# First Impressions and Gender Expression:
# Evidence of a Double Penalty for Autistic Women

Baer, M.[1], Worth, B. F.[1], Cola, M.[2], Knox, A.[2], Covello, M.[2], Kommareddi, R.[2], Russell, A.[2], Pelella, M. R.[2], Schultz, R.[2], Parish-Morris, J.[2], Grossman, R. B.[1]

(1) Emerson College, (2) Center for Autism Research At Children's Hospital of Philadelphia

Corresponding author: Meghan_baer@emerson.edu

## Introduction

- First impressions have lasting impact on social experiences (Bromgard et al., 2006), which are two-directional (double empathy) (Davis & Crompton, 2021)

- Females with ASD have different social expressions but are underrepresented in first impression literature (Cola et al., 2020)

- There is a higher occurrence of gender fluidity in autistic than neurotypical community (Brunissen et al., 2020; George & Stokes, 2017)

## Hypotheses

1) Autistic females will be rated less favorably than their neurotypical peers. 2) Autistic females and neurotypical females will be rated differently in terms of gender expression. 3) Video participants whose perceived gender expression matches their sex assigned at birth will receive more favorable social ratings than video participants whose perceived gender expression differs from their sex assigned at birth.

## Methods

- Adult raters (N=118) watched 45 7-10 second video clips showing autistic or NT youth engaging in a conversation with an researcher who

- Videos showed 15 NT females, 15 autistic females, and 15 autistic males (sex category was determined via parent report).

- Raters provided social first impression for each video participant and their perception of each participant's gender expression (femininity, masculinity, and other/neither)

### Survey Questions

Question 1: It seems like this person and I communicate in a similar way
Question 2: If I were a classmate of this person, I would be interested in spending time with them
Question 3: It seems like conversation comes naturally to this person
Question 4: It seems like this person gets along well with others
Question 5: This person seems like someone their peers enjoy spending time with
Question 6: It seems like this person would be likely to start a conversation with others

Strongly Disagree — Strongly Agree
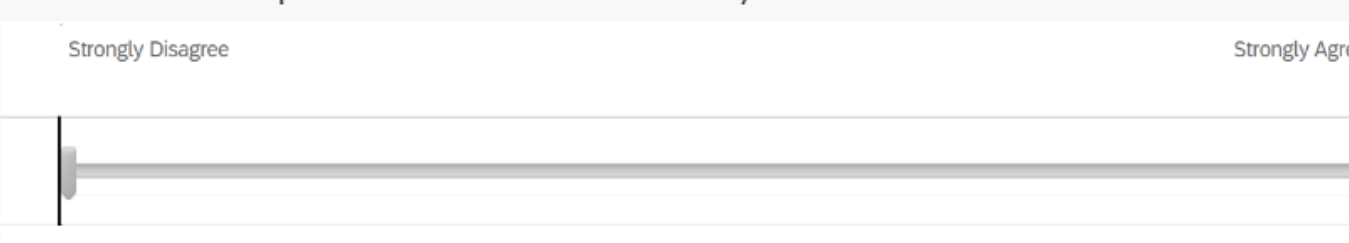
Gender Expression:
I perceive this person's gender expression to include:
(provide a rating for any or all of the characteristics).

Femininity
Masculinity
Other/Neither

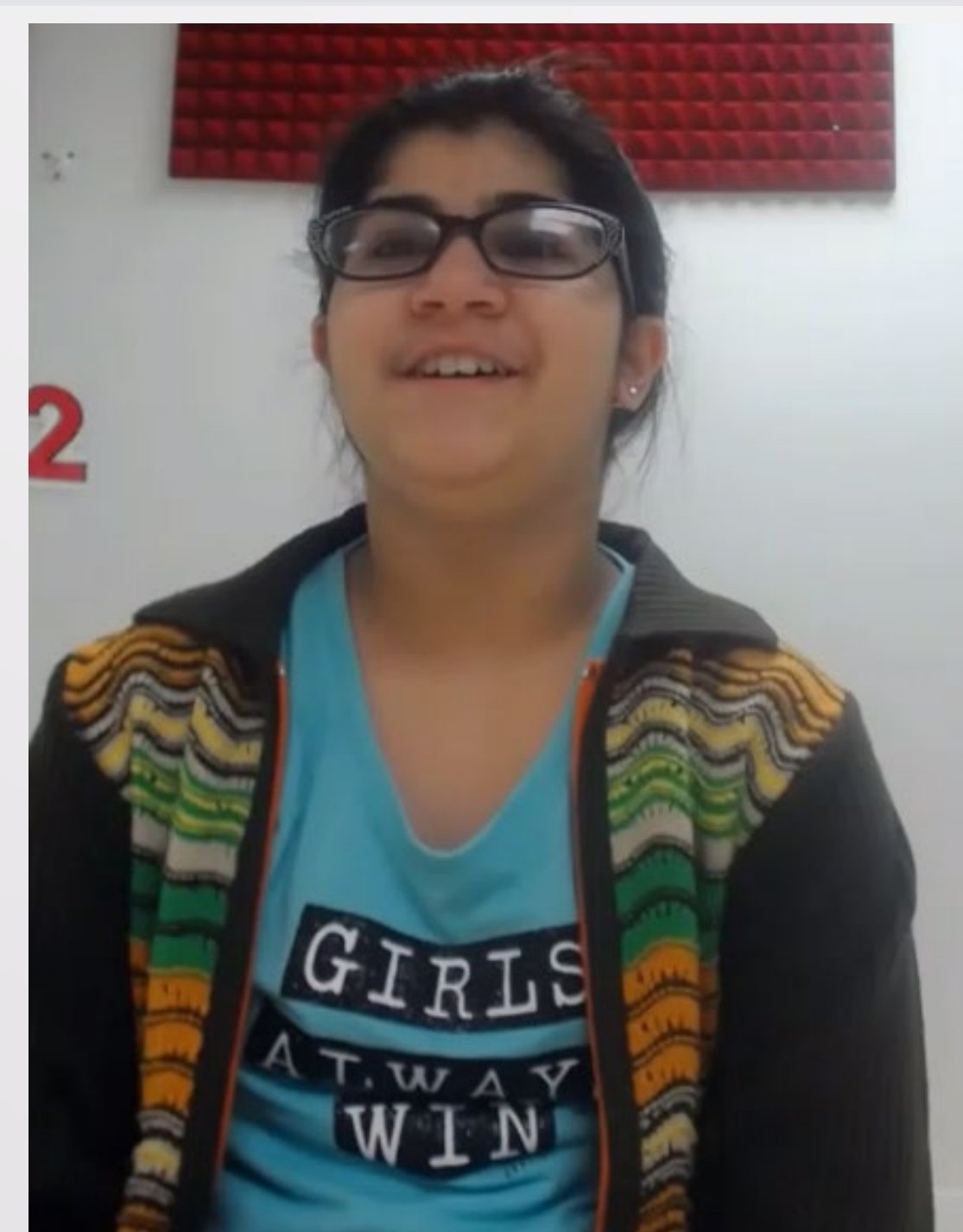### Study Participants

118 students at University of Pennsylvania

| Gender | Age Group | | | |
|---|---|---|---|---|
| | 12-18 yrs | 19-24 yrs | 25-34 yrs | TOTAL |
| Female | 11 | 56 | 1 | 68 |
| Male | 4 | 44 | | 48 |
| Nonbinary | | 1 | | 1 |
| Rather not say | | 1 | | 1 |

### Video Demographics:

| Group | # part | Age | Total IQ | Nonverbal IQ | Verbal IQ | ADOS Total |
|---|---|---|---|---|---|---|
| ASD- Females | 15 | M=10.9 | M=99.4 | M=100 | M=98.8 | M=10.9 |
| TD- Females | 15 | M=11.5 | M=96.3 | M=93.53 | M=93.4 | M=99.2 |
| ASD- Males | 15 | M=12.4 | M=93.4 | M=93.53 | M=94.4 | M=12 |
| ASD Fem/TD Fem $p=$ | | | 0.49 | 0.57 | 0.29 | 0.94 |
| ASD Fem/ASD Male $p=$ | | | 0.15 | 0.3 | 0.29 | 0.36 | 0.58 |

### Acknowledgements
Thank you to the participants and their families, Alissa Dunsky for consulting on survey questions, The CHOP research team, especially Azia Knox, for their assistance collecting data, Barbara Worth for providing her expertise on gender diversity, and Ruth Grossman for her mentorship.

## Results

### Social Ratings for Autistic Videos
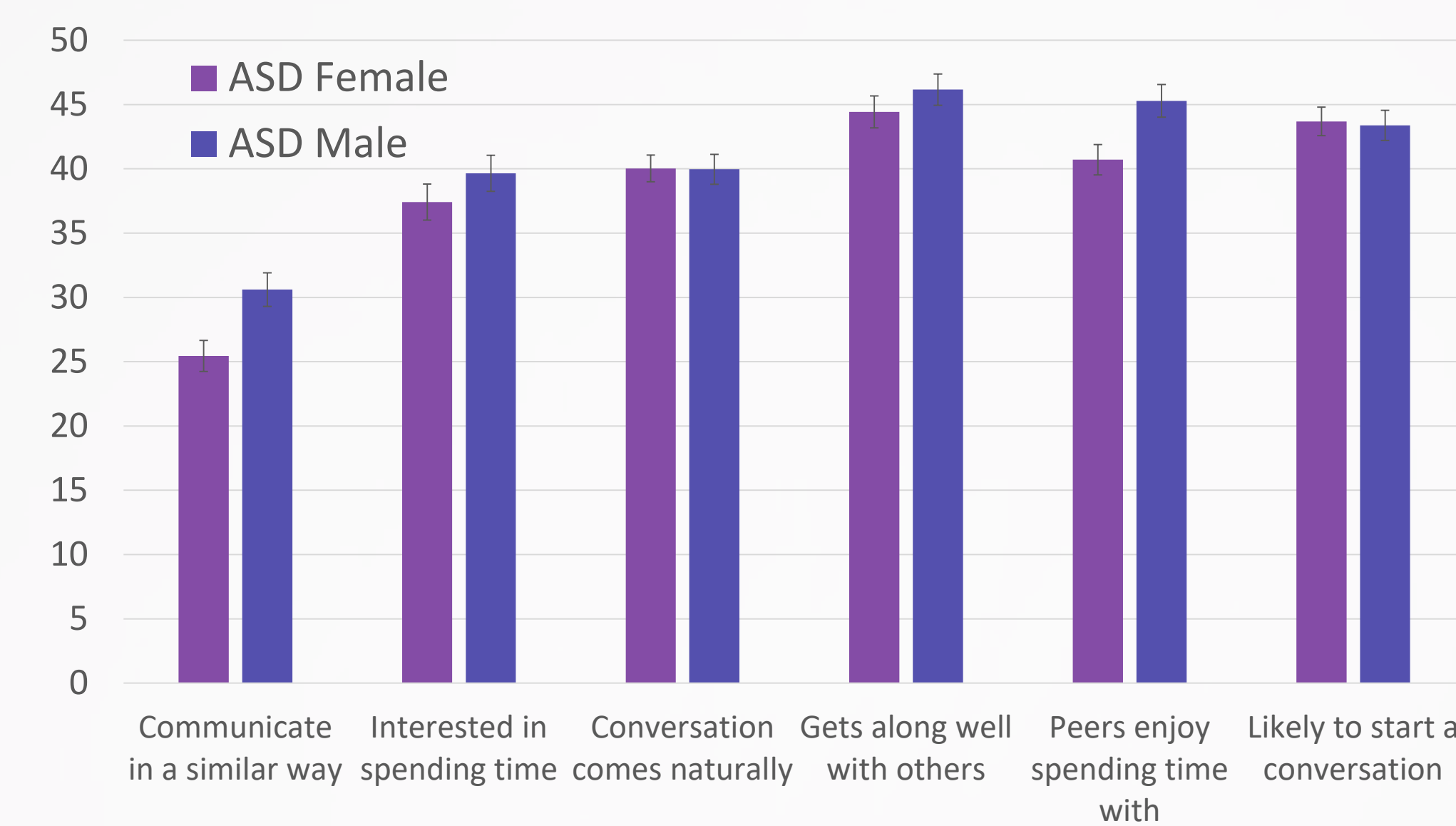


**Social Ratings for Autistic Videos**
Group x question ($F_{(1,111)} = 27.9$, $p < .001$, partial $\eta^2 = .53$). Autistic females rated:
- Question 1: ($t_{(111)} = 9.4$, $p < .001$)
- Question 2: ($t_{(111)} = 3.3$, $p = .001$)
- Question 4: ($t_{(111)} = 2.9$, $p = .002$)
- Question 5: ($t_{(111)} = 7.5$, $p < .001$)

### Gender Expression Ratings for Female Videos
- Group x question ($F_{(1,111)} = 125.9$, $p < .001$, partial $\eta^2 = .53$). Autistic females rated:
- Less feminine ($t_{(111)} = 13.3$, $p < .001$)
- More masculine ($t_{(111)} = 7$, $p < .001$)
- More other/neither ($t_{(111)} = 8.2$, $p < .001$)
- Femininity ratings positively correlated with social impression scores for autistic females on five out of six questions, and positively correlated for all six questions in NT females.
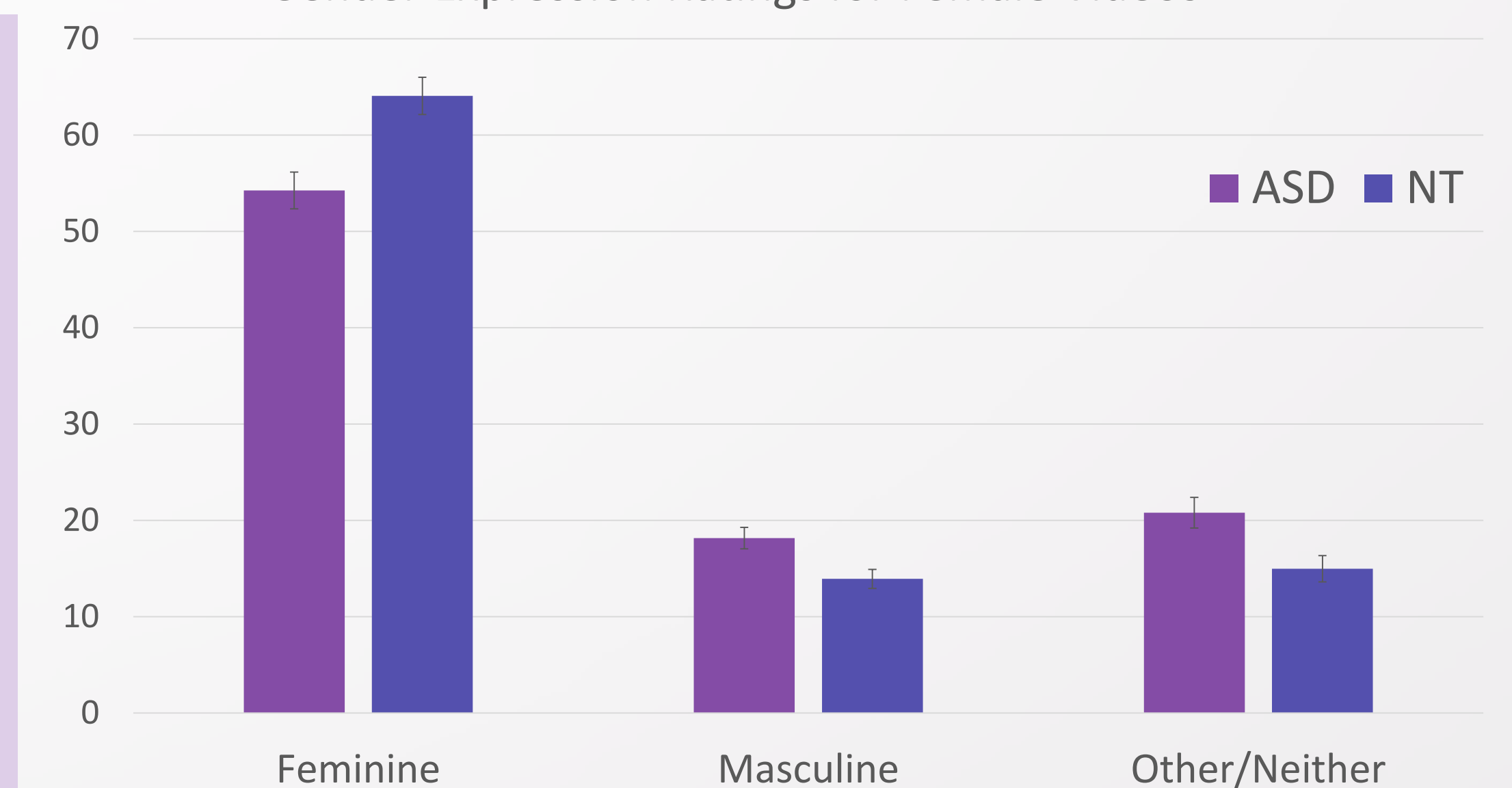


## Conclusions

- Autistic females were rated significantly less feminine, more masculine and more other/neither than NT females and also viewed as less socially skilled than NT females *and* autistic males.

- Perceived gender expression is related to social impressions of autistic and neurotypical individuals and has a particularly strong impact on how autistic females are perceived by others

- Participants with perceived gender expressions that matches their sex assigned at birth received more positive social ratings

- **These data suggest a double penalty for being both autistic and female and have important implications for the social integration of autistic females or autistic individuals whose perceived gender expression deviates from cis- normative social expectations.**

### References
1. Bromgard, G. & Stephan, W. G. Responses to the stigmatized: disjunctions in affect, cognitions, and behavior. J Appl Soc Psychol. 36, 2436–2448 (2006).
2. Brunissen, L., Rapoport, E., Chawarska, K., & Adesman, A. (2020). Sex differences in gender- diverse expressions and identities among youth with Autism Spectrum Disorder. Autism Research, 14(1), 143–155. https://doi.org/10.1002/aur.2441
3. Cola, M. L., Plate, S., Yankowitz, L., Petrulla, V., Bateman, L., Zampella, C. J., de Marchena, A., Pandey, J., Schultz, R. T., & Parish-Morris, J. (2020). Sex difference in the first impressions made by girls and boys with autism. Molecular Autism 11(49).
4. Davis, R. & Crompton, C. J. (2021). What do new findings about social interaction in autistic adults mean for neurodevelopmental research? *Perspectives on Psychological Science*. 1-5. 5. George, R., & Stokes, M. A. (2017). Gender identity and sexual orientation in autism spectrum disorder. Autism, 22(8), 970–982.

SCAN ME