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On a realistic LFG treatment of the periphrastic IRREALIS MOOD in Hungarian

Tibor Laczkó

Department of English Linguistics
University of Debrecen

laczko.tibor@arts.unideb.hu
http://ieas.unideb.hu/laczko
1. Introduction
1.1. Introduction

Goals of the talk

1. to develop and implement an analysis of the **Hungarian periphrastic irrealis mood** in the framework of Lexical-Functional Grammar by
   
   • subscribing to the **paradigmatic** (= inferential-realizational) view of morphology/morphosyntax and
   • formally maintaining LFG’s classical synthetic notion of a morphological word (= **one-word lexical entry strategy**)

2. to posit it in a **broader** cross-linguistic and cross-theoretical **context**
1.2. Introduction

Structure of the presentation

1. Introduction
2. The data
3. The challenge
4. The paradigmatic approach
5. Two analyses in LFG
6. Paradigms in HPSG
7. Conclusion
2. The data
2.1. The data

- Hungarian **conditional** verb forms (cf. *would see*) are **synthetic**
- **irrealis** verb forms (cf. *would have seen*) are systematically **analytic**: they use a two-word pattern
  - the first word is the conjugated past tense form of the lexical verb
  - the second word is the combination of one of the stems of the copula *van* ‘be’ (*vol-*) and the conditional marker (*-na*)

\[
V-PAST-AGREEMENT \quad VOLNA
\]

→ formally, Hungarian encodes **irrealis** mood periphrastically via the combination of two words and two morphosyntactic features: **PAST** and **CONDITIONAL**
2.2. The data

the two singular & indefinite paradigms

classified as conditional, indef. and irrealis, indef.

‘would see’                          ‘would have seen’

lát- né-k                           lát- t-ám       vol-na
see-COND-1SG                        see-PAST-1SG    be-COND

lát- ná-l                           lát- t-ál       vol-na
see-COND-2SG                        see-PAST-2SG    be-COND

lát- na                             lát- ott        vol-na
see-COND.3SG                        see-PAST.3SG    be-COND

earlier Hungarian had several analytic tense form complexes, e.g.:

(a) PRES&AGR + PAST
megy-ek vala
for Mari and Udmurt counterparts, see below
c. ‘I was going’
go-PRES.1SG VALA
g. ‘I had gone’
go-PAST-1SG VALA/VOLT

(b) PAST&AGR + PAST
men-t-em vala/volt
volna is also a member of the conditional paradigm:
vol-né-k be-COND-1SG
vol-ná-l be-COND-2SG
vol-na be-COND.3SG
2.3. The data

- *volna* (even in the expression of irrealis mood) is an independent syntactic atom, see Bartos (2000)

(1) %vár-t \textit{is} volna  
wait-PAST.3SG.INDEF too VOLNA  
‘he would also have waited’

(2) %vár-t-ál \textit{csak} volna  
wait-PAST-2SG.INDEF only VOLNA  
‘you would only have waited’

(3) %vár-t-ál-e volna?  
wait-PAST-2SG.INDEF-QM VOLNA  
‘would you have waited?’

(4) én megsüt-őtt-em \textit{∅, te pedig mege-tt-ed} volna  
fry-PAST-1SG.DEF you by.contrast eat-PAST-2SG.DEF VOLNA  
‘I would have fried (it) and you, in turn, would have eaten (it)’
3. The challenge
3.1. The challenge

• ideally, the two conditional paradigms (analytic vs. synthetic) should be treated in a uniform manner

\[
(1) \text{lát-t-am vol-na} \quad (2) \text{lát-né-k}
\]

see-PAST-1SG BE-COND \quad see-COND-1SG

‘I would have seen’ \quad ‘I would see’

BUT:

• lexical forms are assumed to be synthetic (morphological) words in LFG

• in addition, this irrealis mood is non-compositional:

\[
\text{PAST + COND} \rightarrow \text{IRREALIS}
\]

(formally, morpho-phonologically a genuine past tense morpheme, BUT not semantically/functionally: compatibility with present & future)
4. The paradigmatic approach
4.1. The paradigmatic approach

- Matthews (1991)
- Vincent & Börjars (1996): LFG - a treatment of suppletion and periphrasis at *f*-structure, phenomena from Kashmiri, and comparative adjectives and adverbs in Latin and Romance (compositional)
- Börjars et al. (1997)
- Ackerman & Webelhuth (1998)
- Ackerman & Stump (2004)
- Ackerman et al. (2011)
- Bonami and Samvelian (2009): HPSG (Persian complex predicates)
- Bonami & Webelhuth (2012): HPSG (English, German and French verbal complexes)
4.2. The paradigmatic approach

Ackerman & Stump (2004: 115)

- A lexeme may be realized synthetically (as a single syntactic atom) or periphrastically (by two or more syntactic atoms co-occurring in a c-structure).

- The contentive information associated with a periphrase is not determined by the contentive information associated with its individual, syntactically independent parts through the mediation of unification principles defined on syntactic structures; rather, the contentive information associated with a periphrase is specified morpholexically. That is, syntactic principles of constituency and linearity determine the distribution of a periphrase’s individual parts, but not the functional information which that periphrase expresses. [emphasis mine, TL]
4.3. The paradigmatic approach

Ackerman & Stump (2004: 116, Fn. 8)

• Minimally, within LFG the possibility of multi-word lexical items requires modifying the conventions used for annotating c-structure expressions associated with single-word lexical items so that appropriate lexical information will produce well-formed f-structures. We leave these sorts of implementational issues to another forum in favor of developing general arguments for the morphological status of periphrasis.

[emphasis mine, TL]
4.4. The paradigmatic approach

Ackerman & Stump (2004: 142)

one of the sufficient (but not necessary) criteria for the identification of periphrases: noncompositionality

• If the morphosyntactic property set associated with an analytic combination C is not the composition of the property sets associated with its parts, then is a periphrase.

<table>
<thead>
<tr>
<th>second past realization in Eastern dialects of Mari (Cheremis)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFFIRMATIVE</td>
</tr>
<tr>
<td><strong>kol-en-am</strong></td>
</tr>
<tr>
<td>die-PAST-1SG</td>
</tr>
<tr>
<td>‘I died’</td>
</tr>
</tbody>
</table>

ordinary synthetic form gerund + negated and conjugated present tense copula = second past
4.5. The paradigmatic approach
Ackerman & Stump (2004: 146)

<table>
<thead>
<tr>
<th>Udmurt: imperfective past tense</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FUTURE</strong></td>
</tr>
<tr>
<td><em>mïno</em> ‘I will go’</td>
</tr>
<tr>
<td><em>mïnod</em> ‘you will go’</td>
</tr>
<tr>
<td><em>mïnoz</em> ‘(s)he will go’</td>
</tr>
<tr>
<td><strong>IMPERFECTIVE PAST</strong></td>
</tr>
<tr>
<td><em>mïno val</em> ‘I used to go (long ago)’</td>
</tr>
<tr>
<td><em>mïnod val</em> ‘you used to go (long ago)’</td>
</tr>
<tr>
<td><em>mïnoz val</em> ‘(s)he used to go (long ago)’</td>
</tr>
</tbody>
</table>

**future-tense form** (inflected for subject agreement) + **invariant past** form of the **copula** = **imperfective past**

cf. Hungarian:

<p>| |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>PAST &amp; AGR + COND  →  IRREALIS</td>
</tr>
<tr>
<td>† PRES &amp; AGR + PAST  →  PAST CONTINUOUS</td>
</tr>
<tr>
<td>† PAST &amp; AGR + PAST  →  PAST PERFECT</td>
</tr>
</tbody>
</table>
5. Two LFG analyses
5.1. Two LFG analyses

general considerations

- Lexical Integrity Principle (Bresnan 1982) \(\Rightarrow\) both theoretical and implementational aspects
  - theoretical: the classical view
  - implementational: the architecture of XLE

- one (morphological) word = one synthetic form = one lexical item = one syntactic atom
5.2. Two LFG analyses

(A) a morpheme-based solution: a classical LFG treatment

(1) \textit{látál}, V ‘see <(↑SUBJ) (↑OBJ)>’
    (↑SUBJ PERS) = 2
    (↑SUBJ NUM) = SG
    (↑OBJ DEF) = −
    (↑TENSE) = PAST
    \{ (↑MOOD) = INDICATIVE
        (↑MOOD) = C CONDITIONAL
    \}
    (↑PRT FORM) = _C VOLNA _.

(2) \textit{volna}, PRT
    (↑PRT FORM) = VOLNA
    (↑TENSE) = _C PAST
    (↑MOOD) = CONDITIONAL.

implemented in XLE in \textit{Laczkó & Rákosi} (2008-2013): past + conditional = irrealis (face values)

\begin{itemize}
\item \textbf{the major problem:}
  \begin{itemize}
  \item semantically (functionally): ~past
  \item \textbf{inappropriate f-structure}
  \end{itemize}
\end{itemize}
5.3. Two LFG analyses

(A) a morpheme-based solution: XLE implementation

"Te láttál volna két lányt."

You would have seen two girls.
5.4. Two LFG analyses

B) a realization-based solution (1)


(1) *ki* PRT XLE
   ((↑ DIR) = out)
   (↑PRT-FORM)= ki
   (↑CHECK _PRT-VERB) =c +.

(2) *mászik* V XLE
   (↑PRED)= ‘crawl-out < (↑SUBJ) (↑OBL) >’
   (↑CHECK _PRT-VERB) = +
   (↑PRT-FORM)=c ki
   (↑ DIR) =c out.

(3) *fejez* V *
   (↑PRED)= ‘express <(↑SUBJ) (↑OBJ)>’
   (↑CHECK _PRT-VERB) = +
   (↑PRT-FORM)=c ki.

*Laczkó (2013) (⇔ Forst et al. (2010) and Laczkó & Rákosi (2011))*
5.5. Two LFG analyses

B) a realization-based solution (2)

(1) látítál, V ‘see <(↑SUBJ) (↑OBJ)>’

(↑SUBJ PERS)= 2
(↑SUBJ NUM)= SG
(↑OBJ DEF)= –
{ (↑TENSE)= PAST
  (↑MOOD)= INDICATIVE
  | (↑MOOD)= IRREALIS
  (↑CHECK _PRT-VERB)= +
  (↑PRT FORM)=_{C VOLNA} }.

(2) volna, PRT

(↑PRT FORM)= VOLNA
(↑CHECK _PRT-VERB)=_{C +}.

cf. the treatment of PVCs, in Forst et al. (2010), Laczkó & Rákosi (2011), Laczkó (2013)

all the specifications of the given paradigmatic slot are encoded in the lexical verb’s entry

associated with the +Past tag of the morphological analyzer

it only has a form feature
5.6. Two LFG analyses

B) a realization-based solution (3): XLE implementation

"Te lát-t-ál volna két lány-t."

‘You would have seen two girls.’
5.7. Two LFG analyses

the phrase structure issue

- the crucial assumption:
  - **preverbs** of particle-verb constructions
  - **volna**
  - **is** (‘also’)
  - **csak** (‘only’)
  - **-e** (yes-no question marker)

belong to the non-projecting category PRT (cf. Toivonen (2001))
6. Paradigms in HPSG
6.1. Paradigms in HPSG

Bonami and Samvelian (2009)
   – on Persian complex predicates

Bonami & Webelhuth (2012)
   – on English, German and French verbal complexes
6.2. Paradigms in HPSG

Bonami & Webelhuth (2012)

paradigm function

(37) The perfect periphrase in English
6.3. Paradigms in HPSG

- “the perfect word constructs its phonology in an unusual way: instead of feeding the pf (•) function with its own LID, it provides the LID of LEAVE instead” [my emphasis]
- cf. my FORM feature

Paul has left.

Paul has a book.
7. Conclusion
7.1. Conclusion

1. This analysis spells out the inferential-realizational approach to periphrasis advocated by Ackerman & Webelhuth (1998) and Ackerman et al. (2011), among others, in an LFG framework in this particular inflectional domain.

2. It leaves a basic aspect of the widely accepted, classical view of lexical encoding in LFG intact: by using an appropriate checking and cross-referencing mechanism in the relevant lexical forms, it can avoid recourse to multiple word lexical entries, which would pose rather severe problems for LFG’s general morphological assumptions as well as for implementation. For a discussion, see Laczkó & Rákosi (2011, 2013).

3. The devices can be argued to be motivated and justified independently, again, see Laczkó & Rákosi (2011, 2013) for the treatment of derivational processes in the case of non-compositional PVCs, and Laczkó (2013) for both compositional and non-compositional PVCs.
7.2. Conclusion

4. This analysis is part of my larger project of developing an LFG proposal for treating several categories as non-projecting words, in the (modified) sense of Toivonen (2001), or minor categories, in the sense of Dalrymple (2001).

• so far: preverbs, now: volna, later: nem ‘not’, is ‘also’, -e ‘QM’, csak ‘only’, etc.

5. Butt et al. (2004), Frank & Zaenen (2004), etc. — m-structure

6. Dalrymple (2015, talk at LFG15, day 2)
Acknowledgements

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- the OTKA (Hungarian Scientific Research Fund) project entitled COMPREHENSIVE GRAMMAR RESOURCES: HUNGARIAN (grant number: NK 100804).
References (1)


References (2)


References (3)


References (4)


References (5)
Appendix

(1) *fog-ok me-nni*
    will-1SG go-INF
    ‘I will go’

- ‘will’ is inflected for (subject-verb) agreement, and it is V (≡ I or PRT), see Laczkó (2014)
- both elements are Vs and they are co-heads → the FORM constraint wouldn’t work here (≡ volna)

(2) menni₁, V ‘GO < (↑ SUBJ) (↑ OBL) >’
    (↑ SUBJ NUM)=c sg
    (↑ SUBJ PERS)=c 1
    (↑ TENSE)=c FUT
    (↑ DEF)=c –

- the TENSE constraint requires the presence of (always finite) fog ‘will’
- the specifications of the entire paradigmatic slot are encoded in the lexical form of the infinitive; however, here by dint of constraining equations
4.6. The paradigmatic approach

- in all these cases a form of the copula is involved
- Hungarian, Udmurt: the copula form is invariant and the lexical verb is conjugated
- Mari: the lexical verb form is invariant and the copula is conjugated
- there are also instances when the encoding of agreement is done jointly by the two elements (person vs. number)
- the two elements are non-compositional AND there is (possibly unpredictable) variation in the locus of encoding conjugation

→ motivation for a paradigmatic approach
## 4.7. The paradigmatic approach

<table>
<thead>
<tr>
<th>Taxonomy of lexicalist approaches (Ackerman et al. 2011)</th>
<th>Lexical modification</th>
<th>Morpholexical inflection</th>
<th>Unary expression</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classical LFG (A)</td>
<td>Bresnan</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Some recent LFG views (B)</td>
<td>Alsina, Bresnan, Butt</td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>Realization-based lexicalism (C)</td>
<td>Ackerman, Ackerman et al.</td>
<td>YES [yes]</td>
<td>YES [yes]</td>
</tr>
</tbody>
</table>

(A) Bresnan (1982)


4.8. The paradigmatic approach

(C) Ackerman (1987, 2003)
Ackerman, Stump & Webelhuth (2011:16)

- Only **morphological** and not syntactic **rules** can associate **morphosyntactic content** with a lexeme’s realizations (= the principle of morpholexical inflection).

- **the paradigmatic view, TL: OK**

- **Lexemes** tend to be expressed by single **synthetic word** forms but can also be expressed by **combinations of words ⇔ (B)** (cf. the classical notion of a **morphological word**).

- **TL – aim here: to reconcile the paradigmatic view with the classical notion of a(n obligatorily synthetic) lexical form**
4.9. The paradigmatic approach

Ackerman (2003) on Hungarian particle-verb constructions (PVCs):

**Morphological Expression** (Ackerman & Webelhuth 1998)

*Synthetic realization principle*

- Where the realization \( w \) of \( <L,\delta> \) is a synthetic member of category \( X \), \( w \) may be inserted as the head of \( XP \).

*Periphrastic realization principle*

- Where the realization \( w_1w_2 \) of \( <L,\delta> \) is periphrastic and \( w_1 \) and \( w_2 \) belong to the respective categories \( X \) and \( Y \), \( w_1 \) and \( w_2 \) may be inserted as the heads of the respective nodes \( X(P) \) and \( Y(P) \).

- \( [\delta = \text{either morphosyntactic or derivational properties}] \)

PROGRAMMATIC FOR HUNGARIAN PVCs AND LFG \( \rightarrow \) THEORETICAL AND IMPLEMENTATIONAL CHALLENGES FOR LFG

7.2. Conclusion

4. This analysis is part of my larger project of developing an LFG proposal for treating several categories as *non-projecting words*, in the (modified) sense of Toivonen (2001), or *minor categories*, in the sense of Dalrymple (2001).
   - so far: preverbs, now: *volna*, later: *nem* ‘not’, *is* ‘also’, -e ‘QM’, *csak* ‘only’, etc.

5. The construction type shown in (1) requires an entirely different treatment.

   (1) *fog-ook*  *me-nni*

   will-1SG  go-INF

   ‘I will go’

   • ‘will’ is
     • inflected for (subject–verb) agreement
     • of category V (and not Infl or PRT), see Laczkó (2014)