Focus in German: Towards a Corpus-Based Study

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Motivation

- Nature of integration of a sentence into discourse can provide explanations for constraints stipulated in syntax (De Kuthy, 2002; De Kuthy & Meurers, 2003).
  - To explore this line of research, we need an explicit representation of information structure and its interaction.
- Prosody plays important role in constraining possible integration of a sentence into discourse.
- Research relating syntax, information structure, and intonation predominantly theoretically driven with partly contradictory empirical assumptions.

⇒ Investigate empirically by looking at the intonation of naturally occurring sentences in a larger discourse.

- Pilot study using intonationally annotated corpora

IMS Radionews Corpus

- IMS Radionews Corpus (Rapp, 1998): Recordings of radio broadcasts on Deutschlandfunk:
  - 18 consecutive news broadcasts (28.07./21.11.95) Total length: 1h 26min, 514 sent. (≈ 10 sec/sent)
- Preparation of the corpus involved:
  - manual segmentation into news stories
  - orthographic transliteration
  - automatically word alignment
  - manual prosodic labeling with ToBI

Tones and Break Indices (ToBI)

- ToBI: system for transcribing the intonation patterns and other aspects of the prosody of English.
  - Based on autosegmental-metrical approach to intonation Beckman & Pierrehumbert (1986), for German: Mayer (1995); Grice et al. (2002)
- Perceived intonation contour described in terms of high (H) and low (L) targets in the local pitch range.
  - accented syllables, for English:
    - H*,L*, or bitonal: H*+L, H+L*, L*+H, L+H*, H*+H
    - The * marks the tone on the accented syllable.
  - intonational boundaries (break values: 0–4):
    - intermediate boundary (0–3): H^-, L^-
    - full boundary (4): L% or H%

Relating Syntax, Intonation & Discourse

- Focus projection rules determine the focus projection potential of a pitch accent in a syntactic tree.
  - Popular syntax-driven approach to focus projection: Selkirk (1995) and many variants
- Strongest accent is generally constrained to fall on the last element (e.g., Nuclear Stress Rule of Chomsky & Halle, 1968; for German: Jacobs, 1988)

(1) *Marius hat ein Buch mit BAggern bekommen.*
Marius has a book with diggers received
'Marius received a book on diggers (as a present).'

(2) a. *Was für ein Buch hat Marius bekommen?*
'What kind of a book did Marius receive?'
Marius hat ein Buch $[\![$*mit BAggern*$]\!]_F$ *bekommen.*

b. *Was hat Marius bekommen?*
'What did Marius receive?'
Marius hat $[\![$*ein Buch mit BAggern*$]\!]_F$ *bekommen.*

c. *Wie war Weihnachten für Marius?*
'So how was Christmas for Marius?'
Marius $[\![$*hat ein Buch mit BAggern bekommen*$]\!]_F$.

d. *Was war los?*
'What happened?'
$[\![$*Marius hat ein Buch mit BAggern bekommen*$]\!]_F$.

The Open Issue

- Several authors have recently questioned whether there is an interesting constraining relation between syntax, intonation, and information structure:
  - Büring (2006) any accent within a phrase can project focus, i.e., focus can always project
  - Kadmon (2006) & Roberts (2006): focus never projects (new elements → accented; unaccented & focused → given/retrievable/expectable)
- Very little published empirical research on focus projection, all on perception (Gussenhoven, 1983; Birch & Clifton, 1995; Welby, 2003; Féry, 1993).
  - substantial evidence for the existence of some focus projection, i.e., for certain pairs of verbs with object-NP arguments in English
- More evidence, especially on production is needed.
  - In which constructions
  - can what kind of elements
  - be accented with which type of accents
  - and project focus how far?

Pilot Study using IMS Radionews Corpus

- IMS Radionewscorpus not syntactically annotated.
  - We parsed the corpus with the Berkley parser (Petrov & Klein, 2007) to obtain syntactic analysis.
    - Thanks to Adriane Boyd
- We converted the corpus into TiGer-XML including
  - orthographic transcription
  - phonetic transcription
  - ToBI annotation
  - syntactic analysis

  so that it can be browsed and searched using TiGerSearch tool (Lezius, 2002).

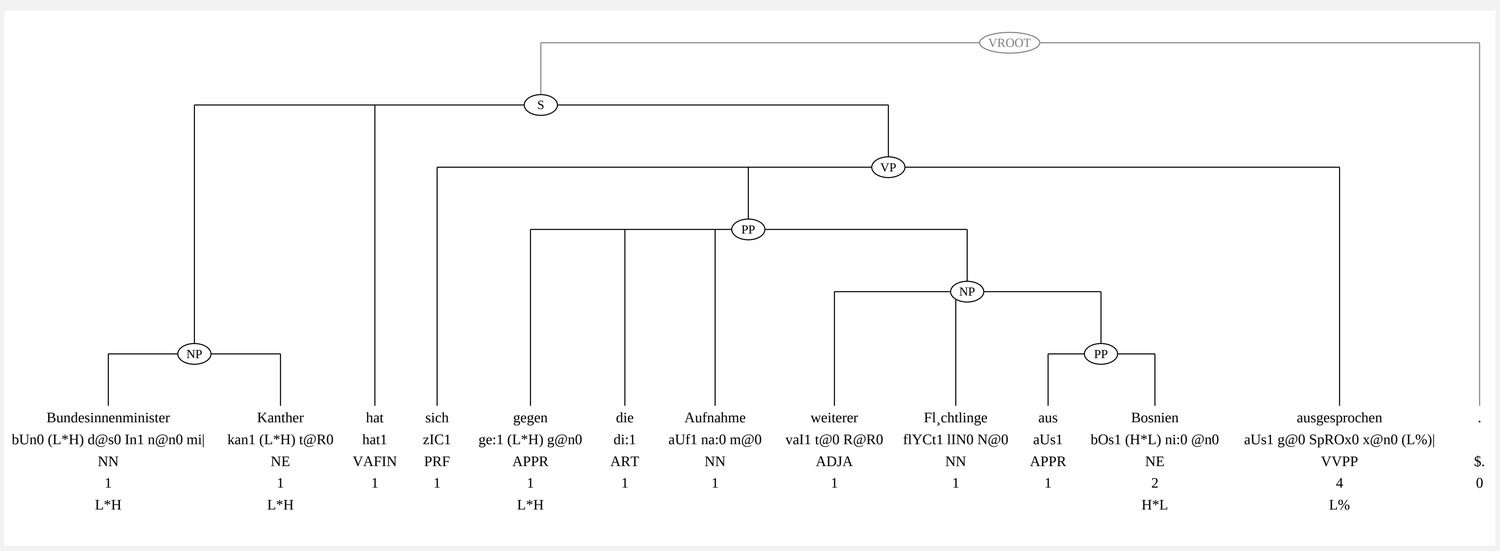
Observations

- Some examples show **focus projection with the traditionally assumed accent pattern**.
- In others, one finds **more accents** than assumed by traditional theories of focus projection.
- A number of **accents in unexpected positions** occur, given standard theories of focus projection.
- There is **significant variation**, even when the same information in the same context is reported.

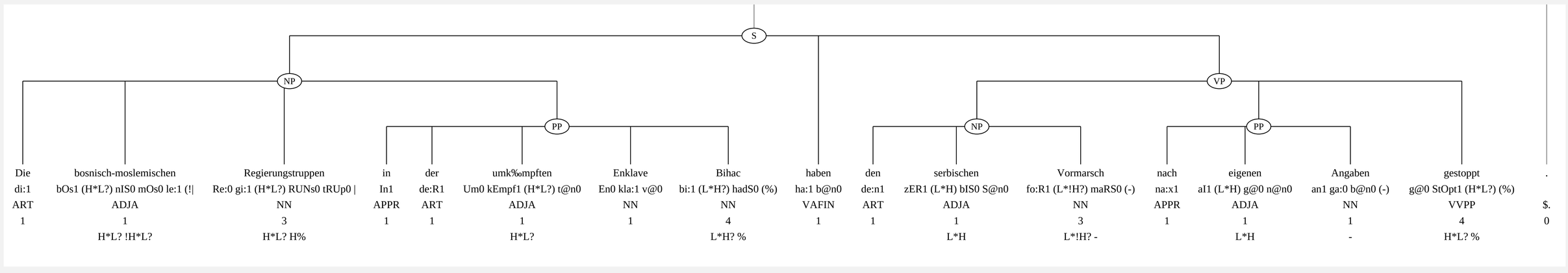
Outlook

- Investigate status of additional, prenuclear accents often occurring in NPs from which focus projects.
- Investigate more spontaneous spoken language instead of read news, with its special discourse structure and potentially unusual intonation.
  - For news, difficult to determine what information is accessible in extra-linguistic context at the time.
  - Potential candidate: The Verbmobil (VM) corpus of appointment scheduling dialogues. However:
    - Many short, incomplete utterances and nature of discourses very limited.
    - Hardly any data, all first phase, annotated with pitch accents (later: only intonational phrasing).

IMS Radionews Corpus Example for Focus Projection in an NP



IMS Radionews Corpus Example for Multiple Accents in an NP



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