

INTRODUCTION

- Research on conversational skills in autism focus on speaker behavior
- Less known about listener behavior
- Backchannels (BCs) are an important listener behavior; they signal interest and comprehension
 - Inadequate BC distressing to speaker (Rosenfeld, 1967), results in disorganized/less comprehensible speech (Bavelas, Coates, & Johnson, 2000; Kraut, Lewis, & Swezey, 1982)
 - Listeners with less BC perceived as less desirable social partners (Vinciarelli, Salamin, Polychroniou, Mohammadi, & Origlia, 2012)
- Very little known about BC behavior by autistic listeners

HYPOTHESES

- Compared to age- and language-matched NT peers, autistic children will:
 - Use less BC
 - Show less responsiveness to nonverbal cues (“gaze windows”) that signal a speaker’s request for BC

PARTICIPANTS

Group	Age (p = .40)	Sex (p = .17)	Language (p = .52)	IQ (p = .37)
Autistic N = 20	13.8 (2.01)	4:16 (F:M)	110	117
Non-autistic N = 23	13.4 (2.44)	9:14	113	112

WORKS CITED

Bavelas, J. B., Coates, L., & Johnson, T. (2000). Listeners as co-narrators. *Journal of Personality and Social Psychology*, 79(6), 941–952. <https://doi.org/10.1037/0022-3514.79.6.941>

Kraut, R. E., Lewis, S. H., & Swezey, L. W. (1982). Listener responsiveness and the coordination of conversation. *Journal of Personality and Social Psychology*, 43(4), 718–731. <https://doi.org/10.1037/0022-3514.43.4.718>

Rosenfeld, H. (1967). Nonverbal reciprocation of approval: An experimental analysis. *Journal of Experimental Social Psychology*, 3(1), 102–111.

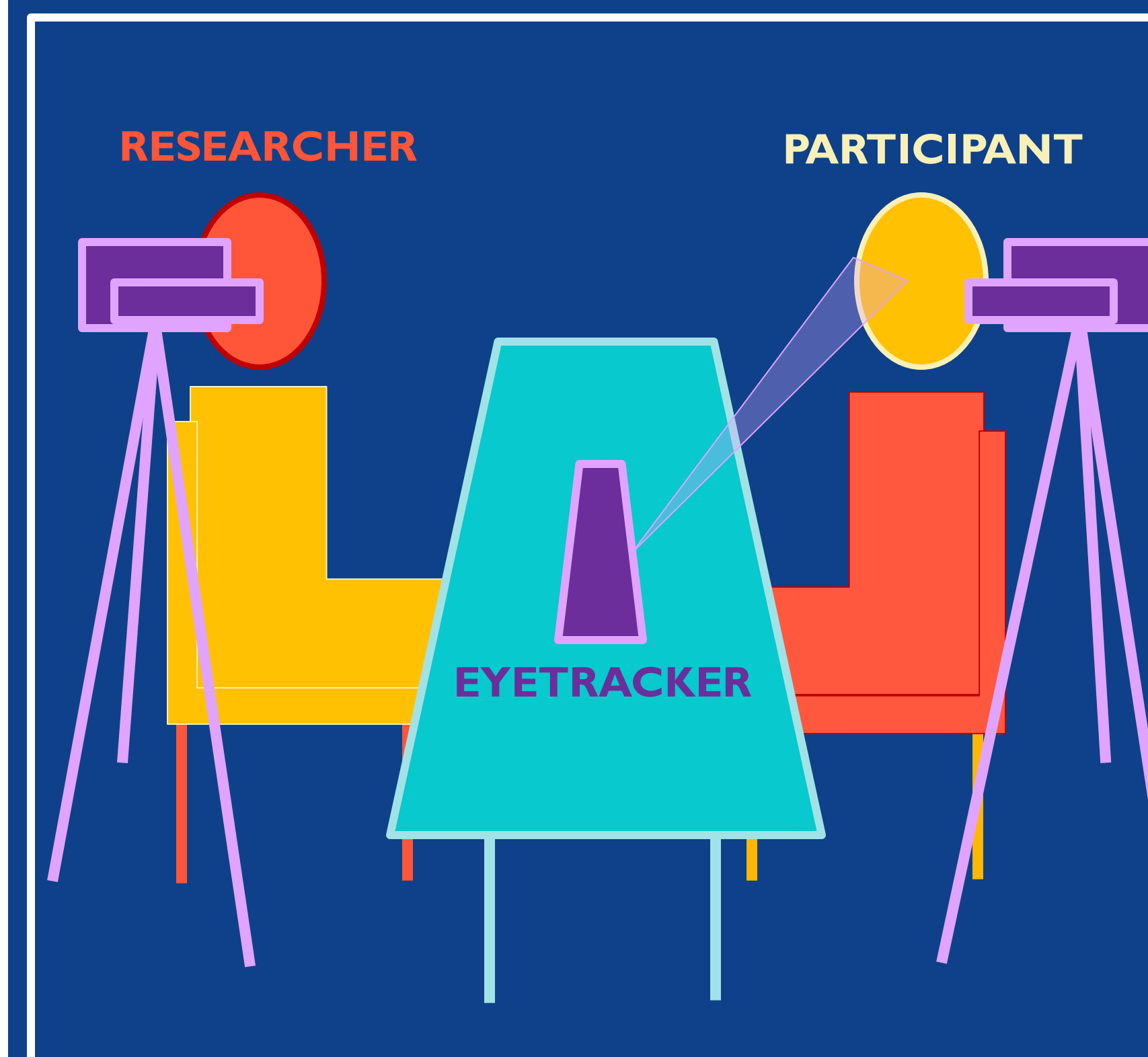
Vinciarelli, A., Salamin, H., Polychroniou, A., Mohammadi, G., & Origlia, A. (2012). From nonverbal cues to perception: Personality and social attractiveness. *Lecture Notes in Computer Science (Including Subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, 7403 LNCS, 60–72. https://doi.org/10.1007/978-3-642-34584-5_5

METHODS

PROCEDURE

- Participants sat across from researcher and participate in a Double Interview (Garcia-Winner, 2002):
 - **Part 1:** Researchers ask questions, mostly in listener role
 - **Part 2:** Participants ask questions mostly in listener role
- The conversation was video-recorded (child and researcher perspectives)
- Participants’ eye-tracking recorded

Experiment Set-Up



BC and Gaze Coding

- From **Part 2** of interview, when participants are mostly listening:
 - BCs blind coded from videos by 2 researchers, based on definitions from Duncan (1974) and Krauss et al. (1977)
 - Nonverbal: e.g., head shaking/nodding
 - Verbal: e.g., laughing and affirmations (‘mm-hm’)
 - **Participant gaze** recorded by eye-tracking; **researcher gaze** determined from participant-perspective video
 - “Mutual Gaze” identified when gaze times overlapped

Analysis

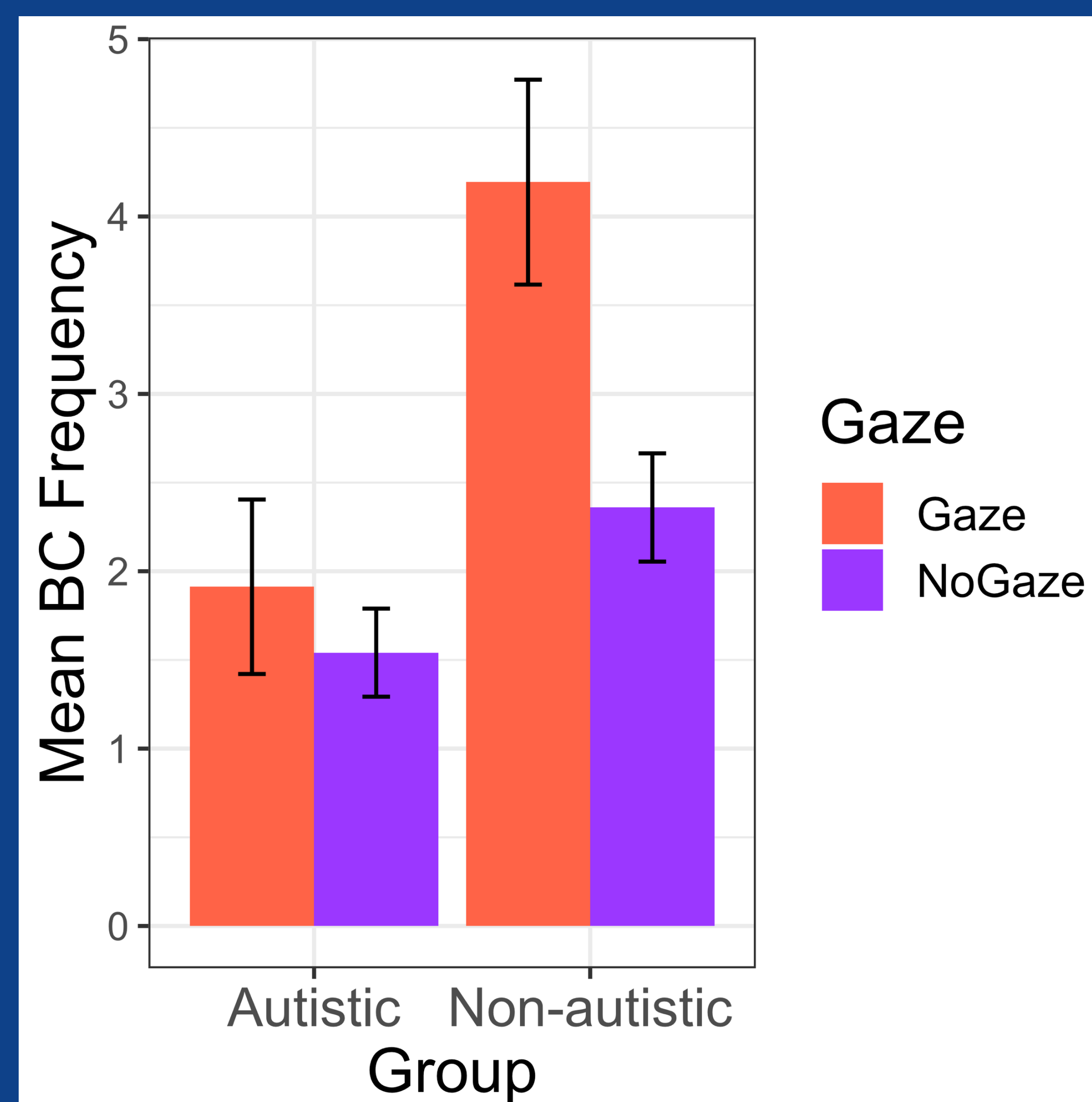
- Number of BCs (nonverbal + verbal) divided by length Interview Part 2 (in min)
- 2 (group) x 2 (BC Modality) repeated-measures ANOVA for frequency of BCs per min
- 2 (group) x 2 (Gaze Type) repeated-measures ANOVA for frequency of BCs per min

CONCLUSIONS

- Autistic participants use less BC than NA peers
 - Effect driven especially by non-verbal BCs
 - Independent of eye contact with conversation partner
- BCs are crucial to conversational goodness
 - Reduced BCs may contribute to conversation breakdowns in cross-neurotype interactions
- Future research should examine BC behavior and ratings of quality during between/across neurotype conversations

RESULTS

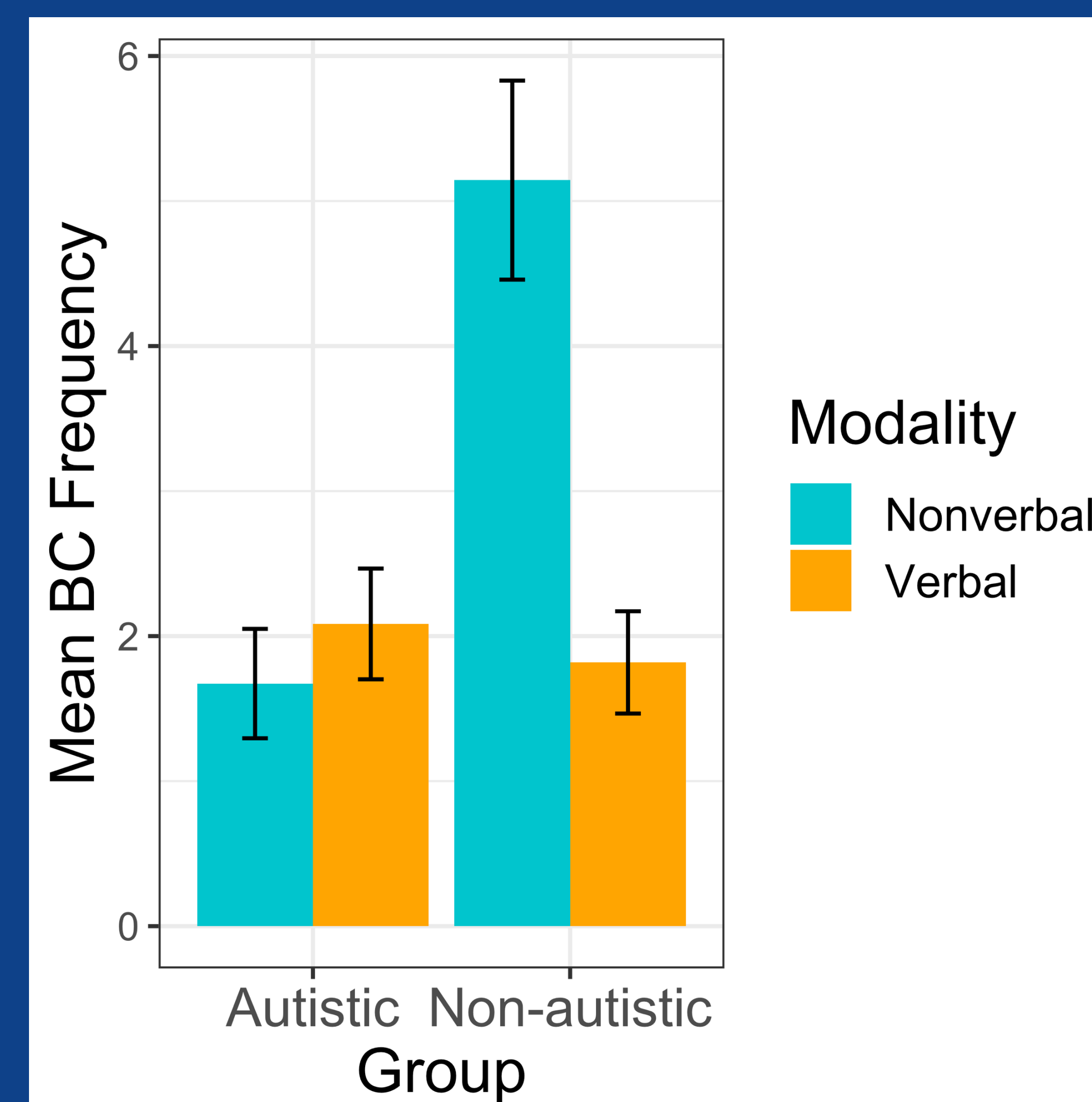
BCs BY GAZE



GAZE ANOVA:

- **GROUP**
($F(1,41) = 14.00, p < .001, \eta^2G = .13$)
- *GAZE**
($F(1,41) = 6.49, p = .01, \eta^2G = .08$)
- GROUP X GAZE**
($F(1,41) = 2.060, p = .11, \eta^2G = .03$)

BCs BY MODALITY



MODALITY ANOVA :

- **GROUP**
($F(1,41) = 11.25, p < .01, \eta^2G = .12$)
- **MODALITY**
($F(1,41) = 10.57, p < .01, \eta^2G = .12$)
- **GROUP X MODALITY**
($F(1,41) = 14.57, p < .001, \eta^2G = .15$)

SCAN FOR PAPER!



ACKNOWLEDGEMENTS

We thank the children and families who supported this research. Work funded by NIH-NIDCD R01 DC012774-01 (Grossman, PI)

PUBLISHED VERSION:

MATTHEWMAN, H., ZANE, E., & GROSSMAN, R. B. (2022). COMPARING FREQUENCY OF LISTENER RESPONSES BETWEEN ADOLESCENTS WITH AND WITHOUT ASD DURING CONVERSATION. *JOURNAL OF AUTISM & DEVELOPMENTAL DISORDERS*, 52(3).