

INTRODUCTION

- Mimicking other people's mannerisms and gestures occurs spontaneously and enhances social affiliation and interaction quality among neurotypicals (NT).
- Mimicry of emotional facial expressions is known to be decreased in autism spectrum disorders (ASD).
- Yet, non-facial/non-emotional mimicry may also be reduced in ASD due to sensorimotor integration issues and/or the (ir)relevance of mimicry for social interactions in ASD.

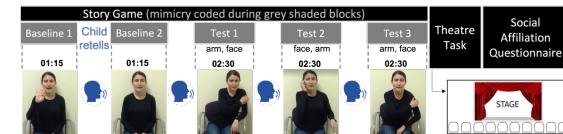
How does non-facial mimicry manifest in ASD children and what does it mean for ASD children's social affiliation?

HYPOTHESIS 1: ASD children will mimic their partner less than NT children.

HYPOTHESIS 2: Mimicry and affiliation will be positively associated in the NT group. Whether this link holds in ASD is explored.

METHODS

- Participants with a complete dataset included 60 children (32 ASD, 28 NT), all aged 8-12 years.
- Children played a story-telling game with a virtual partner. In 5 blocks, they first listened to their partner tell part of a story, and then told it back to her.



MIMICRY ASSESSMENT

- The virtual partner scratched her arm and head twice per block.
- Frame-by-frame coding revealed how many times children performed these "target actions" in the baseline vs test blocks after the narrator did them.

SOCIAL AFFILIATION MEASURES

- After the story-telling game, we measured children's social affiliation with the partner:
 - Theatre task:** How close/distant would you sit if you bumped into your partner at the cinema (response range: 1 – 9)?
 - Questionnaire:** 16 items on attribution of positive vs negative features and liking (response range: 1 – 7).
- ADOS-2 was administered to ASD group, and SRS-2 was collected from all parents.

HIGHLIGHTS

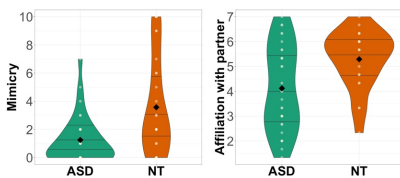
- Neurotypical (NT) people unconsciously copy ("mimic") others' actions and gestures during a social interaction.
- In NT interactions, mimicry enhances social affiliation.

How does non-facial mimicry manifest in ASD children? What does mimicry mean for social affiliation in ASD?

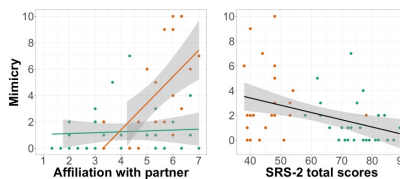
- During a story-telling game with a virtual partner, ASD children mimicked their partner less than NT children.
 - While NT children who mimicked also liked their partner more, mimicry was not related to affiliation for ASD children.

RESULTS

- Due to the positive skew of the mimicry data, zero-inflated negative binomial regression was used.
- 79% of NT children and 56% of ASD children mimicked their partner at least once.



ASD group showed reduced mimicry ($p = .001$, $\phi = .38$) and less affiliation ($p = .01$, $\phi = .33$) compared to NT.



Mimicry was positively associated with affiliation in the NT ($p = .0009$), but not ASD group ($p = .72$). Across diagnostic groups, mimicry was negatively associated with SRS-2 ($p = .004$), likely reflecting the diagnosis-based clustering of SRS-2 data.

CONCLUSIONS

- While autistic children mimic others less, their degree of mimicry is unrelated to their feelings of affiliation.
- Reduction in non-facial / non-emotional expressions in ASD suggests that fundamental sensory-motor integration issues, rather than inattention or an inability to recognise emotions, may account for autism-associated differences in mimicry.
- Disrupted link between mimicry and affiliation for ASD children suggests that there may be alternative mechanisms through which autistic people establish and signal social affiliation.
- Future research can examine the sensory-motor mechanisms and alternative methods of facilitating social affiliation in ASD interactions.

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