

An HPSG account of ground promotion in Norwegian

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Abstract

This paper presents an HPSG account of particle constructions in Norwegian with ground promotion, as illustrated in (1), where *på* ‘on’ is a particle and the object *bordet* ‘the table’ is a ground argument.

- (1) Jon dekker på bordet.
Jon lays on table-DEF
Jon lays the table.

It will be shown that the ground promotion construction has similarities with both regular particle constructions as well as constructions with selected prepositions, and an analysis will be presented where ground promotion is assumed to be a combination of these two constructions. The analysis is implemented in a bidirectional typed feature structure grammar, and it will demonstrate how unification and type inheritance facilitates the merger of two constructions into one, while simultaneously allowing them to be kept apart.

1 Introduction

The term *ground promotion* refers to the suppression of a figure argument, like *water* in *I poured the wa-*

[†]I would like to thank three anonymous reviewers and members of the research group Språk og samfunn at Western Norway University of Applied Sciences for very useful comments and suggestions.

ter out, in constructions like *I poured the bucket out* where the ground *bucket* has been promoted to object (McIntyre, 2007).¹

Ground promotion constructions in Norwegian (see (2a)) are similar to regular, figure retention constructions (see (2b)) in that the verb and the particle forms an intonational unit (Aa, 2020, 2021). In many Norwegian dialects they are pronounced as a single word with tone 2.²

- (2) a. Jon rydder av bordet. (Ground)
Jon clears off table-DEF
Jon clears the table.
b. Jon rydder av koppene. (Figure)
Jon clears off cups-DEF
Jon clears the cups.

The ground promotion construction is similar to selected preposition constructions in that the preposition needs to appear to the left of the object, as shown in (3). If the preposition appears to the right, the object must be interpreted as a figure, and hence the meaning is altered.

¹The terms FIGURE and GROUND stem from Talmy (1972), who defines FIGURE as “the object which is considered as moving or located with respect to another object” and GROUND as “the object with respect to which a first object is considered as moving or located” (Talmy, 1972, 11).

²Most Norwegian dialects distinguish between two tones on word with more than two syllables; tone 1 and tone 2.

- (3) a. Jon rydder bordet av. (Ground)
Jon clears table-DEF off
- b. Jon rydder koppene av. (Figure)
Jon clears cups-DEF off
Jon clears the cups.

2 Complex particle constructions

Constructions with a combination of particles and selected prepositions are common in Norwegian. A search in the LFG grammar NorGram (Dyvik, 2000) shows that there are 132 unique frames where a verb selects for a particular particle and a particular preposition simultaneously. An example is given in (5), which has the particle *ut* ‘out’ and the selected preposition *med* ‘with’.³

- (5) Jeg byttet ut dieselbilen med en
I changed out diesel car-DEF with an
elbil.
electric car
I replaced the diesel car with an electric car.

Interestingly, none of the 132 frames have identical particles and selected prepositions, even though there are many prepositions that can function as both. This could indicate that if a frame requires a particle and a selected preposition with the same form, they would usually be expressed as one, and only in colloquial Norwegian, both forms would be expressed. The reason that NorGram does not specify

³We can tell that *ut* ‘out’ is a particle since it is pronounced together with *byter* ‘change’ as a single word, and it will appear after the object if the object is a light pronoun (see (4)).

- (4) Jeg byttet den ut med en elbil.
I changed den out with an electric car
I replaced it with an electric car.

frames with identical particle and selected preposition, is probably that they are very infrequent in written texts (NorGram is mainly used to parse written texts), but also that an analysis of the second preposition as the head of an adjunct PP is plausible (see Aa (2021, 230)).

The existence of complex particle constructions where the same preposition appears twice, before the figure and before the ground object, is indicated by Aa (2021), who has conducted a search in the NoTa dialect corpus and found four examples. One of them is given in (6) (Aa, 2021, 230).⁴

- (6) legge i mynten i bøtta
lay in coin-DEF in bucket-DEF
put the coin in the bucket

The examples Aa reported are colloquial, and in written Norwegian, one would only use one *i*: *leggemynten i bøtta*. Still, the meaning is the same.

3 Analysis of complex particle constructions

The analysis for ground promotion is assumed to be analogous to the analysis of complex particle constructions like (5), and in order to get to the analysis

⁴Aa suggests that the second PP (*i bøtta* ‘in the bucket’) may be an adjunct, since the “standard” complex particle constructions have a preference for the particle to be to the right of the figure.

In the NorGram lexicon, there are six complex particle constructions with the template V-SUBJ-PRT-OBJ-POBJ. A search in NorGramBank reveals that four of them prefer the particle to be to the right of the figure: *lokke med på* ‘lure on’ (26), *tulle inn i* ‘wrap into’ (65), *venne av med* ‘unlearn’ (38), and *tyne ut av* ‘squeeze out from’ (12). There is one construction which accepts the particle to be both to the left and to the right *gjøre om til* ‘turn into’ (192), and finally there is one which prefers the particle to appear to the left of the figure *bytte ut med* ‘replace with’ (160). These findings suggest that there is no “standard” preference, but rather that it varies from construction to construction.

of ground promotion, I will first have a look at the analysis of complex particle constructions.

The constituent tree for the sentence in (5) is given in Figure 1.

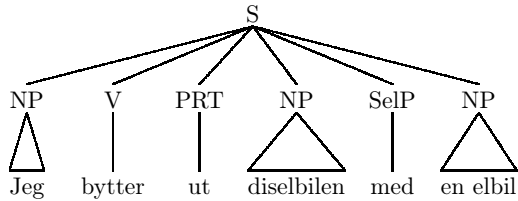


Figure 1: Constituent tree of sentence with a particle, a direct object and a prepositional object

The constituent tree in Figure 1 is the result of the incremental parse shown in Figure 2.⁵ The parse tree shows how subconstructions are added incrementally. The subconstruction types are unified with each other as they are added, and so only constructions that are defined in the grammar are allowed.

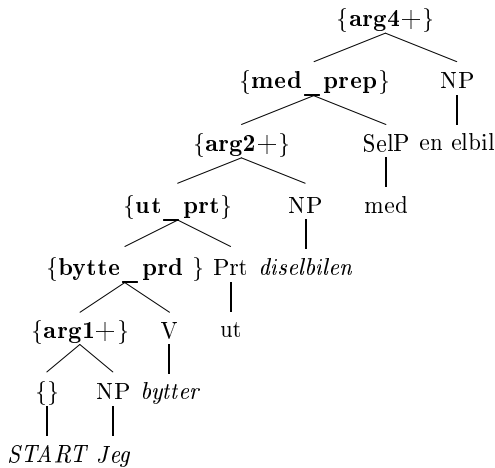


Figure 2: Parse tree of sentence with a particle, a direct object and a prepositional object

⁵The NPs in the parse tree are also analyzed incrementally, however this is not shown in the parse tree.

This analysis is implemented in the Norsyng grammar (Haugereid, 2009) with the LKB system (Copestake, 2002) where particle constructions and selected prepositions are analyzed by assuming underspecified function words that do not introduce a relation, but rather have a subconstruction type that is unified with the PRED value of the verb. This is exemplified with the particle *ut* in (7) (Haugereid, 2014, 2015).

$$(7) \left[\begin{array}{l} \textit{ut-part} \\ \text{STEM} \quad \langle \textit{“ut”} \rangle \\ \text{KEYREL} \quad \left[\text{PRED } \textit{ut_prt} \right] \\ \text{CONT} \quad \left[\text{RELS } \langle \textit{!!} \rangle \right] \end{array} \right]$$

In Norsyng, the construction type for *bytte ut med* ‘replace with’ is *_bytte-ut*med_124_rel*, which is one of ten possible alternating construction types for the verb *bytte*. The name of the construction type encodes that it is the unification of six subconstruction types, marked in bold in Figure 2; *bytte* is the root form of the verb, *ut* is the particle, *med* is the selected preposition, ‘1’ means ‘agent/experiencer’ argument, ‘2’ means ‘patient/theme’ argument, and ‘4’ means ‘oblique’ argument.

The analysis in Figure 1 is also applicable for the NoTa example (see (6)), as shown in Figure 3.

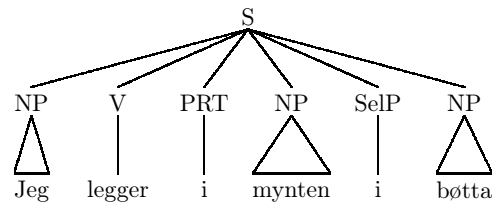


Figure 3: Constituent tree of sentence with identical particle and selected preposition

Given this analysis, I argue that the the sentence has a particle *i* and a selected preposition *i*, and that the construction type is *_legge-i*i_124_rel*.

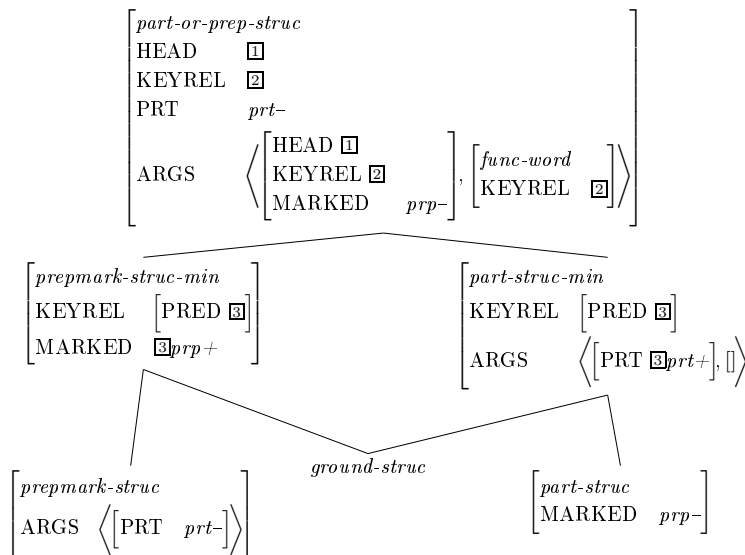


Figure 4: Type hierarchy of rules for attaching particles and selected prepositions

4 Analysis of ground promotion

As mentioned in Section 1, the ground promotion constructions have characteristics of both regular particle constructions (they form a proclitic unit with the verb) and the selected preposition constructions (the object has a ground meaning, and the object cannot appear to the left of the preposition). Given these observations, I suggest that the particles in ground promotion constructions are both particles and selected prepositions at the same time, and that they only appear in cases where the particle and the selected preposition have the same phonological form, as the two cases of *i* ‘in’ in (6). This would explain why there are no complex particle frames in the NorGram lexicon with identical particle and selected preposition, given that the expression of both is considered colloquial.

In the analysis I assume the hierarchy of rule types shown in Figure 4. It shows how the type for at-

taching particles in ground promotion constructions *ground-prom-struct* inherits from the basic types for attaching selected prepositions *prepmark-struct-min* and particles *part-struct-min*, and the subconstruction types added by these rules *prp+* and *prt+* are unified in *ground-prom-struct*, hence it is two subconstructions simultaneously. However, the hierarchy also shows that the subconstructions can be realized by separate rules *prepmark-struct* and *part-struct*.

Given that ground promotion is a combination of two constructions, (1) is assumed to have the construction type *_dekke-på*på_14_rel*, which is a subtype of *på_prt* and *på_prep* (see Figure 5).

The type hierarchy in Figure 5 also illustrates how the alternation between a regular figure retention particle construction *_dekke-på_12_rel* and a ground promotion particle construction *_dekke-på*på_14_rel* is accounted for. The verb (*dekke* ‘lay’) is provided with a KEYREL|PRED value *dekke_prd* which is compatible with the subconstruc-

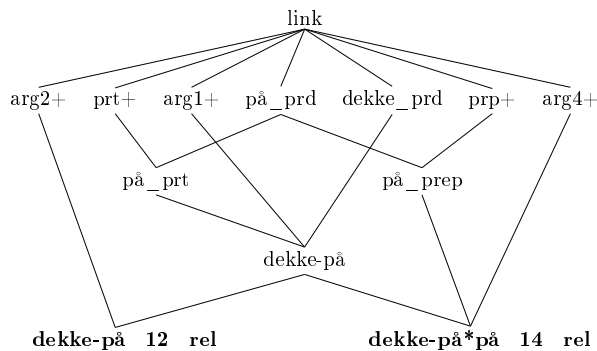


Figure 5: Simplified hierarchy of construction types for the verb *dekke* ‘lay’

tion types shown in the type hierarchy. When all the subconstruction types of a clause are unified, one ends up with one of the construction types at the bottom of the hierarchy (either *_dekke-på_12_rel* or *_dekke-på*på_14_rel*). The grammar only accepts combinations of subconstruction types that are defined in the type hierarchy.

The grammar produces the MRS (Copestake *et al.*, 2005) in Figure 6 for the sentence in (1).

```

h1 e2
{ h3:pron_rel(x4)
  h5:pronoun_q_rel(x4, h6,h7)
  h8:_dekke-på*på_14_rel(e2, x4, x9)
  h10:_bord_n_rel(x9)
  h11:def_q_rel(x9, h12, h13) }
{ h6 =q h3 h12 =q h10 h1 =q h8 }

```

Figure 6: MRS of the sentence in *Jeg dekker på bordet* ‘I lay the table’ ((1))

The semantic representation in Figure 6 shows that, although the sentence has a ground promoting particle *på* ‘on’ which is assumed to be a realization of a particle and a selected preposition simultaneously, the particle is not given its own re-

lation(s). Rather, its presence together with the verb *dekke* ‘lay’ gives rise to the relation ‘_dekke-på*på_14_rel’.

The relation ‘_dekke-på*på_14_rel’ has two arguments, an ARG1 subject and an ARG4 object (the ground). In this construction, the figure is suppressed. However, in addition to the alternation with the ‘_dekke-på_12_rel’ construction shown in Figure 5, the verb also alternates with a complex particle relation ‘_dekke-på*på_124_rel’ (not displayed in Figure 5). This relation has three arguments ARG1, ARG2 (figure), and ARG4 (ground), and accounts for the presence of a figure argument together with the ground argument.

5 Generation from MRS

When the grammar generates from the MRS in Figure 6, it produces the two strings in (8), where one of the strings have two prepositions ((8b)).⁶ The string in (8b) is a little odd, and can be considered colloquial. It means the same as (8a). While (8a) is generated with the *ground-struct* rule, (8b) is generated with a combination of the rule *prepmark-struct* and *part-struct*, and is produced as a consequence of the assumption that ground promotion can be analyzed as a complex particle construction.

- (8) a. Jeg dekker på bordet.
 b. Jeg dekker på på bordet.

This demonstrates how one within the framework of a typed feature structure grammar can account for the merger of two constructions into one, while at the same time allowing them to be separate.

⁶The grammar also produces two strings where the object is topicalized.

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