

Right Node Raising in a Large-Coverage LFG Grammar

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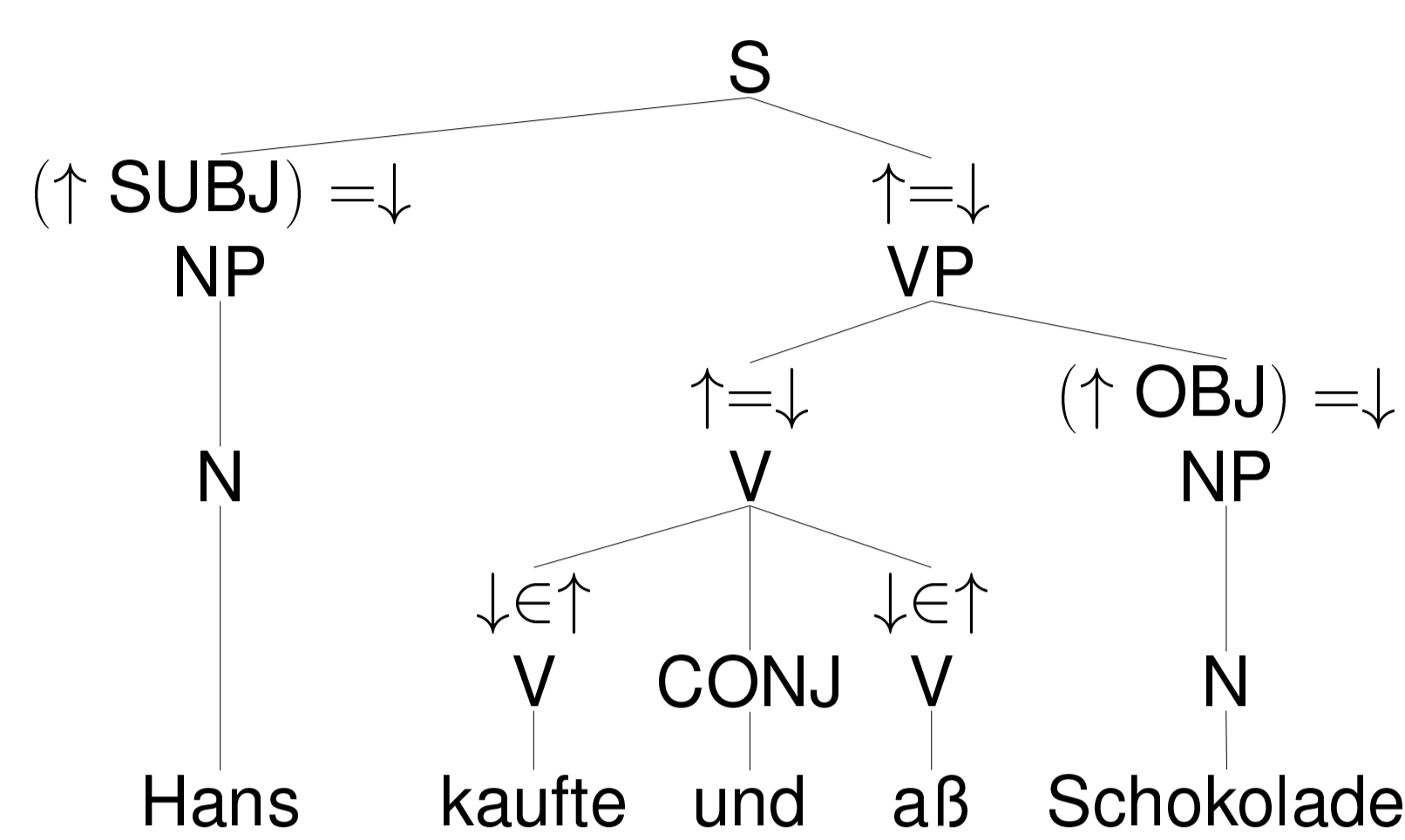
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1. Background: Same Constituent Coordination in LFG

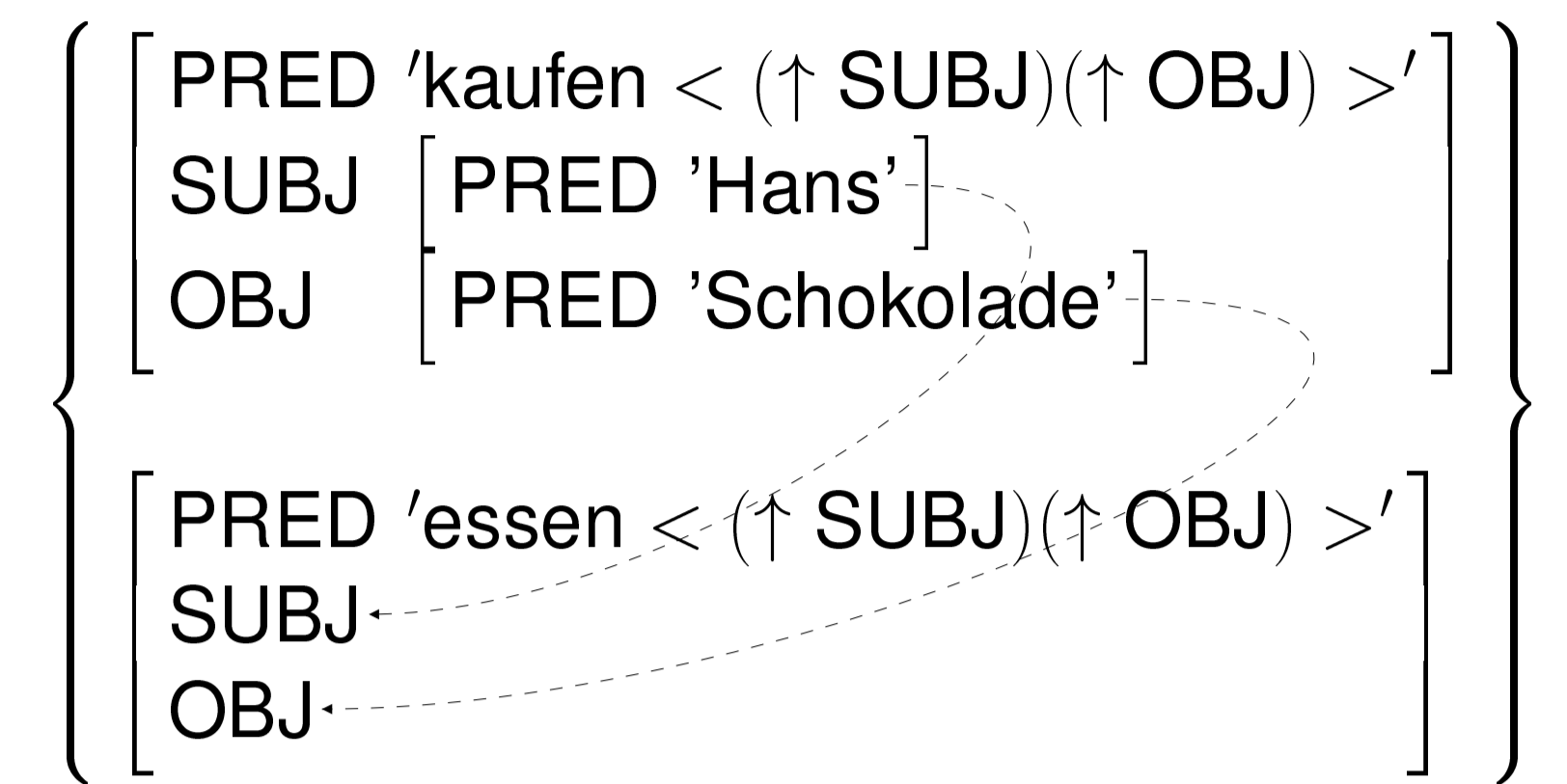
1.1 Main Idea

- Constituent structure: a simple macro allows conjoining categories of the same type
- Functional structure: function application is extended to sets
- Material outside the coordination gets distributed over the conjuncts

1.2 C-Structure



1.3 F-Structure

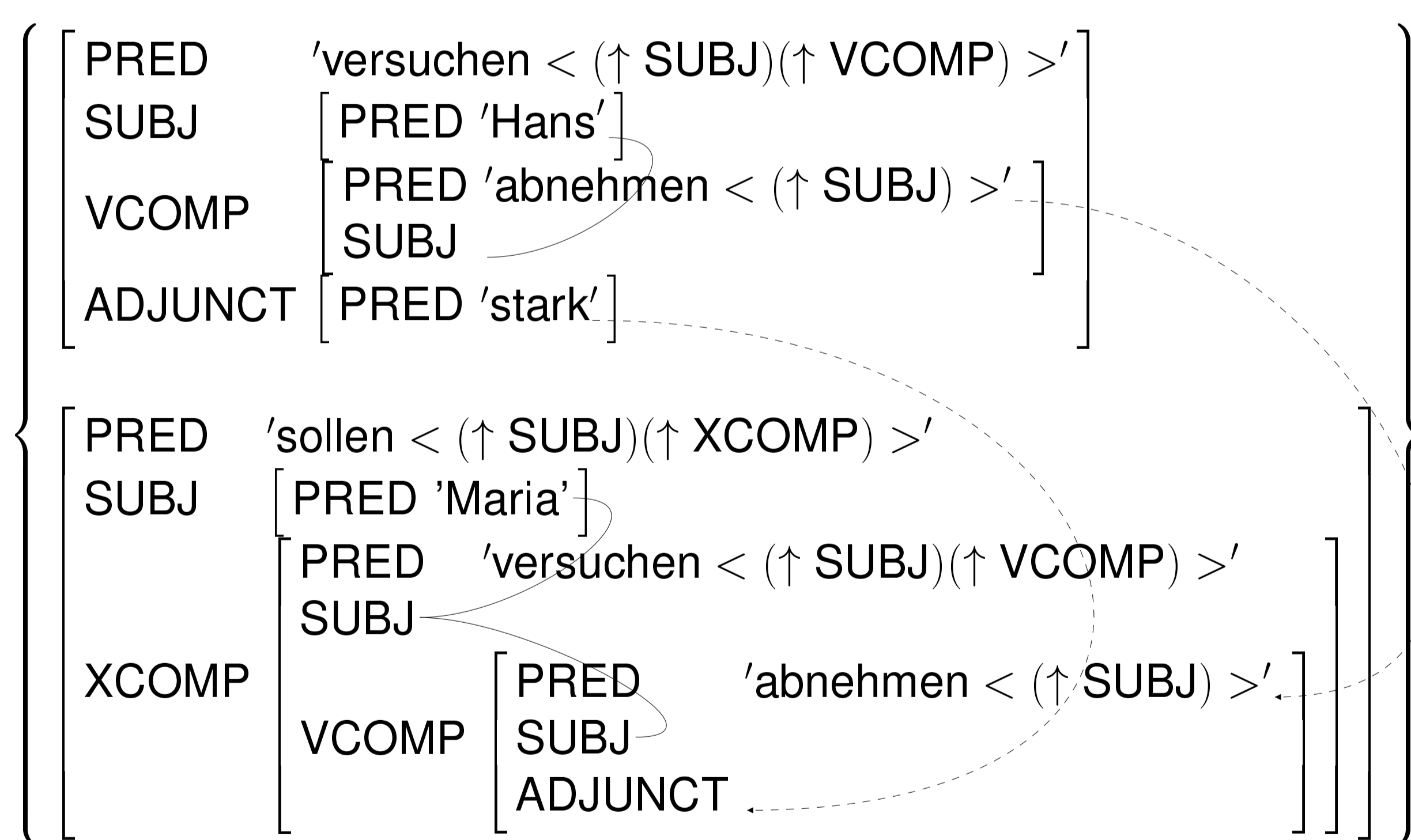


2. Right Node Raising in a Large-Coverage LFG Grammar

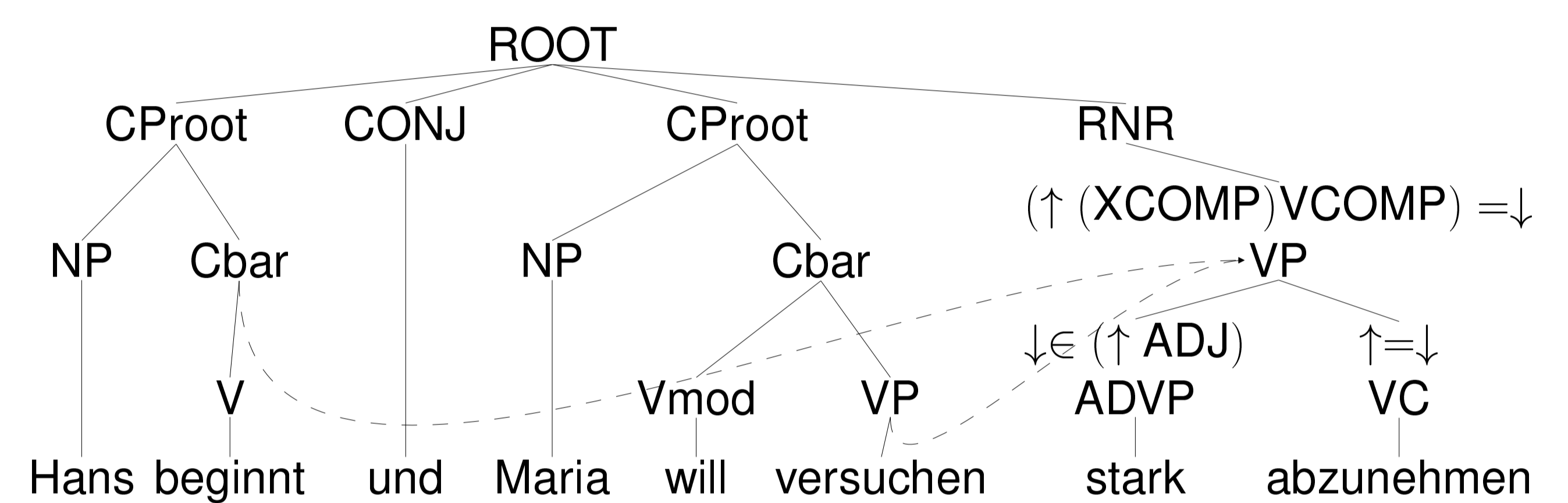
2.1 Data

- Coordination of incomplete constituents
- The raised material on the right-hand side of the sentence completes the conjuncts:
 - (1) Hans kauft und Maria isst Schokolade.
 - (2) Hans kaufte und Maria aß gestern Schokolade.
 - (3) Hans beginnt und Maria will versuchen, abzunehmen.
 - (4) Wulff sagte und Merkel soll bestätigen, daß Steuern gesenkt werden.

2.3 F-Structure



2.2 C-Structure



- The depth of embedding of the raised material may differ

2.4 Analysis

- The grammar allows the coordination of incomplete CPs (e.g. containing a partial VP)
- Well-formedness (completeness and coherence) is checked in F-Structure
- The grammar rule for RNR is based on the Mittelfeld and Nachfeld analysis
- The functional annotation of the raised constituent follows the same principles as the annotation of topicalized constituents

3. Conclusions

- No additional machinery is required to cover coordination of partial constituents
- The analysis works in parsing and generation
- The efficiency of the grammar is barely affected
- The F-structure captures all the functional relations of the sentence → it is easy to interpret for later semantic processing steps

4. Related Work

- Maxwell and Manning modify the underlying LFG parser to cover non-constituent coordination
John Maxwell and Chris Manning (1996): A theory of non-constituent coordination based on finitestate rules. In: Butt, M.; King, T. (eds.), Proceedings of the LFG '96 Conference.
- Zarriß and Seeker reconstruct the Maxwell and Manning approach on the level of grammar rules by generating C-Structure rules for non-constituents
Sina Zarriß and Wolfgang Seeker (2008): Finite-State Rule Deduction for Parsing Non-Constituent Coordination. In Finite-state methods and natural language processing : 6th International Workshop, FSMNLP 2007, Potsdam.
- Forst and Rohrer present an analysis for cases of LD like: 'weil Adam Äpfel und Eva Birnen als Dessert aß'
Martin Forst and Christian Rohrer (2009): A flat structure for German VP coordination. To appear in: Butt, M.; King, T. (eds.), Proceedings of the LFG '09 Conference.