The Role of Tonal Onglides in German Nuclear Pitch Accents

Simon Ritter & Martine Grice

I*f*L Phonetik, University of Cologne
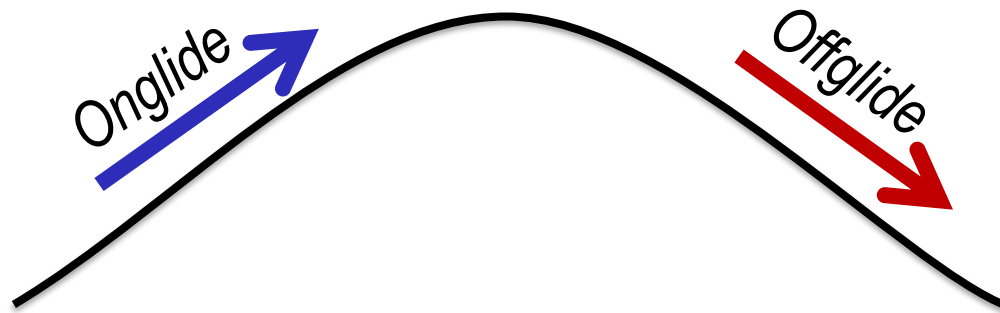
simon.ritter@uni-koeln.de, martine.grice@uni-koeln.de

Phonetics and Phonology in Iberia 2013

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Background

- Models within the AM-framework differ with respect to what tonal movement is considered part of the pitch accents

Onglide

Offglide

On-ramp

Off-ramp

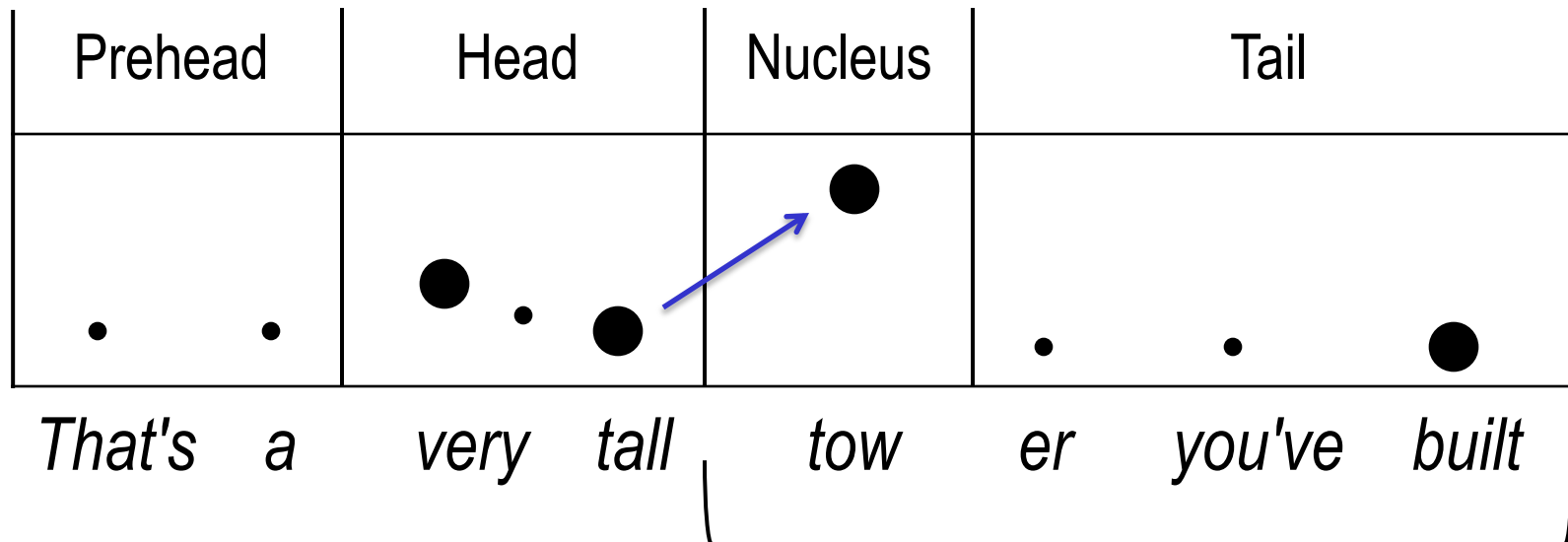Gussenhoven (2004)

Leading tones
(L+H*)

Trailing tones
(H*+L)

Background

- Different models for German:

  - Leading and trailing tones (Grice & Baumann 2002)

  - Trailing tones (Peters 2009)

  - Leading tones only in tritonal accents (Féry 1993; Mayer 1995)

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Background

- British School: Focus on context after nuclear syllable

| Prehead	Head	Nucleus	Tail

That's   a   very   tall   tow   er   you've   built

- Onglide doesn't contribute to the categorization of the contour (although it is annotated ↑↓ by e.g. Crystal 1969)

Background

- **For Dutch:**
  - Pitch before the tonal target of T*:
    - Initial boundary tone (%H vs. %L)
    - Trailing tone of the preceding accent (Gussenhoven 2005, 2008)
  - Grabe et al. (1998): Pitch before target T* is important to differentiate attitudinal meaning
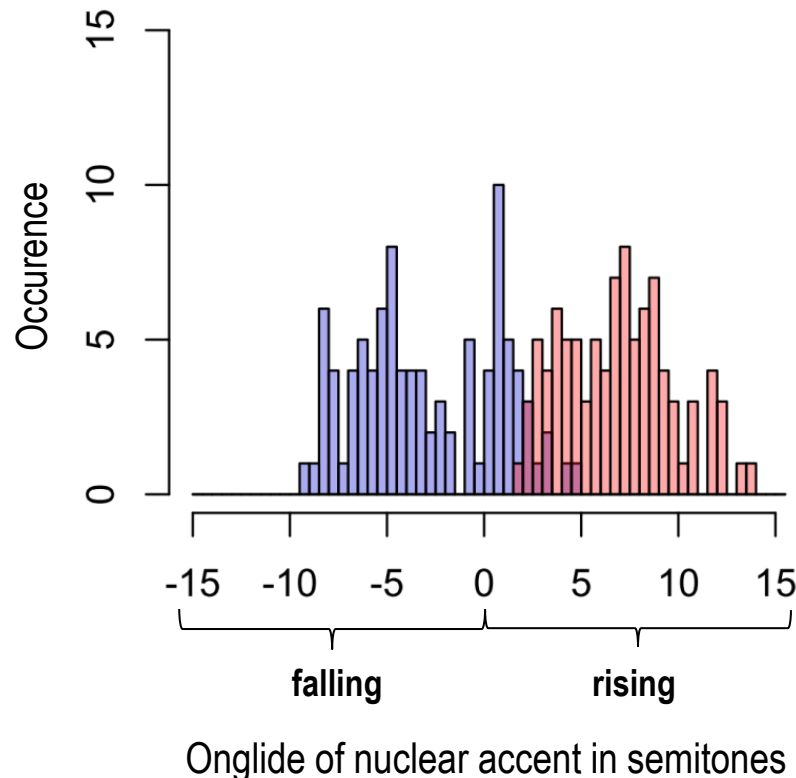
Background (Production)

- Onglide measure in production data
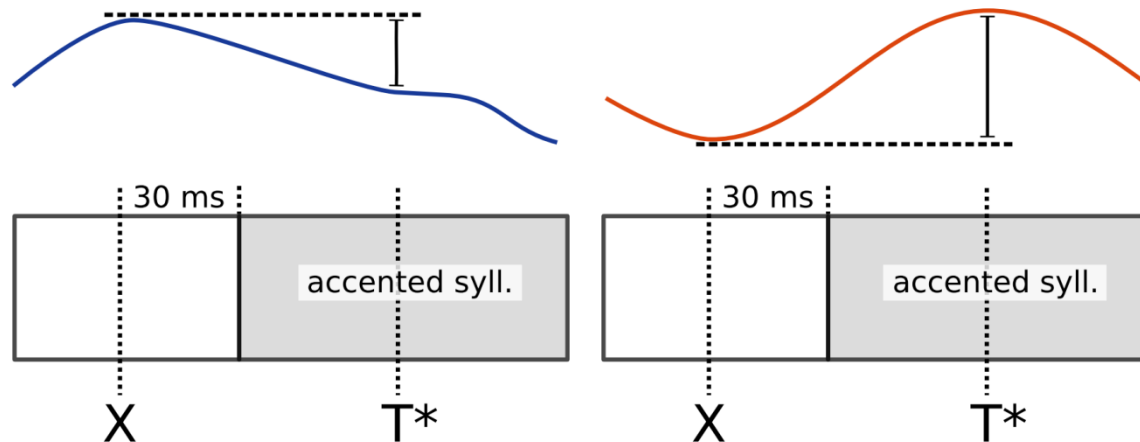
(Ritter, Krüger, Mücke & Grice 2012)

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Background (Production)

- Aspects of information structure could be classified by the direction and magnitude of the onglide with little overlap
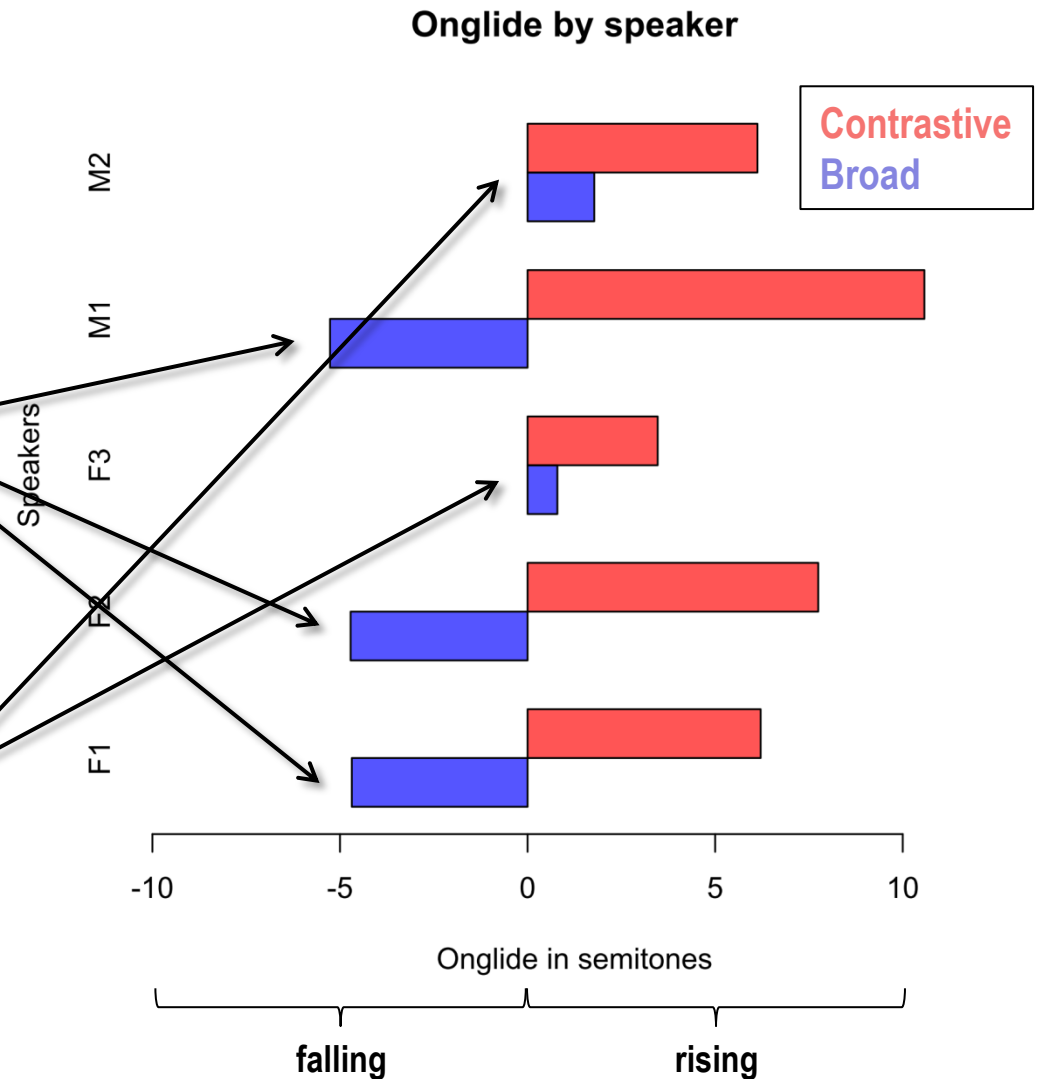
Contrastive focus
Broad focus/all new

Onglide of nuclear accent in semitones

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Background (Production)

- **Different strategies among speakers**

(1) Onglide direction
discrete

(2) Onglide magnitude
continuous

Onglide by speaker

Contrastive
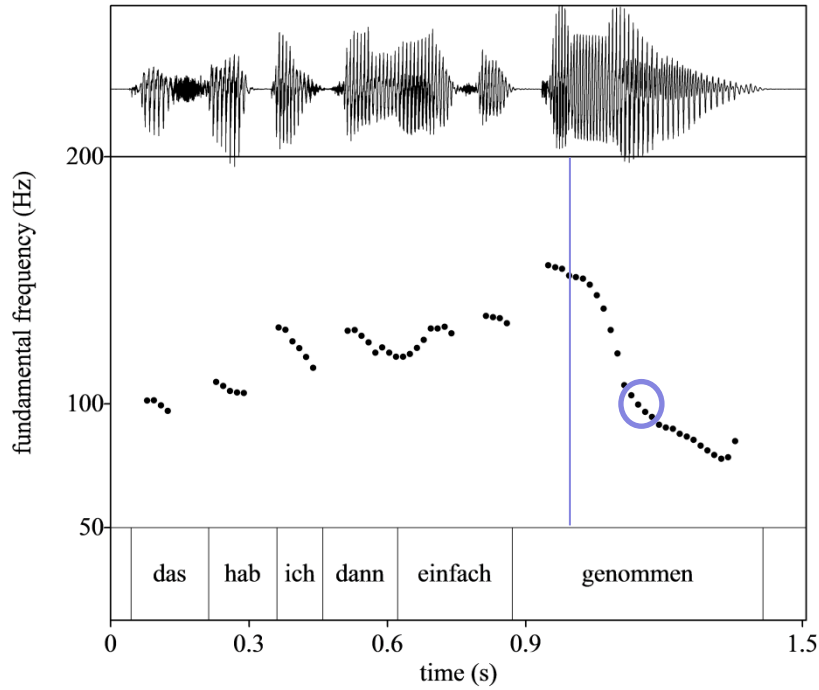**Broad**

M2

M1

Speakers

F3

F2

F1

-10   -5   0   5   10

Onglide in semitones

falling   rising

Background (Perception)

- Perception experiment: Good correlation of rating for focus types and tonal onglide

Broad   **Contrastive**
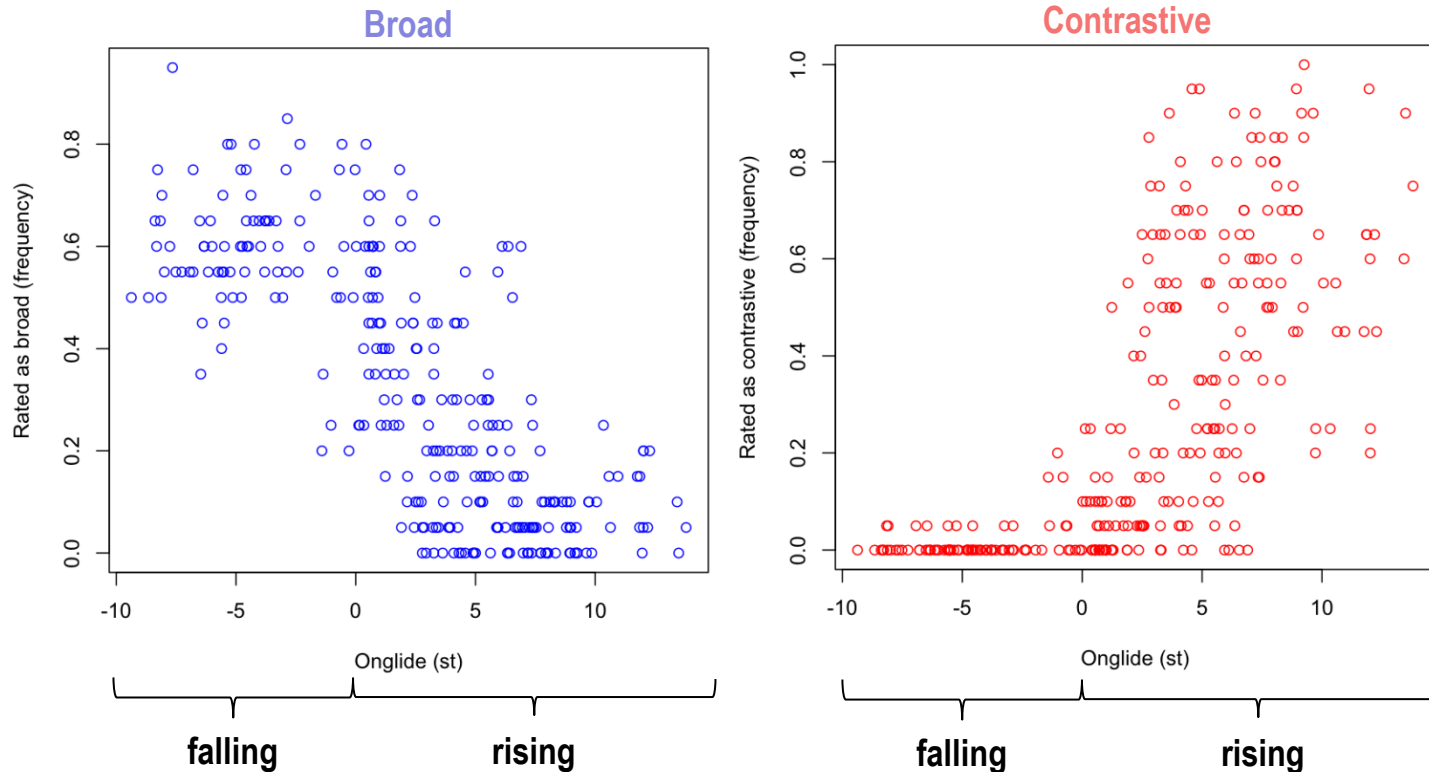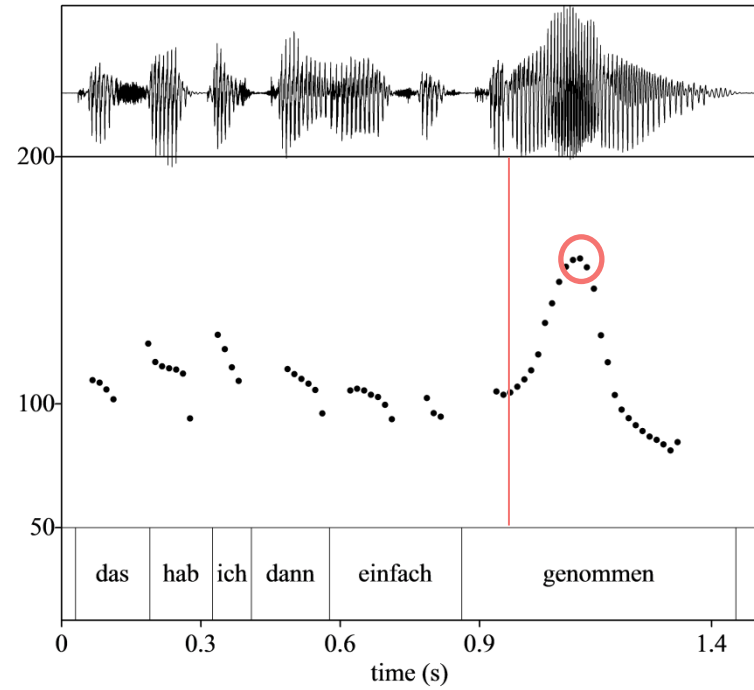
- But: Also other acoustic cues were present

(Krüger 2009)

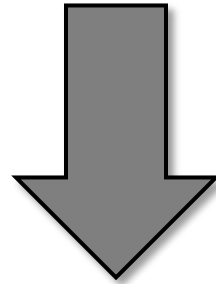IfL Phonetik Köln

Background

falling

rising

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Aim of this study

Assess the importance of the onglide for German in single accent phrases

If the onglide plays an important role, it should be possible to change the meaning by manipulating the onglide only

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Methods: Manipulation

- **3 short phrases, one pitch accent only:**
  - Für Janina *(For Janina)*
  - Für Marlene *(For Marlene)*
  - Für Ramona *(For Ramona)*

Resynthesis

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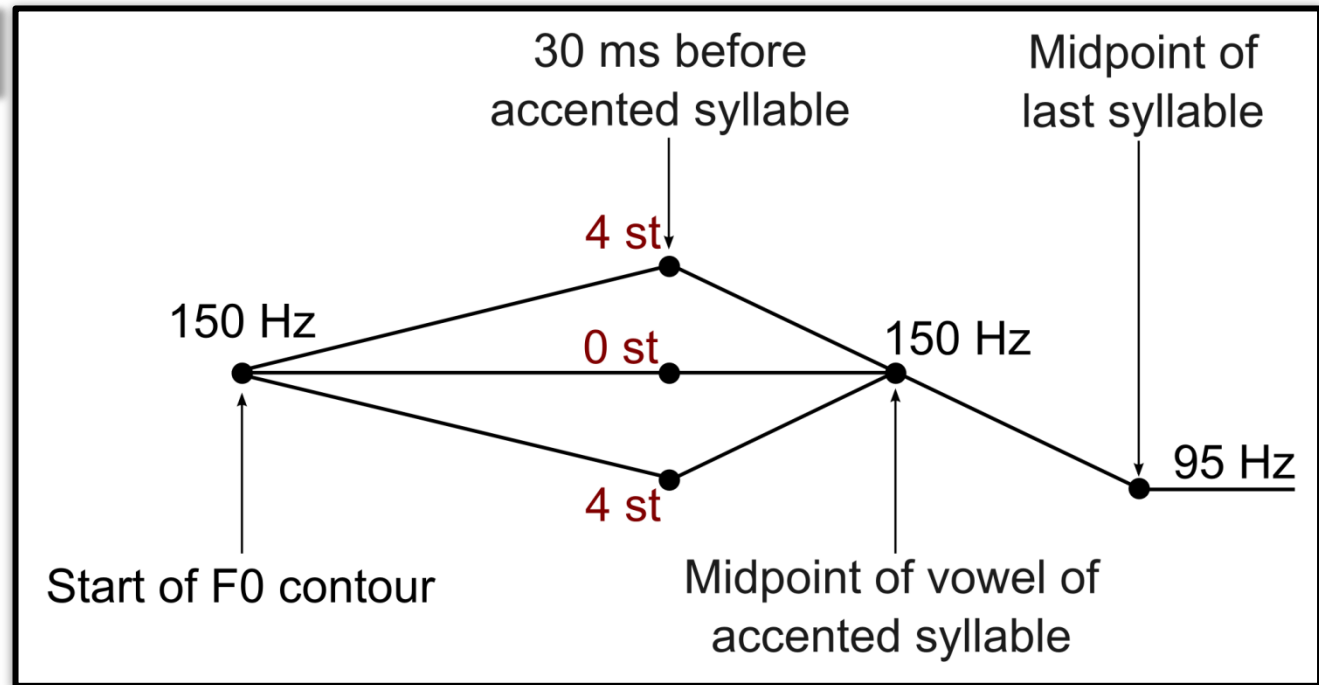
Methods: Task

- Match utterance to context on screen

A: Ist das Paket für Janina? *Is the parcel for Janina?* B: Ja, **für Janina.** *Yes, for Janina.*	A: Ist das Paket für Sofie? *Is the parcel for Sofie?* B: Nein, **für Janina.** *No, for Janina.*

- Affirmative
- Given information
- Not contrastive

Given/non-contrastive

- Negating
- New information
- Explicit contrast (corrective)

New/contrastive

Methods: Participants & Procedure

- 20 native speakers of German (12 f., 8 m., µ = 21 years)

- Training phase (12 items)

- 4 Blocks with pauses in-between

- Duration of experiment: ~10 min.

- Different orders of context presentation:
  - 10 participants: (i) – (ii)
  - 10 participants: (ii) – (i)

- Laptop with PsychoPy (Peirce 2007); stimuli through headphones

- Dataset: 1431 items

Results: Responses

- Rising onglide most frequently rated as new/contrastive (75%)

- Falling onglide less often rated as new/contrastive (27%)

- Level onglide in between (55%)

Means, all subjects

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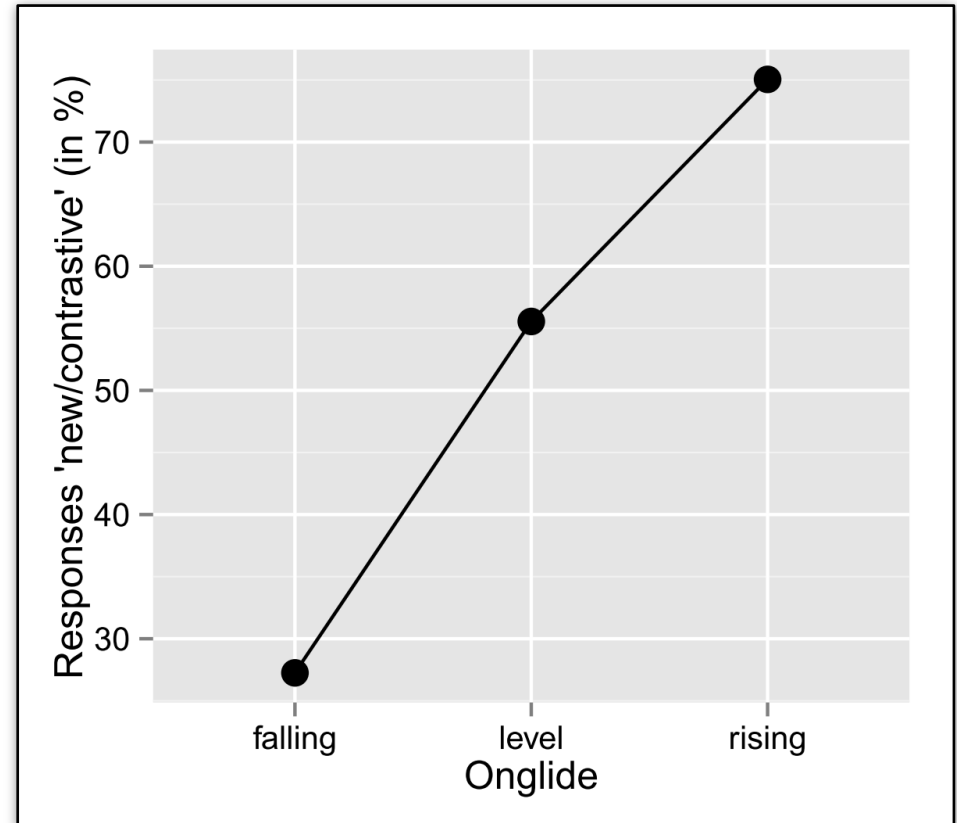
Results: Responses

- Linear mixed model:
  - *Fixed effects:* gender, repetition, presentation order of contexts and manipulation base
  - *Random effects:* intercepts for subjects and by-subject random slopes for the effect of onglide
  - Likelihood ratio test (full model vs. null model): $\chi^2(2) = 15.043$, $p < 0.001$

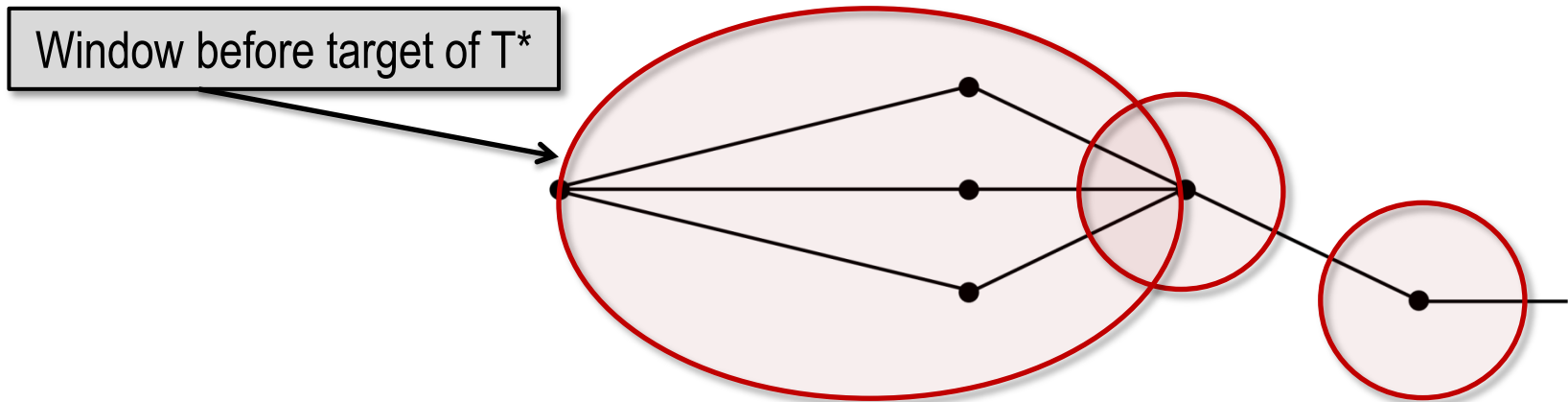- Significant effect of onglide on responses

Means, all subjects

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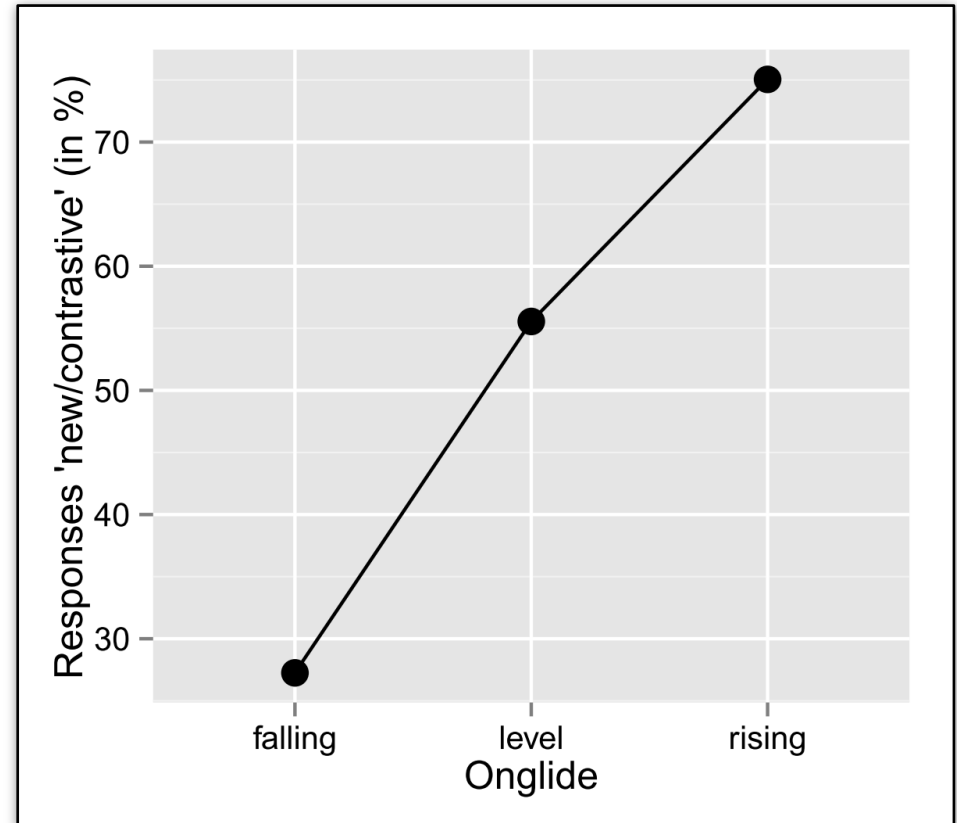
Discussion

Listeners assign pragmatic meaning
on the basis of onglide
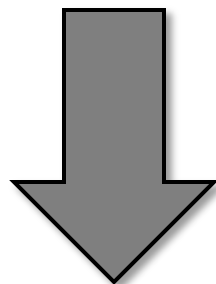
The onglide plays an important role in German

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Discussion

- F0 target for starred tone constant

- Off-ramp part of contour constant

- On-ramp part of contour changes

Window before target of T*

- Leading tone or initial boundary tone

- Important to look at the window before target for the T*

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Outlook

- Finer grained manipulation scale → continuous effects

- Look more at listener specific differences

- Alignment ↔ onglide

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Thank you!

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