The absolute PP-construction

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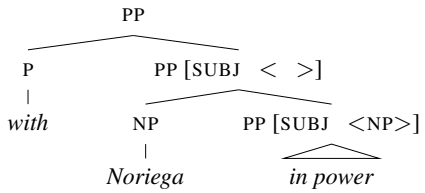
Absolute PPs are sentential modifiers, that consist of a preposition, an NP and a predicative XP. For English the relevant prepositions are *with* and *without*:

(1) a. With Noriega in power, we'll have to cancel our vacation.
b. Without Kim on our team, we are sure to lose.

In Pollard and Sag (1994, 110-111) the absolute PPs are assigned a Stowell Structure, in which the NP is the subject of the predicative XP, as in (2) (Stowell 1983).[1]

(2)



The motivation for this choice is thin. It is just claimed to "seem plausible" and to be in line with the analysis of (3) in Pollard and Sag (1987, 155).

(3) With Kim walking, we can throw away the crutches.

1 Problems for the Stowell Structure treatment

A problem for the Stowell Structure treatment is that the NP is not always the subject of the predicative XP, as illustrated for Dutch in (4), quoted from Van Riemsdijk (1978, 65–69).

(4) a. Met [Einstein voor ogen] begon hij aan zijn onderzoek.
with Einstein for eyes began he on his research
'With Einstein in mind, he started his research.'
b. Met [Cruyff als libero] zijn wij verloren.
with Cruyff as libero are we lost
'With Cruyff as libero, we are lost.'

The bracketed parts in these sentences cannot be paraphrased as *Einstein is voor ogen* 'Einstein is in mind' and *Cruyff is als libero* 'Cruyff is as libero', but rather as *hij heeft Einstein voor ogen* 'he has Einstein in mind' and *we hebben Cruyff als libero* 'we have Cruyff as libero'. The NPs in the bracketed parts of (4) are, hence, objects of the transitive *have*, rather than subjects of a silent copula.

Another problem concerns the CASE value of the NP. As shown in (5–7), the NP has accusative case in English and Dutch, and dative case in German.

[1] Adopting current HPSG practice, we use SUBJ to model the selection of the first member of SUBCAT.

(5) With him/*he at the helm, we are bound to get into problems.

(6) We krijgen gegarandeerd problemen met hem/*hij aan het roer.

(7) Mit dem/*das Fenster offen schläft man besser.
with the.DAT window open sleeps one better
'With the window open, one sleeps better.'

To account for (5–6) it could be argued that case is assigned by something else than the preposition, since accusative case is also assigned to subjects of AcI-constructions and non-finite main clause constructions, as in (8).

(8) a. I saw him come.
b. What, me worry?

In (7), though, it is clear that case is assigned by the preposition, since the German *mit* invariably requires dative case. As a consequence, since the NP is not a dependent of the preposition, in Figure 2 this is an instance of Exceptional Case Marking, and hence a violation of the principle of locality of subcategorization.

A third problem concerns the syntactic weight of the NP. In Dutch the NP can take the form of a full (stressable) pronoun, but not of a weak (unstressable) one (Broekhuis 2013, 200).

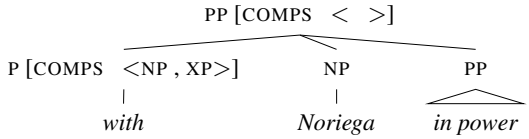
(9) We krijgen gegarandeerd problemen met jou/*je aan het roer.
we get guaranteed problems with you at the helm
'We are bound to get problems with you at the helm.'

In this respect the absolute *met* differs from most of the other prepositions, including the comitative *met* 'with': *met jou/je meegaan* 'go with you'. The constraint must hence be included in its lexical entry, but checking it requires recourse to something like Exceptional Weight Marking, since the pronoun is not a dependent of the preposition in (2).

2 An alternative: the flat structure treatment

An alternative for the Stowell Structure treatment is proposed in Van Eynde (2015, 118). It treats the NP and the predicative XP as complements of the preposition, yielding a flat structure, as in (10).

(10)



The motivation for this choice is indirect, leaning on the argumentation against the Stowell Structure treatment in Van Riemsdijk (1978, 62–86), which is to a large

extent based on theory-internal considerations in pre-GB Transformational Grammar. We will now add argumentation that is based on HPSG-internal grounds and demonstrate that the flat structure treatment solves the problems that are mentioned in Section 1. In the process we will elaborate the sketchy proposal in Van Eynde (2015, 118) into a more detailed analysis.

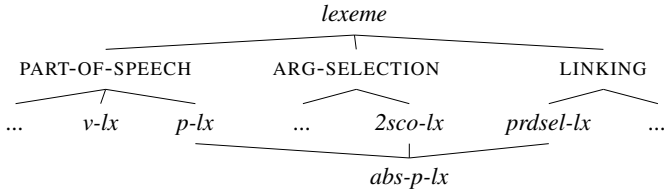


Figure 1: Lexeme hierarchy (Van Eynde 2015, 119)

Starting point is a three-dimensional hierarchy of lexemes, part of which is given in Figure 1. The PART-OF-SPEECH dimension and the ARG-SELECTION dimension are familiar from Ginzburg and Sag (2000, 20). The LINKING dimension is added in Van Eynde (2015) to model the link between syntactic arguments and semantic roles. The constraints on the types that are relevant in this context are spelled out in (11–13).

(11) $\textit{p-lx} \Rightarrow \left[\text{SYNSEM} \mid \text{LOC} \mid \text{CAT} \mid \text{HEAD} \quad \textit{adposition}\right]$

(12) $\textit{2sco-lx} \Rightarrow \left[\text{ARG-ST} \left\langle \left[\textit{scope-object}\right], \left[\textit{scope-object}\right] \right\rangle\right]$

(13) $\textit{prdsel-lx} \Rightarrow \left[\begin{array}{l} \text{SYNSEM} \mid \text{LOC} \mid \text{CONTENT} \mid \text{NUCLEUS} \begin{bmatrix} \text{THEME} & i \\ \text{ATTRIBUTE} & j \end{bmatrix} \\ \\ \text{ARG-ST} \quad \boxed{A} \oplus \left\langle \text{X}_i \, , \, \text{Y}_j \right\rangle \oplus \boxed{B} \end{array}\right]$

(11) is quoted from Ginzburg and Sag (2000, 22), and (12) is similar to the constraint on strictly transitive lexemes in Ginzburg and Sag (2000, 22). The difference is that the selection is defined here in terms of semantic types (*scope-object*), rather than in terms of syntactic categories. (13) defines the kind of linking that holds for the selectors of predicative complements (*prdsel-lx*). Notice also here that the arguments (X and Y) are defined in terms of semantic types (bearers of a referential index[2]), rather than in terms of syntactic categories.

Most of the predicate selecting lexemes are verbs, but here we focus on the adpositions, more specifically those which are subsumed by the type *abs(olute)-p-lx*, which is a subtype of *p-lx*, *2sco-lx* and *prdsel-lx*, see Figure 1. Beside the inherited properties there are some that are characteristic of the absolute adpositions. They are spelled out in (14).

[2]That the indices are referential follows from the fact that they are assigned a semantic role.

(14) *abs-p-lx* ⇒

$$\begin{bmatrix} \textsc{synsem}\,|\,\textsc{loc}\,|\,\textsc{cat} & \begin{bmatrix} \textsc{head}\,|\,\textsc{select}\,|\,\textsc{loc}\,|\,\textsc{cat}\,|\,\textsc{head} & \textit{verb} \\ \textsc{subj} & \langle\ \rangle \end{bmatrix} \\ \textsc{arg-st} & \left\langle \textsc{np}\,, \begin{bmatrix} \textsc{cat}\,|\,\textsc{subj} & \langle \mathrm{X}_j \rangle \\ \textsc{content}\,|\,\textsc{index} & j \end{bmatrix} \right\rangle \end{bmatrix}$$

The SELECT value captures the fact that the phrase which the adposition projects is adjoined to a verbal projection. The SUBJ value implies —in tandem with the Argument Realization Principle— that the syntactic arguments are both on the COMPS list. The first argument is required to be an NP and the second argument is required to be an open predicative complement (Van Eynde 2015, 135). Characteristic of open predicative complements is that they share the index of their unexpressed subject. The adjective *ill*, for instance, denotes those who are ill, the PP *in power* denotes those who are in power, etc. Closed predicative complements, by contrast, have an empty SUBJ list, either because they do not select a subject, or because they contain an overt subject. NPs and clauses, for instance, are closed. Many of the predicate selecting lexemes, including the copula, are compatible with both open and closed predicative complements, but there are also several that only combine with open predicative complements. They include the absolute adpositions, as illustrated by the contrast between (15) and (16).

(15) a. With George ill, Tom will have to play.
b. With Noriega in power, we'll have to cancel our vacation.
c. With three laps to go, the race is not yet decided.

(16) a. * With George the chairman, it'll be a boring meeting.
b. * With the issue whether they agree, we have postponed the meeting.

Given the constraints in (11–14), there is not much that needs to be added to the lexical entries of language specific adpositions. For the Dutch *met* 'with' the entry is spelled out in (17).

(17)

$$\begin{bmatrix} \textit{abs-p-lx} \\ \textsc{phon} & \langle \textit{met} \rangle \\ \textsc{synsem}\,|\,\textsc{loc}\,|\,\textsc{cat}\,|\,\textsc{head}\,|\,\textsc{position} & \textit{initial} \\ \textsc{arg-st} & \left\langle \left[\textsc{loc}\,|\,\textsc{cat} \begin{bmatrix} \textit{major} \\ \textsc{head}\,|\,\textsc{case} & \textit{accusative} \end{bmatrix} \right] \right\rangle \oplus \textit{nelist} \end{bmatrix}$$

The constraint on the POSITION value captures the fact that *met* precedes its complements. In that respect it differs from its head-final counterpart *mee*. Besides, since head-initial Dutch prepositions require their complement(s) to be realized in situ , as demonstrated in Tseng (2005), it is correctly predicted that raising or extraction out of the PP is not possible. Compare the well-formed (9) with the ill-formed (18).

(18) a. * We krijgen gegarandeerd jou$_i$ problemen [met $\_\__i$ aan het roer]
we get guaranteed you problems with at the helm

b. * Wie$_i$ krijgen we gegarandeerd problemen [met $\_\__i$ aan het roer]?
who get we guaranteed problems with at the helm

The constraint on the first argument captures the fact that it must be major and have accusative case. The proposal to differentiate weak from strong pronouns in terms of their CAT value is adopted from Van Eynde (1999).[3] This blocks the combination with weak (unstressable) pronouns and non-accusative NPs.

3 Conclusion

Returning to the problems for the Stowell Structure treatment, it is clear that they are avoided in the flat structure treatment. First, the NP-argument is not treated as the understood subject of the predicative XP, but as its less oblique co-argument; combinations in which it is used as an object, as in (4), are hence allowed. Second, since the NP-argument is a dependent of the preposition, there is no need for Exceptional Case Marking nor for Exceptional Weight Marking. The principle of locality of subcategorization is hence abided by.

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[3] Another way of capturing syntactic weight distinctions is employed in Abeillé and Godard (2000). It uses a feature, called WEIGHT, that is assigned to objects of type *sign*. Since the value of ARG-ST is a list of *synsem* objects rather than of *sign* objects, we use the distinction in terms of the CATEGORY value in (17).