
From Argument Raising to Dependent Raising

KORDULA DE KUTHY AND W. DETMAR MEURERS

1.1 The empirical issue

An extensive literature on partial constituent fronting in German deals with examples in which partial constituents have been fronted, leaving behind one or more *arguments*:¹

- (1) a. [Verkaufen] will er *das Pferd*.
 sell *wants-to he the horse*
 ‘He wants sell the horse.’
- b. [Stolz] ist er *auf seine Kinder* gewesen.
 proud is he of his children been
 ‘He was proud of his children.’
- c. [Ein Buch] hat Hans *über Syntax* ausgeliehen.
 a book has Hans on syntax borrowed
 ‘Hans borrowed a book on syntax.’

In (1a), the transitive verb *verkaufen* has been fronted, leaving its complement, the NP *das Pferd*, behind. In (1b), the AP *stolz* is topicalized without its PP argument *auf seine Kinder*. And in (1c), the NP *ein Buch* has been fronted, leaving its PP complement *über Syntax* behind. In De Kuthy and Meurers (1998, 1999b) we showed that such cases of partial constituent fronting can successfully be analyzed by generalizing the argument-raising approach to partial VP fronting proposed in

¹See, for example, Thiersch (1985), Webelhuth and Besten (1987), G. Müller (1996), Hinrichs and Nakazawa (1994), and the HPSG argument-raising proposals mentioned below.

HPSG² to complements of different categories.³

Interestingly, there is a second kind of partial constituent phenomenon not discussed in most of these publications, namely examples where the partiality of the fronted constituent results from leaving behind an *adjunct* modifying the fronted head. The following sentences illustrate this possibility with adjuncts of fronted verbal, adjectival, and nominal heads.

- (2) a. [Frieren] müssen sie deshalb aber *in der nächsten Woche* nicht.
freeze have to they therefore but in the next week not
 ‘But they will not have to freeze next week because of this.’
- b. [Interessiert] ist er *sehr* an den Umständen des Diebstahls.
interested is he very in the circumstances of the theft
 ‘He is very interested in the circumstances of the theft.’
- c. [Nur zwei Gemälde] werden *aus seinem Spätwerk* gezeigt.
only two paintings are from his late works shown
 ‘Only two paintings were shown from the end of his career.’

In (2a) the partially fronted VP *frieren* leaves behind the temporal adjunct PP *in der nächsten Woche*. In (2b) the fronted AP *interessiert* is separated from its intensifying adverb *sehr*. Finally, in (2c) the adjunct PP *aus seinem Spätwerk* is not included in the fronted NP *nur zwei Gemälde*. Note that in all three cases the adjunct in the Mittelfeld is interpreted as modifying the head of the fronted constituent and not the finite verbs *müssen*, *ist*, or *werden* in verb-second position.

In this paper we want to take a closer look at this second partial constituent phenomenon. Starting out with a discussion of the head movement analysis of S. Müller (1999), the only approach to the phenomenon we are aware of, we argue that it is attractive to explore an alternative approach which captures the parallel character of the two kinds of partial constituent phenomena. We investigate whether the argument-raising approach to partial constituents missing arguments of the kind we saw in (1) can be generalized to the cases involving partial constituents lacking adjuncts as illustrated in (2). We show that extending the notion of argument raising to a concept we will call *dependent raising* properly accounts for both kinds of partial constituent phenomena as well as their interaction.

²See, in particular, Pollard (1996), Nerbonne (1994), Kathol (1995, sec. 7.7), S. Müller (1997), Meurers (1999a), and Bouma and van Noord (1998, sec. 3.4).

³De Kuthy (2000) argues, however, that PPs such as those in (1c) should be analyzed as adjuncts, not complements.

1.2 A head movement analysis and its problems

In his discussion of the partial constituent phenomenon, S. Müller (1999, pp. 360ff) also covers the example (3) involving an adjunct which has not been included in the fronted constituent.

- (3) [Vortragen] wird er es morgen.
present will he it tomorrow
 ‘He will present it tomorrow.’

He proposes to license the fronted verbal head *vortragen* as an extraction of the head of a head-adjunct structure, leaving the temporal adjunct *morgen* behind. He illustrates this with the tree in figure 1.⁴

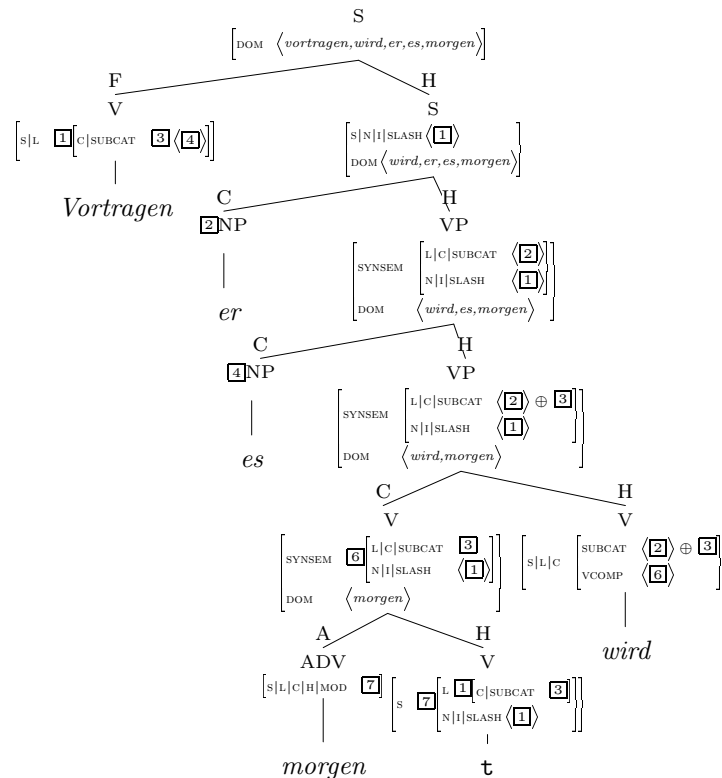


FIGURE 1 Head-movement analysis of example (3) (S. Müller, 1999)

⁴For space reasons, we sometimes abbreviate feature names by their first letter.

Note that S. Müller (1999) uses a linearization approach with word order domains (DOM) that are larger than local trees. In figure 1, the linear occurrence of the finite verb in verb-second position is a result of such linearization. In our context we are mainly interested in the fronted verb *vortragen*. The trace of this verb and the adverb *morgen* modifying this verb are realized in a head adjunct structure which functions as the verbal complement of the finite verb *wird*.

Introducing traces as head daughters in this way opens up a hornet’s nest of problems, though, since it entails the elimination of a central restriction on the occurrence of empty elements. In traditional HPSG, for example, this restriction is expressed by the Trace Principle: “Every trace must be subcategorized by a substantive head.” (Pollard and Sag, 1994, p. 172). Since eliminating this restriction to allow head traces would lead to severe overgeneration, S. Müller (1999) decides against introducing traces altogether and instead defines special immediate dominance schemata tailored to the specific extraction phenomena. The sentence (3), for example, under his analysis is licensed on the basis of the *PVP-SLASH-Introduction Schema (Adjunct)* shown in figure 2.

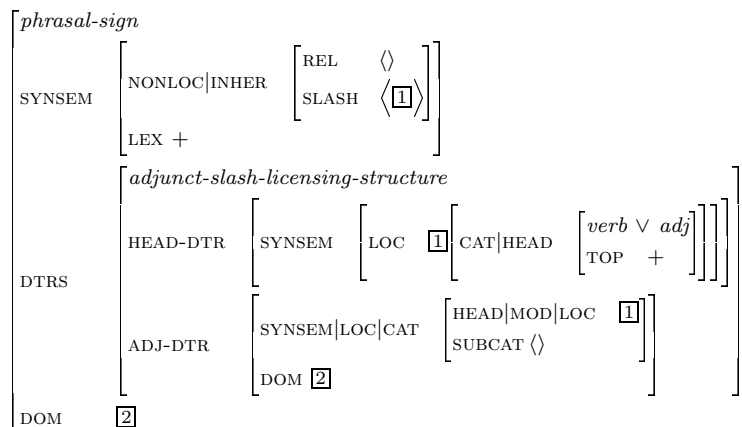


FIGURE 2 PVP-SLASH-Introduction Schema (Adjunct) (S. Müller, 1999)

Note that the mother introduces a non-empty slash value which is specified to be identical to the (local value of the) head daughter. Since the head daughter represents the extracted element, it does not contribute its phonology to the order domain DOM of the mother.⁵ The

⁵The reason that S. Müller (1999) specifies such a *adjunct-slash-licensing-structure* to have a HEAD-DTR at all is related to processing considerations. One could eliminate

head daughter is further restricted to be an adjective or a verb.

The specialized immediate dominance schema of figure 2, together with a second one licensing the extraction of partial *complements* from head cluster structures, successfully accounts for the envisaged partial fronting constructions. The solution in essence consists of encoding each case as a special construction instead of trying to derive both kinds of partial fronting phenomena as the effect of a more general grammar mechanism. In the following, we investigate an alternative to head movement with specialized constructions.

1.3 From argument raising to dependent raising

In the introductory section we discussed basic data highlighting the parallel character of the partial fronting cases involving adjuncts and the more widely studied partial fronting phenomenon where a complement is left behind. Additional empirical support for a uniform treatment of the two classes of examples can be derived from the fact that the two kind of partial fronting phenomena can interact. In example (4a), the verb *verkaufen* has been fronted, leaving behind both its nominal complement *das Pferd* and the temporal adjunct PP *im Herbst* modifying the fronted verb. And in (4b), the verb *verkaufen* forms a constituent with the modal verb *wollen* so that the nominal complement and the temporal adjunct PP must have been raised twice.

- (4) a. [Verkaufen] will er *das Pferd im Herbst*.
 sell *wants he the horse in the autumn*
 ‘He wants to sell the horse in autumn.’
- b. [Verkaufen wollen] wird er *das Pferd im Herbst*.
 sell *want* *will* *he the horse in the autumn*
 ‘He will want to sell the horse in autumn.’

Such interaction between the two kind of partial constituent phenomena is to be expected if both phenomena are licensed by the same underlying mechanism.

To investigate whether the argument-raising analysis we proposed for constituents missing complements can be generalized to include raising of adjuncts, we first need to review the essential ingredients of our argument-raising analysis.

this attribute and state the restrictions on the head daughter on the SLASH value of the mother instead.

1.3.1 The starting point

The heart of our proposal to partial constituents missing complements in De Kuthy and Meurers (1998, 1999b) (henceforth: DKM) is the *Lexical Argument-Raising Principle (LARP)* shown in figure 3. The essential

$$\left[\begin{array}{c} \textit{word} \\ \text{S|L|C|HEAD} \quad \boxed{4} \left[\begin{array}{c} \textit{verb} \\ \text{V|FORM} \quad \textit{bse} \end{array} \right] \end{array} \right] \rightarrow \left[\begin{array}{c} \text{S|L|C|V} \left[\begin{array}{c} \text{SUBJ} \quad \boxed{1} \\ \text{COMPS} \quad \textit{raised}(\boxed{3}) \oplus \boxed{2} \end{array} \right] \\ \text{ARG-ST} \quad \textit{distrib-args}(\boxed{4}, \boxed{1}, \boxed{2}) \wedge (\boxed{3} \circ \textit{indep}) \end{array} \right]$$

FIGURE 3 The Lexical Argument-Raising Principle (LARP)

part of the principle is that the value of the valence attribute COMPS is defined to consist of the non-subject⁶ elements of the argument structure ($\boxed{2}$) plus (potentially) some elements raised from $\boxed{3}$.⁷ What exactly can be raised and whether there are additional restrictions empirically depends on the category of the argument-raising source, i.e., the element from which an argument is raised. This is captured by the definition of the relation *raised* in figure 4.

$$\begin{aligned} \textit{raised}(\langle \rangle) &:= \langle \rangle. \\ \textit{raised} \left(\left\langle \left[\begin{array}{c} \text{LEX} \quad + \\ \text{L|C} \quad \left[\begin{array}{c} \text{HEAD} \quad \textit{verb} \vee \textit{adj} \\ \text{V|COMPS} \quad \boxed{1} \end{array} \right] \end{array} \right] \right\rangle \right) &:= \boxed{1} \textit{lex-minus-list}. \\ \textit{raised} \left(\left\langle \left[\begin{array}{c} \text{L|C} \quad \left[\begin{array}{c} \text{HEAD} \quad \textit{noun} \\ \text{V|COMPS} \quad \boxed{1} \end{array} \right] \end{array} \right] \right\rangle \right) &:= \boxed{1} \textit{prep-list}. \end{aligned}$$

FIGURE 4 Definition of possible argument-raising sources

If there is no argument-raising source, no arguments can be raised. For

⁶Which of the arguments, if any, fills the subject valence is specified by the relation *distrib(ute)-arg(ument)s* defined below—a task which requires special attention to subjectless and raising verbs, which here are assumed to be recognizable by their head subtype:

$$\begin{aligned} \textit{distrib-args}(\textit{subj-less-verb}, \langle \rangle, \boxed{2}) &:= \boxed{2} \\ \textit{distrib-args}(\textit{subj-raising-verb}, \boxed{1}, \boxed{2}) &:= \boxed{2} \left(\left[\begin{array}{c} \text{L|C|V|SUBJ} \\ \text{COMPS} \quad \boxed{1} \end{array} \right] \right) \\ \textit{distrib-args}(\textit{subj-verb}, \langle \boxed{1} \rangle, \boxed{2}) &:= \langle \boxed{1}, \boxed{2} \rangle \end{aligned}$$

⁷All arguments not belonging to the list of argument-raising sources $\boxed{3}$ are required to be *indep(endent)*. This notion defined below encodes that these arguments have realized their own complements and are not part of a lexical head cluster:

$$\begin{aligned} \textit{indep} &:= \langle \rangle. \\ \textit{indep} &:= \left\langle \left[\begin{array}{c} \text{L|C|V|COMPS} \\ \text{LEX} \quad \text{—} \end{array} \right] \textit{indep} \right\rangle \end{aligned}$$

verbal and adjectival raising sources all non-lexical cluster elements can be raised, whereas for nominal raising sources raising is restricted to prepositions.

For a simple example sentence with a partial topicalized VP lacking an argument, such as the sentence we saw in (1a), the generalized argument-raising approach sketched above results in the analysis in figure 5.

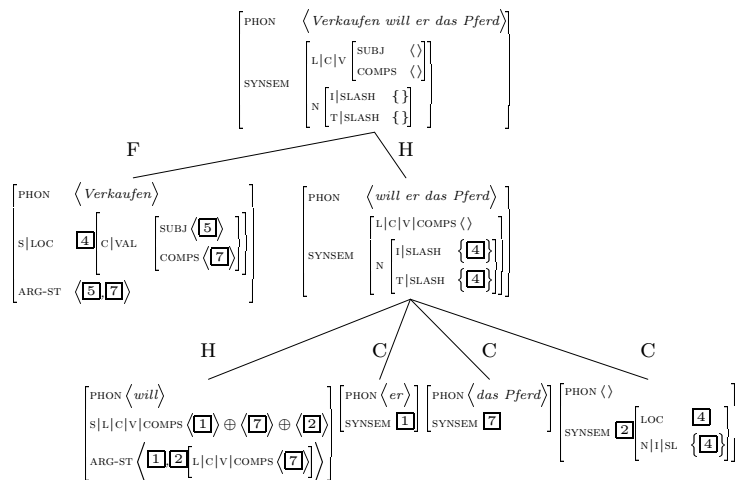


FIGURE 5 Sketch of an argument-raising analysis of partial fronting

In order to make this example tree comprehensible, we briefly have to mention two further aspects of the theory provided in De Kuthy and Meurers (1999b). While the Lexical Argument-Raising Principle applies to base form verbs, finite verbs are derived from these base forms by a lexical rule which among other things removes the subject from SUBJ and encodes it together with the complements on COMPS in the tradition of Pollard (1996). In the same tradition, the Head-Complement Immediate Dominance Schema licenses flat finite verbal structures so that the verb-second position of the finite verb can be obtained by linearization in this local tree.

Returning to the central aspect of argument raising in the analysis sketched in figure 5, the Lexical Argument-Raising Principle has the effect that the finite verb *will* raises the NP complements *das Pferd* (7) of (the trace of) its verbal complement *verkaufen* (2) onto its own COMPS list. *Verkaufen* can then be realized in the fronted position independently of its complement *das Pferd*, while *will* combines with its subject

er, the raised NP *das Pferd*, and the trace of the fronted verbal argument in a head-complement structure.

1.3.2 Adjuncts as dependents

Turning to the question how the sketched argument-raising approach to partial constituents could be generalized to include partial constituents missing adjuncts, the key problem to resolve is that in the traditional HPSG framework (Pollard and Sag, 1994) on which our argument-raising analysis is built, adjuncts are not represented lexically but inserted syntactically in head-adjunct structures. The lexical head therefore does not represent whether its projection includes a modifier or not, which is incompatible with the lexical encoding of argument raising which we adopted from Hinrichs and Nakazawa (1989). If we want adjuncts to undergo such raising, we thus need to ensure that the selection of adjuncts is lexically represented.

The idea of lexicalizing the selection of adjuncts has been argued for in a line of work in HPSG going back at least to Miller (1992) and Van Noord and Bouma (1994). In the most recent incarnation of the idea, Bouma, Malouf, and Sag (to appear) (henceforth: BMS) specify a lexical principle which maps the elements of the argument structure and a list of adjuncts of unspecified length onto a so-called dependents list. The definition of this *Argument Structure Extension* is shown in figure 6.

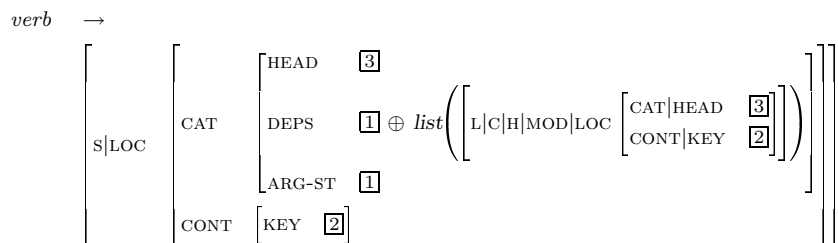


FIGURE 6 Argument Structure Extension of BMS⁸

A second principle entitled *Argument Realization* maps the arguments and adjuncts collected on DEPS onto the valence attributes SUBJ

⁸We show the principles of BMS including the full feature paths according to the feature geometry BMS provide in their figure (17). Note that the type *verb* in figure 6 represents a subtype of *word* instead of the usual subtype of *head*, and ARG-ST is shown as appropriate for *category* objects while usually ARG-ST is defined for objects of type *word*. Since we are not aware of arguments for these changes, our own proposal below is based on the traditional HPSG feature geometry.

and COMPS. The combined effect of these two principles is that selection of adjuncts and complements is lexically represented as part of the head, and both kind of dependents can be realized as part of ordinary head-complement structures.

The BMS proposal includes a traceless analysis of argument and adjunct extraction. Extracted elements, which are marked by a subtype of *synsem*, are represented on DEPS but not mapped onto COMPS. For presentation reasons, the argument raising approach in De Kuthy and Meurers (1999b) includes the basic trace-based extraction theory of Pollard and Sag (1994) and so does the generalization of that approach presented in the following.⁹ Our dependent-raising approach could also be integrated with a traceless analysis, but as discussed in De Kuthy and Meurers (1999a) the traceless variant differs from the trace-based one in a relevant aspect: Under the traceless approach, extracted elements can never undergo dependent raising since they are not represented on COMPS. Under the trace-based analysis, on the other hand, an element can be extracted from a higher COMPS list to which it has been raised—which makes it more similar to the structures licensed by a reanalysis approach to partial constituents we argue for in De Kuthy and Meurers (1999b).

1.3.3 A theory for dependent raising

With a proposal for lexicalizing adjunct selection at hand, the task of this section is to integrate such lexicalized adjunct selection into our general argument-raising theory in order to arrive at a uniform treatment of both kind of partial constituent phenomena.

A straightforward way of performing this integration is to take the specification of the list of adjunct requirements from the Argument Structure Extension principle of BMS (figure 6) and insert it into the Lexical Argument-Raising Principle of figure 3. The Lexical Dependent-Raising Principle (LDRP) resulting from this integration is shown in figure 7.

The central change in this principle compared to the Lexical Argument-Raising Principle is the addition of a list of adjuncts requirements which is shuffled (○) into the list of complements. In addition, the LDRP has a more general antecedent than the LARP. This is necessary to introduce adjuncts as dependents of heads of different categories in order to license the different categories of partially fronted constituents we saw in (2).¹⁰

⁹The DEPS attribute used by BMS to collect all elements which can be extracted thus is not needed in our approach.

¹⁰While the data presented in section 1.1 shows that at least some adjuncts of non-verbal heads should be treated as dependents, this clearly is not the case for all

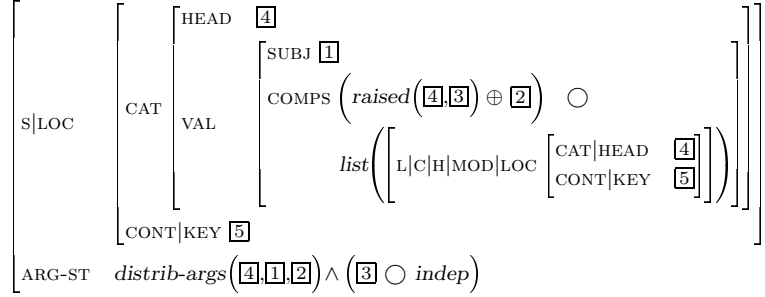
lexeme \rightarrow 

FIGURE 7 The Lexical Dependent-Raising Principle (LDRP)

And parallel to the LARP, the LDRP should define the mapping only for base forms to be compatible with the sentence structure setup following Pollard (1996). We therefore introduce a type *lexeme* as subtype of *sign* and redefine the inflectional lexical rules such as the finitization lexical rule as lexeme to word mappings.¹¹

To be compatible with the more general antecedent of the LDRP, the relation *raised* has to be modified so that it takes the category of the head into account. The otherwise unchanged definition is shown in figure 8.

$$\begin{aligned}
 \text{raised}(\text{head}, \langle \rangle) &:= \langle \rangle. \\
 \text{raised} \left(\text{verb}, \left\langle \left[\begin{array}{l} \text{LEX} \\ \text{L|C} \end{array} \right] \begin{array}{l} + \\ \left[\begin{array}{l} \text{HEAD} \quad \text{verb} \vee \text{adj} \\ \text{V|COMPS} \quad \boxed{1} \end{array} \right] \end{array} \right\rangle \right) &:= \boxed{1} \text{ lex-minus-list}. \\
 \text{raised} \left(\text{verb}, \left\langle \left[\begin{array}{l} \text{L|C} \\ \text{V|COMPS} \end{array} \right] \left[\begin{array}{l} \text{HEAD} \quad \text{noun} \\ \boxed{1} \end{array} \right] \right\rangle \right) &:= \boxed{1} \text{ prep-list}.
 \end{aligned}$$

FIGURE 8 Definition of possible argument-raising sources

At first sight, the fact that the new argument for the head category of all argument-raising sources is specified to be verbal seems to suggest that the additional argument is essentially a complication forced upon us by the need to generalize the antecedent for the adjunct treatment.

kinds of adjuncts. A more elaborate theory of adjunct realization will have to restrict the subclass of adjuncts which are intended to construct as dependents and which are not.

¹¹The description level formalization of lexical rules provided in Meurers (1995, 1999b) readily supports such a revision.

Askedal (1989) shows, however, that in addition to the verbal heads generally discussed, certain adjectival elements can also occur as heads in a head cluster.¹² To extend the coverage of our generalized argument-raising approach to such adjectival heads, it is sufficient to add a clause to the definition of the *raised* relation in figure 8 specifying *adjective* as the first argument. The possibility of having argument-raising sources of different categories thus is also empirically motivated.

Returning to our general task of extending the argument-raising approach to general dependent raising, the essential new aspect of the Lexical Dependent-Raising Principle replacing the Lexical Argument-Raising Principle is that adjuncts are now also represented on the COMPS list. Since the *raised* relation permits verbal, adjectival or nominal complements of verbal heads to be partial if their remaining COMPS elements are raised, the adjuncts represented on COMPS lists can now also be subject to such raising. We thus obtain the intended result that partial constituents can result from raising of adjuncts.

To get a better understanding of how such partial constituents missing adjuncts are licensed, let us take a look at two concrete examples.

1.3.4 Examples

We start with the discussion of the simple example (5) involving raising of an adjunct from a verbal complement.

- (5) [Zurückkehren] wollen sie *im nächsten Frühjahr*.
 return want to they in the next spring
 ‘They want to return next spring.’

A sketch of the analysis for this example resulting from our theory is shown in figure 9. The partially fronted constituent *zurückkehren* is licensed in the following way: The verb *zurückkehren* in the example tree has one argument on its ARG-ST list, its own subject [5]. As an effect of the LDRP of figure 7 the verb has two elements on its valence lists, its subject [5] on SUBJ and the PP adjunct *im nächsten Frühjahr* [3] on COMPS.

¹²Askedal (1989, p. 103) shows this on the basis of examples such as the following one from Thomas Mann’s *Der Zauberberg*.

- (i) da man Eiweiß auf Gift nicht mehr zu reimen gewohnt war.
 because one_{N'} white of egg_{A''} on poison_{P''} not_{Neg'} anymore to rhyme_{V''} used to was_{V'}
 ‘Because one was no longer used to rhyme white of egg with poison.’

The negation *nicht* is interpreted as belonging to the outer predicate *gewohnt sein*. But it intervenes between the inner predicate *zu reimen* and its complements *Eiweiß* and *auf Gift*. The possibility of performing such permutations of elements belonging to different heads is one of the tests of Bech (1955) for the formation of a head cluster. See Meurers (1999b, ch. 9.7.2) for a discussion.

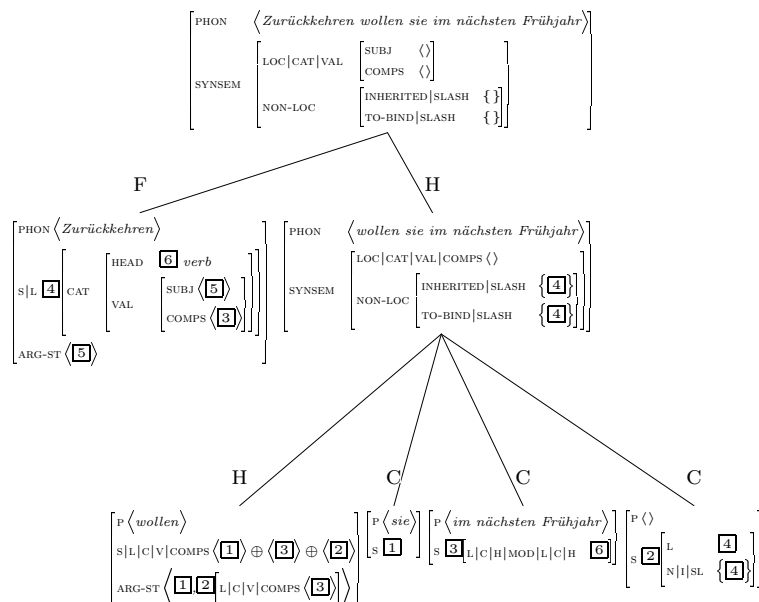


FIGURE 9 An adjunct-raising analysis

The finite verb *wollen* in figure 9 has two elements on its ARG-ST list, the subject NP [1] and a verbal complement [2]. According to the LDRP it raises the COMPS element [3] of this verbal argument onto its own COMPS list. The occurrence of *wollen* in the tree thus has three elements on its COMPS list, its own two arguments, and the dependent [3] raised from the verbal argument *zurückkehren*. The subject NP *sie*, the PP adjunct *im nächsten Frühjahr* and the trace of the topicalized verbal complement *zurückkehren* are then all realized in a head-complement structure.

Interaction of argument and adjunct raising Returning to the more complex example (4a) involving raising of both an argument and an adjunct. We see the sketch of an analysis tree for this example in figure 10. The occurrence of the transitive verb *verkaufen* in the tree has two elements on its ARG-ST list, its subject [5] and the object NP *das Pferd* ([7]). The LDRP maps these two arguments onto the valence members SUBJ and COMPS and additionally introduces the modifying PP [3]. Similar to the example tree in figure 9 the finite verb *will* in this tree has two elements on its ARG-ST list, its subject and a verbal complement. The LDRP maps these two elements onto the COMPS list. In addition the two complements of the verbal complement are raised

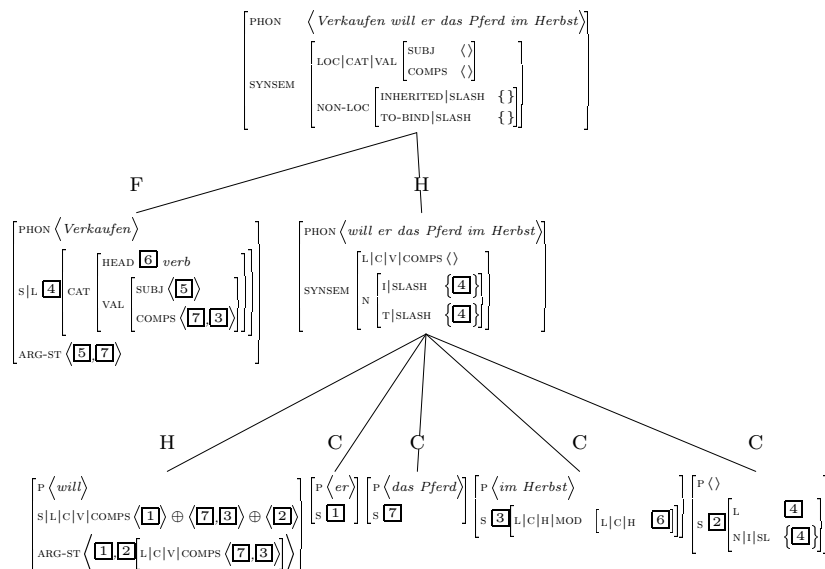


FIGURE 10 Interaction of argument and adjunct raising

onto this list and the finite verb *will* then realizes the trace of the fronted verbal complement, the raised modifying PP and the raised complement and its own subject in a flat head-complement structure.

1.4 Conclusion

This paper addresses an empirical aspect of the partial constituent phenomenon in German which has generally been neglected in the literature: the possibility of fronting constituents which are partial due to missing adjuncts.

We argued that a head-movement analysis of these data such as the one proposed by S. Müller (1999) fails to take into account the parallel character of the partial fronting cases involving adjuncts and the more widely studied partial fronting phenomenon where a complement is left behind. Furthermore, such head movement has to be attached to very specific constructions in order to avoid serious overgeneration.

Taking the parallel character of the two partial constituent phenomena seriously, we proposed to derive both from the same underlying mechanism. We showed that such a mechanism can be obtained by generalizing the lexical argument-raising principle we proposed in De Kuthy and Meurers (1999b) to a mechanism licensing raising of dependents in general. Formally, this generalization consists of integrating a lexicalized

selection of adjuncts as proposed in the adjuncts-as-dependents tradition of HPSG (Miller, 1992; Van Noord and Bouma, 1994; Bouma, Malouf, and Sag, to appear) into our lexical argument-raising principle.

The resulting theory thus has two interesting aspects: On the empirical side, it extends the empirical coverage of previous HPSG proposals in a way providing a uniform analysis of both kinds of partial constituent phenomena. On the theoretical side, it shows how argument raising and adjuncts-as-dependents as two widely applied HPSG mechanisms can be integrated.

Acknowledgments

We would like to thank Stefan Müller, Jürgen Pafel, the anonymous reviewers, and the participants of the HPSG 1999 conference in Edinburgh for comments and discussion.

References

- Askedal, J. O. 1989. über den infinitiv ohne bzw. mit “zu” im heutigen deutsch: Klassenbildung regierender lexeme und hauptzüge der distribution (i). *Deutsch als Fremdsprache* 26:2–7.
- Bech, G. 1955. *Studien über das deutsche verbum infinitum*. Historisk-filologiske Meddelelser udgivet af Det Kongelige Danske Videnskabskabernes Selskab. Bind 35, no. 2, 1955; Bind 36, no. 6, 1957; København. Reprinted 1983, Tübingen: Max Niemeyer Verlag.
- Bouma, G., R. Malouf, and I. A. Sag. To appear. Satisfying constraints on extraction and adjunction. *Natural Language and Linguistic Theory*.
- Bouma, G. and G. van Noord. 1998. Word order constraints on verb clusters in German and dutch. In E. W. Hinrichs, A. Kathol, and T. Nakazawa, eds., *Complex Predicates in Non-derivational Syntax*, vol. 30 of *Syntax and Semantics*. New York, et al.: Academic Press.
- De Kuthy, K. 2000. *Discontinuous NPs in German — A Case Study of the Interaction of Syntax, Semantics and Pragmatics*. Phil. diss., Universität des Saarlandes, Saarbrücken.
- De Kuthy, K. and W. D. Meurers. 1998. Towards a general theory of partial constituent fronting in German. In G. Bouma, G.-J. Kruijff, and R. Oehrle, eds., *Proceedings of the Joint Conference on Formal Grammar, Head-driven Phrase Structure Grammar, and Categorical Grammar (FHCG-98)*, pages 113–124. Saarbrücken: Universität des Saarlandes.
- De Kuthy, K. and W. D. Meurers. 1999a. Argument raising meets adjuncts-as-dependents and traceless extraction. In *Proceedings of*

- the Sixth Int. Conference on HPSG*, pages 45–50. Edinburgh: University of Edinburgh.
- De Kuthy, K. and W. D. Meurers. 1999b. On partial constituent fronting in German. In V. Kordoni, ed., *Tübingen Studies in Head-Driven Phrase Structure Grammar*, Arbeitspapiere des SFB 340 Nr. 132, pages 22–73. Tübingen: Universität Tübingen.
- Hinrichs, E. W. and T. Nakazawa. 1989. Flipped out: Aux in German. In *Papers from the 25th Regional Meeting of the Chicago Linguistic Society*, pages 193–202. Chicago, IL.
- Hinrichs, E. W. and T. Nakazawa. 1994. Partial-VP and Split-NP topicalization in German – an HPSG analysis. In E. W. Hinrichs, W. D. Meurers, and T. Nakazawa, eds., *Partial-VP and Split-NP Topicalization in German – An HPSG Analysis and its Implementation*, Arbeitspapiere des SFB 340 Nr. 58, pages 1–46. Tübingen: Universität Tübingen.
- Kathol, A. 1995. *Linearization-Based German Syntax*. Ph.D. thesis, Ohio State University, Columbus, OH.
- Meurers, W. D. 1995. Towards a semantics for lexical rules as used in HPSG. In *Proceedings of the ACQUILEX II Workshop on the Formalisation and Use of Lexical Rules*, pages 1–20. Cambridge, UK. Also presented at the First Conference on Formal Grammar, Barcelona, 1995.
- Meurers, W. D. 1999a. German partial-VP topicalization revisited. In G. Webelhuth, J.-P. Koenig, and A. Kathol, eds., *Lexical and Constructional Aspects of Linguistic Explanation*, Studies in Constraint-Based Lexicalism, pages 129–144. Stanford, CA: CSLI Publications. Published version of a paper presented at the 3rd Int. Conference on HPSG, May 1996, Marseille.
- Meurers, W. D. 1999b. *Lexical Generalizations in the Syntax of German Non-Finite Constructions*. Ph.D. thesis, Seminar für Sprachwissenschaft, Universität Tübingen, Tübingen. Available as Volume 145 in Arbeitspapiere des SFB 340, 2000.
- Miller, P. H. 1992. *Clitics and Constituents in Phrase Structure Grammar*. New York, NY: Garland. Published version of 1991 Ph.D. thesis, University of Utrecht, Utrecht.
- Müller, G. 1996. *Incomplete Category Fronting*. Habilitationsschrift, Universität Tübingen, Tübingen. Published as Sfs-Report 01–96.
- Müller, S. 1997. Yet another paper about partial verb phrase fronting in German. Research Report RR–97–07, DFKI, Saarbrücken. A shorter version appeared in *Proceedings of the 16th Conference on Computational Linguistics (COLING-96)*.

- Müller, S. 1999. *Deutsche Syntax deklarativ. Head-Driven Phrase Structure Grammar für das Deutsche*. No. 394 in *Linguistische Arbeiten*. Tübingen: Max Niemeyer Verlag.
- Nerbonne, J. 1994. Partial verb phrases and spurious ambiguities. In J. Nerbonne, K. Netter, and C. Pollard, eds., *German in Head-Driven Phrase Structure Grammar*, no. 46 in *CSLI Lecture Notes*, pages 109–150. Stanford, CA: CSLI Publications.
- Pollard, C. 1996. On head non-movement. In H. Bunt and A. van Horck, eds., *Discontinuous Constituency*, vol. 6 of *Natural Language Processing*, pages 279–305. Berlin and New York, NY: Mouton de Gruyter. Published version of a Ms. dated January 1990.
- Pollard, C. and I. A. Sag. 1994. *Head-Driven Phrase Structure Grammar*. Chicago, IL: University of Chicago Press.
- Thiersch, C. 1985. VP and scrambling in the German Mittelfeld. Ms., dated 22. April 1985, Universität Köln, Köln and University of Connecticut, Storrs, CT.
- Van Noord, G. and G. Bouma. 1994. The scope of adjuncts and the processing of lexical rules. In *Proceedings of the 15th Conference on Computational Linguistics (COLING-94)*, pages 250–256. Kyoto.
- Webelhuth, G. and H. d. Besten. 1987. Remnant topicalization and the constituent structure of VP in the Germanic SOV languages (abstract for the 10th GLOW colloquium). In H. Bennis and J. Koster, eds., *GLOW Newsletter Nr. 18*, pages 15–16. Dordrecht: Foris Publications.