Experimental evidence for the structure of the Hungarian VP

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The problem

Arguments in the Hungarian VP show syntactic symmetries as well as asymmetries.

Data used in mapping the VP did not come from methodologically well grounded experiments.

**Goal:** To provide such data and to see the effects this bears on theories of the VP.
Introduction
Phenomena showing symmetries between argument NPs
Phenomena showing asymmetries between argument NPs
Results of an acceptability judgement based experiment
Discussion and conclusion
The Hungarian clause can be divided into two distinct domains

- preverbal
- postverbal
Preverbal domain

- Pre-verbally: highly structured; where constituents move to satisfy information structure related roles such as Topic and Focus.

(1) \( \text{Mari}_{\text{TOP}} \ a \ \text{levest}_{\text{FOC}} \ \text{ette} \ \text{meg} \)  
Mary the soup.ACC ate PRT  
‘As for Mary it was the soup that she ate.’

(2) \( \text{A} \ \text{levest}_{\text{TOP}} \ \text{Mari}_{\text{FOC}} \ \text{ette} \ \text{meg} \)  
the soup.ACC Mary ate PRT  
‘As for the soup it was Mary who ate it.’

- asymmetries in scope taking
- C-command = linear precedence
Postverbal domain

Free constituent order

(3)  a. Tegnap látta Marit János.
yesterday saw Mary.\textit{ACC} John.\textit{NOM}
b. Tegnap látta János Marit.
yesterday saw John.\textit{NOM} Mary.\textit{ACC}

‘It was Yesterday that John saw Mary’

(4)  a. Tegnap adtam Julinak egy almát.
Yesterday gave.\textit{1SG.PAST} Julie.\textit{DAT} an apple.\textit{ACC}
b. Tegnap adtam egy almát Julinak.
Yesterday gave.\textit{1SG.PAST} an apple.\textit{ACC} Julie.\textit{DAT}

‘It was yesterday that I gave an apple to Julie.’
Postverbal domain

- c-command $\neq$ linear precedence
- structural asymmetries
- but also: apparent structural symmetries
Postverbal symmetries

Condition C violation (É. Kiss 1987) (examples from É. Kiss 2002)

(5)  
(a) *Felhívta [őket,] [a fiúk; anyja] called.PASS.3SG they.ACC the boys mother.POSS.NOM 'The boys’ mother called them'
(b) *Felhívták ([ők,]) [a fiúk; anyját] called.PASS.3PL (they.NOM) the boys mother.ACC 'The boys called their mother.'
Lack of Weak Crossover effects (WCO) in local *wh*/focus-movement. (É. Kiss 1987) (examples from (Surányi 2006))

(6) a. Kit_{iT} hívott fel [az pro \_ anyja] 
who.ACC called.3SG.PAST up the (his) mother.POSS.3SG(NOM) 'Who did his mother call up?'

b. Ki_{iT} hívta fel t[i] [az pro \_ anyját]  
who.NOM called.3SG.PAST up the (his) mother.POSS.3SG(ACC) 'Who called up his mother?'
Condition A violation (É. Kiss 1991) (examples taken from É. Kiss 2008)

(7) a. Megkérdeztem a fiúkat egymásról
    PRT.ask.PASS.1SG the boys.ACC eachother-about
    ’I asked the boys about each other’

b. *Megkérdeztem a fiúkról egymást
    PRT.ask.PASS.1SG the boys-about each other.ACC
    ’I asked each other about the boys.’
The scope taking possibilities of monotone decreasing quantifiers differ from other quantifiers (Szabolcsi 1997); Surányi (2006) used this property to highlight a subject-object asymmetry in inverse scope-taking.

(8) Tavaly végzett el ... last year complete.PASS.3SG PRT

a. minden diák kevés kurzust \( (S > O, *O > S) \)
every student.NOM few course.ACC
'It was last year that every student did few courses.'

b. minden kurzust kevés diák \( (S > O, O > S) \)
every course.ACC few student.NOM
'It was last year that each course was completed by few students.'
'It was last year that every student did few courses.'
Theories

  - Thematic hierarchy; linear precedence, Behaghel’s law
  - Surányi (2006a,b): scrambling movement
There is a need to more quantifiably test the phenomena that have been used in the debate over the Hungarian VP.

The results of Szalontai (2012) indicate that there is a complex effect of syntactic and non-syntactic factors in the results of acceptability judgements: this needs to be verified by a more extended study.

Experiment presented: tests some of the phenomena used in the debate in nominative-accusative and accusative-dative constructions.
Experiment: Methods

- phenomena: Condition A, Condition C, WCO
- subjects: 148, volunteered through an add on a social media site.
- Millisecond Inquisit v. 3.0.6.0
- Stimuli: individually randomized order; presented with contexts that clarified binding/scope relations.
- Verb used: *bemutat* to introduce’
- Task: judge grammaticality on a 7 point Likert scale
- Results: analyzed with repeated measures analysis of variance (ANOVA)
(9) Bemutatta [egymást] [Éva és Laci] a introduce.PASS.3PL each other.ACC Eva.NOM and Laci.NOM the
csapatépítésen...
team building
’Eva and Laci introduced each other at the team building (exercise)’

(10) Az értekezleten bemutattam [egymást] the meeting PRT.introduce.PASS.1SG each other.ACC
[Kissnek és Simonyinak]....
Kiss.DAT and Simonyi.DAT
’It was at the meeting that I introduce Kiss and Simonyi to each other.’
Condition A results: Nominative-Accusative

P-values: case < 0.00001; word order = 0.27; case + word order = 0.951
Condition A results: Accusative-Dative

P-values: case < 0.0000001; word order = 0.79; case+wordorder = 0.24

Case of anaphor . word order
Condition A points to clear asymmetries between constituents.

- NOM > ACC
- ACC > DAT

Asymmetries correlate with case: linear precedence ruled out.
(11) A debreceni vonaton bemutatta [a Zolival; the debracen train PRT.introduce.PASS.1SG the Zoli.with egy kupéban ülő lányt] [ői] Istvánnak. one cabin sitting girl.ACC he.NOM Steven.DAT 'On the train to Debrecen, he introduced the girl sitting in one cabin with Zoli to Steven.

(12) Kedden bemutattam a [Danival; egy irodában tuesday PRT.introduce.PASS.1SG the Dani.with one office ülő munkatársnak] [őt]. sitting colleague.DAT he.ACC. 'On tuesday I introduced him to the colleague sitting in the same office as Dani.'
Condition C results: nominative-accusative

P-values: case = 0.938; word order = 0.260; case + word order = 0.203

case of r-expression . word order

![Boxplot diagram showing distributions for different conditions.](image)
Condition C results: accusative-dative

P-values: case = 0.219; word order = 0.819; case + word order = 0.069

case of r-expression . word order
Discussion: Condition C

- no significant effect of the factors
- a possible indication of mutual c-command $\Rightarrow$ flat structure
- But: results are not categorically ungrammatical
  - effects of other factors: processing, economy...
  - Reidnhart (2006): reference set computation can result in economy violations; Condition C: has reference set computation, Condition A doesn’t

- there is a possible difference between the results of Nom-Acc and Acc-Dat structures: internal-external argument asymmetries.
(13) A mai értekezleten is bemutatott the today’s meeting.on also PRT.introduce.PASS.3SG
[mindenkit;j] [a pro; főnöke] a munkatársaknak everyone.ACC the bossPOSS.NOM the colleagues.DAT
’At today’s meeting as well, everyone was introduced by their boss to the colleagues’

(14) A társkereső rendezvényen bemutattam a the match making event PRT.introduce.PASS.1SG the
[pro; párját] [mindenkinek;i] partner.poss.ACC everyone.DAT
’At the match making event I introduced everyone to their partner’
WCO results: nominative-accusative

P-values: case = 0.058; word order = 0.775; case + word order = 0.775

case of quantifier . word order
WCO results: accusative-dative

P-values: case = 0.259; word order = 0.756; case + word order = 0.011

case of quantifier . word order
Discussion: WCO

- NOM-ACC: the effects of case seem to be slightly significant: NOM > ACC hierarchy
- DAT-ACC: combination of case and word order effect are significant.
  - opposite results to Condition A test
  - WCO: probably more complex in terms of unaccounted effects...
- Difference between external-internal and internal-internal tests: asymmetry between arguments.
Summary and Conclusion

- Condition A test: evidence for structural hierarchies
- Condition C test: possible evidence for external-internal argument asymmetries; indication of non-syntactic effects in grammaticality judgements
- WCO test: possible evidence for external-internal argument asymmetries; slight indication of structural hierarchies in Nominative-Accusative constructions; possible presence of non-syntactic factors in grammaticality judgements

General conclusion: a comprehensive theory of the Hungarian VP will need to be built on experimental data which can tease apart and account for the different factors involved in the judgement of structure revealing phenomena.
thank you!

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