

INTRODUCTION

- Children with Autism Spectrum Disorder (ASD) show difficulties with producing personal pronouns, especially non-first-person pronouns. ^{1, 2}
- Most of the research on pronoun production among children with ASD, and some on children with Attention Deficit/Hyperactivity Disorder (ADHD), primarily focuses on ambiguity/unclear uses. ^{3, 4}
- These studies do not distinguish pronoun production by personhood or sheer base rates of production.

OBJECTIVES

- To determine if and how pronoun challenges might persist in older, school-aged children with ASD
- To test whether a conversational context, which affords more discussion of others (i.e., family, friends, pets, etc.), expands children with ASD's pronoun type production

Table 1. Demographic information of the sample

	ASD (n = 21)	ADHD (n = 24)	Comorbid (n = 31)	TD (n = 22)
Sex Ratio (M:F)	17:4	21:3	28:3	14:8
Age	11.6 (2.2)	11.9 (2.5)	12.0 (2.3)	12.5 (2.3)
NVIQ	103.6 ^a (18.9)	96.0 ^a (18.8)	98.4 ^a (17.6)	116.1 ^b (13.7)

NOTE: different superscripts signify a significant difference

REFERENCES

¹ Kelty-Stephen et al. (2020). Children with ASD use joint attention and linguistic skill in pronoun development. *Language Acquisition*, 27(4), 410-433.
² Song et al. (2020). Natural language markers of social phenotype in girls with autism. *Journal of Child Psychology & Psychiatry*.
³ Kuijper et al. (2015). Who is he? Children with ASD and ADHD take listener into account in their production of ambiguous pronouns. *PLoS One*, 10(7), e0132408.

⁴ Novogrodsky & Edelson (2016). Ambiguous pronoun use in narratives of children with Autism Spectrum Disorders. *Child Language Teaching and Therapy*, 32(2), 241-252.
⁵ MacWhinney, B. (2000). *The CHILDES Project: Tools for Analyzing Talk*. 3rd Edition. Mahwah, NJ: Lawrence Erlbaum Associates.

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METHODS

- Data were collected during a virtual reality paradigm where children viewed a virtual classroom through a headset and answered questions about their lives, such as—

"Describe your family and who lives with you."

"Talk about any pets you have now or had when you were younger." (see example responses below)

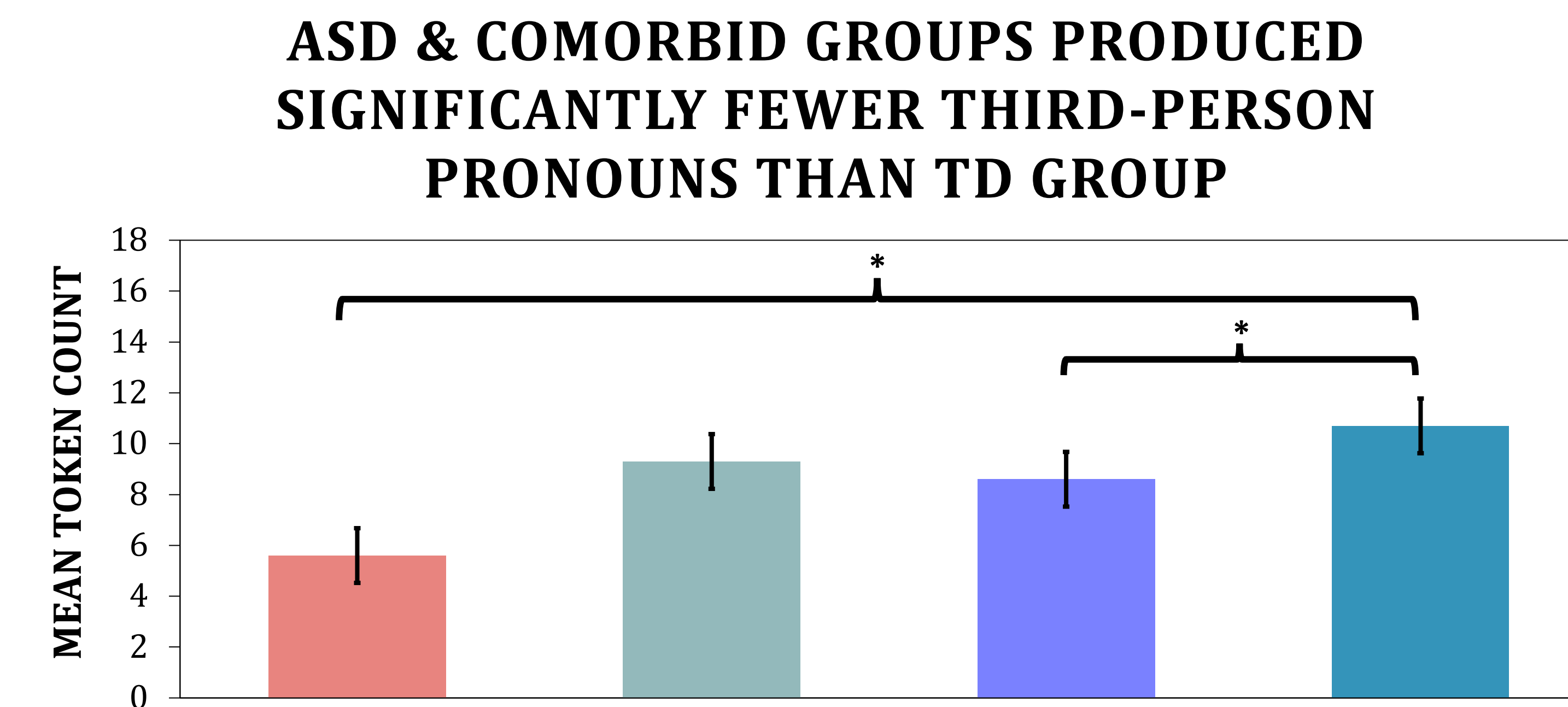
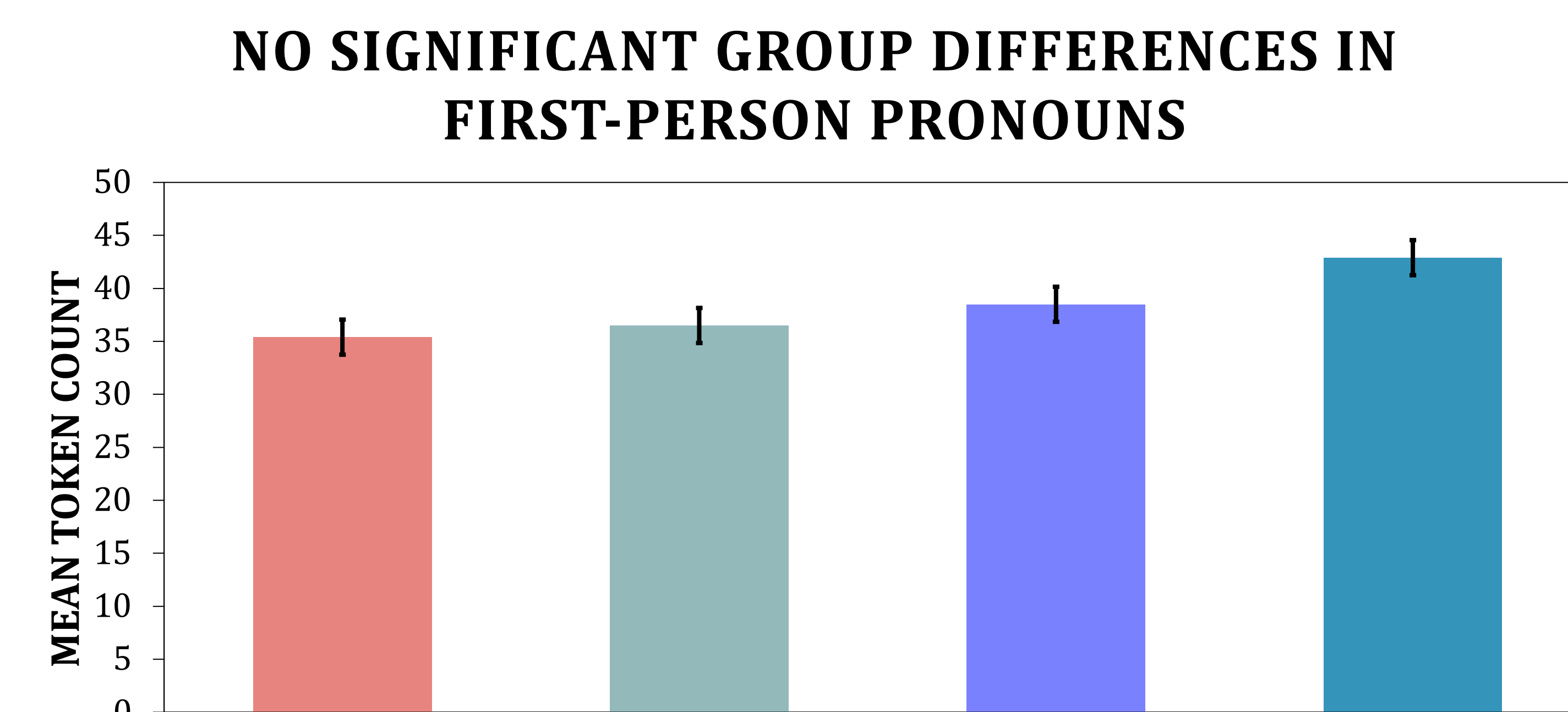
"Describe a good friend or a friend from when you were younger."

- Audio recordings were recorded and transcribed via CHAT and CLAN algorithms were used to extract personal pronoun types and tokens. ⁵

RESULTS

- All groups produced significantly fewer third-person personal pronouns than first-person personal pronouns ($p < 0.001$), with no significant group differences in first-person pronoun production ($p = 0.310$).
- However, significant group differences emerged in third-person pronoun frequency, $F(3,94) = 2.517, p = 0.043, \eta^2 = 0.174$.

■ ASD ■ ADHD ■ Comorbid ■ TD



TD Child	Child with ASD
So, I used to have a pet named Goldie. She was really amazing actually.	My dog, Sky, is brown. Sparky is like white and gray with curly fur.

CONCLUSION

- Although the children with ASD did not show difficulties with producing first-person pronouns, they produced significantly fewer third-person pronouns
- Even though the questions afforded third-person pronoun usage
- Instead, many children with ASD produced more full noun-phrases in lieu of a third-person pronoun
- These findings suggest that third-person pronoun challenges still exist in highly-verbal school-aged children with ASD, and even among those with comorbid symptoms of ADHD