Heads and history

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HEADLEX
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Grammaticalization
Types of category in LFG and HPSG
Prepositions in the nominal domain
till in Swedish
Prepositions in the verbal domain
Infinitival markers in Germanic
Path from nominal to verbal domain
Romance prepositions
Conclusions
References

Outline

1. Grammaticalization
2. Types of category in LFG and HPSG
3. Prepositions in the nominal domain
4. Prepositions in the verbal domain
5. Path from nominal to verbal domain
6. Conclusions
Grammaticalization consists in the increase of the range of a morpheme advancing from a lexical to a grammatical or from a less grammatical to a more grammatical status’ Kuryłowicz (1965)

- reduction in semantics
- reduction in “size”
- loss of independence
- ...
Grammaticalization

- Noun to Preposition

(1) Proto-Germanic *tila ‘goal’
(2) das Ziel ‘the goal’ (German)
(3) åka till Warsawa ‘go to Warsaw’ (Swedish)
(4) till sjöss ‘to sea.\texttt{GEN}’ (Swedish)
## Types of category in LFG

<table>
<thead>
<tr>
<th>Lexical category</th>
<th>Functional category</th>
<th>Non-projecting category ((\hat{X}))</th>
</tr>
</thead>
<tbody>
<tr>
<td>full semantics:</td>
<td>“weak” semantics:</td>
<td>may have</td>
</tr>
<tr>
<td>have (\text{PRED}) feature</td>
<td>no (\text{PRED}) feature</td>
<td>full semantics</td>
</tr>
<tr>
<td>projects to (X'')</td>
<td>projects to (X'')</td>
<td>does not project</td>
</tr>
<tr>
<td>“extension” of lexical category:</td>
<td></td>
<td>adjoins to (X^0)</td>
</tr>
<tr>
<td>functional co-head</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Functional category posited when a feature is associated with a structural position, generally only C, I and D assumed (Kroeger 1993, Börjars et al. 1999)

See Toivonen (2003) on non-projecting category
### Types of category in (HPSG)

<table>
<thead>
<tr>
<th>Full head</th>
<th>Transparent head</th>
<th>Weak head</th>
</tr>
</thead>
<tbody>
<tr>
<td>full semantics:</td>
<td>“weak” semantics</td>
<td>“weak” semantics:</td>
</tr>
<tr>
<td>CONTENT feature</td>
<td>no CONTENT feature</td>
<td>no CONTENT feature</td>
</tr>
<tr>
<td>projects to X’’</td>
<td>projects to X’’</td>
<td>does not project</td>
</tr>
<tr>
<td>combines with X’’</td>
<td>combines with X’’</td>
<td>combines with X’’ (or X’)</td>
</tr>
<tr>
<td>contributes all but CONTENT feature</td>
<td></td>
<td>contributes only MARKING feature: shares HEAD features with complement</td>
</tr>
</tbody>
</table>

### Heads in LFG vs heads in HPSG

<table>
<thead>
<tr>
<th></th>
<th>LFG</th>
<th>HPSG</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lex</td>
<td>Funct</td>
</tr>
<tr>
<td>own lex sem</td>
<td>+</td>
<td>–</td>
</tr>
<tr>
<td>“borrows” lex sem</td>
<td>–</td>
<td>+</td>
</tr>
<tr>
<td>projects</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>combines with</td>
<td>XP</td>
<td>XP</td>
</tr>
</tbody>
</table>
Types of prepositions in Swedish

- prepositions with full semantics

(5) Oscar åkte tåg till Stockholm.
   O travel train to S
   ‘Oscar traveled by train to Stockholm.’

- prepositions marking grammatical relation

(6) Oscar gav boken till läraren.
   O gave book.DEF to teacher.DEF
   ‘Oscar gave the book to the teacher.’

- “particles”

(7) Oscar sparkade till däcket.
   O kicked to tire.DEF
   ‘Oscar gave the tire a kick.’
Types of prepositions in LFG

- prepositions with full semantics
  
  \[
  \text{till} \quad P \quad (f \ \text{PRED}) = \text{‘till <OBJ>}’
  \]

- preposition marking grammatical relation
  
  \[
  \text{till} \quad P \quad (f \ \text{PCASE}) = \text{OBL}_{\text{Recipient}}
  \]

  \[
  \text{give} \quad P \quad (f \ \text{PRED}) = \text{‘give <SUBJ, OBJ, OBLθ>}’
  \]

  \[
  \text{VP} \quad \rightarrow \quad V \quad \ldots \quad PP
  \]

  \[
  \uparrow = \downarrow \quad (\uparrow(\downarrow\text{PCASE})) = \downarrow
  \]
Types of prepositions in LFG

- particle

Swedish particle *till* is aspectual marker (Toivonen 2003: 142)

\[ \hat{P} (f \text{ ASPECT TELIC}) = - \]
\[ (f \text{ ASPECT DYNAMIC}) = + \]
\[ (f \text{ ASPECT DURATIVE}) = - \]

Particles can also have \text{PRED} feature
Types of prepositions in HPSG

- preposition with full semantics

\[
\begin{align*}
\text{CAT} & : \begin{cases}
\text{HEAD} & : \text{prep} \\
\text{SUBJ} & : \langle \text{NP}_1 \rangle \\
\text{COMPS} & : \langle \text{NP}_2[\text{acc}] \rangle \\
\end{cases} \\
\text{CONT} & : \begin{cases}
\text{FIGURE} & : 1 \\
\text{GROUND} & : 2 \\
\end{cases}
\end{align*}
\]

Types of prepositions in HPSG

- preposition marking grammatical relation

\[
\begin{align*}
\text{CAT} & \[ \text{HEAD} \quad \text{MARKING} \quad \text{COMPS} \quad \text{CONT} 1 \] \\
\text{MARKING} & \quad [\text{CAT prep} ] \\
\text{COMPS} & \quad \langle [\text{CAT HEAD noun}] \rangle \\
\text{CONT} & \quad 1
\end{align*}
\]

‘non-predicative’ (Pollard & Sag 1994), ‘transparent’ (Flickinger 2008), full head with “weak” semantics (Abeillé et al. 2006)
Types of prepositions in HPSG

- weak head

```plaintext
[CAT[HEAD[MARKING[till]]COMPS]]
```

cf 'non-oblique' prepositions (Abeillé et al. 2006), ‘minor preposition’ (Van Eynde 2004)
Infinitival markers in Germanic

Grammaticalization:

allative preposition > purposive marker > infinitival marker

(Haselmath 1989)

Not necessarily mirrored by structural change
Infinitival marker in German

- **zu** cannot be separated from the verb

  (8) Er hat versprochen (bald) zu (*bald) kommen.
      he had promised soon INF soon come

- **zu** can be part of the verb

  (9) Sieben Tipps um wirklich munter aufzustehen
      seven tips in order to truly INF.stand
      cheerful up-INF.stand

Infinitival markers in English

- *to* can be separated from the verb, but not by much

(10) to boldly go where no man has gone before

(11) To really understand this situation you need to be an experienced politician.

Infinitival markers in Swedish

- *att* can be separated from the verb, even by whole phrase

(12) Hon njöt av att efter många år åter känna fast mark under fötterna.

She enjoyed of **INF** after many years again feel solid ground under feet.

‘She enjoyed feeling solid ground under her feet again after many years.’

(13) Att fastän hon bara kunde ha stängt dörren efter sig INF although she only could have closed door after **REFL**

stanna och lyssna på vad han hade att säga visade sig vara ett stay and listen on what he had to say showed be a poor decision

‘To stay and listen to what he had to say, even though she could have simply closed the door behind her, turned out to have been a poor decision.’
Infinitival marker in Swedish

- negation and negated objects obligatorily occur between *att* and the verb

(14) Hon gjorde sitt bästa för (*inte) *att* inte somna (*inte).

she did REFL.POSS best for not INF not fall asleep not

‘She did her best not to fall asleep.’

(15) Känslan av *att* ingenting kunna göra (*ingenting) skrämer feeling.DEF of INF nothing be able do nothing frightens

me

‘The feeling of not being able to do anything about it frightens me.’

Infinitival markers in Germanic

- structurally there are (at least) three types of infinitival marker
- the source is the same
- semantically, we can assume they are similar
- in LFG: C vs I vs V
- in HPSG: always a weak head, may combine with different categories
Romance prepositions

- two prepositions à/a ‘at, to’ and de/di ‘of’
- both co-occur with both NPs and VPs

(16) **Il va à Paris** (Fr)
he go.PRES.3SG A Paris
‘He goes to Paris.’

(17) **Comincia a ballare** (It)
begin.PRES.3SG A dance.INF
‘He begins to dance.’
Romance prepositions

(18) los discos de mi primo (Sp)
the discs DE my cousin
‘my cousin’s discs’

(19) O Pedro gosta de tocar flauta (Port)
The Pedro like.PRES.3SG DE play.INF flute
‘Pedro likes to play the flute.’
Abeillé et al. (2006) distinguish two binary contrasts:

- oblique vs non-oblique
- semantically ‘vacuous’ vs semantically ‘full’

- ‘oblique’ à/de phrases have the distribution of PPs - i.e. the items are full heads
- ‘non-oblique’ à/de phrases have the distribution of NPs/VPs, i.e. the items are weak heads
Romance prepositions

**oblique de**: prep-word &

\[
\begin{align*}
\text{MARKING} & \quad \text{de} \\
\text{COMPS} & \quad \langle \langle \text{HEAD} \quad \neg \text{verb} \rangle \rangle \\
\quad & \quad \langle \langle \text{MARKING} \quad \neg \text{de} \rangle \rangle \\
\quad & \quad \langle \langle \text{COMPS} \quad \langle \rangle \rangle \rangle
\end{align*}
\]

**nonoblique de**: weak-head &

\[
\begin{align*}
\text{HEAD} & \quad \text{noun} \lor \text{verb} \\
\text{MARKING} & \quad \text{de} \\
\text{SPR} & \quad [1] \\
\text{COMPS} & \quad \langle \langle \text{SPR} \quad [1] \rangle \rangle
\end{align*}
\]

(Abeillé et al. 2006: (72) and (75))
Over time we find evidence of:

- nouns evolving into prepositions
- prepositions evolving into complementizers
- prepositions evolving from lexical (‘full semantics’) to grammatical (‘weak’ semantics)
But not:

- complementizers evolving into prepositions

Why not?

- because non-finite forms start out as nominal, whereas there is no corresponding shift involving nominalization of finite forms
- this is not a property to be attributed to UG but to the content of these constructions
From nominal to verbal

- from LFG perspective these changes are:
  lexical head > functional head (P) > functional head (C)

- from HPSG perspective these changes are:
  lexical head > weak head (P) > weak head (C)
Minimalist analyses

- P and Case: prepositions like de/di and à/a treated as exponents of Case as well as being case-assigners
- functional vs lexical prepositions: ‘functional’ includes all uses of ‘simple’ prepositions to, at, on, etc while lexical covers (Cinque 2010)
- prepositions as probes, where probe is [– interpretable] (Kayne 2004)
- cartography/nanosyntax: involves a proliferation of heads including silent ones like PLACE Svenonius (2008)
- ‘Prepositional complementizers do not form a constituent with the infinitival IP they are associated with’ (Kayne (1999: 50), but see Borsley (2001))
- prepositional complementizers occupy slots within CP/IP: de/di in Fin head (Rizzi 1997)
Conclusions

• relevance of diachronic data for theory construction
  → change has directionality
  → change happens in small steps
  → change can happen separately in different dimensions

• requirements of a model
  → granularity of formal representation must capture steps of change
  → the relation between steps should be captured as part of the representation
  → different dimensions of linguistic information represented separately, but linked by correspondence rules
Thank you!


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