

# Argument Inheritance and Left Periphery in Hungarian Infinitival Constructions

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## Abstract

Hungarian infinitival constructions have both mono-clausal and bi-clausal properties at the same time. The arguments of the infinitive behave the same way as the arguments of the finite verb do, but the non-finite verb has its own left periphery. After discussing the general description of Hungarian sentence structure and presenting an HPSG analysis for it – including a description of the connection between word order and scope order in the Hungarian left periphery – this paper presents an analysis for Hungarian infinitival constructions. The analysis lexically distinguishes the left peripheral arguments of the infinitive from its complements, and allows the infinitive and its left peripheral arguments to form constituents, while the complements of the infinitive are inherited to the finite verb.

### 1 The Hungarian sentence structure\*

Hungarian is said to be a free word order language. The position of the constituents does not depend on their syntactic function. As shown in example (1), postverbal word-order is totally free.<sup>1</sup>

- (1) a. Fel-hívta Péter tegnap Marit.  
VM-called Peter.NOM yesterday Mari.ACC  
'Peter called Mari yesterday.'
- b. Fel-hívta Marit Péter tegnap.
- c. Fel-hívta tegnap Péter Marit.

On the other hand, the arguments of the verb may not be in postverbal positions only. They can appear in preverbal position too, but in that case they have a special interpretation and function. For detailed discussion see (É. Kiss 1987, 2002).

#### 1.1 Topicalisation

This special function can be, among others, the topic function. Any referential constituent can occur in the preverbal position, whether it is the subject, the object or some non-obligatory argument.

- (2) a. **Péter** fel-hívta tegnap Marit.  
'As for Peter, he called Mari yesterday.'

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<sup>1</sup> VM means verbal modifier. Verbal modifiers form a complex predicate with the verb, in these examples it makes the verb perfective. Verbal complexes form a phonological unit with the verb in neutral sentences, but in non-neutral sentences verbal modifiers are in postverbal position too.

- b. **Marit** fel-hívta Péter tegnap.  
'As for Mari, Peter called her yesterday.'
- c. **Tegnap** fel-hívta Péter Marit.  
'As for yesterday, Peter called Mari.'

More than one constituent can be topicalised, as you can see in (3). But only referential constituents can be topicalised, non-referentials, such as universal quantifiers, cannot.

- (3) Tegnap Péter fel-hívta Marit.
- (4) \***Mindenki** Marit fel-hívta tegnap.  
everybody.NOM Mary.ACC VM-called yesterday  
(*everybody* precedes the topicalised *Marit*.)

### 1.2 Focussing

Another preverbal position is the focus position. The verb may be immediately preceded by a phonologically emphatic constituent, the focus.

- (5) a. **PÉTER** hívta fel Marit tegnap.  
Peter.NOM called VM Mari.ACC yesterday  
'It was Peter who called Mari yesterday.'
- b. **MARIT** hívta fel Péter tegnap.  
'It was Mari that Peter called yesterday.'
- c. Péter **MARIT** hívta fel tegnap.  
'As for Peter, it was Mari that he called yesterday.'
- d. Marit **TEGNAP** hívta fel Péter.  
'As for Mari, it was yesterday that Peter called her.'

The focussed constituent may be subject, object, or any argument. In these sentences, the verbal modifier cannot be in preverbal position, it must appear after the verb. The topic and focus position can be filled at the same time, in this case the topic constituent must precede the focus constituent. Some expressions are obligatorily focussed: *csak*-phrases, question-words, etc.

- (6) a. Tegnap **CSAK PÉTER** hívta fel Marit.  
yesterday only Peter.NOM call VM Mari.ACC  
'It was only Peter who called Mari yesterday.'
- a' \*Tegnap hívta fel/felhívta CSAK PÉTER Marit.
- b. Tegnap **KI** hívta fel Marit?  
yesterday who called VM Mary.ACC  
'Who called Mary yesterday?'
- b'. \*Tegnap hívta fel/felhívta KI Marit?

- c. Tegnap **KEVESEN** hívták fel Marit.  
 yesterday few called VM Mari.ACC  
 'Few people called Mari yesterday.'

c'. \*Tegnap hívták fel/felhívták KEVESEN Marit

In contrast to the topic position, only one constituent can be in the preverbal focus position.

- (7) \*CSAK PÉTER CSAK MARIT hívta fel tegnap.

It is possible for a sentence to contain two focussed constituents, but in this case only one of them can appear in the preverbal focus position, the second focus position is after the verb. This postverbal focus position is present only if the preverbal focus position is filled by a focussed constituent.

- (8) PÉTER hívta fel tegnap **CSAK MARIT**.  
 Peter.NOM called VM yesterday only Mari.ACC  
 'It was Peter who called only Mari yesterday.'

Some constituents, such as universal quantifiers cannot be focussed.

- (9) \*Marit **MINDENKI** hívta fel tegnap.  
 Mari.ACC everybody.NOM called VM yesterday

### 1.3 Quantifier field

The third preverbal position is the so called quantifier field. Expressions containing a distributive quantifier may stay after the verb (10a) or optionally appear in preverbal position (10b). If there are more quantifiers in the sentence, all of them can be in preverbal positions (10c). This preverbal quantifier field is between the topic and focus positions (10d).

- (10) a. Marit meg-látogatta tavaly **mindenki**.  
 Mari.ACC VM-visited in.the.last.year everybody.NOM  
 'Everybody visited Mari in the last year.'
- b. Marit **mindenki** meg-látogatta tavaly **többször is**.  
 Mari.ACC everybody.NOM VM-visited in.the.last.year several.times  
 'Everybody visited Mari several times in the last year.'
- c. Marit **mindenki többször is** meglátogatta tavaly.
- d. Marit **többször is** CSAK PÉTER látogatta meg tavaly.  
 Mari.ACC several.times only Peter visited VM in.the.last.year  
 'As for Mari, it was only Peter who visited Mary several times in the last year.'

### 1.4 Word order in the Left periphery

Hungarian word order is free in the sense that there is no preferred position for the subject and the object of the sentence. The constituents can be scrambled in postverbal positions only, in the left periphery it is different: the

number and order of constituents in the left periphery is defined by their functions: zero or more referential expressions (=Topic) are followed by zero or more distributive quantifiers (=Quantifier) that can be followed by a Focus constituent, which immediately precedes the verb:

- (11) Topic\* - Quantifier\* - (Focus) - Verb

Furthermore, constituent order in the preverbal position is the same as their scopal order (c.f. Szabolcsi 1997): a quantified constituent preceding another takes scope over it:

- (12) a. Marit **mindenki** **többször is** meg-látogatta tavaly.  
 Mari.ACC everybody.NOM several.times VM-visited last.year  
 ‘Everybody visited Mari several times last year.’  
 everybody >> several times
- b. Marit **többször is** **mindenki** meglátogatta tavaly.  
 several times >> everybody

In (12a) the universal quantifier *mindenki* has scope over the non-obligatory *többször is*, so the meaning of the sentence is that ‘everybody is so that she visited Mari several times in the last year’, while the meaning of the sentence (12b) is that ‘it happened several times in the last year that everybody visited Mari.’

On the other hand, this correlation of word order and scope is true only for the constituents of the left periphery. If a quantifier remains in postverbal position it can have narrow or wide scope.

- (13) Marit **többször is** meglátogatta tavaly **mindenki**.  
 everybody >> several times OR  
 several times >> everybody

The rule for the constituents of the left periphery is that their scope must not be wider than the scope of constituents preceding them.

The correlation of word order and scope is observable for all preverbal constituents:

- (14) a. Marit **többször is** CSAK PÉTER látogatta meg tavaly.  
 Mari.ACC several.times only Peter visited VM in.the.last.year  
 ‘It occurs several times that Mari was visited by Peter only in the last year.’
- b. Marit CSAK PÉTER látogatta meg **többször is** tavaly.  
 ‘It was only Peter who visited Mari several times in the last year.’

Since the position of the focussed constituent is fixed, it can scope over another constituent only if it is in postverbal position.

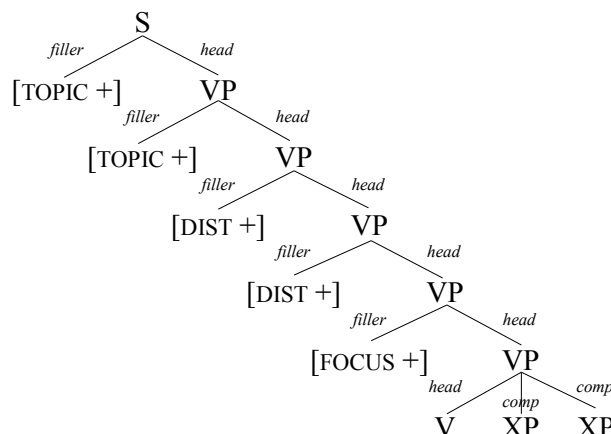
## 2 The analysis of Hungarian sentence structure

### 2.1 Constituent structure

In a transformational analysis (c.f. É. Kiss 1987, 2002), the constituent structure of the sentence consists of a flat VP and a hierarchical left periphery. In the deep structure all the constituents are under the VP, and later the topic, the quantifier and the focus move up their respective functional positions.

In my HPSG analysis for Hungarian I used a similar sentence structure (Szécsényi 2009, 2011). The verb and the postverbal constituents form a flat head-complement structure, and the different constituents of the left periphery form a filler head construction.

(15)



The head-complement schema in (16) that licences the flat postverbal structure is different from the other head-complement schemata in the language. Since the word order is free only in the sentential level, other phrases match the standard X-bar rules:

(16) Head-Complement Schema

$$\left[ \begin{array}{l} \text{SYNSEM|LOCAL|CATEGORY} \left[ \begin{array}{ll} \text{HEAD} & \text{verb} \\ \text{COMPS} & \langle \rangle \end{array} \right] \\ \text{DTRS} \text{ head-comp-struct} \end{array} \right]$$

This schema licences a verb-headed construction where all of the head's complements are present in the constituent, so the mother's head feature is of the *verb* type, and the mother's comps list is empty.

Since almost any of the constituents can appear on the left periphery of the sentence, they must be moved from the COMPS-list of the verb into the verb's SLASH set with the help of lexical rules. The standard *complement extraction lexical rule* (17) does this: it picks out an element from the complements of the verb.

(17) Complement Extraction Lexical Rule (Pollard and Sag 1994:378)

$$\left[ \begin{array}{l} \text{DEPS} \langle \dots, [3], \dots \rangle \\ \text{COMPS} \langle \dots, [3][\text{LOC } 1], \dots \rangle \\ \text{INHER|SLASH} [2] \end{array} \right] \Downarrow \left[ \begin{array}{l} \text{DEPS} \langle \dots, [4] \left[ \begin{array}{l} \text{LOC } 1 \\ \text{NONLOC|INHER|SLASH } \{ [1] \} \end{array} \right], \dots \rangle \\ \text{COMPS} \langle \dots, \dots \rangle \\ \text{INHER|SLASH} ([1] \cup [2]) \end{array} \right]$$

There are two valence features on the description of the verb's lexical description: the DEPS contains all of the arguments, the COMPS contains only those arguments which appear in postverbal position.

Since the arguments of the verb can appear in preverbal position for various reasons, for example one may function as Topic, another as Focus, we need to modify this lexical rule specifying the details of these functions. For example in the case of focusing, a special *Focus Selecting Lexical Rule* (18) grants that the interpretation of the lexical item is changed from  $\alpha$  to  $\beta$ , while one of its complements gets into the SLASH list. This rule can be used only if the original lexical item does not have a focussed constituent, so only one argument can become focussed.<sup>2</sup>

(18) Focus Selecting Lexical Rule

$$\left[ \begin{array}{l} \text{LOC} \left[ \begin{array}{l} \text{CAT} \left[ \begin{array}{l} \text{DEPS} \langle \dots, [3], \dots \rangle \\ \text{COMPS} \langle \dots, [3][\text{LOC } 1], \dots \rangle \end{array} \right] \\ \text{CONTENT } \alpha \end{array} \right] \\ \text{NONLOC|INHER} \left[ \begin{array}{l} \text{SLASH } [2] \\ \text{FOCUS } \{ \} \end{array} \right] \end{array} \right] \Downarrow \left[ \begin{array}{l} \text{LOC} \left[ \begin{array}{l} \text{CAT} \left[ \begin{array}{l} \text{DEPS} \langle \dots, [4] \left[ \begin{array}{l} \text{LOC } 1 \\ \text{NONLOC|INHER|SLASH } \{ [1] \} \end{array} \right], \dots \rangle \\ \text{COMPS} \langle \dots, \dots \rangle \end{array} \right] \\ \text{CONTENT } \beta \end{array} \right] \\ \text{NONLOC|INHER} \left[ \begin{array}{l} \text{SLASH } \{ [1] \} \cup [2] \\ \text{FOCUS } \{ [1] \} \end{array} \right] \end{array} \right]$$

Similar rules are responsible for topicalisation and quantifier raising.

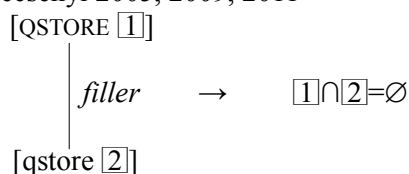
<sup>2</sup>Of course there can be more than one focus constituent in the sentence, as it was presented in the examples in (8), but describing this phenomenon is out of the scope of the present paper. For a detailed description of multiple focus structures see Szécsényi (2011:113–116).

## 2.2 Linear order and scope in the left periphery

One problem has remained unsolved: the correlation of scope and word order in the left periphery. The HPSG quantifier storage mechanism allows a quantified constituent to have wider scope than what is indicated by its position. Quantifier storage allows the quantifiers of quantified constituents to be stored and to rise up in the sentence structure to a proper place where they are ordered based on their scope. It is useful tool in accounting for the interpretation of Hungarian postverbal constituents, but cannot be applied for preverbal ones.

In order to solve this problem quantifier retrieving and filler discharging must be synchronised. In *filler-head* constructions the QSTORE feature of the mother and the filler daughter must be disjunct. In this case the quantifier of the filler daughter doesn't rise up in the structure, so its scope is narrower than that of the higher filler daughters.

(19) Szécsényi 2005, 2009, 2011



## 3 Hungarian infinitival constructions: data

Example (20) presents a neutral infinitival construction. *Péter* is the subject of both the finite verb *szeretne* 'would like', it is in topic position, and the non-finite verb, *beszél* 'to talk', and its arguments, *holnap* 'tomorrow' and *Marival* 'with Mari' are after the matrix verb.

- (20) Péter szeretne holnap beszélni Marival.  
 Peter.NOM would.like tomorrow talk.INF Mari.WITH  
 'Peter would like to talk to Mari tomorrow.'

However, in light of the data presented here it is not clear whether the non-finite verb and its arguments form a constituent or not. The phenomenon was first observed in É. Kiss (1987, 1989).

### 3.1 Infinitival constructions are simple sentences

Our first observation is that it is not only the arguments of the finite verb that can appear on the left periphery of the sentence, namely before the finite verb itself, but the arguments of infinitive can do so as well. In (21) the obligatory arguments of the infinitive appear in topic position (21a), quantifier position (21b) or focus position (21c). These data suggest that the finite verb handles the arguments of the infinitive the same way as it does its own arguments: they can be topicalised, focussed, and they can rise up to quantifier position.



- (21) a. **Marival** Péter szeretne holnap beszélni.  
 Mari.WITH Peter.NOM would.like tomorrow talk.INF  
 ‘As for Mari, Peter would like to talk to her tomorrow.’
- b. Péter **mindenkivel** szeretne holnap beszélni.  
 Peter.NOM everybody.WITH would like tomorrow talk.INF  
 ‘Peter would like to talk to everybody tomorrow.’
- c. Péter **CSAK MARIVAL** szeretne holnap beszélni  
 Peter.NOM only Mari.WITH would.like tomorrow talk.INF  
 ‘It is only Mary whom Peter would like to talk to tomorrow.’

Furthermore, it is not only the obligatory arguments of the infinitive that behave like this, but also its non-obligatory arguments, and even the infinitive itself. Since the infinitive cannot be referential or quantified, it can only be focussed:

- (22) a. Péter **HOLNAP** szeretne Marival beszélni.  
 ‘Peter would like to talk to Mari TOMORROW.’
- b. Péter **BESZÉLNI** szeretne holnap Marival.  
 ‘Peter would like to TALK to Mari tomorrow.’

These data suggest that the infinitive and its arguments do not form one constituent in the sentence, the infinitive is not a clause.

Other data support this analysis. The sentences in (23) show that when the finite verbs argument of its own, the subject, occurs in postverbal position, it can be between the infinitive and one of its arguments.

- (23) a. Holnap szeretne **Péter** beszélni Marival.  
 tomorrow would.like Peter.NOM talk.INF Mari.WITH  
 ‘Peter would like to talk to Mary tomorrow.’
- b. Holnap szeretne beszélni **Péter** Marival.
- c. Holnap szeretne beszélni Marival **Péter**.
- d. Holnap szeretne **Péter** Marival beszélni.
- e. Holnap szeretne Marival **Péter** beszélni.
- f. Holnap szeretne Marival beszélni **Péter**.

Since the subject of the finite verb is the subject of the infinitive as well, these facts may not be regarded problematic. But if we look at sentence (24), we can see that it is not only the subject that can scramble into the infinitival construction, but other arguments of the finite verb can do so, too. In the sentence in (24) it is the non obligatory argument of the verb.

- (24) PÉTER akarta át-úszni **tavaly** a folyót.  
 Peter.NOM wanted across-swim.INF in.the.last.year the river.ACC  
 ‘Peter wanted to swim across the river in the last year.’

These data indicate that the arguments of the finite and non-finite verb are in the same domain: the non-finite verb and its arguments do not form a constituent.

### 3.2 Infinitival constructions are bi-clausal

On the other hand there is a phenomenon that indicates that there is a constituent which contains the infinitive and its arguments. In sentence (25) there are three constituents preceding the infinitive that can be argued to target positions in the left periphery of the infinitive:

- (25) Péter szeretne Marival mindennap CSAK EBÉD ELŐTT beszélni.  
 Peter.NOM would.like Mari.WITH every.day only lunch before talk.INF  
 ‘Only before lunch is the time when Peter would like to talk with Mari every day.’

The constituent *Marival* ‘with Mari’ is in topic position, *mindennap* ‘every day’ is in quantifier position, and *csak ebéd előtt* ‘only before lunch’ is in focus position, exactly in the order required in the left periphery of a simple sentence. And since these positions are characterised as typical sentential positions, we should analyse infinitival constructions as subordinated clauses. But the question arises whether these constituents are really in those positions. The following problems emerge:

a) There is no explicit sign that a constituent is a topic except its position: *Marival* can be either in the topic position of the infinitive, or it can be a postverbal constituent of the finite verb.

b) Quantified constituents can be either in preverbal or in postverbal position (as seen in (10)). Is *mindennap* ‘every day’ in preverbal position (with respect to the non-finite verb), or postverbal position? The only difference between the two positions is in their scope interpretation: a postverbal quantifier can have both narrow or wide scope, a preverbal quantifier cannot, it has to have wide scope. In (26), the quantified object of the infinitive appearing in different positions has different scope with respect to the finite verb. In sentence (26b) it has wide scope as predicted by our earlier observations, but in sentence (26a) the quantified constituent has narrow scope only, which unexpected based on the fact that it appears in postverbal position, at least with respect to the finite verb. However, it is possible to account for the narrow interpretation if we assume that the quantified expression is not in postverbal position but in *preinfinitival* position. If the quantified object appears after the infinitive (26c), its scope is underspecified.

- (26) a. Péter fél mindent meg-kérdezni.  
 Peter.NOM afraid everything.ACC VM-asked  
 ‘Peter is afraid to ask everything.’  
 afraid of >> everything
- b. Péter mindent fél megkérdezni.  
 ‘Peter is afraid to ask anything.’  
 everything >> afraid of
- c. Péter fél megkérdezni mindent.  
 ‘Peter is afraid to ask everything.’ OR  
 ‘Peter is afraid to ask anything.’  
 everything >> afraid of OR  
 afraid of >> everything

c) Although the position of the focus is typically on the left side of the verb, in the case of a multiple focus construction the second focus can be in postverbal position (cf. (7) and (8)). A focussed constituent followed by a non-finite verb can be second focus as well. So the focus constituent in sentence (25) may be after the finite verb, not in the focus position associated with the infinitive.

There is an obvious way to make sure that it is the only focussed constituent in the sentence, and, as such, cannot belong to the finite verb (remember that a post-verbal focus is possible only if a pre-verbal focus is also present in the sentence). In example (9) we saw that universally quantified constituents cannot be focussed. If we insert a universally quantified constituent before the finite verb, and if the sentence is still grammatical, the focus after the finite verb must be in the left periphery of the infinitive.

- (27) Mindenki szeretne CSAK MARIVAL beszélni.  
 everybody.NOM would.like only Mary.WITH talk.INF  
 ‘Everybody would like to speak with Mari only.’

To sum up the properties of infinitival constructions we have made two observations: (i) an infinitive does not form a constituent with its complements, they behave as if they were arguments of the finite verb, so, based on this, the infinitival construction should be analysed as a simple sentence; (ii) the infinitive has its own left periphery, so the infinitive forms a constituent with its left peripheral arguments, so it is an embedded clause in the matrix sentence. This means that the infinitival constructions must be analysed as bi-clausal.

In the transformational literature there are explanations offered for this phenomenon, but they are problematic. É. Kiss (1987, 1989) uses two different sentence structures, one explaining the simple sentence features, the other accounting for the bi-clausal features, but some structures do not fit into either of the patterns.

According to Szécsényi K. (2009) there is a compound sentence structure at first, and then the non-finite clause is reanalysed, so that the constituents of the non-finite sentence appear as the sisters of the finite verb, but this analysis doesn't account for the relative unity of the left periphery of the infinitive.

These analyses cannot explain all the features of Hungarian infinitival constructions.

#### 4 The analysis of infinitival constructions in HPSG

The analysis of Hungarian infinitival constructions is based on the clause union introduced by Fauconnier (1983) and Gibson and Raposo (1986). In HPSG it was used for complex predicate formation by Hinrichs and Nakazawa (1990), Kathol (1994), and Bouma (2003).

As we saw earlier, an argument of the infinitive either appears in the left periphery of the infinitive, or behaves as if it were an argument of the finite verb. First, we have to separate these kinds of arguments, the left peripheral arguments and the inherited arguments. The lexical rules seen in (17) and (18) do exactly this separation: they pick up the left peripheral arguments from the COMPS list of the verb, and put them into the SLASH set. So what happens in the infinitival construction as a result is that the infinitive builds *head-filler* structures with its left peripheral constituents, without building *head-complementiser* structures at the same time with the constituents being on its own COMPS list.

Sentence (28) illustrates the mechanism described above.

- (28) Péter szeretne CSAK EGY DALT el-énekelni mindenkinek.  
 Peter.NOM would.like only one song.ACC VM-sing.INF everybody.DAT  
 'Peter would like to sing only one song for everybody.'

In this sentence the control verb *szeretne* 'would like' has a subject and an infinitival complement. The infinitive has a controlled subject, an object with a focus feature (*csak egy dalt* 'only one song') and a dative argument (*mindenkinek* 'for everybody'). The subject is in the topic position of the left periphery of the finite sentence, the object is in preinfinitival focus position, and the dative constituent follows the infinitive.

The Focus Selecting Lexical Rule is applied on the infinitive verb *el-énekelni* 'to sing'. This rule deletes the object from the COMPS list, and puts it into the SLASH set, marking it as focus. The subject does not appear on the COMPS list of the infinitive exactly because it is an infinitive.

(29)

$$\begin{array}{c}
 \left[ \begin{array}{l}
 \text{PHON } \textit{elénekelni} \\
 \text{LOC} \left[ \begin{array}{l}
 \text{CAT} \left[ \begin{array}{l}
 \text{DEPS} \langle \text{NP}, [\textcircled{3}] \text{NP}[\textit{acc}, \text{LOC}[\textcircled{1}]], \text{NP}[\textit{dat}]] \rangle \\
 \text{COMPS} \langle \text{NP}[\textit{acc}], \text{NP}[\textit{dat}] \rangle
 \end{array} \right] \\
 \text{CONTENT } \alpha
 \end{array} \right] \\
 \text{NONLOC|INHER} \left[ \begin{array}{l}
 \text{SLASH } [\textcircled{2}] \\
 \text{FOCUS } \{ \}
 \end{array} \right]
 \end{array} \right] \\
 \Downarrow \\
 \left[ \begin{array}{l}
 \text{PHON } \textit{elénekelni} \\
 \text{LOC} \left[ \begin{array}{l}
 \text{CAT} \left[ \begin{array}{l}
 \text{DEPS} \langle \text{NP}, [\textcircled{4}] \text{NP}[\textit{acc}, \text{LOC}[\textcircled{1}], \text{SLASH } \{[\textcircled{1}]\}], \text{NP}[\textit{dat}]] \rangle \\
 \text{COMPS} \langle \text{NP}[\textit{dat}] \rangle
 \end{array} \right] \\
 \text{CONTENT } \beta
 \end{array} \right] \\
 \text{NONLOC|INHER} \left[ \begin{array}{l}
 \text{SLASH } \{[\textcircled{1}]\} \\
 \text{FOCUS } \{[\textcircled{1}]\}
 \end{array} \right]
 \end{array} \right]
 \end{array}$$

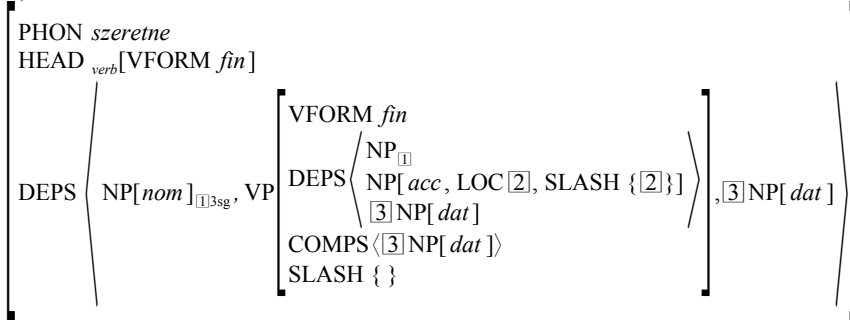
Based on the analysis in the previous section, the control verb inherits all of the complements of its infinitival arguments, except the ones located on the left periphery of the infinitive. Because the infinitival argument can have its own left periphery, its SLASH feature must be empty. The COMPS list of the infinitival argument doesn't have to be empty, its complements are inherited by the finite verb:

(30) Complete argument inheritance (control verb)

$$\left[ \begin{array}{l}
 \text{HEAD}_{\textit{verb}}[\textit{VFORM fin}] \\
 \text{DEPS} \left\langle \text{NP}[\textit{nom}]_{[\textcircled{1}]}, \text{VP} \left[ \begin{array}{l}
 \text{VFORM } \textit{fin} \\
 \text{DEPS} \langle \text{NP}_{[\textcircled{1}]}, \dots \rangle \\
 \text{COMPS } [\textcircled{4}] \\
 \text{SLASH } \{ \}
 \end{array} \right] \right\rangle \oplus [\textcircled{4}]
 \end{array} \right]$$

The DEPS list of the finite verb *szeretne* 'would like' contains its subject which is coindexed with the subject of the infinitive, an infinitival expression, and it is linked to the COMPS list of the infinitive. The elements of this DEPS list may be topicalised or focussed, so the COMPS list of the verb may not contain these elements.

(31)



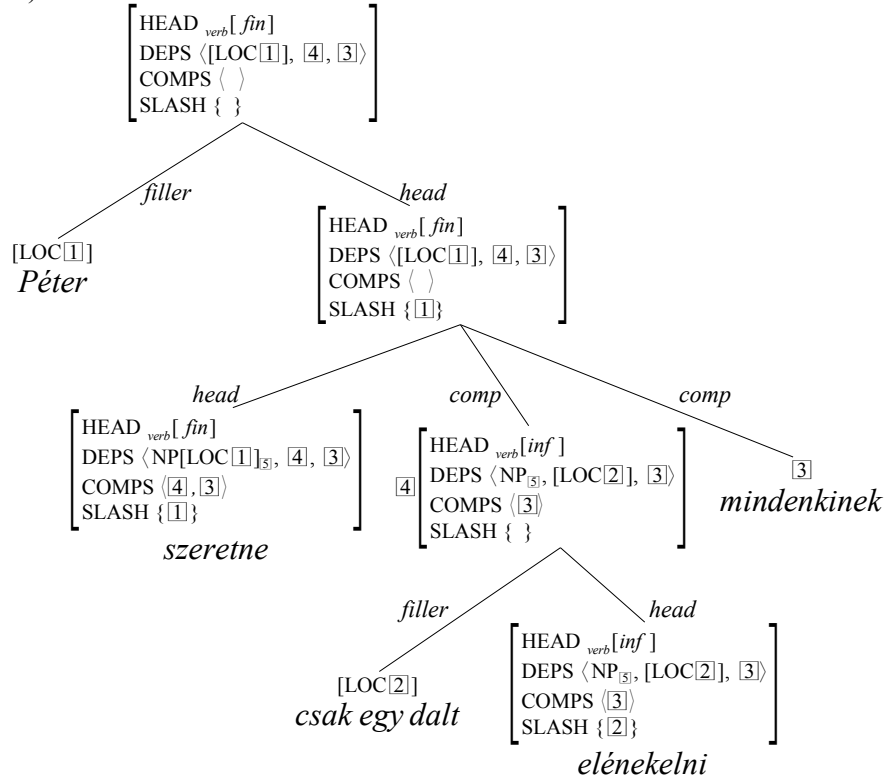
With these lexical descriptions the problem is almost solved. The last task is to ensure that a non-finite verb can form a *filler-head* construction without emptying its COMPS list. The *filler-head* schema must be extended: the COMPS list must be empty in *filler-head* constructions only for the *fin* VFORM feature. The revised version of the Head-Complement Schema in (16) is the following:

(32) Head-Complement Schema



Finally, the analysis of the sentence proceeds as in (33)

(33)



## 5 Predictions of the analysis

### 5.1 Special scope relationships

Since non-finite verbs do not have complement sisters, quantified expressions appearing after infinitival verbs must be in the complement position of the finite verb. If a constituent is in the focus position of the non-finite verb, its scope is fixed. This analysis predicts that focussed constituents of the non-finite verb have narrower scope than quantified constituents following the infinitive (34).

- (34) Mindenki szeretné CSAK MARIT fel-hívni többször is.  
 everybody.NOM would.like only Mari.ACC VM-called several.times  
 'Everybody would like to call only Mari several times.'  
 several times >> only Mari BUT  
 \* only Mari >> several times

However, if the same constituent is in the focus position of the finite verb, post-infinitival quantified constituents can have narrower or wider scope with respect to it (35).

- (35) CSAK MARIT hívta fel Péter többször is.  
 only Mari.ACC called VM Peter.NOM several.times  
 ‘It was only Mari that Peter called her several times.’  
 several times >> only Mari OR  
 only Mari >> several times

### 5.2 Complex predicate formation

Verbal modifiers form a complex predicate with the verb. In neutral sentences they immediately precede the verb, in non-neutral sentences they are in postverbal position. This part of complex predicates is always a single word. Verbal modifiers are typically adverbial particles (e. g. *el-megy* away-go ‘going away’), nominal arguments of the verb (e. g. *iskolába jár* school.INTO go ‘go to school’), or postpositional expressions (e. g. *mellém lép* next.to.me step ‘step next to me’).

Some verbs with infinitival arguments require the verbal modifier of the infinitive to be in their own verbal modifier position in neutral sentences:

- (36) a. Péter **el**-megy.  
 Peter VM(away)-go  
 ‘Peter goes away.’  
 b. Péter **el** akar menni.  
 Peter VM(away) want go.INF  
 ‘Peter wants to go away.’

If the non-finite verb doesn’t have a verbal modifier, the infinitive itself has to appear before the finite verb:

- (37) a. Péter úszik.  
 Peter swim  
 ‘Peter swims.’  
 b. Péter **úszni** akar.  
 Peter swim.INF want  
 ‘Peter wants to swim.’

If the non-finite verb does not have a left periphery, the verb appears in the complement position of the matrix verb as a single word. The infinitive can form a complex predicate with the finite verb only in this case (as verbal modifiers do).

## 6 Further argument inheritance phenomena in Hungarian

Infinitival constructions are not the only construction where this kind of argument inheritance can be attested, though it is the most salient in this case. Argument inheritance is usually related to complex predicate formation or possessive constructions. These constructions are similar with respect to the fact that the verb’s real argument and the inherited argument do not form a constituent, but they can be in separate postverbal positions.



### 6.1 Verbal modifiers

If a verbal modifier appears in the sentence, an extra constituent can appear as well. It is not extraordinary in the case of non-compositional verbal complexes, but it can be seen in compositional cases too. This extra expression is related to the verbal modifier, but they don't form a constituent: the verbal modifier immediately precedes the finite verb, while the other constituent stays in postverbal position (or it can be topicalised, etc.).

- (38) Péter énekelt.  
Peter sang  
'Peter sang.'
- (39) a. \*Péter énekelte az éjszakát.  
Peter sang the night.ACC  
b. Péter **végig**-énekelte **az éjszakát**.  
Peter VM(to.the.end)-sang the night.ACC  
'Peter sang along the night.'
- (40) a. \*Péter énekelt az ablakon.  
Peter sang the window.ON  
b. Péter **ki**-énekelt **az ablakon**.  
Peter VM(out)-sang the window.ON  
'Peter sang out of the window.'

This phenomenon can be explained assuming that the extra constituent originates as the complement of the verbal modifier, but then is inherited by the finite verb. The case of infinitival constructions can be considered as a special case of this pattern. The only difference is that non-finite verbs can have a left periphery, common verbal modifiers cannot.

### 6.2 Possessive constructions

In Hungarian there are two types of possessive constructions. The possessor is unmarked (or nominative) in the first one (41a), dative in the second (41b). The possessed agrees with the possessor in number and person in both cases. They form a constituent, which may be in postverbal position and in the left periphery as well.

- (41) a. El-veszett [**Péter kalapja**].  
VM-lost Peter.NOM hat.GEN  
'Peter's hat has been lost.'
- b. El-veszett [**Péternek a kalapja**].  
VM-lost Peter.DAT the hat.GEN  
'Peter's hat has been lost.'

The dative possessor may be separated from the possessed, one of them can be in the left periphery (42a), or there can be another argument between them in postverbal field (42b):

- (42) a. **Péternek** el-veszett **a kalapja**.  
 Peter.DAT VM-lost the hat.GEN  
 ‘Peter’s hat has been lost.’
- b. El-veszett **Péternek** tegnap **a kalapja**.  
 VM-lost Peter.DAT yesterday the hat.GEN  
 ‘Peter’s hat was lost yesterday.’

In this case the possessor does not raise from the possessive construction to some operator position, since postverbal positions are not operator positions.

Argument inheritance in possessive constructions is different from the earlier mentioned ones, because in this case argument inheritance is not obligatory, and the residue does not form a complex predicate with the verb and occupies the usually preverbal position of the verbal modifiers.

### 6.3 Postpositional phrases

The case of postpositional phrases is a mixture of the case of verbal modifiers and possessive constructions. PPs usually form a constituent (43a, 44a), but P heads can also be verbal modifiers. In this case P and its NP argument form a possessive construction: the noun phrase is in dative case, P gets an agreement suffix. Exploiting the possibilities of possessive constructions, the possessed can be separated from the possessor, and thus the P can get to a verbal modifier position (43b, 44b).

- (43) a. Péter [**a céltábla mellé**] lőtt.  
 Peter the target.NOM next.to shoot.3SG  
 ‘Peter has shoot next to the target.’
- b. Péter **mellé** lőtt **a céltáblának**.  
 Peter next.to shoot.3SG the target.DAT  
 ‘Peter has shoot next to the target.’
- (44) a. Péter [**a vonat után**] futott.  
 Peter the train.NOM after run.3SG  
 ‘Peter run after the train.’
- b. Péter **utána** futott **a vonatnak**.  
 Peter after run.3SG the train.DAT  
 ‘Peter run after the train.’

The goal of argument inheritance is forming a verbal complex, and the tool for doing this is becoming a possessive construction.

## 7 Conclusion

This paper has presented an analysis for Hungarian infinitival constructions. According to this analysis the arguments of the non-finite verb can be either in the COMPS list of the lexical verb or within its SLASH set. The slashed arguments appear in *filler-head* constructions with the infinitive forming constituents, but the elements of the COMPS list are inherited onto the matrix verb's DEPS list. The different handling of different arguments explains the double nature of Hungarian infinitival constructions: they form a clause since they can have a left periphery, but they behave as a single clause as well.

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