

Knowledge of presuppositions in Cantonese-speaking children with and with autism spectrum disorders

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Introduction

Children with autism spectrum disorders (ASD) have been observed to have difficulty comprehending presuppositions (Cheung et al., in press, *Clin Ling Phon*)

- Is this difficulty specifically due to ASD, or is it an epiphenomenon of other deficits?
- Does the pattern of deficit differ between different types of presupposition trigger?

The present study: Measuring ASD and typically developing (TD) children's performance on seven types of presupposition trigger and examining whether children with ASD show a deficit in comprehending presupposition triggers compared to their TD peers after controlling for age, verbal mental age, general language ability, and nonverbal intelligence

Seven types of presupposition trigger:

- | | |
|---|-------------------------------|
| (1) Siu2fan1 go3 syu1baau1 hou2 cung5.
Siufan Cl schoolbag very heavy
'Siufan's schoolbag is very heavy.'
>> Siufan has a schoolbag. | (Definite description) |
| (2) Po4po4*2 zi1dou6*3 miu6*4miu6*2 cam4jat6 mou5 faan1hok6.
Grandma know younger.sister yesterday not.have go.to.school
'Grandma knows that the younger sister did not go to school yesterday.'
>> The younger sister did not go to school yesterday. | (Factive predicate) |
| (3) Siu2koeng4 ngaam1ngaam1 hoi1ci2 hok6 Faat3man4.
Siukoeng just.now start learn French
'Siukoeng has just started learning French.'
>> Siukoeng didn't learn French before. | (Change-of-state verb) |
| (4) Go1*4go1 sing4gung1 gaai2kyut2-zo2 go3 man6tai4.
elder.brother succeed solve-Perf Cl problem
'The elder brother has succeeded in solving the problem.'
>> The elder brother has tried to solve the problem. | (Implicative verb) |
| (5) Sai3lou2 jau6si3 cong2wo6.
younger.brother again cause.misfortune
'The younger brother has caused a misfortune again.'
>> The younger brother has caused a misfortune before. | (Iterative) |
| (6) Siu2ming4 sik6-zo2 daan6gou1 zi1hau6 go3 tou5 hou2 tung.
Siuming eat-Perf cake after Cl tummy very painful
'Siuming's tummy hurt after he had eaten the cake.'
>> Siuming had eaten the cake. | (Temporal clause) |
| (7) Jyu4gwo2 baa1*4baa1 mou5 teo13jau1, keoi5 zung6 gaau3-gan2 syu1.
if dad not.have retire he still teach-Prog book
'If Dad hadn't retired, he would still be teaching.'
>> Dad has retired. | (Counterfactual) |

Methods

Participants: 28 children with ASD (26 M), 64 TD children (28 M), 49 adults (12 M)

Test on presupposition triggers: to judge whether a given presupposition was correct or not.

- (1) Siu2fan1 go3 syu1baau1 hou2 cung5.
Siufan Cl schoolbag very heavy
'Siufan's schoolbag is very heavy.'

Presupposition:

Siu2fan1 jau5 go3 syu1baau1. (Correct)	Siu2fan1 mou5 syu1baau1. (Incorrect)
Siufan have Cl schoolbag	Siufan not.have schoolbag
'Siufan has a schoolbag.'	'Siufan doesn't have any schoolbags.'

Language and cognitive tasks:

General language ability: textual comprehension subtest of the Hong Kong Cantonese Oral Language Assessment Scale (HKCOLAS; T'sou et al., 2006), yields both a raw score (Text Comprehension) and a standardized estimate of verbal mental age

Nonverbal intelligence: measured by the Raven's Standard Progressive Matrices Test (Raven, 1989, *J Ed Meas*)

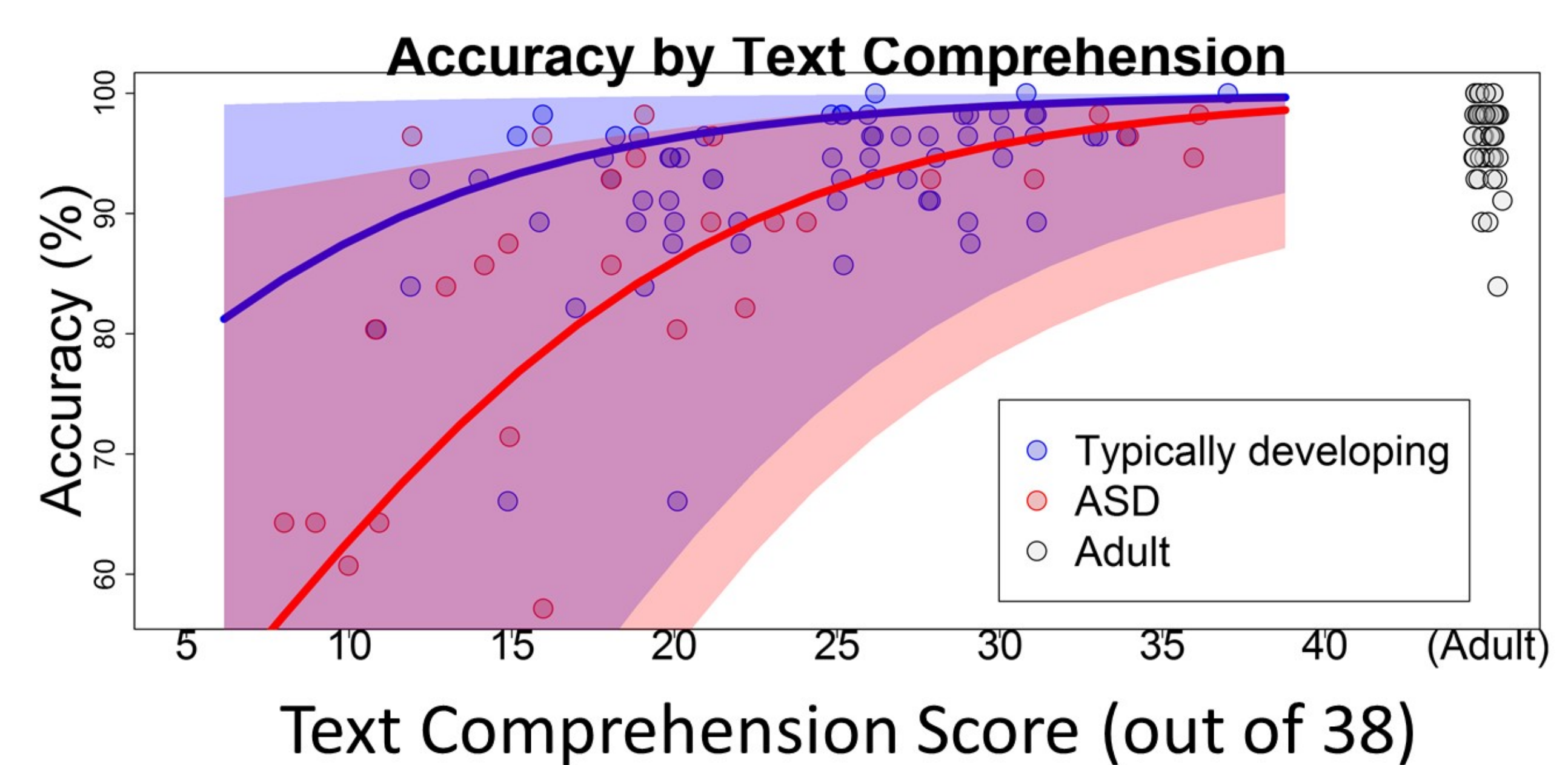
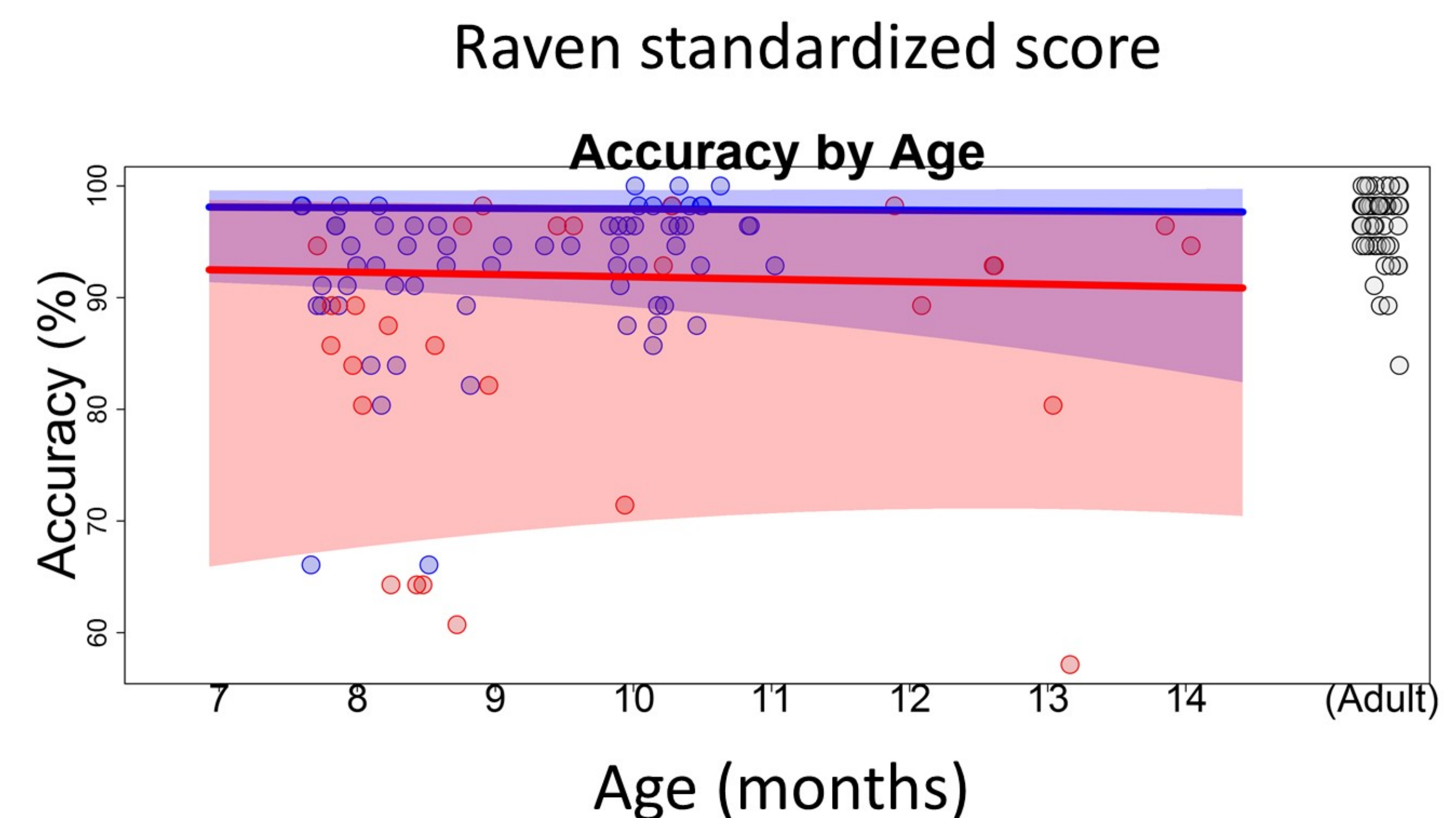
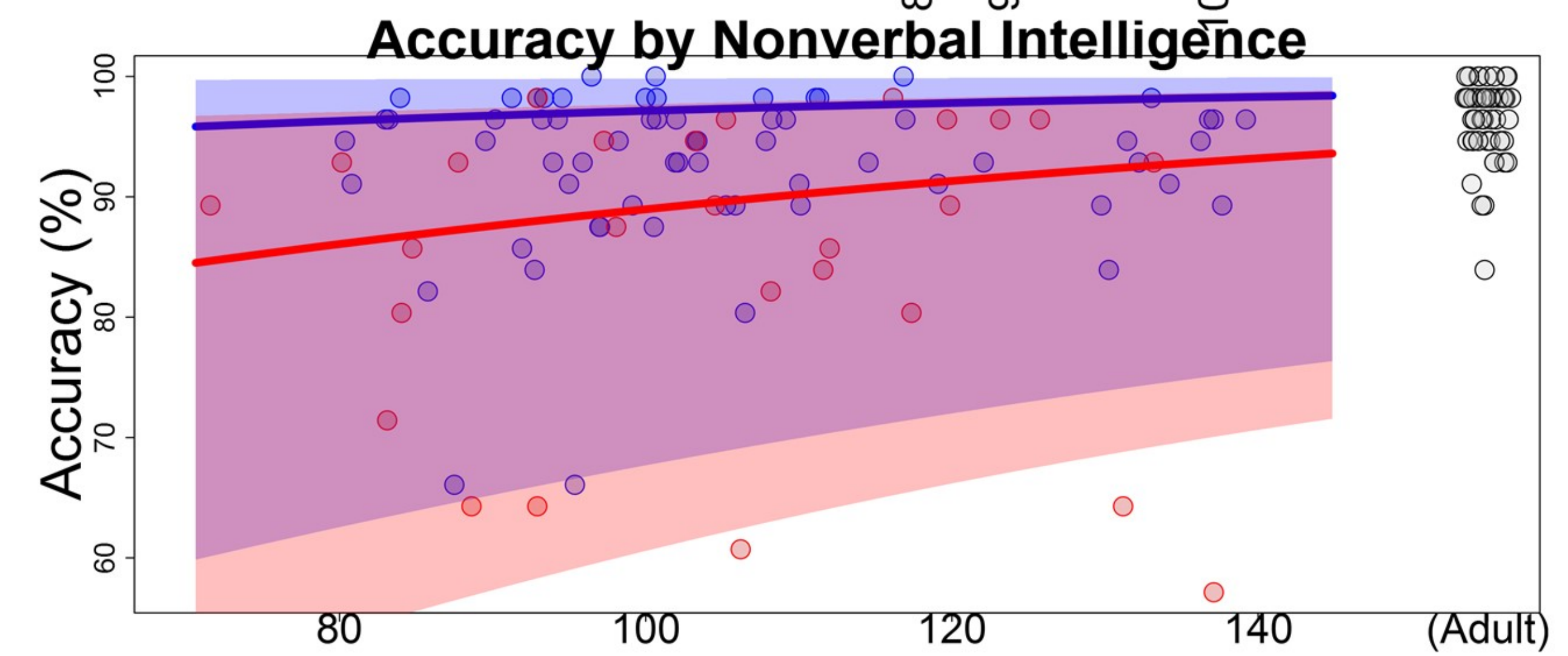
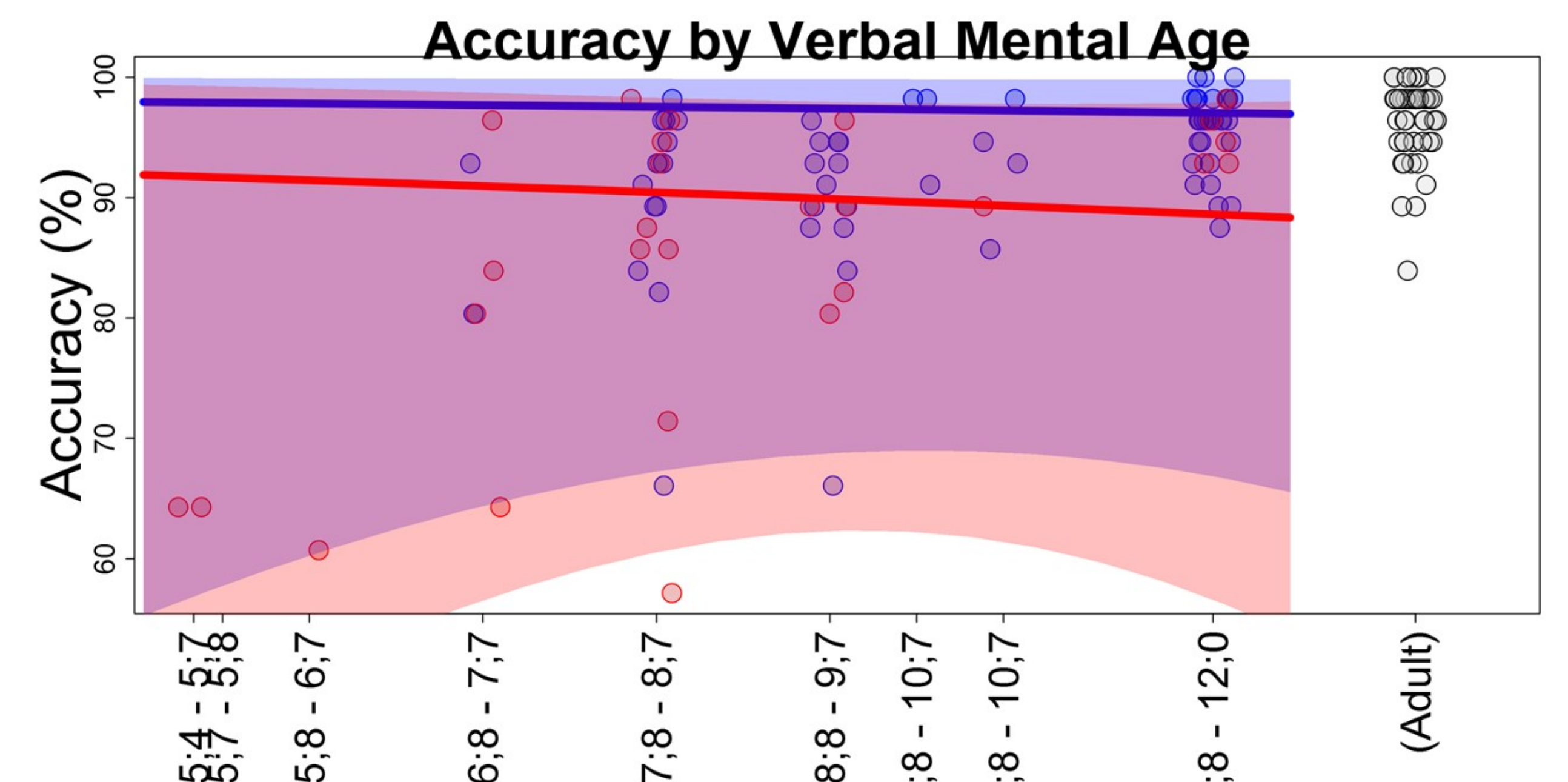
Analysis: Generalized linear mixed effects models to test whether ASD status is significantly associated with lower response accuracy when other individual differences are accounted for

$$\text{Correct} \sim (\text{Trigger}) * (\text{ASD} + \text{VMA} + \text{TextComp} + \text{Age} + \text{Sex} + \text{Raven}) + (\text{Trigger} | \text{Subject}) + (\text{ASD} + \text{VMA} + \text{TextComp} + \text{Age} + \text{Sex} + \text{Raven} | \text{Item})$$

Discussion

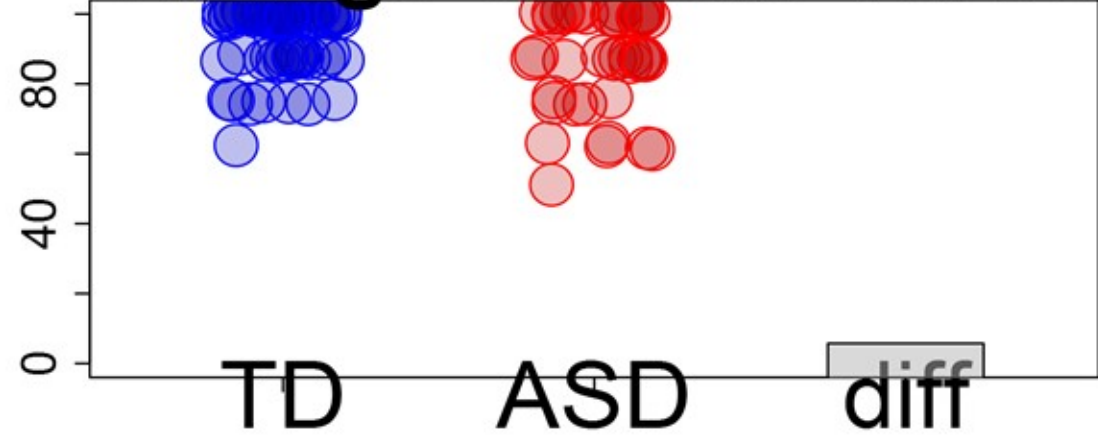
- No significant unique deficit for ASD: ASD children showed poorer performance relative to the TD peers on the comprehension of presupposition triggers, which was mostly attributable to their lower general language ability
- No significant evidence that the comprehension differences between ASD and TD children varied as a function of type of presupposition trigger

Results: ASD deficit attributable to general language ability

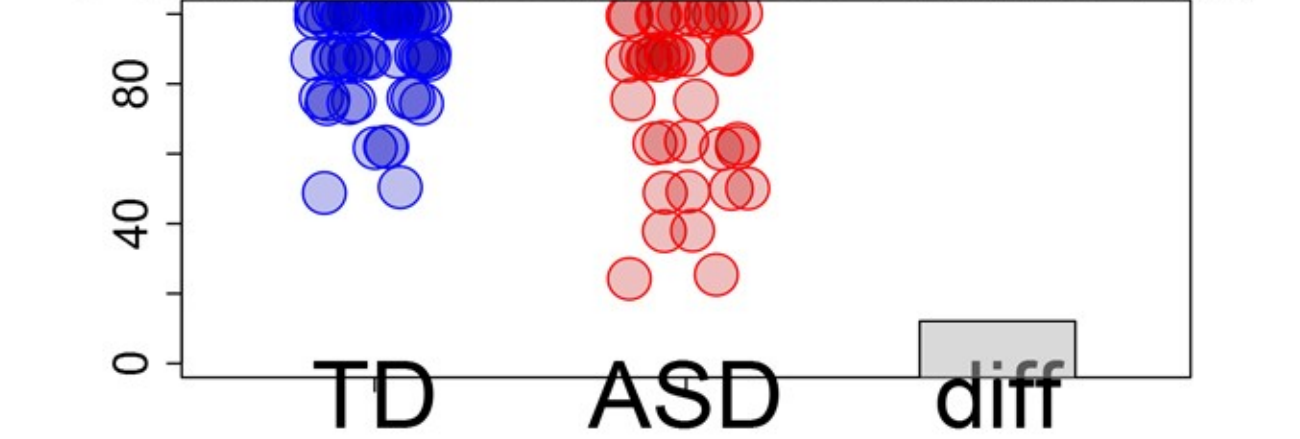


Results: Similar pattern across presupposition triggers

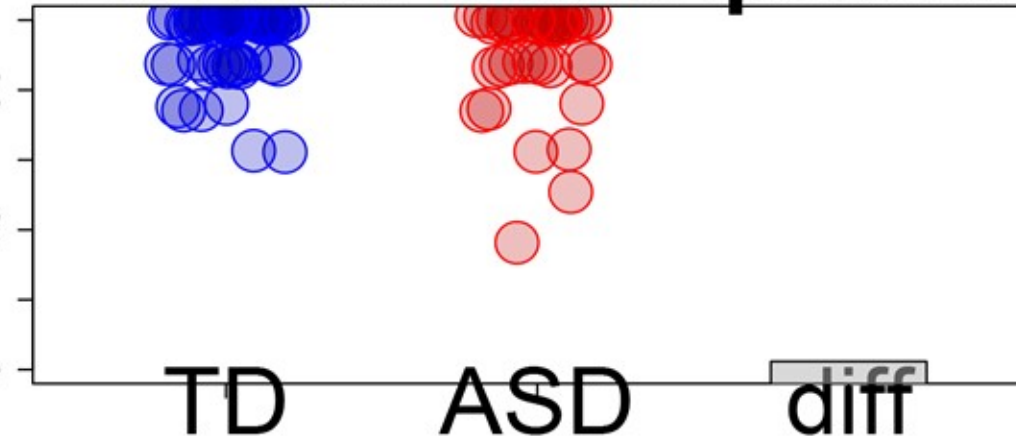
Change-of-state verbs



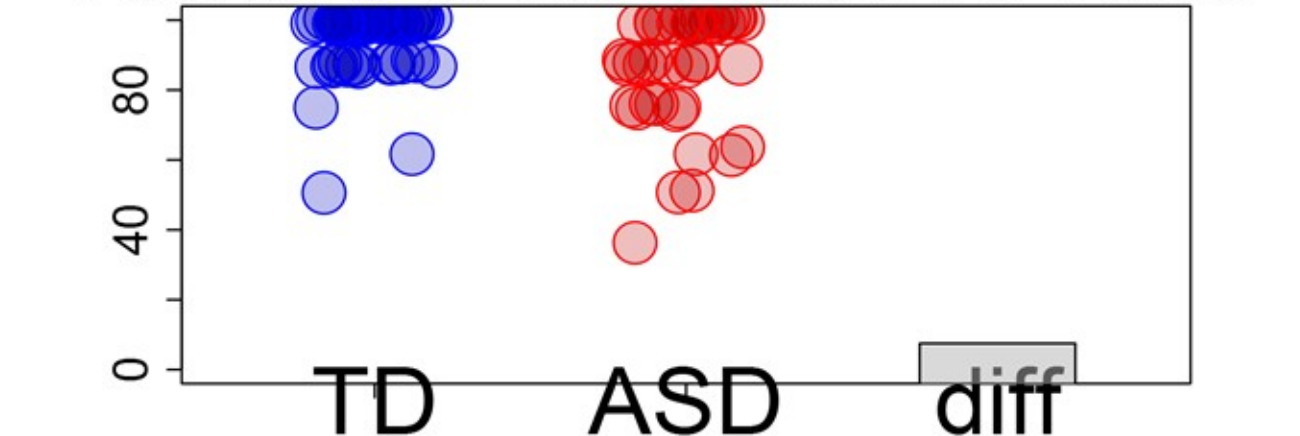
Counterfactual conditional



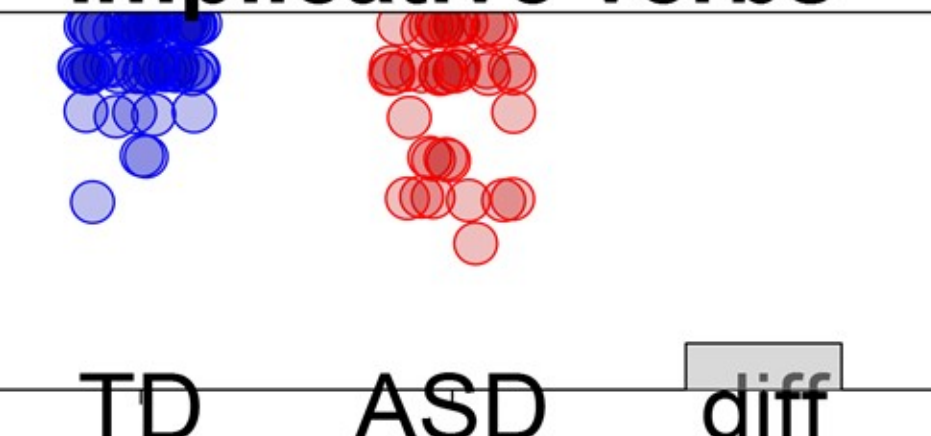
Definite descriptions



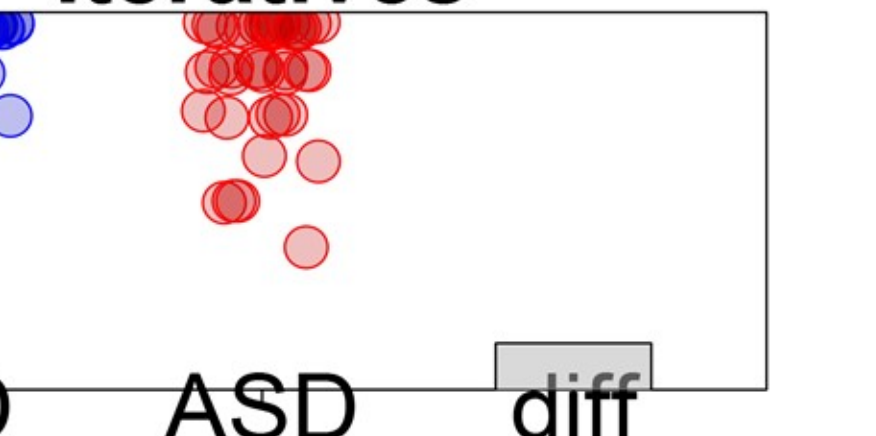
Factive & non-factive verb



Implicative verbs



Iteratives



Temporal clauses

