The prosody of rhetorical questions in German

Jana Schlegel, Daniela Wochner, Bettina Braun & Nicole Dehé

Background:
- Information-seeking questions (ISQs) elicit answers (Han, 2002)
- Rhetorical questions (RQs) as hybrid type of utterance (Grésillon, 1980), may function as assertion (Sadock, 1971) → no knowledge gap (Meibauer, 1986)
- Interrogative syntactic structure vs. assertive function (e.g., Sadock, 1971, 1974) of the opposite polarity (Han, 2002)
  - e.g., Did he lift a finger to help you? → suggests: he did not
  → Mismatch between form and function (Rohde, 2006)
- Recognition of correct illocutionary force may be facilitated by discourse situation, lexical triggers (modal particles) and/or prosodic realization of the interrogative
- Little work on prosodic realization: English RQs said to have falling intonation, irrespective of their position in the discourse

Research questions:
1. Do German RQs have falling intonation, irrespective of their position in the discourse (utterance-medial vs. final)?
2. What phonological & phonetic means do speakers use to mark syntactically ambiguous interrogatives as rhetorical or information-seeking?

Interaction Study: Materials & Methods
- 32 experimental trials: 8 wh-questions (WhQ), 8 polar questions (PolQ)
  - Sentence final objects mostly sonorant
    - e.g., Wer spielt denn Domino? ‘Who plays Domino?’
  - For each interrogative, two short contexts were generated
    - One that favored an RQ reading, one an ISQ reading
  - Target utterance: turn-final or turn-medial position

Procedure
- Illocution type manipulated within-subjects, position between-subjects
- S and A received different contexts (presented on computer screens)
- S produced target interrogatives
- A chose one of two given possibilities as reply → interactive situation

Phonological results:
- Final boundary tone: Rhetorical PolQs often did not rise as strongly as ISQs (higher proportion of H-% compared to H-^H% boundary tones)
- Nucear Pitch accent: Rhetorical WhQs showed higher proportion of L*+H nuclear accents (44%) than ISQs (10%)

Phonetic results: (√ = significant difference)

<table>
<thead>
<tr>
<th>Measured variables</th>
<th>PolQ</th>
<th>WhQ</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial pitch</td>
<td>√</td>
<td></td>
<td>On average 9.2 Hz lower in RQs than in ISQs</td>
</tr>
<tr>
<td>Overall utterance duration</td>
<td>√</td>
<td></td>
<td>RQs on average 39.9ms longer than ISQs</td>
</tr>
<tr>
<td>Duration sentence final object</td>
<td>X</td>
<td>√</td>
<td>3% longer for RQs than for ISQs</td>
</tr>
<tr>
<td>Duration wh-word or verb</td>
<td>X</td>
<td>√</td>
<td>2% shorter for RQs than for ISQs</td>
</tr>
<tr>
<td>Pitch range first constituent</td>
<td>X</td>
<td></td>
<td>On average 1.6 st narrower for RQs than for ISQs</td>
</tr>
<tr>
<td>Spectral tilt (H1-A3) at the center of first vowel</td>
<td>√</td>
<td></td>
<td>Steeper for RQs than for ISQs</td>
</tr>
</tbody>
</table>
  → RQs produced with breathier voice than ISQs

Discussion:
- Differences in distribution of boundary tones and accent types
- Rhetoricity / non-interrogativity already marked early in the utterance
  - Wh-phrase less prominent in RQs than in ISQs
  - Initial pitch lower and speakers’ voice softer in RQs
  → Softer voice may serve to attenuate the assertive force of RQs
- Polar RQs are less marked phonetically – rhetoric is signalled by choice of boundary tone