Gesture Use by Late Talkers at 16 months and 6 Years of Age

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Gesture Definitions

- **3- and 16-Months**
  - Direct and referential gestures that were
    - Directed to another person
    - Part of a direct motor act on an object or other person
    (Rico-Maldonado, 2005)

- **6 Years**
  - Direct or representational (McNeill, 1992, coding manual by Evans and Alibali, 2005)

Method

Parents of 127 children completed the MacArthur-Bates Communicative Development Inventory: Words and Gestures (CDI; Fenson et al., 1993) when children were 13 or 16 months of age. Children were assigned to one of five language groups on the basis of the resulting vocabulary percentiles. A smaller number of these children were re-evaluated when they were 6 years of age.

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References


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For the toddlers, number of words produced was also determined.

Results

- **Toodler Language**

<table>
<thead>
<tr>
<th>Language Group</th>
<th>CDI Scores</th>
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</table>
  | Late Comprehenders (LC) | 16-m N=20
  | 9y N=5 |
  | Late Producers (LP) | 16-m N=37
  | 6y N=11 |
  | Typically Developing – Comprehension-Matched (TD-CM) 13-m N=16 |
  | Typically Developing – Production-Matched (TD-PM) 13-m N=16 |
  | Typically Developing – Age-Matched (TD-AM) 16-m N=16
  | 6y N=18 |

- **Communication Samples**

<table>
<thead>
<tr>
<th>Age</th>
<th>Communication Samples</th>
</tr>
</thead>
<tbody>
<tr>
<td>13- and 16-Months</td>
<td>10 minutes of play with a caregiver and 10 minutes of play with a trained examiner. All language and communicative gestures were transcribed and coded using CHAT. Percent agreement (10% of samples) - 84-96%</td>
</tr>
<tr>
<td>6 Years</td>
<td>Retelling one short episode of an animated woordless cartoon about a mouse and an elephant to a naive listener. Percent agreement (18% of samples) - 80-94%</td>
</tr>
</tbody>
</table>

- **Results**

  - LC used significantly fewer gesture types than all other groups (F(1,4) = 3.24, p = .02, η = .10).

  - Resampling statistics were used for all analyses at 6 years of age because of the small number of children.

  - No differences in overall story completeness.

  - Not all children produced gestures with their language story retells (no difference between groups).

  - Gesture users produced significantly more utterances than those who did not gesture (p = .05).

  - PPVT scores were significantly lower for LT who used gestures than for those who did not gesture (p = .01).

  - LC used significantly more different gestures than TD (p = .05).

  - • LC used a significantly larger proportion of gestures per utterance than TD (p = .05).

  - Patterns of gesture use across children with typical and atypical language development change over time.

  - The changes suggest that gesture use is driven by cognitive development and is consistent with the hypothesis that conceptual development leads verbal development.

Conclusions

Background and Purpose

Low levels of gesture production (both total number of tokens and type) are consistently related to persistent language delay during the earliest stages of communicative development. Late talkers with delays in language comprehension and production (LC) have been shown to use significantly fewer gestures. They are also at greater risk for continued language delay and diagnosis of language impairment (LI) at school-age than those with typical language development (TD) and late talkers with normal comprehension (LP). School-age children with LI use more representational gestures to refer to semantic information that is lacking in their oral language than TD.

In this study we examined the use of communicative gestures by LC, LP and TD identified at 16 months of age and again when they were 6 years old. We hypothesized that LC would use fewer gestures at 16 months of age and more gestures at 6 years of age.

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Parents of 127 children completed the MacArthur-Bates Communicative Development Inventory: Words and Gestures (CDI; Fenson et al., 1993) when children were 13 or 16 months of age. Children were assigned to one of five language groups on the basis of the resulting vocabulary percentiles. A smaller number of these children were re-evaluated when they were 6 years of age.

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