The prosody of yes/no-questions in German first language acquisition

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Background

Intonation in adult speech

<table>
<thead>
<tr>
<th></th>
<th>declarative statements (DCLs)</th>
<th>yes/no-questions* (YNQs)</th>
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</thead>
<tbody>
<tr>
<td>pitch contour</td>
<td>mostly falling</td>
<td>mostly rising</td>
</tr>
<tr>
<td>most common</td>
<td>H↑ L-%</td>
<td>L* H-H%</td>
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<td>nuclear tune</td>
<td></td>
<td></td>
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<tr>
<td>pitch range</td>
<td>relatively small</td>
<td>relatively large</td>
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</tbody>
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(e.g. Grice et al. 2005, Van Heuven & Haan 2000, Wochner et al. 2015)

* focus on information-seeking YNQs

Research questions:

- Do German children use rising vs. falling contours to distinguish YNQs from DCLs at different stages of development?
- Does age affect their realisation of pitch range for YNQs?
- Is the final boundary tone a crucial marker for children to distinguish YNQs and DCLs?

Method

Participants:
12 monolingual German children (5 females), 3 age groups:
1) 2;8 – 2;10 (M = 2;9)
2) 3;1 – 3;4 (M = 3;2)
3) 3;10 – 4;0 (M = 3;10)

Procedure:
Elicited production/imitation task

Materials:
16 target sentences (8 YNQs, 8 DCLs)

- YNQs and DCLs in direct and indirect speech
- main/modal/copula verbs in present tense

Data analysis:
- GToBI annotation (Grice et al. 2005)
- Determination of f0 minimum and maximum between final accented syllable and right boundary tone → range in st

Results

Pitch contour:

- DCLs are predominantly produced with a falling contour with an L-% boundary tone, independent of age.
- YNQs are produced more consistently with a rising contour and with an H-H%-H% boundary tone in age groups 2 and 3 than in age group 1.
- Children of age group 2 and older also produce YNQs with a rising contour realised by the boundary tone L-H%.
- The final boundary tone is a crucial marker at least for age groups 2 and 3 to distinguish YNQs and DCLs.

Discussion

Pitch range:

- Higher range for rises than for falls in all age groups
- No evidence that age affects the realisation of pitch range for rises in the tested age range
- Evidence that rises are produced with a larger range than falls from a relatively early age on

Conclusions

- The production of rises per se is not a problem.
- The youngest children rather seem to have problems selecting the appropriate contour for YNQs.

Future work will address...

- how intonation and syntax interact in the acquisition of YNQs.
- the comprehension of rising/falling intonation in short sentences.

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