trials**, through repeated exposure to the novel syntactic structure,
 $\beta_{\text{trial}} = 0.12, p < .001$.

Learning varied across syntactic complexity, with **easier sentences showing stronger learning** than difficult ones,
 $\chi^2(2)_{\text{trial} \times \text{complexity}} = 15.89, p < .001$.

Learning was stronger in Session 2 than in Session 1, suggesting **partial retention**,
 $\chi^2(1)_{\text{trial} \times \text{session}} = 10.97, p = .001$.

Children showed **variable individual learning trajectories**.

CONCLUSION

This novel test captures **syntactic learning over time** and **variability in children's learning trajectories**.

It may be useful to inform developmental and clinical research and practice.

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