KIDS Corpus (Konstanz Prosodically Annotated Infant-Directed Speech Corpus)

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Example annotation

Annotation – Data analysis (Zahner & Braun)

Tier 1 Intended utterance
Orthographic transcription in German interval

Tier 2 Actual realization of utterance
Orthographic transcription in German, e.g., "küßin" for "küssen" (kiss) interval

Tier 3 Word category of both accented and unaccented words
Simple word categories, e.g., "adv" for adv interval

Tier 4 Word category of both accented and unaccented words
Detailed word categories, following STTS guidelines (Schiller et al. 1999) interval

Tier 5 Accented syllables
Orthographic transcription in German interval

Prosodic analyses

Boundary tones
- Most phrases start and end in low boundary tones (69% for %L and 46% for L-%)
- Considerable amount of high plateau patterns (25% for H-% and 7% for !H-%)

Pitch accent types
- H* and L+H* are the most frequent pitch accent types (>25%)
- L* is often followed by a rise (see Table 2)
- L* is more frequent in the CHILDES subset than in the BSL subset (p<0.003, see Table 1)

Trinitonal pattern analysis
- Most frequent accentual pattern is a falling-falling movement (LH*L), followed in frequency by LL*H
- LL*H is more frequent in the CHILDES subset than in the BSL subset (p<0.04, see Table 2)

Data selection

Utterances of 16 mothers directed to their infants (< one year)
- 8 mothers from the CHILDES database (MacWhinney 2000) (CHILDES subset)
- 7 mothers recorded at the Baby Speech Lab (BSL) at the University of Konstanz and 1 mother recorded in a home-environment (BSL subset)

KIDS Corpus comprises...
- 524 intonational phrases (IPs), 832 pitch accents
- 2014 words, 10min 12sec of speech

Tier 6 Word-prosodic structure
- Indication of primary stress (S, strong syllable), secondary stress (s) or no stress (W, weak syllable)

Tier 7 Prosodic domain of pitch accents
- Indication of availability of unaccented syllables (1/0)

Tier 8 GToBI annotation
- Annotation of pitch accents and boundary tones

Tier 9 Trinitonal pattern analysis
- Indication of trinitonal on both sides of the accented syllable, e.g., "L+H*..!H"

Tier 10 Comments
- E.g., "wide pitch range", "overlaid speech", etc.

Table 1: Frequency distribution of pitch accents (0-20), for the whole KIDS Corpus and the two subsets.

<table>
<thead>
<tr>
<th>Pitch accent</th>
<th>KIDS (n = 832)</th>
<th>CHILDES (n = 311)</th>
<th>BSL (n = 221)</th>
</tr>
</thead>
<tbody>
<tr>
<td>H*</td>
<td>31%</td>
<td>30%</td>
<td>32%</td>
</tr>
<tr>
<td>H</td>
<td>8%</td>
<td>5%</td>
<td>10%</td>
</tr>
<tr>
<td>L+H*</td>
<td>27%</td>
<td>20%</td>
<td>31%</td>
</tr>
<tr>
<td>L*</td>
<td>18%</td>
<td>25%</td>
<td>13%</td>
</tr>
<tr>
<td>L+H</td>
<td>8%</td>
<td>11%</td>
<td>6%</td>
</tr>
<tr>
<td>H+H*</td>
<td>6%</td>
<td>7%</td>
<td>5%</td>
</tr>
<tr>
<td>H+H</td>
<td>2%</td>
<td>3%</td>
<td>1%</td>
</tr>
</tbody>
</table>

Table 2: Frequency distribution of three-tone sequence analysis in condition 1a1, for the whole KIDS Corpus and the two subsets.

<table>
<thead>
<tr>
<th>Trinitonal pattern</th>
<th>KIDS (n = 436)</th>
<th>CHILDES (n = 130)</th>
<th>BSL (n = 296)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LH*L</td>
<td>34%</td>
<td>28%</td>
<td>36%</td>
</tr>
<tr>
<td>HHL</td>
<td>8%</td>
<td>4%</td>
<td>10%</td>
</tr>
<tr>
<td>LHYH</td>
<td>12%</td>
<td>13%</td>
<td>10%</td>
</tr>
<tr>
<td>HL*L</td>
<td>12%</td>
<td>15%</td>
<td>11%</td>
</tr>
<tr>
<td>H*LH</td>
<td>7%</td>
<td>7%</td>
<td>7%</td>
</tr>
<tr>
<td>LL*H</td>
<td>14%</td>
<td>20%</td>
<td>11%</td>
</tr>
<tr>
<td>TTT</td>
<td>6%</td>
<td>4%</td>
<td>6%</td>
</tr>
<tr>
<td>LMYH</td>
<td>1%</td>
<td>4%</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>HML</td>
<td>7%</td>
<td>5%</td>
<td>7%</td>
</tr>
</tbody>
</table>

Syntactic category and word-prosodic structure
- Verbs are most frequent across all words (23%), but nouns are most frequent across accented words (26%, see Figure 2)
- Germanic word-prosodic structure prevails in accented words:
  - 52% are monosyllabic (S),
  - 30% are trochaic (SW),
  - 18% others (e.g., 4% WS, 4% SWW)

Discussion

Input-based hypotheses
- why nouns are segmented earlier than verbs (Nazzi & Alli 2005)
- why high-pitched stressed syllables are good word onsets (Zahner et al. 2015)

Elicitation settings
Can the elicitation settings (CHILDES data vs. BSL recordings) explain the distribution differences across the two subsets?

Access to KIDS

KIDS Corpus-Website:
http://ling.uni-konstanz.de/pages/home/braun/KIDS.html

Soon also available on:
CHILDES (MacWhinney 2000)
Phon (Rose et al. 2006; Rose & MacWhinney 2014)
References


Acknowledgements

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...soon also available on CHILDES and Phon

Visit KIDS...