Differential Phonological Profiles of Typically Developing Toddlers, Low-Verbal Toddlers with ASD, and Middle-Verbal Toddlers with ASD
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BACKGROUND

- Findings on phonological delays/differences in children w/ASD have been mixed.
- 3-6 mos w/ASD → no difference in consonant production (p>0.05) relative to age-matched TDs during semi-structured phonological elicitation task.
- 7-9 mos w/ASD → no Phon Articulation Test, 24% scored in “impaired” range.
- Most research has studied consonant inventories but not vowel inventories.
- 18-36 mos w/ASD → fewer consonant types (24), and different consonant types, than age-matched but not lan-matched TDs during semi-structured elicitation task.
- Consonant inventory (10) during CSBS-2P at 24 mos → positive correlation with verbal & nonverbal DQ at 36 mos.
- Consonant inventory (13) during CSBS-2P at 36 mos → value-added predictor of expressive language at 48-72 mos.
- ASD characterized by heterogeneity → should we subdivide participants w/ASD?

OBJECTIVE

- Analyze the consonant and vowel inventories of Low-Verbal (LV) and Middle-Verbal (MV) children w/ASD, compared to TD children.

PARTICIPANTS

- 20 children from Longitudinal Study of Early Language (LSEL) but not age (Table 1)
- Low-verbal (LV) and middle-verbal (MV) groups determined by EL at onset.
- Transcription timepoint: ~4 months later.

Table 1. Participant Age and Language Level by Group

<table>
<thead>
<tr>
<th>Group</th>
<th>N (TD=18)</th>
<th>MV (N=6)</th>
<th>LV (N=7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>STUDY ONSET</td>
<td>M(SD)</td>
<td>M(SD)</td>
<td>M(SD)</td>
</tr>
<tr>
<td>Age (months)</td>
<td>18.37 (3.2)</td>
<td>33.34 (6.8)</td>
<td>34.46 (4.9)</td>
</tr>
<tr>
<td>MSEL EL (raw)</td>
<td>15.14 (2.3)</td>
<td>17.00 (1.90)</td>
<td>16.43 (1.40)</td>
</tr>
<tr>
<td>MR MSEL EL (raw)</td>
<td>20.70 (0.7)</td>
<td>0.71 (0.7)</td>
<td>19.19 (0.69)</td>
</tr>
</tbody>
</table>

TRANSCRIPTION

- Videos of 30-min caregiver-child play sessions, noted Speech-Like Vocalizations (SLV).
- Every discernible SLV was transcribed in the CLAN.11
- Transcribed: words, self-stimulating vocalizations, babbles.
- NOT transcribed: grunts, whines, crying, laughing.

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RESULTS

- The MV group exceeded the LV group in consonant tokens, consonant types, and vowel types (Figs. 3-5), but no vowel tokens.

CONSONANT PLACE of ARTICULATION

- Labiodental types & tokens: MV > LV
- Alveolar types & tokens: MV > LV
- Velar types & tokens: MV > LV

CONSONANT MANNER of ARTICULATION

- plosive tokens: MV > LV
- Nasal tokens: MV > LV
- Fricative tokens: MV > LV

VOWEL BACKNESS

- Central tokens: MV > LV
- High types & tokens: MV > LV

VOWEL HEIGHT

- Mid tokens: MV > LV
- Low types: MV > LV

DISCUSSION

- Consistent MV/LV differences suggest that diversity of consonant and vowel use is necessary for developing fluent English.
- Few MV/TD differences suggest that phonology may not differ solely by diagnosis; closer age-matching may also be important.
- Future directions:
  - Examine whether phonological characteristics at this timepoint predict expressive language at a later timepoint.
  - Include more participants for increased statistical power.

REFERENCES

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