

AG 2

The Relation between Prosodic and Referential Structure

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Introduction: Prosody and Referential Structure

Overview

- Referential structure
- Marking of referential structure (especially by prosody)
- Empirical evidence for systematic relation between prosodic and referential structure (here: accent type & accessibility)
- Workshop programme (rough assignment of topics)

Referential Structure

- Reference chains of (co-)referring expressions
- Referential and lexical/conceptual activation
 - Anne bought a book yesterday.
↓
 - Mary bought **a book** as well. (ref-new but lex-given)
↓ ↓
 - **She** adores the author. (ref-given, ref-bridging)
- Topic continuity and topic shift
 - Topic continuity: *Mary ... She*
 - Topic shift: *Anne ... Mary*

Referential Structure

- Reference chains of (co-)referring expressions
- Referential and lexical/conceptual activation
 - Anne bought a book yesterday.
↓
 - Mary bought a book as well. (ref-new but lex-given)
↓ ↓
 - She adores the author. (ref-given, ref-bridging)
- Prominence profile: Ranking of discourse referents according to various prominence-related factors; here: pronoun *she* interpreted as referring to *Mary* (subject of preceding sentence)

Referential Structure

- Factors determining referential structure
 - Grammatical role (subject vs. object)
 - Thematic role (agent vs. patient)
 - Information structure (information status, focus/Question Under Discussion, topic)
 - Coherence relations
 - Cognitive factors (expectation, attention, processing load)
 - etc.

Marking of Referential Structure

- Interplay of various linguistic means
- Syntactic
 - Word order (including clefts and dislocations)
- Morpho-syntactic
 - Pronominalisation
 - (In-)Definiteness
 - Particles (e.g., *wa* and *ga* in Japanese)
- Prosodic
 - Highlighting: pitch movement, duration, intensity, position and type of accent
 - Phrasing: pauses, final lengthening, initial strengthening, glottalisation, boundary tones

Relation between Prosodic and Referential Structure

- Example: Types of pitch accent in West Germanic languages
- Pierrehumbert & Hirschberg (1990, Am. Engl.)

Meanings of starred tones are shared among different accent types, marking the information status of referring expressions

new



accessible



given

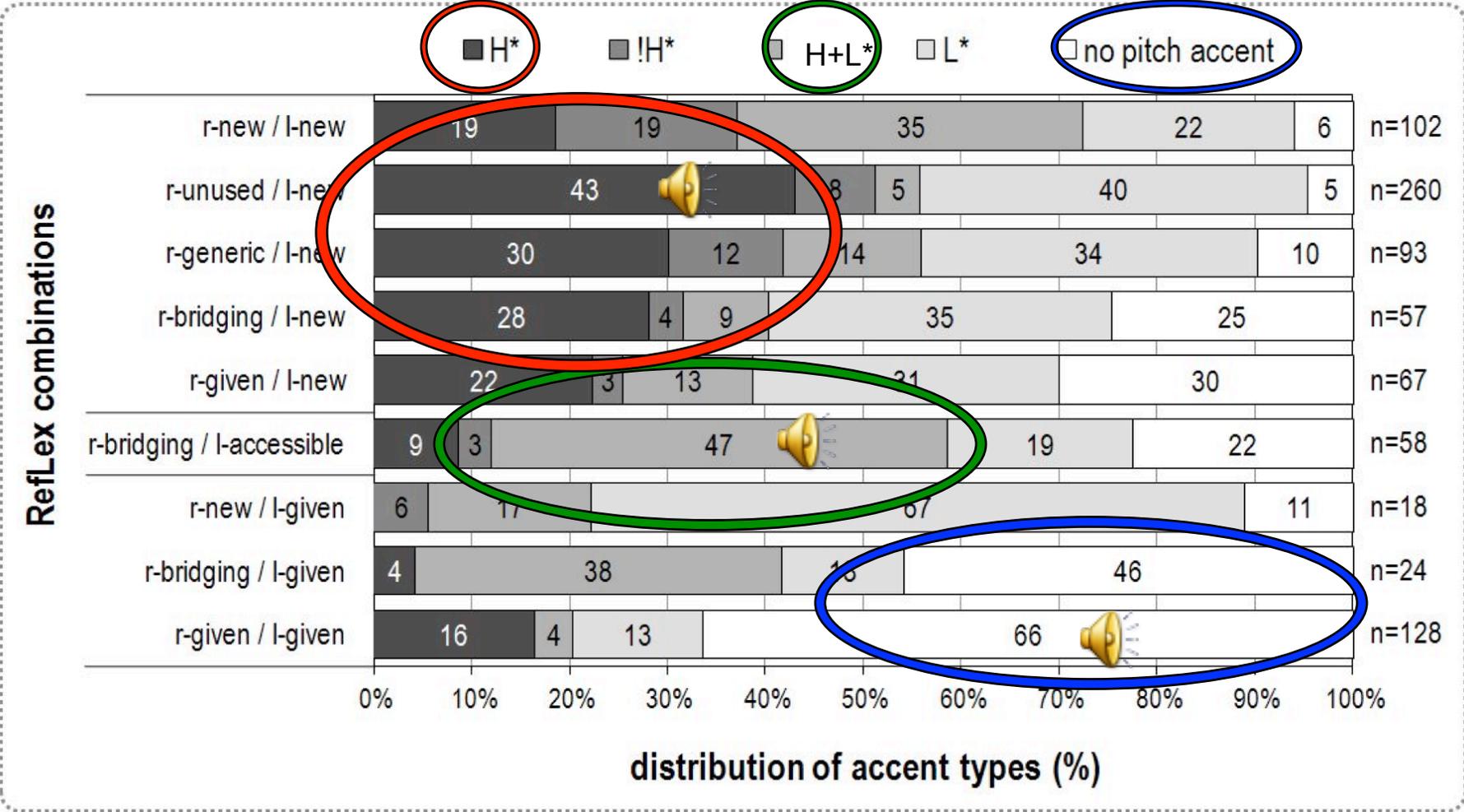
H*

!H*

L*

Production: Accent Type and Information Status

- Baumann & Riester (2013): Corpus study, probab. distribution of ATs



Perception: Accent Type and Coreference

- Perception experiment on coreference in German (Baumann & Roth 2014)

Have you met your cousin?

On Monday I met *Tamara*.

L+H* 
H+L* 
∅ 

'How likely do you think it is that the cousin is Tamara?'

Significant main effect ($p < 0.001$)

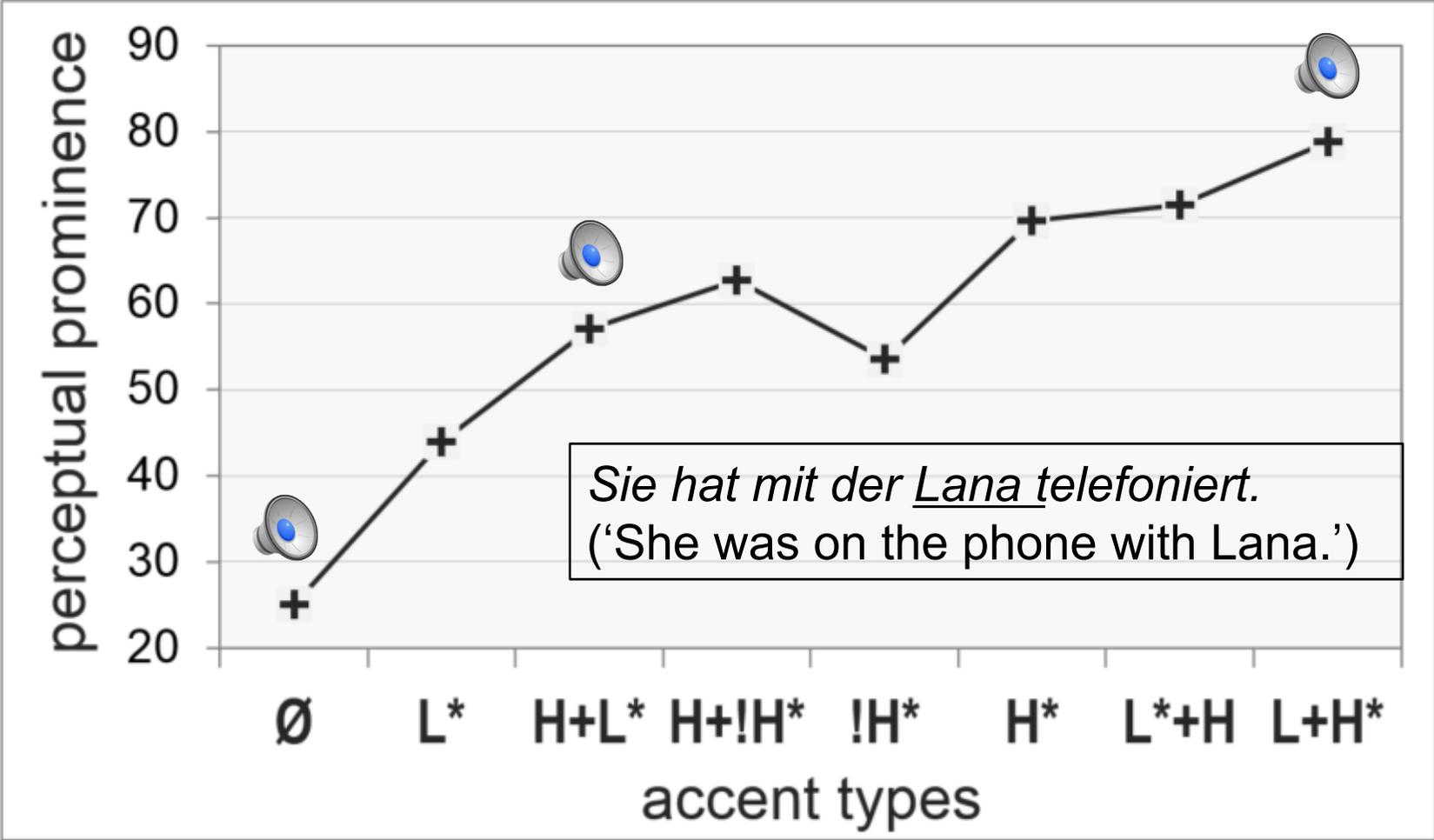
newness L+H* (rise)



H+L* (fall)

coreference no movement (∅)

Perception: Prominence of Accent Types



Baumann & Röhr (2015)

Perception: Accent Type in Cognition

- Schumacher & Baumann (2010): neurolinguistic perception study

Context: *Sabine repariert einen alten Schuh.*

‘Sabine is repairing an old shoe.’



Target Sentence: *Dabei zerschneidet sie die Sohle.*

‘In doing so, she is cutting the sole.’

(*sole* = accessible info,
whole-part relation)



H*



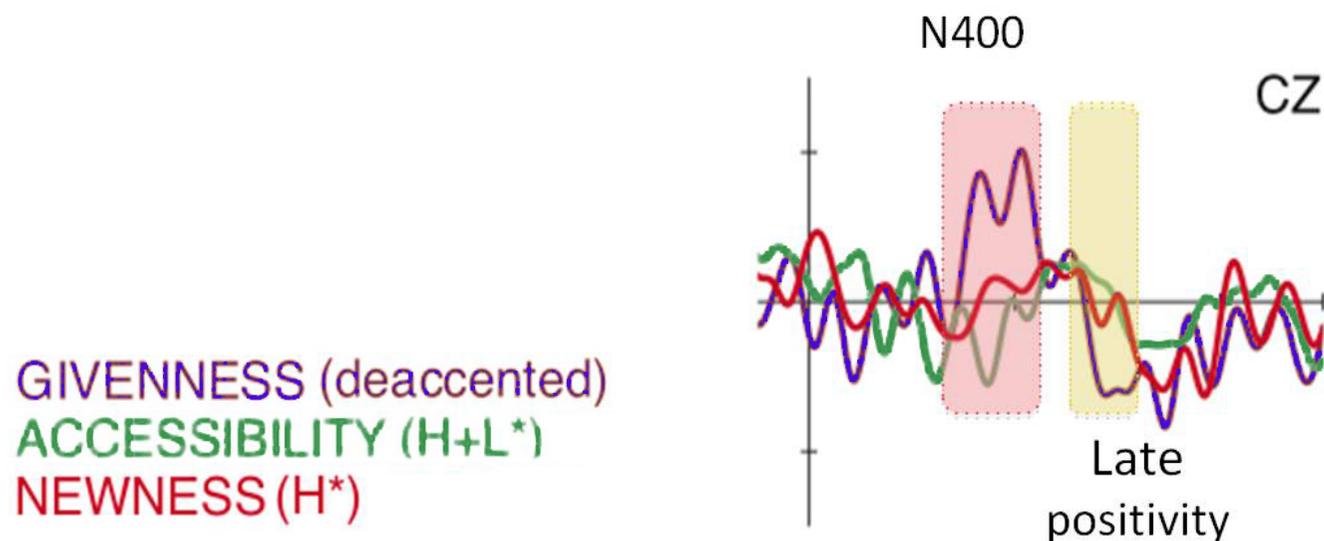
H+L*



∅

Perception: Accent Type in Cognition

- Significant three-way difference in processing effort: **N400** for unexpected accent types: $\emptyset > H^* > H+L^*$
- **Late positivity** for deaccentuation shows strongest mismatch between information status and prosodic realisation
- Least integration costs for 'accessibility accent' $H+L^*$



Production: Accent Type in Referent Tracking

Pilot study (Baumann & von Heusinger, in preparation)

- Which accent types on an object (given vs. bridged/accessible in the context) are strong enough to outweigh the assumed general subject bias (Kaiser 2011) in a story continuation task?
- Contrastive accents (L+H*), 'accessibility accents' (H+L*) and deaccentuation (Ø) tested

Referent Tracking: Setup

“Given” context

a) Gestern ist Peter erst spät ins Fitnessstudio gekommen.
(Yesterday, Peter arrived at the gym rather late.)



b) Der Trainer und der Masseur waren ganz unruhig.
(The trainer and the masseur have been worried.)



c i) Peter hat den **Trainer** beobachtet. (Peter observed the trainer.)



∅



c ii) Peter hat den **TRAI**ner beobachtet.



H+L*



c iii) Peter hat den **TRAI**ner beobachtet. ...



L+H*



Referent Tracking: Setup

“Bridging” context

a) Gestern ist Peter erst spät ins Fitnessstudio gekommen.
(Yesterday, Peter arrived at the gym rather late.)



b) Das **Personal** war ganz unruhig.
(The staff has been worried.)



c i) Peter hat den **Trainer** beobachtet. (Peter observed the trainer.)



∅



c ii) Peter hat den **TRAI**ner beobachtet.



H+L*



c iii) Peter hat den **TRAI**ner beobachtet. ...



L+H*



Referent Tracking: Results

Topic shift / Topic continuity

Topic in first sentence		<i>Peter</i> (subject)	<i>Trainer</i> (object)	<i>Masseur</i> (alternative to object)
Given	∅	36%	45%	0%
	H+L*	36%	50%	5%
	L+H*	23%	73%	0%
Bridging	∅	23%	64%	
	H+L*	27%	59%	
	L+H*	36%	50%	

- Contrastive accents (esp. given context) overwrite the subject bias most clearly (e.g. Schafer et al. 2015)

Referent Tracking: Results

Topic shift / Topic continuity

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Bridging	∅	23%	64%	
	H+L*	27%	59%	
	L+H*	36%	50%	

- Deaccentuation in bridging context strongly activates accessible referent

Referent Tracking: Results

- Two types of activation process
- a) Signal-driven activation
Accents activate a referent by prosodic prominence/ highlighting ('more'): esp. L+H* as the most prominent accent type
- b) Accomodation
Deaccentuation activates a referent by lack of prosodic prominence ('less'): referent is interpreted as already activated

Accent Types and Accessibility

- So far: Interaction between information status and accent types in production and perception
 - Different levels of cognitive activation
 - Analysis by reference chains and topic shifts
 - The mediating role of prominence and – implicitly – the inverse relation between discourse prominence (= givenness) and prosodic prominence (= highlighting)

... but there is much more to come...

Workshop programme – Wednesday (March 7)

- Main Topic: Information status and prosodic form
 - **Arnold:** Information structure (i.e. information status & focus), fluency and predictability and their influence on prosody
 - **Greif & Skopeteas:** Information status in scripted speech
 - ~~**Meyer-Sickendiek & Hussein:** Spoken corpus analysis, recognition of rhythmic patterns in read poetry~~
 - **Riester, Eckart, Rösiger, Schweitzer, Schweitzer & Stehwien:** Spoken corpus analysis at various levels (information status, focus, syntax, prosody)

Workshop programme – Thursday (March 8)

- Main Topic: Semantic-pragmatic functions of prosody
 - **Cole**: Information status and intonational meaning
(in prenuclear position)
 - **Gotzner & Spalek**: Expectations and choice of referential form
(triggered by focus particles and pitch accent types)
 - **Zappoli, Vespignani, Baumann, Grice & Schumacher**:
Processing of information status-prosody relation in L1 and L2
listeners
 - **O'Grady**: Marking of a referent's "informational meaning" by
lexical form and prosody

Workshop programme – Thursday (March 8) contd.

- Main Topic: Semantic-pragmatic functions of prosody
 - **Belz**: Dialogue structure indicated by different (prosodic) types of filled pause
 - **Schlechtweg & Härtl**: Prosody of quotations in referring and name-mentioning expressions
 - **Kentner & Wagner**: Information status of referring expressions in narratives (direct and indirect speech)

Workshop programme – Friday (March 9)

- Main Topics: (Morpho-)Syntax and prosody; typology
 - **de Beer, Huttenlauch, Hanne & Wartenburger:** Speaker-specific variability in resolving (morpho-)syntactic ambiguities
 - **Tönnis:** Acceptability of clefts in written and spoken German
 - **Pesková & Feldhausen:** Prosodic forms and functions of pronominal subjects in Buenos Aires Spanish
 - **Torregrossa & Andreou:** Prosody of personal and demonstrative pronouns in German child language
 - **Maas & Louriz:** Prosody of referential markers in spontaneous and canonical Moroccan Arabic

Change in programme today

- New:
 - 14:15-15:15 Keynote **Jennifer Arnold**: Is prosody an intentional signal of information structure?
 - 15:15-15:45 **Markus Greif & Stavros Skopeteas**: Discourse status, lexical mention, and pitch accent plasticity
 - 15:45-17:00 **Coffee break (extended)** incl. poster session computational linguistics
 - 17:00-18:00 **Arndt Riester, Kerstin Eckart, Ina Rösiger, Antje Schweitzer, Katrin Schweitzer & Sabrina Stehwien**: Studying the prosodic properties of referring expressions in corpus resources: Obstacles and state of the art

Social Events

- **Wednesday, 6:30: Reception at town hall (4th floor)**

Located at market square in the city centre, only a 5-minute walk from the U-Bahn-Station 'Rathaus' and a 10-minute walk from the S-Bahn-Station 'Rotebühlplatz/Stadtmitte'

- **Wednesday, 8:00: Workshop dinner at Murrhardter Hof**
(Wilhelmsplatz 6, information see handout)

- **Thursday, 7:30: Conference dinner at Mensa Stadtmitte**
(Holzgartenstr. 11) 5-minute walk from K1/K2 towers

Questions?