

An Analysis of Depictive Secondary Predicates in German without Discontinuous Constituents

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1 Introduction

Winkler (1997) and Müller (2002a) argued that the depictive secondary predicates in (1) should be treated as adjuncts rather than complements of the verb.

- (1) a. Er ißt das Fleisch_i roh_j.
he eats the meat raw
b. Er_i ißt das Fleisch nackt_i.
he eats the meat naked

In earlier work, I suggest a coindexation analysis in which the subject of the depictive secondary predicate is coindexed with one element in the argument structure of the verb that is modified (Müller, 2002a). Kaufmann (1995, p. 87–88), observes that coindexation approaches with reference to the argument structure have to assume the modification of lexical predicates if one assumes that the argument structure is represented only at lexical items. This is unproblematic for grammars with flat dominance structures for the German clause, since all arguments and the verb are daughters of the same local tree and the argument structure of the modified verb therefore is accessible. However, with binary branching structures it is not trivial to establish the coindexing. Figure 1 on the following page shows the standard analysis for (2) with binary branching dominance structures.

- (2) weil er nackt der Frau hilft.
because he naked the woman helps
'because he helps the woman naked.'

In (2), *nackt* modifies the projection *der Frau hilft*, which is non-lexical and does not contain the argument structure.

Therefore I suggested an analysis based on discontinuous constituents that assumes that *nackt* and *hilft* form a discontinuous constituent, thereby allowing the adjunct to attach to the lexical element

directly, which enables it to access the argument structure.

Considering new data with multiple constituents in front of the finite verb, I developed a new analysis of German sentence structure which makes discontinuous constituents superfluous for accounting of verb placement and constituent serialization (Müller, In Press).

In the following paper I develop an analysis of depictive secondary predicates that does not require discontinuous constituents, but nevertheless uses binary branching structures and that fits into the general fragment of sentence structure that I outlined in (Müller, In Press).

2 The Phenomenon

As Lötscher (1985, p.208) pointed out, the antecedent of the depictive predicate has to precede the depictive:

- (3) a. weil er_i die Äpfel_j
because he the apples
ungewaschen_{i/j} ißt.
unwashed eats
'because he eats the apples unwashed.'
(He is unwashed or the apples are unwashed.)
b. weil er_i ungewaschen_{i/*j} die
because he unwashed the
Äpfel_j ißt.
apples eats
'because he eats the apples unwashed.'
(He is unwashed.)
c. * weil ungewaschen_{*i/*j} er_i / der
because unwashed he the
Mann_i die Äpfel_j ißt.
man the apples eats

In example (3a) the adjective may refer to either *er* or to *die Äpfel*. In (3b) the reference to *die*

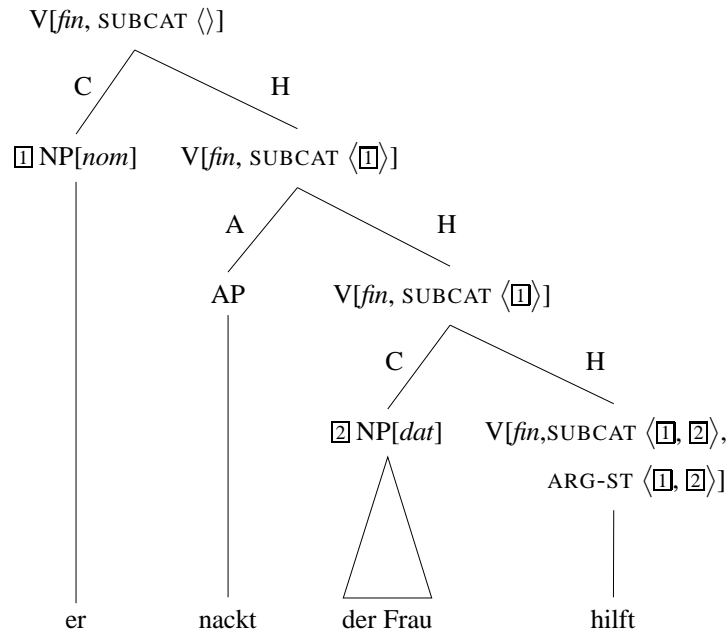


Figure 1: Binary Branching Structures and Depictive Predicates (Continuous)

Äpfel is excluded. Only the reading in which *unge-waschen* refers to *er* is available. The example (3c) in which the depictive precedes both of the possible antecedents is ungrammatical.

There are examples like (4) that do not follow this pattern, but these are instances of so-called I-topicalization (Jacobs, 1997), which can also be observed with parts of the predicate complex that usually have a fixed position, and which therefore should be analyzed similar to extraction.

- (4) weil betrunken_i niemand_i
 because drunk nobody_{nom}
 hereinkommt.¹
 in.comes
 ‘because nobody gets in drunk.’

I will not deal with sentences like (4) here.

In addition to those elements that linearly precede the depictive predicate, unexpressed subjects may also serve as antecedents, as (5) shows:

- (5) daß das Buch nackt gelesen wurde²
 that the book naked read was
 ‘that the book was read naked’

Before I come to the analysis in Section 4, I want to discuss some basic assumptions I make for the analysis of German in the next section.

¹(von Stechow and Sternefeld, 1988, p. 466).

²See (Müller, 2002a, p. 177) for a similar example.

3 Basic Assumptions about the German Sentence Structure

Following the tradition in Transformational Grammar and proposals by Bach (Bierwisch, 1963, p. 34; Bach, 1960; Reis, 1974; Thiersch, 1978, Chapter 1), I assume that German is a verb final language and that verb initial sentences are related to verb final ones. I assume that there is a verbal trace in the position that would be occupied by the finite verb in verb last sentences and that this trace is bound by a verb in initial position. For details of the implementation see (Kiss 1995; Meurers 2000, p. 206–208). A discussion of verb movement can also be found in (Frank, 1994). One reason for assuming such a verb movement analysis as opposed to flat structures or linearization approaches are cases of multiple frontings like those in (6):³

- (6) [Alle Träume] [gleichzeitig] lassen sich
 all dreams simultaneously let self
 nur selten verwirklichen.⁴
 only rarely realize
 ‘All dreams can seldom be realized at once.’

As is argued in (Müller, In Press), these sentences are best analyzed with an empty verbal head in front of the finite verb. The empty verbal head is the same

³See (Müller, 2003) for an extensive documentation of this phenomenon.

⁴Brochure from Berliner Sparkasse, 1/1999

empty element that is used in verb movement analyses and the lexical rule that licenses it is parallel to the verb movement lexical rule used by Kiss (1995) and others modulo verbal complex formation.

Müller (2002b) analyzed verb initial sentences with Reape's linearization domains (1994), which made the introduction of an empty verbal head an ad hoc explanation. The approach defended in (Müller, In Press) does not use linearization techniques for verb placement, but relies on a verb movement analysis and therefore the empty verbal head that is needed to account for special cases like those in (6) is already present in the grammar.

As is well known, constituents can be ordered rather freely in German. For instance, both orders of arguments are possible in sentences like (7):

- (7) a. weil ein Mann dem Kind hilft.
 because a man the child helps
 'because a man helps the child.'
 b. weil dem Kind ein Mann hilft
 because the child a man helps

I will assume an approach that is similar to approaches that assumed a SUBCAT set (Gunji, 1986; Hinrichs and Nakazawa, 1989; Pollard, 1996). Instead of assuming a set, I assume a SUBCAT list and a relational constraint that deletes the argument daughter from the SUBCAT list of the head daughter when two elements are combined with the head argument schema:

Schema 1 (Head Argument Schema)

$$\begin{array}{l}
 \text{head-argument-structure} \rightarrow \\
 \left[\begin{array}{l}
 \text{SYNSEM} \quad \left[\text{LOC|CAT|SUBCAT del} \left[\begin{array}{l} \boxed{2}, \boxed{1} \end{array} \right] \right] \\
 \text{LEX} - \\
 \text{HEAD-DTR} \quad \left[\text{SYNSEM|LOC|CAT|SUBCAT} \quad \boxed{1} \right] \\
 \text{NON-HEAD-DTRS} \quad \left\langle \left[\text{SYNSEM} \quad \boxed{2} \right] \right\rangle
 \end{array} \right]
 \end{array}$$

The analysis that is suggested in the next section is also compatible with proposals to constituent order that use lexical rules that reorder elements in the SUBCAT lists.

4 The Analysis of Depictive Secondary Predicates

As was shown in Section 2, the antecedent has to precede the depictive secondary predicate. This is accounted straightforwardly in the theory outlined in the last section, if we assume that the subject of

the depictive predicate is coindexed with an element in the SUBCAT list of the verbal head it combines with. For the examples in (3) we get the structures in (8):

- (8) a. weil [er [die Äpfel
 because he the apples
 [ungewaschen ißt]].
 unwashed eats
 'because he eats the apples unwashed.'
 (He is unwashed or the apples are unwashed.)
 b. weil [er [ungewaschen [die
 because he unwashed the
 Äpfel ißt]].
 apples eats
 'because he eats the apples unwashed.'
 (He is unwashed.)
 c. * weil [ungewaschen [er / der
 because unwashed he the
 Mann [die Äpfel ißt]].
 man the apples eats

In (8a) the depictive is directly combined with the verb and the SUBCAT list of *ißt* contains both the subject and the object. Therefore the account predicts that both elements are antecedent candidates for *ungewaschen*.

In (8b) the adjective is combined with a projection of *ißt* that contains the object of *ißt*. Therefore the object is not an element of the SUBCAT list of this projection and only the subject is a possible antecedent of *ungewaschen*.

In the last case *der Mann die Äpfel ißt* is fully saturated. The SUBCAT list of this projection is empty. Since there is no possible antecedent for the depictive, the sentence is rejected by the grammar.

Since I assume that verb initial sentences involve a verbal trace at the position that the finite verb would occupy in verb final sentences, verb initial sentences with depictives can be analyzed in parallel to their verb last counterparts:

- (9) ißt_i [er [die Äpfel [ungewaschen _i]]]
 eats he the apples unwashed
 'Does he eat the apples unwashed.'
 (He is unwashed or the apples are unwashed.)

Since both the subject and the object are elements of the SUBCAT list of the verbal trace, both are antecedent candidates of the depictive adjective. Note that approaches like the ones suggested by Kiss and

Wesche (1991, p. 225), Schmidt et. al. (1996), and Crysmann (2003), which assume a right branching analysis for (some) verb initial sentences are incompatible with such an analysis, since they would rule out (9). (9) would have the structure in (10):

- (10) [[[Ißt_i er] die Äpfel] ungewaschen]?
eats he the apples unwashed

Since the SUBCAT list of *Ißt er die Äpfel* is the empty list, there would not be any antecedent candidate for *ungewaschen* in the SUBCAT list of this projection.

Before I discuss the lexical rule for depictive secondary predicates that is the core of the analysis, I want to come back to the possibility to refer to non-overt antecedents, which was discussed in Section 2. The example (5) shows that depictive secondary predicates may predicate over subjects that are not realized at the surface. In approaches that use blocking/deblocking techniques to account for the perfect and the passive with a single lexical item for the second participle (Haider, 1986; Heinz and Matiasek, 1994), such data is unproblematic. In the lexical item for *gegessen* the subject is blocked. It can be deblocked by the perfect auxiliary as in (11a) or it can remain blocked as in the passive example in (11b):

- (11) a. Er hat den Apfel gegessen.
he has the appel eaten
b. Der Apfel wurde gegessen.
the appel was eaten

Since the subject is contained in the lexical item of the participle, it is possible for the depictive to access it: Depictive secondary predicates can refer to an element of a list that is a concatenation of the SUBJ list and the SUBCAT list of the verbal element they modify. Following Pollard (1996), I assume that the SUBJ list of finite verbs is the empty list, so the latter extension is only relevant for non-finite verbs.

The lexical rule in (12) maps a predicative element onto an adjunct that can modify a verbal element. The SUBJ and the SUBCAT list of the modified element (③ and ④) are appended by the relational constraint *append* and the *member* relation chooses nondeterministically one of the elements from the list that results from the *append* relation. The chosen element is coindexed with the subject of the input predicate (①).

The semantics of the input predicate (②) and the semantics of the modified head (⑤) are combined

in the semantic representation of the output of the lexical rule.

In (Müller, 2002a, Chapter 4.1.1.2), I show that the obliqueness hierarchy plays a role in accounting for the different markedness of antecedent choices. So sentences with a depictive predicate that predicates over a dative argument are more marked than those where the predicate predicates over an accusative object or a subject. This can be captured in the current approach with reference to semantic obliqueness. Since the semantic contribution of the modified verbal element is accessible (⑤) the relative semantic obliqueness of the antecedent can be determined.

5 Conclusion

I developed an analysis of depictive secondary predicates that does not rely on discontinuous constituents. Since discontinuous constituents are a very powerful device an approach that can avoid them is favorable.

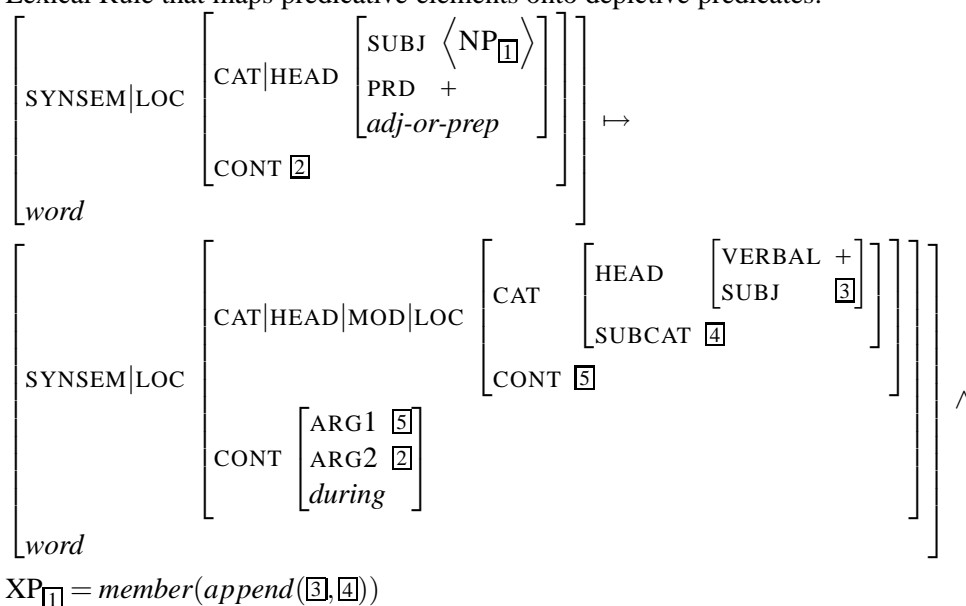
The analysis does not refer to the argument structure of heads and therefore it is not necessary to assume flat structures, a lexical introduction of adjuncts, or a projection of the argument structure.

The analysis can explain why antecedents have to precede the depictive predicates without referring to linear precedence rules, which are difficult to formalize (see (Müller, 2002a, p. 202–203)).

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