How regular a pattern in these labyrinths of constructions!

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THE BIG MESS CONSTRUCTION

(1)  a. *How regular a pattern* it turned out to be!
    b. *It’s so good a bargain* I can’t resist buying it.

Contrast with *a regular pattern* and *a very good bargain*.

The Binominal NP Construction

(2)  a. Let us examine this labyrinth of a construction.
    b. She had a skullcracker of a headache.

Contrast with an employee of a Japanese company.

**Why bother?**

However unusual they are, idiosyncratic constructions are never entirely exceptional. Being part of the grammar, they are expected to share properties with more regular constructions as well.

The purpose of the talk is to provide an analysis of the BMC and the BNPC which captures both their regular and their exceptional properties. For that purpose I employ the framework of constructivist HPSG.

OUTLINE

1. basics of HPSG
2. the simple noun phrase
3. the adjectival phrase
4. a bidimensional hierarchy of phrases
5. the big mess construction
6. the binominal NP construction
7. conclusion
1. Basics of HPSG

(3) \[
\text{sign: } \begin{bmatrix}
\text{FORM list(form)} \\
\text{SYNSEM synsem}
\end{bmatrix}
\]

(4) \[
\text{synsem: } \begin{bmatrix}
\text{CATEGORY category} \\
\text{CONTENT semantic-object} \\
\text{HEAD part-of-speech} \\
\text{SUBJ list(synsem)} \\
\text{COMPS list(synsem)} \\
\text{MARKING marking}
\end{bmatrix}
\]

(5) \[
\text{category: } \begin{bmatrix}
\text{HEAD part-of-speech} \\
\text{SUBJ list(synsem)} \\
\text{COMPS list(synsem)} \\
\text{MARKING marking}
\end{bmatrix}
\]

(6) \[
\text{verb: } \begin{bmatrix}
\text{VFORM vform}
\end{bmatrix}
\]

(7) \[
\text{noun: } \begin{bmatrix}
\text{CASE case}
\end{bmatrix}
\]
sign
FORM \langle likes \rangle

\[
\begin{aligned}
\text{synsem} \\
\text{category} \\
\text{HEAD} \\
\text{SUBJ} \\
\text{COMPS} \\
\text{MARKING} \\
\text{state-of-affairs} \\
\text{NUCLEUS}
\end{aligned}
\]

\[
\begin{aligned}
\text{category} \\
\text{ finite} \\
\text{nom} \\
\text{acc} \\
\text{unmarked} \\
\text{like-rel} \\
\text{LIKER} \\
\text{LIKED}
\end{aligned}
\]
**PHRASES**

\[
\text{sign} \quad \text{lex-sign} \quad \text{phrase} \\
\quad \text{headed-phr} \quad \text{non-headed-phr}
\]

(8) \textit{phrase}: \texttt{[DAUGHTERS nelist(sign)]}

(9) \textit{headed-phr}: \texttt{[HEAD-DTR sign]}

Head Feature Principle (an implicational constraint)

(10) \textit{headed-phr} \Rightarrow \begin{bmatrix}
\text{SYNSEM} | \text{CAT} | \text{HEAD} & 1 & \text{part-of-speech} \\
\text{HEAD-DTR} | \text{SYNSEM} | \text{CAT} | \text{HEAD} & 1
\end{bmatrix}
2. **THE SIMPLE NOUN PHRASE**

Co-occurrence restrictions within the noun phrase

(11) a. that/*those woman
    b. those/*that women

(12) a. a house/*houses/*milk
    b. much beer/*house/*houses

(13) una bella donna
    a. SG.FEM beautiful.SG.FEM woman.SG.FEM
    ‘a beautiful woman’

(14) a. old red houses, responsible young drivers
    b. * that my car, each a bike
    c. all my papers, what a big house
A HIERARCHY OF HEADED PHRASES

Heads lexically select their arguments, but not their adjuncts.

Functors lexically select their head sister.

Functor-driven selection

(15) *part-of-speech:* [select synsem-or-none]

\[
\begin{array}{c}
\text{synsem-or-none} \\
\text{synsem} \quad \text{none}
\end{array}
\]

(16) *head-functor-phr* \(\Rightarrow\)

\[
\begin{array}{c}
\text{DTRS} \left< \left[ \text{SYNSEM} \mid \text{CAT} \mid \text{HEAD} \mid \text{SELECT} \ [1] , \ [2] \text{sign} \right] \right> \\
\text{HEAD-DTR} \ [2] \left[ \text{SYNSEM} \ [1] \text{synsem} \right]
\end{array}
\]
An example

*bella* selects a singular feminine nominal, and so does *molto bella*

```
N
   ├── 1 N
   │    ├── donna
   │    │    └── Adv
   │    │         ├── Adj[SELECT 1]
   │    │         │    └── N[sing, fem]
   │    │         └── Adj[SELECT 1]
   │                     └── bella
   └── Adv
```

*that* selects a singular noun

*a* selects a singular count noun
MARKING

Common nouns and adjectives are unmarked. Proper nouns, pronouns and determiners are marked.

(17) head-argument-phr ⇒
[SYNSEM | CAT | MARKING 1marking
HEAD-DTR | SYNSEM | CAT | MARKING 1]

(18) head-adjunct-phr ⇒
[SYNSEM | CAT | MARKING 1marking
DTRS 〈[SYNSEM | CAT | MARKING 1, 2]
HEAD-DTR 2sign]
AN EXAMPLE

N[MRKG 2 marked]

D[MRKG 2]  N[MRKG 1 unmarked]

| those  | Adj[MRKG 1]  | N[MRKG unmarked] |

| long   | bridges      |

(19) [HEAD | SELECT | CAT | HEAD noun
      MRKG unmarked]
      MRKG unmarked

(20) [HEAD | SELECT | CAT | HEAD noun
      MRKG unmarked]
      MRKG marked
ANOTHER EXAMPLE

(21) die uns unbekannte Frauen
    the us unknown women
    ‘the women unknown to us’

\[
\text{N[MRKG \ [1 unmarked]}
\]
\[
\text{Adj[MRKG [1]} \\
\text{N[MRKG \ [1 unmarked]}
\]
\[
\text{N[MRKG \ marked] \ Adj[MRKG [1]}
\]
\[
\text{uns \ unbekannte Frauen}
\]
(22) * Those a few pages
(23) A few pages are /*is still missing.
(24)  a. All the/*some foreign students left the room.
b. What a/*the mess it was!
AN EXAMPLE

(25) \[
\begin{bmatrix}
{\text{HEAD}} & {\text{SELECT}} & {\text{CAT}} \\
{\text{MRKG}} & {\text{quant}} \\
\end{bmatrix}
\begin{bmatrix}
{\text{HEAD}} & \text{noun} \\
{\text{MRKG}} & \text{def} \lor \text{unmarked} \\
\end{bmatrix}
\]

\[
\begin{array}{c}
\text{N[MRKG 2]} \\
\text{D[MRKG 2 quant]} \\
\text{all} \\
\end{array}
\begin{array}{c}
\text{N[MRKG 1]} \\
\text{D[MRKG 1 def]} \\
\text{the} \\
\end{array}
\begin{array}{c}
\text{N[MRKG unmarked]} \\
\text{students} \\
\end{array}
\]
ANOTHER EXAMPLE

(26)  a. What a mess it was!
      b. What promise she had shown!

(27)  \[
\begin{array}{c}
\text{HEAD} | \text{SELECT} | \text{CAT} \\
\text{MRKG} | \text{quant} \\
\end{array}
\]

\[
\begin{array}{c}
\text{HEAD} \\
\text{MRKG} \\
\end{array}
\]

\[
\begin{array}{c}
\text{noun} \\
\text{a } \vee \text{ unmarked} \\
\end{array}
\]

\[
\begin{array}{c}
\text{N[MRKG 2]} \\
\text{D[MRKG 2 quant]} \\
\text{what} \\
\text{D[MRKG 1 a]} \\
\text{a} \\
\end{array}
\]

\[
\begin{array}{c}
\text{N[MRKG 1]} \\
\text{N[MRKG unmarked]} \\
\text{mess} \\
\end{array}
\]
3. THE ADJECTIVAL PHRASE

(28) It’s a very good bargain.

(29) * A how serious problem is it?
(30) How ridiculously trivial a problem it turned out to be!

```
Adj[MRKG marked]
  / \     /     \
Adv[MRKG I]   Adj[MRKG unm]
  /           |
Adv[MRKG I]       trivial
  /         /
how   ridiculously
```
Taking stock

- Functors lexically select their head sister and leave a mark on the phrases to which they are adjoined.
- The lexical selection is a defining characteristic of the head-functor phrases.
- The marking is a defining characteristic of the head-adjunct phrases.
- Since head-functor-phr is a subtype of head-adjunct-phr, there may be adjuncts which do not lexically select their head sister.
4. A bidimensional hierarchy of phrases

Multiple inheritance (Ginzburg & Sag (2000))
**Nominals**

\[
\text{phrase} \\
\downarrow \\
\text{headed-phrase} \quad \text{clause} \\
\downarrow \\
\text{head-adj-phrase} \quad \text{nominal} \\
\]

\[
(31) \quad \text{nominal} \Rightarrow \begin{bmatrix}
\text{SYNSEM} \\
\begin{bmatrix}
\text{CAT} | \text{HEAD} \\
\text{noun}
\end{bmatrix} \\
\begin{bmatrix}
\text{CONTENT} \\
\text{scope-object}
\end{bmatrix}
\end{bmatrix}
\]

\[
(32) \quad \text{scope-object:} \begin{bmatrix}
\text{INDEX} \\
\text{index}
\end{bmatrix} \\
\begin{bmatrix}
\text{RESTR} \\
\text{set(fact)}
\end{bmatrix}
\]
NP-INTERNAL MODIFICATION

(33) red box

(34) \( np\text{-}int\text{-}mod \Rightarrow \)

\[
\begin{align*}
\text{SYNSEM} & \mid \text{CONTENT} \left[ \begin{array}{c}
\text{INDEX } i \\
\text{RESTR } \Sigma_1 \cup \Sigma_2
\end{array} \right] \\
\text{DTRS} & \left( \begin{array}{c}
\text{SYNSEM} \mid \text{CONTENT} \\
\text{RESTR } \Sigma_1 \text{ neset}(\text{fact})
\end{array} \right), 1
\end{align*}
\]

\[
\begin{align*}
\text{HEAD-DTR} & \left[ \begin{array}{c}
\text{SYNSEM} \mid \text{CONTENT} \\
\text{RESTR } \Sigma_2
\end{array} \right]
\end{align*}
\]

Pollard & Sag (1994)
NP-INTERNAL PREDICATION

(35) the opera ‘Carmen’, actor James Franco

(36) \( np\text{-int-pred} \Rightarrow \)

\[
\begin{align*}
\text{SYNSEM} | \text{CONTENT} & \quad \text{INDEX } i \\
\text{RESTR} & \quad \sum \\
\text{PROP} | \text{SOA} | \text{NUCL} & \quad \left\{ \text{fact} \right\} \\
\text{THEME } i & \quad \left\{ \text{attr-rel} \right\} \\
\text{ATTRIBUTE } j & \quad \left\{ \right\}
\end{align*}
\]

\[
\begin{align*}
\text{DTRS} & \quad \langle \text{SYNSEM} \rangle \\
\text{CAT} | \text{HEAD} | \text{SELECT} & \quad \text{none} \\
\text{CONTENT} & \quad \left\{ \text{INDEX } j \right\} \\
\text{RESTR} & \quad \text{neset(fact)} \\
\text{HEAD-DTR} & \quad \square \text{SYNSEM} | \text{CONTENT} | \text{INDEX } i
\end{align*}
\]

Van Eynde (2015)
5. The Big Mess Construction

how long is subsumed by head-functor-phr, and so is a bridge, but what about how long a bridge?

(37) how long a bridge vs. * long a bridge
We see even so occasional a philosophical scholar as Raleigh quoting Aquinas.

She is too hard a worker to be accused of shirking.

Arnold & Sadler (2014)
MODELING THE BIG MESS

(40) \( \text{big-mess-phr} \Rightarrow \)

\[
\begin{align*}
\text{DTRS} & \quad \left[ \text{phrase} \right] \\
\text{SYNSEM} \quad \text{CAT} \quad & \quad \left[ \text{HEAD adjective quant} \right] \, , \, [1] \\
\text{HEAD-DTR} \quad & \quad \left[ \text{phrase} \right] \\
\text{SYNSEM} \quad & \quad \left[ \text{CAT MARKING a sing} \right]
\end{align*}
\]
CONSTRAINTS ON THE ADJUNCT DAUGHTER

Phrasal

(41) * long a bridge

Adjectival

(42) * so whopper a bridge

Marking value quant (a subtype of marked)

(43) * very long a bridge
**Underspecification**

(44)  
   a. This is *more serious* a problem than the other.  
   b. Any of these could be a sign of a *more serious* problem that needs medical attention.

(45)  
   a. Let’s not make *too big* a deal out of it.  
   b. It was always his conviction that feeling and character must take precedence over a *too literal* representation of anatomy.

(46)  
   a. This is not *good enough* an excuse.  
   b. If that’s not a *good enough* excuse, he has others.
CONSTRAINTS ON THE HEAD DAUGHTER

Phrasal

(47) * so good bargains, how warm water

Marked by a

(48) * so serious the problem, how good my bargains
(49) * how serious some problem, that intricate any issue

Singular index

(50) * that big a few houses, so dark a good many rooms
(51)  

a. He took *so big of a piece* that he couldn’t finish it.

b. It was a judgment question as to *how big of a risk* it was.

```
            N[MRKG 2 quant]
               /   \\
  Adj[MRKG 2]                N[MRKG 1 of-a]
    /  \\
how big          P[MRKG 1]           of
          |                               a risk
         |                                a
      N[MRKG 1 of-a]

```
**Functor treatment**

Diagram:

```
marking
  ├── unmarked
  │    ├── def
  │    │    └── a
  │    └── indef
  │         └── of-a
  │                 ...
  └── marked
      └── quant
```

(52)

```
(HEAD
  SELECT | CAT
    HEAD
      noun
    MRKG
      a
  COMPS
    ⟨ ⟩
  MRKG
    of-a
)
```
Functors cannot be stranded

(53)  a. What are you so afraid of __?
     b. Whose uncle is she the daughter of __?

(54)  a. * What did he take so big of __ that he couldn’t finish it?
     b. * That is a movie which I never saw that disgusting of __ in my life.

Besides, the big mess phrase inherits the constraints on

- head-adjunct-phrase
- np-internal-modification
6. The Binominal NP Construction

(56) a skullcracker of a headache

What about the combination of of with a headache?
Functor treatment

(57)  a. That company I would not like to be an employee of _.
      b. Which club are you a supporter of _?

(58)  a. * What did she have a skullcracker of _?
      b. * What a labyrinth of _ we are examining!

\[
\begin{array}{c}
N[MRKG \ [3 \ a] ] \\
\downarrow \\
D[MRKG \ [3] ] \\
\downarrow \\
a \\
\downarrow \\
N[MRKG \ unmarked] \\
\downarrow \\
skullcracker \\
\downarrow \\
P[MRKG \ [1] ] \\
\downarrow \\
of \\
\downarrow \\
N[MRKG \ a] \\
\downarrow \\
a \ headache
\end{array}
\]
(59)  

a. a skullcracker of a headache \(\rightarrow\) the headache is like a skullcracker

b. this labyrinth of a construction \(\rightarrow\) this construction is like a labyrinth
NP-INTERNAL PREDICATION

(60) \[ np-int-pred \Rightarrow \]

\[
\begin{align*}
\text{SYNSEM} & | \text{CONT} \\
\text{RESTR} & \Sigma \cup \\
\text{PROP} & | \text{SOA} | \text{NUCL} \\
\text{HEAD-DTR} & \begin{cases}
\text{CAT} | \text{HEAD} | \text{SELECT} \ none \\
\text{INDEX} & \text{j} \\
\text{RESTR} & \text{nset(fact)}
\end{cases}
\end{align*}
\]
MODELING THE BINOMINAL NP

(61) \[
\text{binominal-np} \Rightarrow \\
\begin{bmatrix}
\text{DTRS} \left\langle \left[ \text{SYNSEM} | \text{CAT} | \text{HEAD noun} \right], 1 \right\rangle \\
\text{HEAD-DTR} 1 \left[ \text{phrase} \left[ \text{SYNSEM} | \text{CAT} | \text{MRKG of-a } \lor \text{ of-bpl} \right] \right]
\end{bmatrix}
\]

(62) a. It also has jewels of villages like West Burton and Askrigg ...

b. There was a shadowy vagueness about the rest with its hulks of desks and clutter of baskets and papers.
An example

\[ \text{D[MRKG ³]} \quad \text{N[MRKG ³ a]} \]

\[ \quad \text{D[MRKG ³]} \quad \text{N[MRKG ² unmarked]} \]

\[ \quad \text{N[MRKG ²]} \quad \text{P[MRKG ¹]} \quad \text{N[MRKG ¹ of-a]} \]

\[ \quad \text{skullcracker} \quad \text{of} \quad \text{a headache} \]
ANOTHER EXAMPLE

N[MRKG 1 def]

N[MRKG 1]  N[MRKG of-a]

D[MRKG 1]  N[MRKG unmarked]  of a crew

those  fools
(63) She was not being told the truth by *that apologetic mouse of a doctor*.
MODIFIERS - II

D[MRKG 1]  N[MRKG 1 marked]

  |  N[MRKG 2 unmarked]

    |  N[MRKG 2]

    | Adj[MRKG 2]  N[MRKG unmark]

    |  N[MRKG of-bpl]

    |  of knitting-needles

    |  chopsticks

  | her

Chinese
7. Conclusion

- The Big Mess Construction and the Binominal NP Construction show a mixture of idiosyncratic and regular properties.
- The regular properties are inherited from higher (less specific) phrase types, such as head-adjunct-phr and nominal.
- The idiosyncratic properties are spelled out in terms of implicational constraints on more specific types, such as big-mess-phr and binominal-np.
- Constructivist HPSG provides the means to capture both what is specific about idiosyncratic phrases and what they have in common with other —less idiosyncratic— phrases.
- A comparison with other treatments is in the paper A sign-based treatment of two idiosyncratic NPs.
“The picture that emerges from the consideration of special constructions ... is of a grammar in which the particular and the general are knit together seamlessly.” Kay & Fillmore (1999).
Thank you!