ON ELLIPTICAL NOUN PHRASES IN HUNGARIAN

Tibor Laczkó

University of Debrecen

Proceedings of the LFG07 Conference

Miriam Butt and Tracy Holloway King
(Editors)

2007

CSLI Publications

http://csli-publications.stanford.edu/

Abstract

In this paper I develop an LFG analysis of two noun phrase types in Hungarian that can be referred to as elliptical. In one of them, Type (A), the understood noun head is entirely missing from the construction and formally the head function is performed by the head of the final modifying constituent in the phrase. The major task here is to capture, in a lexicalist framework, the formal head properties of an adjective or a numeral. I employ an exocentric structure and introduce a pro noun head into f-structure by an appropriate functional annotation. In Type (B), which is always a (special) possessive construction, the noun head is represented by a pro-like morpheme attaching to the head of the possessor constituent. The fundamental challenge with respect to this construction type is that the morpheme appears to be phrasal in nature, and it can be recursively attached to the head, optionally in combination with the morpheme marking the plurality of the possessed noun. I assume that the morpheme in question is an argument taking predicate, and I capture scope relations and the possibility of recursion by means of a hierarchical sublexical representation.

1. Introduction

There are two very frequently used elliptical (or, depending on one's analysis, anaphoric) noun phrase types in Hungarian. Their shared property is that they lack an overt lexical head. Either the understood noun head is entirely missing from the construction, or it is represented by a pro-like morpheme attaching to the head of the possessor constituent. The goal of this paper is to develop an LFG analysis of these two construction types, which raise interesting questions related to the treatment of head-marking languages and "phrasal suffixes".

The paper has the following structure. In section 2, I characterize the two construction types to be analyzed. In section 3, I propose an LFG account of these phenomena. In section 4, I briefly show that a novel analysis of Hungarian possessive constructions can be naturally adopted in the approach I have worked out. This is followed by some concluding remarks in section 5.

2. The phenomena

In this section I present the relevant data. I describe the two construction types: the headless type (section 2.1) and the pro bound morpheme type (section 2.2). I also point out the challenges they pose for a lexicalist theory like LFG.

2.1. Type (A)

In the Type (A) constructions the noun head is missing from the expression entirely. The rightmost modifier in the "remainder" of the expression (whether an adjective or a numeral) functions formally as the head. This formal headness is manifested by the fact that all the nominal suffixes are attached to the head of this final constituent:

- plural markers (1c)
- case endings (1c-f)
- possessive agreement suffixes (1f)

Note that in nonelliptical noun phrases, numerals and adjectives take none of these suffixes, cf. (1a,b).

(1) a. a nyolc piros toll-at
the eight red pen-ACC
'the eight red pens'

b. a tanár nyolc piros toll-á-t
the teacher.NOM eight red pen-3SG-ACC
'the teacher's eight red pens'

c. a piros-ak-at
the red-PL-ACC
'the red ones'

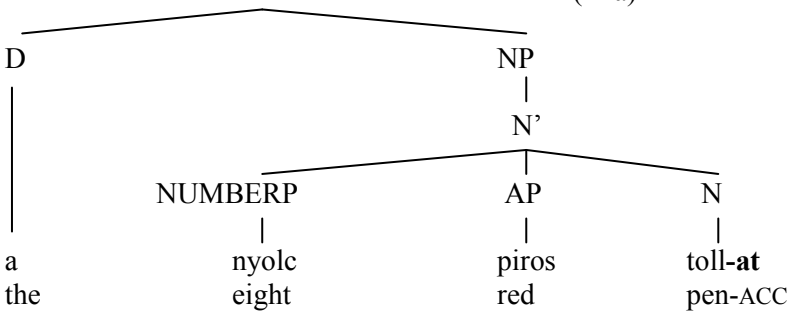
d. a nyolc piros-at
the eight red-ACC
'the eight red ones'

e. a nyolc-at
the eight-ACC
'the eight'

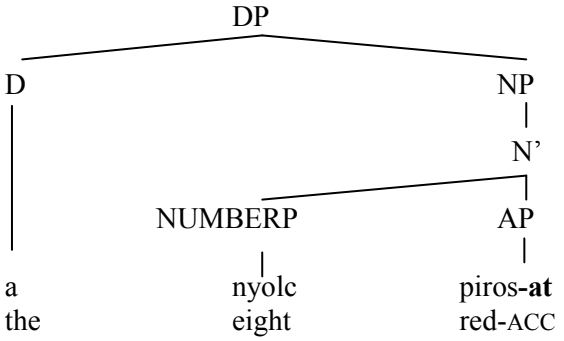
f. a tanár nyolc piros-á-t
the teacher.NOM eight red-3SG-ACC
'the teacher's eight red ones'

The c-structures for (1a-f) are shown in (2)-(6).

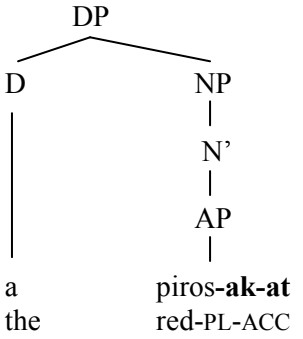
(2) (=1a)



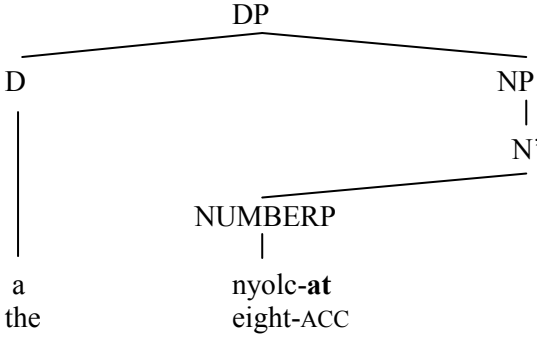
(3) a. (=1d)



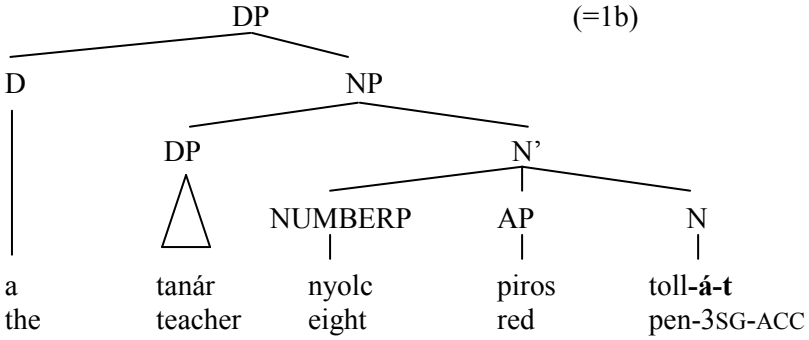
b. (=1c)



(4) (=1e)



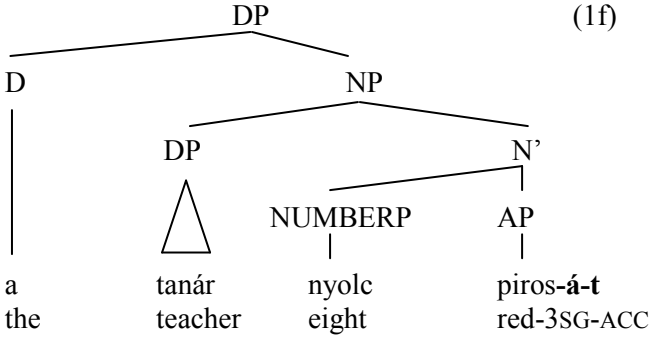
(5)



(=1b)

Let me point out that in cases like (5), in theory the whole (definite) possessive construction as well as the definite possessor noun phrase should have their respective D positions filled. However, they would be adjacent, and, therefore, only one of them is phonetically realized. This issue does not concern us here, and for this reason I simply represent the D of the entire possessive DP without any justification and without any commitment to a possible LFG treatment of this phenomenon. (For detailed discussion and a GB analysis, see Szabolcsi (1994).)

(6)



(1f)

1.2. Type (B)

Type (B) is a special possessive construction. Its special nature is due to the fact that the "phrasal" suffix *-é* attaching to the head of the possessor constituent stands for the possessed noun, cf. (7) and (5) vs. (8).

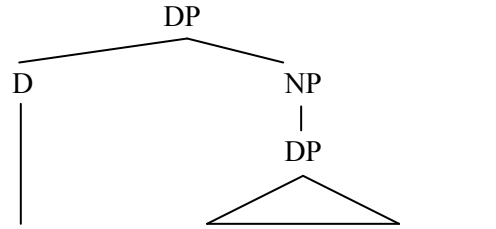
(7)	a	tanár	nyolc	piros	toll-á-t		és
	the	teacher.NOM	eight	red	pen-3SG-ACC		and
					az	okos	diák-é-t
					the	clever	student-É-ACC

'the teacher's eight red pens and the clever student's
(*(i)* pens *(ii)* eight red pens)'

As the two versions in the English translation of (7) indicate, *-é* can stand for either the possessed head alone or a modifier + head sequence.

The c-structure for the elliptical DP in (7) is shown in (8).

(8)



The *-é* morpheme clearly has scope over the whole of the possessor phrase: e.g. on Bartos's (2000) MP account it assigns a Θ-role to this constituent, in addition to triggering the anaphoric interpretation of the missing possessee. This construction type has the following important additional properties, which are illustrated in (9).

(i) The *-é* constituent can be pluralized, and *-é* suffixation and pluralization are recursive.

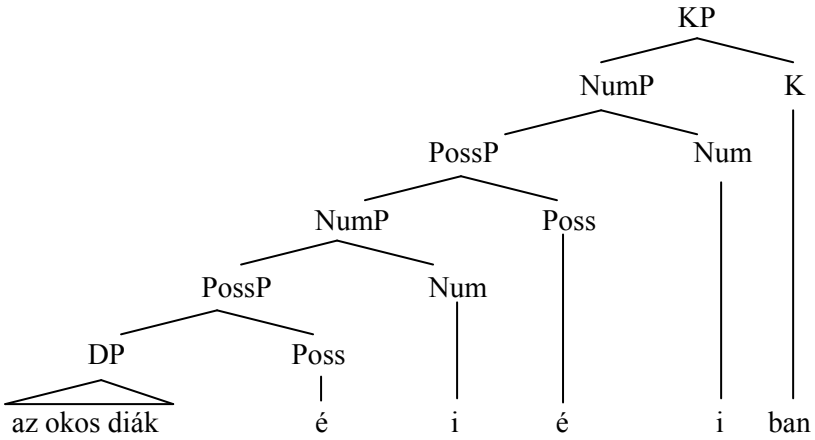
(ii) The entire *-é* phrase can be case-marked just like any other nominal expression.

(iii) The determiners and modifiers in the DP are, as a rule, interpreted as being associated with the most deeply embedded possessor, realized by the noun stem that *-é* attaches to.

(9) az okos diák-é-i-é-i-ban
the clever student-É-PL-É-PL-INE
ca. 'in those of those of the clever student'

Consider Bartos's (2000) syntactic (MP) analysis of (9).

(10)



There are two interrelated challenges for a lexicalist account of this construction type:

(i) the modelling of the recursion of a "phrasal" suffix to the effect that, on the face of it, several possessor DPs can be embedded within one another;

(ii) ensuring that, in the case of multiply embedded possessors, modification always applies to the deepest possessor.

2. An LFG analysis

2.1. Type (A)

Butt et al. (1999: 97-98), in their Parallel Grammar framework, outline an LFG analysis of basically similar German and English constructions, cf.:

(11) NPheadless → NPposs
(↑NUM)=sg
(↑PERS)=3
(↑PRED)='pro'
(↑PRON-TYPE)=null
(↑SPEC)=↓

(12) a. the dentist's

b.

PRED	'pro'	
PRON-TYPE	null	
PERS	3	
NUM	sg	
SPEC	PRED	'dentist'
	NTYPE	count
	ANIM	+
	CASE	gen
	SPEC-TYPE	poss
	PERS	3
	NUM	sg
	SPEC	SPEC-TYPE def
		SPEC-FORM THE

In the spirit of this account, in my analysis of Type (A) constructions I postulate a special exocentric NP without a c-structure categorial head. A functional annotation associated with the final XP node provides an LFG-style 'pro' element, which serves as a basis for the appropriate anaphoric interpretation of the missing head in the given context.

The c-structure rules and their annotations also have to ensure that it is only in the case of elliptical noun phrases that an adjective or a numeral can be inflected and that it is always the final such element that is inflected, and in these cases the number and the case features of the XP provide the whole NP/DP with these features. Therefore, the following devices have to be applied.

(i) "Ordinary APs or NUMBERPs" must be negatively constrained for inflectional features. By "ordinary" I mean (a) APs or NUMBERPs in headed noun phrases and (b) APs or NUMBERPs in nonfinal positions in Type (A) elliptical noun phrases.

(ii) The final AP or NUMBERP must be associated with annotations that encode that the inflectional features of the A or NUMBER head are identical to those of the whole elliptical noun phrase. The following features are relevant in this connection: number, case, and, if a possessor is present in the construction, the agreement features of the possessor.

Consider the phrase structure rules in (13), whose functional annotations satisfy these requirements.

(13) a. NP → DP N'
(↑POSS)=↓ ↑=↓

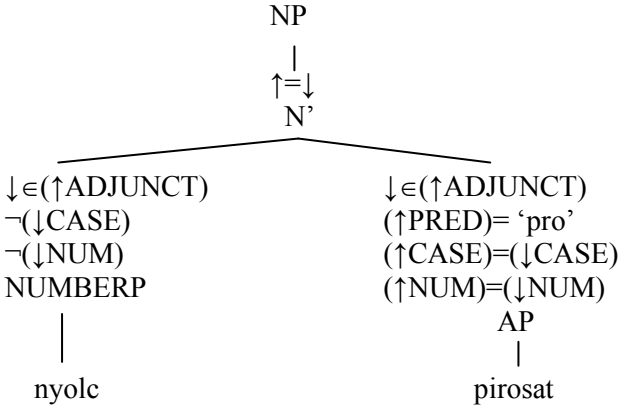
b. N' → XP* N
↓∈(↑ADJUNCT) ↑=↓
¬(↓CASE)
¬(↓NUM)
¬(↓POSS)

c. N' → XP* {NUMBERP | AP}
↓∈(↑ADJUNCT) ↓∈(↑ADJUNCT)
¬(↓CASE) (↑PRED)= 'pro'
¬(↓NUM) (↑CASE)=(↓CASE)
(↑NUM)=(↓NUM)

I provide the analysis of (1d), repeated here as (14a) for convenience, along these lines. (14b) shows the annotated c-structure representation of (1d) and I present the corresponding f-structure in (15).

(14) a. nyolc piros-at
eight red.SG-ACC
'eight red ones'

b.



(15)

PRED	'pro'	
ADJUNCT	{ [PRED	'eight'] }
	{ [PRED	'red'] }
	[NUM	sg]
	[CASE	acc]
NUM	sg	
CASE	acc	

The predicate of the possession relationship and the featural information about the number and person of the possessor are also encoded by the possession morphology on the head of the final constituent in the form of inside-out function application.

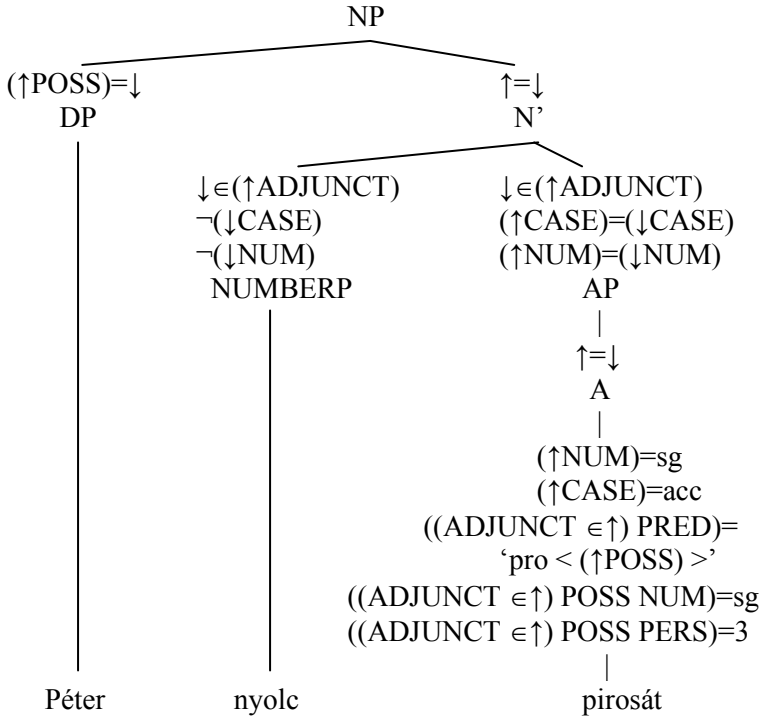
Now consider the analysis of a Type (A) possessive construction, exemplified in (16a). I give the lexical form of the adjective used in this example in (16b), the annotated c-structure representation in (16c) and present the f-structure in (17).

(16) a. Péter nyolc piros-á-t
Peter.NOM eight red-3SG-ACC
'Peter's eight red ones'

b. pirosát, A ‘red’

(↑NUM)=sg
(↑CASE)=acc
((ADJUNCT ∈↑) PRED)= ‘pro < (↑POSS) >’
((ADJUNCT ∈↑) POSS NUM)=sg
((ADJUNCT ∈↑) POSS PERS)=3

c.



(17)

PRED	‘pro < (↑POSS) >’
POSS	PRED ‘Peter’ NUM sg PERS 3
ADJUNCT	{ [PRED ‘eight’], [PRED ‘red’ NUM sg CASE acc] }
NUM	sg
CASE	acc

There is a strong motivation for the 'pro' analysis of Type (A) constructions: if there is no situational or linguistic context, the interpretation of the entire phrase is that it denotes people; that is, the 'pro' element I postulate has the [+human] feature, which is an instance of classical pro(arb), cf.:

(18) Én a gyors-ak-at kedvel-em.
I the fast-PL-ACC like.PRES-3SG
'I like the fast ones (= people).'

(19) Tíz autó van az udvar-on. Én a gyors-ak-at
ten car is the yard-SUP I the fast-PL-ACC
kedvel-em.
like.PRES-3SG

'There are ten cars in the yard. I like the fast ones (= cars).'

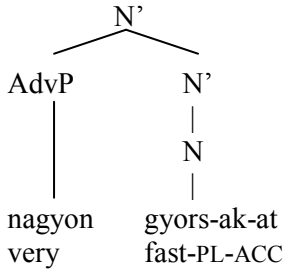
An alternative approach would be to assume that in Type (A) constructions, the head of the final constituent has undergone the lexical process of A → N conversion. There is, however, a very strong argument against such an account: in these elliptical constructions the final adjective or numeral has all the properties ordinary adjectives and numerals have. For instance, the adjective takes adverbial modification, it can be used in comparative and superlative forms, etc. Consider the following examples.

(20) Én a nagyon gyors-ak-at kedvel-em.
I the very fast-PL-ACC like.PRES-3SG
'I like the very fast ones (= people).'

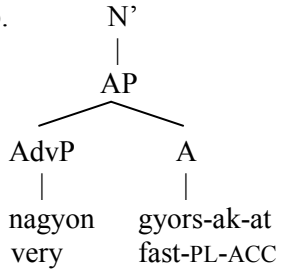
(21) Én a leg-gyors-abb-ak-at kedvel-em.
I the SUP-fast-COMP-PL-ACC like.PRES-3SG
'I like the fastest ones (= people).'

The conversion approach would commit us to postulating that nouns, just like adjectives, can take adverbial modification, which would be rather counter-intuitive. Compare the undesirable, conversion-based representation in (22a) and the analysis based on my elliptical assumptions in (22b).

(22) a.



b.



2.2. Type (B)

The most important assumptions and aspects of my analysis of Type (B) constructions are as follows.

1. I assume that the *-é* suffix is an LFG-style "pro" element.
2. It is the functional and semantic head of the whole nominal expression.
3. It is an argument-taking predicate with a (POSS) argument. The motivation for this assumption is that according to the majority of recent generative analyses of Hungarian possessive constructions the noun head and its possessive morphology make up a complex predicate (whether in the syntax or in the lexicon), and this complex predicate takes the possessor as its argument, cf. Szabolcsi (1994), Laczkó (2000), Bartos (2000), É. Kiss (2002), Chisarik and Payne (2003), etc. Given the fact that *-é* is most straightforwardly analyzable as a "pro possessive noun head" element, its argument taking capacity naturally follows.
4. When *-i*, the plural marker for possessed nouns attaches to *-é* immediately following it, I then take this plural suffix to be a functional co-head, pluralizing the nominal expression.
5. I employ articulated sublexical structures with functional annotations. The possible multiple attachment and the scope relations of the two morphemes, *-é* and *-i*, are modelled by a hierarchical organization of these sublexical structures.
6. The fact that determiners and modifiers are, as rule, associated with the most deeply embedded possessor, which is always realized by the noun head, is captured by the following mechanism. Admittedly, this is only one possible technical way of ensuring the correct interpretation of this construction type. On the issue of modification in the two elliptical phrase types, see section 4.
    - The functional annotations assigned to determiners and modifiers contain the (POSS+) function label. Here the + symbol means any number of (embedded) POSS functions, but at least one.
    - The (↑POSS+ PRED FN)~= pro equation states that the relevant possessor cannot be a 'pro'. No matter how many times *-é* is attached, there will always be only one non-'pro' possessor, the one realized by

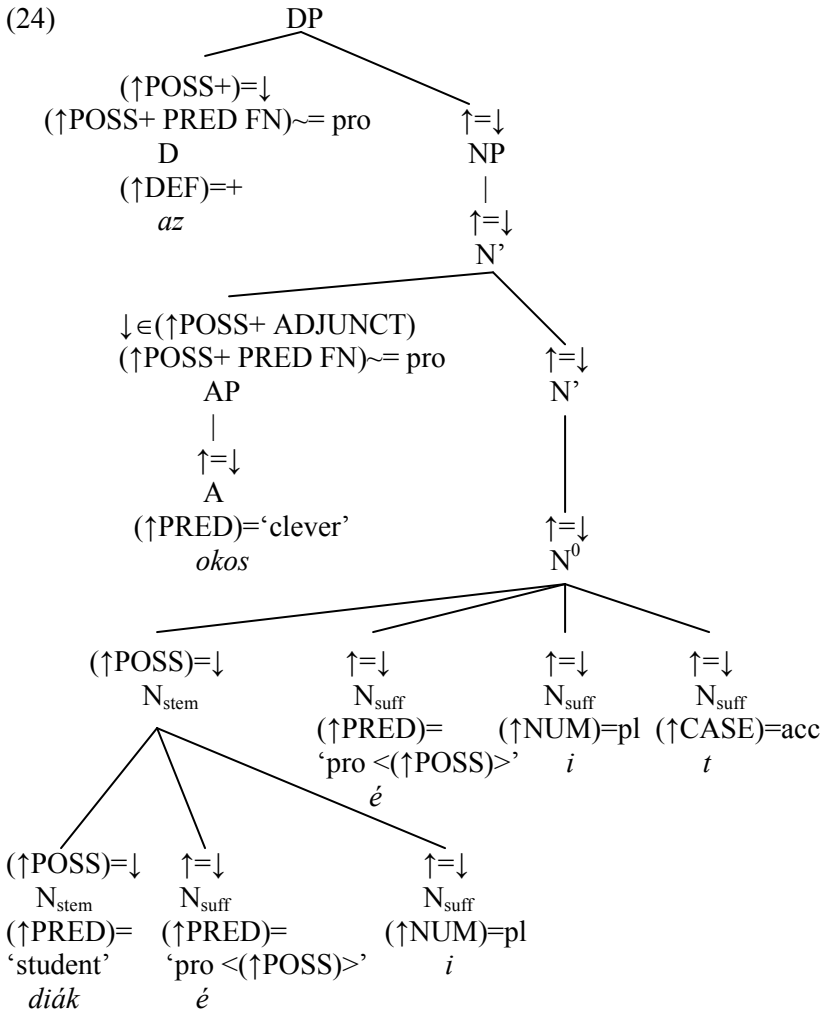
the noun head to which the first *-é* suffix attaches, as required by the facts.

- It has to be ensured that the value of (POSS+) is the same in the relevant annotation pairs.

Let us see how this approach works through the analysis of the example in (23). I present the annotated c-structure in (24) and the f-structure in (27).

(23) az okos diák-é-i-é-i-t
The clever student-É-PL-É-PL-ACC
ca. 'those of those of the clever student'

(24)



The use of hierarchical sublexical structures is not wide-spread in LFG, but it is not unprecedented either. See, for instance, Butt and King (2006) using a similar mechanism in their analysis of Urdu causatives. They in turn cite Kaplan et al. (2004) on the idea of sublexical rules, although these rules do not introduce hierarchical structures. (I am grateful to Tracy H. King for pointing out these facts to me in personal communication.) An alternative to this sublexical structural analysis may be to explore whether Wescoat's (2005) lexical sharing approach can be extended to the treatment of these Hungarian phenomena. I leave this to future research.

In the light of the points above describing the salient aspects of the analysis, most of the details of the representation should be straightforward. There is, however, an important technical problem that this representation does not address, and, consequently, does not solve. The problem is this. The current versions of the two members of the two pairs of functional annotations in (25) do not guarantee that the value of (POSS+) is the same in both members, which would be essential for the analysis to be adequate and not incorrectly overgenerate. In other words, if there are multiply embedded possessors then their numbers should match in the two members of each pair of functional equations. Otherwise we cannot ensure, among other things, that an adjunct should be represented in f-structure, and interpreted by our semantics, as modifying a non-pronominal possessor.

(25) a. (↑POSS+)=↓
(↑POSS+ PRED FN)~= pro

b. ↓∈(↑POSS+ ADJUNCT)
(↑POSS+ PRED FN)~= pro

One feasible solution, which I have developed in a Parallel Grammar framework, and which works efficiently, is as follows (for an overview of the Parallel Grammar Project, see Butt et al. (1999)). We can create a template for the relevant annotations in such a way that it contains disjunctive pairs of functional equations. The templates for (25a) and (25b) can be (26a) and (26b), respectively.

(26) a. { (↑POSS)=↓
(↑POSS PRED FN)~= pro
| (↑POSS POSS)=↓
(↑POSS POSS PRED FN)~= pro
| (↑POSS POSS POSS)=↓
(↑POSS POSS POSS PRED FN)~= pro }

b. { ↓∈(↑POSS ADJUNCT)
(↑POSS PRED FN)~= pro
| ↓∈(↑POSS POSS ADJUNCT)
(↑POSS POSS PRED FN)~= pro
| ↓∈(↑POSS POSS POSS ADJUNCT)
(↑POSS POSS POSS PRED FN)~= pro }

The disjunctive template in (26b), for instance, ensures that the ADJUNCT will precisely and exclusively be represented in f-structure as modifying the (only) non-pronominal possessor. Although in theory further embedding of possessors is possible, even ordinary possessive constructions hardly ever contain more than three possessors embedded within one another. As far as these *-é* "pronominal" constructions are concerned, not a single instance of more complex embedding has been attested. This is fundamentally due to human processing limitations, which are even stricter in these instances of multiple pronominal embedding. Naturally, the templates in (26) can always be augmented with further embedding if there is a justified need for this.

(27)
$$\begin{bmatrix} \text{PRED} & \text{'pro < (↑POSS) >'} \\ \text{NUM} & \text{pl} \\ \text{PERS} & 3 \\ \text{CASE} & \text{acc} \\ \text{POSS} & \begin{bmatrix} \text{PRED} & \text{'pro < (↑POSS) >'} \\ \text{NUM} & \text{pl} \\ \text{PERS} & 3 \\ \text{POSS} & \begin{bmatrix} \text{PRED} & \text{'student'} \\ \text{NUM} & \text{sg} \\ \text{PERS} & 3 \\ \text{DEF} & + \\ \text{ADJUNCT} & \{[\text{PRED 'clever'}]\} \end{bmatrix} \end{bmatrix} \end{bmatrix}$$

3. Adopting a new analysis of possessors

In Laczkó (2007) I develop a new account of Hungarian possessive constructions. It postulates that a lexical predication template converts an ordinary, nonrelational noun into a "raising" type predicate with an (XCOMP) propositional argument and a nonthematic (POSS) function. The possessiveness marker attaching to the noun head is the predicate (π) of the (XCOMP), and its open (POSS) argument is functionally controlled by the (POSS) of the raising predicate. In this section I briefly show that this new approach can be easily adopted by my analysis of the two elliptical constructions proposed in this paper.

(28a) is a Type (A) elliptical construction. (28b) shows the lexical form of the adjectival head as used in this structure according to my account presented in this paper, subscribing to the "traditional" view of possessive constructions. (28c) demonstrates the lexical form of the same adjective in the same construction on the basis of the new approach to possessive constructions as developed in Laczkó (2007).

(28) a. Péter nyolc piros-á-t (=16a)
Peter.NOM eight red-3SG-ACC
'Peter's eight red ones'

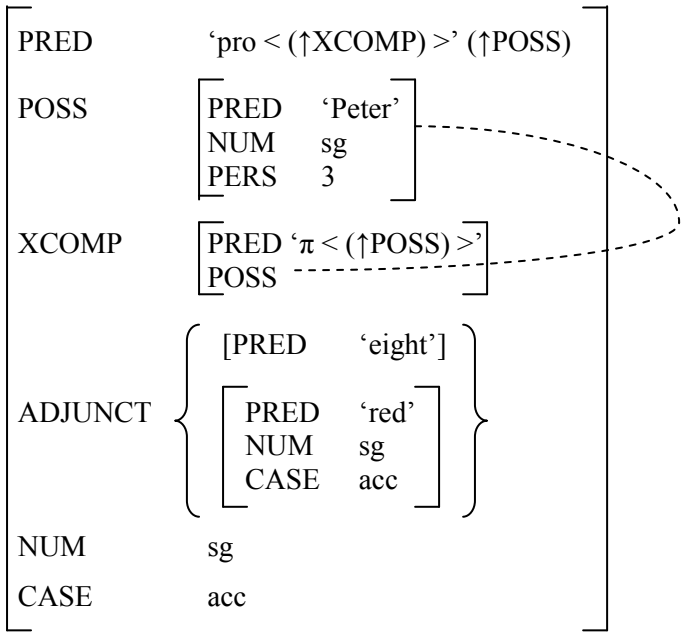
b. pirosát, A 'red' (=16b)
(↑NUM)=sg
(↑CASE)=acc
((ADJUNCT ∈↑) PRED)= 'pro < (↑POSS) >'
((ADJUNCT ∈↑) POSS NUM)=sg
((ADJUNCT ∈↑) POSS PERS)=3

c. pirosát, A 'red'
(↑NUM)=sg
(↑CASE)=acc
((ADJUNCT ∈↑) PRED)=
'pro < ((ADJUNCT ∈↑) XCOMP) >' ((ADJUNCT ∈↑) POSS)
((ADJUNCT ∈↑) POSS)= ((ADJUNCT ∈↑) XCOMP POSS)
((ADJUNCT ∈↑) XCOMP PRED)=
'π <((ADJUNCT ∈↑) POSS)>'
((ADJUNCT ∈↑) POSS NUM)=sg
((ADJUNCT ∈↑) POSS PERS)=3

The major difference is that the Poss morph attaching to the adjectival head does not introduce an ordinary possessive predicate. Instead, it introduces the functional annotational ingredients of the new, raising type analysis. For

further details of the new possessive account, see Laczkó (2007). The f-structure of (28a) is as follows (compare it with (17)).

(29)



(23), repeated here as (30) for convenience, exemplifies Type (B) constructions.

(30) az okos diák-é-i-é-i-t
The clever student-É-PL-É-PL-ACC
ca. ‘those of those of the clever student’

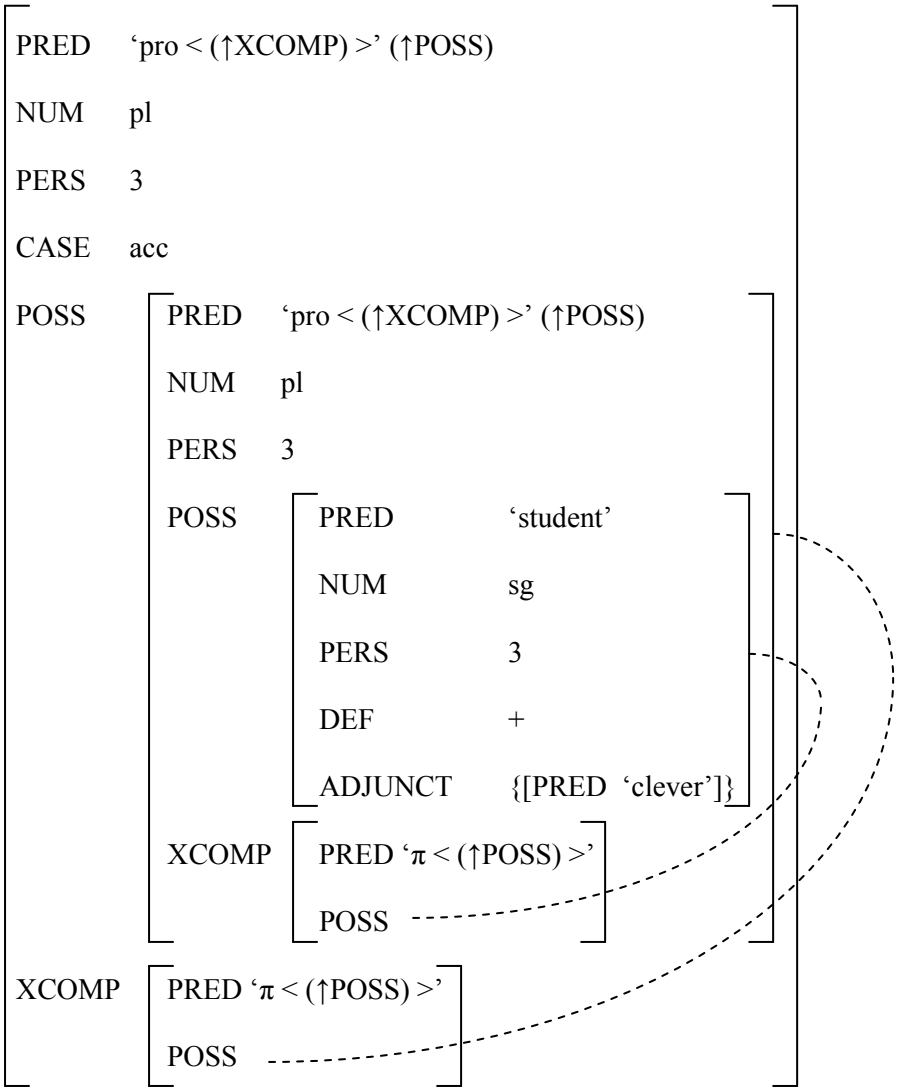
(31a) shows the lexical form of the *-é* morph in my analysis based on the "traditional" possessive view, while (31b) demonstrates the modified version capitalizing on the new perspective presented in Laczkó (2007).

(31) a. *-é*, N_{suff} $[N\_\_]_N$ pro <(↑POSS)>’

b. *-é*, N_{suff} $[N\_\_]_N$ pro <(↑XCOMP)>’ (↑POSS)
(↑POSS)= (↑XCOMP POSS)

The f-structure of (30) on this new account is given (32). Compare it with (27).

(32)



4. Conclusion

In this paper I have developed an LFG analysis of two elliptical noun phrase types. In the case of Type (A), in which the understood noun head is entirely missing from the construction and formally the head function is performed by the head of the final modifying constituent in the phrase, I employ an exocentric structure and introduce a pro noun head into f-structure by an appropriate functional annotation. In the case of Type (B), which is always a

(special) possessive construction and in which the noun head is represented by a pro-like morpheme attaching to the head of the possessor constituent, I assume that the morpheme in question is an argument taking predicate, and I capture the scope relations of this pro morpheme and the plural marker of the possessed noun as well as the possibility of recursion by a hierarchical sublexical representation.

Finally, let me make a short comment on modification in the constructions under investigation. In Type (A) the covert pro head must have a modifier, cf. (1c-f). In Type (B) the overt pro head, encoded by the *-é* suffix, must not have a modifier. This complementarity may be a part of the reason why Type (B) follows its special modification pattern, whose essence is that all the modifiers in the construction must alway be associated with the most deeply embedded, non-pronominal possessor. Another possible factor is that if in this type the modification of pro was possible, then this would inevitably lead to undesirable ambiguity.

References

Bartos, Huba 2000. Az inflexiós jelenségek szintaktikai háttere [The Syntactic Background of Inflectional Phenomena]. In: Kiefer, Ferenc (ed.) *Strukturális magyar nyelvtan 3. Morfológia* [Structural Hungarian Grammar 3. Morphology]. Budapest: Akadémiai Kiadó, 653–762.

Butt, Miriam – Tracy Holloway King – María-Eugenia Niño – Frédérique Segond 1999. *A Grammar Writer's Cookbook.* Stanford: CSLI Publications.

Butt, Miriam and Tracy H. King. 2006. Restriction for Morphological Valency Alternations: The Urdu Causative. *Intelligent Linguistic Architectures: Variations on Themes by Ronald M. Kaplan*, ed. by Miriam Butt, Mary Dalrymple, and Tracy H. King. Stanford: CSLI Publications, 235–258.

Chisarik, Erika and John Payne. 2003. Modelling Possessor Constructions in LFG: English and Hungarian. *Nominals: Inside and Out*, ed. by Miriam Butt and Tracy H. King. Stanford: CSLI Publications, 181–199.

É. Kiss, Katalin. 2002. *The Syntax of Hungarian.* Cambridge: Cambridge University Press.

Kaplan, Ronald, J. T. Maxwell III, Tracy H. King, and R. Crouch. 2004. Integrating Finite-state Technology with Deep LFG Grammars. Proceedings of the Workshop on Combining Shallow and Deep Processing for NLP (ESSLLI). http://www2.parc.com/isl/groups/nltt/pargram/esslli04fst-xle.pdf.

Laczkó, Tibor. 2000. Derived Nominals, Possessors and Lexical Mapping Theory in Hungarian DPs. *Argument Realization*, ed. by Miriam Butt and Tracy H. King. Stanford: CSLI Publications, 189–227.

Laczkó, Tibor. 2007. Revisiting Possessors in Hungarian DPs: A New Perspective. *This volume.*

Szabolcsi, Anna. 1994. The Noun Phrase. *The Syntactic Structure of Hungarian. Syntax and Semantics 27*, ed. by Ferenc Kiefer and Katalin É. Kiss. New York: Academic Press, 179–274.

Wescoat, Michael T. 2005. English Nonsyllabic Auxiliary Contractions: An Analysis in LFG with Lexical Sharing. Butt, Miriam & King, Tracy H. eds. *Proceedings of the LFG '05 Conference*. Bergen: University of Bergen. (On-line publication: 2005 CSLI Publications, ISSN 1098-6782, http://www-csli.stanford.edu/publications/LFG2/lfg05.html)