The Big Mess Construction

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Abstract

There is a construction in English, exemplified by *how long a bridge*, which is so irregular that it has been named the Big Mess Construction, see Berman (1974). This paper first sketches its main characteristics (section 1) and a treatment of the internal structure of the noun phrase which serves as a background for the analysis (section 2). It then presents three ways in which the Big Mess Construction can be analysed; two of them are lexicalist and are shown to be implausible; the third is constructivist and is argued to be superior (section 3). In a next step, the discussion is extended to two other types of constructions. The first concerns the English adnominal reflexives, as in *the children themselves*, and is shown to require a constructivist analysis which is similar but not identical to the one for the Big Mess Construction (section 4). The second concerns the combination of *such* and *what* with the indefinite article, as in *such a pleasure*. In spite of its obvious resemblance with the Big Mess Construction this combination does not require a constructivist analysis; instead, it fits the lexicalist mould of most of the rest of HPSG (section 5).

1   The Big Mess Construction

In English noun phrases the determiner canonically precedes the prenominal adjectives, both the lexical and the phrasal ones.

(1)   a.   a big house

   b.   a very big house

(2)   a.   * big a house

   b.   * very big a house

A notable exception are the adjectival phrases which are introduced by *as, so, too, how, this* and *that*. When they occur in a nominal which contains the indefinite article, they precede the determiner (Huddleston and Pullum, 2002, 435).

(3)   a.   It's so good a bargain I can't resist buying it.

   b.   How serious a problem is it?

(4)   a.   * It's a so good bargain I can't resist buying it.

   b.   * A how serious problem is it?

This construction, for which Berman (1974) coined the term Big Mess Construction, only ocurs in nominals with an indefinite article. It does not occur in nominals with another kind of determiner, as in (5a), nor in nominals without determiner, as in (5b).

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(5) a. * How serious some problem is it?

    b. * They are so good bargains I can't resist buying them.

A further complication is provided by the APs which are introduced by *more* or *less*. They can either occur in the canonical position or in the exceptional one (Huddleston and Pullum, 2002, 435).

(6) a. This is a more serious problem than the other.

    b. This is more serious a problem than the other.

Also here, the exceptional position is only possible in combination with the indefinite article.

What makes the Big Mess Construction interesting is not only its idiosyncracy and the descriptive challenges which it raises, but also the light which its treatment sheds on the issue of the trade-off between lexicalism and constructivism in formal grammar. To pave the way for the treatment I first present my analysis of the internal structure of the noun phrase (section 2). It deals with the canonical order, as exemplified by (1) and (6a). The exceptional order, as exemplified by (3) and (6b), is modeled in section 3.

2 The internal structure of the noun phrase

My treatment of the internal structure of the noun phrase is based on two assumptions. First, that the noun is the head of the noun phrase and, second, that the prenominal dependents are functors, in the sense of Allegranza (1998) and Van Eynde (1998). Since the first assumption is controversial, given the fact that many authors treat the determiner as the head of the noun phrase (cf. Abney (1987), Hudson (1990) and Netter (1994)), and since the second assumption may be unfamiliar, I start with a defense of the former and a succinct presentation of the latter.

2.1 The head of the noun phrase

To substantiate the claim that the noun is the head of the noun phrase adopt the commonly, though often tacitly, made assumption that a noun phrase shares its person, number, gender and case values with its head daughter. Of special relevance are, hence, the noun phrases in which the determiner has other values for these features than the noun, since they allow us to identify the head by simple observation. Here are some of such examples:

(7) My neighbors are/*am rich.

(8) a. What birds have/*has two wings and four legs?

    b. What comes/*come next?

(9) a. A good many pages are/*is lost forever.

b. A few pages are/*is still missing.

Given the form of the finite verb in (7) the subject NP must be plural, which implies that its head daughter can be the third person plural *neighbours*, but not the first person singular *my*. A similar remark applies to the interrogative determiner in (8a). Given the form of the finite verb, the subject NP in (8a) must be plural, which meshes well with the assumption that the plural *birds* is the head, but not with the alternative assumption that the interrogative *what* is the head, since *what* is by itself singular, as shown by (8b). Further evidence is provided by the quantifying determiners in (9). Also here, the form of the finite verb demonstrates that the subject NPs are plural, and while this is perfectly compatible with the assumption that the plural *pages* is the head, it is at odds with the alternative assumption that the head is the quantifying *a good many* and *a few*, since these are both singular, as demonstrated by their compatibility with the indefinite article. To provide an example which turns on the case distinction I switch to Dutch.

(10) Wiens paard heeft hij gestolen?
      whose horse has   he stolen?
      'Whose horse did he steal?'

The fronted NP *wiens paard* 'whose horse' is the object of *gestolen* 'stolen' and, hence, accusative. This is compatible with the assumption that the non-genitive *paard* 'horse' is the head, but not with the alternative assumption that the genitive *wiens* 'whose' is the head. For more arguments in favor of the NP-hypothesis and against the DP-hypothesis, see Van Eynde (2006).

2.2   The prenominal dependents

Turning now to the prenominal dependents the central assumption of the functor treatment is that specifiers and modifiers had better be treated along the same lines. The distinction between specifying determiners and modifiers goes back to Chomsky (1970) and is motivated a.o. by the fact that a head can take at most one specifier, whereas it can take any number of modifiers. Within the lexicalist HPSG framework this is reflected by the assumption that a noun lexically selects its specifier, but not its modifiers, see Pollard and Sag (1994) and Ginzburg and Sag (2000). The feature which models the selection of the specifier is a valence feature, called SPR, and its role in the analysis of the noun phrase is illustrated in (11).

(11)   N[SPR < >]
        ┌────┴────┐
      ⊡ Det   N[SPR <⊡>]
        │   ┌────┴────┐
        a   Adj   N[SPR <⊡>]
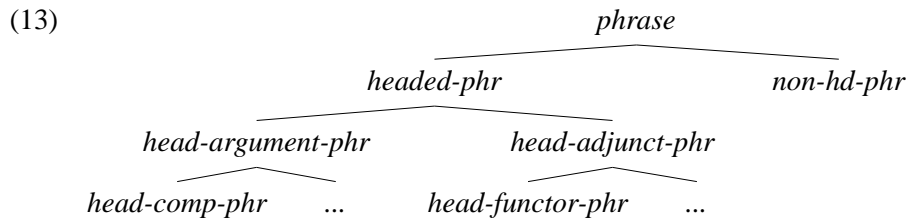   │   │
               long   bridge

The noun selects a determiner as its specifier, and as soon as the determiner is added, the SPR list of the nominal is made empty. The modifying adjective, by contrast, is not selected by the noun and its addition has no effect on the noun's SPR value.

A problem for this dichotomy between modifiers and specifiers is that it complicates the modeling of those properties which the determiners and the other prenominal dependents have in common. Notice, for instance, that in languages which mark number and gender by inflectional affixes, such as Italian, one finds the same morphological variation and the same constraints on agreement for the determiners and the adjectives.

(12) questa   bella   bambina
     this-SG.FEM beautiful-SG.FEM child-SG.FEM
     'this beautiful child'

The singular feminine determiner *questa* 'this' requires a singular feminine nominal in exactly the same way as the singular feminine adjective *bella* 'beautiful'. For these and other reasons Allegranza (1998) and Van Eynde (2003) have proposed a more uniform treatment of the adnominals, in which the specifiers and the modifiers are both treated as functors. Phrased in HPSG terminology, functors are nonhead daughters which select their head sister. To spell this out in formal terms I start from the following phrase type hierarchy, adapted from Ginzburg and Sag (2000).[1]

(13)
```
                                      phrase
                  ┌─────────────────────┴──────────────┐
             headed-phr                              non-hd-phr
        ┌─────────┴──────────┐
  head-argument-phr      head-adjunct-phr
     ┌────┴────┐           ┌────┴────┐
head-comp-phr   ...   head-functor-phr   ...
```

All headed phrases have a head daughter, and are constrained by the HEAD FEATURE PRINCIPLE. The head-adjunct phrases, of which the head-functor phrases are a subtype, also have an adjunct daughter.

(14) $\begin{bmatrix} headed\text{-}phr \\ \text{HEAD-DTR} \quad sign \end{bmatrix}$ $\begin{bmatrix} head\text{-}adjunct\text{-}phr \\ \text{ADJ-DTR} \quad sign \end{bmatrix}$

The main difference between head-argument phrases and head-adjunct phrases is that the head daughter selects its non-head sister(s) in the former, but not in the latter. The verb *bites*, for instance, selects an NP object and a third person singular subject, but it does not select a manner adverb or a locational adjunct. Similarly, the

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[1]The notion *adjunct* is understood in a broad sense, subsuming modifiers as well as specifiers and appositions. Some examples of the latter are given in section 3, see (30) and (31).

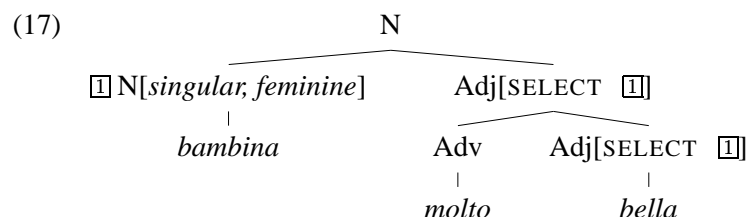noun *houses* does not select an adjective; nor does it select a determiner.[2] Instead, it is the functors which select their head sister. The determiner *every*, for instance, selects a singular count noun, while *few* selects a plural count noun. This is modeled by the feature SELECT. It takes an object of type *synsem* as its value,[3] which is shared with the SYNSEM value of the head sister, as stipulated in the SELECTOR PRINCIPLE.[4]

(15)
$$
\begin{bmatrix}
\textit{head-functor-phr} \\
\text{HEAD-DTR} \mid \text{SYNSEM} \quad \boxed{1}\ \textit{synsem} \\
\text{ADJ-DTR} \mid \text{SYNSEM} \mid \text{LOC} \mid \text{CAT} \mid \text{HEAD} \mid \text{SELECT} \quad \boxed{1}
\end{bmatrix}
$$

The reason why the SELECT feature is included in the HEAD value of the adjunct daughter is that the selectional properties of a phrasal functor are shared with the one of its head daughter. *Very few, a few* and *that few*, for instance, all require a plural count nominal, because *few* requires a plural count nominal.

(16)

```
                           N
         ┌─────────────────┴──────────────┐
   N[SELECT ☐1]                    ☐1 N[plural, count]
    ┌──────┴──────┐                        │
  Adv      N[SELECT ☐1]                  houses
   │              │
  very           few
```
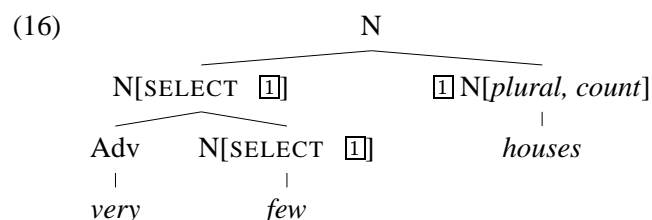
The Selector Principle can also be used to model the number and gender agreement in Italian noun phrases. The determiner *questa* 'this' and the adjective *bella* 'beautiful', for instance, select a singular feminine noun, as in (12). Moreover, *molto bella* 'very beautiful' requires a singular feminine nominal, just like *bella*.

(17)

```
                             N
         ┌───────────────────┴─────────────┐
   ☐1 N[singular, feminine]          Adj[SELECT ☐1]
            │                    ┌──────────┴──────────┐
         bambina              Adv          Adj[SELECT ☐1]
                               │                 │
                             molto             bella
```

In sum, the functors are adjuncts which lexically select their head sister. Since they subsume both the determiners and the other prenominal dependents (as well as a

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[2]This is a difference with the specifier treatment, in which the determiner is selected by the noun. Arguments against the lexical selection of specifiers are provided in Van Eynde (2006).

[3]Most signs which are used as functors can also be used in other ways. Adjectives, for instance, are functors in adnominal position, but in predicate position they are complements of copular verbs. In that case their SELECT value is *none*.
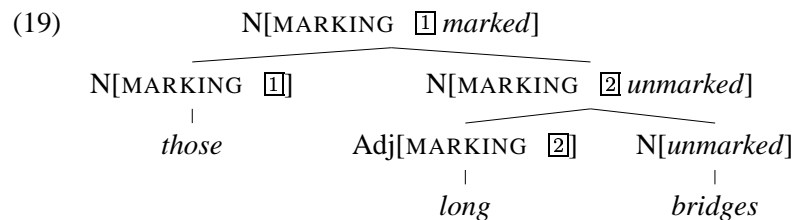
[4]For those who are familiar with Pollard and Sag (1994), this principle subsumes both the Spec Principle and the constraint that the MOD value of an adjunct is token-identical to the SYNSEM value of its head sister. The SELECT feature, hence, replaces and subsumes both SPEC and MOD. A similar neutralization is proposed in Soehn and Sailer (2003).

large variety of other types of adjuncts), this treatment straightforwardly deals with the properties which the prenominals have in common.

At the same time, a full treatment also requires the means to differentiate the determiners from the other prenominal dependents. We should, for instance, distinguish between *long bridges*, which can be preceded by another prenominal, and *the bridges*, which cannot be preceded by another determiner or adjective. To model this the functor treatment employs the MARKING feature. It is part of the CAT(EGORY) value of all signs and its value is shared between the mother and the adjunct daughter, as spelled out in the MARKING PRINCIPLE.

(18)
$$
\begin{bmatrix}
\textit{head-adjunct-phr} \\
\text{SYNSEM} \mid \text{LOC} \mid \text{CAT} \mid \text{MARKING} \quad \boxed{1}\, \textit{marking} \\
\text{ADJ-DTR} \mid \text{SYNSEM} \mid \text{LOC} \mid \text{CAT} \mid \text{MARKING} \quad \boxed{1}
\end{bmatrix}
$$

The MARKING feature was already used in Pollard and Sag (1994), where it plays a role in the treatment of the English complementizers (*that, if, for . . .*), but because of its limited range of application it got ignored in much of the subsequent HPSG literature. In the functor treatment of Allegranza (1998) and Van Eynde (2003), however, it plays a much more prominent role. Assuming that categories can be marked or unmarked, as in Pollard and Sag (1994), it is used to distinguish the nominals which are compatible with a specifier (the unmarked ones) from those which are not (the marked ones). The common nouns, for instance, are unmarked, and the addition of an adjectival modifier does not change this, since these modifiers are unmarked themselves, but the specifying determiners are marked and, therefore, change the MARKING value of the nominal.[5]

(19)

N[MARKING $\boxed{1}$ *marked*]

N[MARKING $\boxed{1}$]   N[MARKING $\boxed{2}$ *unmarked*]

those   Adj[MARKING $\boxed{2}$]   N[*unmarked*]
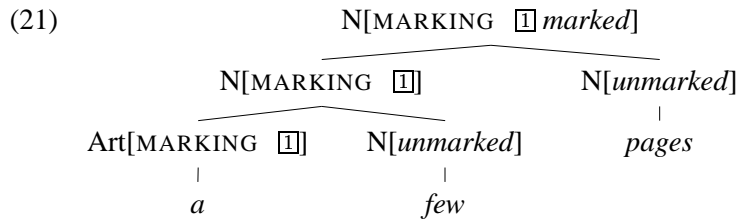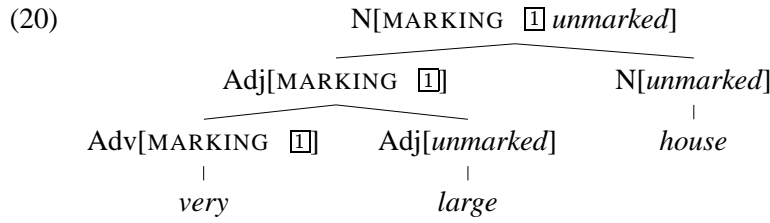
long   *bridges*

In combination with the assumption that the prenominals select an unmarked nominal as their head sister, this accounts for the ungrammaticality of *the those bridges* and *long those bridges*. The distinction between marked and unmarked nominals corresponds to the one between nominals with an empty and a non-empty SPR list, but this does not imply that the MARKING feature is just another name for the SPR feature. Some major differences are the following. First, the functor treatment does not assume that the nouns lexically select their determiner. Second, nominals without determiner are not treated as incomplete, but simply as unmarked. Third, the use of the MARKING feature makes it possible to make finer-grained

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[5]Nouns which do not take a determiner, such as the pronouns and most of the proper nouns, are inherently marked.
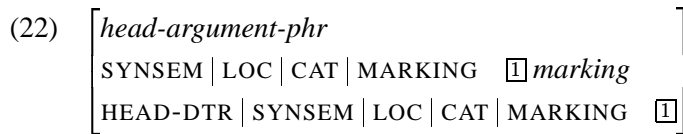
distinctions, to be captured by subtypes of resp. *marked* and *unmarked*. The latter, for instance, are differentiated into bare nominals and incomplete nominals in Van Eynde (2006) to distinguish those that can be used without determiner from those that cannot. Similarly, it is possible to distinguish between different types of marked nominals by introducing more specific subtypes of *marked*. This possibility will be exploited in the treatment of the Big Mess Construction in section 3.

Since a prenominal functor can be a phrase, which in turn contains a functor, the propagation of the MARKING value is iterative, as illustrated in the representations of *very large house* and *a few pages*.[6]

(20)
```
                    N[MARKING  1 unmarked]
          ┌──────────────────┴────────────┐
     Adj[MARKING  1]                  N[unmarked]
    ┌────────┴──────────┐                  │
Adv[MARKING  1]    Adj[unmarked]         house
      │                   │
     very               large
```

(21)
```
                    N[MARKING  1 marked]
          ┌──────────────────┴────────────┐
     N[MARKING  1]                    N[unmarked]
    ┌────────┴──────────┐                  │
Art[MARKING  1]    N[unmarked]           pages
      │                   │
      a                  few
```

The MARKING value of *very* is shared with the one of *very large*, which is in turn shared with the one of *very large house*. The latter is, hence, unmarked, which implies that it can be combined with another adjective or a determiner, as in *that very large house*. Conversely, the determiner *a* with its value of type *marked* makes the prenominal *a few* marked, and hence also the nominal *a few pages*, so that the latter is no longer compatible with another determiner.[7]

Since the MARKING PRINCIPLE in (18) only deals with the phrases of type *head-adjunct*, we still need to spell out how the MARKING values are propagated in other types of phrases. For the head-argument phrases I assume that the MARKING value is shared with the head daughter.[8]
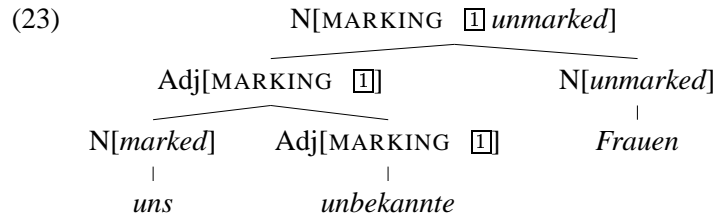
(22)
$$
\begin{bmatrix}
\textit{head-argument-phr} \\
\text{SYNSEM} \mid \text{LOC} \mid \text{CAT} \mid \text{MARKING} \quad \boxed{1}\,\textit{marking} \\
\text{HEAD-DTR} \mid \text{SYNSEM} \mid \text{LOC} \mid \text{CAT} \mid \text{MARKING} \quad \boxed{1}
\end{bmatrix}
$$

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[6]This is where my version of the functor treatment differs from the one of Allegranza (1998), in which iterative propagation is blocked.

[7]That *few* is unmarked is not only clear from its compatibility with *a*, but also from the fact that a nominal which contains it can be preceded by a determiner, as in *those few pages*.

[8]Since headed phrases are either head-adjunct or head-argument phrases, (18) and (22) jointly subsume all types of headed phrases. The propagation in nonheaded phrases is left for future work.

A relevant example is the prenominal in the German *uns unbekannte Frauen* '(to) us unknown women',

(23)

```
                        N[MARKING  1 unmarked]
              _____
        Adj[MARKING  1]                    N[unmarked]
     _____                     |
  N[marked]    Adj[MARKING  1]                Frauen
     |                |
    uns          unbekannte
```

The MARKING value of the AP is identified with the one of the adjective *unbekannte* rather than with the one of its pronominal argument. Since the adjective is unmarked, the nominal can be preceded by a determiner, as in *die uns unbekannte Frauen* 'the (to) us unknown women'.

2.3 Summary

Summing up, I assume that the adnominal dependents are functors which lexically select their head sister and which leave a mark on the phrases to which they are adjoined, as proposed in Allegranza (1998) and Van Eynde (2003). There is just one difference between these sources and the present treatment. While the former apply the Selector Principle and the Marking Principle to the same types of phrases, i.e. the head-functor phrases, the present treatment applies the Marking Principle to all of the head-adjunct phrases and the Selector Principle only to the head-functor phrases. Since the latter is a subtype of the former, it is still true that the head-functor phrases are constrained by both principles, but since the functors are not the only types of adjuncts, it follows that there may be adjuncts which are constrained by the Marking Principle, but not by the Selector Principle. This will turn out to be crucial for the treatment of the Big Mess Construction.
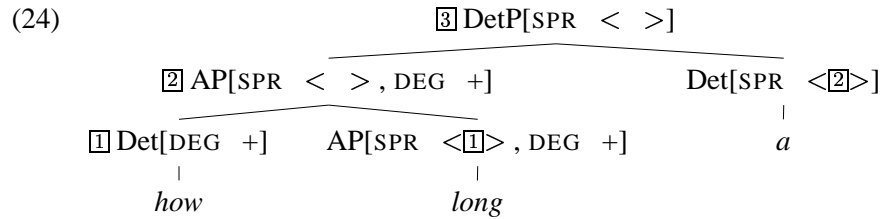
3 Returning to the Big Mess

Having dealt with the canonical combinations of prenominal APs and their nominal head sisters I now return to the Big Mess Construction. The discussion comes in three parts. First, I present the specifier treatment of this construction in Ginzburg and Sag (2000) and show why it is implausible. Second, I show why the functor treatment is equally implausible. Third, I present an alternative.

3.1 The specifier treatment

The treatment in Ginzburg and Sag (2000) is based on the assumption that all words can select a specifier. In the same way as nouns can select a determiner as their specifier, the adjectives can select a degree marker as their specifier and — pushing the envelope somewhat beyond the usual— the indefinite article can select

a degree marked AP as its specifier. A phrase like *how long a bridge* is, hence, assigned a left branching structure, in which the degree marker *how* is the specifier of the adjective *long*, yielding an AP, which is in turn the specifier of the indefinite article.

(24)
```
                                    ③ DetP[SPR < >]
                _____/      _____
         ② AP[SPR < >, DEG +]                          Det[SPR <②>]
        _____/        _____                                |
  ① Det[DEG +]    AP[SPR <①>, DEG +]                          a
        |                  |
       how               long
```

The resulting DETP is then the specifier of the common noun *bridge*. The DE-GREE feature plays a crucial role in this analysis, since only the APs with a positive DEG(REE) value can be specifiers of the indefinite article. Because it is a HEAD feature, the AP shares its DEG value with the adjective, which in turn shares it with its specifier (Ginzburg and Sag, 2000, 198). An asset of this treatment is that it neatly accounts for the fact that the Big Mess Construction only occurs in combination with the indefinite article. The combination with other determiners is excluded since the other determiners do not take a degree marked AP as their specifier.

At the same time, the specifier treatment has a number of problems. First, it begs the question of what the feature [DEG(REE) +] means. If it stands for a degree denoting expression, as the name suggests, then it does not draw the distinction we need, since not all of the degree markers allow the Big Mess Construction. *Very, enough* and *somewhat*, for instance, are degree markers, just like *how, too* and *so*, but do not occur in the Big Mess Construction.

(25)   a. * very big a house (= (2b))
       b. * big enough a house
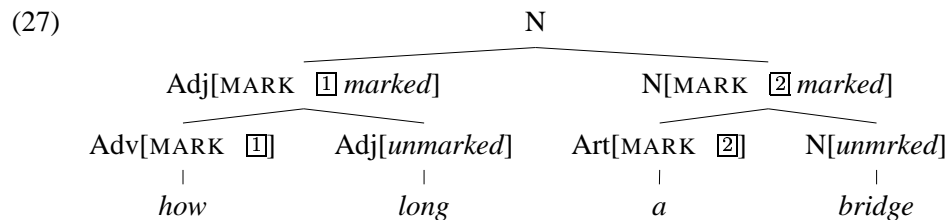   c. * somewhat underdeveloped a country

Second, we need a stipulation to block the ill-formed *a how big bridge*. For this purpose it is suggested that "a constraint on the prenominal adjective construction requiring the modifier daughter to be [DEG(REE) –] may well suffice." (Ginzburg and Sag, 2000, 200) Technically, though, the notation of Ginzburg and Sag (2000) does not provide the means to express this constraint, which explains why it is only given in prose, and conceptually, the constraint begs the question of what it means to be [DEG(REE) –], given that *a more modest statement*, *a somewhat underdeveloped country* and *a big enough room* are all well-formed. Third, the left branching structure is at odds with one of the classical tests for constituency, i.e. the one of permutability.

(26)   a. Never before had we seen that big a bridge.
       b. Never before had we seen a bridge that big.
       c. * never before had we seen bridge that big a

It is possible to permute the AP and the NP, as in (26b), but not the AP with the article and the rest of the nominal, as in (26c). Fourth, the left branching structure complicates the syntax-semantics interface, for the AP does not provide information about the length of the indefiniteness, as (24) suggests, but rather about the length of the bridge.

3.2   The functor treatment

As an alternative, I propose an analysis in which the article is a sister of the nominal, rather than of the AP. More specifically, the article is a functor of the noun, yielding a marked NP and the degree marking *how* is a functor of the adjective, yielding a marked AP. The two resulting phrases are sisters, as in:[9]

(27)
$$
\begin{array}{c}
\text{N}\\
\end{array}
$$

Adj[MARK ①*marked*]   N[MARK ②*marked*]

Adv[MARK ①]   Adj[*unmarked*]   Art[MARK ②]   N[*unmrked*]

how   *long*   *a*   *bridge*

This structure accounts for the permutability facts in (26) and provides a useful starting point for the semantic interpretation, since the AP is a sister of the nominal that it modifies. It also avoids the problem with the interpretation of the DEGREE feature, since the crucial distinction is not defined in terms of a semantically motivated dichotomy, but rather in terms of a purely syntactic distinction between marked and unmarked selectors of gradable adjectives. It is a matter of lexical stipulation that *so, too* and *how* are marked, whereas *very, enough* and *somewhat* are unmarked. Another advantage of this treatment is that it provides a straightforward account of the ungrammaticality of *a how big bridge*, for since the indefinite article selects an unmarked nominal, it cannot precede a marked AP.

   At the same time, the analysis in (27) leaves us with the problem of figuring out how the combination of the adjectival phrase and the noun phrase can be modeled. An obvious choice, it would seem, is to assign functor status to the AP, but this cannot be right, for in that case the head daughter of the AP is predicted to lexically select a marked NP, so that one inadvertently licenses *(very) long a bridge*.

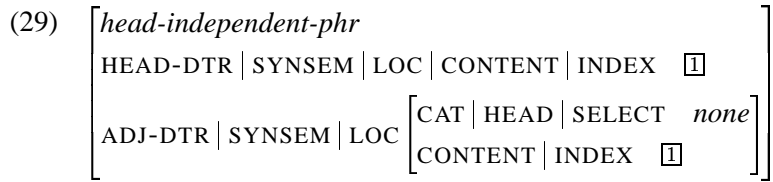## 3.3   The independent adjunct treatment

To solve this problem I will assume that the AP is not a functor, but an independent adjunct. More specifically, its combination with the lower NP is modeled in terms of a type of phrase which I have called the *head-independent-phr(ase)* in Van Eynde (2005). This is a subtype of the *head-adjunct-phr(ase)*, but not of

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[9]The MARKING value of the top node is provisionally left out. How its value is determined is spelled out toward the end of the section, see (34).

head-functor-phr(ase), which implies that it is subsumed by the Marking Principle and the Head Feature Principle, but not by the Selector Principle.

(28)

$$
\begin{array}{c}
\textit{headed-phr} \\
\end{array}
$$

head-arg-phr   *head-adjunct-phr*

head-functor-phr   *head-independent-phr*   ...
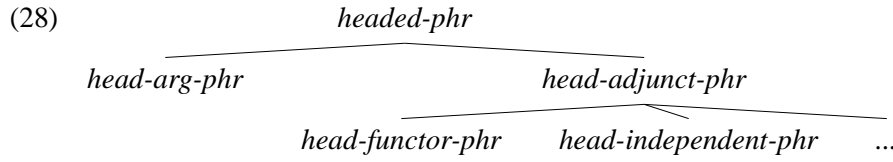
In other words, the nonhead daughters in the phrases of type *head-independent* share their MARKING value with the mother, but they do not lexically select their head sister. Their SELECT value is, hence, *none* (see footnote 3). Since the head daughter does not select its nonhead sister either, this means that there is no selection. Instead, what connects the two daughters is the fact that they share their index.

(29)
$$
\begin{bmatrix}
\textit{head-independent-phr} \\
\text{HEAD-DTR} \mid \text{SYNSEM} \mid \text{LOC} \mid \text{CONTENT} \mid \text{INDEX} \quad \boxed{1} \\[2ex]
\text{ADJ-DTR} \mid \text{SYNSEM} \mid \text{LOC}
\begin{bmatrix}
\text{CAT} \mid \text{HEAD} \mid \text{SELECT} \quad \textit{none} \\
\text{CONTENT} \mid \text{INDEX} \quad \boxed{1}
\end{bmatrix}
\end{bmatrix}
$$

This phrase type was introduced in Van Eynde (2005) to model cases of asymmetric coordination and apposition in Dutch, as exemplified by the subject NP in (30) and the prenominal in (31).

(30) Mijn beste vriend en   kamergenoot is/*zijn vertrokken.
      my   best friend and roommate   is/*are left
      'My best friend and roommate has left.'

(31) Jan   zijn ouders zijn/*is verhuisd.
      John his parents are/*is moved
      'John's parents have moved.'

The coordinated nominal in (30) is not a case of canonical conjunction, as in *John and Mary*, since it does not denote a pair of persons, but rather one person who is both my best friend and my roommate. This singularity, which is confirmed by the form of the finite verb, is modeled straightforwardly if one treats the nominal as a phrase of type *head-independent*, for since the daughters share their index, they are both third person singular, and since the head daughter (the first conjunct) shares its index with the mother, it follows that the subject NP as a whole is third person singular as well. Similar remarks apply to the prenominal in *Jan zijn ouders*. The lower NP and the possessive pronoun must agree in person, number and gender: *Jan mijn/hun/haar ouders* 'John my/their/her parents', for instance, are all ill-formed. This is modeled straightforwardly if one treats the pronoun as the head and the lower NP as an independent adjunct. Coindexing is, hence, a hallmark of the *head-independent-phrase*, both in asymmetric coordination and apposition. The lack of

lexical selection which is the other defining characteristic is also exemplified in (30): it would make little sense to assume that *vriend* selects *kamergenoot* or vice versa. The same holds for *Jan* and *zijn* in (31).

Returning now to the English Big Mess Construction we find the same two properties. The index sharing accounts for the fact that the AP denotes a property of the referent of the lower NP, and the absence of lexical selection solves the problem with the functor treatment.[10] This implies that the Big Mess Construction can be modeled in terms of a subtype of *head-independent-phrase*.

What remains to be modeled at this point are the properties which set the Big Mess Construction apart from the other constructions of type *head-independent*, such as the condition that the lower NP must contain the indefinite article and that the AP must contain a degree denoting word of the appropriate kind. For this purpose, I assume that the *head-independent* phrase type has a number of more specific subtypes, one of which is the *big-mess-phr(ase)* type. Its properties are spelled out in (32).

$$(32) \quad \begin{bmatrix} \textit{big-mess-phr} \\[2pt] \text{HEAD-DTR} \mid \text{SYNSEM} \mid \text{LOC} \begin{bmatrix} \text{CAT} \mid \text{MARKING} & a \\ \text{CONTENT} & \textit{parameter} \end{bmatrix} \\[12pt] \text{ADJ-DTR} \mid \text{SYNSEM} \mid \text{LOC} \mid \text{CAT} \mid \text{MARKING} \begin{bmatrix} \textit{marked} \\ \text{DEGREE} & + \end{bmatrix} \end{bmatrix}$$

The head daughter is required to have a MARKING value of type *a*, which is a subtype of *marked*. This correctly excludes the combination with unmarked nominals, as in *how warm (nice) water*, and otherwise marked nominals, as in *too big some house*, and *how big anyone*. The requirement that the head daughter denote an object of type *parameter* captures the fact that it must not be a quantified NP. This blocks the ill-formed *that big a few houses*.[11]

The adjunct daughter is required to have a MARKING value of type *marked*. This correctly excludes single adjectives, as in *big a house*, and adjectives with an unmarked functor, as in *very big a house*. The adjunct is also required to have a positive value for DEGREE. This feature is homonymous to the one of Ginzburg and Sag (2000), but its role and interpretation are different. First, it is not a HEAD

---

[10]Functors may also share their index with their head sister, but this is not a general property of the *head-functor-phrase* type. The possessive in (7), the interrogative determiner in (8) and the quantifying determiners in (9), for instance, do not share the index of the nominals which they introduce, since they have non-matching NUMBER values.

[11]In the type hierarchy of CONTENT values which is employed in Ginzburg and Sag (2000), the quantified NPs are of type *quant-rel* and the non-quantified ones of type *parameter*. That the indefinite article does not introduce a quantifier is one of the main tenets of both Discourse Representation Theory and File Change Semantics, see resp. Kamp (1981) and Heim (1982). Notice that the ill-formedness of *that big a few houses* raises yet another problem for the specifier treatment, since it requires extra stipulations to rule out the combination of the indefinite article with a degree marking AP when the indefinite article is part of a quantifying adnominal.

feature, but a MARKING feature, so that its value is shared with the AP. Second, its value is positive for all of the degree denoting words, and not only for those which license the Big Mess Construction; *very, somewhat* and *enough*, for instance, have a positive DEGREE value, just like *so, how* and *too*. What differentiates them is not their DEGREE value, but rather their MARKING value. The mutual independence of the DEGREE and MARKING distinctions also facilitates the treatment of the comparative *more* and *less*. By assigning them the underspecified value *marking* in the lexicon, one subsumes both the unmarked use in *a more serious problem* and the marked one in *more serious a problem*, while keeping the DEGREE value constant.

Since the *big-mess-phrase* inherits the properties of its supertypes, it follows that its MARKING value is identified with the one of its adjunct daughter. The resulting chain of propagation can be quite long, as in the following example quoted from (Huddleston and Pullum, 2002, 435).

(33)   It was so blatantly biased a report that no one took any notice of it.

The MARKING value of *so* is propagated to the ADVP *so blatantly*, the participial *so blatantly biased* and the nominal *so blatantly biased a report*.

(34)
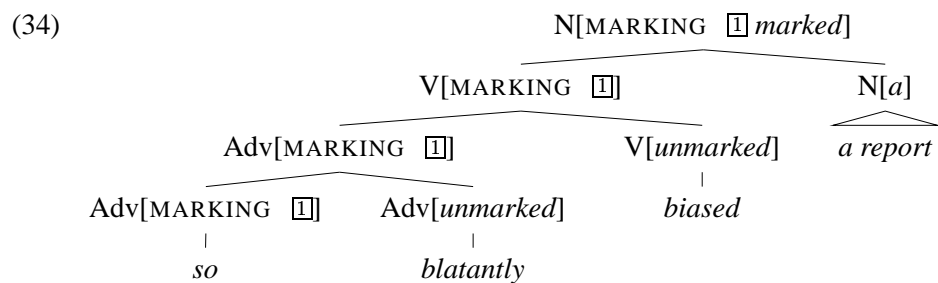
The propagation of the MARKING value accounts for the impossibility of iterative application. *Too long so big a bridge*, for instance, is not licensed, since the addition of *so big* to *a bridge* triggers a switch from the negative DEGREE value of the indefinite article to the positive value of the degree denoting *so*.

It is worth adding that some of the degree denoting adverbs license the addition of another dependent: *so*, for instance, licenses a *that*-clause, as in (33), and *too* a gapped VP[*to*], as in *too complex a problem to solve here and now*. How the licensing and the addition of the extra dependent can best be modeled is an interesting topic in its own right, but it will not be addressed here, since it is independent of the treatment of the Big Mess Construction. There are indeed marked degree words which do not license an additional dependent, such as *this, that* and *how*, and that there are unmarked degree words which do, such as *enough*, which licenses a gapped VP[*to*], and *more* and *less*, which license a *than*-phrase.

3.4 Summary

Summing up, I have presented three treatments of the English Big Mess Construction: the specifier treatment of Ginzburg and Sag (2000), a functor treatment in
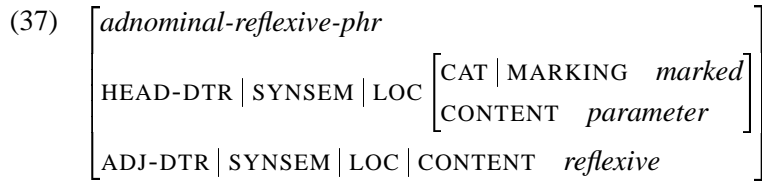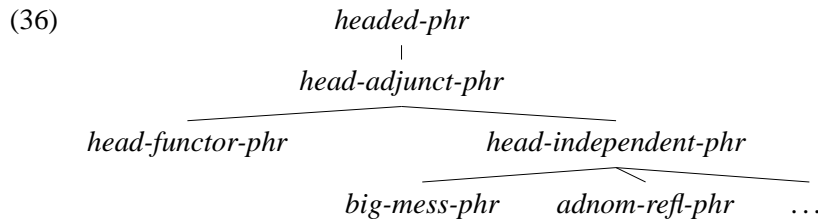
the line of Allegranza (1998) and Van Eynde (2006) and the independent adjunct treatment in the line of Van Eynde (2005). The former two can be called lexicalist, since they rely on lexical selection, either in terms of the valence feature SPR or in terms of the HEAD|SELECT feature. The latter, by contrast, is constructivist since the constraints on the combination are spelled out in terms of properties of the construction as a whole. Since it involves the postulation of a highly specific phrase type (*big-mess-phr(ase)*), there is an obvious risk of missing generalizations. This, however, is counterbalanced by its integration in the phrase type hierarchy, which provides the possibilty to factor out what the Big Mess Construction has in common with other less idiosyncratic constructions and to capture those common properties in terms of constraints which are associated with its supertypes, such *head-independent* and *head-adjunct*. It is also counterbalanced by the existence of other types of combinations which call for a constructivist treatment. Apposition and asymmetric coordination are two examples which have already been dealt with in previous work (for Dutch). I will now discuss another such example from English.
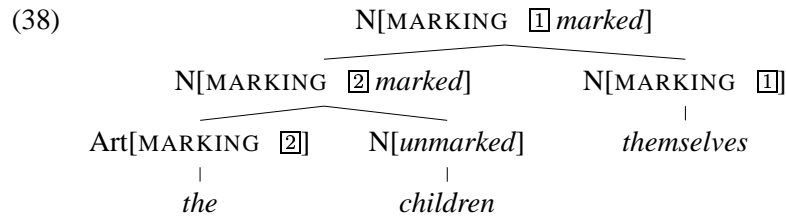
4   Adnominal reflexives

English allows the combination of a noun phrase with an emphatic reflexive, as in:

(35) a. I myself would never do such a thing.
     b. The children themselves are not satisfied about their work.
     c. We met the lady of the house herself.

In these combinations the head must be the lower NP, since it shares its CASE value with the mother: *I myself*, for instance, is nominative, just like the personal pronoun. The accusative reflexive pronoun is its non-head sister and shows the typical properties of an independent adjunct. It shows agreement in person, number and gender with the preceding NP, as required by the index sharing, and it does not lexically select the NP. To capture its other characteristics I add another subtype of *head-independent-phrase*, to be called *adnominal-reflexive-phrase*, with the properties that are spelled out in (37).

(36)
```
                        headed-phr
                            |
                    head-adjunct-phr
              ┌─────────────┴─────────────┐
      head-functor-phr              head-independent-phr
                                      ┌────────┴────────┐
                               big-mess-phr   adnom-refl-phr   . . .
```

(37)
$$
\begin{bmatrix}
\textit{adnominal-reflexive-phr} \\[4pt]
\text{HEAD-DTR} \mid \text{SYNSEM} \mid \text{LOC}
\begin{bmatrix}
\text{CAT} \mid \text{MARKING} \quad \textit{marked} \\
\text{CONTENT} \quad \textit{parameter}
\end{bmatrix} \\[10pt]
\text{ADJ-DTR} \mid \text{SYNSEM} \mid \text{LOC} \mid \text{CONTENT} \quad \textit{reflexive}
\end{bmatrix}
$$

The requirement that the head daughter be marked and non-quantificational blocks such ill-formed combinations as the unmarked *children themselves* and the quantified *any woman herself* and *some soldiers themselves*. The requirement that the adjunct daughter be reflexive correctly excludes other types of pronouns, as in *the children them* and *we each other*.[12] Since the reflexives are pronouns and, hence, marked, and since the adjunct shares its MARKING value with the mother, it follows that the combination as a whole is also marked.

(38)

$$N[\text{MARKING} \; \boxed{1} \, marked]$$

N[MARKING $\boxed{2}$ *marked*]   N[MARKING $\boxed{1}$]

Art[MARKING $\boxed{2}$]   N[*unmarked*]   *themselves*

the   *children*

In sum, the constraints which are characteristic of the *head-independent-phr(ase)* type (index sharing and absence of lexical selection) are not restricted to the Big Mess Construction, but are shared by the English adnominal reflexives and by a number of coordinate and appositive constructions in Dutch. This shows that the addition of a modicum of constructivism to the otherwise lexicalist framework of HPSG is not tantamount to a wallowing in anomaly and particularism. Instead, if one exploits the possibilities of a phrase type hierarchy à la Sag (1997) and Ginzburg and Sag (2000), this constructivism is perfectly compatible with the aim of maximum generality and simplicity.

5   *Such a* **and** *what a*

A combination which superficially resembles the Big Mess Construction is the one of *what* and *such* with the indefinite article, as in:

(39)   a.   What a mess it was!

   b.   It was such a mess.

(40)   a.   * A what mess it was!

   b.   * It was a such mess.

The non-canonical order and the degree denoting nature are similar to the prenominal APs in the Big Mess Construction, but unlike the latter, *what* and *such* are invariably lexical: if the nominal which they introduce contains an adjective, this adjective does not occur before the determiner.

(41)   a.   What a long speech it was!

   b.   It was such a long speech.

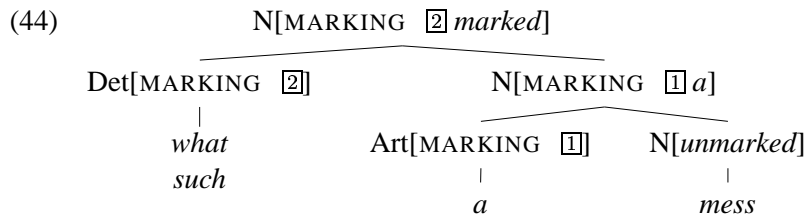[12]In Pollard and Sag (1994) *reflexive* is one of the possible values of the CONTENT attribute.

(42) a. * what long a speech it was!
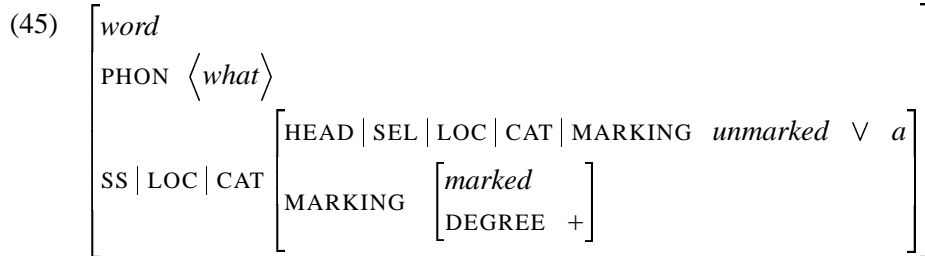
  b. * it was such long a speech

Another difference is that they are compatible with bare nominals.

(43) a. What promise she had shown!

  b. What fools they are!

  c. She had shown such promise.

  d. I had never met such people.

This demonstrates that these combinations are not subsumed by the *big-mess-phrase* type, as defined in (32). As a matter of fact, I assume that they are not subsumed by *head-independent-phrase* either, but rather by *head-functor-phrase*. In other words, I assume that the exclamative *what* and the demonstrative *such* lexically select a nominal which is either unmarked or introduced by the indefinite article. The resulting structure is right branching:

(44)

$$
\begin{array}{c}
\text{N[MARKING } \boxed{2}\, \textit{marked}] \\[4pt]
\diagup \hspace{5em} \diagdown \\[4pt]
\text{Det[MARKING } \boxed{2}] \hspace{3em} \text{N[MARKING } \boxed{1}\, a] \\[4pt]
\mid \hspace{8em} \diagup \hspace{4em} \diagdown \\[4pt]
\textit{what} \hspace{3em} \text{Art[MARKING } \boxed{1}] \hspace{2em} \text{N[\textit{unmarked}]} \\[4pt]
\textit{such} \hspace{9em} \mid \hspace{5em} \mid \\[4pt]
\hspace{9em} a \hspace{6em} \textit{mess}
\end{array}
$$

The relevant constraint on *what* is spelled out in (45).

(45)

$$
\begin{bmatrix}
\textit{word} \\
\text{PHON} \quad \langle \textit{what} \rangle \\[6pt]
\text{SS} \mid \text{LOC} \mid \text{CAT}
\begin{bmatrix}
\text{HEAD} \mid \text{SEL} \mid \text{LOC} \mid \text{CAT} \mid \text{MARKING} \quad \textit{unmarked} \;\vee\; a \\[6pt]
\text{MARKING} \quad
\begin{bmatrix}
\textit{marked} \\
\text{DEGREE} \; +
\end{bmatrix}
\end{bmatrix}
\end{bmatrix}
$$

This subsumes the use of *what* in (39a), (41a) and (43a-b). Since the indefinite article has a negative DEGREE value, iterative propagation, as in *what what a mess* is blocked.

In the case of *such*, we need two lexical entries: one which selects a nominal which is introduced by the indefinite article and which is itself marked, as in (39b) and (41b). The other selects an unmarked nominal and is itself unmarked, just like the adjectival modifiers. This subsumes the use in (43c-d) and (46).

(46) no such luck, many such problems, one such device

In sum, the *such a* and *what a* combinations do not need a constructivist treatment, since their relevant properties can exhaustively be captured in terms of lexical constraints, on the one hand, and the head-functor type of phrase, on the other hand.

6 Conclusion

This paper has provided an HPSG treatment of the English Big Mess Construction. Crucial for the treatment is the distinction between two types of adjuncts. Besides the functors, which lexically select their head sister, there are the independent adjuncts, which lack lexical selection, but which share their index with their head sister. The paper has demonstrated that a treatment in terms of lexical selection is inappropriate for the Big Mess Construction and that the independent adjunct treatment is more plausible. Further work is needed to identify other types of independent adjuncts and to model their properties in a way which differentiates the construction-specific idiosyncratic properties from those which they share with other types of independent adjuncts. How this can be done has been illustrated with the English adnominal reflexives.

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