Contributions of Vocabulary and Theory of Mind to Word Learning Across Social Contexts in Autistic Children

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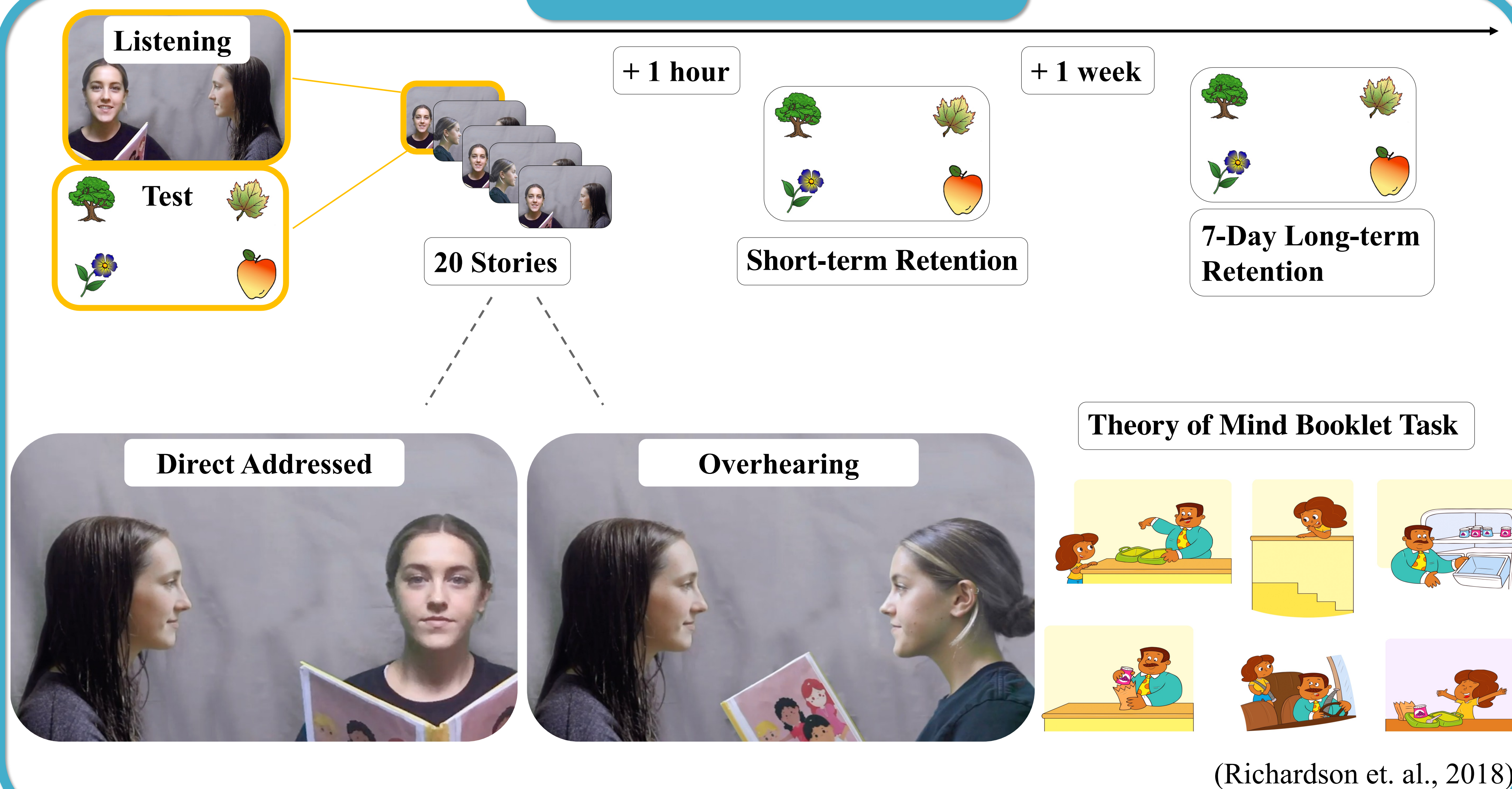
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Background

- How autistic children learn words in the face of social communication difficulties remains under investigated.
- Autistic children have shown mixed evidence in learning words from <u>direct social cues</u> (McGregor et al., 2013, Norbury et al., 2010). **Yet, they demonstrated successful initial meaning mapping from <u>overhearing</u> speech** (Luyster & Arunachalam, 2020) .
- Are words learned from overheard stories with no concurrent visual referents resilient to forgetting for autistic children, compared to those learned from a directly addressed context?
- Are word learning and retention across social contexts more associated with concurrent social cognitive or vocabulary skills in autistic children?
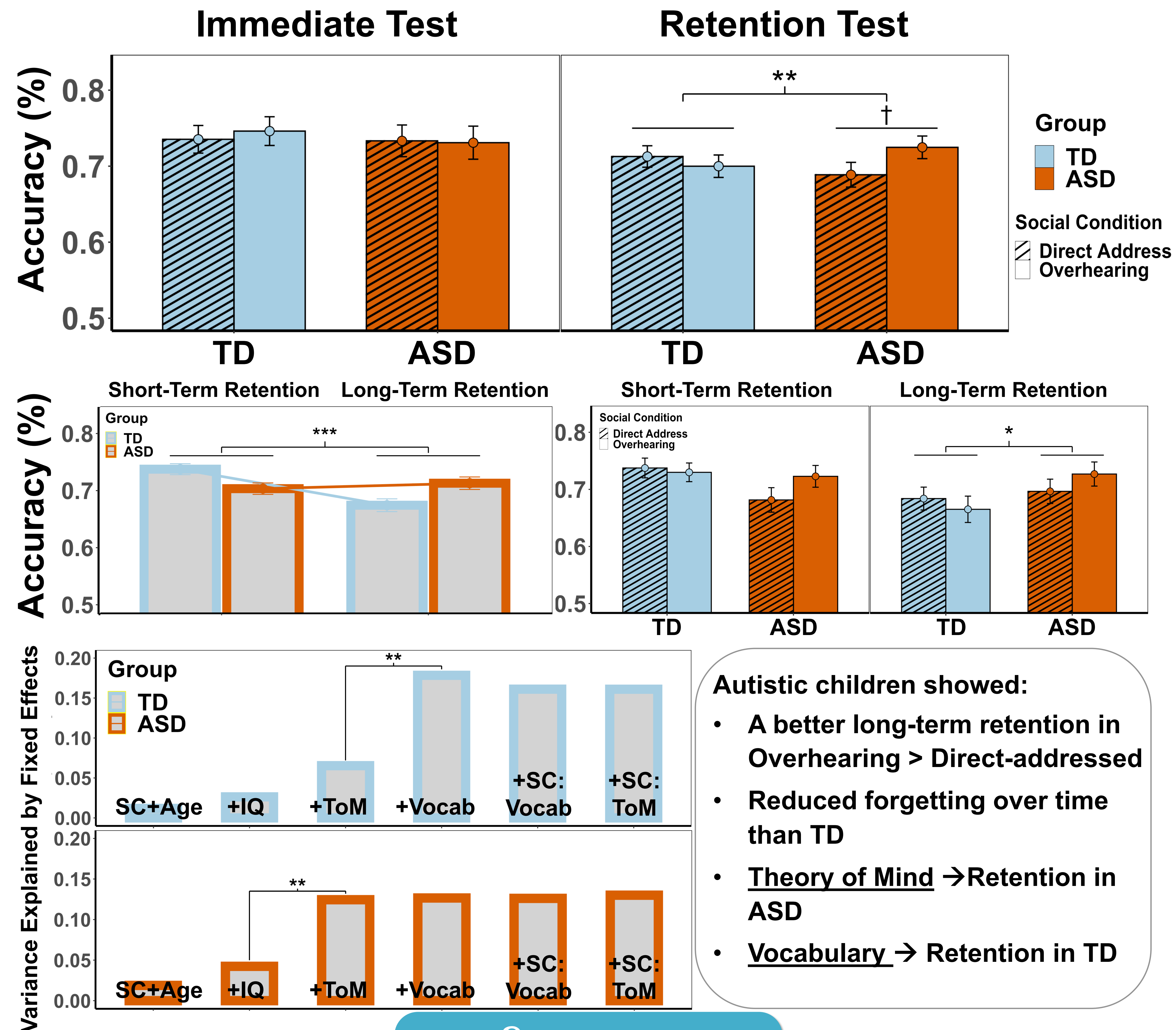
Participants

Characteristics	TD	ASD	Group Difference
N (# of Girls)	50 (26)	48 (15)	$\chi^2 = 3.52, p = 0.06$
Age (Range)	7.44 (4.67~11.00)	7.45 (5.08~9.67)	$t(92.51) = -0.002, p = 1.00$
Picture Vocabulary Test (SD)	111.58 (15.22)	109.08 (14.37)	$t(95.97) = 0.84, p = 0.41$
KBIT (SD)	113.44 (19.08)	110.91 (25.40)	$t(85.25) = 0.53, p = 0.59$
Theory of Mind (SD)	0.80 (0.12)	0.71 (0.17)	$t(73.99) = 2.70, p = 0.009$
SCQ (SD)	4.51 (5.65)	16.53 (7.76)	$t(76.80) = -8.18, p < 0.001$

Methods

Listening

Test

+ 1 hour

+ 1 week

20 Stories

Short-term Retention

7-Day Long-term Retention

Direct Addressed

Overhearing

Theory of Mind Booklet Task

(Richardson et. al., 2018)

Results

Immediate Test

Retention Test

Accuracy (%)

Group: TD, ASD

Social Condition: Direct Address, Overhearing

Short-Term Retention Long-Term Retention

Variance Explained by Fixed Effects

SC+Age +IQ +ToM +Vocab +SC:Vocab +SC:ToM

Autistic children showed:
- A better long-term retention in Overhearing > Direct-addressed
- Reduced forgetting over time than TD
- <u>Theory of Mind</u> →Retention in ASD
- <u>Vocabulary</u> → Retention in TD

Summary

- Both autistic and neurotypical children can learn and retain words from overheard speech <u>without concurrent visual referents</u>.
- Overhearing might serve as a <u>protective mechanism</u> for vocabulary acquisition in autistic children in the face of their social communication difficulties.
- <u>Theory of Mind,</u> but not vocabulary skills, uniquely explain variation in retention of new labels across autistic children, while previous vocabulary knowledge scaffolds the acquisition of new labels in neurotypical children.

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