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SECOND
INTERNATIONAL
CONFERENCE
PROMINENCE
IN LANGUAGE

GENERAL INFORMATION

ABOUT THE CONFERENCE

Prominence relations establish a ranking between linguistic units, such as between prosodic units, or between arguments of a verb or between discourse referents. Prominence is therefore one of the key notions in language and communication: it accounts for prosodic highlighting and for the building of linguistic structure and discourse representations.

The Collaborative Research Center 1252 "Prominence in Language" at the University of Cologne investigates the role of prominence from an interdisciplinary linguistic perspective, involving phonology and phonetics, morpho-syntax, semantics and discourse pragmatics.

The Second International Conference "Prominence in Language" aims at advancing the understanding of the notion of prominence and at promoting the exchange among researchers working on prominence-related phenomena from various perspectives.

A (non-exhaustive) list of topics addressed at the conference:

- the encoding of prominence at the phonetics-phonology interface;
- 2. language-specific and universal prominence scales (animacy scale, referentiality scale, thematic role hierarchy, etc.);
- factors determining the ranking of entities in discourse (e.g., accessibility, salience, activation, topicality, status as central protagonist);
- psycho- and neuro-linguistic underpinnings of prominence relations;
- 5. the role of prominence in the tense-aspect system

SECOND INTERNATIONAL CONFERENCE PROMINENCE IN LANGUAGE

The conference features plenary talks in the fields of phonetics-phonology, morphosyntax-semantics and discourse by three keynote speakers:

Jason Bishop (City University of New York)
Structure, Realization, and the Listener in Prominence Perception

Eva Schultze-Berndt (The University of Manchester)
Universal vs. language-specific influences on agent prominence and differential
agent marking: a view from Down Under

Andrew Kehler (University of California at San Diego)
Prominence in a Referential Theory of VP-Ellipsis





Scientific committee

Martin Becker Chris Bongartz Martine Grice Birgit Hellwig Klaus von Heusinger Beatrice Primus Petra B. Schumacher



Organizing committee

Stefan Hinterwimmer Birgit Hellwig Jakob Egetenmeyer Paul Compensis The conference is hosted by the Collaborative Research Center 1252 "Prominence in Language" and the Cologne Center of Language Sciences (CCLS).







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PROGRAM





09.00-09.45 09.45-10.00 10.00-11.00	Registration Welcoming speeches by the Speaker of the CRC Prominence in Language, Prof. Dr. Klaus von Heusinger, the Vice-Rector for Research, Prof. Dr. Bettina Rockenbach, and by the Dean of the Faculty of Arts and Humanities, Prof. Dr. Monika Schausten Invited speaker: Eva Schultze-Berndt Universal vs. language-specific influences on agent prominence and differential agent marking: a view from Down Under
11.00-11.30	Coffee break
SESSION 1	
11.30-12.00	Fang Yang, Martin Pickering & Holly Branigan: Pin down prominence relations in action events – evidence from Mandarin sentence production
12.00-12.30	Anja Latrouite: Discourse prominence, event prominence and
12.30-13.00	grammatical variation Diana Dimitrova & Petra Schumacher: <i>Non-canonical structure as an attention cueing mechanism</i>
13.00-14.30	Photo session and lunch
SESSION 2	
14.30-15.00	Ulrike Domahs, Christina Kauschke & Frank Domahs: The role of
15.00-15.30	prosodic prominence in processing German past participles Aviad Albert: A tonal conspiracy: A perceptually-motivated acoustic
15.30-16.00	model of prosodic prominence Natalia Kuznetsova: Is there a word stress in Estonian?
16.00-17.30	Poster Session 1
19.00	Conference Dinner



09.00-10.00	Invited speaker: Jason Bishop Structure, Realization, and the Listener in Prominence Perception
SESSION 3	
10.00-10.30	Simon Ritter & Doris Mücke: Continuity and categoriality in prosodic prominence — the case of focus marking
10.30-11.00	Xaver Koch, Anna-Lisa Ndao & Katharina Spalek: Contrastive intonation effects on word recall for information-structural alternatives
11.00-11.30	Coffee break
SESSION 4	
11.30-12.00	Duygu Özge, Ebru Evcen, Alper Kesici & Engin Köse: <i>Pronoun</i> resolution in Turkish Transfer-of-Possession Verbs
12.00-12.30	Cecilia Pilar Puebla Antunes & Claudia Felser: Discourse prominence and antecedent mis-retrieval during native and non-native pronoun resolution
12.30-13.00	Christiane Bongartz, Jacopo Torregrossa, Maria Andreou & Claudia Rizzo: Variation in the encoding of prominence: A view from referential strategies in bilingual children
13.00-14.00	Lunch
14.00-15.30	Poster Session 2
15.30-17.00 17.30	Guided tour: Cologne and its architecture Get-together in a Biergarten



SESSION 5	
09.00-09.30	Marta Donazzan: Voice alternations and prominence relations in complex causative structures
09.30-10.00	Margit Scheibel: <i>Prominence of Agents as a function of action verb specificity</i>
10.00-10.30	Pascal Coenen & Michael Frotscher: Agentivity and prominence: the case of differential subject marking in Old Indo-Iranian
10.30-11.00	Coffee break
11.00-11.30	Javier Caro Reina & Sophie Mürrmann: The prominence of proper names in the extended animacy hierarchy
SESSION 6	
11.30-12.00	Alexander Göbel: Pronouns at the right frontier: discourse structure affects accessibility of final appositives
12.00-12.30	Yvonne Portele & Markus Bader: The interaction of semantic bias and topic status in the interpretation of personal and demonstrative
	pronouns in German
12.30-14.00	pronouns in German Lunch



Stefan Blohm, Franziska Kretzschmar & Matthias Schlesewsky: *Dynamic Prominence in the Processing of Complex Sentences: Evidence From EEG and Eye Movements*

Doriana Cimmino: On the interaction between syntactic prominence and discourse functions. A corpus study of Italian and English left marked structures in online newspapers

Eric Engel: Syntactic prominence in discourse: A corpus-based analysis of topic-marking constructions in French

Yulia Esaulova, Sarah Dolscheid & Martina Penke: Preferences for the positioning of actants in visual scenes

Melanie Fuchs & Petra Schumacher: *Demonstrative Pronouns as Attention Orienting Devices*

Franziska Kretzschmar, Markus Philipp, Tim Graf & Beatrice Primus: *The prominence of sentience*

Sabine Reuters, Sarah Dolscheid, Yulia Esaulova & Martina Penke: *The impact of patient animacy and patient position on German syntax: Evidence from a psycholinguistic experiment on sentence production*

Swantje Tönnis: German es-clefts raising prominence – An empirical study comparing written and spoken data

Carla Umbach & Umut Özge: Scalar and non-scalar equatives in Turkish and in German

Frederike Weeber, Andreas Brocher & Klaus von Heusinger: Referent availability in the comprehension and production of weak definites



Angeliki Athanasopoulou & Irene Vogel: The manifestation of focus as a function of word prosodic properties

Carola de Beer, Clara Huttenlauch, Isabell Wartenburger & Sandra Hanne: *Prosodic cue production in case-ambiguous sentences*

Anna Bruggeman, Sam Hellmuth, Nabila Louriz & Martine Grice: Stress deafness in Tashlhiyt Berber and Moroccan Arabic

Stephen Jones, Chi-Lun Pang & Louise Mycock: *Prosodic vs. Morphological Prominence in Japanese Echo-Questions*

Boram Kim & Jason Bishop: On the Perceived Prominence of Non-Prominent Words

Christine Röhr, Henrik Niemann, Stefan Baumann & Martine Grice: *Prosodic Cues in Expectation-Driven Prominence Marking*

Tabea Thies, Doris Mücke, Bastian Auris, Julia Steffen & Michael Barbe: *The Expression of Prosodic Prominence in Parkinsonian Speech*

Caterina Ventura, Martine Grice, Michelina Savino & Petra Schumacher: *Task determines differential prosodic marking of focus in Italian*



SECOND
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ABSTRACTS – TALKS

Pinning down prominence relations in action events – evidence from Mandarin sentence production

Fang Yang, Martin Pickering and Holly Branigan *University of Edinburgh*

Speakers manipulate word order to indicate the prominence of a particular entity. For example, the prominent entity is Patient in English passive sentences (e.g., Putin in "Putin was kicked by Obama") but Agent in active sentences (e.g., Obama in "Obama kicked Putin"). Is there a scale of prominence? In other words, is there a difference between secondary prominence and no prominence? Our study tested 183 Mandarin speakers in four experiments to investigate this. Mandarin's canonical order is SVO (1) but it also has non-canonical constructions for highlighting Patient: topicalisation (2), left-dislocation (3), focalisation (4), BEI-structure (5) and BA-structure (6).

(1) SVO Obama ti-dao le Putin.
(2) Topicalisation (3) Left-dislocation (4) Focalisation (5) BEI-structure (6) BA-structure (7) Dama ti-dao le (7) Dama ba Putin ti-dao le (7) Dama ti-dao le (7)

Ti-dao (kick-fall); *le* (aspect-marker ASP); ta (3rd-person-singular); *shi* (focus-marker)

Experiment 1-3 used confederate-scripted priming paradigm (Branigan, Pickering, & Cleland, 2000) where a participant and a confederate took turns to describe pictures and judge if the other's description matched their own picture. Confederate always gave description first using (1), (2), (3) or an intransitive (e.g. *Pujing ku le*, "Putin cried") in Experiment 1 and 2, or using (1), (2), (4) or an intransitive (e.g. *Xia yu le*, "it's raining") in Experiment 3. Participants then described a different picture. In all experiments, participants favoured (1) highlighting Agent across conditions but they were more likely to highlight Patient using (2), (5), or (6) after exposure to (2), (3) or (4) than after (1) (*P*<.001, LMER). We interpret these results as showing interlocutors persist in highlighting a particular thematic role across utterances.

Interestingly, when participants highlighted Patient, they tended to assign it secondary prominence (encoding it after Agent but before verb) using (6) in Experiment 1 (mean = 96%) and 3 (mean = 85%), but primary prominence (encoding it before Agent) using (2), (3) or (5) in Experiment 2 where they were additionally asked a question about the to-be-described picture (mean=85%). This suggests a prior question can influence prominence allocation to different thematic roles. To further test this effect, Experiment 4 had naïve participants describe or ask a scripted question about the to-be-described picture to each other. When questions highlighted Patient (QHP, e.g. *Pujing zenme le*, "what happened to Putin?"), participants dominantly produced (5) assigning Patient primary prominence (84%). However, they tended to assign Patient secondary prominence using (6) when questions highlighted Agent (QHA, e.g. *Aobama zenme le*, 70%) or event as a whole (QHE, e.g. *Fasheng shenme shi le* 'occur what matter ASP', 70%; QHV, e.g. *Fasheng le shenme shi*, 'occur ASP what matter', 64%). These results show an effect of discourse context on prominence assignment (*P*< .001, LMER).

Taken together, our results suggest that there is a scale of prominence and different thematic roles are assigned a different gradient of prominence, at least in Mandarin action events, and that both priming effects and discourse factors can influence speakers in prominence assignment.

Reference:

Branigan, H., Pickering, M., & Cleland, A. (2000). Syntactic co-ordination in dialogue. *Cognition*, 75(2), B13-B25.

Appendix:

Table 1. Prominence allocation in different constructions

		Prominence assignment		
Construction	Example	Primary	Secondary	No
		prominence	prominence	prominence
(1) SVO	Obama ti-dao le Putin.	Agent	Ø	Patient
(2) Topicalisation	Putin, Obama ti-dao le.	Patient	Agent	Ø
(3) Left-dislocation	Putin, Obama ti-dao le ta.	Patient	Agent	Ø
(4) Focalisation	Shi Putin bei Obama ti-dao le.	Patient	Agent	Ø
(5) BEI-structure	Putin bei Obama ti-dao le.	Patient	Agent	Ø
(6) BA-structure	Obama ba Putin ti-dao le.	Agent	Patient	Ø

Table 2. Participants' responses in Experiment 1 (N=48)

Response	Pro	Proportion of patient-prominent responses		Proportion of patient-not-prominent responses
Prime	Primary prominence	Secondary prominence	Secondary prominence out of all patient-prominent responses	No prominence
Topicalisation	1.2%	24.2%	95.5%	74.6%
Left-Dislocation	0.3%	20.3%	98.2%	79.4%
SVO	0	12.6%	100%	87.4%
Intransitive	0.4%	19.5%	98.1%	80.1%

Table 3. Participants' responses in Experiment 2 (N=39)

Response	Proportion of patient-prominent responses		ent-prominent responses	Proportion of patient-not-prominent responses
Prime	Primary prominence	Secondary prominence	Primary prominence out of all patient-prominent responses	No prominence
Topicalisation	16.4%	5.3%	75.6%	78.3%
Left-Dislocation	15.1%	2.2%	87.1%	82.7%
SVO	10.4%	1.6%	86.4%	88.0%
Intransitive	21.5%	2.4%	90.0%	76.1%

Table 4. Participants' responses in Experiment 3 (N=64)

Response]	Proportion of patient-prominent responses		Proportion of patient-not-prominent responses
Prime	Primary prominence	Secondary prominence	Secondary prominence out of all patient-prominent responses	No prominence
Topicalisation	1.3%	14.6%	91.8%	84.1%
Focalisation	4.2%	13.5%	76.2%	82.3%
SVO	0.3%	5.2%	95.0%	94.5%
Intransitive	1.9%	13.0%	86.8%	85.1%

Table 5. Participants' responses in Experiment 4 (N=32)

Response Prior question	Proportion of patient-primarily- prominent responses	Proportion of patient-secondarily- prominent responses	Proportion of patient-not-prominent responses
QHP	83.9%	11.6%	4.5%
QHA	0	69.9%	30.1%
QHE	1.5%	69.9%	28.6%
QHV	2.6%	63.6%	33.8%

Discourse prominence, event prominence and grammatical variation

Anja Latrouite Heinrich Heine University Düsseldorf

It has been noted for a number of African, Asian, Austronesian and South-American languages that the (morpho)syntactic structure of transitive clauses tends to be influenced, if not determined, by the relative referential prominence of the actor and the undergoer arguments. If we assume that the referentiality of an expression concerns the status of its referent on two dimensions: (i) individuation (Is the referent of an argument phrase identifiable based on the descriptive content of the phrase?) and (ii) discourse status (Is the referent in the foreground of the awareness of the interlocutors?), then we are dealing with a two-dimensional prominence evaluation cross-cutting the domains of semantics and pragmatics. Studies on grammatical variation, such as work on differential object marking and obviation (e.g. Aissen 1997, 2003), have taught us furthermore, that we should not only compare whether the actor or the undergoer is higher on the hierarchy of referentiality, but also pay heed to the fact whether a given feature is a default (interpretational) feature for the actor or the undergoer argument. The basic idea is then that the departure from an unmarked semantic feature and/or discourse prominence feature is signaled by non-default morphosyntactic marking, e.g. by divergent case- and voice-marking, fronting or inversion constructions.

In this talk, I build on these insights and argue that in addition to referentiality of a given argument, we need to take into account the levels of event structure and discourse structure, if we wish to explain morphosyntactic variation and construction choice in languages, such as Japanese and Tagalog. The consequence of this approach is two-fold: (i) prominence calculations with respect to the referents of arguments have a certain complexity, and (ii) marked morphosyntactic constructions may have quite different information-structural functions depending on whether they target the actor or the undergoer.

The focus of this paper will be on fronting constructions in Japanese and Tagalog. In both languages, undergoer fronting can be shown to be more restricted than actor fronting (cf. Shimojo (2005), Watanabe (2000). This cannot be traced back to any morphosyntactic similarities of the two languages, as they crucially differ with respect to word order as well as their diathesis system and their morphosyntactic means of marking information structure. However, they are alike in that it can be shown that it is non-default information-structural values associated with arguments that require morphosyntactic marking and that asymmetries with respect to fronting possibilities are directly relatable to the asymmetry between actors and undergoers. Given that a certain information-structural feature may be marked/prominent for the actor but not for the undergoer and vice versa, it follows that one and the same morphosyntactic strategy may lead to different IS-interpretations depending on whether which of the two arguments is targeted.) Time permitting, I will also touch on the topic of event prominence of arguments, as it can be shown that verb class also plays a role with respect to the acceptability of fronting constructions.

References:

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 $of \ the \ 14 th \ Pacific \ Asia \ Conference \ on \ Language, \ Information \ and \ Computation \ ,$

Non-canonical structure as an attention cueing mechanism

Diana V. Dimitrova and Petra B. Schumacher *University of Cologne*

In German, focused information can be highlighted by word order (fronting), accentuation, or focus particles. Electrophysiological (EEG) evidence suggests that focusing cues elicit an early and broadly distributed positivity resembling the P3b component for attentive processing, but has a longer latency (e.g., Bornkessel-Schlesewsky et al. 2003; Cowles et al. 2007; Dimitrova et al. 2012). The recruitment of attention mechanisms in the brain has been inferred mostly indirectly (but see Kristensen et al. 2012) and it remains unclear whether focus modulates attention in the temporal dynamics of the processing system. According to the 'gating by inhibition' hypothesis (Jensen & Mazaheri 2010), oscillatory activity in the alpha frequency band regulates the excitation and inhibition of underlying cortical structures by power decrease and increase respectively. 24 participants, all native German speakers (age: 23.5, age range: 18-29) read short stories with

i) inferred and given information and ii) an SVO or OVS word order (examples 1-4) and performed a comprehension task. ERPs time-locked to the critical noun showed an N400 increase for inferred information in both structures (2/4 > 1/3) and a Late Positivity signifying updating costs only for inferred information in SVO sentences (2>1; 3=4). This latter contrast has been associated with information structural differences (non-topical vs. topical information) (Schumacher & Hung 2012). Here we tested how OVS and SVO sentences influence attention allocation to inferred vs. given information by additional time frequency analyses. We hypothesized that OVS structures cue attention to sentence initial elements due to their non-canonical structure, which should be reflected in modulations of alpha power (cf. e.g., Jensen & Mazaheri 2010).

EEG data was pre-processed in Matlab using the FieldTrip toolbox (Oostenveld et al. 2011) and re-referenced to the average of all scalp electrodes and segmented. Eye blinks and movements were removed by an independent component analysis. Time frequency analysis of power was performed using the multitaper fast Fourier transform (FFT) in a time window from 0.5s prior to 1.5s post target onset. Frequencies were tested from 2 to 30 Hz in steps of 2 Hz. A time window of 500 ms moved in 20 ms steps across the time axis and was multiplied by a Hanning taper and Fourier-transformed. Individual time-series data were grand-averaged across participants and conditions and submitted to a cluster-based permutation test. We compared OVS_inferred vs. OVS_given (4/3) and SVO_inferred vs. SVO given (2/1).

An alpha power decrease was found for inferred vs. given information in OVS sentences (4<3), with a maximum between 800-1200 ms. No such effect was found in SVO sentences. This finding suggests an increased attention to the contrast between inferred and given information in OVS structures. Compared to canonical structures, non-canonical OVS structures evoked more attention. Importantly, the use of an initial object induces a topic shift in both cases, however, the topic shift is less expected with inferred information, because topical entities preferably represent given information (e.g., Rosengren 1993). In sum, OVS structures serve as attention regulation mechanisms, such that participants attend more to inferred information that represents a topic shift.

Examples of target sentences. Target words are underlined

(1) SVO – given:

Ein Mann sah gestern einen Bräutigam vor der Kirche. Er beneidete den Bräutigam sehr um die schöne Frau.

(2) SVO – inferred:

Ein Mann beobachtete gestern eine Hochzeitsfeier im Freien. Er beneidete <u>den Bräutigam</u> sehr um die schöne Frau.

(3) OVS – given:

Ein Mann sah gestern einen Bräutigam vor der Kirche. <u>Den Bräutigam</u> beneidete er sehr um die schöne Frau.

(4) OVS – inferred:

Ein Mann beobachtete gestern eine Hochzeitsfeier im Freien. <u>Den Bräutigam</u> beneidete er sehr um die schöne Frau.

English:

Yesterday, a man saw a bridegroom (1/3)/watched a wedding (2/4) in front of the church. He envied the bridegroom for the beautiful woman.

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The role of prosodic prominence in processing German past participles Ulrike Domahs, Christina Kauschke and Frank Domahs

University of Marburg

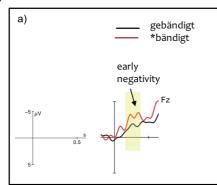
The present study aims at investigating the impact that prosodic feet have on the processing of inflected words. Such inflectional conditions have been proposed in the framework of Prosodic Morphology (e.g. McCarthy & Prince, 1994) which formalizes language-specific processes in which morphological and prosodic characteristics of linguistic forms interact. One example for such an interface phenomenon is the Standard German past participle paradigm, in which affixation of the prefix *ge*-fulfills the requirement of participles to begin with a weak syllable that precedes the dominant trochaic foot of the verbal stem: *ge*-attaches only to verbs with a strong stem-initial trochee (e.g. Wiese, 2000). Accordingly, the past participle of the verb stem 'baendig- (Engl. 'to tame') surfaces as *ge-'baendig-t*, while the participle of the verb stem *stu'dier*- (Engl. "to study") as *stu'dier-t*. It is to say that specific prosodic prominence relations surfacing in a trochaic foot are to some extent grammaticalized, when aligned with a stem or a complex word boundary (e.g. Eisenberg, 2006). We hypothesize that a pretonic weak syllable preceding a trochee establish the grammaticalized pattern of German past participles.

To test the function of the pretonic syllable in German participles, we recorded electrophysiological responses while eighteen German participants listened to sentences including past participles with differing prosodic stem templates. Participles were either correct (e.g., ge'baendigt, 'tamed' and stu'diert, 'studied') or prosodically incorrect in terms of omitted ge-prefixation, leading to a prominent initial syllable (e.g., *'baendigt) or prosodically incorrect in terms of added ge-, resulting in two weak initial syllables (e.g., *gestu'diert). The goal was to disentangle prosodic from morphological aspects of word processing by means of event-related potentials. It was tested whether violations of ge-prefixation yielded components that are indicative of enhanced costs in morpho-syntactic processing indexed by a left-anterior negativity (e.g. Weyerts et al., 1997, Günter et al., 2000), in morpho-lexical processing indexed by an N400 effect (e.g. Weyerts et al., 1997; Janssen et al., 2006), or in prosodic processing yielding a bilateral early negativity (e.g. Rothermich et al., 2010) or a P200 effect (Friedrich et al., 2001).

ERP-analyses yielded a bilateral early anterior negativity in response to participles with omitted *ge*-prefix (*'baendigt, see Figure 1 a)) and a parietal P200 for words with incorrect prefixation of *ge*- (**gestu'diert*, see Figure 1 b)). Both components have been proposed to reflect sensitivity to metrical irregularities in language processing, as is evident when unexpected sequences of strong and weak syllables or unexpected pitch contours are encountered. In addition to the "prosodic" components, we found an N400-like centroparietally distributed negativity and a parietal late positive component (see Figure 1b)). These later components indicate that prefixation errors also lead to enhanced lexico-semantic integration costs and to re-analysis-processes due to the fact that the prefixation violations lead to morphological errors or non-lexicalized forms.

We conclude that the occurrence of brain responses to both prosodic and lexico-semantic violations support the view that *ge*-prefixation in German is prosodically conditioned, fulfilling the prosodic requirement for past participles to begin weak.

(1)



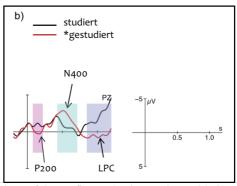


Figure 1. a) early frontal negativity for omissions of the prefix *ge*- (at the Fz electrode); b) P200 for incorrect addition of *ge*-, followed by an N400 and a late positive component (LPC) observed for both violation types (at the Pz electrode).

References

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A tonal conspiracy: A perceptually-motivated acoustic model of prosodic prominence Aviad Albert

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The notions of *conspiracy* and *functional unity* were evoked in generative phonology to indicate critical shortcomings of phonological theory, which was unable to capture underlying commonalities among superficially different processes (anticipating the fall from grace of linear rule systems [1]). This paper argues that the main acoustic cues to phonological prominence—*intensity*, *duration* and f_0 —serve as an example of a phonological conspiracy, still misrepresented in most state-of-the-art theories today (see, e.g., [2] for an overview of the literature on acoustic correlates of *stress*). It further claims that the functional unity of acoustic cues to prosodic prominence is essentially related to the perception of *pitch* (corresponding to phonological *tone*). This requires the refinement of the overtly general and perceptually opaque notion of acoustic intensity, which is replaced here with *periodic energy*. While f_0 is directly linked to the perception of pitch (height), a similar view cannot be

while f_0 is directly linked to the perception of pitch (height), a similar view cannot be maintained for intensity and duration, which may be only partially linked to pitch (strength). Intensity curves, and, to a lesser extent, frequency-filtered intensity curves, lump together periodic and aperiodic components of the acoustic signal, while duration data lacks this distinction altogether. In contrast, an isolated measure of periodic energy can be directly linked to the acoustic intensity of f_0 and thus the strength of perceived pitch [3,4]. As a result, duration measures that are tied to the periodic energy curve can be used together to express two-dimensional strength (duration and intensity) with a single variable, constituting the periodic energy mass (the sum integral of periodic energy and duration, i.e., the area under the periodic energy curve).

Periodic energy curves of speech typically exhibit a sequence of fluctuations over time, or *periodic energy cycles* (the intervals between minima along the curve). Peaks within periodic energy cycles tend to align with syllabic nuclei in speech, making these cycles highly equivalent to syllabic units. The periodic energy mass of each periodic energy cycle is therefore reflective of the prosodic strength of the corresponding syllable. See Figure 1 for some illustrative examples.

It is important to note that periodic energy is not the appropriate dimension of acoustic intensity for all types of phonological prominence (i.e. non-prosodic prominence). For example, meta-linguistic types of emphasis may target any portions of speech that induce lexical ambiguity, rather than specifically the tonal potential of the signal. An intensity curve that models perceived loudness would make a better fit for estimations of strength in such cases.

Prosodic prominence, covering phenomena related to stress, pitch accent and constituent edges, targets the tone-bearing components of speech whereby the role of pitch is multi-dimensional, and may be essentially reduced to two main aspects — pitch contour (tones and their interpolation) and pitch intelligibility (tonal strength); acoustically reflected by the f_0 trajectory and the periodic energy mass, respectively.

Replacing intensity with periodic energy allows for a better acoustic account of the perceptual mechanisms that contribute to prosodic prominence. The superficially different acoustic variables—periodic energy, duration and f_0 —are unified by their shared functional goal: A phonological conspiracy to manipulate tone.

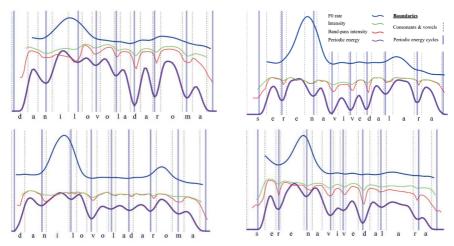


Figure 1. Examples of acoustic speech data curves and corresponding boundaries: Compare periodic energy curves (purple) with partially correlating general intensity curves (green) and bandpass filtered intensity curves (red). Note corresponding segmentations and f_0 curves (blue). Examples feature 4 speakers of Italian uttering *da-ni-lo vo-la da ro-ma / se-re-na vi-ve da la-ra* ('Danilo flies from Rome' / 'Serena lives at Lara's'), with a subject-focus interrogative intonation.

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¹ Periodic energy data (purple) obtained from the *APP Detector* [5,6,7] and smoothed in *R* [8]; General intensity curves (green) obtained from *Praat* [9]; Band-pass filtered intensity (red) obtained from Praat using *Prosogram* [10], and smooth f_0 curves (blue) obtained from Praat using *mausmooth* [11].

Is there a word stress in Estonian?

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Standard Estonian is famous for its distinctive ternary quantity contrast, a cross-linguistically rare phonological feature. The quantity patterns are a foot-level phenomenon and are directly linked to stress: quantity manifestation in the nucleus of any Estonian foot (a sequence from the first syllable vowel throughout the second syllable vowel) is obligatory.

While a lot of phonetic and phonological research is devoted to Estonian quantity, there is still no established theory of the Estonian stress system. Existing descriptions (viz. Asu et al. 2016) do not distinguish clearly between (1) the rhythmic and the lexicalized stress, (2) the foot- and the word-level stress phenomena, (3) the lexical and the post-lexical prosody. Most formal stress accounts of Estonian do not take existing phonetic facts into due consideration, which often results in controversies and even descriptive errors (Viitso 1982, Kuznetsova, subm.). Functionally-oriented phonological descriptions (Hint 1973, Viitso 1979) are rich with theoretical ideas, but date back to the time when not much experimental data was available. Modern Estonian stress accounts (Pajusalu et al. 2005, Lippus et al. 2014) describe phonetic facts in detail, but often refrain from phonological judgements. My aim will be to synthesize what is known and unknown about the phonetics and phonology of Estonian stress and to outline a way forward towards its consistent phonetically-informed functional theory.

I suggest a two-level model of Estonian prominence. On top of the quantity-based foot rhythm, there is a pitch-based "macro-rhythm" (Jun 2014) of accentual phrases. In speech, the feet which correspond to the peaks of the accentual phrases receive the most durational and tonal prominence. The feet which happen to occur at the falls of the accentual phrases, are often phonetically flattened, up to the point when no significant differences between stressed and stressed syllables in a foot are preserved (cf. phonetic findings in Asu et al. 2016: 157-159). Estonian H*L accentual phrase intervals are regular enough by Jun's parameters, but are sensitive to the placement of the lexicalized foot accents and morphological word borders.

Both the foot rhythm and the accentual phrase rhythm are highly correlated with the morphological word, but at the same time show a certain level of independence from the latter. The morphological word can consist of several feet or be a part of a bigger foot, the former happening more frequently than the latter. The same statement is valid for the accentual phrase, however with a reverse statistical frequency in comparison with the foot. This model would conform to the intuition of phoneticians and functional phonologists about the foot as a central word-level prosodic unit in Estonian (Asu et al. 2016: 160). On top of the accentual phrases, there are the largest units: intonational phrases, which correspond to the syntactic phrases and are marked by phrase-final lengthhening, pauses, boundary tones (Asu 2004, Jun 2014). Such a model of Estonian prosody allows to account for a number of phonetic facts which have remained problematic for the phonological interpretation, while appealing for more phonetic studies on the prosody of Estonian compounds.

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Continuity and categoriality in prosodic prominence – the case of focus marking Simon Ritter and Doris Mücke University of Cologne

One of the principal functions of prosody in German is the marking of focus. As shown by several researchers (e.g. [1], [2], [3], [5]), both intonational and articulatory differences can be attested between entities that are in focus and entities that are out of focus. Recently, studies have demonstrated that speakers do not only mark focussed vs. non-focussed constituents: Focus *types* are differentiated, meaning that prosodic prominence directly encodes discourse functions. The present study is concerned with how categorical phonological and continuous phonetic aspects work together in marking focus and how they can be integrated into a theoretical model of prosodic prominence.

The findings of [4] shows that some speakers use categorical distinctions to differentiate focus types, while others do not. However, investigating the F0 contours with continuous measures reveals that all speakers' pitch accents pattern in a similar direction: Going from broad through narrow to contrastive focus, the peaks of the pitch accents are aligned later, their onglides and target heights are higher. Another interesting finding from the same corpus is presented in the study of [5]: The differences in the articulatory modification of the vowel's opening gesture between unaccented and accented are rather weak compared to the differences found within the group of focus types that are accented: Going from broad through narrow to contrastive focus, articulatory movements become larger, longer and faster.

To investigate in more detail how the phonetics and phonology interact in the direct prosodic marking of information structure, we recorded 26 speakers both acoustically and with electromagnetic articulography involving an interactive scenario in a game-like environment yielding a data set of 2080 utterances. First analyses of the intonational patterns are shown in fig. 1 using tonal onglide as a continuous measure, i.e. the direction and magnitude of the f0 movement to the target in the accented syllable: While speaker 1 uses falling *and* rising accents and speaker 2 only uses rising accents, the direction of the modification is identical for both speakers: broad exhibits smaller onglides than narrow focus and narrow exhibits smaller onglides than contrastive focus. Fig. 2 shows the fitted F0 curves from a generalised additive mixed model through the time window of the nuclear-accented syllable (plus a padding of 5 ms before and 10 ms after). The trajectories illustrate how speakers differ in their realisation of intonation contours but also how they agree in their general trend with peaks becoming later and higher from broad through narrow to contrastive.

To explore the theoretical implications of the categorical and continuous variation for our understanding of prosodic prominence, the idea of the attractor landscape is adopted from dynamical systems theory. This framework explains categorical changes as the result of scaling a continuous parameter ([6], [7]): A small change in a continuous variable can lead to a great shift in the attractor landscape. While dynamical systems establish a useful concept of quasi-categories arising from a continuous context, they also explain multistability, i.e. the presence of more than one category, and variation around the attractors.

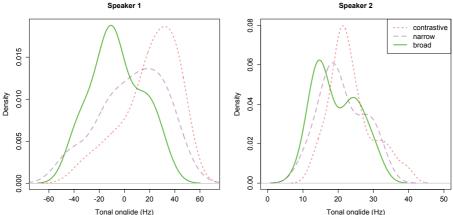


Fig. 1: Distributions of tonal onglides of all target words for two speakers (positive values indicate rising onglides, falling values indicate falling onglides)

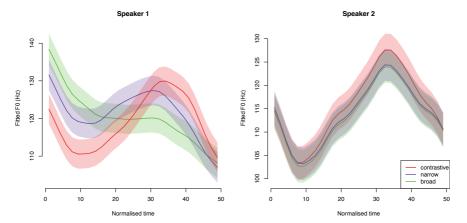


Fig. 2: Fitted F0 values from a generalised additive mixed model through the nuclear-accented syllable for two speakers (plus 5 ms before and 10 ms after)

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Contrastive intonation effects on word recall for information-structural alternatives

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This study investigates the effect of contrastive intonation on listeners' memory for contextual alternatives. When processing discourse, listeners do not only internalize linguistic propositions but also take into account the information structure of an utterance. Focus as one core component of information structure indicates "the presence of alternatives that are relevant for the interpretation of linguistic expressions" (Krifka, 2007, p.18). Focus can be expressed in different ways, e.g., word order, focus particles and intonation. What all of these means have in common is that they evoke a set of alternatives to the focused constituent (cf. Rooth, 1992).

Listeners may interpret the L+H* tone accent with which the focused constituent MARY in Example 1 is realized as contrastive (cf. Grice & Baumann, 2002). Consequently, for Example 1, listeners may conclude that context alternatives to the focused constituent, (e.g., Peter, William) have not been shown any pictures. The activation of these alternatives may be beneficial for subsequent discourse processing which is supported by corpus research findings (cf. Spalek & Zeldes, 2015). In contrast to related research which has shown that contrastive intonation improves *recognition* memory for alternatives (e.g., Fraundorf et al., 2010), the present study investigates whether contrastive intonation improves later *recall* for focus alternatives similarly to the finding that focus particles enhance recall performance for alternatives (Spalek et al., 2014).

Example 1: John showed MARY the pictures.

(upper case indicating a contrastive L+H* tone accent)

Native speakers of German (n=100, 50 female) performed a delayed recall task. They listened to German auditory stimuli introducing a person and a set of three elements (cf. Example 2a for an English translation). These context sentences were continued in two different versions: the critical sentences were presented with either contrastive intonation (L+H*) focussing one of the three list items (cf. Example 2b) or with a broad intonation contour (H*). In the following, the two items that were not mentioned in the last sentence (here: eggs, milk) will be referred to as "alternatives". After ten trials, participants were prompted to recall the elements in the context sentences

Example 2a: Isabell wrote cheese, eggs and milk on the shopping list.

Example 2b: She forgot to buy the CHEESE.

Word recall accuracy for the contextual alternatives was investigated with generalized linear mixed-effect modelling (fixed effects: intonation, gender; random effects: participant, test item, test word). Additionally, two separate analyses on male and female participant data were conducted because pilot data suggested that male participants generally showed poorer task performance. The omnibus mixed-effect analysis indicates that contrastive focus enhances recall for focus alternatives (cf. Fig. 1). Male participants performed worse than females but did not show smaller focus alternative effects in the omnibus analysis. However, the separate analyses on male and female data indicate that the observed focus alternative effect is predominantly driven by females as only their recall was affected by contrastive focus. The comparison with Spalek et al.'s (2014) Experiment 2 data suggests that contrastive intonation

elicits smaller focus alternative effects on recall than focus particles (2.9% in our data vs. ~4.5% effect size in Spalek et al., 2014). To conclude, the results point towards focus effects on alternative recall being mediated by contrastive intonation with significant gender effects on general task performance.

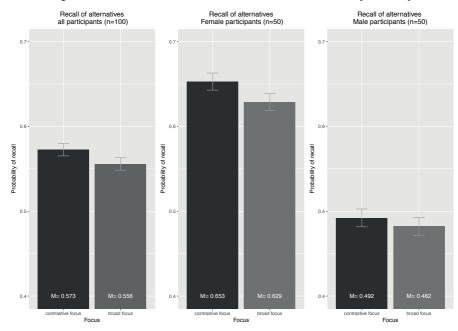


Figure 1: Effects of contrastive intonation on alternative recall probability

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Pronoun resolution in Turkish Transfer-of-Possession Verbs

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How we identify the antecedent of an ambiguous pronoun has been a topic of interest in discourse anaphora studies. Crudely speaking, the most prominent entity is selected as the antecedent, but what determines the ranking of an entity as prominent is still an open question. Features such as givenness, [1, 2, 3] parallel roles, [4] or recency, [3] syntactic role, [5] thematic role, [6,7] verb type, [7] coherence relations, [3,8,9] and referential form [3,10] have been nominated as the determinants of prominence in anaphora resolution. Other studies suggest that multiple factors interact during pronoun resolution. [10,11,12, 13] Also, a widely accepted generalization is that more reduced referential forms encode more prominent entities. [14]

For Turkish, the intuition is that null pronouns are likely to refer to the subject and overt pronouns refer to the object. [15] However, recent experimental studies showed some verb types (e.g., stimulus-experiencer; e.g., frighten) in Turkish may not reflect this expectation due to their strong thematic biases. [16; c.f., 10,17] Similarly, for English, ToP verbs have been reported to show a goal-bias. [6] Yet, recent studies underlined the influence of coherence relations: the goal-bias is observed only in occasion (and) and result (so) relations but not in explanation relations. [9] For Japanese [17] and Korean, [18] on the other hand, null pronouns were source-biased regardless of the coherence relations. Apparently, language-specific factors are also at play. However, all of these studies come from sentence-completion studies where the coherence relations may be marked implicitly. What happens in comprehension when the coherence relations are overtly marked?

We test how an ambiguous pronoun is interpreted in Turkish sentences with ToP verbs, and how different coherence markers (*and, so, because*) (manipulated within-subjects) and referential forms (*null/overt*) (manipulated between-subjects) influence interpretation. We conducted a rating study modeled after a previous study. ^[19] One-hundred-twelve participants read conjoined clauses with an ambiguous anaphor and a nonsense-verb, and they determine the antecedent of this nonsense action (see, 1&2).

If purely thematic factors dominate^[6], we expect a goal-bias. If grammatical position determine the antecedent of a null pronoun as in Japanese^[17] or Korean,^[18] we expect more source-bias in null-pronoun condition regardless of the coherence marker. If coherence relations interact with the referential form as in English,^[9] we expect a goal-bias in occasion and result conditions compared to explanation relation.

We found a significant effect of coherence-marker and referential form, and a significant interaction between the two (see, Table&Figure). We observed a gradient source(subject)-bias changing with the coherence marker only in null-pronoun condition (source-bias: and>so>because). In this condition, there was a source-bias in occasion and result conditions and a goal(object)-bias in explanation condition. In the overt-pronoun condition, there was a goal-bias regardless of the coherence marker. Thus, even if reflecting different thematic biases, Turkish null-pronouns pattern with English pronouns (and not with Japanese/Korean null-pronouns) in reflecting a complex interplay between grammatical and pragmatic factors, but the overt-pronouns are under the heavy influence of grammatical factors. They are predominantly linked to the object. [15]

Sample Test Items

- (1) Bahar Ceren-e rapor-u yolla-dı ve/bu yüzden/çünkü punta-dı.

 Bahar-Nom Ceren-Dat report-Acc send-Past.3sg and/so/because punta-Past.3sg

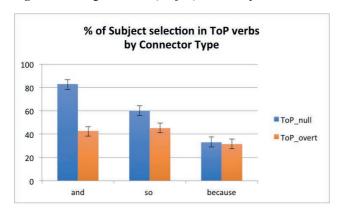
 'Bahar sent Ceren the report and/so/because (she) dax-ed.'
- (2) Bahar Ceren-e rapor-u yolla-dı ve/bu yüzden/çünkü o punta-dı.

 Bahar-Nom Ceren-Dat report-Acc send-Past.3sg and/so/because she punta-Past.3sg 'Bahar sent Ceren the report and/so/because she dax-ed.'

Table: Results of repeated measures ANOVA conducted over percentage of Source (Subject) selection with coherence-marker as within-subjects variable and referential-form as between-subject variable

Source	df	F	P
Coherence-marker	2	69.84	<.0001
Referential-form	2	106.78	<.0001
Coherence-marker*Referential-form	4	15.43	<.0001

Figure: Percentage of Source (Subject) selection by coherence marker and referential form



References: [1] Givon, 1983; [2]Gundel, et al. 1993; [3]Arnold, 1998; [4]Sheldon, 1974; [5]Crawley et al, 1990; [6] Stevenson et al., 1994; [7] Garvey&Caramazza, 1974; [8] Kehler, 2008; [9] Rohde, Kehler, & Elman, 2006;2008; [10] Fedele& Kaiser, 2015; [11]Kaiser&Trueswell, 2008; [12] Gordon, et al., 1993; [13] Badecker& Straub, 2002; [14] Grosz, Joshi, Einstein, 1995; [15] Turan, 1998; [16] Özge, Harsthorne&Snedeker, 2016; [17] Ueno&Kehler, 2016; [18] Kim, et al., 2013; [19] Hartshorne&Snedeker, 2013.

Discourse prominence and antecedent mis-retrieval during native and non-native pronoun resolution

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We report the results from an eye-movement-monitoring-during-reading study investigating the role of antecedent prominence in native (L1) and non-native (L2) pronoun resolution in German. Pronoun resolution is thought to involve cue-based memory search and retrieval [1], which may sometimes lead to feature-matching but grammatically illicit antecedents being retrieved, especially if these are discourse-prominent [2]. There is evidence suggesting that the resolution of reflexive anaphors is more prone to interference from discourse-prominent antecedents during L2 compared to L1 sentence processing [3]. The current study extends this research by examining the processing of personal pronouns in grammatically constrained ('Principle B') configurations. We investigated how the discourse saliency of grammatically illicit antecedents affects the likelihood of them being considered for coreference construal during real-time processing.

Method. Participants included 48 German native speakers (mean age: 27 years) and 48 advanced L2 learners of German (mean age: 27 years) with Russian as their L1. Our experiment had a 2x2 design with the factors Prominence (prominent, nonprominent) and Gender (match. mismatch). with only the illicit antecedent being manipulated. Stimulus materials included short texts introduced by a context sentence. The second, critical sentence contained an object pronoun and two c-commanding subject NPs as potential antecedents (see 1a-d). According to binding Principle B, NP1 (e.g. Otto in example 1) but not NP2 (e.g. der Direktor 'the manager' in 1a,c) is a grammatically licit antecedent for the masculine singular object pronoun ihn ('him'). In all experimental conditions, the illicit antecedent was rendered highly elaborate through relative clause modification. In (1a,b) the illicit antecedent's discourse prominence was increased through first-mention and by introducing it as the subject of the context sentence.

Results. For L1 speakers, the eye-movement data showed significant main effects of Gender in regressions out of the pronoun and spillover regions, and in regression-path times at the spillover region, indicating that this group experienced interference from the illicit antecedent (NP2) after encountering the pronoun. The likelihood of mis-retrieval was not modulated by the illicit antecedent's discourse prominence, however. A different pattern was seen in our L2 group, who showed significant interactions of Gender and Prominence in first-pass times and total reading times at the pronoun region. The observed interaction patterns indicate that L2 speakers were more likely to mis-retrieve the illicit antecedent if it was discourse-prominent compared to when it was not. Both the L1 and L2 speakers demonstrated perfect sensitivity to binding Principle B in a post-experiment untimed questionnaire task, however.

Discussion. Our results show that real-time pronoun resolution is affected by the presence of grammatically illicit antecedents during early processing stages in both L1 and L2 comprehension. This is the case at least for antecedents that are highly elaborate, which is thought to result in stronger memory representations [4]. Our results moreover confirm and extend earlier findings suggesting that L2 comprehenders are more sensitive to extra-sentential discourse information than L1 comprehenders during processing [3, 5]. This suggests that discourse-level information may be differently weighted in native compared to non-native processing.

- (1a) PROMINENT, GENDER-MATCH
 Ein kompetenter Direktor leitete die Firma.
 Otto glaubte, dass der Direktor, der zuverlässige Kontakte in Schweden suchte, ihn schon bald anrufen würde.
- (1b) PROMINENT, GENDER MISMATCH Eine kompetente Direktorin leitete die Firma. Otto glaubte, dass die Direktorin, die zuverlässige Kontakte in Schweden suchte, ihn schon bald anrufen würde.
- (1c) NON-PROMINENT, GENDER MATCH
 Eine gewaltige Konkurrenz bedrohte die Firma.
 Otto glaubte, dass der Direktor, der zuverlässige Kontakte
 in Schweden suchte, ihn schon bald anrufen würde.
- (1d) NON-PROMINENT, GENDER MISMATCH Eine gewaltige Konkurrenz bedrohte die Firma. Otto glaubte, dass die Direktorin, die zuverlässige Kontakte in Schweden suchte, ihn schon bald anrufen würde.
 - '{A competent manager_{masc/fem} directed the company. / An enormous competition threatened the company.} Otto thought that the manager_{masc/fem}, who_{masc/fem} was searching for reliable contacts in Sweden, would call him very soon.'

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Voice alternations and prominence relations in complex causative structures

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This talk tackles the issue of argument realisation in the realization of **causative structures**, concentrating on the case of **complex causative constructions** (**CC**) in Italian. CC encode a bi-eventive structure, expressing an indirect causal relation: in (1), the Causer of the inflected light-v, does not directly control the event of opening the door, which is performed by an intervening initiator (so-called Causee). In Italian, CC are realized by a monoclausal construction (Rizzi1976, Guasti1996): the Causee in (2) and (3) is not case-marked as subject by the infinitive, and has to be introduced by a prepositional phrase, which may be headed by two distinct prepositions. The existence of two constructions for Italian CC has been explained either as the surface realization of two underlying syntactic structures (cf. Kayne 1975), or as depending on selectional restrictions for the inflected verb (Folli&Harley2007). We present empirical evidence against the hypothesis that *fare* realises two light-verbs with distinct selectional properties, and we suggest that the structure (2) results from **passivisation**, where P(assive)Voice binds existentially the external argument of the infinitival clause (Bruening2013).

Next, we show that this analysis can be implemented by considering the realisation of Throles in a causative structure in terms of **prominence relations**. Assuming that semantic and thematic information constrain the realisation of argument structure, the valency change realized by PVoice is interpreted as the demotion of the external argument of the infinitive clause. There is an observed tendency for PVoice to bind existentially the prototypical agentive argument, i.e. the argument that, in the active sentence, is ranked higher in a hierarchy based on semantic roles (see e.g. Kiparsky 2013). Indeed, in Italian the implicit Causer in a passive construction is by default interpreted as prototypically agentive (4a), although this interpretation may be eventually overruled (5b).

A detailed inquiry on the semantic roles subcategorized by both verbal predicates in CC reveals an asymmetry in terms of agentivity. Taking agentivity at its strong value (i.e. as implying volition), an agentivity constraint is imposed on the Causee in *a*-causatives, and on the Causer in *da*-causatives (cf. Table 1). We therefore suggest that Voice alternation is justified in order to obtain a coherent mapping between semantic interpretation and argument realisation in the process of forming a complex predicate. Given that CC in Italian are reanalysed as monoclausal constructions, where two Causers are presented as responsible of the realisation of one complex event, passivisation applies when the first Causer is agentive, and the demotion of an agentive Causee follows the necessity to avoid a structure where two participants are equally ranked in terms of agentivity, i.e. are equally plausible as Causers. As for passivization in general, however, the rule is not strict. It may happen that the demoted Causee is characterized explicitly as non-agentive (6b), or that both Causee and Causer are agentive (5b), and yet passivisation doesn't apply. Nevertheless, this hypothesis yields a correct descriptive result: according to the generalisation in Table 1, *da*-causatives are the passive version of *a*-causatives, where the Causer is necessarily agentive.

Examples and tables

- (1) John made the janitor open the door.
- (2) Mario ha fatto aprire la porta *al* custode Mario make.PF open.INF the door *to*-the janitor "Mario made the janitor open the door"
- (3) Mario ha fatto aprire la porta *dal* custode Mario make.PF open.INF the door *by*-the janitor "Mario had the janitor open the door"
- (4) a. Il manifestante è stato ucciso.

"The protester has been killed (by somebody/#by something)"

b. Il manifestante è stato ucciso da una pallottola vagante.

"The protester has been killed by a stray bullet"

Table 1 – Agentivity constraints on causer and causee

	Causer	Causee	
<i>a</i> -causatives	+/-Agent	+Agent	(5a,b,c)
da-causatives	+Agent	+/-Agent	(6a,b,c)

- (5) a. La siccità ha fatto arare la terra ai contadini. [-Ag drough make.PF plough the earth to-the farmers
 - [-Agent, +Agent]
 - b. Il padrone ha fatto arare la terra ai contadini.
- [+Agent, + Agent]
- the landlord make.PF plough the earth to-the farmers c. *Il padrone ha fatto arare la terra al trattore.
 - [+ Agent, -Agent]

the landlor make.PF plough the earth to-the tractor

"The landlor/the drough made the farmer plough the earth"

(6) a. Il padrone ha fatto arare la terra dai contadini. [+Agent, + Agent] the landlor make.PF plough the earth by-the farmers

b. Il padrone ha fatto arare la terra dal trattore. [+Agent, - Agent] the landlord make.PF plough the earth to-the tractor

b. *La siccità ha fatto arare la terra dal trattore. [-Agent, - Agent] the drough make.PF plough the earth to-the farmers

"The landlor/the drough made the farmer plough the earth"

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Variation in the encoding of prominence: A view from referential strategies in bilingual children

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When analyzing the expression of prominence in language, one is faced with a constellation of individual adaptations of prominence (different linguistic phenomena and inter- and intra-individual variation), a fact that challenges the view of prominence as a unifying principle. In the paper we aim to capture individual differences, considering factors that are external to prominence and interact with it. In particular, the study of prominence-management by bilinguals allows to identify linguistic and cognitive principles interacting with prominence and to distinguish them from each other. We consider bilingual reference production and comprehension as case studies for prominence-management. However, our theory of individual differences should apply to other prominence-related linguistic phenomena as well.

Forty Greek-Italian bilingual children (age-range: 8.00-11.8, M: 9.5) – living in Athens and attending a Greek-Italian bilingual school – took part in the study. We designed an experimental battery for the assessment of their prominence-management skills: i) two sentence repetition tasks (SRT) tapping the syntactic representations of the language-specific referential systems; ii) a Theory-of-Mind task (Silent movies, Devine & Hughes, 2013); iii) an updating task (on-line monitoring and manipulation of information); iv) a narrative production task (Schneider et al., 2005) eliciting referring expressions (REs) in Italian; v) a reference comprehension task: the children watched a video and had to associate subtitles in Italian to the actions performed by a character, choosing between two sentences that differed only in the presence of a null vs. full noun.

For the analysis of the narratives, we coded REs for factors affecting the prominence of their referent (Arnold, 2010) – Table 1. Then, we identified referential configurations indicating an overspecific use of REs (e.g., a definite determiner phrase (DEFDP) in subject position when the antecedent is a subject, with no intervening character) and an underspecific use (use of a null when the antecedent is an object, with or without intervening characters). For the comprehension task, we tapped into overspecification and probed how many null forms a child accepted before choosing a full DP.

We distinguished two groups based on the SRT-scores (greater syntactic proficiency in Italian vs. Greek). The analysis of REs in the narrative-task shows that cognitive variables (updating and ToM) affects prominence-management in the two groups differentially. The Greek-dominant group tends to use overspecific REs in Italian, as an effect of unbalanced language proficiency, while the cognitive variables did not motivate variation. In the Italian-dominant group, we found instances of both underspecific and overspecific REs. Our analysis reveals that the former are an effect of low ToM and the latter of low updating. In comprehension, the two groups perform similarly: the tendency towards overspecification correlates with low updating.

By differentiating two groups – based on language-specific syntactic mastery of REs – we were able to tease apart linguistic and cognitive factors in prominence-management: if the linguistic options for reference are not fully mastered, cognitive variables make no difference. Moreover, the interaction between language and cognitive variables operates differentially in production and comprehension. Task design and analysis both tapped into how a discourse referent's prominence was assessed by the participants, something that happened independently of the RE actually used. In this way, we are able to show that prominence emerges as the

unifying principle for the observed variations involving language, cognition and mode

	CHARACTER	TYPE_RE	CLAUSE	GRAMMATICAL_ROLE	CLAUSE_ANT	GRAMMATICAL_ROLE_ANT	CHARACTERS	
CH_002: Italian dominant; ToM (6/12) Updating (14/20).								
il giraffino ha detto [the little giraffe said]								
di non prenderlo [not to take it]	В	elitie	subordinate	object				
e lei giocava ancora [and she was playing still]								
e poi è caduto in acqua. [and then fell in the water]	В	null	main	subjec	subordinate	object	1D	underspecific
CH_033: Italian dominant; ToM (8/12) Updating (6/20).								
La cagnolina era molto arrabbiata [The the doggie was really angry]								
e il coniglio molto triste [and the rabbit really sad]	R	full DP	main	subject				
Ehm il coniglio vide un vecchio coniglio [then the rabbit saw an old rabbit]		full DP	main	subject	main	subject	0	overspecific
CH_003: Greek dominant; ToM (8/12) Updating (6/20).								
Però se ne è andato il palloncino [But went away the balloon]								
E la cagnolina si è arrabbiata tanto con lui [and the doggie got angry very much with him]	D	full DP	main	subject				
E poi la cagnolina si è arrabbiata e urlava [and then the doggie got angry and screaming]	D	full DP	main	subject	main	subject	1D	overspecific
CH_013 Greek dominant; ToM (2/12) Updating (19/20)								
E lui impaurito non sapeva [And he scared didn't know]	R	overt pron	main	subject				
che cosa dirle [what to tell her]								
Il coniglio vide un vecchio coniglio con tantissimi palloncini [the rabbit saw an old rabbit with many balloons]	R	full DP	main	subject	main	subject	1D	overspecific

Table 1: Excerpts from narratives and analysis of (a selection of) referring expressions. We coded each RE for its features (corresponding referent, type, syntactic position – main or subordinate clause – grammatical role – subject or object), features of its antecedent (syntactic position, grammatical role of the antecedent) and number of intervening characters between the RE and its antecedent, of same (S) or different (D) gender. For each child, the Table reports data concerning dominance (SRT) and the performance in ToM and updating. Among the Italian dominant children, the use of underspecific or overspecific REs is affected by cognitive factors (i.e., relatively low ToM and relatively low updating, respectively). In the Greek-dominant group, the production of overspecific forms depends on low proficiency in Italian and not on cognitive factors: it appears in association with relatively low updating and high ToM in CH_003 as well as low ToM and high updating in CH_013.

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Prominence of Agents as a function of action verb specificity

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Research in the last decades detected various factors influencing the prominence of discourse referents. Strong impact is typically adjudged to structural-syntactic factors. Nevertheless, some studies also demonstrated an improved availability of referents if their representations were semantically richer or more connected in discourse [1-2]. In two experiments, we examined whether even the semantic richness of a single verb influences the elaborateness of discourse encoding and improves the prominence of involved Agents.

Study 1 compared single-word processing times for action verbs. In a lexical decision experiment, specific and unspecific German verbs such as (1)-(2) were contrasted. Each specific verb entailed the action denoted by its unspecific counterpart, but additionally specified a method by which the action is carried out. Verb pairs were selected so that both conditions did not differ significantly in six of the most influential confounding variables (e.g. word length or frequency).

- (1) besticken (to embroider) vs. verzieren (to ornament)
- (2) verrühren (to stir) vs. vermischen (to mix)

The results showed that specific action verbs elicited 17ms longer response latencies than unspecific verbs (significant main effect in a likelihood ratio test with LME-models), indicating an elaborate encoding process for semantic specificity. Based on this finding, we argue for a semantically richer event representation in case of specific verbs. To test whether this improves the semantic richness and connectivity of Agent representations leading to the expected increased prominence, we used short contexts and measured the resolution speed for Agent pronouns as a function of the introductory verb specificity.

In study 2, short contexts made up of two sentences such as in (3) were presented for self-paced reading. The first sentence introduced an event described either by a method-specific action verb or an unspecific verb. The Agent was named initially by a forename; the theme was realized by a definite NP following the verb. The second sentence started with a personal pronoun referring back to the previous Agent. Pronoun resolution was unambiguous due to gender marking. General availability of the antecedent was ensured by structural-syntactic factors (first-mentioned noun, subjectness, parallelism of position and role). The short contexts were identical in both conditions except for the action verb in the first sentence.

(3) Anke bestickt/verziert das Hochzeitskleid. Sie hat dafür ganz besonderes Garn ausgewählt.

(Anke is embroiling/ornamenting the wedding dress. She has chosen special yarn for that.)

The completion and analysis of study 2 is currently ongoing. Preliminary results indicated that method-specific action verbs facilitate the resolution of Agent pronouns. Since specific verbs elicited longer reading times in the first sentence, we will argue for an immediately densified connectivity of the Agent with other information in the ongoing discourse representation (regarding the action and the anticipated affected theme).

In sum, action verb specificity seems to increase the prominence of Agent entities. We expect the advantage in later retrieval to originate from their diversified connectivity in the event representation. The finding will be discussed as a positive trade-off in discourse processing based on more elaborate verb encoding processes. To conclude, the results so far provide evidence that verb's semantic specificity is a further prominence-promoting factor.

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Agentivity and prominence: the case of differential subject marking in Old Indo-Iranian Pascal Coenen and Michael Frotscher University of Cologne

Vedic Sanskrit possesses two forms for the nominative plural masculine of a-stems, a shorter variant in -ās (áśvās 'horses') and a longer one in -āsas (áśvāsas 'horses'). Cognates of these two forms are also found in Avestan and Old Persian (Av. -ā: OP -ā: Ved. -ās vs. Av. -āŋhō: OP -āha: Ved. -āsas) so that this variation is probably of Proto-Indo-Iranian age.

This presentation is part of a larger research project, the goal of which is to investigate the original distribution of these two variants. This goal can best be achieved by examining primarily data from Vedic Sanskrit, for the Old Iranian text corpus does not contain sufficient data that are relevant for this investigation. Due to a preliminary investigation of the data the following research hypotheses have been established: (i) The feature which is expressed by the opposition -ās vs. -āsas is a feature of the entire noun phrase since in each noun phrase only one form exhibits the long variant. (ii) The function of these two variants is to indicate where the respective noun is located on the agentivity scale. Thus, -āsas is used to indicate a high degree of agentivity whereas -ās is used to indicate a low degree of agentivity. This hypothesis is based on the observation that nominalized adjectives tend to exhibit the nominative plural in -āsas, when the context in which they appear requires a higher degree of agentivity. Otherwise, the short form in $-\bar{a}s$ appears to be used. (iii) The long form $-\bar{a}sas$ reflects a universation of the short form (Ved. $-\bar{a}s < PIE *-\bar{o}s$) with the Indo-European reflexive pronoun (PIE *s-, nom.pl. *s-es).

The focus of this presentation lies on research hypothesis (ii). A preliminary run-through of the material (using the database in MÜTH 2007) suggests that the opposition -ās vs. -āsas is used to alter the agentivity value of nominal entities within the noun phrase (similarly already KURYŁOWICZ 1960: 162). Here the long form -āsas functions as a means of contextually upgrading the agentivity value of lexemes with a low inherent agentivity. A noun phrase containing the long variant is therefore associated with features like [volition], [causation] and [autonomous movement] (regarding these features and their relation to animacy see DOWTY 1991: 571-575 and PRIMUS 2012: 16-27). In contrast, the employment of the short form seems to function as a means of downgrading the agentivity value in lexemes with a high inherent agentivity. Thus, it disassociates a noun phrase with the features mentioned above. These observations imply that the opposition of $-\bar{a}sas$ vs. $-\bar{a}s$ is a complementary one. As an example of the function of this opposition, cf. the sentences in (1):

```
(1a)
       āśīrvantas
                             sut\dot{a} = -\dot{a}s
                                            imé
       with.milk:NOM:PL
                             iuice:NOM:PL this:NOM:PL
       'These juices (are) mixed with milk'
                                                                             (RV 1.23.1)
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sutāso [= -āsas]
(b)
      prá
                                                 harayanta
       forth you:ACC:PL juice:NOM:PL
                                                 fetch:PRS:INJ:MID:3PL
       pūrņās
       full:NOM:PL
       'The juices fetch you forth, (when they are) full'
                                                                         (RV 4.37.2)
```

vah

The sentence in (b) requires that the 'juices' be higher on the agentivity scale than in sentence (a). As a result, in (b) they are marked with $-\bar{a}sas$ whereas in (a) they are marked with $-\bar{a}s$.

One specific goal of this investigation is to determine whether all of the agentivity features mentioned above (or only a proper subset of those) are relevant for this opposition.

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The prominence of proper names in the extended animacy hierarchy

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The extended animacy hierarchy is a prominence scale that captures the cross-linguistic patterns of plural marking, split ergative systems, differential object marking, etc. In this implicational scale, proper names occupy an intermediate position between pronouns and common nouns with human referents, as shown in (1).

(1) Extended Animacy Hierarchy (Croft 2003: 130) first/second person pronouns > third person pronoun > proper names > human common noun > non-human animate common noun > inanimate common noun

In this talk, we will examine the patterns of prominence lending features of proper names in Romance languages with respect to Differential Object Marking (DOM), which is viewed as a prominence dependent operation. The purpose of this talk is two-fold. First, we will test the predictive value of proper names in Galician, Portuguese, Asturian, Spanish, Catalan, Corsican, Sardinian, Sicilian, Neapolitan, and Romanian. Contrary to Helmbrecht *et al.* (2008), who suggest removing proper names from typological generalizations, we provide synchronic and diachronic evidence that shows that Differential Object Marking is in line with the extended animacy hierarchy. For example, in Allerese and Roussillon Catalan, there is a split between differentially marked first/second person pronouns and unmarked third person pronoun. In Central Catalan we find DOM with strong pronouns regardless of person. In Corsican, Galician, and Portuguese DOM occurs with pronouns and proper names but not with common nouns. In Asturian, Romanian, Sardinian, Sicilian, and Spanish there is DOM with strong pronouns, proper names, and definite human nouns. However, definite human nouns are optionally marked in Asturian, Neapolitan, Sardinian, Sicilian, and Neapolitan while they are obligatorily marked in Romanian and Spanish, as illustrated in Table 1.

Table 1: DOM according to the extended animacy hierarchy in Romance languages

Language	1./2. personal	3. personal	Proper names	NPs (definite
	pronoun	pronoun		and human)
French, Italian	-	-	-	-
Allerese, Roussillon Catalan	+	_	_	_
Central Catalan	+	+	_	_
Corsican, Galician, Portuguese	+	+	+	_
Asturian, Neapolitan, Sardinian, Sicilian	+	+	+	±
Spanish, Romanian	+	+	+	+

Crucially, we find examples that run counter to the implicational hierarchy. This is the case in Old Sardinian, where proper names are differentially marked as opposed to pronouns (see Putzu 2008: 415–416 for details). In this respect, we will argue that the exceptions found are scarce and hence do not invalidate the promince lending features of the extended animacy hierarchy.

And second, we will introduce a fined-grained classification of proper names based on animacy and agentivity, which includes deity names, personal names, kinship names, animal names, and place names. It will be shown that this classification contributes to a better understanding of the patterns of DOM expansion and retraction, especially in languages such as Corsican, where the cut-off point is between proper names and common nouns.

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The interaction of semantic bias and topic status in the interpretation of personal and demonstrative pronouns in German

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P(ersonal)-pronouns exhibit a subject preference which is easily overriden by semantic bias (verb semantics, coherence relations). Anaphoric d(emonstrative)-pronouns, in contrast, have been hy-pothesized to show a preference for non-topical antecedents. To what extent semantic bias affects d-pronouns is not known ([3]; [6]; [2]). We therefore ran two experiments investigating how topi-cality and semantic bias affect the interpretation of p- and d-pronouns.

Each experimental stimulus of Experiment 1 consisted of three sentences followed by a continuation prompt (see Table 1). Sentence 1 set the scene. Sentence 2 introduced a referent that was taken up in sentence 3, which additionally introduced a second referent and contained an object-experiencer verb. The referent newly introduced in sentence 3 acted as subject/stimulus and was non-topical. The referent already introduced in sentence 2 served as object/experiencer and was the topic ([5]; [1]). Each continuation prompt contained a pronoun (er 'he'/p-pronoun or der 'he'/d-pronoun) and a discourse marker (deshalb 'therefore' or nämlich 'the reason was that').

In accordance with the literature, the results for the p-pronoun show a preference for the stimulus with a cause relation and a preference for the experiencer with a consequence relation (see Figure 1). Unlike most prior experiments, which have found complementary preferences for p- and d-pronouns, the d-pronoun showed the very same preferences. Thus, semantic bias governs the interpretation of p- and d-pronouns in the same way ([2]).

Experiment 2 manipulated the position of the topic in sentence 3 by varying the referent introduced in sentence 2. The continuation prompt always contained the causal discourse marker n'amlich. When the subject referent of sentence 3 was already introduced in sentence 2, the topic appeared in first position, whereas the topic appeared in final position when the object referent was already introduced before. For the p-pronoun, the results show a strong preference to refer to the subject/stimulus, independent of the topic's position (see Figure 1). The d-pronoun also preferred reference to the first NP, but the strength of the preference was modulated by the topic manipulation. The preference for the subject/stimulus was much stronger when it was not the topic, in agreement with the non-topic orientation of d-pronouns.

In sum, the interpretation of p-pronouns was almost completely determined by the coherence relation established by the discourse marker. Thus, with a strong semantic bias, topicality is too weak to have an effect. Like p-pronouns, d-pronouns showed a preference for the semantically most expected antecedent. Simultaneously, the d-pronoun showed an anti-topic effect, as proposed in the literature.

A theory integrating different types of bias proposed in [4] derives interpretive preferences from production frequencies. For both experiments we have obtained these frequencies in order to test this theory.

Table 1: A complete stimulus item for Experiment 1

[C1] Gestern Abend wurde eine Talkshow für das Fernsehen aufgezeichnet.
yesterday evening was a talkshow for the TV recorded
[C2] In der Runde saß auch ein angesehener Experte.
in the round sat also a distinguished expert
[C3] Ein vorlauter Studiogast hat den Experten während der Aufzeichnung mehrfach irritiert.
a cheeky studio guest has the expert during the recording several times irritated.
Continuation prompt: Er/Der nämlich (cause)
Er/Der deshalb (consequence)

Table 2: A complete stimulus item for Experiment 2

[C1] Gestern Abend wurde eine Talkshow für das Fernsehen aufgezeichnet. yesterday evening was a talkshow for the TV recorded

Topic First

[C2] In der Runde saß auch ein vorlauter Studiogast. in the round sat also a cheeky studio guest

[C3] Der Studiogast hat einen angesehenen Experten während der Aufzeichnung mehrfach irritiert. the studio guest has a distinguished expert during the recording several times irritated.

Topic Second

[C2] In der Runde saß auch ein angesehener Experte. in the round sat also a distinguished expert

[C3] Ein vorlauter Studiogast hat den Experten während der Aufzeichnung mehrfach irritiert.

a cheeky studio guest has the expert during the recording several times irritated.

Continuation prompt: Er/Der ______ nämlich (cause) _____

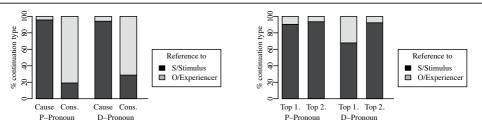


Figure 1: References to the sub./stimulus and obj./experiencer for Experiments 1 (left) and 2 (right).

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ABSTRACTS – POSTERS I

Dynamic Prominence in the Processing of Complex Sentences: Evidence from EEG and Eve Movements

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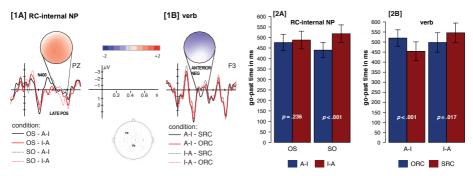
Introduction: Animacy is a semantic property that allows establishing a prominence relation between verbal arguments, with animates being more prominent than inanimates. In sentence comprehension studies, animacy-based prominence has been found to remedy processing penalties for dispreferred word order variations, notably object relative clauses (ORCs) vs. subject relative clauses (SRCs). This finding even holds for languages such as English, where animacy plays a minor role compared with the dominant word order cue (e.g. MacWhinney et al. 1984, Traxler et al. 2005). But while psycholinguistic studies confirm the significant impact of animacy on argument interpretation across languages, it remains unclear whether this influence is modulated dynamically within an unfolding complex sentence, as interactions between RC and matrix-clause information are understudied.

The present study: We conducted two experiments in German, where reliance on animacy as a probabilistic cue to argument interpretation is stronger than in English (MacWhinney et al. 1984), and where the ORC penalty is well established with animate referents and relativized nominative-marked RC heads. We investigated whether and how the SRC/ORC asymmetry in German is affected by (1) animacy-based prominence within the RC and by (2) interactions between animacy and further prominence cues in the matrix clause.

Our design fully crossed matrix-clause word order (SO_{HEAD} vs. OS_{HEAD}), animacy of the RC noun phrases (A_{HEAD}-I vs. I_{HEAD}-A), and RC type (SRC vs. ORC). We recorded ERPs (Exp.1: n=24) and monitored eye movements (Exp.2: n=48) while participants read sentences with RCs that were locally ambiguous up to the RC-final verb (see Table 1 below).

Results: Both experiments revealed an interaction of RC type and animacy at the disambiguating verb: In Exp.1, ORCs and SRCs with inanimate heads showed a LAN-like negativity (but no late positivity) relative to SRCs with animate heads; see Fig. 1B. In Exp.2, we observed an SRC advantage for animate heads and an ORC advantage for inanimate heads; see Fig. 2B.

Additionally, both experiments revealed an interaction of matrix-clause word order and animacy at the RC-internal noun phrase. There was no effect of animacy when matrix-clause subjects were relativized (OS_{HEAD} : I_{HEAD} - $\underline{A} = A_{\text{HEAD}}$ - \underline{I}), but we observed a late positivity (Exp.1) and longer reading times (Exp.2) for animate vs. inanimate noun phrases when matrix-clause objects were relativized (SO_{HEAD} : I_{HEAD} - $\underline{A} < A_{\text{HEAD}}$ - \underline{I}); see Figs. 1A and 2A.



[1] Exp. 1: ERPs time-locked to the onset of the RC-internal NP [1A] and of the disambiguating verb [1B]. Topographic maps illustrate the scalp distribution of observed effects.

[2] Exp. 2: Go-past times for the RC-internal NP [2A] and for the disambiguating verb [2B]; error bars indicate 95% confidence intervals.

Discussion: Extending prior findings to German, our results confirm that animacy-based prominence may level the SRC/ORC asymmetry (Exp.1) or even invert it (Exp.2). Moreover, the experiments provided novel converging evidence for an interaction of matrixclause information and RC-internal prominence relations. As sentence-initial noun phrases were animate in all conditions, the pattern of results suggests that the misalignment of prominence features (syntactic function, linear order, animacy) in the matrix clause affects the establishment of prominence relations in the embedded relative clause. This finding can be theoretically accounted for if we assume that the reliability of probabilistic cues to argument interpretation is updated dynamically in the processing of complex sentences.

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Table 1: Example sentences

SO _{HEAD} A _{HEAD} -I SRC	Der Politiker	bezahlte	die Terroristen,	,die	die Nachricht	erhielten,	als der
SO _{HEAD} A _{HEAD} -1 SKC	the _{NOM} politician	paid	the_{ACC} $terrorists_{pl}$	$that_{AMB}$	$the_{AMB} message_{sg}$	$received_{pl}$	when the
SO _{HEAD} A _{HEAD} -I ORC	Der Politiker	bezahlte	die Terroristen,	,die	die Nachricht	verärgerte,	als der
30 _{HEAD} A _{HEAD} -1 OKC	the_{NOM} politician	paid	the_{ACC} $terrorists_{pl}$	$that_{AMB}$	the_{AMB} $message_{sg}$	$upset_{sg}$	when the
SO _{HEAD} I _{HEAD} -A SRC	Der Politiker	verfasste	die Nachricht,	,die	die Terroristen	verärgerte,	als der
SO _{HEAD} I _{HEAD} -A SICC	the _{NOM} politician	wrote	the_{ACC} $message_{sg}$	$that_{AMB}$	the_{AMB} $terrorists_{pl}$	$upset_{sg}$	when the
SO _{HEAD} I _{HEAD} -A ORC	Der Politiker	verfasste	die Nachricht,	,die	die Terroristen	erhielten,	als der
SO _{HEAD} I _{HEAD} -A OKC	the _{NOM} politician	wrote	the_{ACC} $message_{sg}$	$that_{AMB}$	the_{AMB} $terrorists_{pl}$	$received_{pl}$	when the
OS _{HEAD} A _{HEAD} -I SRC	Den Politiker	bezahlten	die Terroristen,	,die	die Nachricht	erhielten,	als der
OS _{HEAD} A _{HEAD} -1 SKC	the _{ACC} politician	paid	$the_{NOM} terrorists_{pl}$	$that_{AMB}$	$the_{AMB} message_{sg}$	$received_{pl}$	when the
OS A LODG	Den Politiker	bezahlten	die Terroristen,	,die	die Nachricht	verärgerte,	als der
OS_{HEAD} A_{HEAD} -I ORC	the _{ACC} politician	paid	$the_{NOM} terrorists_{pl}$	$that_{AMB}$	the_{AMB} $message_{sg}$	$upset_{sg}$	when the
OS I ASPC	Den Politiker	frustrierte	die Nachricht,	,die	die Terroristen	verärgerte,	als der
OS_{HEAD} I_{HEAD} -A SRC	the _{ACC} politician	frustrated	$the_{NOM} message_{sg}$	$that_{AMB}$	the AMB terrorists pl	$upset_{sg}$	when the
OC I A ODC	Den Politiker	frustrierte	die Nachricht,	,die	die Terroristen	erhielten,	als der
OS _{HEAD} I _{HEAD} -A ORC	the_{ACC} politician	frustrated	the _{NOM} message _{sg}	$that_{AMB}$	the_{AMB} $terrorists_{pl}$	received _{pl}	when the

On the interaction between syntactic prominence and discourse functions. A corpus study of Italian and English left marked structures in online newspapers

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Left marked structures in Italian and English, such as Left Dislocations (*La torta, l'ho mangiata/The cake, I ate it*) and Frontings (*A Maria, non ho parlato/To Maria, I didn't speak*) have been claimed to be multifunctional. More precisely, studies devoted to real texts have described left marked structures as performing functions ranging, for example, from topic-marking, to presentative (see, among many others, Benincà et al. 1988, Bonomi et al. 2002, De Cesare 2011, for Italian; Prince 1998, Birner&Ward 1998, Lambrecht 2001, for English).

The aim of this contribution is twofold. Firstly, to provide a corpus-based account of Italian and English left marked structures' discourse functions in online newspapers. Secondly, to show that the interaction between syntactic prominence and discourse functions is the same in both languages. Following a contrastive and corpus-based approach, 200 occurrences of Italian and English Left Dislocations and Frontings have been manually extracted from a small corpus of online newspapers (ca. 500'000 words). Their information properties and discourse functions have been analyzed in the frame of a multilevel and multidimensional model for the segmentation of written texts, the so-called Basel Model (Ferrari et al. 2008, Ferrari 2014). The parameters considered relevant for the analysis describe both information properties of the left marked structures – e.g., topicality (à la Lambrecht) and givenness (à la Chafe) – and discourse properties– e.g., their connections with the thematic progression (Ferrari&De Cesare 2009) and presuppositions in the texts (Prince 1986).

The results provide evidence that Left Marked Structures in Italian and English online newspapers perform at least five different functions (topicalising, focalizing, presentative, expressive and cognitive), pertaining not only to the topical but also, at least, to the logicosemantic dimension of the text. Moreover, there is a direct relation between the syntactic prominence of the left marked structures and the functions they perform. In other terms, left marked structures that exhibit a higher degree of syntactic articulation are able to perform a wider variety of functions. Finally, the contrastive perspective allows clarifying which traits of this interaction vary across the languages examined.

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Syntactic prominence in discourse: A corpus-based analysis of topic-marking constructions in French

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The objective of this talk is to gain insight into the interplay of syntactic and discourse prominence, by comparing sentences containing a referential expression in the left or right periphery (LP/RP) with sentences that have a referring expression in root position (ROOT).

In spoken French, constructions like left dislocation in (1) and right dislocation in (2) al-low speakers to refer to a particular referent by placing the referring expression in the periph-ery of the sentence, and (optionally) taking it up with a resumptive clitic in the clausal root. Those types of constructions are generally assumed to be topic-marking constructions. How-ever, marking the topic in this sense is by no means obligatory, as topics can also be expressed by the ROOT variant, as in (3). From a variationist perspective, the question arises then which factors motivate the choice between the different word-order options.

- (1) Cette fille_i, tu l'_ias pas vue sortir? (LP) this girl you her-have NEG seen go.out 'This girl, haven't you seen her come out?'
- (2) Tu l'ias pas vue sortir, cette fillei? (RP) you her-have NEG seen go.out this girl 'Haven't you seen her come out, this girl?'
- (3) Tu l'ias pas vue sortir? (ROOT) you her-have NEG seen go.out 'Haven't you seen her come out?'

Existing literature on the subject posits that the LP variant can be used to express contrast, topic shift, or serves turn-taking, whereas RP constructions are better suited for disambiguation or turn-closing (Delais-Roussarie et al. 2004; Ashby 1988). Still, those claims are either based on intuitive judgments by informed speakers, or on incomplete empirical observation that fails to systematically contrast LP/RP constructions with the ROOT variant. In order to fill that gap, a pilot study has been conducted on a part of the French sgs subcorpus (www.sgscorpus.com), which consists of task-guided, spontaneous speech from 102 speakers from the Île de France region. So far, 430 referring expressions have been identified and annotated with respect to the construction type (ROOT, LP, RP), ϕ -features, information status, and the referents they are used to refer to. From this data, we calculated indicators of the density of competing referents (those bearing the same person, number, and gender features), an indicator of the density of mentions in previous discourse (backward-looking perspective), and an indicator of referential persistence (forward-looking perspective).

Preliminary results suggest that topic-marking via placement in the periphery is a rather scarce phenomenon, at least in our data, with only 18 instances (4.2%) of LP and 11 instances (2.6%) of RP. Moreover, the RP option is characterized by a higher number of competing referents in the context, as predicted by the disambiguation hypothesis. By contrast, our data do not support the view of LP as a shift marker: So far, referents mentioned in LP constructions actually come out as less continuous and less persistent than RP mentions, which in turn are less continuous and less persistent than mentions in the ROOT construction

Overall, our variationist approach shows that LP and RP constructions do have different discourse properties than the ROOT variant, although those differences are much more gradient than assumed in the syntactic literature. In this vein, we discuss LP and RP constructions as possible variants to (re-)direct the hearer's attention, and we argue that broadening the perspective to forward- and backward-looking discourse functions can help sharpen our understanding of variation at the sentence level.

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Preferences for the positioning of actants in visual scenes

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The goal of this study was to determine whether language users have a preference for the visual representation of events that can be expressed using transitive action verbs. We examined whether there is a preference for agents depicted to the left or to the right of patients in scenes containing both (e.g., a boxer pushing a thief).

Thirty-six native speakers of German (mean age 24.2 years, SD = 1.8) took part in the study. Participants were asked to fill out a questionnaire that consisted of 9 items, each containing two mirror images of the same scene. The scenes depicted 9 events between two animate figures (see Figure 1). For each item participants were asked to mark with a cross the picture they preferred (i.e., the one that – in their opinion – looked more conventional, natural or better) or the option "I have no preference".

The results show that overall left-agent preference occurred significantly more often than both right-agent preference and no preference, and right-agent preference occurred more often than no preference. While the results suggest that participants generally prefer the scenes where the agent is positioned to the left of the patient, this preference was reverse for some scenes. Thus, for the event *ziehen* 'pull' participants showed a significant preference for the agent depicted to the right of the patient.

The findings show that in general agents to the left of patients are preferred even in nonverbal tasks. This left-agent preference is in line with that reported in previous literature on verbal tasks (e.g., Chatterjee, Southwood & Basilico, 1999). However, just like in verbal tasks, these representations appear to be influenced by the directionality of events, since the pictures depicting events with directionality dissociation (i.e., *ziehen* 'pull' where the action affecting the patient is directed away from it) elicited a clear right-agent preference. These findings have important implications especially for studies on prominence with event representations and event structure at the core of their design, as non-verbal preferences may be a potential confound that needs to be carefully considered when experimental stimuli are constructed.

Keywords: event, preferences, visual scenes Figure 1.



The prominence of sentience

Franziska Kretzschmar, Markus Philipp, Tim Graf and Beatrice Primus *University of Cologne*

Agent arguments are the highest ranked arguments with a privileged status in many linguistic phenomena. It has been proposed that this privilege can be explained by the notion of prominence (cf. Himmelmann & Primus 2015), but the prominence status of other roles such as 'pure' experiencers, verbal arguments with sentience as their only semantic role property, has not been investigated. By using fine-grained semantic role features instead of monolithic roles (cf. Dowty 1991), the present paper investigates the prominence status of experiencers within an experimental approach. Dowty's prototypicality account predicts an agentivity cline which is stable across different constructions and in which a 'pure' experiencer argument is a less prototypical agent compared to an argument with the additional proto-agent features of volition and autonomous motion. By contrast, prominence predicts agentivity clines that vary depending on the construction and its discourse function. When investigating experiencers in terms of prominence the question arises whether different types of sentience – specifically emotion, perception and cognition (e.g. Lehmann et al. 2004) – may lead to a prominence cline between subtypes of experiencers.

In order to address these issues, we conducted three acceptability judgement experiments with constructions that are claimed to be restricted to or strongly preferred with volitional agents: Pseudoclefts with *do* (Cruse 1973, Jackendoff 2007) in Experiment 1, personal passives (Eisenberg 2013) in Experiment 2 and impersonal passives (Dowty 1991, Primus 2011) in Experiment 3. The stimulus materials in Experiment 1 (N= 60) and Experiment 2 (N= 69) comprise five verb classes, each with six transitive verbs referring to volitional perception (BEOBACHTEN 'watch'), non-volitional perception (SEHEN 'see'), non-volitional emotion (HASSEN 'hate'), and non-volitional cognition (KENNEN 'know'). The fifth class (AUFWEISEN 'have, exhibit') includes verbs whose subject participant lacks volition, sentience and autonomous motion. BEOBACHTEN, HASSEN and SEHEN entail a mental process that is initiated by the proto-agent participant and that is characteristic for the situation denoted by the verb (autonomous motion in a broad sense), while KENNEN and AUFWEISEN are genuine states (cf. Kratzer 1995). See Figures 1 and 2.

In Experiment 3 (N= 83) we used four verb classes, each with six intransitive verbs referring to volitional activity (ARBEITEN 'work'), non-volitional bodily process (SCHWITZEN 'sweat'), non-volitional emotion (BANGEN 'fear') and a state that does not entail any of the agentive properties under investigation (GLÄNZEN 'glitter'). See Figure 3.

The results of our three experiments reveal that the privileged status of 'pure' experiencers compared to that of volitional agents varies depending on the construction and its discourse function (active vs. passive, *do*-pseudocleft vs. passive), in support of an explanation in terms of prominence. In addition, our findings also suggest that Dowty's protoagent features, sentience in particular, may need further decomposition.

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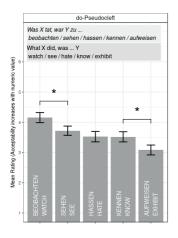


Figure 1: do-pseudocleft, examples, mean acceptability ratings for each condition

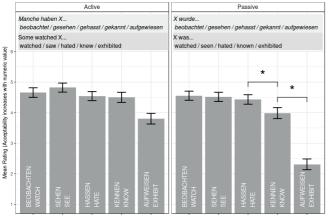


Figure 2: active vs. personal passive, examples, mean acceptability ratings for each condition

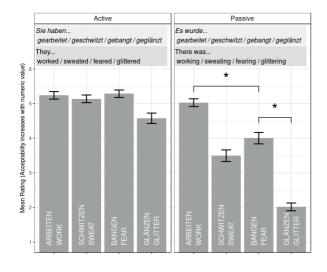


Figure 3: active vs. impersonal passive, examples, mean acceptability ratings for each condition

The impact of patient animacy and patient position on German syntax: Evidence from a psycholinguistic experiment on sentence production

Sabine Reuters, Sarah Dolscheid, Yulia Esaulova and Martina Penke

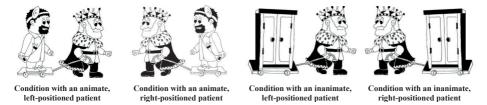
University of Cologne

Background:

In order to facilitate communication, speakers have the option to choose between diverse syntactic alternatives (Myachykov, Garrod & Scheepers 2010: 53). The first picture in Figure 1, for instance, can be described by a German active sentence (*Der König zieht den Arzt - The king pulls the doctor*), a passive sentence (*Der Arzt wird vom König gezogen - The doctor is pulled by the king*) or a topicalization (*Den Arzt zieht der König - The doctor [ACC], the king [NOM] pulls*).

There has been substantial evidence that syntactic choices can be influenced by certain pro-minence-lending features. Studies have e.g. shown that higher-ranked referents on the anima-cy hierarchy scale are preferably chosen as sentential subject or realized in an earlier clause position leading to the production of passive sentences or object topicalizations (Prat Sala & Branigan, 2000; Van Nice & Dietrich, 2003). At the same time, drawing and reaction time experiments have proven that people seem to represent actions in a left to right directionality, with agents located on the left and patients on the right (e.g. Chatterjee, Southwood & Basili-co, 1999).

Figure 1



Aim of Study:

Our goals were: (i) to test how the interaction of patient animacy and patient position determines the selection of syntactic structures and (ii) to investigate in how far these factors affect speech onset times in German sentence production. Since both voice alternations and object topicalizations are feasible options in German, the study also offers the possibility to disentangle whether animate or left referents are realized as sentence-initial subjects or sentence-initial objects.

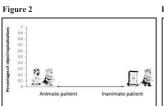
Method:

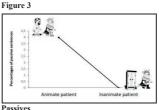
We conducted a sentence production experiment with 30 monolingual German participants who were asked to describe simple black-and-white drawings depicting diverse interactions in a single sentence. The different conditions are shown in Figure 1. All nouns were controlled for word length, word form frequency and grammatical gender. Verbs were controlled for their occurrence in passive voice. In terms of visual aspects, we also controlled referent size and referent colour.

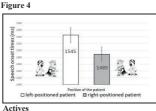
Results:

As figure 2 illustrates, object topicalizations did not occur at all throughout the experiment. However, a two-way repeated measures ANOVA revealed a significant main effect of patient animacy on the production of passive sentences ($F_1(1, 29) = 6.16$, p = .019, $F_2(1, 14) = 28.62$, p = .001) meaning that in the conditions with an animate patient significantly more passive

sentences were produced than in the conditions with an inanimate patient (see figure 3). In addition, the ANOVA yielded a significant main effect of patient position on speech onset times $(F_1(1, 29) = 7.26, p = .012, F_2(1, 14) = 12.10, p = .004)$ indicating that speech onset times were much slower for stimuli with a left-positioned patient compared to stimuli with a right-positioned patient (see figure 4).







Topicalizations

Discussion:

Stimuli with animate patients lead to a higher number of passive sentences compared to pictures with an inanimate patient. Since no topicalizations occurred at all, the results of our study also suggest that animate nouns rather occur as sentence-initial subjects than as sentence-initial objects.

The slower reaction times for stimuli with a left-positioned patient indicate higher processing costs for this stimulus type in comparison to stimuli with right-positioned patients. This may be due to participants' reading habits. Since reading orientation in German goes from left to right the pictures in which the more prominent left position is not filled by the more prominent agent but by the less prominent patient lead to higher cognitive costs in planning the utterance. Further studies investigating the interaction of animacy and attention and testing languages with another reading direction are in preparation.

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Demonstrative Pronouns as Attention Orienting Devices

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Addresses cannot attend equally well to all information presented in discourse. Speakers thus direct attention to specific information, e.g. to prominent referents and the focus of attention can be shifted from one referent to another. In German, demonstrative pronouns are an important attention orienting device. We investigate two types of German demonstrative pronouns and hypothesize that these referential forms take priority in the brain and that attentional (re-)orientation is computationally demanding. Two ERP components are relevant: The N400 – a negativity with a peak latency around 400 ms – reflects the predictability of a particular referent. The P300 – a positivity usually peaking around 300 ms after stimulus onset, but which can also appear later – reflects discourse updating costs.

German demonstrative pronouns have two functions: i) They refer to a non-prominent referent from preceding discourse. We propose that the underlying mechanism is reflected in the N400. ii) They serve to shift the focus of attention towards a less prominent referent in the upcoming discourse, thus initiating a topic shift. We suggest that this is reflected in the P300/late positivity. German has two demonstrative pronouns (*der/dieser*), but previous studies have exclusively focused on *der*. Regarding (i), both demonstrative pronouns refer back to less prominent referents but it has been argued that *dieser* prefers the last-mentioned referent [1], while *der* relies on other cues like thematic role [2]. Regarding (ii), there are conflicting accounts with respect to which demonstrative pronoun has the stronger topic shift potential [3]. In two ERP studies that differed with respect to the features of the antecedents in the context sentences, we contrasted the processing of the two demonstrative pronouns and the personal pronoun *er*. 30 participants per experiment read a context and a target sentence (containing one of the three pronouns). Stimuli were presented in segments and ERPs were time-locked to pronoun onset. *Dieser* evoked a biphasic N400 – late positivity pattern relative to the other two pronouns over all contexts. No difference was observed for *der* vs. *er*.

Crucially, the demonstrative *dieser* differs substantially from the other pronouns, revealing its important role in structuring discourse. In contrast to previous studies [2], we could not find an effect for *der*. We propose that this is due to subtle positional differences in the stimuli across experiments (i.e. presentation of the pronouns in sentence-initial or -medial position), indicating that this affects the processing of the attention orienting cues of the different demonstrative pronouns.

Regarding (i), the results show that *dieser* evokes the strongest effect of unexpectedness (N400). This may further support the claim that *dieser* is subject to a specific interpretive principle (last-mentioned preference) while the other pronouns are subject to more contextdependent interpretive strategies. Regarding (ii), the data suggest that attentional reorienting in discourse is mainly triggered by the demonstrative pronoun *dieser* (late positivity).

Our research thus indicates that *dieser* is an important attention orienting device and that the N400 and late positivity reflect the neural correlates of its attention orienting functions.

Example stimuli with varying features of the antecedent in the context sentence:

a. Subject/Agent before Object/Patient

Im Restaurant hat <u>der Fussballspieler</u> <u>den Tennisspieler</u> getroffen. Dort hat **er/der/dieser** wie immer ein Steak bestellt.

In the restaurant has the <u>football player_nom</u> the tennis <u>player_nom</u> the has hepers.pro/ hepeni/hepenil as usual ordered a steak.

'In the restaurant, the football player met the tennis player. There **he** ordered a steak as usual.'

b. Object/Patient before Subject/Agent

Im Restaurant hat <u>den Tennisspieler der Fußballspieler</u> getroffen. Dort hat **er/der/dieser** wie immer ein Steak bestellt.

In the restaurant has <u>the tennis player, the football player, was</u> met. There has **hepers.pro** / **he**_{DEM I} / **he**_{DEM II} as usual ordered a steak.

In the restaurant, the football player met the tennis player. There **he** ordered a steak as usual.

c. Object/Experiencer before Subject/Stimulus

Beim Konzert hat <u>dem Boxer der Musiker</u> imponiert. An diesem Tag hat **er/der/dieser** wie immer eine schwarze Hose getragen.

At the concert has the boxer_{DAT} the musician_{NOM} impressed. On that day has hepers.pro/he_{DEM1}/he

'At the concert, the musician impressed the boxer. On that day, **he** was wearing black trousers as usual.'

d. Subject/Stimulus before Object/Experiencer

Beim Konzert hat <u>der Musiker dem Boxer</u> imponiert. An diesem Tag hat **er/der/dieser** wie immer eine schwarze Hose getragen.

At the concert has the musician_{NOM} the boxer_{DAT} impressed. On that day has hepers.pro/hepen/hepen/hepen/black trousers worn.

'At the concert, the musician impressed the boxer. On that day, **he** was wearing black trousers as usual.'

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German *es-*clefts raising prominence – An empirical study comparing written and spoken data

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Tönnis et al. (2016) observed that clefts are found less frequently in spoken than in written German. They propose that clefts are a device to mark prominence, in particular focus intonation, in written language but not in spoken language (see also DeVeaugh-Geiss et al. 2015). Spoken language usually marks focus with an A-accent in-situ (Bolinger 1958).

In written texts, the context of a sentence and world knowledge often suggest a certain element to be prominent by supporting a certain intonation more than any other. Furthermore, there is a default intonation for each sentence, determined by the prosodic restrictions of the particular language. I argue that a cleft in written German is used to mark unexpected prominence of the pivot constituent. This is necessary whenever there are neither enough cues in the context nor an acceptable word order that would shift prominence to the right constituent without clefting. The cleft keeps the reader from assuming a wrong intonation for the sentence, given the context. Hence, the cleft is a means for the writer of a text to reduce processing effort for the reader while figuring out the intended intonation. Since in spoken German prominence can be marked by prosodic means without much effort, the cleft is not required in spoken German.

The current study presents two experiments that compare a sample of clefts from the cleft corpus by Tönnis et al. to their optimal unclefted versions (henceforth OUVs) in spoken and written modality. The OUV of a cleft is the most natural ordering of the words from the original cleft sentence in the given context without clefting.

(1) It was PETER who Mary visited. CLEFT

(2) Mary visited PETER. OUV

The OUV of each cleft in the experiments is determined by four annotators (independently of each other). The following hypotheses will be tested:

- **H1.** Depending on the cues for the intended intonation provided by the context and world knowledge, a naturally occurring cleft sentence in written German causes less processing effort for the reader than its OUV. The worse the cues are, the more the original cleft and its OUV differ with respect to processing effort.
- **H2.** In spoken language, the OUVs with an A-accent on the former pivot (pivot intonation) tend to be easier to process than OUVs in written language. In spoken language, OUVs with default intonation are harder to process compared to pivot intonation, in case the two differ.

Experiment I is a reading study that will compare each original cleft to its OUV. The processing effort will be measured via the analysis of the participants' eye-movements during reading.

Experiment II will test H1 and H2 via an acceptability judgment task. It uses the same stimuli as Experiment I, presented both visually and auditorily to different participant groups. The auditory stimuli will occur with pivot intonation as well as default intonation. Depending on the context, pivot intonation in spoken language should improve the acceptability of the OUV compared to the OUV in written language. Whenever default and pivot intonation coincide, the OUV and the cleft should be judged similarly in written language.

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Scalar and non-scalar equatives in Turkish and in German

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In equative comparison, two entities – individuals or events – are compared with respect to selected properties. Equatives are either scalar relating to a measurable dimension like size or weight, or they are non-scalar relating to properties composed out of multiple dimensions of arbitrary type. In German, scalar equatives are mostly expressed by gradable adjectives, as in (1a) whereas nominal and verbal cases, as in (1b, c), are usually non-scalar. Note that, in adjectival cases, the dimension of comparison is lexically fixed by the adjective – it has to be height in (1a). In nominal and in verbal cases, even though the range of possible dimensions is restricted by the noun or verb, the (multiple) dimensions of the actual comparison are selected by the context – in (1b), for example, Anna's hairdo and Berta's hairdo may be compared with respect to color, curliness, fullness, symmetry, overall length and many others.

(1) a. Anna ist so groß wie Berta.

c.

adjectival, scalar

'Anna is as tall as Berta.'

nominal, non-scalar

b. Annas Frisur ist so wie die (Frisur) von Berta.
'Anna's hairdo is like Berta's.'

verbal, non-scalar

Anna rennt so wie Berta (rennt).
'Anna runs like Berta does'

Due to their cross-categorical uniformity, German data suggest a uniform semantic analysis. In Umbach (2016) a generalized account of equatives has been proposed based on the idea that the standard marker *wie* in equatives expresses similarity (of hairdos and ways of running as well as of heights).

In Turkish, scalar and non-scalar equatives make use of different standard markers – *kadar* and *gibi*, cf. (2a-c) which appears at first sight similar to the situation in English where scalar equatives are marked by *as* and non-scalar ones by *like*. There is, however, an additional surprising twist: In Turkish the scalar standard marker *kadar* can be used with nouns and verbs indicating a comparison along some scalar dimension. In (3a) Anna's and Berta's hairdo are compared with respect to their length, and in (3b) their running is compared with respect to, e.g., distance or speed. These data suggest that the two standard marker in Turkish select different dimensions: While *gibi* relates to a composition of multiple dimensions, *kadar* picks out a single measurable dimension.

(2) a. Anna Berta kadar uzun.

adjectival, scalar

A. B. kadar tall.Pres3sg 'Anna is as tall as Berta.'

Anna'nın saç-ı Berta'nın-ki gibi.
 A-gen hair-poss.3sg B-gen-Rel like.poss.3sg
 'Anna's hairdo is like Berta's.'

nominal, non-scalar

c. Anna Berta gibi koşuyor. A. B. like run-pres.3sg 'Anna runs like Berta does.' verbal, non-scalar

- (3) a. Anna-nın saç-ı Berta-nın-ki kadar. nominal, scalar A.-gen hair-poss.3sg B.-gen-Rel kadar 'Anna's hair is as long as Berta's.'
 - Anna Berta kadar koşuyor.
 A. B. kadar run-pres.3sg
 'Anna runs as fast/long as Berta.'

The contrast between *gibi* and *kadar* in nominal and verbal equative comparison raises a number of intriguing questions:

- Which scalar dimensions are made available by particular nouns/verbs? Do they vary in different contexts?
- Are these dimensions always metrical, or could it be dimensions relating to evaluative adjectives like ivi 'good' and güzel 'beautiful'?
- As for their grammar, *gibi* and *kadar* can both attach to Nps (2a-c and 3b) and appear as predicates (2b and 3a). What does this flexibility imply for their semantics?

Even though for German (and Polish which behaves close to German) a generalized account of equatives is adequate, this is obviously not the case in Turkish. But the division line is not between gradable adjectives on the one hand and nouns and verbs on the other (as in English), but instead between scalar and non-scalar comparison. From a semantic point of view, that might be reason to assume that there are (at least) two different strategies of comparison, one based on similarity and one based metrics, and that languages differ with respect to which of these strategies they allow for in adjectival, nominal and verbal equatives.

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Referent availability in the comprehension and production of weak definites

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Weak definites are definite descriptions such as *the psychologist* in (1). They differ from regular definites in that they trigger sloppy readings and take narrow scope under quantification. Additionally, they differ from definite and indefinite descriptions in that they express enriched meaning (Aguilar-Guevara & Zwarts, 2010; Carlson et al. 2006). We investigated the discourse referential properties of weak definites in comprehension and

(1) Kate went to the psychologist.

production.

The few empirical studies that have tested the anaphoric potential of weak definites claim that these expressions are more likely to be mentioned again with a full NP than a pronoun (Scholten & Aguilar-Guevara, 2010). Furthermore, Aguilar-Guevara (2014) found that weak definites prefer kind-level (*alternative psychologist*) over individual-level adjectives (*famous psychologist*). However, we know surprisingly little about whether weak definites do in fact introduce discourse referents (cf. Aguilar-Guevara & Zwarts, 2010; Schwarz, 2009).

In Expt1, a visual world eye tracking study, participants listened to stories like the one in (2). Stories consisted of a context sentence, a sentence introducing two human referents, and a target sentence that included an ambiguous pronoun (*he*). The subject of the second sentence was always a proper name. The object NP always appeared inside a goal PP. During story presentation, four pictures appeared onscreen: the subject (*Frank*), the critical object (*psychologist*), and two unrelated object distractors.

(2) Die Angststörungen waren in letzter Zeit immer schlimmer geworden.

The anxiety disorder was getting worse and worse.

- (a) Frank ging zu einem Psychologen. *Frank went* (a) *to a psychologist*
- (b) Frank ging zum Psychologen. *Frank went to the*_{weak} psychologist.

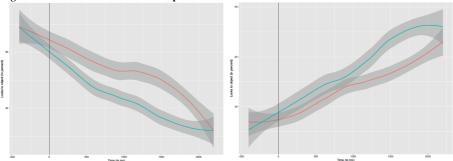
Als ein Bild herunterfiel, streckte er vergebens die Hand zum Auffangen aus. When a picture fell off the wall, he unsuccessfully reached out to catch it.

Mean fixation times time-locked to pronoun onset showed that participants looked more to the object picture in the indefinite (2a) than the weak definite condition (2b). Generalized mixed-effects models on vectors with looks to the object picture vs. looks to all pictures revealed a marginal effect of condition (weak or indefinite) from 500 - 800 ms post pronoun onset, b = -0.07, SE = 0.04, z = -1.91, p = .056, and a reliable effect of condition from 800 to 1100 ms, b = -0.111, SE = 0.050, z = -2.23, p = .026.

In Expt2, we used the same materials as in Expt1, but removed the final sentence. Participants read the story fragments and provided one additional sentence. Weak definites were mentioned again less often than indefinites (44% vs. 52% of continuations), which resulted in a statistical trend, b = -0.25, SE = 0.15, z = -1.62, p = .106. Interestingly, weak definites were not re-mentioned more often with a full NP than an indefinite (see Table 1).

Our results support the view that weak definites introduce discourse referents with low prominence: They are poorer competitors to subject referents than regular definites in comprehension. However, our data from production indicate that weak definites are almost as good as antecedents of anaphoric expressions as indefinites. Our results, then, support a distinction between the prominence level for anaphoric resolution (backward function, Expt1) and the potential for referential chains (forward function, Expt2).

Figure 1: Mean fixation times in Experiment 1



Notes: Left side = Looks (in %) to picture of objekt noun (psychologist); Right side = looks (in %) to picture of subject noun (Frank); Red line = indefinite condition; Blue line = weak condition; Vertical black line (marked 0) = onset of ambigous personal pronoun.

Table 1: Anaphoric potential for indefinite noun phrases vs. weak definites in Experiment 2

	Number of	Percentage of	D	Number of	
	mentions	mentions	pronoun	definite NP	sentences
indefinite	194	52%	72% (139)	28% (55)	374
weak	163	44%	67% (108)	33% (55)	371
total	357	48%	69% (247)	31% (110)	745

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ABSTRACTS – POSTERS II

The manifestation of focus as a function of word prosodic properties

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One of the main strategies for expressing sentential prominence (narrow focus) is the enhancement or hyper-articulation of particular acoustic attributes (duration, F0, etc.) of the prominent element, e.g., focused word.1,2 The enhancement is primarily manifested on the stressed syllable of the focused word,2-7 and while this option is not available in languages lacking stress, such languages may still manifest focus prosodically. We investigate the acoustic properties of focus prominence in different word prosodic systems, and demonstrate that languages exhibit systematic differences corresponding to their word prosody, but also similarities in the use of boundary phenomena.

The languages examined represent three main types of word prosodic systems: stress (Turkish, Arabic, and Portuguese), tone (Mandarin), and neither stress nor tone (Indonesian). The latter two languages lack stress, and thus an obvious location for the manifestation of focus, we consider focus in such languages in relation to phonological phrasing,1-3,8-10 and specifically, the possibility that the focused element forms a prosodic unit, although its nature is somewhat controversial.2 Given the association between focus and prosodic structures,9-12 we additionally examine the stress languages, to assess whether they, too, express focus with phonological phrasing.

The corpus consists of recordings of 10 speakers of standard dialects of Mandarin (Beijing), Indonesian (Jakarta), Arabic (Amman), Portuguese (Northeast Brazil), and Turkish (Istanbul). The target vowels /i, u, a/ appeared in each syllable of 10 real three-syllable words, and in the stress languages, in both stressed and unstressed conditions. In Mandarin, we examined Tone 1, a high level tone. To examine the properties of focus, we compared the targets produced in focus and non-focus contexts, as primed by different dialogues. For each target vowel we measured duration, intensity, F0, and vowel centralization, and analysed them with binary logistic regression analyses. The results provided in Table 1 show which properties were used at the boundaries in all three types of language; and for syllable enhancement in the stress languages.

The non-stress languages exhibited a combination of boundary phenomena consistent with the right edge of a major prosodic constituent: increased final-syllable duration, and in Indonesian, also lowered F0. As a tonal language, Mandarin does not exhibit a lowering of F0 on the final syllable, but instead an expansion of the F0 range. The stress languages similarly exhibited boundary phenomena in the manifestation of focus, mainly related to pitch changes at the right or left edge.

In sum, while stress languages enhance the syllable with word stress, this is not necessary for the prosodic expression of focus, as seen in languages without lexical stress. In Indonesian and Mandarin, focus is manifested in terms of boundary phenomena, specifically, final lengthening and F0 changes, although the latter depends on the presence of lexical tone (i.e., lower F0 in Indonesian; increased tonal range in Mandarin). Despite this difference, and the enhancement of a stressed syllable in stress languages, we also find commonality in the use of boundary phenomena consistent with major prosodic constituent breaks indicating focus in the languages, regardless of their word-prosody.

Table 1. Results of the focus manifestation by language.

Languaga	Syllable Enhancement	Boundary Phenomena		
Language		Left	Right	
Portuguese	longer stressed syll	high F0	low F0	
Turkish	longer stressed syll	X	low F0	
Arabic	higher F0 on stressed syll	high F0	final lengthening	
Mandarin	X	X	final lengthening & pitch range expansion	
Indonesian	X	X	final lengthening & low F0	

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Prosodic cue production in case-ambiguous sentences

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Prosody is central to successful communication. Prosodic cues (e.g. pause, duration, pitch) are used for sentence comprehension and thereby hold the potential to serve as an important source of information for syntactic ambiguity resolution. In locally case-ambiguous sentences (e.g. DasNOM/ACC Kind sucht derNOM Mann, The man looks for the child), prosodic cues can facilitate sentence interpretation because they help to identify the thematic role of the first constituent (das Kind) before the structurally disambiguating morphological cue (der) is encountered (Weber et al., 2016). In globally ambiguous sentences (e.g. DasNOM/ACC Kind sucht dieNOM/ACC Frau, The child looks for the woman/The woman looks for the child) the impact of prosodic cues for disambiguation is less clear (Snedeker & Trueswell, 2003; Grünloh et al., 2011). In both structures, prosodic cues can serve to establish a prominence relation between the two arguments of the verb and thus to distinguish between agent and patient of the verb. Crucially, prosodic cue production in cases of (morpho-)syntactic ambiguities is highly variable between speakers (e.g. Cangemi et al., 2015; Clifton et al., 2002; Peters et al., 2005). Additionally, the production of prosodic cues is subject to external factors of the communicative situation (e.g. different interlocutors, situations) (Biersack et al., 2005; Huttenlauch, 2016).

In our current study, we investigate the production of prosodic cues in semantically reversible (i) locally case-ambiguous SVO and OVS sentences (LOC), and in (ii) globally case-ambiguous sentences (GLOB):

- (i) SVO: DasNOM/ACC Kind ruft nun denNOM Vater. (The child now calls for the father.)

 OVS: DasNOM/ACC Kind ruft nun denNOM Vater. (The father now calls for the
 - OVS: DasNOM/ACC Kind ruft nun derNOM Vater. (The father now calls for the child.)
- (ii) SVO/OVS: DasNOM/ACC Kind ruft nun die ACC/NOM Oma. (*The child now calls for the granny/The granny now calls for the child.*)

In two production experiments, 21 LOC and GLOB, for which semantic reversibility has been judged by 72 naïve participants, will be tested. The sentences will be produced by German adults in five different conditions with varying adressees or background noise: addressing (a) a young adult (baseline condition), (b) a child, (c) a non-native young adult, (d) an elderly person, and (e) a young adult in a noisy environment. At the beginning of each condition block, the adressee presents themself in a video clip. The written stimulus-sentence(s) will be presented on screen, each with two black-and-white line-drawings, depicting the SVO and the OVS version of the stimulus sentence, respectively. When presenting the LOC, the target sentence and the matching picture are highlighted; for the GLOB, the target picture is highlighted. Speakers will be instructed to utter the target sentence in such a way that a listener would know as accurately and early as possible which of the two pictures matches the target sentence.

We will present the results of our acoustic analyses at the conference, which will allow us to determine the most prominent prosodic cues, used by speakers in locally and globally ambiguous structures. Furthermore, we will identify possible variabilities and regularities of prosodic cue production for syntactic disambiguation in different communicative contexts and between speakers.

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Prominence deafness in Tashlhiyt Berber and Moroccan Arabic Anna Bruggeman¹, Sam Hellmuth², Nabila Louriz³ and Martine Grice¹ University of Cologne, ²University of York, ³Université Hassan II

This paper uses a perception study to shed light on the word prosodic systems of Tashlhiyt Berber (TB) and Moroccan Arabic (MA), languages characterised by long-term contact. While it is generally accepted that TB lacks lexical stress [1,5], there is no such consensus for MA [6,7,8,9]. The present study investigates whether native speakers of both languages exhibit perceptual insensitivity to prosodic prominence asymmetries at the lexical level, which would make them 'stress-deaf', and would suggest the absence of lexical stress in the native lexical phonology [10,11.]

The present study tests TB and MA native speakers' ability to discern word-level prominence contrasts caused by lexical stress (as in Dutch) or post-lexical accent (as in Persian), replicating the methodology used in the stress deafness study performed by [11]. The experiment consisted of two Sequence Recall Tasks (SRTs), one testing a segmental contrast ['muku]~['munu] and the other a prosodic contrast ['numi]~[nu'mi]. The test phase of the SRT required participants to accurately retain, in (short-term) memory, sequences of words: 3, 4 or 5 words, followed by the word "OK" to prevent participants from using acoustic memory. Participants represented the sequences by keying in the numbers they had learned to associate with the individual words (e.g. 122 for ['numi] [nu'mi] [nu'mi]). There were 30 test sequences per SRT, with half the sequences made up of 2 Dutch speakers' renderings of the relevant words, and the other half made up of 2 Persian speakers' phonetic variants.

The full dataset for the present experiment consists of 1860 individual responses (31 participants x 2 native languages x 5 sequences x 3 sequence lengths x 2 stimulus languages), logged as correct or incorrect. The present dataset was directly compared with the raw scores from [11].

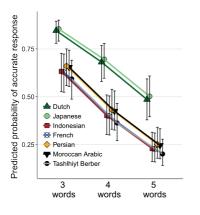
The comparison of the TB/MA scores with the scores from [11] reveals that on the prosodic contrast, both TB and MA groups have lower scores than Dutch and Japanese ('non stress deaf') groups, while they are no different from 'stress deaf' French/Indonesian/Persian groups. Figure 1 shows the predicted scores and 95% confidence intervals based on the model. An additional finding is the differential behaviour (of the TB and MA groups only, no information in [11]) depending on the acoustic nature of the stimuli: Participants scored lower on the Dutch female speaker's stimuli (Figure 2). These particular stimuli exhibit a prominence contrast which lacks durational differentiation (which is present in the other stimuli), and exhibit final rising F0 (as opposed to rising-falling F0) in stimuli with final prominence.

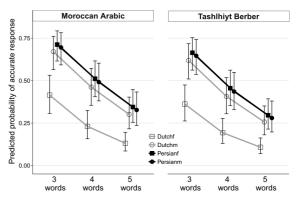
The general results, with TB and MA scoring low on the SRT with the prosodic contrast, can be interpreted in terms of native speakers of MA and TB exhibiting stress deafness, which lends credibility to claims that lexical prominence asymmetries are absent in both languages. This, in turn, suggests that convergence between the languages extends to prosodic-phonological aspects of structure.

The effect of the acoustic details of stimuli TB and MA participants moreover show differential sensitivity to prominence asymmetries as a function of the acoustic properties involved in the relevant contrast, which suggests that a possible, new explanation for earlier observed degrees of 'stress deafness' (cf. [12]) might relate to the details of acoustic prominence.

¹ glmer(SCORE ~ GROUP + CONTRAST + SEQUENCELENGH + STIMLANG + GROUP:CONTRAST + STIMLANG:CONTRAST + STIMLANG:GROUP + (0+CONTRAST|PARTICIPANT) + (0+STIMLANG|PARTICIPANT))

Figure 2 Predicted response accuracy on the prosodic SRT per stimulus speaker for present MA/TB data





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Prosodic vs. morphological prominence in Japanese echo-questions

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This paper presents new data from an elicitation experiment on the prosody of echo-questions in Japanese. Analysis of the data provides evidence that the prosodic feature EPR — EXPANDED PITCH RANGE — proposed for Chinese by Peng *et al.* (2005) is also present in Japanese as a gradient feature, and that prosody and morphosyntax interact in expressing prominence.

Echo-questions are those questions where the speaker is asking for clarification or confirmation an utterance that they have just heard, repeating much of that utterance as part of their question. In the English responses to (1), (2a) and (2b) are both echo-questions marked by distinctive prosody, and with *wh*-in-situ word order in the short form.

- (1) A: John chose a toy for Julie at the shop.
- (2) a. B: John chose a toy for Julie where?
 - b. B: Where did you say John chose a toy for Julie?

This study explores the relationship between prosody and morphosyntax in Japanese, where wh-in-situ word order is unmarked. In the following sentence variants, (3) is a declarative sentence, (4) is a question, with optional question particle ka, and (5) and (6) are short and long forms respectively of echo-questions.

- (3) norio-ga mise-de mayumi-ni omocha-o erabimashita Norio-NOM shop-LOC Mayumi-DAT toy-ACC chose.POL 'Norio chose a toy for Mayumi at the shop'
- (4) norio-ga mise-de mayumi-ni omocha-o erabimashita (ka) Norio-NOM shop-LOC Mayumi-DAT toy-ACC chose.POL (Q) 'Where did Norio chose a toy for Mayumi?'
- (5) norio-ga doko-de mayumi-ni omocha-o erabimashita-tte Norio-NOM where-LOC Mayumi-DAT toy-ACC chose.POL-QUOT 'Norio chose a toy for Mayumi where?'
- (6) norio-ga doko-de mayumi-ni omocha-o eranda to itteimashita ka Norio-NOM where-LOC Mayumi-DAT toy-ACC chose that saying.POL Q 'Where did you say Norio chose a toy for Mayumi?'

Method Data were collected from four native speakers of Tokyo Japanese, who were asked to read sentences from a script that gave a discourse context. At least three recordings were taken of each utterance from each speaker on three separate occasions. Utterances were segmented manually, and F_0 maximum, minimum and pitch span (Hz) were calculated for each word. For each speaker a baseline pitch span was calculated as the mean pitch span across the first word of all utterances. From this, a pitch span ratio (PSR) was derived for each word.

Findings Figures 1 and 2 show word-by-word variance in PSR between short (3, 4 - ka, 5) and long (3, 4 + ka, 6) forms of a sentence respectively, presented as grand averages across all speakers and all recordings. In the declarative sentence (3), pitch peaks are seen at the adjunct mise-de 'shop-LOC' and the object omocha-o 'toy-ACC'. In the question (4) and echo-question (5,6) variants, a pitch peak with EPR is seen at doko-de 'where', which bears question focus. However, there is almost no difference in the PSR between questions and echo-questions. A pitch peak is seen utterance-finally in the questions and echo-questions, with EPR for the echoquestion relative to the question. Comparison of the short (5) and long (6) forms of echoquestions (not shown) indicates that EPR is greater for short forms, where there is only minimal morphosyntactic marking. Statistical analysis will be available at the workshop.

Figure 1: 'Short' morphosyntax: no question particle ka

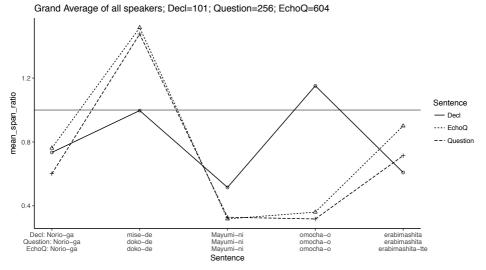
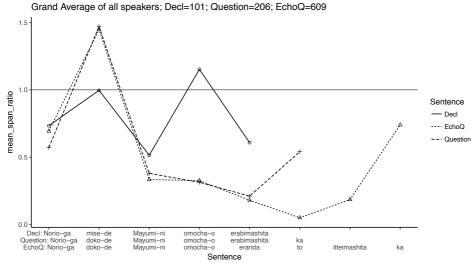


Figure 2: 'Long' morphosyntax: question particle *ka* present



Conclusion The data show that considering pitch peaks alone cannot account for systematic variations in prosody: the feature EPR is required to describe magnitude variations in PSR. The data also suggest that, where the work of marking prominence is shared between morphosyntax and prosody (6), EPR has a lower value than where the principal marker is prosodic (5).

Reference Peng, S.-H., *et al.* 2005. Towards a Pan-Mandarin system for prosodic transcription. In Jun, S.-A., ed., *Prosodic typology: the phonology of intonation and phrasing*. Oxford University Press

On the perceived prominence of non-prominent words

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Using tasks such as Rapid Prosody Transcription (RPT; Cole et al., 2010) and other rating methodology (e.g., Eriksson et al., 2002; Jagdfeld & Baumann, 2011; Bishop, 2012) considerable attention has been devoted to identifying the correlates of perceived prominence—correlates that are both bottom-up and top-down in nature (e.g., Kochanski et al., 2005; Cole et al., 2010; Bishop, 2012). A basic finding in this work, at least for head-marking languages like English and German, is that the factors that predict intonational pitch accent—i.e., phonological prominence—also predict perceived prominence in behavioral tasks (Eriksson et al., 2002; Cole et al., 2010). Consistent with this, when pitch accents themselves are the predictors, the presence of a pitchaccent strongly predicts perceived prominence by human listeners (Baumann & Röhr, 2015; Cole, Mahrt, & Roy, 2017; Bishop & Kuo, in prep). What we explore in the present study is prominence perception that occurs in the absence of pitch accent—i.e., the perceived prominence of phonologically non-prominent words. The motivation for asking this question comes from a finding in Bishop & Kuo (in prep), in which English-speaking listeners in a RPT task identified as prominent approximately 10% of the words labeled as unaccented by two ToBI labelers. The goal of the present analysis was therefore to determine what factors best predict listeners' perceived prominence for this unaccented subset of the corpus, since presumably these words lack phonological marking.

We approached this question by asking whether (and to what extent) the same factors that predict the perceived prominence of pitch accented words also predict the perceived prominence of unaccented words. Our analysis relied upon mixed-effects logistic regression to model prominence judgments in the unaccented portion of Bishop and Kuo's (in prep) dataset, which amounted to approximately 29,000 listener judgments, comparing it with the portions that included judgments of prenuclear-accented (15,000) and nuclear-accented (13,000) words. In approaching the modeling, we distinguished factors that were bottom-up (e.g., acoustic properties) versus top-down (e.g., linguistic structure/lexical statistics). One hypothesis we were interested in testing was that top-down factors would have a larger effect on prominence perception for unaccented words than for accented words.

In brief, preliminary analyses found that prominence judgments for unaccented words were largely predicted by the same factors that predicted prominence judgments for accented words—and highly significantly so in all cases. We therefore focus here on the effect sizes, which did differ. First, we found a tendency for two acoustic predictors, duration and f0, to have smaller effects on prominence judgments for unaccented words compared with unaccented words (not shown). Second, we found one top-down factor, phrase position, to have a far larger effect on the perceived prominence of unaccented words than accented words; being phrase-final in an Intonational Phrase increased the odds ratio of being perceived as prominent dramatically (Fig.1). Finally, we found factors such as repeated mentions in the materials and lexical frequency to have more complex and asymmetric effects (Fig. 2), which we discuss in terms of predictability (see Calhoun 2006).

Prosodic Cues in Expectation-Driven Prominence Marking

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In many languages speakers employ prosody to highlight new or unpredictable information, making it more prominent. Prosody is also used to play down, or attenuate, shared or expected information, making this information less prominent. Prosodic highlighting and attenuation can take different forms, involving both phonetic parameters, such as pitch direction and excursion, target height and alignment, and segmental durations, as well as phonological choices, such as accentuation and phrasing.

Previous research has revealed that in West Germanic languages information status (i.e. newness/givenness in discourse) is marked not only by accent placement (nuclear – non-nuclear) but also by the level of prominence of pitch accent types. Studies on German ([1], [3], [5], [6]) suggest an inverse relation between discourse givenness and prosodic prominence, i.e. the more accessible a concept in the listener's mind, the lower the produced prosodic prominence required for the listener to decode it. Results reveal that the pitch movement leading towards the target on the accented syllable ('onglide' [4]) is the most important tonal cue to the marking of givenness and the perception of prominence (rises being perceptually more prominent than falls [2]).

An ERP study [7] showed that prosodically signalled information status (including different pitch accents) is processed in real-time. While prosodic cues entail sensory input (i.e. signal-driven attention orienting based on the prosodic realization) and are used by the speaker to (re)orient the listener's attention, they also interact with expectation-driven prominence (raised by the pragmatic or prosodic context).

With this production study on read German we aim to find out how far different types of expectations influence a speaker's choice of prosodic cues. Two discrete pre-contexts for each test sentence (60 items) were designed to trigger expectations about appropriate upcoming prosody. For example, the pre-context in (1a) builds up an expectation for new information, whereas the pre-context in (2a) establishes that nothing new or unexpected is going to follow. A prominent accent typically used for new information is assumed to be appropriate on the noun in test sentence (1b), whereas an accent typically found on contextually derivable information should be appropriate on the noun in test sentence (2b). We tested three different groups of subjects with slightly different tasks: In two groups the contexts were presented orthographically. In the first group only the test sentence was read aloud, while in the second group both the context and the test sentence were read aloud. In the third group the contexts were only presented acoustically, and subjects read out loud the test sentence only.

Preliminary results generally confirm our hypothesis (Fig.1). In 80% of all test sentences subjects (10f, 4m) realize the nuclear accent on the noun. After context (1a) they use rising accents 91.8% of the time, whereas they hardly use falling accents (only 8.2%). After context (2a), they make more frequent use of falling accents (35%). They also use rising accents in this context (65%), although to a lesser extent than after context (1a) (with a clearer prosodic differentiation for subjects who read out both the context and the test sentence). Thus, speakers vary the direction of pitch movement to (re)orient the listener's attention. These results serve as a basis for a follow-up ERP study which aims to disentangle expectation-based vs. signal-driven aspects of perceptual prominence.

The Expression of Prosodic Prominence in Parkinsonian Speech

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Patients with idiopathic Parkinson disease (PD) suffer from a neurodegenerative disorder of the extrapyramidal motor system which is released by a progressive loss of dopamine neurons in the substantia nigra. This area of the brain is responsible for motoric activity, cognition and the limbic systems. The major symptoms of this disorder are bradykinesia, resting tremor, rigidity, hypokinesia [1] and dysarthria. The latter one includes monoloudness, monopitch, reduced stress, imprecise articulation, variability of speech rate, disfluencies and voice tremor [2, 3]. Therefore, PD affects communication as well as other related functions such as cognition, but complex prosodic aspects such as prominence marking are less well studied.

Prominence marking in German requires changes in intonation and articulation [4]. In prominent positions (e.g. under accent), speakers use a more distinct articulation of prosodic units such as syllables involving larger, longer and faster movements of the articulators. When the level of prominence decreases speakers adapt to the requirements of localized reduced speech, constantly mediating between linguistic structure and the physical control system. Speakers use multiple cues in the phonetic domain to regulate prosodic marking [5]. In the present study, we are analyzing the prosodic marking strategies of PD patients and compare them to the productions of neurotypical speakers. Therefore, we investigate the production of target words in divergent focus structures.

We recorded 40 German speakers: 20 PD patients in medication ON condition and 20 healthy controls. As speech material, we used a question-answer scenario to manipulate focal structure by means of contextualizing target utterances. Nine target words were placed in either contrastive focus (with a potentially high degree of prominence) or background position (which is likely produced without any prominence) in sentences such as <Die Fliege hat die grüne **WAde** berührt.> ("The fly has touched the green calf.") related to pictures on a computer screen [cf. fig.1]. Target words were always disyllabic (CV.CV structure). In total, we recorded 1440 tokens (9 target words x 40 speakers x 2 focus structures x 2 adjectives). For acoustic measurements, we analyzed supralaryngeal and laryngeal parameters: syllable duration, intensity, formants of target syllables, (relative) pitch height and F0-contours.

Preliminary results show that, in line with [6], patients can express prosodic prominence by increasing pitch, intensity and duration [cf. fig.2] but to a lesser extent as the healthy controls do [3, 6] and with a higher degree of variability. This reflects abnormalities in the regulation mechanism of speech. Figure 2 shows two different productions of the target word <Wade> /va:d@/ in prominent position spoken by the same speaker. In the left example, the supralaryngeal adjustments lead to a strong increase in loudness in the target syllable, making the utterance sound unnatural and a very steep pitch excursion. In contrast, the example on the right shows a more balanced production of loudness but a distinct flatter pitch contour. For the upcoming conference, the results of all speakers and variables will be presented. We will discuss how much variation is tolerated in a dynamical speech system before the expression of prosodic functions is getting instable.

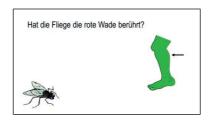
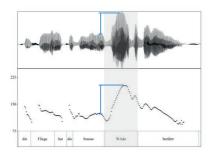


Figure 1. Stimuli presentation: question-answer scenario - question as audio stimulus and the appropriate answer as production task.



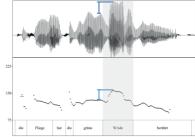


Figure 2. Acoustic waveform and F0-contour for the target word <Wade> in the utterance <Die Fliege hat die braune/grüne Wade berührt> in Praat [7]: data of one patient produced *in the same condition – (accented word <Wade> shaded in grey)*

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- (1) (a) Rate mal, was uns heute passiert ist! 'Guess what happened to us today!
- (2) (a) *Heute ist nichts Besonderes passiert.* 'Today, nothing special happened.
- (b) Wir haben Milena getroffen. We met Milena.'
- (b) Wir haben Milena getroffen. We met Milena.'

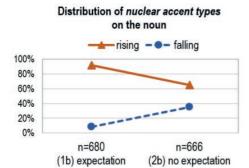


Figure 1. Relative distribution of nuclear accent types on the nouns in the test sentences plotted against their respective pre-context.

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Task determines differential prosodic marking of focus in Italian

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Differences in focus structure entail differences in the degrees of prosodic prominence of a word in an utterance. For example, across a number of varieties of Italian, it has been shown that broad focus, non-contrastive narrow focus and narrow contrastive (corrective) focus are produced using pitch accents with differing degrees of prominence (Fivela et al., 2016; Grice et al., 2005): in broad focus and non-contrastive narrow focus, nuclear accents are generally falling (e.g. H+L*), whereas in narrow contrastive (corrective) focus, they can be both rising (e.g. L+H*) or falling (e.g. H*+L). Moreover, some pitch accents are attested only postfocally, e.g. L* in the Florentine and Siena varieties (Bocci & Avesani, 2010).

A similar (although not identical) form-function mapping has been argued for German too. However, studies have found that certain patterns do not hold for all speakers, and that individual speakers are often inconsistent across different realisations of the same function, even in identical contexts (Grice et al., 2017, Cangemi et al., 2015). In fact, as shown in Grice et al. (2017), some speakers may use the same pitch accent to mark different types of focus, but nevertheless succeed in using intonation to express intended pragmatic functions, allowing listeners to recover the intended focus.

The current study explores two datasets in the variety of Italian spoken in Udine (in the north-eastern part of Italy), with the aim of comparing the differential production of three focus structures across two tasks. Both tasks manipulate contexts through the use of three question-answer pairs that made the target word occur either in broad focus, contrastive focus or as part of the background (post-focal). Subjects (n=14 in each of the two sessions) listened to the questions (presented both visually in written form and auditorily) and read out the answers in a contextually appropriate manner. Each subject produced 60 answers in total. The difference between the two sets of stimuli was in the length of the utterance: in the first experiment, speakers were required to repeat part of the question; in the second, they provided a shorter answer. The strategy was considered more natural in the second than in the first task version (Table 1). We explore whether this difference in length (involving repetition of material in the question) affects the ability of subjects to differentiate between focus structures, addressing the question: Do task requirements play a role in the planning of the focus structure a speaker has to produce?

The first (long answer) dataset appears to confirm the trend mentioned above, with participants producing a high degree of overlap in their productions across the three conditions. In the second (short answer) set, the three conditions are realized more distinctly (Figure 1). These results show that production studies on intonation are very sensitive to task requirements and individual strategies employed by participants. In fact, when the task implies a higher level of difficulty, prominence relations are less clearly defined, showing the relevance of the task in the planning of the focus structure speakers want to produce.

Conditions	Questions	Answers		
		Set 1 (long answers)	Set 2 (short answers)	
Broad focus	Cosa bisogna fare quando si va in gita? (What do you need to do when you go on a trip?)	preparare un panino per la merenda. (When you go on a trip, you need to	Bisogna preparare un panino per la merenda. (You need to prepare a sandwich as a snack)	
		prepare a sandwich as a snack)		

Narrow	Quando si va in gita, bisogna preparare	Quando si va in gita, bisogna	Bisogna preparare un
focus	un panino o un caffè per la merenda?	preparare un PANINO per la	PANINO per la
	(When you go on a trip, do you need to	merenda.	merenda.
	prepare a sandwich or a coffee as a	(When you go on a trip, you need to	(You need to prepare a
	snack?)	prepare a SANDWICH as a snack)	SANDWICH as a snack)
Post-focal	Quando si va in gita, bisogna preparare	Quando si va in gita, bisogna	Bisogna PREPARARE
	o comprare un panino per la merenda?	PREPARARE un panino per la	un panino per la
	(When you go on a trip, do you need to	merenda	merenda
	prepare or buy a sandwich as a snack?)	(When you go on a trip, you need to	(You need to PREPARE
		PREPARE a sandwich as a snack)	a sandwich as a snack)

Table 1: Examples of stimuli for each condition. Bold indicates the target words, while words in capital letters are the focused ones.

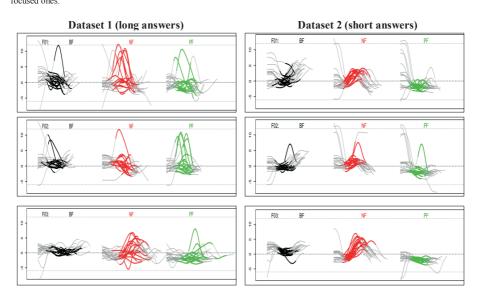


Figure 1: Pitch contours (in semitones, relative to each speaker's median) for each target word, for each condition (BF= Broad focus, NF= Narrow focus, PF=post-focal), for three speakers (F01, F01, F03). Coloured lines indicate the stressed syllable. Set 1= long answers, Set 2=short answers.

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