Investigating the Relationship Between Early Joint Attention and Later Usage of Verb Subcategories in ASD

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Background

- Children with ASD demonstrate early challenges with joint attention (JA).
- JA predicts variation in later productive language measures, like verb diversity (i.e., number of different verbs produced).
- Productive verb diversity in childhood predicts adult language outcomes in ASD.
- But, do we see a link between JA and production of verbs in subcategories?
  - Action (e.g., eat, run)
  - General all-purpose (GAP; e.g., want, go)
  - Internal state (e.g., think, hope)

Does the presence or duration of JA predict production of action, GAP, and/or internal state verbs?

Methods

- 31 children with ASD (from a longitudinal project)
- Language samples from six parent-child play sessions, each four months apart
- Presence and duration of JA episodes were coded at visits 1-3 (T1)
- Verbs produced during visits 4-6 (T2) were coded as action, GAP, or internal state

IJA+ group had higher T1 language and communication scores.

<table>
<thead>
<tr>
<th>Age in months</th>
<th>MSEL Expressive Language Raw Score</th>
<th>MSEL Receptive Language Raw Score</th>
<th>Vineland Communication Total</th>
<th>ADOS Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>IJA+ (n = 19)</td>
<td>33.06 (6.06)</td>
<td>21.05 (6.88)</td>
<td>26.42 (7.97)</td>
<td>82.68 (17.46)</td>
</tr>
<tr>
<td>IJA- (n = 12)</td>
<td>32.59 (4.70)</td>
<td>12.67 (4.70)</td>
<td>13.92 (6.00)</td>
<td>65.08 (8.55)</td>
</tr>
</tbody>
</table>

\[ \rho = 0.862, \ p < .001 \]

Results

IJA+ children produced a higher proportion of action and internal state verb types at T2 than IJA- \( (\rho < .05) \)

<table>
<thead>
<tr>
<th>T1 IJA</th>
<th>IJA-</th>
<th>IJA+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action</td>
<td>0.40</td>
<td>0.52</td>
</tr>
<tr>
<td>GAP</td>
<td>0.22</td>
<td></td>
</tr>
<tr>
<td>Internal State</td>
<td>0.50</td>
<td></td>
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</tbody>
</table>

T1 duration of JA was positively correlated with T2 proportion of action and internal state verb types \( (\rho < .05) \)

Discussion

- Children who engage in JA are more likely to later use action and internal state verbs than those who do not engage in JA.
- Longer duration of JA episodes is related to later higher proportions of action and internal state verb types.
- Episodes of JA may be particularly conducive to learning specific types of verbs (i.e., action and internal state), possibly because:
  - Children are more interested/invested when they initiate JA
  - Parents produce richer/more varied verb input during JA
- GAP verb analyses did not yield significant effects, but the patterns were opposite those seen of action and internal state verbs.
- Lack of significance in GAP verb analyses is likely related to the extreme variability in GAP verb proportions in the JA- group.
- Data are currently being recoded with a focus on context of use.
- Future work should investigate how parent talk during JA relates to children’s production of verbs within subcategories, and whether this production within subcategories predicts later language skills.

References & Acknowledgements


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