Long and Short Adjunct Fronting in HPSG

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1   Introduction

The purpose of this paper is to consider the proper treatment of short- and long-fronted adjuncts, (a) and (b) in (1), respectively, within the framework of HPSG.

(1)   a.   *On Saturday*, will Dana go to Spain?
      b.   *Yesterday* I believe Kim left.

We will first look at some data, and then show that previous analyses of adjunct fronting within HPSG (Pollard and Sag 1994; Bouma et al 2001; Levine 2003) cannot give a satisfactory analysis of the data.   We will then propose an alternative analysis which is based on the notion of 'incidentality' (Bonami and Godard 2003).

2   The data

Fronted adjuncts can participate in the 'topic-comment' or 'focus-presupposition' organisation of information in a sentence, in the same way as fronted noun phrases.   In (2), the short-fronted adjuncts *last year* and *in those days* have narrow focus, and hence they have heavy stress.

(2)   a.   LAST year we were living in St. Louis.
      b.   In THOSE days we drove a nice car.
                          (Culicover 1991: 34)

In (3), the adjuncts *on Monday* and *on Tuesday* function as a topic or a 'link'

(Birner and Ward 1998) in that the fronted adjunct stands 'in some salient and relevant relationship to elements that have been evoked' in the prior discourse (Ward et al 2002: 1368).

(3)   This is John's schedule.   *On Monday*, he plays a match in London and meets the press.   *On Tuesday*, he plays a match in Sheffield…   (Shaer 2004a: 325)

Long fronted adjuncts have the same properties.   Let us consider (4).

(4)   a.   * Tomorrow I promised that he would be there.
      b.   Around midnight I promised that he would be there.   (Ross 1986: 179)

With normal intonation, (4a) is ungrammatical and (4b) is unambiguous with the adverbial *around midnight* construed only with the matrix clause. However, Ross (1986: 180–181) states that '[i]f the preposed adverbials bear heavy stress, […,] [(4a)] becomes grammatical, and [(4b)] becomes ambiguous, for the adverbial can modify the lower verb as well as the main verb'.   If Ross' observation is correct, the long fronted adjuncts can carry narrow focus.   In (5), the adverbial *on Monday* functions as a topic in the same way as (3).

(5)   We've decided our schedule for the next week.   *On Monday* we have arranged that we have dinner in a restaurant in town.

However, short fronted adjuncts do not necessarily have to be a topic or a narrow focus.   First, let us consider (6).

(6) a.   *Carefully* he lit a pipe.

    b.   A man came in.   *With a hammer* he broke the window.

<div align="right">(Frey 2005: 107)</div>

The fronted adjuncts *carefully* and *with a hammer* in (6a,b) do not stand in any relationship to elements evoked in the prior discourse.   Second, short fronted adjuncts can occur in a sentence focus context.

(7) A: What happened?

    B: *Five minutes ago*, my car broke down.

A sentence with sentence focus can be an answer to *What happened?*   The fact that a sentence with a short-fronted adjunct can be an answer to this question indicates that such an adjunct does not have a topic nor a narrow focus interpretation.

On the other hand, long fronted adjuncts do not occur in such contexts as (6) and (7).

(8) a.   A man came in.   *With a hammer* he broke the window.

    b.   A man came in.   *#With a hammer* I think he broke the window.

<div align="right">(Frey 2005: 107)</div>

(9) A: What happened?

    B: *#With a hammer* I think he broke the window.

The data in (8) and (9) suggest that long-fronted adjuncts cannot be part of a broad focus domain, as opposed to short-fronted adjuncts.

The above observation suggests that there are three types for short-fronted adjuncts, but two types for long-fronted adjuncts.   The table in (10) summarises the differences and the commonalities of these types of adjuncts.

(10)

	Topic	Narrow focus	Part of broad focus
Short-fronted adjuncts	√	√	√
Long-fronted adjuncts	√	√	╱

Thus, short-fronted adjuncts can be a topic, a narrow focus and a part of a broad focus domain, but long-fronted adjuncts can just be a topic and a narrow focus.   A satisfactory analysis of adjunct fronting should be able to capture these facts.

3   Previous HPSG Analyses

In this section we consider how earlier HPSG analyses have treated fronted adjuncts.   In Pollard and Sag's (1994) analysis, examples with a short fronted adjunct like (1a) are a combination of a sentential modifier and an unslashed S, as specified by the Head-Adjunct Schema.

(11)   Head-Adjunct Schema:
XP   →   Y''[MOD[3]],   [3]XP

<div align="right">(Pollard and Sag 1994: 384)</div>

On the other hand, the long-fronted adjunct as in (1b) is the filler of an extraction construction whose lowest verb is slashed through the Adjunct Extraction Lexical Rule.

(12)   Adjunct Extraction Lexical Rule

$$\begin{bmatrix} \text{COMPS} & \langle ..., [2]V''[\text{SUBJ } \langle \, \rangle],... \rangle \\ \text{INHER}\,|\,\text{SLASH} & \{\, \} \end{bmatrix}$$
$$\Downarrow$$
$$\begin{bmatrix} \text{COMPS} & \langle ..., [2], ... \rangle \\ \text{INHER}\,|\,\text{SLASH} & \{Y''[\text{MOD } [2]]{:}[3]\} \\ \text{CONTENT}\,|\,\text{SOA-ARG} & [3] \end{bmatrix}$$

<div align="right">(Pollard and Sag 1994: 387)</div>

Thus, Pollard and Sag's (1994) approach

treats short and long fronting of adjuncts separately. It would therefore be not difficult to capture the difference between these types of adjuncts observed above. However, their non-unified treatment makes it difficult to accommodate the common properties.

In the version of HPSG developed by Bouma et al (2001: 385) long and short fronting of adjuncts are treated in parallel, in terms of combination of the filler and the slashed construction, in the same way as fronting of noun phrases.[1,2] This unified treatment would make it easy to capture the common properties of the two types of adjunct fronting. However, it faces a difficulty in capturing the distinction between the two.

Let us turn to Levine's (2003) analysis of adjunct fronting. He assumes that adverbials in adjoined positions can extract with leaving a trace behind. With this assumption, it would be possible to argue that topicalised and narrow-focused adverbials are extracted, and another type which can participate in a broad focus domain is adjoined to the top S node. In the former case, the SLASH feature can be identified with a filler either within the clause or higher in the tree. Thus, it might appear that arguments along these lines would be able to capture the facts summarised in (10). However, this approach faces a problem.

(13)   *I was wondering [$_S$ during the holidays [$_S$ for what kind of jobs [$_S$ you would go into the office.]]]

There is nothing to prevent a filler from combining with an embedded *wh*-question. One might introduce the head feature INDEPENDENT-CLAUSE (IC) (Ginzburg and Sag 2000: 45). The [IC +] specification for the sister of the adverbial could exclude (13) since embedded *wh*-questions are [IC −]. However, this gives rise to another problem.

(14)   I was wondering [$_{S[IC\,-]}$ for what kind of jobs [$_{S[IC\,-]}$ during the holidays [$_{S[IC\,-]}$ you would go into the office.]]]

In (14) the preposed adjunct occurs in the clause with the specification [IC −]. This means that the S that the adjunct modifies is also [IC −] because the Head Feature Principle ensures that the HEAD value of the mother is structure-shared with the head value of the head daughter. This example is then predicted to be ungrammatical. However, it is grammatical.

Thus, Pollard and Sag's (1994) and Bouma et al's (2001) analyses of adjunct fronting cannot handle the facts summarised in (10), and an analysis along the lines of Levine (2003) cannot deal with the ordering in (13) and (14).[3]

4   Analysis

In this section we will provide an alternative analysis of fronted adjuncts.

4.1   Incidental adjuncts

This subsection will introduce the notion of 'incidentality' (Bonami and Godard 2003; Bonami, Godard and Kempers-Manhe

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[1]   See also Sag (2005).

[2]   Bouma et al (2001) and Sag (2005) assumes that the ARG-ST of the lowest verb contains an adverbial element which is slashed.

[3]   (13) and (14) are problematic for Pollard and Sag (1994) and Bouma et al (2001) as well.

2004).[4] This is concerned with a prosodic property. Adverbials are incidental when they have a special prosody which sets them apart from the rest of the sentence. Preposed adjuncts clearly have incidentality in this respect since they have 'comma intonation'. Moreover, incidentals have some flexibility with respect to positioning. For example, Bonami and Godard (2003) state that a French sentence (15) can contain incidentals in the positions indicated with dots.

(15) • Paul • a • envoyé • ses
     Paul   has sent   his
     voeux • à ce vieil ami •.
     wishes   to this old friend
     'Paul sent his best wishes to this old friend of his.'

                    (Bonami and Godard 2003: 2)

This is also characteristic of adjuncts which we are concerned with. (16) shows that the adjunct *at five* can occur in various positions. It has comma intonation wherever it occurs.

(16) a. *At five*, John finally signed the form.
      b. John finally, *at five*, signed the form.
      c. John finally signed the form, *at five*.
                    (Adapted from Shaer 2004a: 314)

It will thus be reasonable to assume that they are manifestations of the same incidental adverbial.[5]

   We assume that incidentals have the following description.

(17) $\begin{bmatrix} \text{PHON} & incidental\text{-}phon \\ \text{HEAD} & [\text{INCID} +] \\ \text{CONT} & [1] \\ \text{INFO-STRUC} & \begin{bmatrix} \text{LINK} & [2] \\ \text{FOCUS} & [3] \end{bmatrix} \end{bmatrix}$,

where $[1] \neq [2]$ and $[1] \neq [3]$

The PHON value specifies that they have incidental phonology (comma intonation), and [INCID +] specifies that they are incidentals (Bonami and Godard 2003: 10). Incidentals carry neither a narrow focus interpretation nor a topic interpretation.

     We further assume that incidentals are ordinary adjuncts in constituent structure (Bonami and Godard 2003: 11; See (11)). To ensure that incidental adverbials can occur in various positions, as in (16), let us assume, along with Bonami and Godard (2003: 12), that such modifiers are inserted into the order domain of the modified constituent.[6] For example, constituent structure and order domains of (16b) will be given the following representation.[7]

(18) (Schematic) structure for (16b)
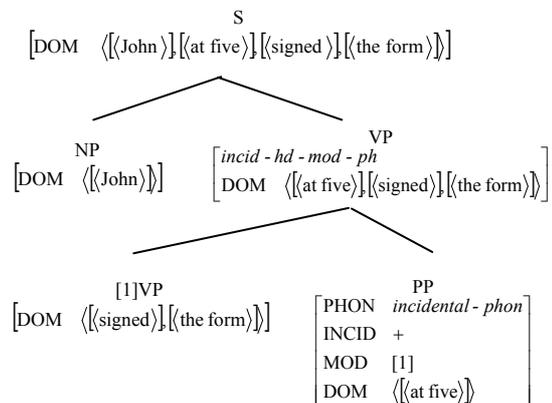
The adjunct *at five* is a modifier of the VP *signed the form* (Levine 2003), and

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[4] Bonami and Godard (2003) and Bonami, Godard and Kempers-Manhe (2004) distinguish incidentality from 'parentheticality'. The latter term denotes the semantic/pragmatic property. Adverbials have a parenthetical interpretation when their semantic/pragmatic contribution is not integrated into the proposition which the sentence asserts.
[5] Shaer (2003a: 247, 2003b: 458–459, 2004a: 314, 2004b: 385) call such adverbials 'orphans' (cf. McCawley 1982, Espinal 1991; Haegeman 1988).

[6] See Reape (1994), Kathol (1995; 2000), etc for details of the versions of HPSG in which linear order is determined in a level of 'order domains', independently from constituent structure.
[7] The elements of the daughter's order domain may be compacted to form a single element in the order domain of the mother or they may just become elements in the mother's order domain.

therefore they are sisters in constituent structure. In order domains, *at five* is inserted into the domain of the head VP. By sequence-union (shuffle), various ordering possibilities, as in (16), are permitted. Thus, in the present approach, short-fronted adjuncts are incidentals which are in the initial position of a sentential order domain.

4.2 Extracted adjuncts

Let us move on to fronted adjuncts with a topic or a narrow focus interpretation. First, we assume, along with Levin (2003), that adverbials in adjoined positions can extract. In this case, fronted adjuncts are fillers combined with a slashed clause (Pollard and Sag 1994; see also Hukari and Levine 1995). Second, head-filler structures are constrained by the following constraint, along with the usual constraints imposed on these types of structures (e.g., Head-Filler Rule; Pollard and Sag 1994: 164).[8]

(19)

$$hd\text{-}filler\text{-}ph \; \rightarrow \; \left[\text{NHD-DTRS} \left[\begin{array}{l} \text{INFO-STRUC} \left[\begin{array}{ll} \text{LINK} & [2] \\ \text{FOCUS} & [3] \end{array} \right] \\ \text{CONT} \quad [1] \end{array} \right] \right]$$

where [1] = [2] or [1] = [3]

Constraint (19) requires that the non-head daughter of head-filler phrases must be interpreted either as a narrow focus or a link (i.e., topic).

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[8] Head-Filler Rule:
   X → [LOCAL [1]],
        S[*fin*, INHER|SLASH {[1],…},
          TO-BIND|SLASH {[1]}]
                    (Pollard and Sag 1994: 164)

5   An account of the facts

In this section we will consider how the above analysis accommodates the data problematic for the earlier HPSG analyses of fronted adjuncts.

In our analysis, the fronted adjuncts in (2) and (4) are fillers, and therefore they can bear a narrow focus, due to constraint (19).

(20)   LAST year we were living in St. Louis.
                                    [= (2a)]

(21)   Around midnight I promised that he would be there.   [= (4b)]

The fronted adjuncts in (3) and (5) are also fillers, so (19) allows them to be a topic.

(22)   This is John's schedule. *On Monday*, he plays a match in London and meets the press. *On Tuesday*, he plays a match in Sheffield…   [= (3)]

(23)   We've decided our schedule for the next week. *On Monday* we have arranged that we'll have dinner in a restaurant in town.   [= (5)]

Constraint (19) does not allow the fillers to be part of a broad focus domain. This accounts for the unacceptability of (8b) and (9).

(24)   A man came in. #*With a hammer* I think he broke the window.   [= (8b)]

(25)   A: What happened?
        B: # *With a hammer* I think he broke the window.   [= (9)]

Now let us turn to short-fronted adjuncts. In our analysis, they are incidentals, and inserted into the order domain of their head. Their initial positioning is therefore just one of alternative linearization patterns. Incidentals are described as something like (17), which indicates that they are neither a

narrow focus nor a topic. Therefore they are allowed to occur in a sentence focus context such as (6) and (7).

(26) A: What happened?
  B: *Five minutes ago*, my car broke down.   [= (7)]

Finally, let us consider how our analysis handles the data problematic for Levine (2003).

(27) *I was wondering [$_S$ during the holidays [$_S$ for what kind of jobs [$_S$ you would go into the office.]]]   [= (13)]

(28) I was wondering [$_{S[IC\ -]}$ for what kind of jobs [$_{S[IC\ -]}$ during the holidays [$_{S[IC\ -]}$ you would go into the office.]]] [= (14)]

The positioning of the fronted adjunct in (14) is one of the alternative patterns of linearization permitted by our order domain analysis. To exclude (13), we assume a constraint that that the *wh*-phrase is in the initial position in the order domain of embedded clauses.

6   Summary

In this paper, we first observed data of fronted adjuncts, and pointed out that short-fronted adjuncts can be a topic, a narrow focus, or a part of a broad focus domain, but long-fronted adjuncts can be just a topic and a narrow focus. We argued that topic and narrow-focus adjuncts are fillers and those adjuncts that can occur in a broad focus domain are incidentals. We saw that this analysis can give a satisfactory account of the data.

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