# Diagnostic status influences rapport and communicative behaviours in dyadic interactions between autistic and non-autistic people

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Diversity in Social Intelligence Project

## Background

- Social interactions are key for rapport and social bonds (Hall, Horgan, and Murphy 2019).
- However, little is known about how rapport develops differently between autistic and non-autistic people, especially within same- or mixed-neurotype dyads.
- Using the APIM (Kenny and Ledermann 2010), this study assessed links between diagnostic status, rapport, and communication, including the mediating role of specific behaviours.

**Aims:**

1. Examine whether actor/partner diagnostic status affects self-reported rapport.
2. Investigate if these behaviours mediate the status-rapport relationship.
3. Assess variations in multimodal behaviours between autistic and non-autistic participants.
4. Investigate how does awareness of a partner's diagnostic influences rapport.

**Hypotheses:**

- **(H1):** Lower rapport for autistic participants, those with autistic partners, and in mixed-neurotype dyads.
- **(H2):** Multimodal indices mediate the status-rapport link.
- **(H3):** Autistic participants in mixed-neurotype dyads will show fewer multimodal indices of engagement than those in same-neurotype (autistic-autistic) dyads.

## Methods

**Participants:** 108 adult participants (56 autistic, 18 self-identified).

**Procedure:** Unfamiliar pairs in 5-min unstructured, video-recorded conversation; self-report rapport measure post-interaction.

**Measures:**

- **Rapport:**
  - Sum of 5 VAS (0-100: ease, enjoyment, success, friendliness, awkwardness [rev.]).
  - Good reliability (Cronbach's α = .88).
- **Multimodal Indices:**
  - *Kinematics:* Upper body velocity, acceleration, jerkiness (OpenPose (Cao et al. 2019) & `duet` (Efthimiou 2025)).
  - *Emotions:* % time laughing/smiling (ELAN manual coding).
  - *Verbal:* Mean utterance length, verbal backchannels (ELAN).
  - *Non-verbal:* Non-verbal backchannels (ELAN).

Figure 1: Study Setup Example. Participants faced each other at an angle for a 5-minute conversation.

## Results

**Rapport (H1, Fig 2):**

- **H1a Supported:** An individual's own neurotype (the actor effect) significantly predicted their self-reported rapport. On average, autistic participants reported lower rapport (*M*=360.47) compared to non-autistic participants (*M*=423.32)showing a significant negative association(b = -31.43, 95% CI [-47.05, -15.81], $p < .001$; Figure 2).
- **H1b Not Supported:** Partner's status did not significantly affect rapport ($p = .33$).
- **H1c Not Supported:** No actor-partner interaction effect on rapport ($p = .81$).

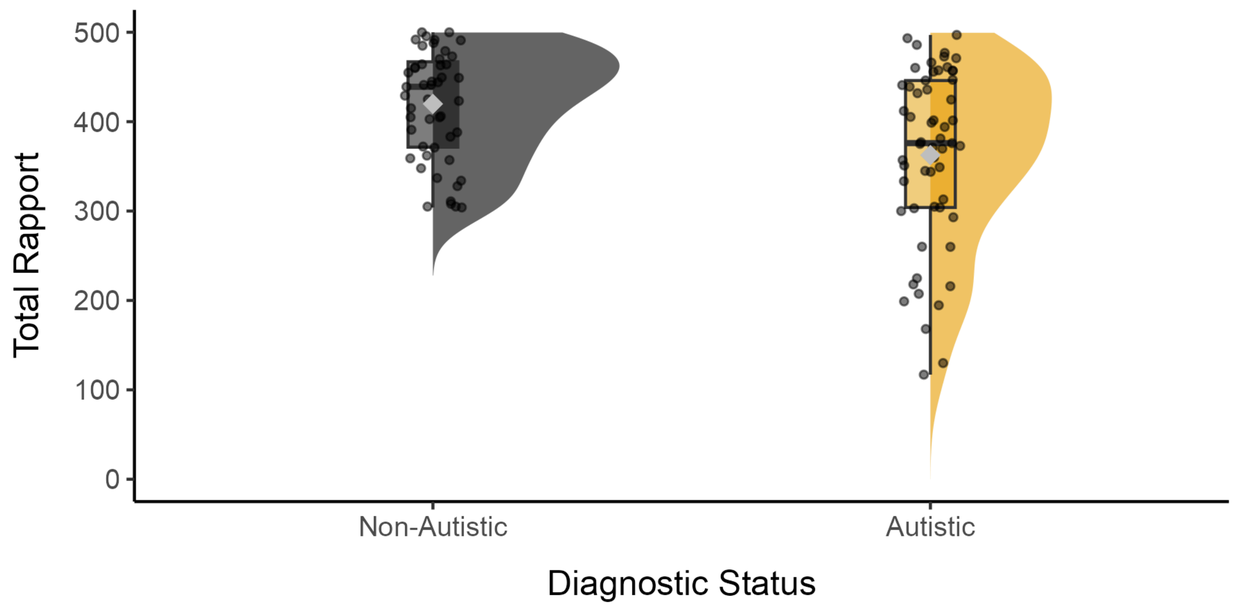


Figure 2: Rapport Scores by Actor Diagnostic Status.

**Mediation by Multimodal Indices (H2):**

- **H2 Not Supported:** No tested multimodal indices (verbal/nonverbal backchannels, laughing, smiling, utterance length, kinematics) significantly mediated the status-rapport link (all $p > .05$).

**Group Differences in Multimodal Indices (H3):**

- **Mean Utterance Length:** Autistic participants had significantly longer mean utterance lengths vs. non-autistic (b = 1.46, 95% CI [0.79, 2.13], $p < .001$). No other significant differences in other multimodal indices by actor, partner, or interaction.

**Exploratory - Awareness of Partner's Diagnostic Status:**

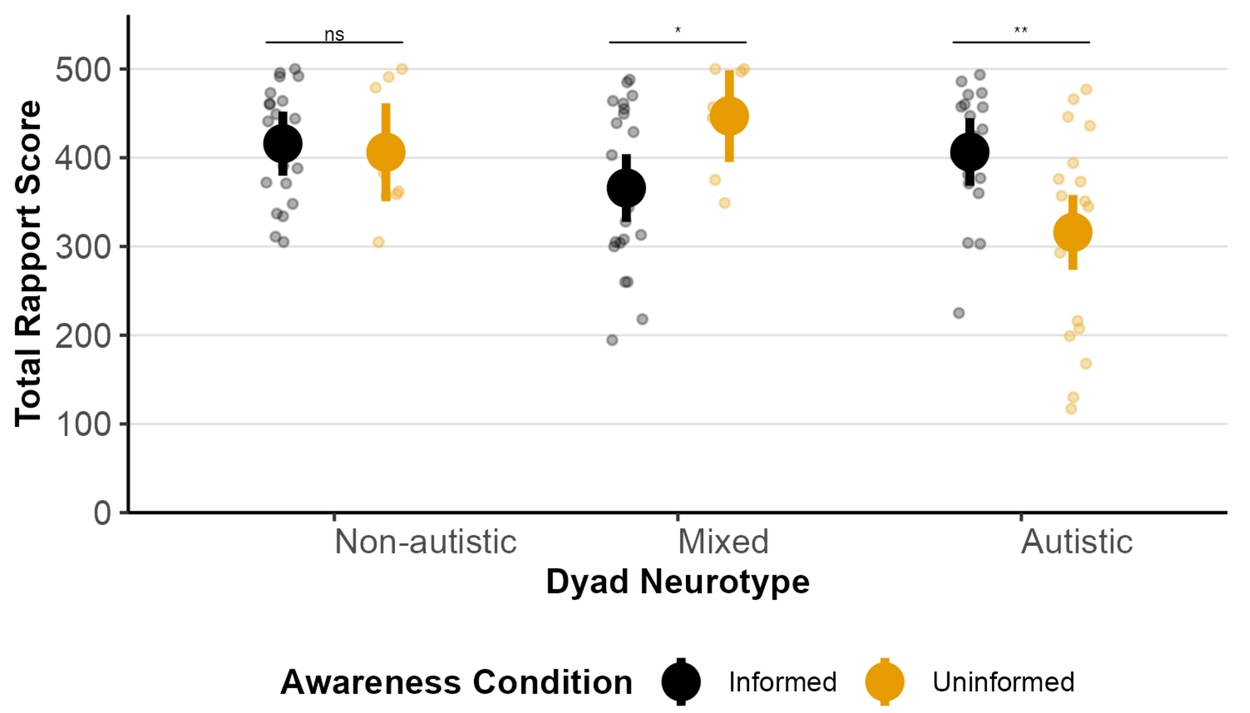


Figure 3: Rapport by Dyad Neurotype & Awareness of Partner`s Status. Solid points/lines are model-predicted averages with 95% CIs. ns = not significant, * p < 0.05, ** p < 0.01

- Awareness moderated rapport (Interaction: $F(2, 55.37) = 8.09$, $p < .001$, $\eta^2 = 0.23$; Figure 3).

## Discussion

- Lower rapport in autistic participants aligns with some prior research; lack of mediation suggests other unmeasured factors (e.g., heightened anxiety).
- Longer utterances in autistic participants might indicate deeper engagement or a different conversational style, not a deficit.
- Awareness moderation highlights explicit social information's importance. Knowing partner's neurotype may reduce ambiguity for autistic individuals, though effects varied.

**Limitations:** Self-report biases; potential underpowering for APIM partner/interaction effects; isolated behaviour analysis.

**Future Directions:** Larger, diverse samples; deeper linguistic analysis (content, prosody, pitch); autistic-friendly methods (longer interactions); objective measures alongside self-reports.

## Link to OSF and References