Morphology as a module of grammar?

Joost Kremers
University of Göttingen, Germany
joost.kremers@phil.uni-goettingen.de

IMM 15
Vienna, February 9-12, 2012
Syntax and Morphology

- Architecture of the grammar:
  - Phonology
  - Morphology
  - Syntax
  - Semantics

- Language as a pairing of form and meaning:

  \[
  \begin{align*}
  \text{form} & \approx \text{phonology} \\
  \text{meaning} & \approx \text{semantics} \\
  \text{pairing} & \approx \text{syntax+morphology}
  \end{align*}
  \]
Syntax and Morphology

Conceptual and theoretical arguments in favour of a unified module:

- There is no obvious functional distinction.
- Both are generative systems manipulating the same objects: heads.
- What is a word? (Dixon & Aikhenvald 2002, Haspelmath 2011)
Bare Phrase Structure

- Merge as the only structure-building operation.
- \(X^\circ\): minimal (non-projecting) head.
- XP: maximal projection of \(X\).

(1) a. \[
Y^\circ \to X^\circ \to X^\circ
\]

(1) b. \[
Y \to Z \to X
\]
Suppose we have the structure in (2):

(2)  

\[ \text{V} \]

\[
\text{water} \quad \text{boil}
\]

We do not know at this point whether the derivation is going to yield *to boil water* or *water boiler*. 
Representations such as those in (3) and (4) are not distinguished in BPS:

(3) a. \text{V°} \\
\quad \text{water}_N \quad \text{boil}_V \\

b. \text{VP} \\
\quad \text{boil}_V \quad \text{water}_N \\

Models of grammar are based on the intuition that there is a distinction between the word level and the phrasal level.
Proposal

▶ An optical (or rather acoustic) illusion:

(4) a. PWd ≈ “Morphology”
   b. PPhr ≈ “Syntax”

The structure-building mechanism does not determine onto which level in the prosodic hierarchy a structure is mapped.

(Separation Hypothesis, Beard 1988)
Arabic verbal nouns

(5) ʔaqlaqa-nī -ntiqād-u -l-rajul-i -l-mašrūf-a
annoy-1sg.O criticising-NOM DEF-man-GEN DEF-project-ACC
‘The man’s criticising the project annoyed me.’

Properties:

- Regular form (in most verb stems).
- Event-Structure.
- Subject takes genitive case.
- Object takes genitive case when no subject is present, otherwise accusative or PP.
- In other words: Poss-ing or Ing-of (Abney 1987).
Arabic verbal nouns

McCarthy & Prince’s (1990) account:

Form: ʿintiqād

| Root: /nqd/ | Nominalizer: /i.a/ |
| Stem VIII: (σ)σμ | Non-finite: -σμμ |
| ______ | ______ |

Syllabic tier
Segmental tier

(σ) σ μ
μ τ
σ μ μ (σ)

n t i q a d

Syllabic tier
Segmental tier
The four morphemes are ordered based on phonological principles only.
Arabic verbal nouns
The four morphemes in the word form *intiqād* need to be combined.

Only phonology needs to “know” that the four morphemes need to be combined; syntax does not.

Syntax/phonology mapping principle:

(6) *Input Correspondence*:
If A selects (a projection of) B, \( \Phi(A) \) selects \( \Phi(B) \).

VIII selects $\sqrt{}$, N-FIN selects VIII, and NOML selects N-FIN.

There is no need for a distinct sub-tree containing these four heads.

By Input Correspondence, all four morphemes must be realised in a single form.
Phonological composition

- Syntax creates hierarchical feature structures (BPS, no linear order).
- The phonological chunks associated with syntactic heads are assembled into a phonologically licit form.
- Principles relevant to phonological composition:

  (7) a. Phonological principles
      b. Mapping principles
Latin -que

(8)  

bonī  puerī  bonae-que  puellae

good  boys  good-and  girls
‘good boys and good girls

- Embick & Noyer (2001) argue that -que attaches to the first MWd of its complement.
Latin -que

Note the following data (Embick & Noyer 2001: 576):

(9) a. *circum-*que ea *loca*  
around-and those places  
‘and around those places’

b. *contrā-*que *lēgem*  
against-and *lēgem*  
‘and against the law’

(10) a. *in rēbus-*que  
in things-and  
‘and in things’

b. *dē prōvinciā-*que  
from province-and  
‘and from the province’

-que attaches after the first PWd (Agbayani & Golston 2010).
Latin -que

- Latin -que is a *prosodic* morpheme:

\[
\begin{array}{c}
\sigma|_{\omega} \\
\wedge \\
\text{kw} \\
\epsilon
\end{array}
\]

- The phonological form of -que specifies that it is a syllable that must appear at the right edge of a PWd.
Tagalog -um-

(12) a. aral – um·aral
    b. sulat – s·um·ulat
    c. gradwet – gr·um·adwet

(13) \[
\omega \mid \sigma \quad \Lambda \quad \Lambda \\
_u \quad \sigma \quad \sigma \\
_u \quad m
\]
English -ing

(14) \[ \sigma \mid_\omega \]

\[ \hat{\eta} \]

\[ \hat{i} \]
Lexical Integrity

One difference between syntactic and morphological complex heads is *Lexical Integrity*:

- Subextraction of parts of words is not possible.
- Features of parts of words are not accessible to syntax.
Lexical Integrity

For example, a compound cannot be split up:

(15) *Tea$_i$, I have bought a t$_i$ pot.

However, the same is true for certain phrases:

(16) *Blue$_i$, I have bought a t$_i$ tea pot.
Consider also the following data (Pereltsvaig 2008: 8, 10):

(17) Čërnogo_I ja rešila ne pokupat’ [NP t_i xleba]!
black_I decided not to.buy bread
‘I decided not to buy black bread.’

(18) V_vagon_i ona xodila t_i-restoran obedat’.
to carriage she went restaurant to.dine
‘She used to go dine in a carriage restaurant.’
Lexical Integrity

Sometimes selectional restrictions of nonheads percolate up:

(19) *verbouw-plannen*  *aan het huis*
    reconstruction-plans on the house
    ‘reconstruction plans for the house’

(20) *Benghazi, the grootste door opstandelingen tegen Gaddafi*
    *Benghazi, the largest by revolters against Gaddafi*
    *bestuurde stad*
    governed city
    ‘... Benghazi, the largest city governed by opposition forces against Gaddafi’
(21) Semantic units correspond to syntactic units, and vice versa.
A strong, but violable principle of language: displacement violates it.

At the same time, the SCP restricts displacement: an element that is displaced in syntax acts as a syntactic unit and must therefore be a semantic unit as well.
Correspondence mismatches

- When a complex syntactic unit corresponds to a simplex semantic unit, we expect the syntactic unit to become opaque.
- Hebrew compounds (Borer 1989, 2009) confirm this expectation:
  - Nonhead cannot be modified.
  - Nonhead cannot be coordinated.
  - Nonhead is not referential.
  - Meaning is nontransparent.
  - Pronominal reference to head or nonhead separately is not possible.
Lexical Integrity

- The SCP ensures that syntax and semantics match up.
- Input (and Linear) Correspondence do the same for syntax and phonology.
- Correspondence tendencies:
  - simplex semantic unit (concept) ↔ syntactic head.
  - syntactic head ↔ PWd (or syllable).
Morphology by itself

- Certain effects clearly cannot be attributed to syntax.
- N-pattern suppletion in Romance (Maiden 2004):
  
<table>
<thead>
<tr>
<th></th>
<th>sg</th>
<th>pl</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>siento</td>
<td>sentimos</td>
</tr>
<tr>
<td>2nd</td>
<td>sientes</td>
<td>sentís</td>
</tr>
<tr>
<td>3rd</td>
<td>siente</td>
<td>sienten</td>
</tr>
</tbody>
</table>

- Forms may have purely “morphological” meanings (Aronoff 1994).
Morphology by itself

- However, “morphological” meaning is *not* about linking form with meaning.
- Morphological patterns arise as a result of:
  - (arbitrary) historical developments
  - general constraints on pattern matching and categorisation (e.g., Principle of Contrast, Carstairs-McCarthy 2004)
In many languages, there is a general tendency for simplex semantic units to correspond to prosodic words. Although not specified by UG, this correspondence may become a strong factor in the I-grammar. This may lead to I-grammatical effects that only apply to the “word”. Generalisations in this domain are not directly constrained by UG; they may arbitrarily reference semantics, syntax and phonology. That is what we call “morphology”.


