Autistic Teenagers Lexically Align at Similar Rates to Typically Developing Peers
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Background
- Lexical alignment (LA): using same term (e.g., rabbit not bunny) as conversational partner
- LA has been proposed to build rapport & improve social communication (SC)
- Higher task-relevant LA → better cooperative task performance in TD adult dyads
- Less frequent but more highly concentrated LA → better cooperative task performance in TD adult dyads
- Autism Spectrum Disorder (ASD) associated with weaker SC
- If LA linked to SC, autistic people would be expected to align less than TD peers
  • However:
    1. British high-verbal autistic children aligned at equal rates to TD peers in a picture-naming game
    2. What about lower-verbal autistic children with wider range of ability levels?
    3. How consistent is LA across item type (natural kinds versus artifacts)?

Participants
- Subset of Longitudinal Study of Early Language (LSEL) participants
  - At 1-2 years, TD and ASD groups matched on language ability
  - Present study: Same participants (teenagers/young adults), now more widely ranging in language ability; see Table 1

Procedure: LA
- Adapted from SNAP paradigm
- Changed British English items to North American English
- 40 target cards (20 item pairs), 40 filler cards (non-target items), 16 SNAP cards (8 item pairs)
  • Target items (preferred/diagram were:
    - natural kinds (n=7), e.g., mom/mother, stomach/belly, cat/kitten
    - artifacts (n=13), e.g., toilet/potty, stairs/steps, cup/mug
  • Preferred & alternate terms determined via piloting w/TD undergraduates at University of Connecticut

Figure 1. Steps of the SNAP Game

Figure 2. Autistic and TD Teenagers Aligned at Equal Rates

Table 1. Age, Standardized Measure Scores, and Alignment Scores by Diagnostic Group

<table>
<thead>
<tr>
<th>Diagnostic Group</th>
<th>Age (years)</th>
<th>M (SD)</th>
<th>T1</th>
<th>M (SD)</th>
<th>p (Cohen's d)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TD</td>
<td>16.20 (4.01)</td>
<td>15.30 (3.01)</td>
<td>16</td>
<td>16.20 (3.65)</td>
<td>.430 (0.27)</td>
</tr>
<tr>
<td>ASD</td>
<td>20.46 (7.18)</td>
<td>18.33 (6.82)</td>
<td>20</td>
<td>18.94 (7.24)</td>
<td>.006 (1.23)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Measure</th>
<th>CELF-5® combined raw scores (six subscales)</th>
<th>CELF-5® Expressive Language Index standard scores</th>
<th>ADOS2® (Communication + Social Interaction)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TD</td>
<td>105.80 (5.09)</td>
<td>82.89 (18.19)</td>
<td>20</td>
</tr>
<tr>
<td>ASD</td>
<td>104.00 (58.52)</td>
<td>86.07 (19.04)</td>
<td>19</td>
</tr>
</tbody>
</table>

| Note. | INV = investigator; PAR = participant. Steps 1-4 = preferred-term trial; Steps 5-8 = alternate-term trial; Steps 9-10 = SNAP trial (occurred every 2-3 trials). |

Results: Analyses
- Alignment scores did not differ between the TD and autistic groups (Figure 2).
- LA scores for natural kinds higher than for artifacts in both groups (Figure 3).
- TD: LA scores did not correlate significantly with ADOS-SC or CELF scores
- ASD: LA scores significantly positively correlated with CELF scores (r = 0.57, p = .027) and negatively correlated with ADOS-SC scores (r = -0.64, p = .010)
- When controlling for ADOS-SC scores, correlation between LA scores and CELF scores no longer significant
- When controlling for CELF scores, correlation between LA scores and ADOS-SC scores no longer significant

Conclusions
- Autistic and TD individuals continue to align at similar rates – even as teens and young adults.
- LA scores were higher for natural kinds than artifacts → people may consider names of natural kinds more interchangeable than names of artifacts.
- LA is related to SC and language in autistic individuals, but not in TD individuals.
- In this sample, SC and structural language colinearly contribute to LA

References

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