

## Background

- Verb diversity in childhood predicts adult language and communication outcomes in ASD<sup>1</sup>
- But does ASD often involve difficulty with early verb production?
- Past work measuring overall verb vocabulary size via parent-report checklists shows mixed results<sup>2-4</sup>
- What about more detailed measures of verb use over time in a naturalistic context?
- This project investigates naturalistic verb production in ASD and typical development (TD). We look at:
  1. Overall verb diversity (i.e., verb types)
  2. Use of high-frequency verbs (e.g., *want, go, do*)
  3. Proportion of manner (e.g., *run*) vs. result (e.g., *break*) vs. stative (e.g., *think*) verbs

## Research Questions

1. How does early verb production in ASD compare to early verb production in typical development?
2. What contributes to use of high-frequency verbs?
3. What contributes to the lexical-semantic composition of children's verb vocabularies?

## Methods

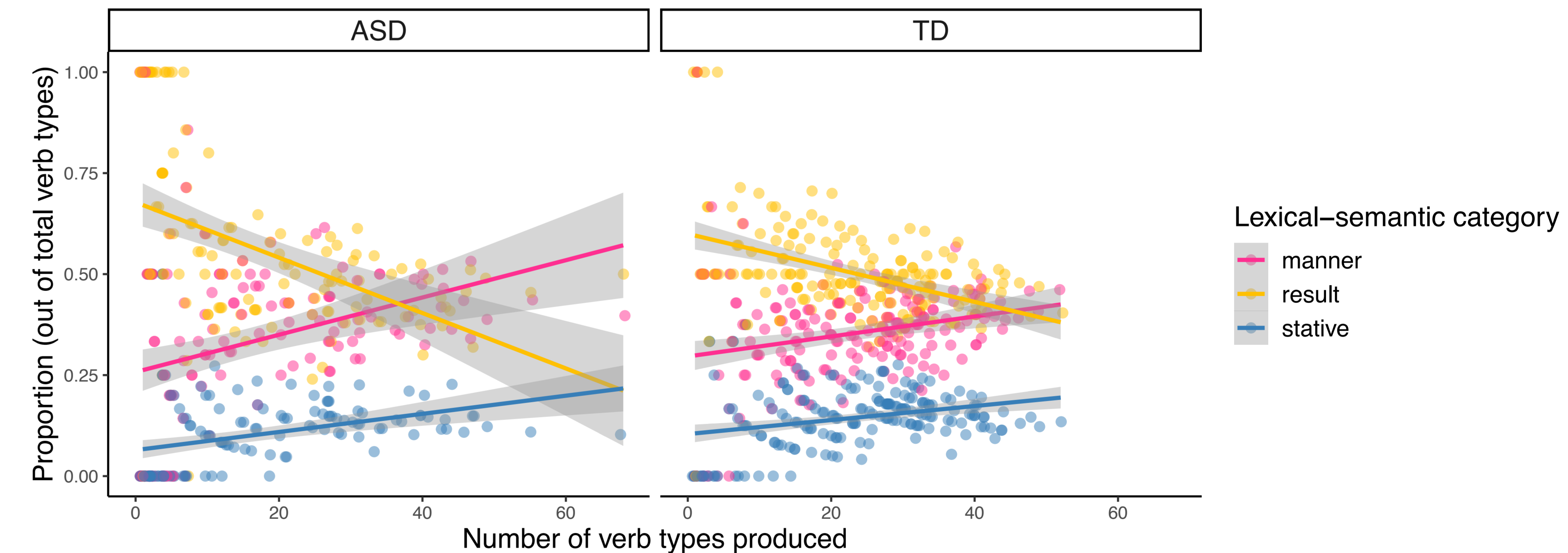
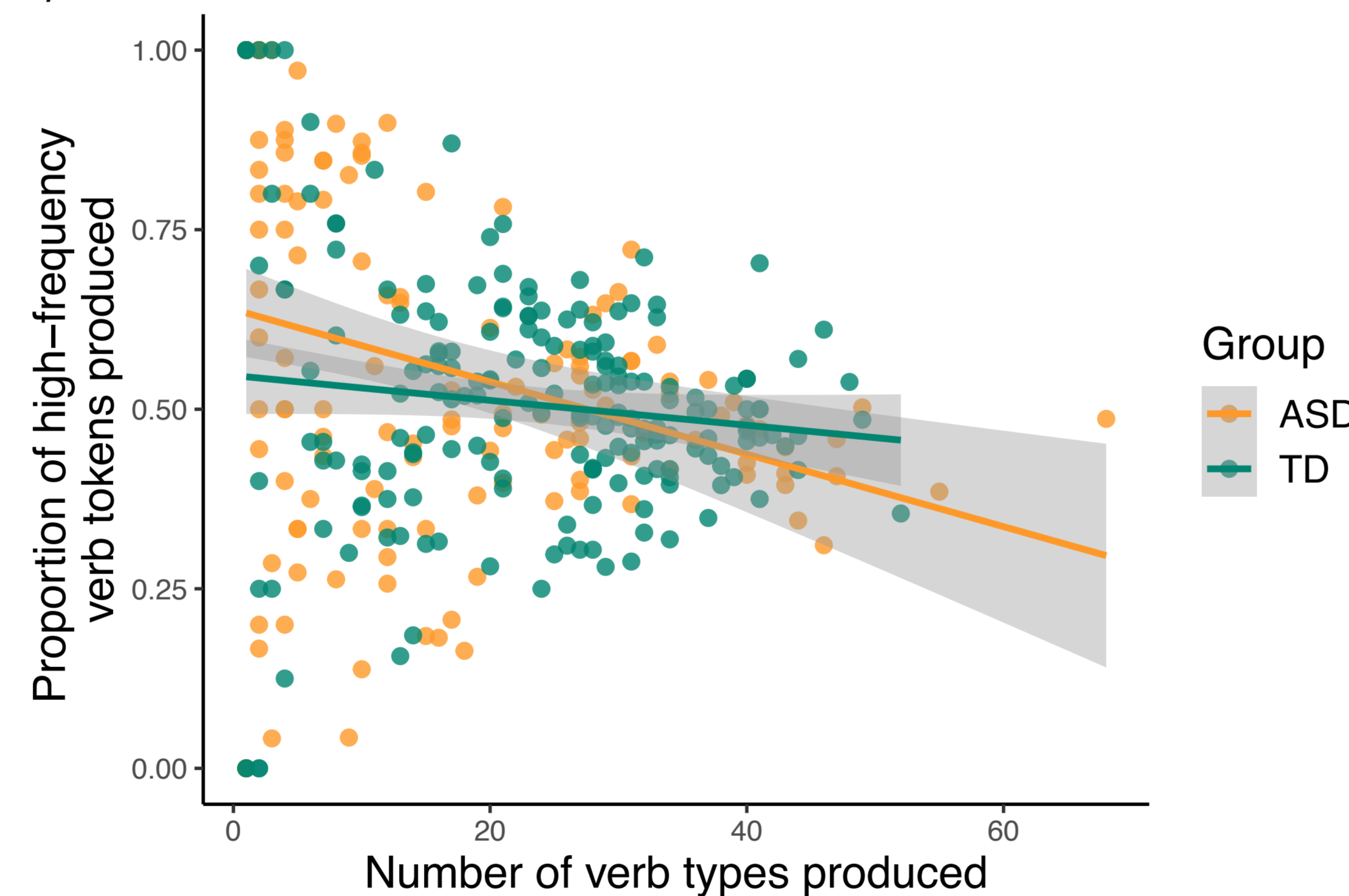
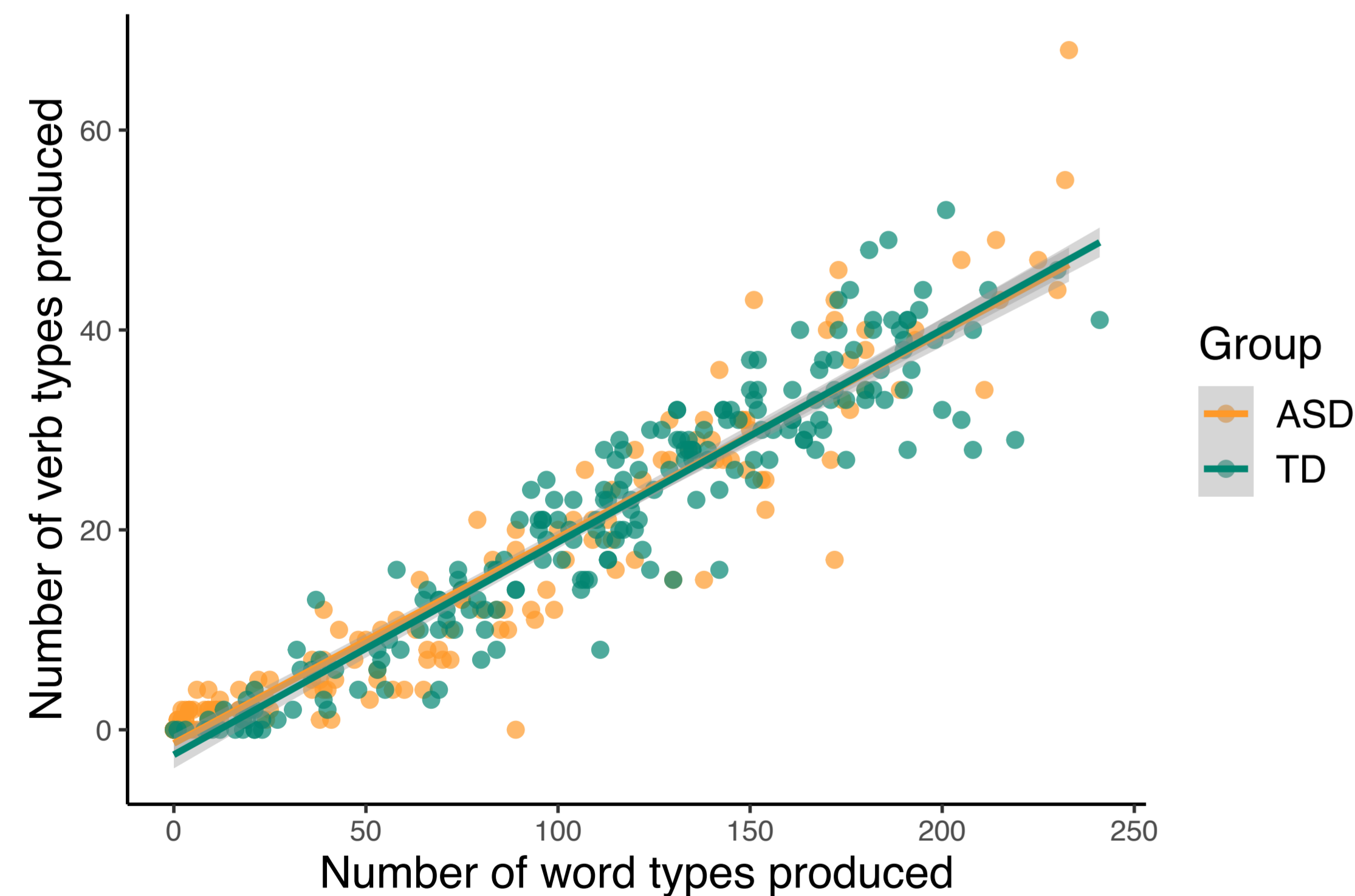
- Data from a longitudinal sample<sup>5</sup>
- ASD: n = 32; TD: n = 35
- Six parent-child play sessions analyzed for each child (T1-T6), each four months apart
  - Groups matched on expressive language at T1
  - ASD mean age at T1 = 32.85 months
  - TD mean age at T1 = 20.26 months
- Videos of play sessions transcribed and coded using CLAN<sup>6</sup>, and checked by hand
- All verbs extracted from each transcript
  - High-frequency verbs = top 10 most frequently produced verbs across groups and visits (*go, want, do, open, get, have, see, blow, put, eat*)
  - Lexical-semantic coding (manner vs. result vs. stative) determined using linguistic diagnostics<sup>7</sup>
- Statistical approach: linear mixed-effects models

## Results

- Expressive vocabulary size affects number of verb types produced ( $p < .001$ )
- No effect of group on overall verb types

- Verb vocabulary size ( $p = .020$ ) and group ( $p = .023$ ) affect proportion of high-frequency verb tokens produced (ASD > TD)
- Interaction between verb vocabulary size and group ( $p = .021$ )

- Children with larger verb vocabularies produce **more manner** and **stative** verbs ( $p < .001$ )
- Children with larger verb vocabularies produce **fewer result** verbs ( $p < .001$ )
- ASD group: lower proportions of **result** ( $p = .013$ ) and **stative** ( $p < .001$ ) verbs than TD group
- Interaction between verb vocabulary size and group for **result** and **stative** verbs ( $p < .05$ )



## Discussion

- Language level impacts overall verb use in ASD and TD, as well as verb use within high-frequency and lexical-semantic subcategories
- Autistic and TD children do not differ in overall verb use, but group differences do emerge in use of high-frequency verbs and the lexical-semantic composition of verb vocabulary
  - Stative verbs (e.g., *think, enjoy, trust*) often refer to internal states. Group differences in stative verb production could relate to autistic and TD children's differences in social interaction
- In the high-frequency verb analysis and the analyses of lexical-semantic composition, verb vocabulary size had a larger impact for the ASD group than the TD group
- Future directions: cluster analysis to examine what contributes to heterogeneity of verb production trajectories in ASD and TD; investigate the degree to which high-frequency verb production and/or lexical-semantic verb composition relate to language outcomes

## References

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