

# **An HPSG Account of Depictive Secondary Predicates and Free Adjuncts: A Problem for the Adjuncts-as-Complements Approach**

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**Lee, Hyeyeon. 2014. An HPSG Account of Depictive Secondary Predicates and Free Adjuncts: A Problem for the Adjuncts-as-Complements Approach. *SNU Working Papers in English Linguistics and Language* 12, 52-69.** English depictive secondary predicates and free adjuncts share many essential properties in that they are both participant-oriented modifiers. However, they exhibit several differences when scope of negation, sentential position, and choice of the subject are concerned. The main argument of this paper is that treating both depictives and free adjuncts as complements, as in the Adjuncts-as-Complements approach, does not adequately account for the differences between depictives and free adjuncts. I propose that depictives are like typical postverbal adverbials that project in a head-complement structure, but that free adjuncts attach to a higher projection (VP). This difference accounts for the scope differences. The analysis of the choice of the subject follows Müller's (2004, 2008) proposal, although I assume a different structure in that depictives are complements. (Seoul National University)

**Keywords:** HPSG, depictive secondary predicate, free adjunct, adjunct, adverbial, X-ARG, Adjuncts-as-Complements

## **1. Introduction**

This paper deals with English depictive secondary predicates and free adjuncts. Depictive secondary predicates specify a property of a participant of the event introduced by the verb, which holds during the event. Typical examples are given in (1).

- (1) a. Mary ate the meat raw.
- b. George left the room drunk.

It is difficult to distinguish free adjuncts from depictives, but the most

readily distinguishable property of free adjuncts is that they are prosodically detached from the main clause. This prosodic break is indicated in writing by a comma, as in examples in (2).

- (2) a. Walking down the street, I met a beautiful woman.  
 b. George left the room, drunk.

Moreover, English free adjuncts have various types of adverbial roles in the semantic interpretation (Yoo 2010).

Albeit these differences, English depictive secondary predicates and free adjuncts share an essential property. They are both predicative modifiers. This means that unlike other adverbials which only form a single adverbial relation with the main verb, depictive secondary predicates and free adjuncts form an additional predicational relationship with a participant of the main verb. This predication relation is explained by having their own subjects be coindexed with an argument of the modified verb. However, they differ in many other aspects such as sentence position, scope of negation, and choice of external argument.

Depictive secondary predicates and free adjuncts are both traditionally treated as adjuncts. Therefore, this paper ultimately relates to the treatment of adjuncts. The analysis of adjuncts in the HPSG framework has changed over the years. One of the most recent accounts is Bouma, Malouf, and Sag's (2001) [BMS] Adjuncts-as-Complements approach. The main argument of this paper is that treating both depictives and free adjuncts as complements, as in the Adjuncts-as-Complements approach, does not adequately account for the differences between depictives and free adjuncts. I propose that depictives are like typical postverbal adverbials that project in a head-complement structure, but that free adjuncts attach to a higher projection (VP). This difference accounts for the scope differences. The analysis of the choice of the subject follows Müller's (2004, 2008) proposal, although I assume a different structure

in that depictives are complements.

In Section 2, I outline a previous study on depictive secondary predicates in the HPSG framework (Müller 2004; Müller 2008) and the Adjuncts-as-Complements approach of Bouma, Malouf, and Sag (2001). In Section 3, I explain why depictives and free adjuncts are both defined as complements (sisters) of the verb in the Adjuncts-as-Complements approach and outline the problems of this treatment. In Section 4, I propose my own analysis of English depictives and free adjuncts. My analysis differs from Müller (2008) in that English depictives are sisters of the verb, and are thus sensitive to the SUBCAT list of the projection they attach to. Also, I propose that free adjuncts structurally differ from depictives because they attach to a higher projection, VP. This alternative analysis solves the problems posed in Section 3.

## **2. Previous Studies and Theoretical Background**

### **2.1 Bouma, Malouf and Sag (2001)**

Bouma, Malouf and Sag (2001) introduced a unified HPSG analysis of complement, adjunct, and subject extraction. Here, BMS argue that English post-verbal adjuncts should be treated on par with complements in that they are dependents selected by the verb. In this analysis, an intermediate level of representation, DEPENDENTS (DEPS), is introduced in addition to ARGUMENT-STRUCTURE (ARG-ST) and valence features. DEPS is a kind of extended argument structure, and is crucial to the traceless analysis of extraction.

DEPS specifies the selected arguments plus an underspecified list of adverbial *synsems*. This relation is introduced by the Argument Structure Extension constraint in (3). This allows any number of *adverbials* to appear on a verb's DEPS list in addition to the arguments.

The MOD | HEAD value of the adverbial is unified with the HEAD

value of the verb on whose DEPS list appears the adverbial. The adverbial's MOD | KEY value is identified with the KEY relation introduced by the verb.

- (3) Argument Structure Extension (Bouma, Malouf and Sag, 2001, p.42)

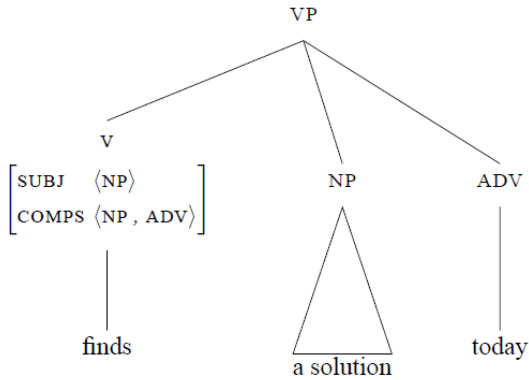
$$verb \Rightarrow \left[ \begin{array}{ll} \text{HEAD} & \boxed{3} \\ \text{DEPS} & \boxed{1} \oplus \text{list} \left( \left[ \text{MOD} \left[ \begin{array}{ll} \text{HEAD} & \boxed{3} \\ \text{KEY} & \boxed{2} \end{array} \right] \right] \right) \\ \text{ARG - ST} & \boxed{1} \\ \text{CONT | KEY} & \boxed{2} \end{array} \right]$$

An example is outlined in (4) and (5).

- (4)

$$\left[ \begin{array}{ll} \textit{trans} \ \& \ 3sg & \\ \text{I - FORM} & \textit{finds} \\ \text{HEAD} & \boxed{4}V[\textit{fin}] \\ \text{SUBJ} & < \boxed{1}NP[3sg] > \\ \text{COMPS} & \left\langle \boxed{2}NP, \boxed{3} \left[ \text{MOD} \left[ \begin{array}{ll} \text{HEAD} & \boxed{4} \\ \text{KEY} & \boxed{5} \end{array} \right] \right] \right\rangle \\ \text{DEPS} & < \boxed{1}, \boxed{2}, \boxed{3} > \\ \text{ARG - ST} & < \boxed{1}, \boxed{2} > \\ \text{CONT | KEY} & \boxed{5} \end{array} \right]$$

(5)

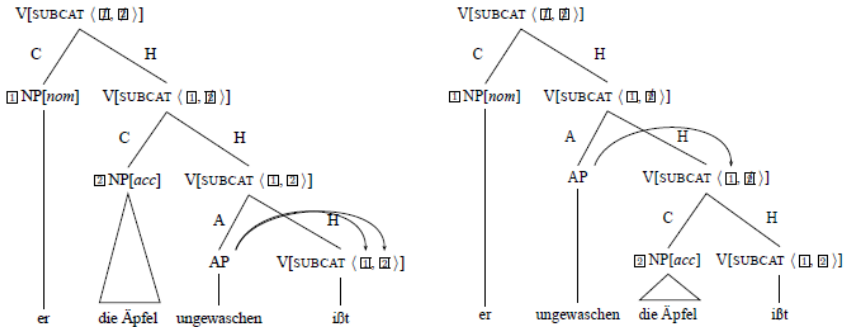


## 2.2 Müller (2004, 2008)

Müller (2004, 2008) analyzed depictive secondary predicates in German. He suggested a coindexing analysis of depictives. Here, the subject of the depictive predicate is coindexed with an unrealized element of the SUBCAT list of the verbal head. In this analysis, adjuncts attach to complete verbal projections (in German and English.) The structures for the examples in (6) are given in (7).

- (6) a. weil [er die Äpfel [ungewaschen ißt]].  
 because he the apples unwashed eats  
 ‘because he eats the apples unwashed.’  
 (He is unwashed or the apples are unwashed.)
- b. weil [er [ungewaschen [die Äpfel ißt]].  
 because he unwashed the apples eats  
 ‘because he eats the apples unwashed.’  
 (He is unwashed.)

(7) Figure 1 (from Müller 2008: 13)



In (6a), the depictive *ungewaschen* combines with the verb *ißt* whose SUBCAT list contains both the subject and the object. In (6b), the depictive combines with [*die Äpfel ißt*] whose SUBCAT list only contains the unrealized subject. Therefore, in (1a), both the subject and the object are possible antecedents for *ungewaschen*, while in (1b), only the subject is.

English, however, differs from German in that realized elements can be antecedents as well.

- (8) a. John <sub>i</sub> [[<sub>VP</sub> ate the apples<sub>i</sub>] unwashed<sub>i</sub>].  
 b. You can't <sub>i</sub> [[<sub>VP</sub> give them<sub>i</sub> injections] unconscious<sub>i</sub>].

For example, in (8), realized elements (*the apples* and *them*) can be antecedents as well.

### 3. A Problem with the Adjunct-as-Complements Approach

#### 3.1 Depictives and Free Adjuncts as ‘Adverbials’

In BMS, the list of adverbials is included in the DEPS list. A *synsem* is an *adverbial* “if its MOD feature is unifiable with the *synsem* value of

the head it modifies (i.e. the item on whose COMPS list it appears)” (Bouma, Malouf, and Sag 2001: 11). In this respect, depictives and free adjuncts both fall under BMS’s definition of adverbials.<sup>1</sup>

As a result, depictives and free adjuncts are both licensed in head-complement structures, as sisters of the head. For example, the verb *ate* in both *He ate the apples unwashed* and *He ate the apples, unwashed* would have the following lexical specification.

(9)

<i>trans</i> & 3 <i>sg</i>	<i>ate</i>
I – FORM	
HEAD	[4]V[ <i>fin</i> ]
SUBJ	< [1]NP[3 <i>sg</i> ] >
COMPS	$\left\langle [2]NP, [3] \left[ \text{MOD} \left[ \begin{array}{l} \text{HEAD} [4] \\ \text{KEY} [5] \end{array} \right] \right] \right\rangle$
DEPS	< [1], [2], [3] >
ARG – ST	< [1], [2] >
CONT   KEY	[5]

This licences the same head-complement structures for depictives and free adjuncts as in (10) and (11).

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<sup>1</sup> Free adjuncts modify the KEY value of the head whether or not it modifies the VP or the S because the KEY value is passed up from the head of a phrase to the mother.





It has been noted by Schultze-Berndt and Himmelmann (2004) that depictives and free adjuncts behave differently when the scope of negation is concerned.

- (12) a. John didn't leave outraged.  
b. **not(outraged(leave(j)))**

- (13) a. John didn't leave, outraged.  
b. **outraged<sub>j</sub>(not(leave(j)))**

(12a) and (13a) have the readings in (12b) and (13b), respectively. The difference between (12a) and (13a) is in that in (12a), *outraged* is within the scope of negation, while in (13a), it is not.

In BMS's theory, adjunct scope is determined by the linear order of adjuncts (Bouma, Malouf, and Sag 1998; Sag 2005). For example, *Kim apparently almost succeeded* only has the reading **apparently(almost(succeeded(k)))**. The scope interactions of postverbal adjuncts are in the opposite order. Therefore, *Robin reboots the Mac [frequently] [intentionally]* only has the reading **intnl(freq(reboot..))**. This is ensured by the Adverb Addition Schema (Sag 2005). Here, when two adverbials follow the verb, the first adverbial's LTOP forms a  $\leq$  relation with the LTOP of the second adverbial's MOD value. As a result, subsequent scopal adverbials always outscope prior adverbials, under the condition that all such adverbials scope over the verb's predication.

The scope interactions between preverbal adjuncts and postverbal adjuncts are not discussed in his paper. Here, I give a brief analysis of the scope interactions between *not* and postverbal adverbials. When the postverbal adverbial is a scopal adverb, the scope relations are ambiguous. For example, in (14), (14a) can have the meaning in (14b), implying that John's going to school was not intentional. It can also be

interpreted as in (14c), meaning that John's not going to school was an intentional act.

- (14) a. John did not go to school intentionally.  
 b. **not(intnl(gotoschool(j)))**  
 c. **intnl(not(gotoschool(j)))**

When the postverbal adverbial is nonscopal, like *today*, *not* outscopes the postverbal adverb. Therefore, (15a) is interpreted as in (15b).

- (15) a. John did not go to school today.  
 b. **not(today(gotoschool(j)))**

(16) shows that the scope interaction between *not* and a depictive predicate (*naked*) parallels that of the relationship between *not* and *today*, a typical nonscopal adverb.

- (16) a. John did not go to school naked  
 b. **not(naked<sub>j</sub>(gotoschool(j)))**

In (17), however, *naked* scopes over the rest of the sentence.

- (17) a. John did not go to school, naked.  
 b. **naked<sub>j</sub>(not(gotoschool(j)))**

It is difficult to account for why the scope difference arises if we assume parallel structures for depictives and free adjuncts, as in (10) and (11).

### 3.2.2 Sentential Position

Depictives are, without doubt, postverbal adverbials. On the other hand, there is an obstacle in treating free adjuncts as postverbal adverbials, and therefore as complements. Although depictive secondary predicates usually appear after the main predicate, free adjuncts can appear at the initial position of the sentence, as in (18).

- (18) a. **Unable to meet his eyes**, Kate looks down at her hands... (Stump 1985: 4)  
b. **A center for shoe factories and breweries early in this century**, it was industrialized at a time when the cities west of it were still tied to the land. (Stump 1985: 4)  
c. **Standing on a chair**, John can touch the ceiling. (Stump 1985:41)

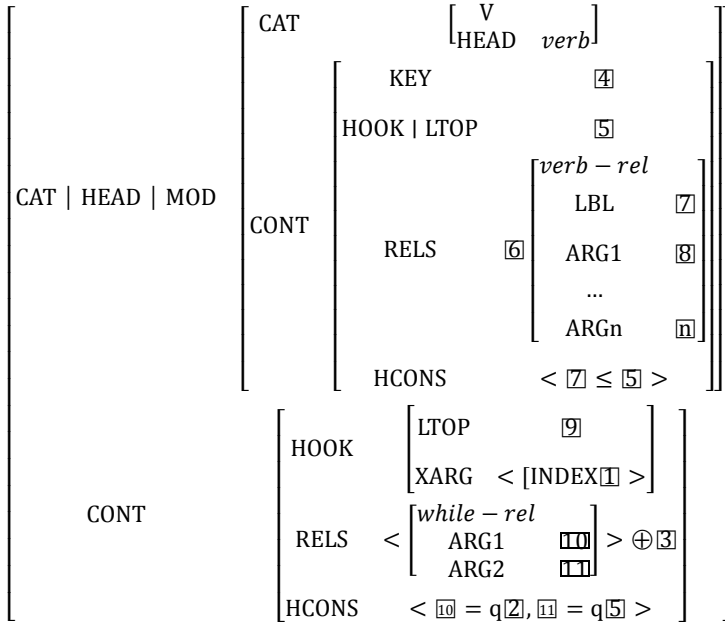
However, free adjuncts are not preverbal modifiers, either. Preverbal modifiers cannot be extracted, and thus cannot occur at the sentence-initial position, as in (19b) and (20b).

- (19) a. I think Kim almost found the solution. (Bouma, Malouf, and Sag 2001: 43)  
b. \*Almost, I think Kim \_ found the solution. (Bouma, Malouf and Sag 2001: 48)
- (20) a. Kim claimed that Sandy never sang for her. (Bouma, Malouf, and Sag 2001: 43)  
b. \*Never, Kim claimed that Sandy \_ sang for her. (Bouma, Malouf and Sag 2001: 48)

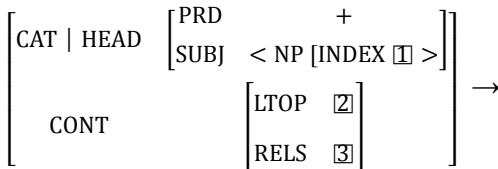
On the other hand, free adjuncts frequently appear at the sentence-initial position, and are therefore not preverbal modifiers. Thus, it seems that free adjuncts differ in sentential position from both typical postverbal adverbials and preverbal adverbials. This implies that we

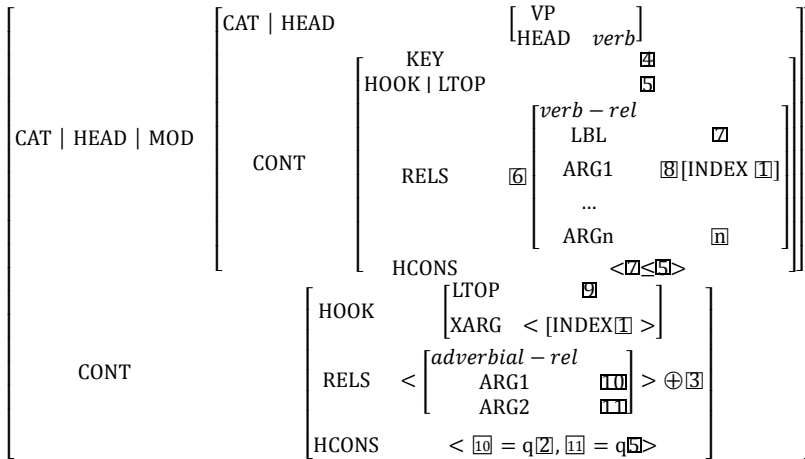


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(23)



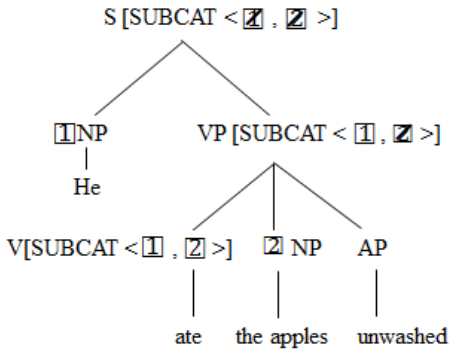


There are several differences to note between (22) and (23). First, the category of the head of depictives is an adjective, a preposition, or a present participle (as in *singing* in *He left the room singing*.) On the other hand, the category of the head of free adjuncts is underspecified, as it can be a present participle, a past participle, an infinitive, an NP, a PP, an A/AP, or and Adv/AdvP (Kortmann, 1991). Also, depictives and free adjuncts modify different projections. Depictives modify V, while free adjuncts modify VPs. This difference will be further explained in the next section. Another difference to note is the INDEX of the XARG. XARG picks out the index of the subject argument within a given phrase (Copestake et al., 2005). The XARG of depictives is any argument within the phrase, whereas the XARG of free adjuncts is the subject argument of the modified verb.

### 4.2 Structural Differences

In this analysis, I treat English depictives together with other typical postverbal adverbials in English. I assume that depictives combine with verbs in a head-complement structure, adopting BMS’s Adjuncts-as-Complements approach.

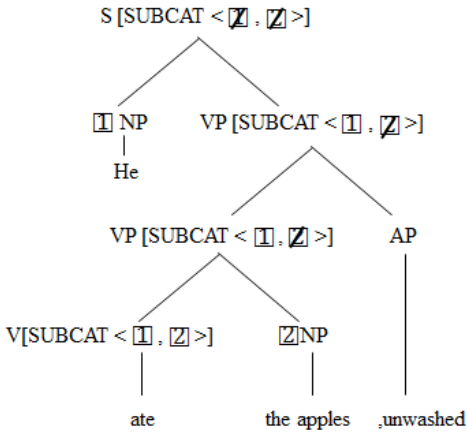
(24)



Contrary to Müller (2008), I argue that English depictive predicates are also sensitive to the SUBCAT list of the projection they combine with. That is, they are no different from German depictives. Therefore, in (24), the subject of *unwashed* can be any one of the two members of the SUBCAT list of the verb it attaches to.

On the other hand, English free adjuncts attach to a higher projection, the VP. In other words, free adjuncts are not sisters of the verbal head, unlike depictives. (25) is a simplified tree structure for the sentence *He ate the apples, unwashed*.

(25)



In (25), the free adjunct *unwashed* attaches to the VP. Only the subject is included in the SUBCAT list of this VP. Thus, the antecedent for *unwashed* can only be the subject *he*, which is an unrealized element. Furthermore, the structure in (25) accounts for the scope facts in (17). Since free adjuncts are higher up in the tree than other complements or adverbials, it is not surprising that they outscope the entire preceding (or following) VP.

## 5. Concluding Remarks

In this paper, I have proposed an analysis of English depictive secondary predicates and free adjuncts. The formulation of dichotomous structures for English depictive secondary predicates and free adjuncts is motivated by the fact that some clausal adverbials like free adjuncts (, absolutes, and perhaps many more, although not discussed in this paper) do not behave like other typical postverbal adverbials, which are treated as complements.



This is, however, not to argue entirely against the Adjuncts-as-Complements approach. The implication of this paper is that not all postverbal modifiers can be treated as complements. Further research should be done to discover if there exist other types of modifiers that pattern with free adjuncts outlined in this paper. Also, the reason why free adjuncts frequently appear at the sentence-initial position is still an unsolved issue.

Also, I have proposed that English depictives and English free adjuncts all refer to the SUBCAT list of the projection they attach to, not unlike German depictives. This suggests that the reference to the SUBCAT list for the selection of the index of XARG may possibly be extended to wider range of phenomena in more languages.

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