

SOME ISSUES

Further machinery

SPR and SUBJ

Sag *et al.* (2003) and Kim and Sells (2008) assume that subjects within clauses and specifiers within NPs and APs are the realization of the same SPR (SPECIFIER) feature. However, most HPSG work has assumed that subjects are the realization of a separate SUBJ (SUBJECT) feature. This is because there appear to be heads which have both a subject and a specifier (Pollard and Sag 1994: 358-362).

The simplest examples are in the bracketed complements of *with* in the following:

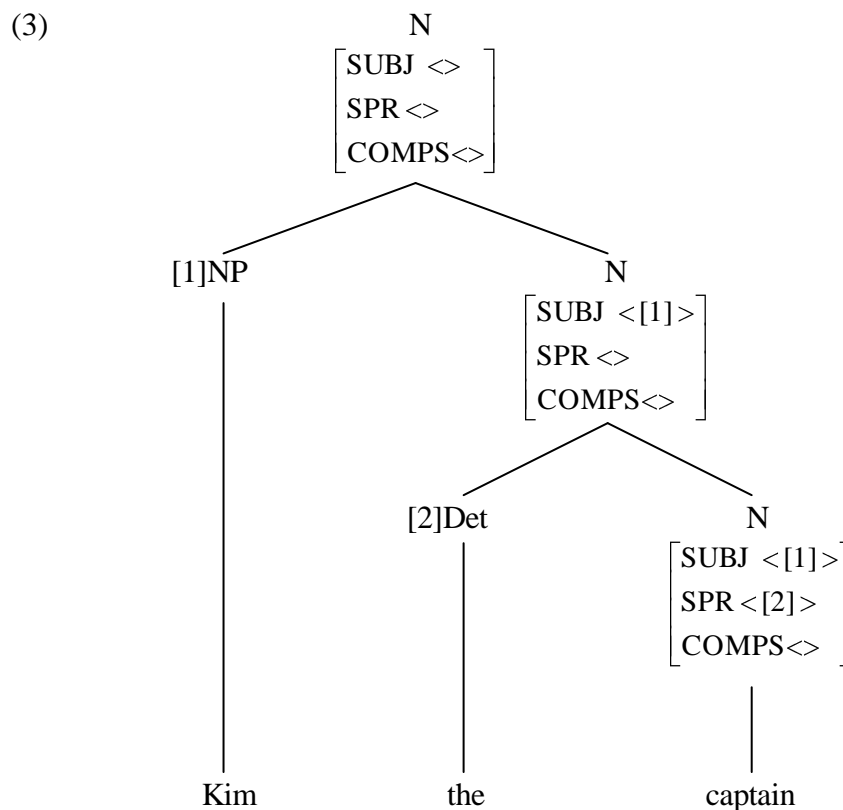
- (1) [With [Kim [the captain]]] anything is possible.

Head = *captain* Specifier = *the* Subject = *Kim*

- (2) [With [Kim [too drunk to stand up]]] the party ended.

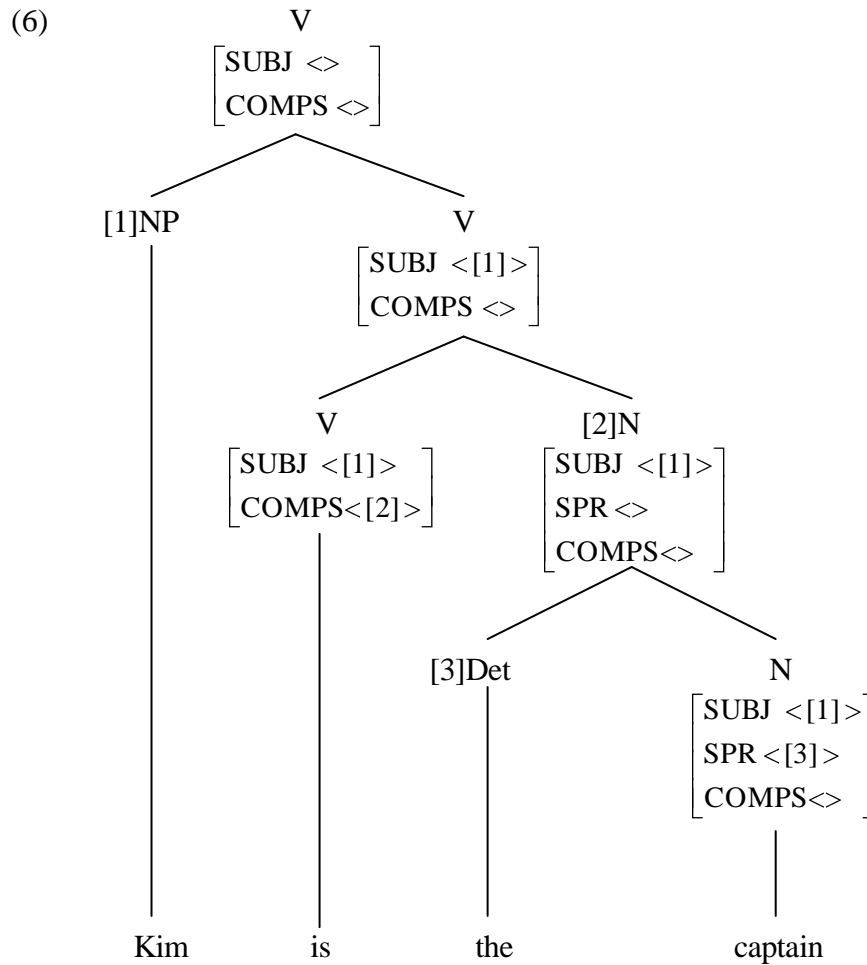
Head = *drunk* Specifier = *too* Subject = *Kim*

The complement in (1) can be analyzed as follows:



Assuming that the subject of *be* is also the subject its complement

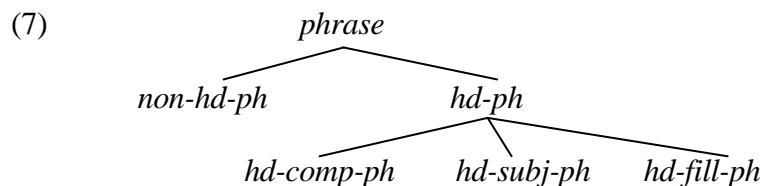
- (4) Kim is [the captain].
 (5) Kim is [too drunk to stand up].



Constructions and multiple inheritance

Since Sag (1997) much work in HPSG has been construction-based. This means that it employs complex hierarchies of phrase types or constructions. HPSG has employed complex hierarchies of lexical types since Pollard and Sag (1987).

A simple example



This allows properties that various phrase types have in common to be captured by constraints of the following form:

(8) *phrase* → $\begin{bmatrix} \dots \\ \dots \end{bmatrix}$

hd-ph → $\begin{bmatrix} \dots \\ \dots \end{bmatrix}$

hd-comp-ph → $\begin{bmatrix} \dots \\ \dots \end{bmatrix}$

etc.

If all phrases are [COMPS $\langle \rangle$], this can be captured by the following constraint:

(9) *phrase* → [COMPS $\langle \rangle$]

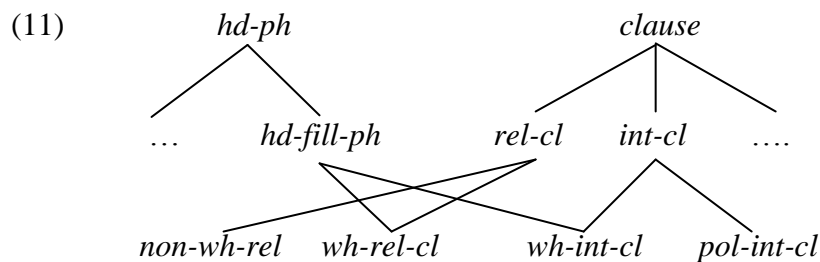
Since Sag (1997) it has been widely accepted that a satisfactory approach to syntax requires two separate hierarchies of phrase types.

Some evidence for this comes from wh-relatives and wh-interrogatives such as the following:

- (10) a. I wonder [who Kim annoyed].
 b. This is the man [who Kim annoyed].

Both are head-filler phrases but they differ in their distribution and their semantics. Wh-relatives are similar in certain respects to non-wh-relatives, and wh-interrogatives are similar in certain respects to polar interrogatives,

They can be classified as follows:



Given such a classification the properties that all relative clauses and all interrogative clauses share can be captured by constraints of the following form:

(12) *rel-cl* → $\begin{bmatrix} \dots \\ \dots \end{bmatrix}$

int-cl → $\begin{bmatrix} \dots \\ \dots \end{bmatrix}$

The special properties of *wh*-relatives and *wh*-interrogatives can be attributed to constraints of the following form:

$$(13) \textit{wh-rel-cl} \rightarrow \begin{bmatrix} \dots \\ \dots \end{bmatrix}$$

$$\textit{wh-int-cl} \rightarrow \begin{bmatrix} \dots \\ \dots \end{bmatrix}$$

Given an appropriate system of constructions it is possible to capture both very broad general syntactic properties and very specific idiosyncratic syntactic properties (see Borsley 2010).

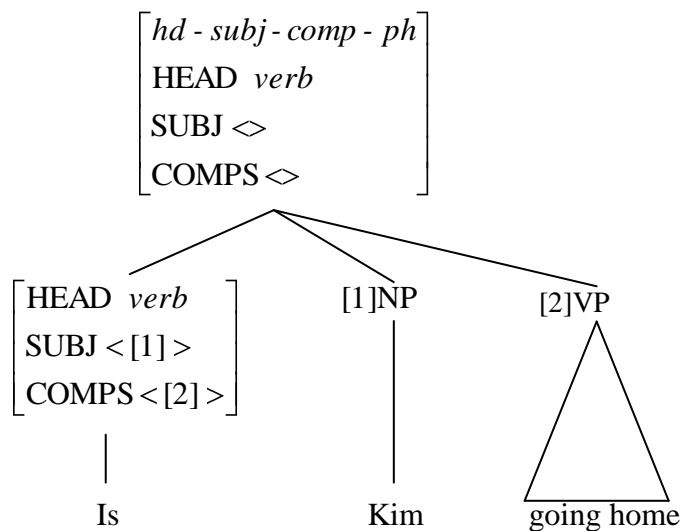
Competing analyses

Auxiliary-initial clauses

One possibility for auxiliary-initial clauses in English is that they are structures in which a head has both its subject and its complements as sisters. Within this approach (14) has the structure in (15).

(14) Is Kim going home?

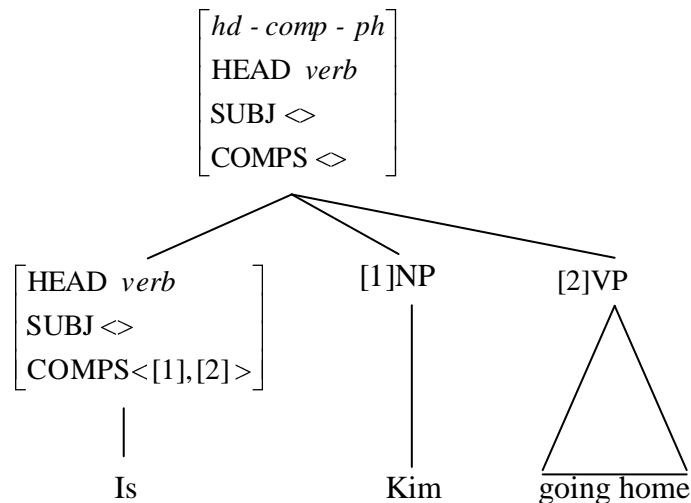
(15)



This approach is taken to English auxiliary-initial clauses in Pollard and Sag (1994), Kim and Sells (2008) and Ginzburg and Sag (2000).

An alternative approach treats post-verbal subjects as extra complements. This gives the following structure for (14):

(16)



This approach is taken to English auxiliary-initial clauses in Sag, Wasow and Bender (2003).

Borsley (1995) argues that the first approach is appropriate for verb-initial clauses in Arabic and the second for verb-initial clauses in Welsh.

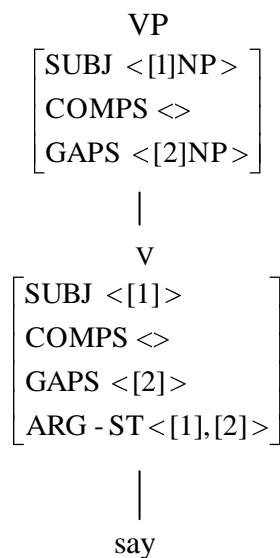
Unbounded dependency gaps

Most HPSG work on unbounded dependencies assumes a set valued SLASH feature instead of a list valued GAP feature as in Kim and Sells (2008) .

Most HPSG work assumes that an unbounded dependency gap is a member of the ARG-ST (ARGUMENT-STRUCTURE) list of some head with no counterpart in constituent structure. On this view, the bracketed VP in (17) has the structure in (18).

(17) What did Lee [say]?

(18)



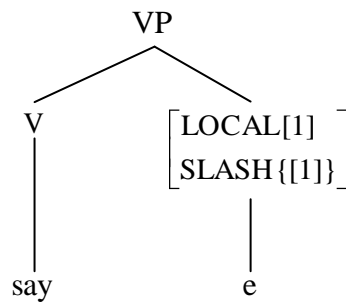
However, Pollard and Sag (1994) proposed that gaps are filled by an empty element with the following category:

(19)

$$\left[\begin{array}{l} \text{LOCAL}[1] \\ \text{SLASH}\{\{1\}\} \end{array} \right]$$

On this view, the bracketed VP in (17) has the schematic structure in (20).

(20)



Levine and Hukari (2006) argue for this view of gaps, arguing among other things that it can provide a more satisfactory account of examples like the following, where the wh-phrase has scope over three VPs:

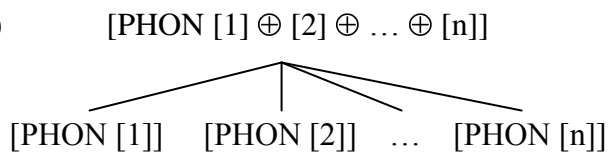
(21) In how many seconds flat did Robin find a chair, sit down and whip off her logging boots ___?

See Borsley (2009).

More machinery – order domains

In much work in HPSG the phonology of a phrase is the concatenation of the phonology of its daughters, as in (22).

(22)



There are phenomena which suggest that this may be too simple.

Kathol (2000) proposes that the following have the same constituent but different order domains and that it is order domains which determine the phonology:

- (23) a. [A man wearing a balaclava] came in
 b. [A man] came in [wearing a balaclava].

These have the following order schematic analyses:

(24) a.

$$\left[\begin{array}{l} \text{SYNSEMS} \\ \text{DTRS} \langle [a \text{ man wearing a balaclava}], [came \text{ in}] \rangle \\ \text{DOM} \langle [a \text{ man wearing a balaclava}], [came \text{ in}] \rangle \end{array} \right]$$

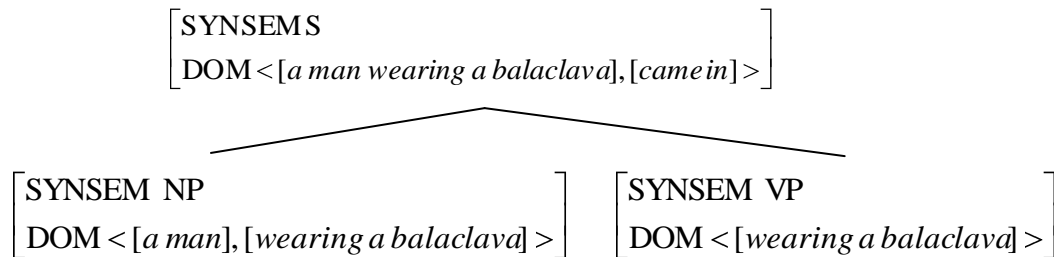
b.

$$\left[\begin{array}{l} \text{SYNSEM S} \\ \text{DTRS} \langle [a \text{ man wearing a balaclava}], [came \text{ in}] \rangle \\ \text{DOM} \langle [a \text{ man}], [came \text{ in}], [wearing a balaclava] \rangle \end{array} \right]$$

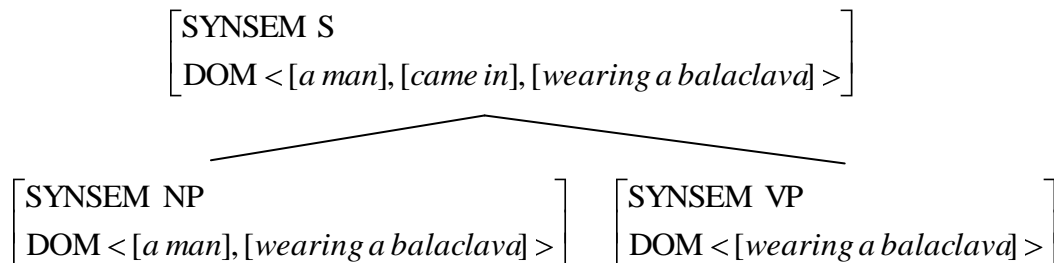
In (24a) there is a one-to-one correspondence between daughters and domain elements but in (24b) there are more domain elements than daughters.

The following are slightly fuller analyses using the standard tree format to represent constituent structure:

(25) a.



b.

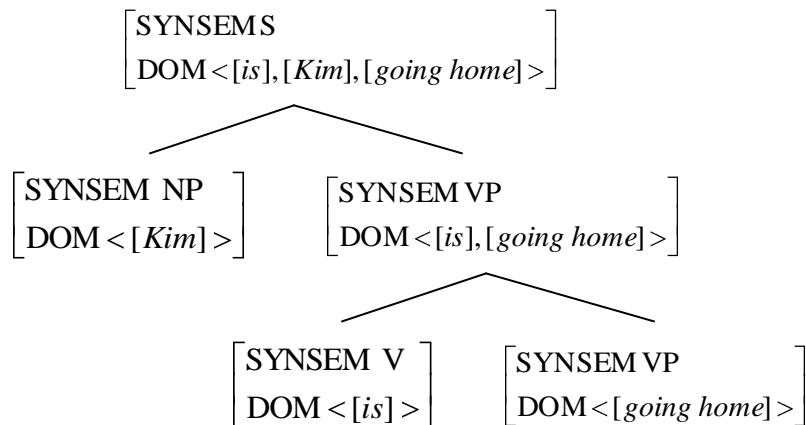


This framework provides a further possible analysis for auxiliary-initial clauses, in which they involve mismatch between domain elements and daughters.

(26)

$$\left[\begin{array}{l} \text{SYNSEMS} \\ \text{DTRS} \langle [Kim], [is \text{ going home}] \rangle \\ \text{DOM} \langle [is], [Kim], [going \text{ home}] \rangle \end{array} \right]$$

(27)



Kathol proposes an analysis like this for verb-initial clauses in German.

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