Focus affects the pitch register – focal lowering in German
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1 Introduction
• Focal prominence is realized prosodically with higher F0 (and longer duration) in Germanic languages (Cooper et al. 1985, Breen et al. 2010, Engl.; Baumann et al. 2006; Féry & Kügler 2008, Germ.).
• However, lower tonal scaling with increased focal prominence has been observed in Italian (Gilli-Fivela 2008) and Akan (Kügler & Genzel 2012).
• On the basis of impressionistic data, Liberman & Pierrehumbert (1984) state that “increasing the local prominence on a L* accent causes it to scale downward” (p. 218).

2 Research Question
Does focal prominence always induce a locally higher tonal scaling of pitch accents in German? Or does the effect of focal prominence depend on the type of pitch accent?

3 Hypothesis / Predictions
H1: Focal prominence causes global raising of pitch register
• Higher scaling of Low and High tones
H2: Focal prominence causes a local change in tone scaling
• Higher scaling H tones, lower scaling a Low tones

A production study – Lingo (linguistic bingo), and pilot data on list intonation

4 Lingo
• Interactive task (bingo) to elicit low/rising pitch accents in yes/no questions
• Items: matching / non-matching colored forms (cf. Krahmer & Swerts 2001)
• Activity: Instructor: calls for coordinates (A1 – blue triangle) (cf. Fig. 1)
  Participant: “Kannst du mir ein blaues Dreieck geben?”
  (Can you give me a blue triangle?)

5 List intonation
• Lists – rising L′H pitch accents (cf. Grabe 1998)
• Elicitation of neutral – focal prominence
  A: Kommen zu Deiner Party? ‘Who is coming to your party?’
  B: Zur Party kommen Jane, Martin und Jule, wenn es nicht zu spät wird.
  ‘Jane, Martin, and Jule will come to the party if it won’t be too late.’

6 Results
• F0 analysis of L* in Hz
• Linear mixed effects model with speaker (5) and item (12) and repetition (2) as random factors (slopes & intercepts) and focus condition as fixed factor (Bates et al. 2013)
• Mean F0 averaged across speakers and items: neutral focal prominence 184.2 Hz 174.8 Hz

7 Conclusion
• Confirmation of H2: Focal prominence induces a local change in tone scaling.
  Low tones are scaled lower (Fig. 4), cf. Liberman & Pierrehumbert (1984:218).
• Information structure affects the pitch register, i.e. the scaling of pitch accents (cf. Féry & Ishihara 2010).
• Type of pitch accent is relevant – focus as enhancement of tonal category: H tones are scaled higher (e.g. Féry & Kügler 2008). L tones are scaled lower.
• H tones after the L* accent seem to be raised – be it a trailing H tone and/or a H%
• Perceptual relevance of lower scaling?

References
http://www.sfb632.uni-potsdam.de/en/cprojects/d5.html


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