

A profile of the Hungarian DP

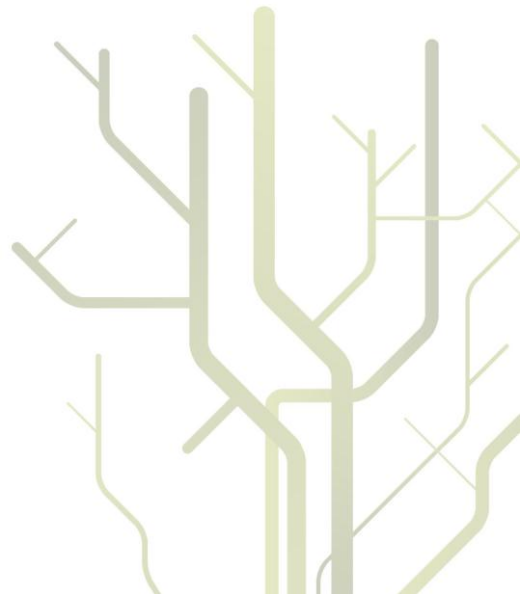
The interaction of lexicalization, agreement and linearization with the functional sequence



Éva Katalin Dékány

A dissertation for the degree of
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A thesis submitted for the degree Philosophiae Doctor

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Abbreviations

| | |
|----------|---|
| 1 | First person |
| 2 | Second person |
| 3 | Third person |
| ABLAT | Ablative case |
| ACC | Accusative case |
| ADESS | Adessive case |
| ALLAT | Allative case |
| ASS.PL | Associative plural |
| CAUS | Causative suffix |
| CL | Classifier |
| COMIT | Comitative case |
| COMP | Comparative |
| COND | Conditional |
| DAT | Dative case |
| DELAT | Delative case |
| ELAT | Elicative case |
| -é | so-called possessive anaphor spelled out as -é |
| ILLAT | Illative case |
| IMP | Imperative |
| INESS | Inessive case |
| INF | Infinitive |
| NOM | Nominative case |
| PAST.3SG | Past tense, 3 rd person singular verbal suffix |
| PL | Plural |
| POSS | Possessedness suffix |
| POSS.1SG | Possessive agreement for 1 st person singular |
| POT | Potential suffix |
| PRT | verbal particle |
| PRTCP | Participial suffix |
| SG | Singular |
| SUBLAT | Sublative case |
| SUP | Superessive case |
| SUPLAT | Superlative case |

Letter-to-sound correspondences

Consonants

| | | |
|---|----|----------------|
| b | b | <i>bad</i> |
| c | ts | <i>its</i> |
| d | d | <i>day</i> |
| f | f | <i>fog</i> |
| g | g | <i>get</i> |
| h | h | <i>how</i> |
| j | j | <i>yes</i> |
| k | k | <i>Kate</i> |
| l | l | <i>love</i> |
| m | m | <i>miracle</i> |
| n | n | <i>no</i> |
| p | p | <i>press</i> |
| r | r | (trill r) |
| s | ʃ | <i>ship</i> |
| t | t | <i>tip</i> |
| v | v | <i>very</i> |
| z | z | <i>zip</i> |

Vowels

| | | |
|---|----|---|
| a | ɔ | <i>what</i> |
| á | a: | <i>father</i> |
| e | ɛ | <i>edge</i> |
| é | e: | <i>café</i> |
| i | i | <i>bit</i> |
| í | i: | <i>keen</i> |
| o | o | <i>force</i> |
| ó | o: | <i>tall</i> |
| ö | ø | <i>her</i> |
| õ | ø: | long version of the vowel in <i>her</i> |
| u | u | <i>bull</i> |
| ú | u: | <i>fool</i> |
| ü | y | <i>début</i> |
| ű | y: | long version of the vowel in <i>début</i> |

Digraphs

| | | |
|----|----|--|
| cs | tʃ | <i>cheek</i> |
| dz | | <i>Hudson</i> |
| gy | ʃ | <i>dew</i> (British English pronunciation) |
| ly | j | <i>yes</i> |
| ny | ɲ | <i>canyon</i> |
| sz | s | <i>street</i> |
| ty | c | <i>stew</i> |
| zs | ʒ | <i>measure</i> |

Trigraphs

| | | |
|-----|----|---------------|
| dzs | dʒ | <i>jungle</i> |
|-----|----|---------------|

Chapter 1

Introduction

1.1 The domain of inquiry and aim of the thesis

The past 20 years of cartographic research has led to an explosion of functional structure. Every phrase has been decomposed into multiple layers: CP (Rizzi, 1997, 2002), the *v*P-to-TP region (Cinque, 1999, 2006d), *v*P (Larson, 1987; Ramchand, 2008b), NP (Abney, 1987; Ritter, 1991; Szabolcsi, 1987, 1994), PP (Koopman, 2000; den Dikken, 2010; Svenonius, 2010), AP (Scott, 2002) have all been split into several projections. Detailed cross-linguistic comparisons have argued that not only is the hierarchy of functional projections very fine grained, but it also shows no variation across languages. Starke (2001, 2004) call this rigid sequence of functional projections ‘the functional sequence’, or *f*-seq for short.

The domain of inquiry of this thesis is the extended nominal projection (xNP) in Hungarian, and its aim is to set up a functional sequence for xNP in a way that does justice to both semantic and word order considerations.

1.2 Why this empirical basis

1.2.1 Motivating the domain of inquiry

Hungarian is famous as a discourse-configurational language with free constituent order in the clause. The order of phrasal modifiers in the Hungarian xNP, however, is very rigid, and corresponds to what Cinque (2005a) identifies as the base-generated order $\text{Dem} > \text{Num} > \text{Adj} > \text{N}$.

- (1) a. $\text{Dem} > \text{Num} > \text{Adj} > \text{N}$
b. ez a három szép ajándék
this the three nice gift
‘these three nice gifts’

The general shape of the Hungarian xNP has been studied in detail in Szabolcsi (1994), Bartos (1999) and É. Kiss (2002), among others. Given Szabolcsi’s pioneering work on Hungarian possessors and the definite article, the influence of which on DP theory is hard to underestimate, literally every DP-researcher knows the basics about Hungarian xNPs.

Given the straightforwardness of (1-b), and the extensive previous work on this topic, one may wonder whether there is anything left to say on the Hungarian xNP in general and on its functional sequence in particular. It is my contention that the answer to this question is positive, and that there are two reasons why studying the Hungarian DP is a worthwhile project. Firstly, Hungarian is an agglutinative language, allowing its verbal and nominal stems to take multiple suffixes.

- (2) Ír-at-hat-t-ak vol-na gyógyszer-t.
prescribe-CAUS-POT-PAST-3PL be.PAST-COND medication-ACC
‘They could have had medication prescribed.’

- (3) a barát-a-i-d-ék-hoz közel
 the friend-POSS-PL-POSS.2SG-ASS.PL-ALLAT close.to
 ‘close to your friends and their company’

Owing to the rich suffixation, Hungarian wears much of the functional sequence transparently on its sleeve, and allows inquiries into f-seq in a more direct way than fusional languages. This makes it a rewarding language to study for both typologists and cartographers.

Secondly, in spite of the simplicity of (1-b) and a general consensus on certain matters, there remain some understudied data points as well as a number of unresolved and difficult issues. In the next section I will briefly illustrate those which receive extensive treatment in this thesis.

1.2.2 Problem areas in the Hungarian xNP

Classifiers

Universalist considerations point to the conclusion that every count xNP must contain a classifier that partitions the denotation of NP (Borer, 2005). Hungarian wears this partitioning on its sleeve in the form of (optionally used) classifiers. Classifiers are a grievously neglected area of Hungarian DP syntax; beyond recent work by Csirmaz and Dékány (2010); Dékány and Csirmaz (2010); Csirmaz and Dékány (in press) neither descriptive nor generative accounts have tried to incorporate them into a theory of the Hungarian xNP.

Classifiers present at least two interesting puzzles. Firstly, they are in complementary distribution with the plural marker (4), supporting theories that these two elements instantiate the same syntactic head and do the same semantic job (Borer, 2005 and much recent work).

- (4) *hét szem gyöngy-ök
 seven CL_{eye} pearl
 ‘seven pearls’

At the same time, classifiers and the plural have a rather different distribution. To mention just a few contrasts, classifiers are compatible with numerals and quantifiers but the plural marker is not, and phrasal demonstratives show agreement for the plural but they cannot do so for classifiers.

- | | |
|--|--|
| <p>(5) hét szem gyöngy seven CL_{eye} pearl ‘seven pearls’</p> | <p>(6) hét gyöngy-(*ök) seven pearl-PL ‘seven pearls’</p> |
| <p>(7) Ez-ek a ház-ak this-PL the house-PL ‘these houses’</p> | <p>(8) *Ez szem a szem mogyoró this CL_{eye} the CL_{eye} hazelnut ‘this hazelnut’</p> |

Secondly, while in the default case classifiers appear in the middle of the adjective sequence (9), in the absence of an overt noun they can both follow low adjectives and co-occur with the plural suffix (10).

- (9) két nagy (*sárga) cső (*nagy) sárga kukorica
 two big yellow CL big yellow sweetcorn
 two big yellow corncobs of rice
- (10) a sárga csöv-ek
 the yellow CL_{tube}-PL
 ‘the yellow ones’ (e.g. corncobs)

I will offer a solution to these puzzles in Chapters 9 and 3 respectively.

The two kinds of plurals

More conundrums surround the plural marker than just its relationship with classifiers. The consensual view is that it rejects numerals because of a Doubly Filled Comp type of restriction. However, there is room for some alternative analysis here. This is because the existence of a QP above NumP is generally acknowledged (even if views differ on what sort of quantifiers QP can harbour), and the plural doesn't co-occur with any quantifiers either. Spec, QP quantifiers (however we delineate that set) resist an explanation in terms of a Doubly Filled Comp filter.

- | | | | |
|------|--|------|---|
| (11) | minden öt hallgató every five gradstudent every five gradstudent | (12) | minden hallgató-(*k) every gradstudent-PL every gradstudent |
|------|--|------|---|

Further, Hungarian also possesses a so-called associative plural suffix, shown in (13-b).

- | | | |
|------|--|---|
| (13) | a. János-ok John-PL 'more than one John' | b. János-ék John-ASS.PL 'John and his associates' |
|------|--|---|

Co-occurrence and scope considerations support the view that the two plurals occupy different heads (14), and demonstrative agreement facts show that they are not related by movement.

- (14) a barát-a-i-d-ék-at
the friend-POSS-PL-POSS.2SG-ASS.PL-ACC
'your friends and their associates (acc)'

However, the associative plural, too, rejects numerals (15-b), and triggers agreement on the predicate with the same phonological shape as the regular plural (16).

- | | | |
|------|--|---|
| (15) | a. a két igazgató-(*k) the two director-PL 'the two directors' | b. a két igazgató-(*ék) the two director-ASS.PL 'the two directors and their company' |
|------|--|---|
- (16) a. az igazgató-k jön-nek
the director-PL come-3PL
'the directors are coming'
- b. az igazgató-ék jön-nek
the director-ASS.PL come-3PL
'the director and his company are coming'

(15) further weakens the appeal of the Doubly Filled Comp Filter for the Hungarian NumP and invites an alternative approach, which I will present in Chapter 9. Capturing the syntax and semantics of the associative plural and its relationship to the ordinary plural is not a commonly sought goal in the Hungarian literature; Chapter 9 will also extensively treat this issue.

Anti-agreement with pronominal possessors

It is a well-known fact that Hungarian third person pronominal possessors do not show number marking overtly. Instead, they appear invariantly in the singular form regardless of whether the possessor is to be interpreted as singular or plural. The number difference is reflected only in the agreement on the possessee (19).

- | | | | |
|------|-------------------|------|------------------------|
| (17) | ő s/he s/he | (18) | ő-k s/he-PL they |
|------|-------------------|------|------------------------|

- (19) pronominal possessors: anti-agreement
- a. az ő csont-ja
the he bone-POSS(3SG)
'his bone'
 - b. az ő csont-j-uk
the he bone-POSS-POSS.3PL
'their bone'
 - c. *az ő-k csont-j-uk
the s/he-PL bone-POSS-POSS.3PL
'their bone'
 - d. *az ő-k csont-ja
the s/he-PL bone-POSS(3SG)
'their bone'

Similar anti-agreement is impossible for both R-expression possessors (20) and third person pronominal subjects (21).

- (20) R-expression possessors: no anti-agreement
- a. *a vő csont-j-uk
the son.in.law bone-POSS-POSS.3PL
'the sons-in-law's bone'
 - b. a vő-k csont-ja
the son.in.law-PL bone-POSS(3SG)
'the sons-in-law's bone'
 - c. *a vő-k csont-j-uk
the son.in.law-PL bone-POSS-POSS.3PL
'the sons-in-law's bone'
- (21) pronominal subjects: no anti-agreement
- a. ő-k ír-nak
s/he-PL write-3PL
'they write'
 - b. *ő ír-nak
s/he write-3PL
'they write'

This phenomenon has stimulated a lot of discussion (den Dikken, 1998, 1999; Csirmaz, 2006; Bartos, 1999; É. Kiss, 2002; Chisarik and Payne, 2003; Ortmann, 2011), but a definitive analysis has proven to be elusive, and anti-agreement is still one of the thorniest problems of the Hungarian xNP. Chapter 9 will show this phenomenon in a new light: I will put forward some hitherto unnoticed generalizations and capture (19) in a novel way that takes into consideration these generalizations.

Adpositions

Postpositions constitute another area of Hungarian grammar that has sparked a lively debate. It is well known that Hungarian has two kinds of postpositions. So-called dressed Ps take complements which have no morphologically visible case. So-called naked Ps, on the other hand, subcategorize for specific oblique cases. The two types of postpositions also differ in their distribution: dressed Ps are inseparable from their complement, while naked Ps are for the most part separable from the DP by various syntactic movements.

- (22) a szék alatt
the chair under
'under the chair' naked P
- (23) a szék-en túl
the chair-SUP beyond
'beyond the chair' dressed P

Perhaps the typologically most interesting feature of the adpositional system is that phrasal demonstratives obligatorily show agreement for dressed postpositions. Agreement for an adposition is cross-linguistically rare, therefore (24) instantiates a rather exotic phenomenon.

- (24) amellett a szék mellett
 that.next.to the chair next.to
 ‘next to that chair’

Concerning the status and analysis of dressed and naked Ps, nothing close to a consensus has emerged. The debate begins at whether naked Ps are adpositions at all or they are rather adverbs (see Antal, 1961; É. Kiss, 1999, 2002; Trommer, 2008 for the latter view), and continues with whether the complement of dressed Ps is caseless (É. Kiss, 2002; Asbury, 2008b) or bears some case. Proponents of the latter view disagree on whether the case on the complement is the phonologically null nominative case (Marác, 1986, 1989) or whether dressed Ps function as a case-marker themselves (Kenesei, 1992). Chapter 5 is entirely devoted to this debate. I will argue that naked Ps are true adpositions, and will propose a novel analysis of dressed Ps that captures the intuition behind both the É. Kiss – Asbury and the Kenesei approach.

Demonstrative agreement

There is very little DP-internal concord in the Hungarian xNP: only phrasal demonstratives share suffixes with the noun. A unified characterization of the shared suffixes, however, is a challenging task. Demonstratives agree for the plural but not for the classifiers (see above), and they agree for dressed Ps and case markers but not naked Ps (25).

- (25) a. a(z)-ok mellett a ház-ak mellett
 that-PL next.to the house-PL next.to
 ‘next to those houses’ dressed P
- b. az-ok-hoz a ház-ak-hoz közel
 that-PL-ALLAT the house-pl-ALLAT close.to
 ‘close to that house’ naked P

Further, the demonstrative doesn’t agree for the possessedness marker on the possessor, but it agrees with a curious suffix that attaches to the possessor only in elliptical DPs (see immediately below).

Beyond the issue of how the shared suffixes can be characterized as a natural class, it is also an interesting question whether the suffixes on the demonstrative represent genuine agreement or spell out contentful functional heads internally to the demonstrative’s phrase. In spite of some attention (Moravcsik, 1997; Ortman, 2000; Payne and Chisarik, 2000; Bartos, 2001a), demonstrative concord has not taken center stage in research on the Hungarian xNP, and the full complexity of the phenomenon has not been explored.

In Chapter 8 I will argue that the demonstrative acquires its plural and case value via Agree from the extended projection of the noun. As they are demonstrably between the K and Num heads in the noun’s projection, Hungarian phrasal demonstratives are also highly relevant for the current theoretical debate on the directionality and locality constraints of Agree.

The so-called possessive anaphor -é

Even though the so-called possessive anaphor -é has intrigued traditional grammarians for a long time, the amount of generative work on this suffix is small (Bartos, 1999, 2001a). The suffix -é surfaces only in elliptical possessive noun phrases, and it appears to replace the possessed head noun and the possessedness marker. On the surface, it cliticizes onto the possessor.

- (26) János cipő-je
 John shoe-poss
 ‘John’s shoe’
- (27) János-é
 John-é
 ‘John’s one’

The function of *-é* is similar to that of English *one*-pronominalization, though there are important differences.

The suffix *-é* presents two conundrums. Firstly, it is in complementary distribution not only with the noun and the possessedness marker (which is the exponent of the Poss head), but also with all phrasal modifiers in the lower part of the xNP such as adjectives, numerals, demonstratives and relative clauses (29).

- (28) János három/barna cipő-je
 John three/brown shoe-POSS
 ‘John’s three/brown shoes’
- (29) (*három/*piros) János-é (*három/*piros)
 *three/*red John-é *three/*red
 Intended: ‘John’s red ones/three ones’

At the same time, it happily co-occurs with the plural marker (30), which is situated midway in the functional sequence between adjectives on the one hand and relative clauses, demonstratives and relative clauses on the other. Therefore the elements it is in complementary distribution with do not appear to form a constituent (31).

- (30) János-é-i
 John-é-PL
 ‘John’s ones’
- (31) [*DemP* demonstrative [*NumP* numeral [*Num'* **plural** [*AP* adjective [*PossP* [*Poss'* possessedness marker [*nP* noun]]]]]]]

Secondly, *-é* is obligatorily copied onto the possessor’s own demonstrative modifier (if it has one).

- (32) ez-é a gyerek-é
 this-é the child-é
 ‘this child’s one’
 (NOT: ‘the child’s this one’)

This combination of properties makes *-é* a rather unique suffix, which has no direct counterpart in well-known European languages.

-É therefore presents a threefold challenge: one must find its syntactic category in a way that i) naturally fits into the universal functional sequence, ii) allows a coherent story about what sort of elements are copied onto the demonstrative, and iii) provides a natural account of its complementarity with all elements in the lower xNP except for the plural.

Previous analyses (Bartos, 1999, 2001a) explain different subsets of its properties, but fall short of capturing the totality of facts involved. The syntax of *-é* will be a major concern of mine in Chapter 8.

1.2.3 Interim summary

I hope to have demonstrated in the preceding paragraphs that in spite of the straightforward and rigid order *Dem > Num > Adj > N* and the existence of previous studies, the Hungarian xNP still offers an interesting set of problems to solve. The problem areas include understudied data points (classifiers, associative plural, *-é*, demonstrative agreement) as well as extensively discussed, controversial phenomena (anti-agreement, postpositions) and phenomena which have consensual but wrong solutions (the complementarity of the plural with numerals and quantifiers).

In the next section I will discuss the stumbling blocks that present themselves on the way of setting up a functional sequence and will spell out the method used in this dissertation.

1.3 How to set up the functional sequence

Linguists make claims about the functional sequence on the basis of different considerations, among them typology, word order, distribution, semantics, and others. Most commonly, word order is

used as the primary (or only) source of evidence. But many researchers who set up a functional sequence based on word-order are so preoccupied with getting the linear order that they forget to check whether the posited f-seq makes sense from a compositional semantic point of view, and whether their surface structure predicts the meaning that the particular construction actually has.

In this thesis I will attempt to take into consideration all the different sources of evidence there are. I will use the following clues to f-seq: i) compositional semantics, ii) scope, iii) distribution, iv) portmanteau morphemes (on the assumption that the features packed into lexical items must be in a local configuration in a tree where the lexical item can be felicitously used), v) universalist considerations and vi) word order. Perhaps surprisingly, compositional semantics is going to be the most important of these, and word order the least important.

Keeping all these balls in the air is no small task, and in order to be able to do it consistently it is necessary to choose a constrained domain, otherwise the task becomes impossible. At the same time, the empirical domain should not be too small, or else one cannot observe the interplay of the above factors. I believe that the functional sequence of xNP in one particular language is a domain of just the right size, as it is neither too big nor too small. As we have seen above, the Hungarian xNP offers both a solid empirical and theoretical basis to build on, an interesting set of problems that invites discussion.

Interpreting the empirical evidence as regards the functional sequence essentially depends on four variables. These are:

1. how the functional sequence is mapped onto the syntax-semantics interface
2. how the functional sequence is mapped onto the syntax-phonology interface (i.e. how f-seq is lexicalized)
3. how the functional sequence is linearized (i.e. the used word-order algorithm)
4. which morphemes represent agreement, and what status agreement markers have with respect to the functional sequence in general

There is more than one approach available for all the four issues, and a standpoint on all of them is necessary in order to set up the functional sequence.

In this thesis I make a very firm assumption about the first issue. I am going to assume, without argument, that the syntax-semantics mapping works in the most elegant and seamless way possible: the semantics can be read off directly from the syntactic structure. In other words, the semantics of a given structure is determined compositionally on the basis of the base functional sequence.

For syntactic heads, I will assume that each of them has to have a semantic contribution. This places constraints on the possible shapes of the functional sequence in a very obvious way: I will make every possible attempt to eliminate empty heads that serve only word-order purposes (Cinque's (2005a) AgrPs, Koopman and Szabolcsi's (2000) XP+s and stacking and licensing positions, Kayne's (1998) W nodes). This, in turn, will directly influence the word-order algorithms that I can reasonably entertain.

For specifiers, I will assume that they must be semantically compatible with and share the interpretation of every head they get into a local configuration with. This is a rather standard assumption, especially in the domain of the clausal left periphery (anything in spec, TopP is interpreted as a topic, Rizzi, 1997) and adjectives (*green* cannot be in spec, Adj_{color}P when it means 'inexperienced', Scott, 2002).

For the functional sequence in general, I will assume that each and every piece of semantics is available at exactly one projection. For instance, the possession relation can only be introduced in PossP, and partitioning of a mass happens only in the Cl Projection. Combined with the above, this means that if a projection P contributes interpretation α to the structure, then any morpheme or constituent that has the meaning component α will have to be in the head or in the specifier of P at some point in the derivation, even if there is no record of that on the surface.

The theoretical goal of the thesis is to find those approaches to the other three variables that allow a maximal conformity to this kind of syntax-semantics mapping.

1.3.1 Lexicalization

The first of the remaining variables is how the functional sequence is mapped onto the syntax-phonology interface. It is often the case that one and the same lexical item appears in different positions but roughly in the same zone of f-seq, and has related but not identical meaning contributions in those positions. How to capture this without positing massive homophony in the lexicon? I will call this the ‘lexicalization problem’, and devote Part I of the thesis to it.

The mainstream view is that there is a one-to-one relationship between terminals and morphemes: one terminal can only have one morpheme associated to it, and one morpheme can spell out only one terminal. In the current cartographic research, which generally assumes more terminals than morphemes, this results in many terminals that remain without a spellout entirely or receive a phonologically zero spellout.

This thesis abandons the one-to-one mapping between terminals and morphemes, and adopts the Nanosyntactic view on lexicalization. Nanosyntax is a theory of spellout that assumes post-syntactic lexicalization and contends that morphemes may spell out a chunk of structure. This chunk of structure may occasionally be just one terminal, but the crucial point is that it may also be bigger than that.

As one morpheme may be the exponent of more than one terminal, Nanosyntax results in functional sequences with fewer nodes that don’t receive an overt spellout. Morphemes that spell out a chunk of structure also help to diagnose the ‘closeness’ of terminals to each other: whichever terminals a morpheme spells out, they must be in an uninterrupted contiguous sequence/set in the utterance in which that particular morpheme can be used. Portmanteaus therefore provide an excellent window on certain snippets of the functional sequence.

The effects of Nanosyntax on the functional sequence are most profound in the treatment of complementary distribution and polysemy, however. Consider the scenario in which two heads, X and Y can be shown to be distinct in the universal functional sequence, they can be shown to be present in a language L, and can also have separate overt realizations in L. Suppose that the overt realization of X and Y are nevertheless in complementary distribution in L. In a system using terminal spellout, this can be ascribed to a semantic incompatibility, to a syntactic movement (X moves to Y), or to a phonological rule (hapology deleting Y in front of X). Non-terminal spellout allows to view this as competition between lexical items for the same position without the involvement of movement (if the overt realization of X can also spell out Y, economy will dictate that they don’t co-occur). The way the system is set up also heavily constrains polysemy, and thus gives a handle on the lexicalization problem. I will explain this in detail in Chapter 2.

The Nanosyntactic view of lexicalization provides a new tool to attack both old problems and new data, and I will argue that it brings empirical payoffs across the board.

1.3.2 Agreement

The next variable is how to detect and represent agreement markers in the functional sequence. I call this the ‘agreement problem’, and take it up in Part II. Separating agreement morphemes from the exponents of contentful functional heads is not trivial. There is a well-known grammaticalization cline from pronouns via clitics to genuine agreement markers, and not many studies make the effort to place individual morphemes on this cline in a principled manner (but see Bresnan and McHombo, 1987; Coppock and Wechsler, to appear; Preminger, 2009 for good examples). The number of morphemes is not a reliable clue. If a morpheme appears in a constituent only once, that morpheme may very well be agreement with a contentful null head. If a morpheme appears at multiple places in a constituent, then it is possible that one of them spells out a contentful functional head and the others instantiate agreement, but they may also be all agreement with a contentful null head. Finding out which morphemes represent contentful functional heads and which represent genuine agreement is important regardless of how agreement is represented in f-seq. If nothing else, it influences the labels of different projections in the functional sequence.

In this thesis, however, it has a much bigger importance than just labeling. Consider how Baker (1996, p. 30.) characterizes agreement: "agreement morphemes, unlike tense and aspect, are semantically vacuous; thus, there is no way of locating them in a syntactic tree by investigating their scope with respect to other items". As my main source of evidence for the functional sequence is compositional semantics and agreement morphemes don’t have any semantics, I will not have

good evidence to posit Agreement Projections dedicated to hosting these morphemes (c.f. also Chomsky, 1995 et seq., but his considerations only partly overlap with mine). Therefore I will follow the approach of Julien (2002). Julien argues that agreement features are added to other, independently motivated contentful functional heads. In this approach, the existence of agreement loosens up the relationship between the underlying structure and the surface forms, as it deceptively presents morphemes which are not associated to a head/projection of their own. Finding out which these morphemes are is of paramount importance in setting up the functional sequence.

1.3.3 Linearization

The last remaining variable is how the functional sequence is linearized. I will call this the ‘linearization problem’ and discuss it in Part III. Capturing the linear order without empty heads with no semantic content is not a commonly sought goal; many linguists view such projections as a necessary means to an end. But as I have already mentioned above, my approach to the syntax-semantics mapping doesn’t allow me to take this easy road. This will place severe constraints on me. I will have to set this variable in a way that is compatible with my proposals about the spellout algorithm and agreement and at the same time doesn’t require a weird theory of movement. In Part III, I will explore several linearization algorithms. I will argue that movements into inner specifiers à la Myler (2009) as well as Mirror Theoretic representations can deliver the order, but it is Mirror Theory that does so in the most elegant way.

To summarize, in this thesis I will set up a functional sequence for the Hungarian xNP in a way that takes into consideration all possible sources of evidence, and is consistent with the clean syntax-semantics mapping I assume.

1.4 The outline of the thesis

Part I of the dissertation focuses on the lexicalization problem. It consists of four chapters. Chapter 2 provides the framing discussion to the lexicalization problem and offers a detailed introduction to Nanosyntax. Chapters 3 through 5 map out the basic functional sequence of the Hungarian xNP. These chapters identify the surface positions of phrasal modifiers and heads, and use Nanosyntax in the analysis of functional heads throughout.

Chapter 3 explores the hierarchy of projections from N to Num. Classifiers feature prominently in this chapter. I discuss their function and position, as well as the ordering puzzle in elliptical DPs that I have already flagged in Section 1.2.2. The analysis of classifiers builds on joint work with Anikó Csirmaz, but goes beyond the collaborative work both in terms of data and analysis, and uses the Nanosyntactic theory of lexicalization rather than the standard one.

I turn to the order and lexicalization of projections from Num to D in Chapter 4. In this chapter D takes the spotlight. I will discuss co-occurrence restrictions between D on the one hand and demonstratives and quantifiers on the other. I will review Szabolcsi’s (1994) analysis of this phenomenon in terms of haplology as well as some more recent proposals. I will argue that Nanosyntax allows an insightful reinterpretation of the facts, whereby the co-occurrence restrictions are the side-effect of co-lexicalization. This novel analysis straightforwardly captures some intuitions that researchers express about D over and over again.

I continue mapping out the hierarchy of xNP in Chapter 5 with the projections above D, that is, K and the layers of P. The focus will be on the relationship between case markers, dressed Ps and naked Ps. I will argue that these elements correspond to different ways of lexicalizing the same chunk of structure. In particular, dressed Ps always lexicalize the relevant chunk on their own, while naked Ps can only lexicalize the higher part of this chunk, thus they need to recruit the help of case markers for the purposes of spelling out the lower chunk.

Part II is concerned with the agreement problem and has four chapters. Chapter 6 leads up this part with a framing discussion of the problem itself and lays out the approach to agreement adopted in this thesis. Chapter 7 picks off the easy topics: possessive agreement and suffix sharing between nouns and their appositive modifiers. I argue that possessive agreement is true agreement (rather than a clitic) because it has typical agreement properties: it can take a default value and its position is subject to variation across dialects and idiolects (with the order of contentful functional

heads being constant in the relevant varieties). On the other hand, I argue that appositives contain an elliptical noun, and the suffixes they share with the head noun belong to this elliptical noun, in fact.

In Chapter 8 I take up concord on phrasal demonstratives. I argue that the case suffix of phrasal demonstratives is the exponent of a K head, but their plural suffix is a pure agreement morpheme. The second part of this chapter centers on *-é*. I analyze *-é* as the Genitive case suffix; this provides a coherent picture of what kind of suffixes copy onto the demonstrative. I further argue that *-é* always occurs with a null pronoun that spells out the lower chunk of the DP — hence the complementarity with most elements in that region.

Chapter 9 addresses the problem of the plural: its complementarity with classifiers and numerals as well as its relationship to the associative plural. I will argue that the complementarity with classifiers stems from co-spellout, while the complementarity with numerals is due to a semantic reason. I will argue that the garden variety and the associative plural share the feature [group], and that some instances of the plural (the ones that appear on demonstratives and third person pronouns) are in fact pure agreement morphemes situated higher than the Num head.

Part III of the thesis is devoted to the linearization problem. This part comprises Chapter 10, which provides both the framing discussion and the analysis. While the Dem > Num > Adj > N order of the Hungarian xNP makes the linearization problem look like a trivial issue, closer inspection reveals that several movements take place internally to xNP. On the one hand, I will argue that some phrasal modifiers (specifically possessors, phrasal demonstratives and numerals) undergo a specifier to specifier movement. On the other hand, the heads on the xNP's projection line are lexicalized by postnominal suffixes and prenominal free morphemes in an alternating fashion. This requires an analysis that can bring the relevant suffixes together with the noun, while at the same time can keep the prenominal non-affixal heads prenominal and preserve the base-generated Dem > Num > Adj > N order — all this without word-order projections. I will show that both derivational and representational models can achieve this (Myler 2009 and Brody 2000a respectively). My personal choice for the linearization algorithm will be Brody's Mirror Theory.

I round off the thesis in Chapter 11 with some conclusions and a big picture view of the main theoretical and empirical contributions of the dissertation.

Part I

The lexicalization problem

Chapter 2

The functional sequence meets the lexicalization problem

2.1 Introducing the lexicalization problem

In the next three chapters I will map out the functional hierarchy of the Hungarian xNP. In this process I will find items again and again that appear to be in multiple positions and concomitantly appear to do multiple (but related) jobs. In Chapter 3 I will discuss classifiers, and will show that they occur in Cl in the default case, but in elliptical xNPs they occupy the N position and have the distribution of garden variety nouns. In Chapter 4 I will examine non-phrasal demonstratives. These elements sometimes seem to be in D and do the job of both a demonstrative and the definite article, while in other cases they are undoubtedly lower than D and don't do the job of the article. Finally, in Chapter 5, I will look at spatial case markers. Most of the time these appear in Place⁰ and Path⁰, and have meaning contributions related to these heads. But they can also appear under specific adpositions. In this case they still occupy some position in the P-domain, but they don't contribute the Place and Path meaning themselves.

In all these cases, the lexical items in question appear in different positions but roughly in the same zone of f-seq, and have related but not identical meaning contributions. This relatedness makes a homophony account very doubtful, and completely unenlightening. How do we capture the similar but not the same meaning as well as the similar but not the same position of these lexical items in an insightful and constrained manner? I call this the lexicalization problem.

To show that the problem is not parochial to Hungarian or to nominal f-seq, but that it is ubiquitous indeed, in Section 2.2 I will provide examples from languages and empirical domains that don't overlap with the Hungarian nominal f-seq. As the Hungarian cases I will discuss involve the polysemy of heads, this section will also give more prominence to heads. In the remainder of the chapter I will outline Nanosyntax, the lexicalization algorithm I adopt in order to tackle the lexicalization problem.

2.2 Polysemy in the lexicalization of the functional sequence

2.2.1 Polysemy of phrasal modifiers

Polysemy is widely attested with both adverbs and adjectives. Cinque's (1999) *Adverbs and Functional Heads* discusses the syntax of adverbs. On the basis of ordering restrictions between functional heads on the one hand and adverbs on the other, Cinque sets up a very fine-grained functional sequence between *v* and C. He shows that the hierarchy of adverbs and the independently established hierarchy of heads show remarkable parallelisms. He accounts for both hierarchies by a single functional sequence, where the adverbs sit in the specifiers of the semantically corresponding functional heads.¹ (1) shows the order of functional heads and where applicable, the English

¹The claim that adverbs are specifiers has not remained uncontested, see esp. Ernst (2002) for a theory of adjunction.

adverbs hosted in their specifiers.²

| | | |
|-----|------------------------------------|---|
| (1) | Mood _{speech act} | <i>frankly, honestly, sincerely</i> |
| | Mood _{evaluative} | <i>fortunately, luckily, oddly, regrettably</i> |
| | Mood _{evidential} | <i>allegedly, reportedly, obviously, evidently</i> |
| | Mod _{epistemic} | <i>probably, likely, supposedly, presumably</i> |
| | T(Past) | <i>once</i> |
| | T(Future) | <i>then</i> |
| | Mood _{irrealis} | <i>perhaps</i> |
| | Mod _{aleth necess} | <i>(not) necessarily</i> |
| | Mod _{aleth possib} | <i>possibly</i> |
| | ASP _{habitual} | <i>usually, generally, regularly, customarily</i> |
| | ASP _{delayed} | <i>finally</i> |
| | ASP _{predispositional} | |
| | ASP _{repetitive(I)} | <i>again</i> |
| | ASP _{frequentative(I)} | <i>often, repeatedly, X times, twice, frequently</i> |
| | Mod _{volition} | <i>intentionally</i> |
| | ASP _{celerative(I)} | <i>quickly, rapidly</i> |
| | T(Anterior) | <i>already</i> |
| | ASP _{terminative} | <i>no longer</i> |
| | ASP _{continuative} | <i>still</i> |
| | ASP _{perfect} | <i>always</i> |
| | ASP _{retrospective} | <i>just, recently, lately</i> |
| | ASP _{proximative} | <i>soon, immediately</i> |
| | ASP _{durative} | <i>briefly</i> |
| | ASP _{progressive} | <i>characteristically</i> |
| | ASP _{prospective} | <i>almost, immediately, nearly, imminently</i> |
| | ASP _{inceptive} | |
| | Mod _{obligation} | |
| | Mod _{ability} | |
| | ASP _{frustrative/success} | |
| | Mod _{permission} | |
| | ASP _{conative} | |
| | ASPSg.completive(I) | <i>completely</i> |
| | ASPP1.completive | |
| | Voice | <i>well, manner adverbs</i> |
| | ASP _{celerative(II)} | <i>quickly, rapidly, fast, early</i> |
| | ASP _{inceptive(II)} | |
| | ASP _{repetitive(II)} | <i>again</i> |
| | ASP _{frequentative(II)} | <i>often, repeatedly, X times, twice, frequently</i> |
| | ASPSg.completive(II) | <i>completely</i> |

The adverbs in bold can appear in two different places in the hierarchy of adverbs, which gives rise to the impression that their position is not fixed. *Again, often, quickly, rapidly* and *completely* thus pose a potential problem to the idea of a universal, rigid functional hierarchy. So do many more adverbs that can appear in two (or more) positions in the clause, such as *cleverly, stupidly, tactfully, aggressively, rudely, graciously* and so on. The standard example to illustrate the problem involves *cleverly*. It is well-known that the different positions correspond to different interpretations.³

- (2) a. John has cleverly answered their questions.
b. John cleverly has answered their questions.

²(1) combines the hierarchy in Cinque (1999, p. 106., ex. 92) with the refinements presented in Cinque (2006f).

³The polysemy of these adverbs has an extensive literature. I refer the reader to McConnell-Ginet (1982); Geuder (2000); Ernst (2002); Wyner (2009) and Piñón (2010) for examples and discussion. What is important for our purposes is that in a cartographic view, all these adverbs are capable of occurring in different functional projections.

- c. John has answered their questions cleverly.
Cinque (1999, ch. 1., ex. 83.)

Cinque proposes that the functional hierarchy is rigid, after all, and that the relevant adverbs appear in multiple places because they can be base-generated in more than one functional projection. Polysemous adverbs of the *cleverly*-type, for instance, can be generated in the specifier of the Voice head, in which case they receive a manner interpretation; or in the specifier of a deontic Modality head (depending on the adverb, $\text{Mod}_{volition}$, $\text{Mod}_{obligation}$ or $\text{Mod}_{ability/permission}$), where they receive a subject-oriented interpretation. Potential support for this comes from data like (3), with both positions filled.

- (3) John has cleverly answered the questions cleverly/foolishly.

In a similar fashion, *quickly* can be the specifier of both a higher $\text{Asp}_{celerative(I)}$ head, where it modifies the event (X is quick in ...), and a lower $\text{Asp}_{celerative(II)}$ head, where it modifies the process (X does Y in a quick way). Thus the way polysemous adverbs are interpreted depends on the functional projection they are a specifier of.

Cinque (1999, 2006c) are very clear that these cases involve one and the same adverb base-generated in different positions, rather than homophonous adverbs. Given a systematic polysemy for a class of adverbs, he strictly excludes an ambiguity or homonymy approach. Cinque suggests that these adverbs have a core meaning, which makes them compatible with more than one FP; and the meaning of the adverb and the meaning of the functional head combine and yield the interpretation together.

The type of highly elaborated functional sequence advocated in Cinque (1999) has been adapted for the analysis of adjectives in Scott (2002). Scott proposes that like adverbs, adjectives also sit in specifiers of functional projections, and proposes the hierarchy in (4) to account for the cross-linguistic patterns of adjective ordering.

- (4) ordinal > cardinal > $\text{Adj}_{\text{subjective comment}}$ > ? $\text{Adj}_{\text{evidential}}$ > Adj_{size} > $\text{Adj}_{\text{length}}$ > $\text{Adj}_{\text{height}}$ > $\text{Adj}_{\text{speed}}$ > ? $\text{Adj}_{\text{depth}}$ > $\text{Adj}_{\text{width}}$ > $\text{Adj}_{\text{weight}}$ > $\text{Adj}_{\text{temperature}}$ > ? $\text{Adj}_{\text{wetness}}$ > Adj_{age} > $\text{Adj}_{\text{shape}}$ > $\text{Adj}_{\text{color}}$ > $\text{Adj}_{\text{nationality/origin}}$ > $\text{Adj}_{\text{material}}$ > compound element

Just like certain adverbs seem to occur in more than one position in the hierarchy, so do some adjectives. Scott comments on this in the following way:

Adjectives with the same orthography but which can occur in different positions must be able to be specifiers of more than one (i.e., different) FP.

Scott (2002, p. 105.)

The adjectives that can appear in two positions in the adjective hierarchy fall into two classes. In the first class we find truly ambiguous, homophonous adjectives like *cool* ‘not hot’ vs. ‘great’ and *green* ‘the color green’ vs. ‘inexperienced’. The higher and the lower occurrence of these adjectives are entirely unrelated (a *young green Martian* is green in color, while a *green young Martian* is inexperienced). For these adjectives, the lexicon contains two different, homophonous items, which are consistently merged in different projections (e.g. SubjectcommentP for *cool* ‘great’ and TemperatureP for *cool* ‘not hot’).

In the second class we find adjectives that have a core meaning compatible with more than one adjective-related FP. The adjective *old* is a case in point. Its core meaning is such that it can be merged in the specifier of an age-related FP (as in *an old man*) or in the specifier of a temporal-related FP (as in *my old (=former) boss*).⁴ Just like with adverbs, the interpretation that these adjectives eventually get depends on what sort of grammatical-semantic information the functional projection adds to their core meaning.⁵

⁴Scott tentatively suggests that a similar analysis is also possible for *ancient*, *bulky*, *ponderous* and perhaps *tiny*, which can be merged either in some age- or size-related and a SubjectcommentP (though he also outlines a possibility whereby these are always merged in SubjectcommentP).

⁵While Scott explicitly mentions a parallel with the *cleverly*-type adverbs in the discussion of the *green*-type adjectives, the parallel seems to hold rather with the *old*-type adjectives, as in both cases the two readings make use of the same lexical item.

2.2.2 Polysemy of heads

In the verbal f-seq, modal verbs, restructuring verbs and light verbs are all representatives of lexical items that occur in various positions with various meanings in the functional sequence. Modalities come in different types: deontic modality is related to will or obligation, epistemic modality is related to knowledge, and alethic modality is related to necessary and possible truths. Epistemic and deontic modality are widely assumed to be represented by projections in the functional sequence.

It is well known that some languages allow a sequence of two modals (German, Catalan, Spanish, various Scots and American English dialects as well as the Scandinavian languages); and that co-occurring modals have a rigid order: epistemics must precede other modals (c.f. Vikner, 1988; Brown, 1991; Thráinsson and Vikner, 1995; Roussou, 1999, among others). This strict order has led to the claim that the functional projection for epistemics is higher in f-seq than the projection(s) for deontics (Picallo, 1990; Cinque, 1999, among others).⁶ Cinque (1999) and Cinque (2006f) argue that alethic modality is also represented in the functional sequence by a dedicated projection, and the order is $\text{Mod}_{\text{epistemic}} > \text{Mod}_{\text{alethic}} > \text{Mod}_{\text{deontic}}$.

Modal verbs are often polysemous, and can be used to express two or three different kinds of modalities. (5) and (6) from English are exemplar. In the cartographic approach this means that modals can be merged at different points of f-seq.

- (5) Kate must be in her office.
 deontic: ‘Kate has an obligation to be in her office.’
 epistemic: ‘Based on knowledge about the world, the speaker is entirely confident that Kate is in her office.’
- (6) John might go home.
 epistemic: ‘Based on what the speaker knows, it is possibly true that John will go home.’
 alethic: ‘It is possible that John goes home.’ (pure possibility, not related to the speaker’s confidence in the utterance)
 deontic: ‘John is allowed to go home.’

The phenomenon of ‘restructuring’ first came under discussion in Rizzi (1978), and has gained a lot of attention in the subsequent literature. As pointed out by Cinque, the semantic content of all restructuring verbs is such that it makes them able to represent (i.e. lexicalize) some functional head in (6). The existence of this systematic correspondence led to the claim that restructuring verbs can appear in two distinct positions in the clause: they can be merged either as a main verb in VP (and take a clausal complement) or as a functional verb in the head of the semantically corresponding functional projection (Cinque, 2001, reprinted as Cinque, 2006f; Cinque, 2003, reprinted as Cinque, 2006b; and Cardinaletti and Schlonsky, 2004). The former case results in a biclausal configuration with no transparency effects. In the latter case the structure is monoclausal and transparency effects obtain.

Cinque (2004), reprinted as Cinque (2006e) rejects this proposal and argues that restructuring verbs are always merged as functional heads. But this still does not mean that restructuring verbs are always merged in one and the same position. Restructuring verbs appear to be rigidly ordered, as is expected if they are in the heads of functional projections in (6). Some exceptions exist, however, where one and the same verb can either precede or follow other verbs. This is reminiscent of what we have seen for adverbs, and Cinque argues that it should be treated in the same manner, too. That is, the relevant restructuring verbs can merge in more than one functional projection. The Italian verb *cominciare*, for instance, can lexicalize both a higher and a lower Inceptive head. This gives rise to the apparently free word order with the heads between the two Inceptive projections.⁷

Thus there are two kinds of claims about the polysemy of restructuring verbs: some analyses posit a polysemy between a main verb use and a functional verb use; while others claim that

⁶See, however, Cormack and Smith (2002) for a criticism of this approach and an alternative analysis, and Barbiers (2002) for an overview of various approaches to epistemic and deontic modality.

⁷See also Fukuda (2008) for puts forward an analysis of English aspectual verbs in the same spirit. He proposes that these verbs can be merged either in the head of a Low Asp phase (below *v*), taking a gerundive complement, or in a High Asp head (above *v*), taking an infinitival complement. Aspectual verbs like *begin*, *start*, *continue* and *cease* can take either infinitive or gerundive complements, thus – Fukuda suggests – they can be merged in either in the higher or the lower Asp head.

polysemy stems from merger in different functional projections.

So-called light verbs are another eminent example of lexical items occurring in more than one position in the functional sequence. Light verbs mostly contribute aspectual or aktionsart information to the clause and form a complex predicate with the main verb in the sentence.⁸ They occur in a dedicated slot in the verbal sequence that is different from the position of both main verbs and auxiliaries (Butt and Lahiri, 2002).

Butt and Lahiri (2002) propose a cross-linguistic generalization about light verbs: in every language that makes use of them, light verbs have main verb uses as well. This observation became known as Butt's generalization.

- (7) Butt's generalization
A light verb is always form-identical with a main verb in the language.

The following Malayalam (Dravidian) examples testify to the dual nature of light verbs.

- (8) a. *avan kada-(y)il pooyi*
he store-LOC went
'He went to the store.' (Rosmin Mathew, p.c.)
b. *kuppi potṭi pooyi*
bottle break-CP GO-PST
'(The) bottle broke.' (Abbi and Gopalakrishnan, 1991, p. 162.) Malayalam

On a widespread conception of light verbs, they have undergone grammaticalization and/or semantic bleaching, and they are derived from the corresponding main verb. However, as Butt and Lahiri (2002); Butt (2003); Butt and Geuder (2003) and Butt (2010) point out, this view cannot account for the observed form-identity. Auxiliaries that have undoubtedly undergone grammaticalization split off from the main verb and tend to undergo a grammaticalization cline, developing different forms and functions from their source verb. Light verbs never undergo this process, they remain form-identical with the main verb. When the form of the main verb changes, the form of the light verb also undergoes the same change (and vice versa).

This leads Butt (2003); Butt and Lahiri (2002) and Butt (2010) to conclude that the main verb and the light verb make use of the same lexical entry. See also Ramchand (2008a) and Ramchand (2008b, ch. 5.6.) for a syntactic analysis that posits one unified lexical entry for the main verb and the light verb use. If this is on the right track, then light verbs are an exemplar of a large class of verbs that can appear in two positions in the functional sequence.

Finally, polysemy of heads is also attested in the nominal f-seq. Many languages make use of classifiers as categorizing devices in the DP. Classifiers come in various types: there are numeral, noun, genitive, verbal, and locative or deictic classifiers (Aikhenvald, 2000). Example (9) illustrates noun classifiers; these typically sort nouns into categories like man, woman, animal, bird, etc.⁹

- (9) *mayi jimirr bala-al yaburu-ṅgu julaal*
vegetable-ABS yam-ABS person-ERG girl-ERG dig-PAST
'The person girl dug up the vegetable yam.' (Dixon, 1982, pg. 185) Yidiny

In some languages all noun classifiers systematically lead double lives as noun classifiers and full nouns. Examples include Minangkabau from the Austronesian language family, the Amazonian Dāw (Aikhenvald, 2000), and a number of Australian languages such as Mparntwe Arrernte (Wilkins, 2000), Yidiny (Dixon, 1982), Yir-Yoront (Alpher, 1991, cited in Wilkins, 2000), Kugu

⁸Depending on the language, light verbs can form complex predicates with verbs, nouns, adjectives and adpositions. Here I will restrict my attention to light verb – verb complex predicates, as only these are relevant to the discussion.

⁹In the languages that have them, noun classifiers occur in the nominal phrase independently of any other constituents either inside or outside of the DP; that is, noun classifiers are classifiers that are not in need of any licenser element. This contrasts with numeral classifiers, for instance, the occurrence of which is typically licensed by numerals or quantifiers. Noun classifiers scope over the noun phrase, they do not trigger agreement and their choice is determined by semantics/lexical selection. The meaning relation between the classifier and the noun is often generic-specific, which is why in Australianist linguistics they are referred to as generic classifiers or generics (Aikhenvald, 2000).

Nganhcara (Johnson, 1998, cited in Wilkins, 2000) as well as Limilngan and Wardaman (Sands, 1995).

Wilkins (2000) notes that in these languages, the classifier meaning and the corresponding ‘heavy’ noun meaning are generally treated as separate. He points out that this approach leads to a massive and regular polysemy, which seems to miss an important generalization. Wilkins proposes that the noun classifier use and the noun use feature the same lexical item.¹⁰ This analysis is more satisfactory than the generally pursued homonymy approach. If there is indeed a single lexical entry behind the noun classifier use and the noun use, as Wilkins suggests, then this entry can be merged in two different positions in the functional sequence of the above mentioned languages: in the noun position and in the noun classifier position.¹¹

2.2.3 Interim summary and outlook

In the preceding sections, we have seen that polysemy is ubiquitous in the literature, and that compatibility with multiple positions is a frequently used tool of cartographic theory to attack this problem. Explicit discussions of polysemy always invoke the idea that the lexical entry has a rather general core meaning, which makes it semantically compatible with more than one functional projection.

I do not contest the validity of the the ‘general core meaning + merge in various positions’ approach. I believe that it is actually correct for a large set of cases, especially the phrasal modifiers (adverbs and adjectives). But the cases of head-polysemy I will look at will receive a better analysis by a Nanosyntactic approach to lexicalization. Nanosyntax is a lexicalization algorithm that operates with non-terminal spellout and restricts systematic polysemy to subset-superset relations between both meanings and positions of a lexical item. In Chapters 3 through 5, I will show that this approach brings empirical payoffs when applied to both new and old data.

Before turning to the detailed exposition of lexicalization in Nanosyntax in Section 2.4, I will first give a short overview of the various works that operate with non-terminal spellout.

2.3 Lexicalization algorithms using non-terminal spellout

In this section I will discuss the different ways in which the idea of non-terminal spellout has been implemented in the literature, and the various linguistic phenomena it has been applied to. This will serve as a background to the detailed exposition of Nanosyntax in Section 2.4.

The claim that lexical insertion can only target terminals is the most widely shared assumption of syntactic theories that posit a hierarchical tree structure. This claim, however, has not remained uncontested. Overt and covert pronouns, for instance, are often thought to correspond to an entire phrase even in analyses that otherwise use only terminal spellout. Jackendoff (1977), for example, argues that the English pro-forms *do so* and *one* correspond to V' and N' respectively, and they are incompatible with V and N complements because those are internal to V' and N' . Uriagereka (1995) and Corver and Delfitto (1999) argue that (clitic) pronouns are D-elements that take a pro-NP complement.

The idea that a lexical entry can spell out an entire constituent is taken up in Weerman and Evers-Vermeul (2002) and Neeleman and Szendrői (2007) to explain the distribution of pronouns. Weerman and Evers-Vermeul (2002) examine Dutch pronouns and establish two groups: those that can and those that cannot occur with other DP-internal material such as numerals, adjectives and nouns. They argue that with both types of pronouns, there is an N present in the syntax, and the difference between the two pronoun types lies in the amount of structure spelled out by pronoun. Pronouns that can co-occur with other DP-internal constituents sit in D , leaving N , Num and $spec$, Adj free to be spelled out by other lexical items. Pronouns that cannot co-occur with other

¹⁰This is reminiscent of the way Butt posits a unified lexical item for light verbs and their corresponding full verbs. Note, however, that while Butt’s generalization has cross-linguistic validity, not all noun classifiers of all languages have a noun use.

¹¹Wilkins proposes an analysis of the relevant noun classifier constructions in the framework of construction grammar. Given the way construction grammar works, for him the two positions do not correspond to two projections in the functional sequence. However, in the generative framework pursued here, this is the only sensible interpretation of his proposal.

DP-internal material, on the other hand, spell out the entire DP. Weerman and Evers-Vermeul further suggest that there exist pronouns that spell out KP (this gives rise to the subject vs. object pronoun distinction) as well as pronouns that spell out some phrase between NP and DP (this is the case with pronouns that can co-occur with a D but not with other material between N and D).

Neeleman and Szendrői (2007) analyze the cross-linguistic distribution of radical pro-drop. They argue that languages with radical pro-drop i) have pronouns that correspond to KPs with a phonologically zero spell out, as in (10) and ii) these languages have no other, more specific spell-out rules for KP that could block the application of (10) by the Elsewhere Principle. (11) is an example of such a blocking rule from Dutch.

$$(10) \quad [_{KP} + \text{pronominal}, - \text{anaphoric}] \Leftrightarrow \emptyset$$

$$(11) \quad [_{KP} + \text{pronominal}, - \text{anaphoric}, 3, \text{SG}, \text{M}, \text{ACC}] \Leftrightarrow \textit{hem}$$

This account provides a principled way of explaining why radical pro-drop is attested only in languages with agglutinating pronouns. In languages with pronouns fusional for case, all pronoun spell-out rules target KP, and the application of the very general rule in (10) is blocked by the existence of more specific rules. In languages with agglutinating pronouns, on the other hand, the bare pronouns spell out some constituent smaller than KP; for instance NP (yielding pronouns agglutinating for both number and case) or DP (yielding pronouns agglutinating only for case). An example from Japanese is given in (12).

$$(12) \quad \begin{array}{l} \text{a. } [_{NP} + \text{pronominal}, - \text{anaphoric}, 1, \text{SG}] \Leftrightarrow \textit{watasi} \\ \text{b. } [_{K \text{ NOM}}] \Leftrightarrow \textit{ga} \\ \text{c. } \textit{watasi-ga} \\ \quad \text{I-NOM} \end{array}$$

Neeleman and Szendrői argue that the rules in (10) and (12-a) are not in competition, as neither properly includes the other in its domain of application. (10) is more specific because it targets a larger piece of structure, and (12-a) is more specific because it makes reference to more features. Consequently, the zero-spell out rule in (10) that produces radical pro-drop is not blocked in languages with agglutinating pronouns.

Williams (2003) uses the idea of lexical items spelling out multiple positions in an entirely different, lexicalist framework: representation theory. The detailed architecture of this model need not concern us here, so I will limit myself to a brief sketch of how Williams thinks about vocabulary items and their relation to syntactic structures. He assumes a universal set of elements arranged in a rigid hierarchical order. For the verbal domain, this is $\text{Agr}_S > \text{T} > \text{Asp} > \text{Agr}_O > \text{Voi} > \text{V}$ (alternatively, $\text{T} > \text{Agr}_S > \text{Asp} > \text{Agr}_O > \text{Voi} > \text{V}$), where $>$ stands for the complementation relation. Williams further proposes that a lexical item may realize only one element in this functional chain or it may realize a sequence of elements. A lexical item of the latter type is said to ‘span’ the functional chain.

As a concrete example, consider the fragment of the English spanning vocabulary for verbs given in (13) (from Williams, 2003, ch. 8., ex. 56). As the examples shows, vocabulary items may span different amounts of structure, starting and ending at different points in the functional chain.

| | | | | | |
|------|--------------|--------------------|------------------|---------------|--------|
| (13) | T | Asp ₁ | Asp ₂ | Voi | V |
| | might | have | been | being | killed |
| | | | <u>kills</u> | | |
| | | <u>passive was</u> | | | |
| | | | | <u>killed</u> | |
| | <u>has</u> | | | | |
| | | | <u>killed</u> | | |
| | | <u>been</u> | | | |
| | | | <u>kill</u> | | |
| | <u>modal</u> | | | | |
| | <u>-s</u> | | | | |
| | | | <u>kill</u> | | |

Williams' spanning idea is also adopted by Adger (to appear). Adger applies spanning to free functional morphemes in representations which resemble Brody's (2000a) 'telescopic' trees. I refer the reader to the book for more details.

Lexical items spanning multiple positions in a sequence is also a central idea in Newson (2010). Newson works in the framework of Alignment Syntax, a version of Optimality Theoretic Syntax that dispenses with syntactic structures entirely, and relies solely on alignment and parse-type faithfulness constraints to derive word order. Thus strictly speaking, it is not true that Newson works with non-terminal spell out: he has no terminals to begin with. But the spell-out mechanism he uses is best viewed as the equivalent of non-terminal spellout in a syntactic theory without structures; and he himself points out parallels with Nanosyntax on several occasions in the paper.

Newson proposes that the building blocks of syntax are conceptual units (CUs). Examples of CUs include roots, 'agent', 'cause', 'past', etc. He argues that there is no lexicon with pre-bundled CUs: individual, non-bundled CUs serve as the input to syntax. Syntax determines an optimal order for CUs, but there is nothing in syntax that would determine which neighbouring CUs will belong to the same word. Vocabulary insertion operates on the output string of syntax. It is Spellout itself that bundles the CUs into words, and yields the illusion that there are word positions.

Vocabulary items can spell out a span of continuous CUs. Newson argues that roots have no argument structure, rather the arguments associated with the root are licensed by thematic functional CUs. Such thematic functional CUs end up close to the root and get spelled out together with it, which makes them invisible. Verbs with irregular past tenses also spell out a span of CUs, specifically the root, the thematic CUs introducing the arguments and the past tense CU, all of which ended up in a continuous string in syntax. Some specific examples of spanning vocabulary items are provided in (14) and (15).

| | | | | | | |
|------|----------------|------|--------------|---|-------|------|
| (14) | string of CUs: | past | agent | ✓ | theme | perf |
| | spellout: | had | <u>throw</u> | | | -n |

| | | | | | | | |
|------|----------------|------|-------|------|-----|--------------|---|
| (15) | string of CUs: | past | cause | perf | ... | theme | ✓ |
| | spellout: | had | made | it | | <u>break</u> | |

Let us summarize this section. Although non-terminal spellout is not part of the toolbox of mainstream generative syntax, the idea has been around for a while. It cannot be emphasized enough that the concept of one lexical item spelling out more than a single terminal (or equivalent thereof) is a feature of how spellout works, and therefore it is fairly independent of the syntactic model one uses. It is, of course, incompatible with models in which syntax manipulates words with phonological information. But it is entirely compatible with any syntactic model in which syntax manipulates abstract units without phonological features and relies on late insertion. Most syntactic theories currently on the market answer to this description. Non-terminal spellout can be paired with any one of them. We have seen that this idea has been used in the mainstream generative syntax model (Weerman and Evers-Vermeul, 2002; Neeleman and Szendrői, 2007), in the very much non-mainstream Representation Theory (Williams, 2003) and even in OT syntax (Newson, 2010). Non-terminal spellout is compatible with both lexicalist and non-lexicalist theories (Williams, 2003 versus the other works mentioned).

I will pair the idea of non-terminal spellout with a cartographic phrase-structure representation, a non-lexicalist syntax and an elegant syntax-semantics mapping.

2.4 The lexicalization algorithm of Nanosyntax

As I have already indicated before, this thesis adopts the syntax-phonology mapping of Nanosyntax. Nanosyntax belongs to the family of lexicalization algorithms that do not restrict lexical insertion to terminals. Instead, it allows one lexical item to spell out multiple terminals without movement taking place. Representative works of this framework include Fábregas (2007); Ramchand (2008b); Abels and Muriungi (2008); Taraldsen (2010); Svenonius et al. (2009); Caha (2009); Starke (2011); Ramchand (2011); Pantcheva (2011); Caha (2011) and Bye and Svenonius (forthcoming).

2.4.1 Two ways to do non-terminal spellout in Nanosyntax

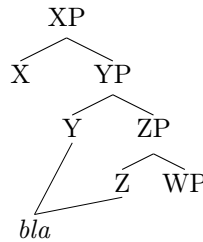
Nanosyntax is a new theory and as such, many aspects of it are still in the making. Currently, non-terminal spellout in Nanosyntax is being explored in two different ways. One line of research investigates phrasal spellout: the idea that spellout always targets constituents (terminal and non-terminal). This approach emerged from Michal Starke's unpublished work on the English *-able* and *-ed* morphemes, and it is discussed in detail in Fábregas (2009); Caha (2009); Pantcheva (2011) and Starke (2011), among others. Phrasal spellout is graphically represented as in (16). In (16) *bla* spells out all of YP.



This approach is closely related to the analysis of Weerman and Evers-Vermeul (2002) and Neeleman and Szendrői (2007) and the treatment of pro-NPs in Uriagereka (1995) and Corver and Delfitto (1999).

The other line of research investigates the possibility of sequential spanning: the idea that spellout targets only heads and contiguous sequences of heads that take each other as complements. This approach emerged from Gillian Ramchand's work on *vP* syntax and verb classes, and it is detailed in Ramchand (2008a,b, 2011) as well as in ongoing unpublished work by Ramchand. This idea can be seen as a natural extension of Brody's (2000a) Mirror Theoretic treatment of bound affixes to portmanteau morphemes in general. This framework is adopted in Abels and Muriungi (2008); Taraldsen (2010) and Svenonius (2011). Spanning is graphically represented with multiple association lines to one piece of phonology, as in (17). In (17) *bla* spells out the head span comprising X and Y. This approach is closely related to the idea of Williams (2003).

(17)



The assumption is that in the default case lexical items linearize in the highest associated position.

A morpheme lexicalizing a span of heads yields the effects of head movement without actual head movement taking place. The model thus avoids the theoretical problems associated with head movement (e.g. its countercyclic nature or the way it complicates the definition of c-command).

The most important difference between phrasal spellout and spanning is that in phrasal spellout a complement or specifier can undergo co-spellout with the head, while this is not possible in spanning.

In this thesis spanning will be the primary approach. My reasons for this choice are the following. Firstly, phrasal spellout operates with lots of remnant movements to create the right constituent for lexicalization. Adopting spanning as my main approach allows me to make the derivations shorter and the exposition simpler. Secondly, spanning is also more compatible with my assumptions about linearization. In Part III, I will argue against the existence of word-order projections (projections which are posited only to provide a landing site for roll-up and other word-order movements). The massive movements in phrasal spellout often require such projections, while spanning can do without them quite well.

In Chapters 3 and 4, I will use exclusively spanning. From Chapter 5 on, I will also make use of phrasal spellout to a limited extent. The two approaches will be applied in a systematic manner: phrasal spellout will be restricted to pronouns only, and I will use spanning everywhere else. Pronouns appear to spell out many features, and appear to have both a noun component and a D component. In the present approach, this translates into pronouns spelling out a piece of structure that is relatively big. The pronouns I will examine are incompatible with phrasal modifiers. This calls for a phrasal spellout approach, because spanning cannot block intermediate specifiers. Representing pronouns as spellouts for phrases is a straightforward Nanosyntactic rendering of analyses that posit an empty N^0 accompanying pronouns (Panagiotidis, 2002) or analyses that argue for an NP-level *pro* complement to a D-level pronoun (Uriagereka, 1995; Corver and Delfitto, 1999). As I have already mentioned, pronouns are often thought to correspond to phrases even in theories that don't normally work with non-terminal spellout. I will argue that pronouns spell out a constituent that contains NP and is base-generated by f-seq. Thus in these cases movements and word order projections will not be required to create the right constituent for lexicalization.

To summarize, there are two ways to do non-terminal spellout in Nanosyntax: phrasal spellout and spanning. I will apply phrasal spellout to pronouns, but spanning will suite my purposes better in all other cases, therefore spanning is going to be the primary approach here.

In Sections 2.4.2 and 2.4.3 I will turn to general architectural assumptions about lexicalization and competition between lexical items. The ideas and principles I will discuss in these sections are shared by both approaches, therefore it will be possible to introduce them in a way that is neutral between the phrasal spellout and the sequential spanning model. In order to remain neutral, in these sections I will talk about the lexicalization of 'a piece of structure' or 'a chunk of structure' rather than the lexicalization of a constituent or a head span. In Section 2.4.4 I will discuss the interaction of morpheme size with various grammatical operations and phenomena. In this section I will need to draw trees and show their lexicalization explicitly, therefore it will not be possible to remain neutral between the two models any more. Section 2.4.4 will feature spanning trees, similarly to most of the thesis.

2.4.2 General assumptions about lexicalization

As pointed out earlier, non-terminal spellout is compatible only with post-syntactic vocabulary insertion. Nanosyntax operates with late insertion indeed. It is assumed that syntax manipulates

abstract features that have no phonological information whatsoever. Insertion of vocabulary items operates on already existing structures.

Nanosyntax is also a non-lexicalist model. It assumes that language has only one generative system, and that takes care of both syntax and morphology (also known as ‘syntax all the way down’). As there is no generative lexicon, words are assembled in syntax, in the same module as phrases and clauses.

Neither assumptions discussed so far are either original or radical; they are both shared by Distributed Morphology, too. Nanosyntax, however, breaks with DM in how syntax-morphology mismatches should be handled. DM has a suite of post-syntactic operations: a morphology module on the PF-branch. Morphology adapts the output of syntax to the vocabulary of the lexicon: if syntax yields a tree that cannot be spelled out, morphology comes into the picture to fix the situation. Morphology covers a variety of PF-operations such as Fusion, Fission, Impoverishment/Obliteration, readjustment rules, insertion of dissociated features/morphemes and PF-movement/Morphological merger (of two kinds, Lowering happens before, while Local Dislocation happens after vocabulary insertion). I will not be concerned with the technicalities of these operations here, though later on I will make reference to some of them at appropriate points for comparison with Nanosyntax. For discussion of DM’s morphological operations, I refer the reader to Halle and Marantz (1993, 1994); Embick (1998); Harley and Noyer (1999); Embick and Noyer (2001, 2007); Arregi and Nevins (2008) and Siddiqi (2009).

Nanosyntax has no morphological component, or post-syntactic operations of any kind (apart from vocabulary insertion). If syntax yields a tree that cannot be lexicalized then that particular structure simply doesn’t have a well-formed spellout. DM’s Fusion and Fission fall out as a direct consequence of lexical insertion (to be explained later); the other morphological operations have no equivalents and cannot be rendered in Nanosyntax. This kind of architecture is more restricted than DM because it dispenses with a range of operations and has fewer modules. Consequently, the viability of this theory is well worth pursuing.

One of the basic assumptions of Nanosyntax is that every syntactic feature of a tree-representation must receive a spellout. This principle, called the Exhaustive Lexicalization Principle, is detailed in Fábregas (2007).

- (18) Exhaustive Lexicalization Principle:
Every syntactic feature must be lexicalized. (Fábregas, 2007, p. 167.)

This principle requires every feature in the output of syntax to be associated to some phonology, but crucially, it does not require that phonology to be overt. That is, features are allowed to remain inaudible as long as they are realized by a phonologically null element. Note that the principle does not regulate the distribution of empty categories; that must be taken care of independently.

The Exhaustive Lexicalisation Principle has a number of parallels in other frameworks. Bonet (1991), for instance, argues that the role of impoverishment is to delete the features that would receive no spell out if they remained in the representation. In essence, its role is to create representations that can be exhaustively lexicalized. This idea has been taken up in the subsequent DM literature. The crucial difference between (18) and Bonet’s proposal is that the Exhaustive Lexicalisation Principle places a requirement on the output of syntax, while Bonet places the same requirement on the output of morphology.

In Borer’s (2005) exo-skeletal theory functional heads are open values that can be assigned range in various ways. Every open range introduced into syntax must be assigned range in one way or another, or else the derivation does not converge. This obligatory range assignment is reminiscent of the Exhaustive Lexicalisation Principle, but of course cannot be equated with it (range assignment can be brought about by insertion of a head, specifier-head agreement and even a long-distance relationship, thus it does not call for phonological material in the head, but the Exhaustive Lexicalisation Principle requires this).

Newson (2010) explicitly claims that every conceptual unit (basic building block of syntax) in the syntactic output must be lexicalized. This is practically the Exhaustive Lexicalisation Principle.¹²

¹²There is a caveat, though. If the optimal output violates some parse constraint, there will be input elements missing from the output. That is, an equivalent of a deletion process can take place between the input and the optimal

Once adopted, the Exhaustive Lexicalisation Principle has far-reaching consequences. It automatically entails that Nanosyntax does not have impoverishment or obliteration rules. In fact, Nanosyntax could not have such rules even if it had a morphological component. Impoverishment and obliteration rules are morphological rules in DM that delete syntactic features and nodes after syntax and before vocabulary insertion. As a result of these rules, a number of features/terminals are removed from the syntactic representation before they could get a chance to be spelled out. This means that some features are present in the output of syntax but they are not realized by any phonology. This is incompatible with the Exhaustive Lexicalization Principle.

Halle and Marantz (1994) identify the three key features of DM as late insertion, syntax all the way down and underspecification of lexical items. We have seen that Nanosyntax shares the first two assumptions. The reader has no doubt inferred by now that this is not the case with underspecification. Underspecified lexical items are widely used in DM. The idea is that if there is no lexical item that would be a perfect match to the feature content of a terminal, then the lexical item that can realize the largest subset of the relevant features is chosen for insertion. This is known as the Subset Principle.

- (19) The Subset Principle
 The phonological exponent of a Vocabulary item is inserted into a morpheme . . . if the item matches all or a subset of the grammatical features specified in the terminal. Insertion does not take place if the Vocabulary item contains features not present in the morpheme. Where several Vocabulary items meet the conditions for insertion, the item matching the greatest number of features specified in the terminal morpheme must be chosen.
 (Halle, 1997)

The Subset Principle allows lexical items to spell out terminals even if they are underspecified for some features of that terminal. Underspecification is the standard treatment of syncretisms in DM. If a lexical item is compatible with different values of a feature, say, singular vs. plural for number, nominative vs. accusative for case, then the assumption is that it is underspecified for that feature.

From the Exhaustive Lexicalisation Principle, it follows that Nanosyntax does not share the assumption of underspecified lexical items and does not adopt the Subset Principle. Underspecification and the application of the Subset Principle leave certain features of the syntactic representation without a spellout, and (18) does not allow this.

But if Nanosyntax does not use the Subset Principle and underspecification, then what does it do with nodes for which there is no perfectly matching vocabulary item? There is only one logically possible answer here. If every syntactic feature must be spelled out and there is no perfectly matching lexical item, then an overspecified lexical item is chosen for insertion. This principle, called the Superset Principle was first proposed by Michal Starke in unpublished work, and was formulated in Caha (2007).¹³

- (20) The Superset Principle (informal)
 A lexical item can spell out syntactic structures which are smaller than that lexical item.
 (from the Nanosyntax glossary at <http://nanosyntax.auf.net/glossary.html>)

Basically, the difference between the Subset and the Superset Principles boils down to this. The Superset Principle allows the features of lexical entries to be ignored but does not allow features in the syntax to be ignored. The Subset Principle, on the other hand, allows features in syntax to be ignored, but it does not allow the features of lexical entries to be ignored. Intuitively, the features in syntax are more important than the features in lexical items, as lexical items merely serve as ‘clothing’ on the syntactic structure. As pointed out by Michal Starke, this intuition can be straightforwardly cashed out only with the Superset Principle. For a detailed comparison of the Subset and the Superset Principles, I refer the reader to Caha (2007). In the next section, where I discuss competition between lexical items in Nanosyntax in general, I will come back to the Superset Principle and show how it favours overspecification over underspecification and captures patterns of syncretism.

order. However, once the optimal order is determined, all conceptual units contained in it must be lexicalized.

¹³See Newson (2010) for the use of overspecified lexical items and the Superset Principle in Alignment Syntax.

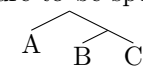
The Superset Principle thus allows a lexical item to spell out fewer features in a particular tree than it possibly could. Unused features, i.e. features that a lexical entry could spell out but in a particular syntactic structure it does not are said to be ‘Underassociated’ (term from Ramchand, 2008b). Recent work in Nanosyntax has shown that while Underassociation is widely available, some lexical items have idiosyncratic specifications that prevent them from Underassociating particular features of theirs (Svenonius, 2009; Starke, 2011). In other words, these lexical items must spell out these particular features under all circumstances. Finding out which lexical items have such restrictions and for which feature(s) is an empirical task. In Chapters 4 and 9 I will argue that Hungarian pronouns have this kind of restriction: they spell out both low and high features in xNP, and none of them can be Underassociated.

Some clarification about Underassociation is in order before we proceed. In the present framework, lexical items are associated to three kinds of information in the lexicon: i) syntactic-categorial (the category features or chunk of structure they spell out), ii) phonological (the phonological shape of the spellout) and iii) lexical-conceptual (semantic information independent of category features, real world knowledge). Syntactic-categorial information is what distinguishes the verb *sleep* from the noun *sleep*, for instance. The lexical-conceptual information associated with these lexical items is the same, but they are used to spell out different syntactic categories. Lexical-conceptual information is what distinguishes the noun *sleep* from the nouns *dream* or *table*. Underassociation applies only to syntactic-categorial information. That is, a lexical item can spell out all or only a subset of the syntactic features it could, but the lexical-conceptual meaning associated to the lexical item is constant.

Suppose that a lexical item may spell out three syntactic features, A, B and C, and the lexical-conceptual specification of this item can be characterized as xyz . In a structure where this item spells out all of A, B and C, its semantic contribution is $A+B+C+xyz$. If this item Underassociates its A feature, then its semantic contribution is $B+C+xyz$. If this item Underassociates its A and B features, then its semantic contribution is $C+xyz$. The meaning contribution of a lexical item in a particular structure thus depends on both the amount of structure it spells out and the lexical-conceptual information associated to that item. This way of deriving a lexical item’s semantic contribution is a perfect fit for the syntax-semantics mapping I assume (c.f. Chapter 1), because it is fully compositional.

It is obvious at this point that the Superset Principle and Underassociation yield a restrictive theory of polysemy. A lexical item that can spell out multiple terminals and is able to Underassociate some of its category features will always have polysemous uses. The example I have just discussed shows how: polysemy that arises via the Superset Principle yields multiple related meanings that stand in a superset-subset relationship to one another. The Superset Principle also predicts that morphemes polysemous in this way appear at different positions in the functional sequence. If f-seq defines the order of terminals as $A > B > C$, and the previously mentioned lexical item spells out $A+B+C$, then it linearizes in the A position. When it spells out $B+C$, it is not associated to the A position any more. Instead, it linearizes in B.

The last general assumption about lexicalization in Nanosyntax is that features in the lexical entries are arranged in a hierarchical relationship. In other words, the features in the lexical entries are ordered. Spellout is a procedure that matches not only the featural information, but also the hierarchical (i.e. ordering) information between lexical entries and syntactic structures. For a successful spellout, both need to match. That is, features A and B in a syntactic representation like (21) can only be spelled out by a lexical entry like (22). (23) is not a good match because the features are not in the correct order.

| | | |
|---|--|--|
| (21) structure to be spelled out | (22) lexical entry ₁ {A > B} | (23) lexical entry ₂ {B > A} |
|  | | |

Spellout of syntactic structures goes bottom-up, and it consists in matching the hierarchically ordered features in the lexicon to the hierarchy of features built by narrow syntax.

2.4.3 Competition between lexical entries

Overspecified wins over underspecified

As a demonstration of how the Superset Principle works, consider the following abstract example. Syntax has a piece of structure, α , that needs to be spelled out. The structure α contains two features: A and B. The language has no perfectly matching lexical entry, but it has a lexical entry that can realize only A and another that can realize A, B and C.

- (24) feature content α : [A, B]
- (25) a. features of lexical entry₁: [A]
b. features of lexical entry₂: [A, B, C]

According to the Superset Principle, it is lexical entry₂ that is chosen to realize α . (According to the Subset Principle, on the other hand, lexical entry₁ must be chosen.)

Nanosyntax captures syncretisms via the Superset Principle. Syncretism happens when a vocabulary item is used to realize both a piece of structure for which it is a perfect match and a piece of structure for which it is not. Suppose that in a different scenario syntax has a piece of structure, β , that contains the features A, B and C.

- (26) feature content of β : [A, B, C]

Lexical entry₂ is a perfect match for β , and is therefore chosen to realize it. This means that lexical entry₂ spells out both α and β . In other words, α and β are syncretic with each other. The features of α are a subset of β ; and lexical entry₂ corresponds to a superset of the features of α . This approach to syncretism has been explored in detail in Caha (2007, 2009); Pantcheva (2009, 2010) and Pantcheva (2011).

Less junk wins over more junk

Suppose that the piece of structure to be spelled out is the α of our earlier example, and the language has no perfectly matching lexical entry, as before. Suppose further that the language has a number of overspecified lexical entries that could, by the Superset Principle, lexicalize α . One of them contains one extra feature, as in (28-a), and the others contain two extra features, as in (28-b) and (28-c).

- (27) feature content of α : [A, B]
- (28) a. features of lexical entry₂: [A, B, C]
b. features of lexical entry₃: [A, B, C, D]
c. features of lexical entry₄: [A, B, E, F]

The winning lexical entry is always the one with the fewest number of extra features, that is, in our case (28-a). This principle is informationally called Minimize Junk or Best Fit. As Caha (2009) points out, Minimize Junk directly follows from the Elsewhere Principle of Kiparsky (1973).

- (29) The Elsewhere Principle
In case two rules, R_1 and R_2 can apply in an environment E, R_1 takes precedence over R_2 if it applies in a proper subset of environment compared to R_2 .
(formulation in Caha, 2009, p. 55.)

Minimize Junk is a necessary constraint on any spell-out algorithm that works with the Superset Principle; it regulates the competition between two or more overspecified lexical items. Essentially the same idea lies behind Grimshaw's (1997b) analysis of *do*-support as well. Grimshaw argues that *do*-support is motivated by the need of affixes for a host, and the reason why *do* is chosen for this role is that it has the least syntactic-semantic content of all verbs. That is, the insertion of *do* minimizes the use of unnecessary features and semantics. An analysis of English light verbs and auxiliary verbs along the same lines is put forward in Newson (2010). Newson

argues, for instance, that a causative conceptual unit (basic building block of syntax) is lexicalized by *make* because *be* and *do* do not have a causative semantics and thus they are too underspecified, while *create*, *kill* or *close* are out because they are too over-specified.¹⁴ That is, the latter group of lexical items are filtered out by the Minimize Junk Principle (though he does not use this term).

Fewer lexical items win over more lexical items

Suppose that we still want to lexicalize α , but this time the competing lexical items are as in (31).

- (30) feature content of α : [A, B]
- (31) a. features of lexical entry₁: [A]
 b. features of lexical entry₂: [B]
 c. features of lexical entry₃: [A, B]

In this case α could be lexicalized by a combination of lexical entry₁ and lexical entry₂, or by lexical entry₃ on its own. From the perspective of Minimize Junk, both are equally economical. The assumption of Nanosyntax, however, is that they do not stand in free variation. Rather, lexical entry₃ is more economical than lexical entry₁ + lexical entry₂ on the grounds that it involves fewer morphemes. Differently put, the number of lexical items used to spell out a structure should be kept to a minimum. This economy constraint is termed as Maximize Span Principle (also called as the Union Spellout Principle, e.g. in Muriungi, 2009). Poser's generalization on blocking can be derived from this principle (Poser, 1992).¹⁵

Maximize Span captures the same intuition as DM's Minimize Exponence constraint, proposed in Siddiqi (2009). Siddiqi writes:

[...] an economy constraint that captures the competing forces on the grammar — in particular the balance necessary in pronouncing all the interpretable features of a given derivation in the most efficient way possible. I propose the following constraint:

- (32) Minimize Exponence
 The most economical derivation will be the one that maximally realizes all the formal features of the derivation with the fewest morphemes.

The gist of this constraint is that the best utterance is the one that conveys the most amount of information with the least effort (measured in number of morphemes that have to be pronounced). In terms of the production of an utterance, this constraint captures the struggle between the need to be maximally contrastive and the need to be maximally efficient.

(Siddiqi, 2009, p. 4.)

C.f. also Noyer (1993) for the formulation of the same idea in an Optimality-Theoretic framework.

I will assume that the Maximize Span Principle comes into play only when two different lexicalizations yield the same meaning. In other words, Maximize Span falls under the purview of Cardinaletti and Starke's (1999) Minimise α constraint.

- (33) Minimise α , up to crash, given a particular choice of interpretation.
 (Cardinaletti and Starke, 1999, p. 204.)

Whether two different lexicalizations of the same chunk of structure yield different meanings depends on the lexical-conceptual information associated to the used lexical items. Consider irregular past tenses or irregular plural forms. English *books*, *teeth* and **tooths* are associated to the same syntactic-categorial information: N and plural Num. *Teeth* can spell out the relevant structure with just one morpheme, therefore it is a more economical spellout than either *books* or **tooths*.

¹⁴See Newson (2010) for details and remarks on the causative use of *have* and *let*.

¹⁵See Lundquist (2008, ch. 5.6.) for further discussion of Poser-blocking in Nanosyntax.

However, it blocks only **tooths*, because the competing lexicalizations yield the same meaning only in this case.

This assumption will be important in Chapters 3 and 5. In Chapter 3 I will argue that Hungarian overt classifiers span N and Cl. Noun plus classifier combinations are therefore always less economical than a classifier on its own. Noun plus classifier strings are nonetheless felicitous because they have a different meaning than a classifier on its own. Similar considerations will hold for the competition between the covert classifier and overt classifiers. In Chapter 5 I will argue that dressed Ps and naked P + case marker combinations spell out the same piece of structure. Maximize Span doesn't block the latter because the less economical lexicalization results in a different meaning.

Interim summary

In Nanosyntax, as in any theory with post-syntactic spellout, lexical items compete for spelling out syntactic structures. In this section I have surveyed the different scenarios in which competition takes place, and we got acquainted with three principles that regulate the competition. The Subset Principle chooses overspecified items over underspecified ones. Its non-vacuous application results in syncretisms. The Minimize Junk Principle favours lexical items with the least possible overspecification. It is a consequence of the widely used Elsewhere Principle, and expresses the same intuition that drives Grimshaw's analysis of *do*-support and Newson's analysis of English auxiliary verbs. Finally, in the spirit of DM's Maximize Exponence Principle, the Maximize Span Principle favours fewer lexical items over more.

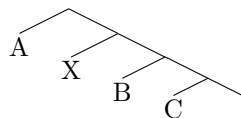
2.4.4 Size matters

It is a characteristic of every theory using non-terminal spellout that depending on how many terminals they realize, morphemes are of different syntactic complexity and size. In an indirect way, this size issue interacts with syntactic phenomena such as movement, pied-piping and co-occurrence restrictions. These interactions are discussed from a Nanosyntactic point of view in Fábregas (2009), Caha (2009) and Starke (2011), among others.

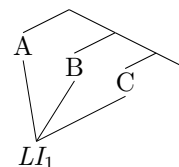
The interaction of size and the functional sequence

Suppose that the functional sequence defines the order of four features as $A > X > B > C$, and a language has a lexical item like LI_1 .

(34) f-seq

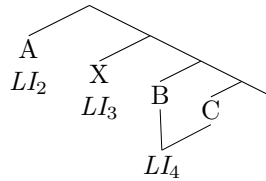


(35) lexical entry in the lexicon



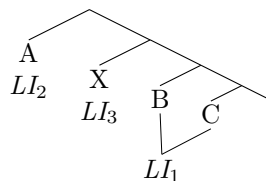
LI_1 can be used to spell out A, B and C together only in case X is not projected in the language. If X is projected, as in (34), then it acts as an intervener between A and B and prevents A from being lexicalized together with B and C; A on the one hand and B and C on the other have to be spelled out by different morphemes. I call this as 'disruption effect'. What happens in these cases depends on what other lexical entries are available in the lexicon. For instance, if the language possesses an LI_2 spelling out A, an LI_3 spelling out X, and an LI_4 that can spell out B and C, then the tree is lexicalized in the following way.

(36)



Consider now the situation in which there is no LI_4 that could spell out only B and C, and there are no lexical items that could spell out B and C separately either. Due to the Superset Principle, in this case B and C can be spelled out by LI_1 : LI_1 ‘shrinks down’ to B and C and Underassociates its A feature.

(37)

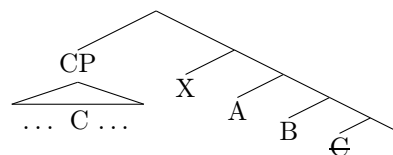


In Chapter 4, I will argue that non-inflecting demonstratives and certain Hungarian quantifiers display precisely the disruption effect in (37).

The interaction of size and movement

As movement changes constituency and the contiguity of terminals, extraction has an effect on how the structure can be lexicalized. Suppose that the functional sequence is $X > A > B > C$, and a language has LI_1 (for A, B and C) and LI_3 (for X). LI_1 is specified such that it cannot Underassociate its C feature. In addition, the language has no other lexical item that could spell out any further combination of A, B, C and X. If in this language CP moves above X, then the structure becomes unlexicalizable because there will be no felicitous spellout for A and B. (C could be spelled out by LI_1 via the Superset Principle.)

(38) structure non-lexicalizable with the available entries of the language¹⁶



This language has two possibilities to create a lexicalizable tree. It can leave C(P) in its base position, or it can move the whole constituent containing A, B and C. That is, in order to create a structure that can be lexicalized, this language can have an in situ construction or it can apply pied-piping. In Chapter 5, I will show that certain pied-piping phenomena in the domain of Hungarian PPs receive a natural explanation along these lines.

In Phrasal Spellout lexicalization interacts with movement in a perhaps even more spectacular way. Movement creates constituents that can be the target of spellout, thus it can feed the use of certain lexical items. Movement also destroys constituents, which can bleed the use of certain lexical items. For more discussion and examples, I refer the reader to Fábregas (2009); Pantcheva (2011) and Starke (2011) (the latter also contains an insightful Nanosyntactic rendering of covert movement as overt movement).

By necessity, movement interacts with lexicalization and potentially changes the lexicalization possibilities in any theory that uses non-terminal spellout. See Newson (2010) for demonstration that (the OT-equivalent of) movement changes the lexicalization possibilities in Alignment Syntax. As Fábregas (2009) points out, in a theory that uses terminal spellout, movement is not supposed to change the lexicalization possibilities of the structure: terminals are still terminals after movement.

¹⁶Traces are generally assumed to be ignored by the lexicalization algorithm.

Therefore if empirical evidence is found that movement changes spellout, it must be seen as strong evidence in favour of non-terminal spellout. For specific examples that support non-terminal spellout in this way, see Fábregas (2009), Caha (2009) and my Chapter 5 on Hungarian PPs.

The interaction of size and co-occurrence restrictions

The size of a morpheme also delimits the possible modifiers of that morpheme. When the same class of lexical items systematically admit a certain type of modifier in one language but not in the other, then a straightforward rendering of this fact in non-terminal spellout is that the modifier is spelled out together with the modifyee in the second type of language.

The reader will recall that Weerman and Evers-Vermeul (2002) explain the inability of certain Dutch pronouns to co-occur with DP-internal modifiers in the same manner. They argue that these pronouns spell out the whole KP, hence they ‘eat up’ the positions that could be occupied by modifiers in the DP.¹⁷ In Chapters 4 and 9 I will touch upon the modification possibilities of Hungarian pronouns, and argue that the severely restricted modification of overt and covert pronouns can be explained along these lines.

The interaction of size and the apparent non-rigidity of the functional sequence

While some researchers contend that every projection of the functional sequence is present in every language, claims that certain languages do not appear to have a projection X or Y abound. As pointed out in Starke (2011), the idea that every projection is present in every language can be maintained without predicting that every projection has an overt realization in every language. If the vocabulary of a language is such that some projection is always spelled out together with some other terminal, it will appear to be missing from the functional sequence of the language.

In a variety of the missing functional projection claim, two phrases are said to be co-projected in some languages. This is applied to cases where there is evidence for both projections, but these never have co-occurring exponents and appear to be in complementary distribution. Analyses that make use of co-projection include, among others, Thráinsson (1996); Bobaljik and Thráinsson (1998); Giorgi and Pianesi (1997) and De Belder (2011). Co-projection introduces a form of cross-linguistic variation into the functional sequence (even if this is not a variation in order). This can be avoided in non-terminal spellout in a straightforward way. If two projections never have co-occurring exponents in a language but there is syntactic and semantic evidence for the presence of features associated to those projections, then this language does not possess lexical items that could spell out the two projections separately. Instead, this language only has lexical items that span both projections. In other words, the projections in this language undergo co-spellout, as opposed to co-projection. This puts the source of variation in co-occurrence into the lexicon rather than the syntax. In Chapter 9 I will argue that the plural marker does not co-occur with classifiers in Hungarian because of such a co-spellout.

Where have Fusion and Fission gone?

As already discussed, Nanosyntax does not have a morphological component and it does not have space in its architecture for post-syntactic operations like Fusion and Fission. The effects of Fusion and Fission, however, fall out as a side-effect of spellout. Fusion merges two adjacent heads and creates one head from them with one terminal. The effect of this operation is that two terminals which are separate in syntax are spelled out by a single morpheme. Non-terminal spellout captures this effect without further ado.

Fission works in the opposite direction as Fusion: it takes a single terminal and splits it up into multiple pieces, with a different morpheme lexicalizing each piece. The effect of Fission is that one terminal in the syntax is spelled out by several morphemes. Nanosyntax has no way of splitting up terminals. Instead, the analysis of apparent cases of Fission is that the relevant features have never been bundled in the first place. Instead, they were merged in separate terminals from the beginning. The reason why Fission seems to have taken place is that those terminals are spelled

out together in most other languages. In a theory with terminal spellout, that gives the mistaken illusion that they came from just one terminal.

2.5 Summary

This section introduced the lexicalization problem: the omnipresence of polysemous lexical items that appear in various positions in f-seq. In order to deal with this problem, I adopted the Nanosyntactic lexicalization algorithm. Nanosyntax operates with non-terminal spellout, and heavily constrains systematic polysemy and appearance in multiple positions. Nanosyntax assumes no morphological module. Its basic lexicalization principles are the Exhaustive Lexicalization Principle and the Superset Principle. Competition between lexical items is regulated by two economy principles, Minimize Junk and Maximize Span. The lexicalization of non-terminals interacts with the functional sequence, pied-piping and co-occurrence restrictions in intricate ways. Chapters 3 through 5 will provide ample illustration of all these principles and interactions at work.

Chapter 3

From N to Num

3.1 A bird's eye view of the Hungarian DP

Any cartography of the DP must address two fundamental questions.

- What sort of projections are there in the DP?
- What order are these projections merged in?

The functional sequence for the DP emerges from the answers to these questions. (1) to (6) provide a selection of recent proposals for what the functional sequence of the DP looks like.

- (1) SDP > PDP > KiP > N (Zamparelli, 2000)
- (2) D > Ordinal > Cardinal > Adj > PP_{gen} > N (Shlonsky, 2004)
- (3) D > # > Div > N (Borer, 2005)
- (4) Dem > Num > Adj > N (Cinque, 2005a)
- (5) Dem > Num > Cl > N (Simpson, 2005)
- (6) Dem > Art > Num > Cl > RelCl > Adj > n > N (Svenonius, 2008a)

In spite of the differences between the number of projections (and at times the use of different labels for the same projection), it is clear that there is a consensus around the core of the functional sequence; specifically, that the crude backbone of the DP is D > Num > Adj > N.

A cartography of the Hungarian DP has to answer two additional questions.

- How is the functional sequence lexicalized in Hungarian?
- What is the surface order in the noun phrase in Hungarian?

The very short answer to the last question is that the Hungarian noun phrase has a rigid order as in (7).

- (7) demonstrative > article > numeral > classifier > adjective > noun > plural > case > postposition

The following examples demonstrate.

- (8) ez a hét szem piros eper
this the seven CL red strawberry
'these seven red strawberries'
- (9) a nagy ház-ak-at
the big house-PL-ACC
'the big houses'
- (10) a nagy ház-ak-on át
the big house-PL-SUP through
'through the big houses'

Comparing this basic order against the crude functional sequence $D > \text{Num} > \text{Adj} > N$, it immediately stands out that Hungarian does not feature movements internal to the DP. All the constituents are in the exact place where they are base-generated according to (1) through (6). Later on I will show that the Hungarian DP can contain more constituents than shown in (7), and that possessors, for instance, do move internally to the DP. But (7) serves for my present purposes, which is to show that Hungarian displays neither head-movement of N, nor roll-up movement of NP.

(8) through (10) feature definite noun phrases. Indefinite noun phrases appear to show more freedom of word order, but on closer inspection the freer word orders turn out to involve something different than an ordinary DP. The first kind of departure from the order in (7) involves the inversion of a numeral and an adjective. (11) represents the base order, while (12) shows the adjective preceding the numeral.

- | | | | |
|------|---|------|---|
| (11) | egy furcsa álom a strange dream 'a strange dream' | (12) | furcsa egy álom strange a dream 'a strange dream' |
|------|---|------|---|

The word order in (11) is always possible. The availability of (12), however, is subject to multiple constraints. First, the adjective must be predicative. Second, the numeral can only be *egy* 'one'. Further, the different orders produce different meanings: (11) has the kind of reading that English *an idiot doctor* does, while (12) yields the type of reading that English *an idiot of a doctor* does. Given these properties, it is clear that (12) is a special construction that does not represent garden variety DPs in Hungarian, and as such it will not be discussed in this thesis. Den Dikken and Lipták (1997) convincingly analyze (12) as nominal-internal predication; I refer the reader to their work for more careful discussion of this construction.

The second kind of departure from the order in (7) is illustrated in (13).

- (13)
- | | |
|----|---|
| a. | Kalap-ot, het-et lát-t-am feketé-t. hat-ACC seven-ACC see-PAST-1SG black-ACC 'As for hats, I saw just seven that were black.' |
| b. | Fekete kalap-ot, het-et lát-t-am. black hat-ACC seven-ACC see-PAST-1SG 'As for black hats, I saw just seven.' |
| c. | Kalap-ok-at, csak feketé-k-et lát-t-am. hat-PL-ACC only black-PL-ACC see-PAST-1SG 'As for hats, I saw only black ones.' |
- (Szabolcsi, 1994, p. 184., ex. 12.)

Szabolcsi (1994) characterizes these examples as involving adjectives and nouns that "assume the inflectional suffixes of the noun and scramble freely" (p. 184). Note that this 'scrambling' takes places within the clause rather than internal to the noun phrase; internally to the fronted noun phrase the order in (7) must be strictly observed. As these noun phrases are not representative of garden variety DPs, I will not discuss them here. (I will come back to them briefly in Chapter 7, though, and suggest that they involve two different noun phrases, one of which is elliptical). Readers interested in the syntax of this construction are encouraged to consult the references in Szabolcsi (1994).

Putting the cases in (12) and (13) aside, (7) is the only available order for definite and indefinite noun phrases alike. The goal of this thesis is to develop a cartographic profile of DPs conforming to (7). This chapter maps out the functional sequence between N and numerals. Chapter 4 lays out the cartography of the DP between numerals and D, while chapter 5 zooms in on case markers and postpositions.

3.2 The landscape of the DP up to numerals

3.2.1 A basic structure

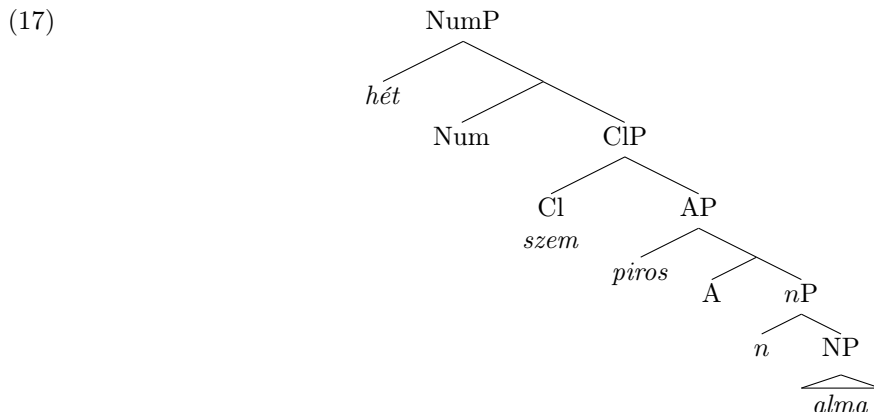
As (7) shows, the possible constituents between N and numerals are nouns, adjectives, classifiers and numerals. Considering the functional sequences (1) through (6), it is uncontroversial that a noun phrase like (14) involves at least four different projections: the numeral in NumP, the classifier¹ in ClP, the adjective in AP and the noun in NP.

- (14) hét szem piros alma
 seven CL_{eye} red apple
 ‘seven red apples’

Mapping (14) to a tree structure requires a decision whether the constituents involved are heads or phrasal modifiers. It is accepted wisdom that only phrasal modifiers are amenable to modification; and this leads to the conclusion that numerals and adjectives are phrasal modifiers, while classifiers are heads.^{2,3}

- (15) [kevesebb, mint két] szem alma (16) [nagyon piros] almák
 less than two CL_{eye} apple very red apple-PL
 ‘less than two apples’ ‘very red apples’

(14) therefore has the structure in (17). (17) includes the commonly assumed *nP* in the structure, even though this projection has no overt reflex in Hungarian.



(17) represents a widely shared view of what the lower portion of the DP looks like, but readers who do not have a good command of Hungarian are probably not aware of the existence of classifiers in the language. As I cannot rely on the readers' prior knowledge of Hungarian classifiers, I will provide some background to their use and distribution before I start refining the picture in (17).

¹Throughout the thesis, by ‘classifier’ I will mean classifiers that select count nouns. These classifiers name the unit in which the denotation of the noun is naturally packaged in the world, similarly to English *an ear of corn* or *a strand of hair*. I will not be concerned with classifiers that select mass nouns (mass classifiers or massifiers for short, e.g. *drop*), container nouns (also known as container measures, such as *glass*), group classifiers (also called collective classifiers, for instance *bevy*), kind classifiers (*type*) or standard measures (*kilo*).

Every Hungarian count classifier also has a noun use. For instance, the classifier for small spherical objects, *szem*, is also the noun for *eye*. Following the glossing method of Csirmaz and Dékány (in press), I gloss classifiers as CL and give the full noun reading in subscripts. Thus the classifier use of *szem* will be glossed as CL_{eye}.

²Examples like (i) could potentially involve a classifier modified by an adjective, which would indicate that classifiers are phrasal. Section 3.3.4 will show in detail that the adjective in (i) modifies the constituent comprising the noun and the classifier, and therefore it does not constitute evidence for the phrasal status of classifiers.

- (i) két nagy szem alma
 two big CL_{eye} apple
 ‘two big apples’

³Both adjectives and numerals have been analyzed as heads, but these proposals are not convincing to my mind. If we give up modifiability as a test to distinguish between phrasal modifiers and heads, then we are left without a reliable tool to make the distinction.

- (23) *szem gyöngy
 CL_{eye} pearl
 intended: pearl
- (24) *a szem gyöngy
 the CL_{eye} pearl
 intended: the pearl

The claim that classifiers do not co-occur with plural marking enjoys wide currency in the literature (T'sou, 1976; Chierchia, 1998; Borer, 2005, among others), but it is known that the complementarity is not perfect. As Hungarian has both classifiers and a plural marker, it is worth testing if the claim holds in this language. Care must be taken, however, with how the co-occurrence is tested. The DP in which complementarity is checked must have a licenser for the classifier (numeral, quantifier or demonstrative), and the chosen licenser must be compatible with the plural. This rules out numerals and quantifiers, as they independently don't co-occur with the plural in Hungarian.

- (25) hét/sok gyöngy-(*ök)
 seven/many pearl-PL
 'seven/many pearls'

Demonstratives, on the other hand, happily co-occur with the plural. Thus to see whether classifiers reject the plural or not, the co-occurrence must be checked in DPs that contain demonstratives.

- (26) ez-ek a gyöngy-ök
 this-PL the pearl-PL
 'these pearls'

Even though demonstratives are independently able to co-occur with both classifiers (22) and the plural (26), they cannot co-occur with both at the same time.

- (27) *ez-ek a szem gyöngy-ök
 this-PL the CL_{eye} pearl-PL
 'these pearls'

This means that classifiers in Hungarian are not comfortable with the plural independently of numerals/quantifiers, and the claim about cross-linguistic complementarity is not refuted by the Hungarian data.⁶ The structural relationship between classifiers and the plural will be taken up in detail in Chapter 9.

3.2.2 The optionality of projections

It is common knowledge that syntactic structures need not be built as big as they potentially could be: clauses can be smaller than CP, verb phrases can be smaller than *v*P, and noun phrases can be smaller than DP. Everybody acknowledges that projections can be missing from the top of the functional sequence. However, there is controversy over the possibility of projections missing from 'the middle' of the functional sequence.

Cinque (1999), for instance, argues that all of the adverb-related functional projections are present in the structure even when they do not contain adverbs. He argues that the functional heads of these projections have a marked value when an adverb is present, while in the absence of an adverbial they default to an unmarked value. However, some scholars treated this view with scepticism, and currently there is no consensus on whether projections can be missing from the middle of the functional sequence or not.

would rule out (22) as well. Instead, the ungrammaticality of (24) is due to the lack of a proper classifier licenser.

⁶Csirmaz and Dékány (2010) show that classifiers and the plural can co-occur in elliptical DPs. (i), a minimal pair of (27), illustrates this point. Based on this evidence, Csirmaz and Dékány (2010) conclude that the claimed complementarity does not hold in Hungarian. They do not address the question of why complementarity is suspended precisely in this environment.

- (i) ez-ek a szem-ek
 this-PL the CL_{eye}-PL
 'these ones' (small spherical objects, e.g. pearls)

In Section 3.5 of this chapter, I am going to show that in elliptical DPs many more co-occurrence restrictions on classifiers become relaxed. I am going to claim that in DPs like (i) the classifier is lower than in DPs like (27), and unlike in (27), the classifier and the plural do not compete for the same position in (i).

My personal take on this issue is that the presence of functional projections without an overt exponent should be determined on the basis of whether they make a clear semantic contribution to the structure. If in a given structure a projection contains no overt material but it can be shown to have an impact on the semantics, then there is good reason to posit it in the functional sequence. On the other hand, if a projection contains no overt material and there is no clear semantic effect that could be attributed to that projection either, then it is not well-founded to assume its presence. In essence, the assumed syntax-semantics mapping allows us to make inferences for the structure on the basis of the semantics. This amounts to saying that there is no across-the-board answer to the problem of ‘optionality in the middle’: it must be determined on a case by case basis.

The discussion of projections missing from the middle of a sequence is relevant for (17) because both adjectives and classifiers can be omitted from Hungarian DPs without producing ungrammaticality.

- (28) *hét alma*
 seven apple
 ‘seven apples’

That adjectives are not obligatory is entirely expected, but the optionality of classifiers is subject to cross-linguistic variation and cannot be predicted. I address the omissibility of each of these noun satellites in turn.

The literature on adjectives often mirrors the discussion in the literature on adverbs, and the same controversies that surround adverb syntax also appear in the syntax of adjectives. Are they adjuncts or are they harboured in functional projections? If the latter, are they heads or are they specifiers? How should the ordering restrictions among these modifiers be captured, and how fine-grained is the ordering in the first place? How do non-neutral orders arise? These questions have been raised in connection with both adverbs and adjectives, and similar types of answers have been proposed in both empirical domains.

One crucial difference, however, is that the functional projections related to adverbs are motivated independently on the basis of the existence of functional heads. The functional heads introducing adjectives, on the other hand, have not been motivated independently of adjectives, c.f. the discussion in Scott (2002) and Svenonius (2008a), among others.⁷ Scott (2002) suggests that augmentative/diminutive suffixes may be the manifestation of a size-related functional head and classifiers may be the manifestation of a shape-related functional head, but this accounts for only a small fraction of his 16 different adjectival functional projections. As pinning down a semantics for the heads of APs independently of the semantics of the adjectives themselves has been elusive, there has not been much discussion whether these projections can be radically missing from the DP. Given that in the absence of adjectives a clear semantic contribution of these heads cannot be identified, I will assume that in DPs without adjectives they are simply not projected.

Let us now turn to the optionality of classifiers. Given the foregoing discussion, the basic question is whether they can be shown to make a semantic contribution even in the absence of an overt exponent. I will argue that this is the case indeed, and that all count DPs contain a classifier phrase.

In her discussion of the nominal functional sequence, Borer (2005) argues that ‘mass’ and ‘count’ are not lexical specifications. Instead, they correspond to a piece of structure: ‘count’ is built on top of ‘mass’ structure and properly contains it (see also Muromatsu, 2001, 2003 for a similar proposal). Nouns merely denote ‘stuff’, as opposed to individuals, and it is necessary to build further functional structure on top of N before a count or individual denotation emerges. Specifically, before the ‘stuff’ denotation of nouns can interact with the counting system, it must be divided up into units that can be counted. This is done by the Classifier Phrase (Borer calls it DivP). Classifiers thus structurally come between the noun and Number Phrase (Borer’s #P), and their semantic function is to partition the noun denotation and produce an output that numerals and quantifiers can operate on. Borer’s DP decomposition is summarized in (29).

- (29) DP > # > **Div** > N

⁷See Svenonius (2008a) for an attempt to place adjectives into specifiers of independently motivated functional projections like *nP* and *ClP*.

In (29) N denotes stuff, Div adds partitioning, # adds counting, DP adds definiteness. Every terminal has a semantic import; and the semantics of the structure is determined compositionally on the basis of the syntactic representation.

In this decomposition, CIP has a prominent semantic role: it is the locus of creating the units that can be counted, and in the absence of CIP no bounded units emerge. From this it follows that every count DP where bounded units are counted must contain a CIP. In both (30) and (31), it is bounded units that are counted, and therefore both contain a CIP.

- | | | | |
|------|--|------|---|
| (30) | hét szem alma seven CL _{eye} apple ‘seven apples’ | (31) | hét alma seven apple ‘seven apples’ |
|------|--|------|---|

If count DPs with and without classifiers had different structures, it would mean that (30) and (31) have different structures. This is highly undesirable. (30) and (31) have no detectable meaning difference, therefore they have the same structure. The difference boils down to the overtness of the classifier: (30) has an overt classifier, while (31) features a phonologically null classifier. The idea of a null classifier is neither new nor radical on my part. Null classifiers have been employed in various works, including Sharvy (1978); Muromatsu (2001); Kobuchi-Philip (2006); Cinque (2006a); Gebhardt (2009); Piriawiboon (2010) and Zhang (2011), among others, and the idea has been adopted for Hungarian in particular in Csirmaz and Dékány (2010) and Dékány and Csirmaz (2010).

The same logic can be naturally extended to account for the cross-linguistic variation between classifier languages, non-classifier languages and languages with optional classifiers. If every count DP must contain a CIP, as I argued above, then CIP is accessible in every language; and it is the (c)overtness of classifiers that yields the three types of languages. Prototypical classifier languages like Mandarin have overt classifiers but no null classifier, hence the classifier phrase is visible in every count DP. Non-classifier languages only have a phonologically null classifier, therefore their CIP remains invisible.⁸ Languages with optional classifiers, like Hungarian, have access to both overt classifiers and a phonologically null classifier. Depending on which type is deployed in a given noun phrase, the classifier projection may or may not be directly visible.

This has two welcome results. Firstly, Chinese-type classifier languages and English-type non-classifier languages are not cut from a different cloth: their nominal functional sequences are built in the same way. Secondly, cross-linguistic variation with respect to classifiers is relegated to the lexicon, the only component of grammar which shows variation beyond the shadow of a doubt. See also Zhang (2011); Dékány and Csirmaz (2010) and Csirmaz and Dékány (in press) for recent arguments that null classifiers play an important role in cross-linguistic variation.

Within non-terminal spellout architectures, a perhaps more satisfying alternative to zero classifiers is that count nouns may span from N up to Cl. In this approach, the mass use of count nouns arises when no CIP is projected, count nouns Underassociate their Cl feature and spell out only their N feature. Underassociation thus derives the effects of the Universal Grinder.

In conclusion, CIP cannot be missing from the functional structure of count DPs. This is not to say that CIP cannot be missing from the middle of the functional sequence at all, and that quantifiers cannot combine with *nP* directly. But a structure like (32) does not yield a meaning in which units are counted.

- (32)
- $$\begin{array}{c} \diagup \quad \diagdown \\ \text{quantifier} \quad nP \end{array}$$

Borer (2005) in fact argues that a structure like (32) is the correct representation of expressions such as *much water*. That is, (32) yields an amount of stuff, as opposed to an amount of units.

⁸Borer (2005) argues that English does have overt morphemes that function as classifiers: the plural, the numeral *one* and the definite article can all fulfill the classifier function. In this sense, English does have classifiers. I am not challenging this analysis. My claim is that if a language has no overt morpheme that spells out the classifier head in a count DP, then that language makes use of a covert classifier.

the authors acknowledge as classifier-related are bolded. My own labels for these projections are provided in the last row of (39).

- (39) Svenonius (2008a) Dem > Art > **Unit Cl** > **Sort Cl** > n > N
 Borer (2005) D > # > **Div** > N
 labels used here Dem > D > Num > Cl > n > N

My CIP is thus equivalent to Svenonius' Sort CIP and Borer's DivP (as well as Zhang's 2011 UnitP), and my NumP is equivalent to Svenonius' UnitP and Borer's #P. I chose these labels in an attempt to avoid proliferation of terminology and provide maximal transparency with regard to what sort of elements these projections host.

The data (33) through (38) make it necessary to have several functional projections that can host classifiers. Svenonius (2008a) can capture the data quite elegantly, placing the various classifiers into independently motivated functional projections. I will term his proposal for the three classifier-related heads as the 'Svenonius hierarchy'. The existence of multiple classifier-related functional projections raises the question of which classifier position(s) Hungarian classifiers lexicalize. To probe this question, Dékány and Csirmaz (2010) test the ordering of classifiers with respect to adjectives.¹²

3.3.2 Adjectives and the Svenonius hierarchy

I repeat the Svenonius hierarchy with my labels in (40). The functional heads that can host classifiers are marked in bold.

- (40) Dem > D > **Num** > **Cl** > n > N

It is uncontroversial that non-idiomatic, non-focused adjectives are base-generated between *n* and Num. There are three logical possibilities as to how they line up with respect to the Cl position.

- (41) Adj > Cl

- (42) Cl > Adj

- (43) Adj > Cl > Adj

Dékány and Csirmaz (2010) point out that Borer (2005) does not discuss adjectives, but her proposal has clear predictions for the ordering of classifiers and adjectives. Specifically, adjectives that can modify undivided 'stuff' and adjectives that are normally understood to modify divided 'stuff' (atoms or units) are predicted to occur in different contexts, along the lines of (43).

Adjectives that can modify 'stuff' without that 'stuff' being packaged into units are predicted to be grammatical independently of the presence or absence of a dividing structure. Adjectives of color, material and nationality, for instance, are such adjectives: they are predicted to occur both in mass and count structures without a change in meaning. Borer makes no predictions for the height of these adjectives. They could, in principle, occur either below or above classifiers.

Adjectives that are normally understood to modify divided 'stuff' (units, atoms), on the other hand, are predicted to have a more constrained distribution. Adjectives of shape, height, length and other physical dimensions are such adjectives. In the presence of a dividing structure these adjectives are predicted to be grammatical. A further prediction is that when they modify units, these adjectives are merged above classifiers. This follows from compositionality: first the divisor must create units, and only then can these units be modified. In the absence of a dividing structure, however, no units are established and so these adjectives cannot receive an interpretation of modifying units. Depending on how flexible the grammar is, without a divisor these adjectives are either ungrammatical or they are interpreted as modifying types. No prediction is made for the ordering of different adjective classes within the two types.

¹²I will depart from both Svenonius (2008a) and Dékány and Csirmaz (2010) on one point, however: I will assume that adjectives are merged in specifiers of functional projections specialized for adjectives. Svenonius (2008a) assumes that adjectives are in the specifiers of *n* and CIP, while Dékány and Csirmaz (2010) take no explicit stand on how adjectives are introduced into the syntax.

3.3.3 The position of specific classifiers

To test the ordering of adjectives with respect to classifiers, Dékány and Csirmaz (2010) use Scott's (2002) adjective sequence in (44). Dékány and Csirmaz (2010), however, do not commit to the existence of all these separate projections (admittedly, more could be proposed), they merely use it for convenience because it distinguishes a lot of adjective classes.

- (44) ordinal > cardinal > size > length > height > speed > width > weight > temperature > wetness > age > shape > color > origin > material

Dékány and Csirmaz test the adjective classes in (44) with classifiers one by one. The complete set of their data is reproduced in Appendix II of this chapter. They find that adjectives chosen from the beginning of (44), specifically between size and weight, neutrally precede classifiers. Two examples are given below.

- | | | | |
|------|--|------|---|
| (45) | két nagy szem alma two big CL _{eye} apple 'two big apples' | (46) | *két szem nagy alma two CL _{eye} big apple 'two big apples' |
| (47) | két nehéz fej brokkoli two heavy CL _{head} broccoli 'two heavy broccolis' | (48) | *két fej nehéz brokkoli two CL _{head} heavy broccoli 'two heavy broccolis' |

The classifier > adjective order, marked here with an asterisk, is not entirely ungrammatical. Instead, it is ruled out on a unit-modifying interpretation of the adjective, and requires a different context. Specifically, speakers report a type reading for these orders.¹³ Dékány and Csirmaz (2010) note this fact but do not discuss it further. I will return to this issue in Section 3.4.

The pattern changes to the reverse one at temperature adjectives: from here on, classifiers precede the adjective.

- | | | | |
|------|---|------|--|
| (49) | két karika hideg kolbász two CL _{ring} cold sausage 'two cold slices of sausage' | (50) | *két hideg karika kolbász two cold CL _{ring} sausage 'two cold slices of sausage' |
| (51) | két szem sárga alma two CL _{eye} yellow apple 'two yellow apples' | (52) | *két sárga szem alma two yellow CL _{eye} apple 'two yellow apples' |

With these adjectives, the orders marked with the asterisk are very hard to get, even with a change in the interpretation. I can only imagine them with a very strong, contrastive stress, one that could indicate that the adjective in question has moved to a DP-internal focus position (Truswell, 2004; Scott, 2002; Aboh, 2004b; Giusti, 2005; Svenonius, 2008a). But even with this prominent stress, I highly prefer these adjectives to stay behind the classifier.

To summarize the results, in Hungarian classifiers divide the adjective space into two, yielding an Adj group 1 > classifier > Adj group 2 order. Their neutral surface position is between weight and temperature adjectives.¹⁴

- (53) ordinal > cardinal > size > length > height > speed > width > weight > **classifiers** > temperature > wetness > age > shape > color > origin > material

¹³This is similar to how certain adjective orders in English are marked with an asterisk on account of not being the neutral order. Although *black big car* is usually marked as * or *?, it does not mean that the order does not exist at all. Rather, it requires a special context and focus on the first adjective. Hungarian specific classifier > adjective orders in (45) and (48) are also * in the sense of not being the neutral order.

¹⁴I note here that Dékány and Csirmaz (2010) check adjectives and classifiers pairwise, but do not test whether the strict ordering among the adjectives in (44) actually holds. I remain agnostic about how many adjective projections there are per adjective zone, as nothing hinges on the exact number. My tentative feeling is that the relative order of adjectives in Hungarian is very similar to that in English, and that Scott's hierarchy is mostly right for Hungarian but the order may not be as rigid as he claims.

These findings confirm the predictions of Borer’s theory to a large extent: adjectives that modify bounded units are found above classifiers. It also looks like that most ‘mass adjectives’ are found below classifiers. The odd one out might be speed adjectives, but in this case, too, one might argue that speed is generally a property of animates, and thus requires units. The only real puzzle is the position of shape adjectives. Based on compositional semantics, these are predicted to be merged above classifiers, and there is no obvious reason, syntactic or semantic, why they actually surface below classifiers. Dékány and Csirmaz (2010) leave this as an open question.¹⁵

- (54) két szem kerek rizs
two CL_{eye} round rice
‘two round grains of rice’
- (55) *két kerek szem rizs
two round CL_{eye} pearl
‘two round grains of rice’

The Svenonius hierarchy, repeated for the reader’s convenience as (56), provides three possible positions for classifiers.

- (56) Dem > Art > Num > Cl > n > N

The fact that Hungarian adjectives can be surrounded by adjectives on both sides makes them compatible only with the Cl position. They cannot be in the Num head because numerals sit in the specifier of NumP, and that would leave no position for the adjectives that precede the classifier and follow numerals. They cannot be in *n* either, as adjectives below this position are idiomatic (e.g. *cold war*, c.f. Truswell, 2004 and Svenonius, 2008a), and adjectives following classifiers are not idiomatic.¹⁶

(57) is a modified version of the Svenonius hierarchy. It incorporates Dékány and Csirmaz’s (2010) observations about the ordering of classifiers and adjectives and marks the position of specific classifiers by a frame around the Cl position.

- (57) Dem > Art > Num > Adj > Cl > Adj > n > N

3.3.4 Evidence from compositional semantics

Dékány and Csirmaz (2010) also support the Adj group 1 > Cl > Adj group 2 decomposition with arguments from compositional semantics. They show that both the kind of stuff that is divided up and the kind of division imposed on the stuff must be known before the semantic contribution of relative dimensional adjectives can be computed. This means that dimensional adjectives that modify units (as opposed to kinds) can only be merged after the classifier. This line of argument thus makes use of the same kind of neat syntax-semantics mapping I am assuming here.

The argument goes like this. Certain classifiers encode dimensionality information. For instance, the classifier *szem* is associated with small spherical objects, while *fej* is used for big spherical objects. But when we evaluate the dimensionality of a noun modified by such a classifier, it is not enough to know what sort of classifier is involved. The size of the *szem* unit, for instance, is evaluated differently depending on whether the noun it combines with is *mustard seed* or *coconut*.

¹⁵Note that shape adjectives are special among dimensional adjectives not only because of their unexpected position, but also because they are the only intersective dimensional adjectives. This raises the possibility that, as Truswell (2004) and Svenonius (2008a) suggest, Div cuts the adjective sequence into two along the subsecutive vs. intersective divide. However, if (53) is a base-generated order, then at least age adjectives are misplaced in the sequence. Age is computed relative to a standard of comparison: and old olive tree is exponentially older than an old hamster. The two adjective zones are thus not perfectly aligned along the subsecutive/intersective bifurcation either.

¹⁶This is not to say that adjectives following classifiers cannot be idiomatic. (i) is an example of an idiomatic adjective following a classifier. The point is that they not have to be (c.f. (ii)), therefore classifiers must be higher than *n*.

- (i) egy szem zöld-alma
one CL_{eye} green-apple
‘one green apple (characteristically green when ripen, for instance Granny Smith)’
- (ii) egy szem zöld alma
one CL_{eye} green apple
‘one green apple (an apple that happens to be green but may change color later)’

adjectives’ and ‘mass adjectives’ on the basis of whether they presuppose units or not. This is not the same partitioning as the subsective/intersective or the gradable/non-gradable divide. ‘Mass adjectives’, for instance, can be both gradable (*green*) and non-gradable (*wooden*), and they can be both intersective (*moroccan*) and subsective (*old*).

Closest in spirit to Dékány and Csirmaz (2010) is the discussion of adjectives and divisors in Truswell (2004). Truswell proposes that adjectives are adjuncts, and they can occur both between *n* and Div and above Div in Borer’s DP-structure. He suggests that certain adjectives (like *size*) cannot appear without Div, and so they cannot appear with mass nouns. Like Dékány and Csirmaz (2010), he suggests a semantic reason for this, viz. that these adjectives presuppose delimited objects. He further discusses the gradability of adjectives and the subsective/intersective bifurcation.

None of these works, however, actually test their predictions on a classifier language, where the effect of divisors and the mass vs. count distinction is the most visible, and where the different heights proposed for adjectives could translate into a detectable linearization effect (provided that no movement masks the base-generated order). To my knowledge, Dékány and Csirmaz (2010) is the first to do this.

3.3.6 The position of the general classifier

Hungarian has a general classifier: *darab*.¹⁸ *Darab* literally means ‘(whole) piece’, but it could also be rendered in English as specimen (c.f. German *ein Stück Auto*).¹⁹ This classifier can combine with any noun that is traditionally categorized as ‘count’. In unpublished work, Dékány and Csirmaz observe that *darab* has a different distribution than specific classifiers. Specifically, all kinds of adjectives follow *darab*. The following two examples with a relatively high and a relatively low adjective illustrate this point. Their complete set of examples is reproduced in Appendix II of this chapter.

(62) *egy nagy darab körte
one big CL_{generic} pear
‘a big pear’

(63) egy darab nagy körte
one CL_{generic} big pear
‘a big pear’

(64) *egy fehér darab toll
one white CL_{generic} feather
‘a white feather’

(65) egy darab fehér toll
one CL_{generic} white feather
‘a white feather’

The surface generalization about *darab* is that it precedes all adjectives and it is right-adjacent to the numeral.²⁰ Dékány and Csirmaz conclude that in contrast to the other classifiers, *darab* sits in the Num head. (66) shows this position on the modified Svenonius hierarchy.

¹⁸I thank Aniko Csirmaz for bringing *darab* to my attention. She credits the original observation to Anna Szabolcsi.

¹⁹*Darab* also has other uses in the language. It can have a partitive meaning ‘piece of’, as opposed to ‘whole piece’, and in that use it must bear stress. Furthermore, in some contexts it seems to function as a noun, similarly to English *number* in (i).

(i) Only fab fashion designer Indashio could make Denise Richards the belle of the ball in a gum-inspired dress. Richards rocked the sparkly, blue number, which Indashio revealed was inspired by the ‘Awaken’ flavor of Trident Vitality gum.
(from <http://www.popeater.com/2011/02/18/denise-richards-johnny-weir-indashio-fashion-show/>, accessed 18. 03. 2011)

I will not be concerned with either of these uses here, and the generalizations presented here hold only for the classifier use of *darab*. Csirmaz and Szabolcsi (in press) shortly compare the genuine classifier and the partitive uses of *darab*; I refer the interested reader to their work.

²⁰An apparent counter-example is (i), where the adjective *nagy* ‘big’ precedes the general classifier.

(i) egy nagy darab ember
one big CL_{generic} man
‘a beefy man’
NOT: ‘a big man’

Several considerations, however, point to the conclusion that this example does not involve the garden variety adjective phrase for size adjectives. The reasons to think that (i) is exceptional include: i) humans are generally not modified by the adjective *big*, ii) the interpretation is non-compositional, iii) *nagy* cannot be replaced by its

(66) Dem > Art > **Num** > Adj > Cl > Adj > n > N

While the general classifier occupies a different functional head than the other classifiers, it does not co-occur with them. (67) and (68) are crashingly ungrammatical.

(67) *egy **darab** **fej** hagyma (68) *egy **darab** **szem** krumpli
 one CL_{generic} CL_{head} onion one CL_{generic} CL_{eye} potato
 ‘an onion’ ‘one potato’

That some semantic requirement contributes to the ungrammaticality of (67) and (68) be safely excluded. The nouns in the examples can felicitously occur either with *darab* or the specific classifier, as indicated in (69) through (72). Furthermore, the semantics of *darab* does not clash with that of the specific classifiers.

(69) egy **darab** hagyma (70) egy **darab** krumpli
 one CL_{generic} onion one CL_{generic} potatoe
 ‘an onion’ ‘one potato’

(71) egy **fej** hagyma (72) egy **szem** krumpli
 one CL_{head} onion one CL_{eye} potatoe
 ‘an onion’ ‘one potato’

(67) and (68) therefore must be excluded on account of a grammatical violation. Dékány and Csirmaz suggest two possible explanations. The ungrammaticality of (74) and (75) falls out naturally if *darab* is inserted into Cl, like specific classifiers, and subsequently moves to Num, or if *darab* is inserted into Num and selects for the phonologically null classifier.

Dékány and Csirmaz also observe that the restriction on classifier co-occurrence is relaxed when an adjective intervenes between *darab* and the specific classifier. (73-a) and (73-b) are appreciably less deviant than the sharply ungrammatical (74) and (75).

(73) a. ?egy **darab** nagy **fej** hagyma
 one CL_{generic} big CL_{head} onion
 ‘a big onion’
 b. ?egy **darab** nagy **szem** krumpli
 one CL_{generic} big CL_{eye} potato
 ‘one big potato’

Low adjectives originating below Cl, on the other hand, do not have the ameliorating effect.

(74) *egy **darab** **fej** lila hagyma
 one CL_{generic} CL_{head} purple onion
 ‘a purple onion’

(75) *egy **darab** **szem** norvég krumpli
 one CL_{generic} CL_{eye} Norwegian potato
 ‘one Norwegian potato’

Dékány and Csirmaz don’t analyze the data in (73). A natural account of these examples that arises in the context of this thesis is that the general classifier *darab* spans Cl and Num. The

antonym *kicsi* ‘small’, iv) *darab* can occur with any count noun, but *szép darab* can occur only with a handful nouns, v) *nagy darab* has a compound-like stress pattern, *darab* cannot have its own stress, and vi) the string *nagy darab* can co-occur with another *darab*.

(ii) egy **darab** nagy **darab** ember
 one CL_{generic} big CL_{generic} man
 ‘one beefy man’

The string *nagy darab* is therefore best analyzed as a compound (according to the conventions of Hungarian orthography, it is written as one word, too). Thus the first *darab* in (ii) is the real classifier, while second *darab* is part of a compound adjective.

functional head that introduces the high adjective interrupts the adjacency of Num and Cl, and therefore *darab* cannot spell out both. In other words, the Adj head has a disruption effect on Cl and Num. This analysis is specific to the spanning implementation. Note that as it is the intervening functional head that makes (73-a) and (73-b) possible, it is crucial for the analysis that adjectives are licensed by functional projections specialized for adjectives. If adjectives were introduced as adjuncts (Sproat and Shih, 1991; Muromatsu, 2001; Carstens, 2008; Schoorlemmer, 2009) or as specifiers of the classifier-related projections *nP* and SortP (Svenonius, 2008a), then head movement from Cl to Num could not be blocked in (73-a) and (73-b), and they should be just as good or bad as (74) and (75). Therefore the spanning analysis provides indirect support for the hypothesis that adjectives are introduced in special functional projections.

Independently of Dékány and Csirmaz’s work, and without examining ordering with respect to adjectives, Zhang (2009a) argues that the Mandarin general classifier *ge* is structurally higher than specific classifiers. She suggests that specific classifiers are merged in Cl (her Sort), and they move to Num (her #). *Ge*, on the other hand, is inserted directly into Num. As shown by Gebhardt (2009), the Persian general classifier *ta* also occupies a position higher than specific classifiers.

- (76) a. do ta jeld ketab
 two CL CL_{book} book
 ‘two books’
 b. *do jeld ta ketab
 two CL_{book} CL book
 ‘two books’
 (Gebhardt, 2009, e. 273., ex. 110.) Persian

Mandarin, Persian and Hungarian have no genetic or areal connections. It would be interesting to find out whether general classifiers have a unique structural property that sets them apart from specific classifiers in other languages, too. While a cross-linguistic study of general classifiers would be a worthwhile project, it is far beyond the scope of this thesis, and I must leave it to for further research.

3.3.7 Interim summary

In conclusion, Hungarian makes use of two different classifier-related positions on the Svenonius hierarchy for its classifiers. The general classifier *darab* occupies the highest classifier-related head, Num, while specific classifiers occupy Cl, the classifier-related head in the middle. (77) shows the revised functional sequence of Hungarian up to NumP.

- (77) [_{NumP} numerals [_{Num} **darab** [_{AdjP} Adj [_{ClP} **specific Cls** [_{AdjP} Adj [_{nP} n [_{NP} N]]]]]]]]

3.4 Count adjectives: position and interpretation

In this section I return to specific classifier > count adjective > N orders. Adjectives that express dimensions presuppose a division of stuff (dimensions arise with bounded units, bounded units arise by division). How is it possible, then, to arrive at a classifier > dimensional adjective order? I suggest that the answer depends on whether an order like this has a type or a token interpretation.

3.4.1 Token readings

I propose that when the classifier > dimensional adjective order gives rise to a reading in which units or tokens are modified (i.e. where *two classifier big apple* means two apples which are big), then the adjective is merged above the Cl position, as Dékány and Csirmaz (2010) suggest. This follows from the syntax-semantics mapping I assume: if *big* modifies units, then compositionality dictates that it must be merged after units are created, viz. above Cl. Then the classifier > *big* order arises because on the surface, the classifier sits in the highest classifier-related head, Num. This is precisely what we have seen with the general classifier *darab*.

On a token interpretation, then the classifier > dimensional adjective arises if i) the classifier is a pure Num classifier without a divisor function, and is merged in Num in the first place, ii) the

classifier is a Cl classifier that moves to Num, or iii) in a spanning framework it is also a possibility that the classifier spells out both Cl and Num, and linearizes in the higher Num position.

Either the second or the third option materializes for some speakers of Mandarin, for instance. Mandarin classifiers are prototypical divisors, therefore they must be an exponent of the Cl position. It has been claimed in the literature in various places that adjectives must generally follow Mandarin classifiers (c.f. Cheng and Sybesma, 1998, 1999 and Borer (2005), though they all acknowledge that certain exceptions do exist, and not all speakers find $\text{adj} > \text{Cl}$ sequences equally bad). An example from Cheng and Sybesma (1999) is reproduced in (78).

- (78) a. yi zhi da gou
 one CL big dog
 ‘one big dog’
 b. *yi da zhu gou
 one big CL dog
 ‘one big dog’
 (Cheng and Sybesma, 1999, p. 516., ex. 15. b.) Mandarin

The examples in (78) are reminiscent of the distribution of Hungarian *darab*: the interpretation is a token interpretation, and the order is classifier $>$ dimensional adjective. The token interpretation of (78) means that the merge-in order is dimensional adjective $>$ Cl: first dog stuff is partitioned into dog units, and then these dog units are modified by the adjective *big*. Given that Mandarin classifiers are true divisors, they must be merged in Cl. The surface order then arises by classifier movement to Num (alternatively, Mandarin classifiers span Cl and Num are spelled out in the latter position). The merge-in position of Mandarin classifiers is transparently visible in those examples which admit the dimensional adjective $>$ classifier order (according to Cheng and Sybesma, 1998, 1999, this is the exception rather than the rule).

- (79) a. yi da tiao yu
 one big CL fish
 ‘a big fish’
 b. yi chang bu yingpian
 one long CL film
 ‘a long film’ (Cheng and Sybesma, 1998, fn. 4.) Mandarin

Zhang (2011) (and the ample references she cites on p. 39) claims that the order in (79) is, in fact, widely accessible, and that classifiers can be generally preceded by adjectives (her examples feature dimensional adjectives).

- (80) a. yi da tiao hao-han
 one big CL good-guy
 ‘one big good guy’
 b. san da zhi laohu
 three big CL tiger
 ‘three big tigers’
 c. san chang tiao xianglian
 three long CL necklace
 ‘three long necklaces’
 (Zhang, 2011, p. 34, exx. 104 c-e) Mandarin

She claims that (dimensional) adjective $>$ classifier and classifier $>$ (dimensional) adjective orders are interchangeable without a concomitant difference in meaning. Observe the flexible position of the dimensional adjectives in (81).

- (81) a. yi chang tiao xianglian = yi tiao chang xianglian
 one long CL necklace = one CL long necklace
 ‘one long necklace’
 b. yi bo pian shuye = yi pian bo shuye
 one thin CL leaf = one CL thin leaf
 ‘one thin leaf’

- c. yi hou ben jiaoke-shu = yi ben hou jiaoke-shu
 one thick CL text-book = one CL thick text-book
 ‘one thick textbook’
- d. yi suan ding maozi = yi ding yuan maozi
 one round CL hat = one CL round hat
 ‘one round hat’
- e. yi xiao fang zhang zhuanpian = yi zhang xiao fang zhuanpian
 one small square CL photo = one CL small square photo
 ‘one small square photo’
 (Zhang, 2011, p. 45, ex. 117.)

Mandarin

As both orders in (81) have the same interpretation with the dimensional adjective modifying units, these adjectives must be merged above Cl in both orders. This is forced by the syntax-semantics mapping. The left hand side members of the pairs then show the base-generated order. The right hand side members of the pairs, on the other hand, feature a classifier that ends up in Num on the surface.²¹

3.4.2 Type interpretations

If the classifier > dimensional adjective order gives rise to a type interpretation, then the dimensional adjective cannot be merged above the classifier. By compositionality, adjectives always modify their sister node. If a divisor is merged before the adjective, then units are created below the adjective, and the adjective must be interpreted as modifying units. An adjective that modifies types does not directly say anything about units, so in this case no units can be established inside the sister node of the adjective, and no divisor can be present below the adjective. Therefore the claim is that the classifier > dimensional adjective order with a type interpretation is base generated, with the adjective being merged under the Cl node. That is, in this case the dimensional adjective is merged to a mass structure. As masses are unbounded and have no dimensions, the only feasible interpretation of this structure is to coerce the mass structure into a type interpretation. Thus *big apple* with no classifier between the adjective and the noun is interpreted as a big type of apple. If a classifier is merged on top of a [dimensional adjective; noun] constituent, then it creates units from a particular type of noun. In our case, *two classifier big apple* creates two units from a big type of apple.

Suggestive evidence for the correctness of this proposal comes from Thai. Thai classifiers are used in a different, wider variety of contexts than Hungarian classifiers. In certain cases it is even possible for the same classifier to appear multiple times in the same DP (c.f. Hundius and Kölver, 1983; Singhapreecha, 2001; Jenks, 2006 and Piriya-wiboon, 2010, among others). A full understanding of the data I review here requires an understanding of the previously mentioned factors. Therefore without pursuing in detail any particular theoretical mechanism that will ensure the correct distribution of classifiers in Thai, these data remain suggestive. Nonetheless I include them here because they provide potential support for my proposal in an interesting way.

Observe the contrast between (82-a) and (82-b). In (82-a) the dimensional adjective directly modifies the noun *animal*, without a classifier present in the DP. The interpretation is a type interpretation. In (82-b) minimally differs from (82-a) in the presence of a classifier. Crucially, the syntactic difference translates into a semantic difference: (82-b) has a token interpretation.

²¹Zhang (2011) proposes deriving the flexibility in (81) by base-generating both orders. Specifically, she proposes that the phrase introducing the classifier and the phrase introducing the adjective can be merged in either order because the functional sequence does not order them. As the interpretation is the same, Zhang’s proposal does not make for a compositional semantics of her structures. Given the syntax-semantics mapping I am assuming here, I must reject her analysis. In the end will end up agreeing with Zhang in that both merge-in orders are possible, but I will argue that the different orders correlate with different meanings. Since both orders in (81) lead to the same interpretation, one of them must be a derived order.

- (82) a. sat yai
 animal big
 ‘big animals’ (type of animal: elephants, buffaloes, rhinoceroses, etc.)
 b. sat tua yai
 animal CL big
 ‘animals that happen to be big’ (e.g. a dog that is big for a dog)
 (Cheng and Sybesma, 2009, ex. 17., citing Kookiattikoon, 2001) Thai

Example (83) makes the same point: the classifier ensures the token reading, and without it a kind interpretation arises.

- (83) a. khaw ~~sua~~ baan yay
 he buy house big
 ‘He bought a big house. (a mansion, a big kind of house)’
 b. khaw ~~sua~~ baan laj- yay
 he buy house CL big
 ‘He bought a big house. (a house which is big for a house)’
 (Jenks, 2006, ex. 2.) Thai

In his discussion of the omissibility of Thai classifiers, Piriawiboon (2010) makes the generalization that NPs with a type reading cannot contain classifiers. These data support my hypothesis that without a classifier dividing stuff into portions, dimensional adjectives cannot modify tokens.²² Cheng and Sybesma (2009) do not examine the relative orders of classifiers and adjectives, but they comment on (82) (their (17)) in the following way. "In (17a), the size has already been wired in before we start singling out the individuals or units in which they exist. In (17b), we single out the individual first, and then say that this particular individual is particularly big." This ties in with my analysis perfectly.

To conclude this section, I proposed that classifier > dimensional adjective orders with a token modifying interpretation are produced by merging the adjective above Cl and linearizing the classifier in Num. Classifier > dimensional adjective orders with a type interpretation, on the other hand, arise by merging the adjective to a mass structure.²³

3.4.3 Representing the flexibility

The proposal outlined above means that classifiers and dimensional adjectives can be merged in either order. This requires a certain flexibility in the order of functional heads. If this proposal is on the right track, then Cl and the functional heads that introduce adjectives are not ordered by UG. Their ordering is free, but due to the assumed syntax-semantics mapping, the different base-generated orders have different interpretations. This is not entirely new. It is well known that intensional operator adjectives like *former* and *alleged* do not have a fixed position in the adjective sequence. They can be merged in multiple positions, but with a change in interpretation. Specifically, intensional adjectives take scope over their c-command domain, or in other words, over their sister node and anything that is inside it. The different merge-in positions correlate with different c-command domains, and consequently with different interpretations.

²²In the spirit of full disclosure, it must be acknowledged that not every noun displays the kind of alternation shown in (82) and (83). Jenks (2006) shows that only a subset of Thai nouns admit direct modification by an adjective, and others cannot receive any interpretation in this case. (Jenks, 2006, p. 7.) further claims that the instances of direct modification by a dimensional adjective are "often lexicalized into a true compound, indicating a likely tight syntactic and semantic relationship between the two". Compound formation in the case of direct modification is perfectly compatible with my suggestion. Everybody agrees that there is a tight local structural relationship between members of a compound. According to Harley (2009), for instance, the two parts of a compound noun must be in a first-modifier relationship. Therefore dimensional adjectives that form compounds with their head noun cannot be separated from the noun by a Cl projection, these adjectives must be merged below Cl.

²³Dimensional adjectives cannot combine with the mass noun use of any noun, of course. *Big water* is ruled out, even on a type interpretation. This, however, is real-world knowledge (*big water* cannot be assigned an interpretation that makes sense in our world), not a syntactic constraint. Dimensional adjectives can combine with mass structures on a type interpretation as long as the noun has the potential to be packaged into natural bounded units.

- (84) a. a famous alleged murderer
(a person who is famous and allegedly a murderer)
b. an alleged famous murderer
(a person who is allegedly a famous murderer)

Non-definite superlatives exhibit the same freedom of word order (Teodorescu, 2006).

- (85) a. My class has a shortest Italian student.
(an Italian student who is shorter than other Italian students in the class)
b. My class has an Italian shortest student.
(the shortest student in the class is Italian)
(Teodorescu, 2006, p. 403., ex. 22.)

Thus the claim is that dimensional adjectives, like intensional adjectives and non-definite superlatives, scope over their complement. If their complement has the size of a mass structure, they do not take scope over a divisor and receive a type-modifying interpretation. If their complement contains a divisor, then they take scope over the divisor and yield a token modifying interpretation. This does not require dimensional adjectives to be operators, it follows from compositionality. Note that UG still plays a role in adjective ordering: it is responsible for ordering dimensional adjectives before, say, color adjectives, and size adjectives before shape adjectives. In languages that can or must make use of a covert divisor, the token vs. type modification may not or does not translate into a word order difference, due to the invisibility of the classifier. But the presence or absence of the divisor between the dimensional adjective and the noun is still detectable on the basis of the interpretation.²⁴

3.5 The Spurious NP Ellipsis

In this section I argue that Hungarian has a construction that looks like noun phrase ellipsis on the surface, but which in fact involves a classifier in the noun position. I term this construction as Spurious NP Ellipsis (SNPE). Before I start the discussion of the Spurious NP Ellipsis, it will be useful to provide some background information of garden variety noun (phrase) ellipsis in Hungarian. Knowledge of this construction will make reading the rest of this chapter easier, and it will allow the reader to fully appreciate the differences between the regular and the spurious NP ellipsis.

3.5.1 NP ellipsis in Hungarian

Noun phrase ellipsis in Hungarian deletes *nP*, possibly together with adjectival modifiers. The nominal suffixes, however, are not deleted together with the noun. Instead, they surface on the right edge of the remaining overt material. In other words, they lean onto the linearly last element in the elliptical DP. An example with the plural is furnished in by (86). Observe that Hungarian adjectives do not show concord with the noun. If a plural noun is elided, however, then the last adjective has to bear plural marking.

- (86) a. a nagy piros rózsák
the big red rose-PL
'the big red roses'
b. a nagy piros-ak
the big red-PL
'the big red ones'
c. a nagy-ok
the big-PL
'the big (red) ones'

²⁴I thank Aniko Csirmaz for urging me to think about this point.

Example (87) makes the same point with case marking and shows that in ellipsis case markers can be supported by a numeral.²⁵

- (87) a. három szép piros rózsá-t
 three beautiful red rose-ACC
 ‘three beautiful roses’
 b. három szép piros-at
 three beautiful red-ACC
 ‘three beautiful roses’
 c. három szép-et
 three beautiful-ACC
 ‘three beautiful ones’
 d. három-at
 three-ACC
 ‘three ones’

Some classifier languages, including Mandarin and Persian, do not allow classifier deletion in NP ellipsis.

- (88) a. Bǎoyù mǎi-le jǐ zhī bǐ?
 Baoyu buy-PRF how.many CL pen
 ‘How many pens did Baoyu buy?’
 b. Tā mǎi-le wū *(zhī)
 he buy-PRF give CL
 ‘He bought five.’
 (Zhang, 2009a, p. 9., ex. 21.) Mandarin
- (89) a. bist ta danešju
 twenty CL student
 ‘twenty students’
 b. bist *(ta)
 twenty CL
 ‘twenty (students)’
 (Gebhardt, 2009, p. 281., fn. 63.) Persian

Hungarian NP ellipsis can also delete the classifier.²⁶ If the classifier happens to be the last element, then case marking appears on the classifier; but the classifier can also be deleted together with the noun.²⁷

- (90) a. három fej salátá-t
 three Cl_{head} lettuce-ACC
 ‘three heads of lettuce’
 b. három fej-et
 three Cl_{head}-ACC
 ‘three ones (e.g. heads of lettuce)’
 c. három-at
 three-ACC
 ‘three ones’

To summarize, the descriptive generalization is that nominal suffixes stranded by NP ellipsis are supported by the linearly last morpheme in the DP. The phenomenon is not unique to Hungarian: Lipták and Saab (2010) observe that NP ellipsis strands nominal suffixes also in Persian, Quechua, Turkish and Basque; and Kester (1996) reports that this also happens in North Sámi. In these languages, like in Hungarian, the stranded nominal suffixes lean onto some other element of the

²⁵This is not possible with the plural marker. Recall that Hungarian nouns and quantifiers occur with a morphologically singular noun. As no plural marker is possible in (87-a), no plural marker is possible in its versions with ellipsis either. This means that the plural never winds up on a numeral.

²⁶Note that this has nothing to do with the optionality of classifiers, as Persian classifiers are also optional.

²⁷As classifiers do not normally co-occur with the plural, except in the SNPE, the effect can only be shown with case markers.

DP. Lipták and Saab (2010) note that in their sample of languages, only agglutinative languages employ this strategy, and fusional languages like Spanish opt for deletion of the stranded affixes instead.

Interesting as this phenomenon might be, a more detailed discussion would divert us from present concerns and I will not attempt it here. Hungarian NP ellipsis has recently come under discussion in Laczkó (2007a) and Lipták and Saab (2010). The interested reader is encouraged to consult these works.

3.5.2 The SNPE phenomenon

Earlier in this chapter we have established that Hungarian specific classifiers are hosted in Cl, in the middle of the adjective sequence.

(91) high adjective > Cl > low adjective > N

(92) shows that color adjectives are found after the classifier.

(92) egy (*zöld) szem zöld gyöngy
 one green CL_{eye} green pearl
 ‘a green pearl’

What order do we expect when noun phrase ellipsis deletes *nP*? Ellipsis has been treated in various ways: as LF-copying (Williams, 1977), as a null *pro* form in the ellipsis site (Lobeck, 1995), as deletion at PF (Merchant, 2001; Aelbrecht, 2010), as lack of vocabulary insertion (Kornfeld and Saab, 2004), and as deletion in syntax (Baltin, to appear). Under none of these approaches, and indeed under no plausible theory of ellipsis at all, do we expect ellipsis to have an effect on the order of the remnant noun satellites. Put differently, ellipsis should not be able to change the order of the non-elided constituents in the DP, and we expect that after noun phrase ellipsis the order is still classifier > low adjective. This is indeed possible, as witnessed by (93).

(93) egy szem zöld-et és egy szem piros-at kér-ek
 one CL_{eye} green-ACC and one CL_{eye} red-ACC want-1SG
 ‘I want one green one and one red one (e.g. pearl)’

However, the unexpected reverse order is also possible.

(94) egy zöld szem-et félre-tesz-ek
 one green CL_{eye}-ACC aside-put-1SG
 ‘I put aside one green one (e.g. pearl)’

I call the combination of the low adjective > classifier order and the absence of an overt head noun as the Spurious Noun Phrase Ellipsis (SNPE). The Spurious Noun Phrase ellipsis seems to be a mysterious exception among cases of ellipsis because it allows the order of a classifier and a low adjective to be reversed.

The unorthodox order is not the only striking feature of the SNPE: two more exceptional properties cluster around low adjective > classifier strings. Firstly, classifiers in the SNPE can co-occur with plural marking.

(95) ez-ek a zöld szem-ek megroml-ott-ak
 this-PL the green CL_{eye}-PL go.off-PAST-3PL
 ‘these green ones have gone off (e.g. strawberries)’

Plural marking cannot co-occur with classifiers in non-elliptical DPs or in elliptical DPs with the expected order classifier > low adjective.

(96) *ez-ek a szem zöld epr-ek megroml-ott-ak
 this-PL the CL_{eye} green strawberry-PL go.off-PAST-3PL
 ‘these green strawberries have gone off’

- (97) *ez-ek a szem zöld-ek megroml-ott-ak
 this-PL the CL_{eye} green-PL go.off-PAST-3PL
 ‘these green ones have gone off (e.g. strawberries)’

Secondly, classifiers in the SNPE are compatible with the definite article.

- (98) a zöld szem-et félre-tesz-em
 the green CL_{eye} -ACC aside-put-1SG
 ‘I put the green one aside. (e.g. strawberry)’

This is not possible in non-elliptical DPs or in elliptical DPs with classifier > low adjective order.

- (99) *a szem zöld epr-et félre-tesz-em
 the CL_{eye} green strawberry-ACC aside-put-1SG
 ‘I put the green strawberry aside.’
- (100) *a szem zöld-et félre-tesz-em
 the CL_{eye} green-ACC aside-put-1SG
 ‘I put the green one aside. (e.g. strawberry)’

The goal of the rest of this chapter is to explain the unorthodox order in a way that the co-occurrence with the plural and the definite article automatically fall out. In the analysis I will strive to capture the intuition that the very same lexical item shows the distribution of classifiers in garden variety DPs and the distribution of nouns in the SNPE (nouns, but not classifiers occur below low adjectives, co-occur with the plural and co-occur with the definite article). Classifiers thus instantiate the lexicalization problem. I will argue that non-terminal spellout and in particular the Superset Principle introduced in Chapter 2 provides just the right tool to capture the above mentioned intuition, thereby it provides an insight into the lexicalization problem.

3.5.3 The SNPE does not involve focus

Compare the order of the classifier and the low adjective in garden variety DPs and the SNPE. A plausible assumption is that the classifier is in Div/Sort in both (101) and (102). Then in (102) the adjective either has to have moved above the classifier or it has to have been base-generated higher than Div/Sort.

- | | | | |
|-------|---|-------|---|
| (101) | egy szem zöld gyöngy one CL_{eye} green pearl ‘a green pearl’ | (102) | egy zöld szem-et félre-tesz-ek one green CL_{eye} -ACC aside-put-1SG ‘I put aside one green one (e.g. pearl)’ |
|-------|---|-------|---|

What could be the trigger of the movement or the reason for the exceptional high base-generation? (102) seems to involve NP ellipsis because it does not contain an overt noun. Various works have argued that NP ellipsis is licensed by focus (c.f. Ntelitheos, 2004; Eguren, 2009; Corver and van Koppen, 2009, among others). Therefore it is possible that the adjective is moved to or base-generated in a focus-related position that is higher than the normal position for low adjectives.

Two different focus related DP-positions have been proposed in the literature: one high, above Num, and one lower, below Num. Let us examine whether either of them can be involved in the SNPE. Nkemnji (1995); Ihsane and Puskás (2001); Ntelitheos (2004); Aboh (2004b) and Giusti (2005), among others, argue for the existence of a DP-internal FocP quite high, above *d* or in the D-zone. Their DP-structures are shown in (103) through (107).

- | | | |
|-------|--|---------------------------|
| (103) | FocP > DP > Rel Cl | (Nkemnji, 1995) |
| (104) | DeterminerP > TopP > FocP > DefiniteP | (Ihsane and Puskás, 2001) |
| (105) | TopP > FocP > DefP | (Ntelitheos, 2004) |
| (106) | [DP... [D... topic... focus [NumP ...[Num... [FP...N...]]]] | (Aboh, 2004b) |
| (107) | D > Top* > Foc > Top* > d | (Giusti, 2005) |

- (117) *a [_{Focus} NAGY [_{DivP} szem zöld-ek [_{NP} (szöngy)]]]
 the big CL_{eye} green-PL pearl
 ‘the big green ones’ (e.g. pearl)

C.f.:

- (118) a nagy zöld szem-ek
 the big green CL_{eye}-PL
 ‘the big green ones’ (e.g. pearl)

In addition to the word order issues, the focus analysis provides no insight into why the co-occurrence restrictions on the classifier are lifted in the SNPE, i.e. why it is that the classifier can co-occur with a plural marker and the definite article precisely in this environment.

In sum, the adjective-in-focus analysis of the SNPE must be rejected because it fails to capture the totality of facts involved. Note that I am not arguing against the idea that focus licenses garden variety NP ellipsis (though see Alexiadou and Gengel, to appear a; Alexiadou and Gengel, to appear b; Lipták and Saab, 2010 for recent arguments to this effect). The claim is that focus is not involved in the SNPE. But as I will argue that the SNPE is not ellipsis in the first place, I remain uncommitted with regard to the licensing conditions of genuine ellipsis.

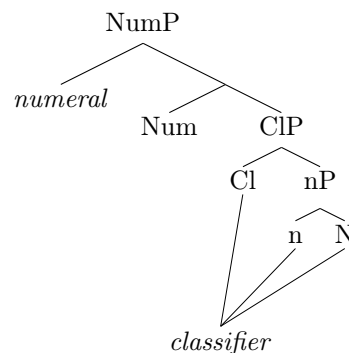
3.5.4 The SNPE via the Superset Principle

Recall from Chapter 2 that in the variety of non-terminal spellout used here, a lexical item is able to spell out or ‘span’ a sequence of contiguous heads, and that lexical items may spell out only a subset of the heads they are specified for (the Superset Principle).

I propose that Hungarian classifiers are specified for and able to spell out all the nominal features N through Cl. They can make use of all these features in garden variety ellipsis with no low adjective, as in (119).

- (119) három cső ~~(kukorica)~~
 three CL_{tube} sweetcorn
 ‘three ones’ (e.g. corncobs)

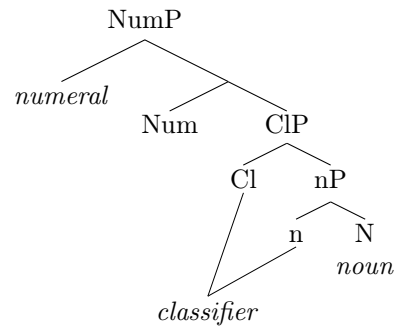
- (120)



In regular non-elliptical DPs they underassociate their N feature and allow the N node to be spelled out by a noun.

- (121) három cső kukorica
 three CL_{tube} sweetcorn
 ‘three ears of corn’

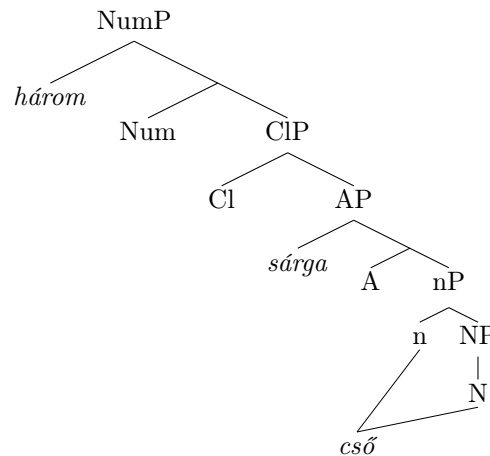
(122)



Finally, in the SNPE classifiers underassociate their Cl feature. In effect, they are ‘squeezed down’ into *n* and N, and appear in the position where garden variety nouns do.

(123) három sárga cső
 three yellow CL_{tube}
 ‘three yellow ones’ (e.g. ears of corn)

(124)



That classifiers in the SNPE are pushed down into *n* and N explains all mysterious properties of this construction without further stipulations. Firstly, it accounts for the unusual low position: *n* and N are below all adjectives. Secondly, the classifier can appear with the definite article because it functions as a noun, not as a classifier. The co-occurrence restriction on the definite article and the classifier holds for a classifier in the Cl position. The classifier in the SNPE does not serve as an exponent of Cl.

(125) *a fej saláta
 the CL_{head} lettuce
 ‘the head of lettuce’

(126) a zöld fej
 the green CL_{head}
 ‘the green one’
 (e.g. head of lettuce)

According to Borer (2005), the English plural is a divisor that functions as a classifier. If this is on the right track for the Hungarian plural, too, then the plural and classifiers compete for Cl and it falls out naturally that they don’t co-occur (c.f. also Chapter 9). In the SNPE, however, the classifier spells out only *n* and N. The co-occurrence is possible because the plural and the classifier do not compete for the same slot any more: Cl is freed up for the plural.

(127) *ez-ek a fej salátá-k
 this-PL the CL_{head} lettuce-PL
 ‘these heads of lettuce’

(128) ez-ek a zöld fej-ek
 this-PL the green CL_{head}-PL
 ‘these ones (e.g. heads of lettuce)’

In the previous section I rejected the idea that the difference between (129) and (130) stems from the placement of the adjective. My proposal amounts to saying that the place of the adjective

is invariant in (129) and (130), and the difference lies in the position of the classifier. It is linearized in Cl in (129) and in *n* in (130) (always in the highest head it spells out).

- (129) egy szem zöld gyöngy
 one CL_{eye} green pearl
 ‘a green pearl’
- (130) egy zöld szem-et félre-tesz-ek
 one green CL_{eye}-ACC aside-put-1SG
 ‘I put aside one green one’ (e.g. pearl)

If the SNPE involves the noun position filled by a classifier, then it is not ellipsis at all. This correctly predicts that the noun cannot be ‘restored’ in the SNPE.

- (131) a sárga csöv-ek
 the yellow CL_{tube}-PL
 ‘the yellow ones’ (e.g. ears of corn)
- (132) *a sárga cső kukoricá-k
 the yellow CL_{tube} sweetcorn-PL
 ‘the yellow ears of corn’

Further, it correctly predicts that low adjective > classifier orders are always ambiguous. Recall that all specific classifiers are homophonous with a full noun. Low adjective > classifier orders thus should receive two different readings: an SNPE interpretation when the noun position is filled by the squeezed classifier, and a literal non-SNPE reading when the noun position is filled by the homophonous noun. This prediction is fully borne out.

- (133) a sárga csöv-ek
 the yellow CL_{tube}-PL
 ‘the yellow tubes’
 ‘the yellow ones’ (e.g. ears of corn)
- (134) a kék szem-ek
 the blue CL_{eye}-PL
 ‘the blue eyes’
 ‘the blue ones’ (e.g. blueberries)
- (135) a kemény fej-ek
 the hard CL_{head}-PL
 ‘the hard heads’
 ‘the hard ones’ (e.g. onions)

In a way, classifiers can be thought of as nouns that have a more general semantics than most nouns do, and can spell out a larger piece of structure than most nouns can.

3.5.5 The SNPE and *darab*

In Section 2 we have seen that the general classifier *darab* has a different distribution from specific classifiers: it occurs in Num, rather than Cl. It turns out that not only does *darab* differ from other classifiers in its order with respect to adjectives, but it does not take part in the SNPE either. An example of this is furnished by (138).

- (136) egy darab zöld gyöngy
 one CL_{generic} green pearl
 ‘one green one’
- (137) egy darab zöld
 one CL_{generic} green
 ‘one green one’
- (138) *egy zöld darab
 one green CL_{generic}
 ‘one green one’

I suggest that *darab* cannot participate in the SNPE because it is not specified for the *n* and N features. That is, it cannot be pushed down to *n* and N because it does not have the potential to spell out these positions in the first place. Support for this hypothesis comes from the third

exceptional property of *darab*, namely that unlike specific classifiers, it cannot form compounds with nouns.

Hungarian compounds are right-headed and are formed by concatenation (Kiefer, 2009). Some examples are provided in (139).

- | | | | | |
|-------|----|--|----|---|
| (139) | a. | folyó-meder river-basin 'watercourse' | c. | fekete-piac black-market 'black market' |
| | b. | rúd-ugrás pole-jumping 'pole-vaulting' | d. | hűtő-gép cooling-machine 'refrigerator' |

Hungarian specific classifiers can form compounds with the nouns they categorize. In these compounds it is always the classifier that functions as the head. (140) is exemplar.

- | | | | | |
|-------|----|--|----|--|
| (140) | a. | kukorica-cső sweetcorn-CL _{tube} 'corncob' | d. | szalámi-rúd salami-CL _{rod} 'salami stick' |
| | b. | homok-szem sand-CL _{eye} 'grain of sand' | e. | krumpli-bokor potato-CL _{bush} 'potato plant' |
| | c. | rózsa-szál rose-CL _{thread} 'rose (with a shank)' | f. | káposzta-fej cabbabe-CL _{head} 'cabbage head' |

It is quite clear that the classifiers in (140) are not sitting in Cl: they are not subject to the same distributional restrictions as classifiers in numeral > classifier > N sequences. Classifiers in compounds can freely co-occur with the plural and the definite article, and do not need a numeral/quantifier/demonstrative to license their appearance. This provides strong evidence against deriving noun-classifier compounds by syntactic movement of the noun to the vicinity of the classifier in Cl, contra Ott (2011).³⁰

- | | | | | | |
|-------|----|--|-------|----|---|
| (141) | a. | *cső kukorica CL _{tube} sweetcorn 'corncob' | (142) | a. | kukorica-cső sweetcorn-CL _{tube} 'corncobs' |
| | b. | két cső kukoricá-(*k) two CL _{tube} sweetcorn-PL 'two ears of corn' | | b. | kukorica-csöv-ek sweetcorn-CL _{tube} -PL 'corncobs' |
| | c. | *a cső kukorica the CL _{tube} sweetcorn 'the ear of corn' | | c. | a kukorica-cső the sweetcorn-CL _{tube} 'the corncob' |

(142) suggests that classifiers contained in compounds have an N-like distribution. This is further corroborated by the fact that classifiers in compounds follow low adjectives.

³⁰The movement analysis is also inconsistent with the fact that accidental gaps occur with noun-classifier compounds. In other words, noun-classifier compounds are not entirely productive, and classifiers cannot form compounds with all nouns that they can co-occur with.

- | | | | | | |
|-----|----|---|------|----|--|
| (i) | a. | egy szem homok one CL _{eye} sand 'a grain of sand' | (ii) | a. | egy szem dió one CL _{eye} walnut 'one walnut' |
| | b. | homok-szem sand-CL _{eye} 'grain of sand' | | b. | *dió-szem walnut-CL _{eye} 'walnut' |

This fact is also incompatible with an analysis in which numeral > classifier > N sequences are derived from noun-classifier compounds by upward movement of the classifier (c.f. Zhang, 2009a,b).

- (143) a. műanyag gyöngy-szem
 plastic pear-CL_{eye}
 ‘plastic pearl’
- b. zöld káposzta-fej
 green cabbage-CL_{head}
 ‘green cabbage head’

We can thus conclude that classifiers in noun-classifier compounds have a noun-like distribution, as if noun-classifier compounds were noun-noun compounds.³¹

I have shown that classifiers also have a noun-like distribution in the SNPE. I suggest that a noun-like distribution arises when the classifier underassociates its Cl feature (it is pushed down to $n+N$ or N). This analysis makes the following prediction. If *darab* cannot have a noun-like distribution in the SNPE because it does not have the features n and N , then it cannot have a noun-like distribution in compounds either, and compounds of the form noun-*darab* are predicted to be infelicitous. This is the case indeed. While the compounds in (144) are grammatical, *darab* cannot receive the ‘whole unit, specimen’ interpretation it does as a classifier. The compounds in (144) feature the partitive *darab*, and can only refer to a piece of a potato, cabbage, apple or candle, rather than to a complete potato, cabbage, apple or candle. Thus *darab* as a general classifier cannot form compounds.

- (144) a. krumpli-darab
 potato-darab
 ‘potato piece’
 *potatoe
- b. káposzta-darab
 cabbage-darab
 ‘cabbage piece’
 *cabbage
- c. alma-darab
 apple-darab
 ‘apple piece’
 *apple
- d. gyertya-darab
 candle-darab
 ‘candle piece’
 *candle

In sum, the fact that *darab* does not take part either in the SNPE or compound formation falls out naturally if it spells out a different span than specific classifiers do. It cannot have a noun-like distribution because it is not specified for the n and N features.

3.5.6 The SNPE and the Exhaustive Lexicalization Principle

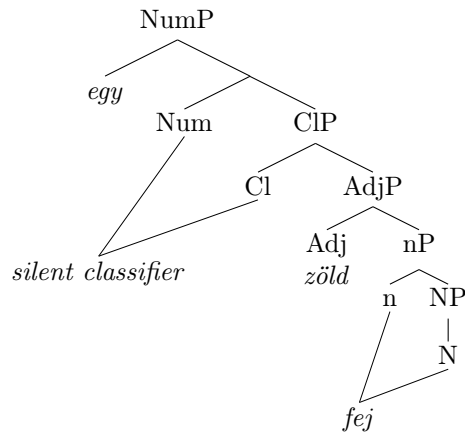
Let me conclude this section with a few remarks on how the Exhaustive Lexicalization Principle bears on genuine ellipsis and the SNPE. The Exhaustive Lexicalization Principle requires that every feature and terminal in the output of syntax must receive a spellout, even if that spellout is zero. In light of this constraint, it is not possible to treat ellipsis as failure of vocabulary insertion. This still leaves a variety of options on the table: syntactic or PF-deletion, deployment of *pro* or another form of null spellout, non-generation of the ellipsed constituent, and no doubt others. But at the end of the day, all features in the syntactic output must receive a lexicalization.

For the SNPE, the Exhaustive Lexicalization Principle raises the question of what spells out Cl and Num if the classifier is pushed down to n and N . The null classifier I defended in Section 3.2.2 provides the natural answer here. Suppose that the null classifier can spell out both Cl and Num, like I suggested for *darab* in a footnote. Then (145) is lexicalized as in (146).

- (145) egy (silent cl) zöld fej
 one green CL_{head}
 ‘one green one’

³¹That classifiers in noun-classifier compounds do not exercise their divisor function receives support from the distribution of such compounds in Mandarin, too. As Zhang (2011, ch. 6.) shows, these compounds “behave the same as regular nouns in the language” (p. 111). They have the same distribution and readings that bare nouns do, and they need a unit-word (classifier, massifier, group classifier) to combine with a numeral. This is unexpected if classifiers deploy their apportioning potential in these compounds.

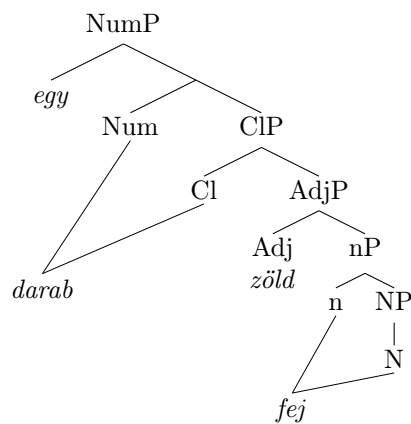
(146)



Now I have suggested that the silent classifier has the same feature content as the general classifier *darab*, both are specified for Cl and Num. Accordingly, *darab* should also be able to spell out Cl and Num in the SNPE. This prediction is borne out.

(147) egy *darab* zöld fej
 one CL_{generic} green CL_{head}
 'one green one'

(148)



It is, however, not possible to spell out Cl with the same specific classifier that is pushed down to the noun position. That is, we do not get doubling of the form specific classifier > low adjective > specific classifier.

(149) *egy [CIP fej [AdjP zöld [NP fej]]]
 one CL_{head} green CL_{head}
 'one green one'

Theoretically, this should be possible. I argued that in non-elliptical DPs classifiers spell out Cl and underassociate their *n* and N features. This is what the first instance of the *fej* is doing in (149). The second instance of *fej* does what classifiers in the SNPE regularly do: underassociates the Cl feature and spells out *n* and N. No terminal is left without a spellout, and the configurations for the first and the second instance of the classifier are independently attested.

What goes wrong in (149), I suggest, is that it is not as economical a spellout as (145) or (147). *Darab* and the silent classifier are both a perfect match for the structure in (148), while the first instance of *fej* has two underassociated features and on top of that it cannot spell out Num. Therefore (149) is ruled out because both the silent classifier and *darab* are a better fit.

In this analysis, it needs to be explained why classifiers can appear in the classifier position in the first place. That is, if (150-a) and (150-b) are more economical spellouts than (150-c), then why is (150-c) possible at all?

- (150)
- a. numeral > null Cl > N
 - b. numeral > *darab* > N
 - c. numeral > specific Cl > N

In Chapter 2 I argued that competition between lexical items arises only if we keep the meaning constant, and discussed how this accounts for the existence of both regular and irregular plural and past tense forms. All the different lexicalization patterns depicted in (150) produce a different shade of meaning, therefore these lexicalizations are not in competition with each other.

The lexicalization of the Cl position is different in the SNPE because N and *n* are spelled out by a specific classifier. Whatever lexical, conceptual or semantic difference or ‘plus’ specific classifiers have with respect to the general or the null classifier, they already contribute that to the meaning in N and *n*. Therefore when it comes to the lexicalization of Cl, using a specific classifier for this position will not give anything different or ‘extra’. Therefore in this case specific classifiers do compete with and lose to the general classifier and the null classifier.

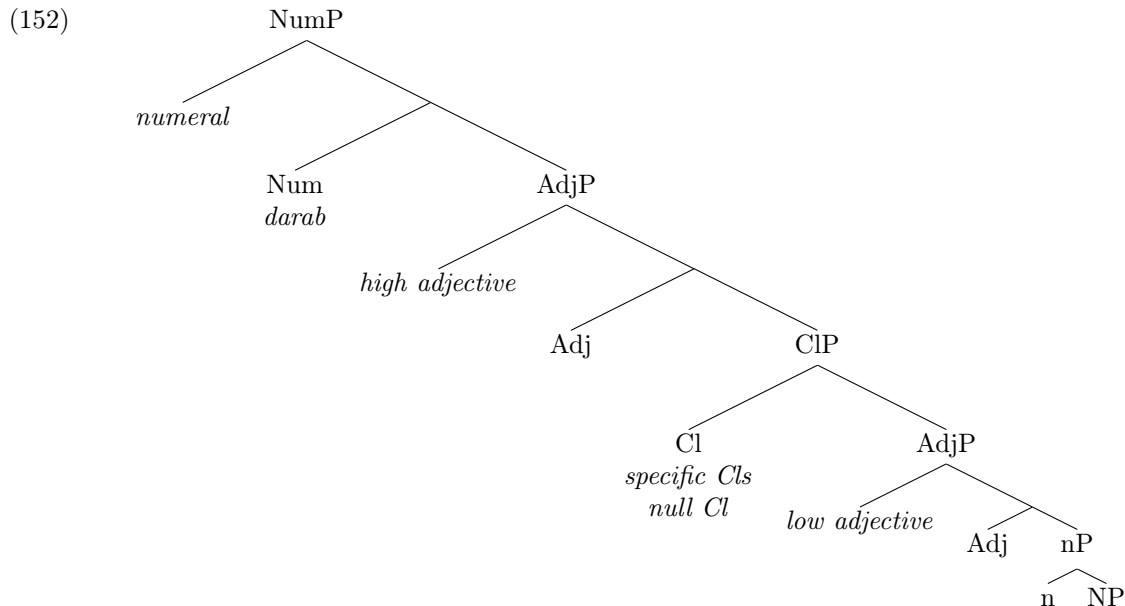
Let us summarize the results of this section. I argued that classifiers are specified for the features N, *n* and Div/Sort. They are always spelled out in the highest head they lexicalize in a given structure. In non-elliptical DPs, this is Div/Sort. In the SNPE, on the other hand, classifiers are squeezed down to and spelled out in the noun position. This accounts for why they occur so low, why their co-occurrence restrictions disappear and why the noun cannot be restored in this apparent ellipsis construction.

3.6 Conclusions

This chapter mapped out the functional sequence in the the lower portion of the Hungarian DP, between N and Num. Building on Borer (2005); Svenonius (2008a) and Dékány and Csirmaz (2010), I proposed the decomposition in (151).

- (151) NumP > AP > ClP > AP > nP > NP

The way these positions are lexicalized in non-elliptical, plain DPs is depicted in (152).



I have also shown, however, that parts of the functional sequence in (151) can be lexicalized in a different way. This leads to a different word order than what is shown in (152). Such changes in word order require a careful investigation to establish what exactly has changed with respect to (152), that is, what remains in the same position and what ends up in a different node.

I proposed that an example of such a different lexicalization happens with classifiers in the SNPE. Classifiers can spell out the range of functional projections from N to Cl, but in the SNPE

they are pushed down to n and N . This has an effect both on the word order and the distribution of classifiers. The analysis sheds light on how the Superset Principle can derive that one lexical item can occur in various positions (when those positions are unrelated by movement) and how the same lexical item can have different properties in the different positions. The Superset Principle thus provides an insight into the lexicalization problem.

3.7 Appendix I

| classifier | nominal gloss | shapes/types of objects referred to | nouns modified |
|---------------|----------------|---|---|
| <i>bokor</i> | ‘bush’ | plants with the shape of a shrub | potato, raspberry, rose |
| <i>cikk</i> | ‘article/item’ | 3-D, crescent shaped | garlic, orange, grapefruit, mandarin |
| <i>cserép</i> | ‘pot’ | flower, plant | plant |
| <i>csík</i> | ‘strip, line’ | chewing gum | chewing gum |
| <i>cső</i> | ‘tube’ | long, hollow/unusable middle | sweet corn, green/red pepper or paprika |
| <i>darab</i> | ‘piece’ | neutral w.r.t shape or size | any count noun |
| <i>fej</i> | ‘head’ | big spherical | cabbage, onion, lettuce, kohlrabi, cauliflower |
| <i>fő</i> | ‘head’ | people | people in regimented situations, eg. <i>gyalogos</i> ‘infantryman’, <i>legénység</i> ‘crew’ |
| <i>gerezd</i> | ‘clove’ | 3-D, crescent shaped | garlic, orange, grapefruit, mandarin |
| <i>karika</i> | ‘ring’ | flat round | sausage |
| <i>kötet</i> | ‘volume’ | bound paper | book or other bound volume |
| <i>ív</i> | ‘sheet’ | paper | paper |
| <i>rózsa</i> | ‘rose’ | floret | cauliflower, broccoli |
| <i>rúd</i> | ‘stick/rod’ | long cylindrical (in part synonym of <i>szál</i>) | chitterlings and salami, vanilla |
| <i>szál</i> | ‘thread’ | long cylindrical | hair, fur, match, sausage, frankfurter, salami, welt, flower, candle, (green) onion, carrot, cigarette, cigar, grass, plank |
| <i>szem</i> | ‘eye’ | small spherical | grape, tomato, berry (and all types of berries), nuts (all types), corn, sweet corn, potato, pepper, biscuit, pill, pearl, sand |
| <i>tő</i> | ‘stem’ | plant with a stem | grape, rose, nursling/plant, any specific type of plant that has a nursling |
| <i>vegni</i> | ‘loaf’ | bread | bread |

Table 3.1: Hungarian classifiers

3.8 Appendix II

3.8.1 The order of specific classifiers and adjectives

Adj_{ordinal}: Ordinal ... Cl

(153) az első szem alma
the first CL_{eye} apple
'the first apple'

(154) *a szem első alma
the CL_{eye} first apple
'the first apple'

Adj_{cardinal}: Cardinal ... Cl

(155) két szem alma
two CL_{eye} apple
'two apples'

(156) *szem két alma
CL_{eye} two apple
'two apples'

Adj_{size}: Size ... Cl

(157) két nagy szem alma
two big CL_{eye} apple
'two big apples'

(158) *két szem nagy alma
two CL_{eye} big apple
'two big apples'

Adj_{length}: Length ... Cl

(159) két hosszú szál répa
two long CL_{thread} carrot
'two long carrots'

(160) ??két szál hosszú répa
two CL_{thread} long carrot
'two long carrots'

Adj_{height}: Height ... Cl

(161) két magas bokor málna
two tall CL_{bush} raspberry
'two tall raspberry plants'

(162) *két bokor magas málna
two CL_{bush} tall raspberry
'two tall raspberry plants'

Adj_{speed}: Speed ... Cl

(163) két gyors szál cigaretta
two quick CL_{thread} cigarette
'two quick cigarettes (i.e. smoked fast)'

(164) *két szál gyors cigaretta
two CL_{thread} quick cigarette
'two quick cigarettes (i.e. smoked fast)'

Adj_{depth}: —

Adj_{width}: Width ... Cl

(165) két vastag cső kukorica
two thick CL_{tube} sweetcorn
'two thick ears of corn'

(166) *két cső vastag kukorica
two CL_{tube} thick sweetcorn
'two thick ears of corn'

Adj_{weight}: Weight ... Cl

(167) két nehéz fej brokkoli
two heavy CL_{head} broccoli
'two heavy broccolis'

(168) *két fej nehéz brokkoli
two CL_{head} heavy broccoli
'two heavy broccolis'

Adj_{temperature}: Cl ... Temperature

- | | | | |
|-------|---|-------|--|
| (169) | két karika hideg kolbász two CL _{ring} cold sausage 'two cold slices of sausage' | (170) | *két hideg karika kolbász two cold CL _{ring} sausage 'two cold slices of sausage' |
|-------|---|-------|--|

Adj_{wetness}: Cl ... Wetness

- | | | | |
|-------|--|-------|---|
| (171) | két szem száraz keksz two CL _{eye} dry biscuit 'two dry pieces biscuit' | (172) | *két száraz szem keksz two dry CL _{eye} biscuit 'two dry pieces biscuit' |
|-------|--|-------|---|

Adj_{age}: Cl ... Age

- | | | | |
|-------|---|-------|--|
| (173) | két szem régi keksz two CL _{eye} old biscuit 'two pieces of old biscuit' | (174) | *két régi szem keksz two old CL _{eye} biscuit 'two pieces of old biscuit' |
|-------|---|-------|--|

Adj_{shape}: Cl ... Shape

- | | | | |
|-------|---|-------|---|
| (175) | két szem kerek rizs two CL _{eye} round rice 'two round grains of rice' | (176) | *két kerek szem rizs two round CL _{eye} pearl 'two round grains of rice' |
|-------|---|-------|---|

Adj_{color}: Cl ... Color

- | | | | |
|-------|--|-------|---|
| (177) | két szem sárga alma two CL _{eye} yellow apple 'two yellow apples' | (178) | *két sárga szem alma two yellow CL _{eye} apple 'two yellow apples' |
|-------|--|-------|---|

Adj_{origin/nationality}: Cl ... Origin

- | | | | |
|-------|--|-------|---|
| (179) | két szem gánai kávé two CL _{eye} Ghanan coffee 'two Ghanan coffeebeans' | (180) | *két gánai szem kávé two Ghanan CL _{eye} coffee 'two Ghanan coffeebeans' |
|-------|--|-------|---|

Adj_{material}: Cl ... Material

- | | | | |
|-------|--|-------|---|
| (181) | két szem műanyag gyöngy two CL _{eye} plastic pearl 'two plastic pearls' | (182) | *két műanyag szem gyöngy two yellow CL _{eye} pearl 'two yellow pearls' |
|-------|--|-------|---|

3.8.2 The order of the general classifier and adjectives

Adj_{size}: *darab* ... Size

- | | | | |
|-------|---|-------|--|
| (183) | *egy nagy darab körte one big CL _{generic} pear 'a big pear' | (184) | egy darab nagy körte one CL _{generic} big pear 'a big pear' |
| (185) | *egy nagy darab ember one big CL _{generic} man 'one big man' | (186) | egy darab nagy ember one CL _{generic} big man 'one big man' |

Adj_{length}: *darab* ... Length

(187) *egy hosszú darab lécs
 one long CL_{generic} lath
 'a long lath'

(188) egy darab hosszú lécs
 one long CL_{generic} lath
 'a long lath'

Adj_{height}: *darab* ... Height

(189) *egy magas darab ház
 one tall CL_{generic} house
 'a tall house'

(190) egy darab magas ház
 one CL_{generic} tall house
 'one tall house'

Adj_{speed}: *darab* ... Speed

(191) *egy gyors darab rakéta
 one quick CL_{generic} rocket
 'a quick rocket'

(192) egy darab gyors rakéta
 one CL_{generic} quick rocket
 'a quick rocket'

Adj_{depth}: *darab* ... Depth

(193) *egy mély darab gödör
 one deep CL_{generic} pit
 'a deep pit'

(194) egy darab mély gödör
 one CL_{generic} deep pit
 'a deep pit'

Adj_{width}: *darab* ... Width

(195) *egy széles darab deszka
 one wide CL_{generic} plank
 'a wide plank'

(196) egy darab széles deszka
 one CL_{generic} wide plank
 'a wide plank'

Adj_{weight}: *darab* ... Weight

(197) *egy nehéz darab kő
 one heavy CL_{generic} stone
 'a heavy stone'

(198) egy darab nehéz kő
 one CL_{generic} heavy stone
 'a heavy stone'

Adj_{temperature}: *darab* ... Temperature

(199) *egy hideg darab tojás
 one cold CL_{generic} egg
 'a cold egg'

(200) egy darab hideg tojás
 one CL_{generic} cold egg
 'a cold egg'

Adj_{wetness}: *darab* ... Wetness

(201) *egy száraz darab kenyér
 one dry CL_{generic} bread
 'a dry (loaf of) bread'

(202) egy darab száraz kenyér
 one CL_{generic} dry bread
 'a dry (loaf of) bread'

Adj_{age}: *darab* ... Age

(203) *egy régi darab kalap
 one old CL_{generic} hat
 'an old hat'

(204) egy darab régi kalap
 one CL_{generic} old hat
 'an old hat'

Adj_{shape}: *darab* ... Shape

(205) *egy kerek *darab* asztal
 one round CL_{generic} table
 'a round table'

(206) egy *darab* kerek asztal
 one CL_{generic} round table
 'a round table'

Adj_{color}: *darab* ... Color

(207) *egy fehér *darab* toll
 one white CL_{generic} feather
 'a white feather'

(208) egy *darab* fehér toll
 one CL_{generic} white feather
 'a white feather'

Adj_{origin/nationality}: *darab* ... Origin

(209) *egy norvég *darab* fjord
 one norwegian CL_{generic} fjord
 'a norwegian fjord'

(210) egy *darab* norvég fjord
 one CL_{generic} norwegian fjord
 'a norwegian fjord'

Chapter 4

From Num to D

4.1 The landscape of the DP between numerals and D

This chapter looks at the functional sequence of the DP from NumP up to (but not including) KP. First I will establish what kind of constituents are found in this zone and in what order; and I will set up the functional sequence of this domain (Section 4.1). Once the functional sequence is in place, I will show that the elements residing in this region display complex interactions that affect the lexicalization of the D position (Section 4.2).

If we look at the selection of recent proposals for the functional sequence of the DP from Chapter 3, repeated here as (1) through (6), it stands out immediately that much fewer projections have been proposed above Num than below. Most of these decompositions recognize just one projection above NumP: D or Dem, which houses the definite article and/or demonstratives. We will see, however, that Hungarian has a variety of constituents between Num and D/Dem: quantifiers, participial relatives as well as two kinds of demonstratives and two kinds of possessors occupy positions in this zone. This is more than any of these proposals have space for; and thus accommodating these modifiers requires a more fine-grained decomposition.

- (1) SDP > PDP > KiP > N (Zamparelli, 2000)
- (2) D > Ordinal > Cardinal > Adj > PP_{gen} > N (Shlonsky, 2004)
- (3) D > # > Div > N (Borer, 2005)
- (4) Dem > Num > Adj > N (Cinque, 2005a)
- (5) Dem > Num > Cl > N (Simpson, 2005)
- (6) Dem > Art > Num > Cl > RelCl > Adj > n > N (Svenonius, 2008a)

4.1.1 Quantifiers have their own projection

Quantifiers are often lumped together with and placed into the same projection as numerals. This is motivated by the intuition that quantifiers essentially have the same function as cardinals: they both express some quantity. In this view, the only difference between numerals and quantifiers is how specific that quantity is: while numerals express a specific number, quantifiers express some non-specific quantity. Analyses that do not assume different positions for numerals and quantifiers include Pereltsvaig (2006); Rutkowski and Maliszewska (2007) as well as Borer (2005).

The fact that numerals often share morphological properties with quantifiers fits naturally into this view. In Hungarian, for instance, both numerals and quantifiers require the quantified noun to be morphologically singular.

- (7) a. hét katona-(*k)
seven soldier-PL
'seven soldiers'
- b. sok katona-(*k)
many soldier-PL
'many soldiers'

This property, however, does not extend to numerals and quantifiers such as *sok* ‘many’ or ‘néhány’ ‘some’. These happily occur right after the definite article.

- (12) a. a hét katona
the seven soldier
‘the seven soldiers’
- b. a sok katona
the man soldier
‘the many soldiers’

Following Bartos (1999) and É. Kiss (2002), I conclude that in addition to NumP Hungarian also has a QP. This projection houses *-ik* quantifiers as well as *minden* ‘every’ and *valamennyi* ‘each’.

- (13) QP > NumP > NP

QP, the quantifiers in its specifier and the ban on their adjacency with the definite article will figure prominently in Section 4.2 in the discussion of the lexicalization of the D projection.

4.1.2 Demonstratives

Hungarian demonstratives exhibit a binary distance contrast between proximal and distal, and fall into two morphological classes. So-called inflecting demonstratives obligatorily take the same number and case suffix that the noun does. When the noun occurs with a so-called case-like postposition (also termed ‘dressed’ postposition in the Hungarian adpositional literature), then this adposition, too, must occur on the demonstrative as well.⁵ Inflecting demonstratives must be immediately followed by the definite article. Demonstratives in this class are proximal *ez* ‘this’ and distal *az* ‘that’, as well as compounds formed with these demonstratives, such as *ugyan-ez* ‘same (proximal)’, *ugyan-az* ‘same (distal)’, *mind-ez* ‘all this’, *mind-az* ‘all that’, *emez* ‘this other one’ and *amaz* ‘that other one’.

- (14) ez-ek-et a tanuló-k-at
this-PL-ACC the student-PL-ACC
‘these students’
- (15) ugyan-az-ok-at a tanuló-k-at
same-that-PL-ACC the student-PL-ACC
‘those exact same students’
- (16) mind-az-ok alatt a hid-ak alatt
all-that-PL under the bridge-PL under
‘under all those bridges’

So-called non-inflecting demonstratives, on the other hand, cannot take the suffixes of the noun and cannot occur contiguously with the definite article. Demonstratives in this class are proximal *e*, *eme* and *ezen*, all of which mean ‘this’, and distal *ama* and *azon*, both of which mean ‘that’.⁶

- (17) eme tanuló-k-at
this student-PL-ACC
‘these students’
- (18) ezen tanuló-k-at
this student-PL-ACC
‘these students’
- (19) e tanuló-k-at
this student-PL-ACC
‘these students’
- (20) ama tanuló-k-at
those student-PL-ACC
‘those students’
- (21) azon tanuló-k-at
those student-PL-ACC
‘those students’

⁵‘Postpositional agreement’ as in (16) is cross-linguistically rare. Adpositions in general and the example in (16) will be a major concern of mine in Chapter 5.

⁶The proximal *e* has no distal counterpart *a*. *A tanuló-k-at* is grammatical but it means ‘the students’, where *a(z)* is the definite article.

These demonstratives are somewhat archaic, poetic or represent a highly elevated register. In contemporary Hungarian, they are used far less frequently than inflecting demonstratives.

There is evidence that inflecting and non-inflecting demonstratives differ not only with respect to their morphological properties, but also occupy different positions in the functional sequence. As evidenced by (14) and (15), inflecting demonstratives always precede the definite article. Non-inflecting demonstratives cannot be contiguous with a definite article. However, the inclusion of a non-finite restrictive relative clause or a Nominative possessor in (17) through (21) makes the article visible: it obligatorily appears with these modifiers and it precedes the non-inflecting demonstrative.⁷

- | | |
|---|--|
| (22) a tő-led kapott eme levél the from-2SG received this letter ‘this letter received from you’ (É. Kiss, 2002, ch. 7., ex. 7. b.) | (23) az én ezen kalap-ja-i-m the my this hat-POSS-PL-1SG ‘these hats of mine’ (Szabolcsi, 1994, ex. 24.) |
|---|--|

Note that Hungarian personal pronouns cannot take the definite article (*én* vs. **az én* ‘I’). Therefore the definite article in (23) definitely belongs to the head noun, as depicted in (24). The structure in (25), where the article forms a constituent with the possessor can be safely excluded.

- | | |
|---|---|
| (24) [_{DP} az [én [ezen [_{NP} kalapjaim]]]] | (25) *[[az én] [ezen [_{NP} kalapjaim]]]] |
|---|---|

While inflecting and non-inflecting demonstratives do not co-occur in the same DP, based on their relative ordering with respect to the definite article we can conclude that the surface order is as in (26).

- (26) inflecting Dem > definite article > non-inflecting Dem

Cross-linguistically, demonstratives often co-occur with the definite article. When they both precede the noun, then both Dem > Art > N and Art > Dem > N orders are attested.⁸ Some examples featuring the Dem > Art > N order are provided in (27) through (34).

- | | |
|---|-----------------|
| (27) had l wəld this the boy ‘this boy’ (Shlonsky, 2004, p. 1489., ex. 55.) | Moroccan Arabic |
| (28) wəy á-jʁab that.one art-girl ‘that girl’ (Rijkhoff, 2002) | Abkhaz |
| (29) dan il-ktieb this the-book ‘this book’ (Plank, 1992, p. 454.) | Maltese |
| (30) afto to spiti this the house ‘this house’ (Ezcurdia, 1996) | Greek |
| (31) sá inn gamli hestr that the old horse ‘the old horse’ (Lohndal, 2007, p. 288. ex. 1.a.) | Old Norse |

⁷This phenomenon has been extensively discussed in the literature, and it will be the focus of Section 2 of this chapter.

⁸Demonstratives co-occur with the specificity marker in postnominal position in Gungbe (Aboh, 2004a, 2010a) and (optionally) with the definite article in Zina Kotoko (Demeke, 2002). As is well known, in several languages demonstratives co-occur with the definite article but they are on different sides of the noun. Examples include Welsh, Scottish Gaelic, Irish, Breton, (Roberts, 2011), Spanish (Bernstein, 1997), Kana (Dryer, 2005), Galela (Rijkhoff, 2002), and this is also an option in Greek (Giusti, 1997), Moroccan Arabic (Shlonsky, 2004) and Samoan (Rijkhoff, 2002). Demonstratives co-occur with enclitic articles on different sides of the noun in Norwegian, Albanian (Dimitrova-Vulchanova and Giusti, 1998) and it is also a possibility in Gulf Arabic (Dryer, 2005). Postnominal demonstratives co-occur with an enclitic article in Roumanian (Dimitrova-Vulchanova and Giusti, 1998; Brugè, 2002). The space of options to derive these orders is substantially bigger than what is necessary to derive Dem > Art > N and Art > Dem > N.

- (32) yà ndì dza
this def house
'this house' (Dryer, 2005, ex. 16.) Ngiti
- (33) tá ta nov pes
this the new dog(.NOM)
'this new dog' (Leu, 2008, p. 30. ex. 33. a.) Colloquial Slovenian
- (34) ika n anak
this the child
'this child' (Bernstein, 1997, p. 93., ex. 14. d) Javanese

Examples from languages with the Art > Dem > N order are given in (35) to (38).

- (35) der dOziker mAn
the this man
'this man' (Ezcurdia, 1996) Yiddish
- (36) ke-ia kanaka
the-this person
'this man' (Ezcurdia, 1996) Hawaiian
- (37) sá-ma-y apók
ART-DEM-LK grandchild.my
'my grandchild, i.e. that grandchild of mine'
(Diessel, 1999, p. 92. ex. 23. a.) Pangasinan
- (38) si-nā pua'a
ART-that pig
'that poor pig' (note that *si* has an emotional quality)
(Rijkhoff, 2002, p. 183., ex. 25.) Samoan

Thus both the inflecting Dem > D > N and the D > non-inflecting Dem > N orders of Hungarian find parallels in other languages.

The consensus view in the literature is that the definite article is in D, which yields the order in (39).

- (39) inflecting Dem > D > non-inflecting Dem

At this juncture two analytical decisions need to be made. First, we need to decide whether inflecting and non-inflecting demonstratives are heads or phrases, and second, we need to be explicit about which functional projections they sit in.

There is an absolute consensus in the literature that inflecting demonstratives are phrasal (Kenesei, 1992, 1994; Bartos, 1999; É. Kiss, 2002; Bartos, 2001a; Ihsane and Puskás, 2001). This view is supported by four types of evidence. First, inflecting demonstratives can be used as a short answer to a question. An example of this is furnished by (40).

- (40) a. Ez a ház érdekel?
this the house interest.3SG
'Are you interested in this house?'
b. Nem, ez / az / emez / amaz.
no this / that / this other / that other
'No, (I am interested in) this one / that one / this other one / that other one.'

Second, inflecting demonstratives can be used on their own without an associated noun. This point is similar to the previous one, but while (40-b) could potentially be taken to be an elliptical DP, (41) cannot.

- (41) Ez / az el-fut-ott.
this / that away-run-PAST.3SG
'This / that ran away.'

Third, they can be modified by appositive modifiers and can be used as appositives themselves.

- (42) ez-t, (vagyis) a ház-at (43) a ház-at, ez-t
 this-ACC that.is the house-ACC the house-ACC this-ACC
 ‘this, that is, the house’ ‘the house, this one’

Finally, Bartos (1999, 2000) argue that case markers and the possessive anaphor are phrasal affixes in Hungarian: they morphosyntactically attach to a phrase rather than to the nominal head. The fact that these affixes appear on inflecting demonstratives lends further support to the claim that they are phrasal in nature.

There is also a near-absolute consensus that inflecting demonstratives are harboured in spec, DP (only Ihsane and Puskás, 2001 place them higher, but only they assume an articulated left periphery for DP). I will follow the consensus view here and place these demonstratives into spec, DP. The fact that they are always left-adjacent to the definite article and nothing can intervene between them suggests that these demonstratives are in a specifier-head configuration with the article, and thus sit in spec, DP. Finally, it is often suggested that inflecting demonstratives are of category DP themselves (Kenesei, 1992; Bartos, 1999). In Chapter 8 I will provide support for this position from compositional semantics.

In contrast to inflecting demonstratives, non-inflecting demonstratives have received far less attention in the literature: they are little noted or poorly treated in most works (except for the phenomenon of apparent article deletion in front of them, c.f. (21), (22) and (23)). Given that in (22) and (23) they follow the definite article, it is generally assumed that they are generated lower than D. There is, however, no definitive resolution as to whether they are heads or phrases. While Szabolcsi (1994) and Kenesei (2006) analyze them as heads, Kenesei (1992) and É. Kiss (2002) suggest that they are phrasal elements.

Szabolcsi (1994) identifies the position of non-inflecting determiners as the Det head. In her structure, DetP is situated between NumP and the phrase housing nominative possessors. Kenesei (2006) follows Szabolcsi’s suggestion and places non-inflecting demonstratives into the same position.

Kenesei (1992) uses a coarse-grained bi-partite NP structure (DP > NP) and places non-inflecting demonstratives into spec, NP, while É. Kiss (2002) in her more fine-grained decomposition base-generates them in spec, DemP. Her structure is shown in (44).

- (44) [_{DemP} e [_{NumP} két [_{NP} kérdés]]]
 this two question
 ‘these two questions’ (É. Kiss, 2002, ch. 7., ex. 5. a)

É. Kiss (2002) further suggests that when the presence of a participial clause or a possessive does not prevent this, non-inflecting demonstratives raise to spec, DP, and thus their surface position is the same as that of inflecting demonstratives.

I agree with Szabolcsi (1994) that non-inflecting demonstratives are best analyzed as heads. Szabolcsi makes this assumption without argument, but it is easy to see why it is natural to view these demonstratives as heads. Non-inflecting demonstratives cannot be used alone without an accompanying noun, which is unexpected if they are phrases.

- (45) *Eme / *ezen / *e el-fut-ott.
 this / this / this away-run-PAST.3SG
 ‘This ran away.’

Further, these demonstratives cannot be modified by appositives and cannot be appositives themselves either, as (46) and (47) show.

- (46) *ama / *azon, (vagyis) a ház (47) *a ház-at, (vagyis) eme-t
 that / that that.is the house the house-ACC, that.is this-ACC
 ‘that, that is, the house’ ‘the house, this one’

In Section 4.2 of this chapter I will take a different tack and I will argue that non-inflecting demonstratives do not co-occur contiguously to the definite article because these demonstratives, in fact, span Dem and D. The introduction of the functional head related to relatives and possessors in between them disrupts the adjacency of Dem and D, and this forces these heads to be spelled out separately. With this, the pattern falls out as a by-product of the way lexicalization works, and add-ons like the non-affixal nature of the intervening heads are not required.

Let us now return to the surface position of demonstratives in (50), repeated here as (51), and ask whether these are also the merge-in position of these elements.

(51) $[_{DP} \text{infl.Dem } [_{D'} \text{def.art } [_{DemP} [_{Dem'} \text{non-infl.Dem }]]]]$

There is no immediately obvious evidence internal to Hungarian that either inflecting or non-inflecting demonstratives originate lower in the structure than where they appear on the surface. I suggest, however, that inflecting demonstratives are merged in spec, DemP and their position in spec, DP is a derived one. This is motivated by the assumed syntax-semantics mapping. In Chapter 1 I committed to the idea that each and every piece of semantics is available at exactly one projection, and that specifiers must be semantically compatible with and share the interpretation of every head they get into a local configuration with. The D projection in Hungarian has no semantic import of deicticity, the definite article that spells out D is completely neutral in this respect. The Dem projection, however, does have a semantic import of deicticity. The meaning of non-inflecting demonstratives, which sit in Dem⁰, and the meaning of inflecting demonstratives are not only related but in fact indistinguishable. The proximal inflecting demonstrative *ez* has no discernible meaning difference from either of the proximal non-inflecting demonstratives *eme*, *ezen*, *e*. The same holds for the inflecting distal *az* and the non-inflecting distals *azon* and *ama*. If every piece of semantics is available in one position, and specifiers share the interpretation of every head they get into a local configuration with, then inflecting demonstratives must have merged in (or passed through) spec, DemP. This is the only way they can assume a deictic interpretation. Then spec, DP must be a derived position for them. For now I will take this to be correct on the basis of the semantics alone, but in Section 4.2.6 I will also adduce syntactic evidence in favour of this hypothesis. That heads and specifiers with related meanings are in a local configuration in syntax is the standard assumption with adverbs and adjectives. The analysis advocated here is a natural extension of this approach.

As inflecting and non-inflecting demonstratives do not co-occur (not even in the presence of a participial relative or a nominative possessor), thus Dem⁰ and spec, DemP are never filled at the same time, I will assume a Doubly Filled Comp Filter type of constraint for the Hungarian DemP. Invoking a restriction of this kind is a rather brute-force way of capturing the data, but in absence of a deeper understanding of the pattern I will employ it here.¹¹ My proposal for the merge-in site and surface position of Hungarian demonstratives is summarized in (52).

(52) $[_{DP} \text{infl.Dem}_i [_{D'} \text{def.art} / \text{non-infl. Dem } [_{DemP} t_i [_{Dem'} \text{non-infl.Dem }]]]]$

There is indeed no evidence, either syntactic or semantic, that Hungarian demonstratives are merged any lower than DemP. This is very much in line with the currently popular approach that the base-generated order of DP-internal modifiers is Dem > Num > A > N (c.f. Cinque, 2005a and the other proposals in (1) through (6)).¹²

¹¹It would perhaps be possible to derive this in a way similar to the ban on multiple delimitation of events, but I will not attempt to flesh out that proposal here.

¹²There is a number of works suggesting that demonstratives are merged in the functional sequence of the DP much lower than this (Brugè, 2002; Guardiano, 2009; Roberts, 2011, among others). There is some cross-linguistic indication that demonstratives are indeed merged low in the structure. In Russian, for instance, demonstratives can appear either in front of numerals, as in (i-a), or between the numeral and adjectives, as in (i-b).

- (i) a. Èti pjat' krasivyx devušek prišli.
 these-NOM.PL five beautiful-GEN.PL girls-GEN.PL arrived-PL
 (Franks, 1994, p. 609., ex. 15.)
 b. Pjat' èti krasivyx devušek prišli.
 five these-GEN.PL beautiful-GEN.PL girls-GEN.PL arrived-PL
 (Franks, 1994, p. 611., ex. 20.)
- Russian

4.1.3 Possessors

Possessors are probably the most extensively discussed constituents of the Hungarian DP. They have attracted a lot of attention from very early on, and via the seminal work of Szabolcsi (Szabolcsi, 1983b, 1987, 1992; Szabolcsi and Laczkó, 1992; Szabolcsi, 1994) they have contributed to both the discovery of NP-internal functional projections and the rise of the DP–CP parallelism hypothesis.

It is quite clear that for Theta-theoretic reasons possessors must be merged in the structure fairly low (Bartos, 1999; den Dikken, 1999; É. Kiss, 2002). On the surface, however, they appear in the zone that is the focus of this chapter. It is well known that Hungarian has two kinds of possessor constructions. In the first type the possessor is marked with Dative case, while in the second type the possessor is marked with the morphologically null Nominative case. The two kinds of possessors are illustrated in (53) and (54).¹³

- | | | | | | | |
|------|----------------|---------------|------|----------------|-----|---------------|
| (53) | Péter | könyv-e | (54) | Péter-nek | a | könyv-e |
| | Peter.NOM | book-POSS.3SG | | Peter-DAT | the | book-POSS.3SG |
| | ‘Peter’s book’ | | | ‘Peter’s book’ | | |

In addition to the different case marking, the two types of possessors also exhibit syntactic differences. As is well known, only Dative possessors can be extracted from the DP.¹⁴

- | | | | | | |
|------|----|---------------------------------|--------------------|-----|-------------------|
| (55) | a. | *Péter | el-áz-ott | (a) | könyv-e |
| | | Peter.NOM | away-soak-PAST.3SG | | the book-POSS.3SG |
| | | ‘Peter’s book got soaking wet.’ | | | |
| | b. | Péter-nek | el-áz-ott | a | könyv-e |
| | | Peter-DAT | away-soak-PAST.3SG | | the book-POSS.3SG |
| | | ‘Peter’s book got soaking wet.’ | | | |

Further, they occupy different positions on the surface. This can be shown via their relative ordering with the definite article. Dative possessors occur with the definite article when the possessee is definite, and they invariably precede the article.

- | | | | | | | | | | |
|------|----|----------------|-----|---------------|----|----|----------------|-----------|---------------|
| (56) | a. | Péter-nek | a | könyv-e | b. | *a | Péter-nek | könyv-e | |
| | | Peter-DAT | the | book-POSS.3SG | | | the | Peter-DAT | book-POSS.3SG |
| | | ‘Peter’s book’ | | | | | ‘Peter’s book’ | | |

Note that modulo the demonstrative, in (i-b) the nominal constituents appear in the base-generated order Num > Adj > N. Under the most natural interpretation of the facts, Russian demonstratives are merged under Num and subsequently raise above numerals. (The difference in the case of the demonstrative in (i-a) and (i-b) is an independent phenomenon already mentioned in connection with (8). See Franks, 1994; Bošković, 2008; Pesetsky, 2009, among others.)

Similarly, demonstratives can appear either low or high in Greek as well. Note that in this language, too, the order of the adjective and the noun corresponds to the base-generated one).

(ii) i nei afti katiki tis polis
 the new these inhabitants the-GEN city-GEN
 ‘the new inhabitants of the city’ (Roehrs, 2009, p. 50. ex. 31. b.)

(iii) afto to oreo to vivlio
 this the good the book
 ‘this good book’ (Giusti, 1997, p. 109., ex. 41. a.)

Greek

These data point to the conclusion that demonstratives – in these languages at least – are merged lower in the functional sequence than in Cinque (2005a). This conjecture, however cannot be confirmed from Hungarian. Therefore I will assume that Hungarian demonstratives are base-generated in the Dem projection. I will briefly come back to this issue in Chapter 8.

¹³In both types, the possessee is marked with the possessedness suffix. When the possessor is a pronoun, the possessee also bears agreement for the number and person of the possessor. The agreement is null in 3rd person singular. To keep the examples shorter and tidier, I will use non-pronominal possessors or 3rd singular pronominal possessors in this section whenever possible. I defer the discussion of the position of the possessedness suffix in the functional sequence and the problem of possessive agreement until Chapter 7.

¹⁴The standard explanation of this pattern is that Dative possessors are in the topmost specifier of the DP, and that this position serves as an escape hatch from the DP, much like the specifier of CP does in the clause.

Nominative possessors do not co-occur with the definite article if they are non-pronominal, c.f. (53). Pronominal nominative possessors, on the other hand, obligatorily co-occur with and strictly follow the definite article.

- (57) *(az) ő könyv-e
 the he book-POSS.3SG
 ‘his book’

Now personal pronouns normally cannot co-occur with the definite article, therefore the article in (57) does not form a constituent with the pronoun. It is in the D position of the extended projection of the head noun. The order of the two types of possessors is thus as in (58).¹⁵

- (58) Dative possessor > definite article > Nominative possessor

Let us determine how (58) and the sequence of demonstratives in (26), repeated here as (59), can be combined into one sequence.

- (59) inflecting Dem > definite article > non-inflecting Dem

Dative possessors and inflecting demonstratives both precede the definite article, and when they co-occur, the former strictly precedes the latter.¹⁶

- (60) János-nak ez a kalap-ja
 John-DAT this the hat-POSS.3SG
 ‘this hat of John’s’

Nominative possessors and non-inflecting demonstratives both follow the definite article. We have already seen in the previous section that the article does not occur contiguously to non-inflecting demonstratives, but it is made visible by an intervening Nominative possessor or participial relative clause. The relevant examples are repeated here.

- | | |
|--|---|
| <p>(61) a tő-led kapott eme levél the from-2SG received this letter ‘this letter received from you’ (É. Kiss, 2002, ch. 7., ex. 7. b.)</p> | <p>(62) az én ezen kalap-ja-i-m the my this hat-POSS-POSS.PL-1SG ‘these hats of mine’ (Szabolcsi, 1994, ex. 24.)</p> |
|--|---|

Nominative possessors thus precede non-inflecting demonstratives. In sum, (58) and (59) combine into one sequence as shown in (63).

- (63) Dat poss > infl dem > D > Nom poss > non-infl dem

The difference between the two possessors in terms of case, extractability and position (as well as various other factors I glossed over in the exposition) have generated a lot of discussion. The vast literature on this topic is divided along the following issues: i) whether Dative and Nominative possessors have the same base position or not, ii) what is the exact base position, iii) what is the source of Dative case (and relatedly, whether Dative possessors are created from Nominative possessors in syntax or not), iv) what is the surface position of Dative possessors, v) what is the surface position of Nominative possessors, vi) whether pronominal and non-pronominal Nominative possessors occupy different positions or not.

¹⁵This is further supported by dialectal and historical data, c.f. Szabolcsi and Laczkó (1992); Szabolcsi (1994) and den Dikken (1999).

¹⁶(i) is grammatical under the irrelevant reading *this is John’s hat*, where the inflecting demonstrative is not contained in the DP.

- (i) ez János-nak a kalap-ja
 this John-DAT the hat-POSS.3SG
 ‘This is John’s hat.’

This reading is also available for (60); in that case this order is derived by moving out the Dative possessor of a DP and merging the demonstrative and the subject.

A complete story of Hungarian possessive constructions has to take a stand on all of these issues. It is beyond the ambitions of this chapter to provide a full picture of possessives, however. Many of the questions raised above are related to argument structure. The aim of this dissertation is to establish the sequence of functional heads in the DP, and the complexities of nominal argument structure have to remain unexplored here. The interested reader is encouraged to consult the following list of representative works, where these issues are treated more extensively: Szabolcsi (1983b, 1987, 1992, 1994); Szabolcsi and Laczkó (1992); den Dikken (1999); Bartos (1999); Chisarik (1999); Laczkó (2000); É. Kiss (2000, 2002); Nikolaeva (2002); Chisarik and Payne (2003); Laczkó (2007b).

The last three questions concern the surface position of Dative and Nominative possessors and thus they are more relevant for the cartography of the DP than the others. Dative possessors are the leftmost constituents of the Hungarian nominal projection, no DP-internal material can precede them. Most of the literature does not posit an extra projection for Dative possessors. Instead, in one way or another they are accommodated into the DP projection: they are placed into spec, DP (Szabolcsi, 1994; Kenesei, 1994; den Dikken, 1999; Bartos, 1999) or they are treated as DP-adjuncts (É. Kiss, 2002). In contrast to this, Ihsane and Puskás (2001) assume an articulated left periphery of DP, and place Dative possessors above DP and a DP-internal TopP, into a projection that they call DeterminerP. I do not assume such a left periphery for DP because I see little semantic evidence for it, if at all, and with the assumption that Dative possessors are adjoined to DP all noun satellites can be accommodated into DP. (See also Szendrői, 2010 for recent arguments against DP-internal TopP and FocP.) I will therefore link Dative possessors to DP, as most of the literature does. Placing these possessors into spec, DP counterfactually predicts a complementary distribution with inflecting demonstratives (c.f. (60)), therefore I will follow É. Kiss (2002) and assume that Dative possessors are DP-adjuncts. For the purposes of the main contribution of this chapter, the novel analysis of the well-known article deletion data in Section 4.2, nothing important turns on this, though.

The surface position of Nominative possessors, on the other hand, will figure prominently in the new analysis. (62) shows that pronominal Nominative possessors occupy a position between the definite article and non-inflecting demonstratives. Possessors in similar positions are well documented in other languages, too. Some Indo-European examples with the definite article > possessor order are provided in (64) through (67).

- (64) **il mio** Gianni
the my Gianni
(Giusti, 1997, p. 101., ex. 19. a.) Italian
- (65) **pɛ t im** kufi'ri
I.saw the my cousin.MASC
'I saw my cousin.' (Manzini and Savoia, 2011, p. 272. ex. 39. a.) Vena Albanian
- (66) **els seus** llibres
the his/her/their books
'his/her/their books' (Picallo, 1994, p. 259. ex. 1.) Catalan
- (67) Dieu, par **le t-uen** glorioz non
God, by the.M.OBL.SG your-M.OBL.SG glorious.M.OBL.SG name.M.OBL.SG
'God, by your glorious name' (Wood, 2007, p. 340. ex. 7.) Old French

The consensus in the literature is that Nominative possessors (at least pronominal ones) sit in the specifier of a high possession-related projection below DP (Szabolcsi, 1994; Bartos, 1999; den Dikken, 1999). For the sake of explicitness, I will call this projection Poss2P.^{17,18} In Section 4.2, this projection will be shown to interact with both quantifiers and non-inflecting demonstratives,

¹⁷Szabolcsi (1994) calls this projection (N+I)P, Bartos (1999) calls it AgrP. While the label I use is new, the existence of this projection has long been acknowledged. I do not take over the established AgrP label because it suggests that this phrase is projected by the possessive agreement morpheme. I will argue against this position at length in Chapters 6 and 7.

¹⁸Whether non-pronominal Nominative possessors are also in spec, Poss2P is largely orthogonal to the analysis in Section 4.2, therefore at this point I will not pursue this question any further. At the end of Section 4.2 I will come back to this issue.

and have an effect on the possible lexicalization of the D position.

(68) summarizes the projections identified so far in the upper half of the DP.

(68) DP > Poss2P > DemP > QP

4.1.4 Non-finite relative clauses

In Hungarian, finite relative clauses always follow the noun. This is illustrated for restrictive relatives in (69) and for non-restrictive relatives in (70).

(69) az a javaslat amit előad-t-ak
that the proposal that present-PAST-3PL
'the proposal that they presented'

(70) a javaslat, amit előad-t-ak, ...
the proposal that present-PAST-3PL
'the proposal, which they presented, ...'

Hungarian also has different kinds of non-finite relatives. Without going into a discussion of their full range and classification, I mention here that they are prenominal and illustrate their behaviour with clauses containing *-t/tt* participles (roughly corresponding to English *-ed*).¹⁹

(71) a [tegnap előadott] javaslat
the yesterday presented proposal
'the proposal presented yesterday'

These participial relatives can appear at various heights in the DP. We have already seen that such relatives can appear between the definite article and non-inflecting demonstratives.

(72) a [tegnap előadott] eme javaslat
the yesterday presented this proposal
'this proposal presented yesterday'

They cannot be higher than this position: they cannot precede Nominative possessors, for instance, or any other category that is higher than non-inflecting demonstratives.

(73) *a [tegnap előadott] én javaslat-om
the yesterday presented I proposal-POSS.1SG
'my proposal presented yesterday'

(74) *(a) [tegnap előadott] (a) képviselő javaslat-a
the yesterday presented the MP proposal-POSS.3SG
'the proposal of the MP presented yesterday'

They can, however, appear lower than non-inflecting demonstratives. In (75-a) the participial relative appears between the non-inflecting demonstrative and the numeral, while in (75-b) it follows the numeral.

(75) a. eme [tegnap előadott] három javaslat
this yesterday presented three proposal
'these three proposals presented yesterday'
b. három [tegnap előadott] javaslat
three yesterday presented proposal
'three proposals presented yesterday'

Participial relatives thus do not have a fixed linear/hierarchical position. This flexibility possibly stems from semantic factors: (72), (75-a) and (75-b) appear to have subtle differences in the scope of the relative clause (i.e. the scope corresponds to the surface position).

(76) DP > Poss2P > part. rel. > DemP > part. rel > QP > NumP > part. rel

¹⁹Non-finite relatives are treated more extensively in Komlósy (1994). For *-t/tt* participles in particular, see Márkus (2009) and references cited therein.

There are many ways in which the syntax of participial relatives can be approached. They can be introduced into the structure either as adjuncts or as specifiers; and their different positions can be derived by upward movement into an adjoined position, upward movement into a specifier position or as base-generation at multiple positions.

At this point, we have no sufficient evidence either for or against any of these analytical options. In Section 4.2 I will discuss disruption effects affecting the lexicalization of D. There I will show that examples like (72) exhibit such a disruption effect, and I will develop a unified account of intervention phenomena in the Q to D zone. The analysis of the disruption effects, in turn, will have implications for the possible representations of participial relatives. Specifically, it will rule in those analyses that place these relatives into specifier positions and rule out the adjunction hypothesis altogether.

4.1.5 Interim summary

Let us summarize the proposed decomposition of the functional sequence between NumP and KP. I have shown that between numerals and case markers, five types of elements need to be accounted for in Hungarian: quantifiers, demonstratives (inflecting and non-inflecting), possessors (Nominative and Dative), non-finite relative clauses, and the definite article. The latter has not received much attention thus far but it will be the center of the discussion in the next section.

Putting aside the exact structural representation of participial relatives, I suggested that Hungarian provides evidence for the following functional sequence in the upper half of the DP.

(77) DP > Poss2P > part. rel. > DemP > part. rel > QP

4.2 Lexicalizing the D position

In this section I zoom in on the D position, which harbours the definite article *a/az* ‘the’. Hungarian does not have an indefinite article; singular indefinite DPs feature the numeral *egy* ‘one’.

| | | | | |
|------|----|---|----|---|
| (78) | a. | a feltaláló the inventor ‘the inventor’ | b. | egy feltaláló one inventor ‘a / one inventor’ |
|------|----|---|----|---|

The consensus view is that *egy* does not lead a double life as both a numeral and an indefinite article. Instead, *egy* is always and only the numeral *one* (Kornai, 1989; Szabolcsi and Laczkó, 1992; Szabolcsi, 1994; Bartos, 1999), and when a phrase like (78-b) is as big as DP, then the D position is occupied by a phonologically null indefinite article. This analysis receives substantial support from the fact that in contrast to the definite article, *egy* always follows Nominative possessors.

In this section I argue that many other lexical items can spell out D. Specifically, non-inflecting demonstratives and certain quantifiers as well as pronouns and some proper names span the D position from below, and this causes the well known haplology (article deletion) effect in the Hungarian DP.

4.2.1 The data

In the preceding sections we have already become familiar with the pattern in (79): non-inflecting demonstratives do not co-occur contiguously with the definite article, but a participial relative or a Nominative possessor intervening between D and Dem makes the article obligatorily visible.

| | | |
|------|----|---|
| (79) | a. | (*az) eme javaslat the this proposal ‘this proposal’ |
| | b. | *(a) [tegnap előadott] eme javaslat the yesterday presented this proposal ‘this proposal presented yesterday’ |

- c. *(az) én eme javaslat-om
 the my this proposal-POSS.1SG
 ‘this proposal presented yesterday’

We have seen that quantifiers sitting in spec, QP don’t co-occur contiguously with the definite article either. These quantifiers are: *minden* ‘every’, *valamennyi* ‘each’ and quantifiers ending in the unique identifying suffix *-ik*, such as *mind-egy-ik* ‘each’ (lit. all-one-ik), *bár-mely-ik* ‘any, either’ (lit. any-which-in), *vala-mely-ik* ‘a certain’ (lit. some-which-ik), *se-mely-ik* ‘neither, none’ (lit. no-which-ik), *némely-ik* ‘some’. But just like in (79), a Nominative possessor or a participial relative appearing between Q and D forces the article to be present.

- (80) a. (*a) bármelyik könyv
 the any book
 ‘any book’
 b. *(a) tegnap vásárolt bármelyik könyv
 the yesterday bought any book
 ‘any book bought yesterday’
 c. *(a) te bármelyik könyv-ed
 the you any book-POSS.2SG
 ‘any book of yours’
- (81) a. (*a) valamennyi könyv
 the each book
 ‘each book’
 b. *(az) én valamennyi könyv-em
 the I each book-POSS.1SG
 ‘each book of mine’
 c. *(a) tegnap vásárolt valamennyi könyv
 the yesterday bought each book
 ‘each book bought yesterday’
- (82) a. (*a) minden könyv
 the every book
 ‘every book’
 b. *(a) tegnap vásárolt minden könyv
 the yesterday bought every book
 ‘every book bought yesterday’
 c. *(a) te minden könyv-ed
 the you every book-POSS.2SG
 ‘every book of yours’

The Hungarian literature’s term for the elements that cannot appear contiguous to the definite article but which can co-occur with it in the presence of an intervener is ‘determiner’. Crucially, the presence or absence of the definite article in front of a determiner does not have an effect on the interpretation of the expressions above.

The pattern in (79) through (82) has been described in both linear and structural terms. Szabolcsi and Laczkó (1992) and Szabolcsi (1994) describe it as a phonological deletion rule applying to linear strings, as in (83).

- (83) Haplology: (Szabolcsi, 1994, ex. 69.)
- The co-occurrence of a D and Det is grammatical if they are linearly separated by some intervener.
 - Contiguous strings of the type D Det, or D D, are ungrammatical. Ungrammaticality can be eliminated either by deleting *a(z)* of D in phonetic form, or by moving the constituent that contains Det or the second D.

Simply put, an intervener or movement out of the lower position will make the co-occurrence OK.²⁰

²⁰Later on I will come back to the cases in which alleged movement separates D and Det and thereby allows their co-occurrence.

É. Kiss (2002) formulates the generalization about (79) – (82) in structural terms. Compare (83) and (84):

- (84) The default definite determiner, the definite article *a/az*, is only spelled out – presumably in the head position of a DP projection – if the noun phrase has no quantifier determiner or demonstrative determiner ... or if the quantifier or the demonstrative determiner it has is not the highest element in the noun phrase but is buried, for example, under a non-finite restrictive relative clause ... (p. 154.)

Szabolcsi (1989, 1994) point out that a similar phenomenon exists in Tohono O’odham (formerly known as Papago, Uto-Aztecan) as well. In this language, the determiners *'am* ‘over there (in front of speaker)’ and *g* ‘the, a’ cannot co-occur contiguously; grammatical DPs either employ extraposition or have *g* deleted. The locative determiner *'am* combines with the postposition *weco* but it does not combine with the noun *miisa*, which is reflected by the bracketing in the examples.²¹

- (85) a. *'am [g miisa] weco
 DET DET table underneath
 b. 'am [miisa] weco
 DET table underneath
 ‘under the table’
 c. 'am weco [g miisa]
 DET underneath DET table
 ‘under the table’ (Szabolcsi, 1994, p. 212., 73.) Tohono O’odham

In absence of a deeper understanding of the Tohono O’odham examples, I am reluctant to give a full-fledged analysis of (85) and I will rather focus on Hungarian, where the data are well understood and have been extensively discussed in the literature. At the appropriate points, however, I will refer back to Tohono O’odham as potential support for the proposed analysis.

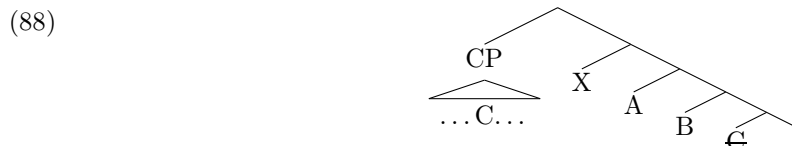
4.2.2 A spanning account of non-inflecting demonstratives and *-ik* quantifiers

Recall from the theoretical discussion in Chapter 2 that in a framework employing non-terminal spellout, movement potentially changes the spell-out possibilities of a structure. A lexical item that is associated to the features A, B and C can spell out all of these features at once only if they appear in a contiguous sequence in the structure, as in (87).

- (86) $LI_1 \Leftrightarrow \{A, B, C\}$



On the other hand, in a structural configuration where C, for instance, is moved away, it is not possible to spell out all of A, B and C by LI_1 anymore (traces don’t count for spell-out purposes).

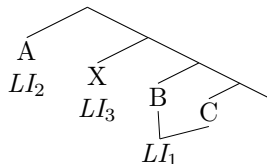


Recall further that disruption effects breaking the contiguity of certain head sequences can arise not only as a result of movement, but also as a result of base-generation. If the functional sequence

²¹The translations of the two determiners in the running text are based on Zepeda (1983). I kept Szabolcsi’s glosses in (85) (which she took over from Abney, 1987).

defines the hierarchy $A > X > B > C$, then in order to use LI_1 as an exponent of A, B and C, X must not be generated in the tree. In case X is present in the structure, it acts as an intervener and results in A being lexicalized separately from the other features. If the language has no lexical item that could spell out only B and C, then by the Superset Principle LI_1 shrinks down to B and C. This is illustrated in (89).

(89)



In sum, the conditions under which contiguity is broken and which force A, B and C to be spelled out in two distinct bits are i) linear separation by an intervener and ii) movement. In Szabolcsi's Haplology rule in (83), these are precisely the configurations that require the overt, separate spell-out of the definite article.

I suggest that the pattern under consideration is best seen as an effect of a structural intervener on a spanning lexical item. I propose that non-inflecting demonstratives and quantifiers triggering article deletion (*-ik* quantifiers, *minden*, *valamennyi*) span up to the D position.²² Nominative possessors and participial relatives make the co-occurrence obligatory because they are both introduced in the specifier of a specialized functional head. These cut the sequence of heads lexicalized by demonstratives or quantifiers into two. By virtue of their position between D and Dem/Q, they effectively separate D from the other heads it could be spelled out together with. That is, instead of a surfacy Haplology rule, I suggest capturing the pattern in terms of the size of the lexical items involved.

Crucial for this analysis is that both Nominative possessors and participial relatives are introduced by a functional head of their own (otherwise they could not function as interveners). This is entirely uncontroversial for Nominative possessors, as we have seen. I called the relevant functional head Poss2. For participial relatives, we have seen a number of different possible approaches that could all capture their surface distribution, but we have not had clear evidence for any of them. Given the way spanning works, i.e. that only heads but not adjuncts or specifiers count as interveners for spanning lexical items, from my analysis of intervention effects a number of things follow for the representation of participial relatives.

Firstly, they cannot be adjuncts, because in an adjoined position they could not prevent spanning of D and Dem or D and Q, and the pattern in (79) through (82) could not arise. Secondly, contra Kenesei (2006), they cannot sit in the specifier of the functional head that introduces non-inflecting demonstratives.²³ If participial relatives were sitting in this position, then the D and Dem heads would still be contiguous in the sequence of heads, and inflecting demonstratives should be able to spell out the D position even in the presence of a high participial relative. As (79) shows, this is not possible.

For participial relatives to function as interveners in (79) – (82), they must be introduced in the specifier of a specialized functional head that is different from Dem. That is, the sequence of functional heads in (79) through (82) must be $D > X > Dem$, where X intervenes between D and Dem and prevents their joint spellout. That the X head cannot be Poss2 is shown by examples that contain both a Nominative possessor and a high participial relative.

- (90) az én [tegnap előadott] bármelyik javaslat-om
 the I yesterday presented any proposal-POSS.1SG
 'any proposal of mine presented yesterday'

This means that the sequence of functional heads in (90) is $D > Poss2 > X > Dem$, where X is the head responsible for the introduction of non-finite relatives. I call this head pRelCl for participial relative clause. Participial relatives have been independently argued to occupy a specifier projection in various works, including Ouhalla (2004) and Cinque (2010). The analysis presented here supports their conclusions.

²²This will be qualified for quantifiers below.

²³I call this projection DemP, Kenesei calls it DetP, but this is only a terminological difference.

This proposal sheds light on the way a lexicalization algorithm interacts with the functional sequence. From the way lexicalization is set up, viz. that spanning items spell out a contiguous head sequence, it follows that only heads can have a disruption effect. Therefore any element that causes the disruption effect involves the merger of an intervening head, and these elements spell out either the head itself or its specifier. In essence, spanning allows us to distinguish adjuncts from functional heads and their specifiers.

Let us now turn to a detailed exposition of how spanning works for non-inflecting demonstratives. The relevant portion of the functional sequence is repeated below.

- (91) $[_{DP} \text{infl dem } [_{D'} \text{def. art } [_{Poss2P} \text{pronom Nom poss } [_{pRelClP} \text{part. rel. } [_{DemP} \text{infl dem } [_{Dem'} \text{non-infl dem }]]]]]]]]$

Demonstratives are merged in DemP. Inflecting demonstratives are phrases that move from spec, DemP to spec, DP. Non-inflecting demonstratives, on the other hand, are in the head of DemP, and they do not co-occur contiguous to the definite article because they span the D position themselves. Their lexical entry thus contains two categorial features: one for Dem and another for D.

- (92) non-inflecting demonstrative \Leftrightarrow {Dem, D}

Non-inflecting demonstratives are not specified either for the Poss2 or the pRelCl head. When these heads are not present in the syntax, then D and Dem form an uninterrupted sequence and they can be spelled out together by the non-inflecting demonstrative.

- (93) (*az) eme javaslat
the this proposal
'this proposal'

- (94)

The reason they have to be spelled out together, that is, why the article appears to be obligatorily deleted, is the economy principle Maximize Span/Union Spellout Principle discussed in Chapter 2 (also known as Minimize Exponence in DM).

- (95) Minimize Exponence
The most economical derivation will be the one that maximally realizes all the formal features of the derivation with the fewest morphemes. (Siddiqi, 2009, p. 4.)

Spelling out D and Dem with just the non-inflecting demonstrative is more economical than using the definite article for D and shrinking down the demonstrative to Dem.

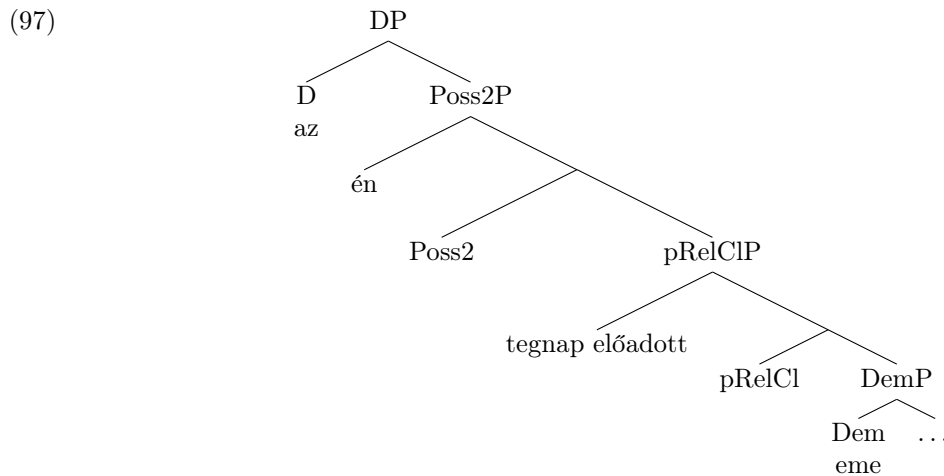
However, when one or both of the Poss2 or pRelCl heads appear between D and Dem, spanning is not an option any more. In this case the non-inflecting demonstrative must shrink down to Dem and D is spelled out by the definite article, as depicted in (97).²⁴

²⁴One question that may arise here is why Dem/Q to D spanning is allowed with a *pro* possessor. As is well known, Hungarian is a *pro* drop language and it allows not only its subjects but also its possessors to be covert. Pronominal subjects and possessors are overt only if emphasized or contrasted.

- (i) a. az én ötlet-em
the I idea-POSS.1SG
'my idea'
- b. az ötlet-em
the idea-POSS.1SG
'my idea'

If the possessee is modified by a non-inflecting demonstrative or spanning quantifier and the possessor is *pro*, then the definite article does not appear on the surface.

- (96) *(az) én tegnap előadott eme javaslat-om
 the my yesterday presented this proposal-POSS.3SG
 ‘this proposal presented yesterday’



Let us now turn to quantifiers. *Minden* ‘every’, *valamennyi* ‘each’ and *-ik* quantifiers exhibit the same distribution with respect to the definite article as non-inflecting demonstratives do. In the most parsimonious account, they should receive the same analysis, too. However, the exact same analysis will not work here because quantifiers are phrases. In spanning, lexical items are able to spell out multiple head positions but they are not able to span a mixture of head and specifier positions. Therefore it is technically impossible for these quantifiers to span the D position.

While the exact same analysis used for non-inflecting demonstratives is inapplicable to the relevant quantifiers, it is possible to preserve the spirit of the account and capture the behaviour of quantifiers in an analogous fashion. Recall from Chapter 2 that the Exhaustive Lexicalization Principle is an important constraint on lexicalization.

- (98) Exhaustive Lexicalization Principle:
 Every syntactic feature must be lexicalized. (Fábregas, 2007)

The reason the Exhaustive Lexicalization Principle is relevant in the present context is that the Q head hosting quantifiers does not have an overt exponent. As according to (98) Q^0 must be associated to a piece of phonology, the only possibility is that it receives a phonologically zero spellout.

- (99) $\emptyset \Leftrightarrow \{Q\}$

The article deletion data with quantifiers can be captured in the same fashion as those with non-inflecting demonstratives if the Q head appearing with the relevant quantifiers spans the D position. Thus the lexical entry of the morpheme spelling out the Q head appearing with these quantifiers is as in (100).

- (100) $\emptyset \Leftrightarrow \{Q, D\}$

-
- (ii) a. eme javaslat-om
 this proposal-POSS.1SG
 ‘this proposal of mine’
- b. valamelyik javaslat-om
 a.certain proposal-POSS.1SG
 ‘a certain proposal of mine’

If *pro* possessors are also in spec, Poss2P, then Poss2 should act as an intervener and force the appearance of the definite article. I propose that (ii) shows that *pro* possessors are in fact in a different structural position. For both (ii-a) and (ii-b) to fall out, this position must not be between Q and D. There are two possible alternatives: *pro* possessors stay in the low thematic position where possessors are base-generated, and in this case Poss2P is not generated at all, or alternatively a *pro* possessor could raise straight to spec, DP, which is also the position for R-expression Nominative possessors. C.f. also Ortman (2011) for a proposal that these cases do not involve a covert pronoun at all.

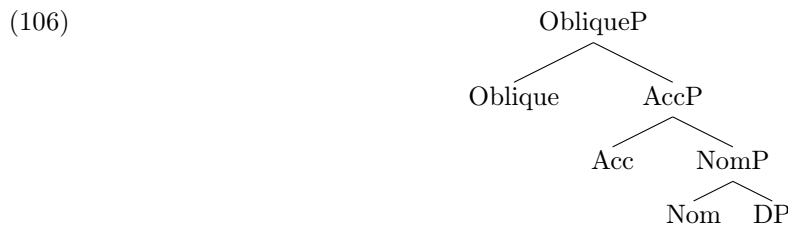
deletion indeed, and that moving Det away from D makes the definite article visible. She presents data with Dative possessors as evidence of this.

Independently of the article deletion data, Szabolcsi proposes that Dative possessors are derived from Nominative possessors in the syntax. Every possessor starts out as Nominative and has a copy in the position of Nominative possessors. From this position, possessors can undergo movement to the periphery of the DP, where they are assigned Dative case by D (Szabolcsi, 1994).

The relevant data where movement from the Nominative possessor position to the Dative possessor position supposedly prevents the application of haplogy are in (105). In (105-a) *minden* is part of the Nominative possessor and it is string-adjacent to D, causing the deletion of the article. In (105-b) the possessor has been moved to the periphery of the DP and *a* and *minden* are not adjacent any more. This causes the article to appear overtly.

- (105) a. (*a) minden feltaláló ötlet-e
 the every inventor idea-POSS.3SG
 ‘every inventor’s idea’
 b. minden feltaláló-nak_i *(az) t_i ötlet-e
 every inventor-DAT the idea-POSS.3SG
 ‘every inventor’s idea’

If this was the case indeed, it would provide a showcase of how movement affects spellout. However, I do not subscribe to the view that Dative possessors are created from Nominative possessors in syntax. On the one hand, den Dikken (1999) and É. Kiss (2002) point out that D is generally not a Dative case assigner: is never assigns Dative (or indeed any other) case to inflecting demonstratives in spec, DP. On the other hand, there is also a theory-internal, Nanosyntax-specific reason not to adopt Szabolcsi’s view that Nominative possessors turn into Dative in the derivation. Caha (2009) argues that cases have internal syntactic structure: Obliques structurally contain Accusative, and Accusative structurally contains Nominative case.



As syntactic trees can only be extended at the root node, it follows from Caha’s system that once a DP is merged with Nominative case (or with no case, for that matter), it cannot be assigned Dative later on. In Dékány (2010) I show how this system can be fruitfully applied to Hungarian long operator movements featuring case competition, and I argue that apparent instances of a constituent acquiring extra layers of case in the derivation actually involve base-generating the bigger case.



The correct word order can be derived in the following way. First the complement of Q must be extracted such that Q, spec Q and D can form a constituent targeted by constituent spellout (recall that traces don’t count for spellout purposes). Then remnant movement must restore the original order between QP and its complement. This solution is mostly along the lines of Starke (2007, 2009a,b); Taraldsen (2009); Starke (2011). Alternatively, it can be assumed that nodes that have already undergone spellout can be ignored for further spellout. In our case these nodes would be the ones abbreviated as ‘...’. In this scenario \emptyset can spell out D’ without movements taking place. This solution is in the spirit of Caha (2009).

Tohono O’odham determiners, on the other hand, quite possibly show both the base-generated and the movement-related intervention effect. The relevant example is repeated here for the reader’s convenience.

- (107) a. *’am [g miisa] weco
 DET DET table underneath
 b. ’am [miisa] weco
 DET table underneath
 ‘under the table’
 c. ’am weco [g miisa]
 DET underneath DET table
 ‘under the table’ (Szabolcsi, 1994, p. 212., 73.) Tohono O’odham

In (107-a) the string-adjacency of determiners leads to ungrammaticality. (107-b) suggests that this is because *’am* spans the position of *g* and thus it is a more economical spellout. In (107-c) the extraposition of the [*g miisa*] constituent appears to break the adjacency and make the separate spellout of *g* possible. While the Tohono O’odham data are suggestive, the analysis remains tentative because I cannot verify whether *’am* and *g* are on the same projection line or not. The spanning analysis is viable only if these determiners are part of the same extended functional sequence, and *g* is not embedded in some specifier. As I do not have a proper grasp of what the phrase structure of (107) looks like, I will not look further into the Tohono O’odham data.²⁶

In the proposed analysis of ‘haplology’, non-inflecting demonstratives and quantifiers triggering the article deletion properly contain the definite article. The intuition that these elements somehow include the definite article is expressed in the literature again and again. Below I provide a selection of quotes expressing this insight.

"a határozott és határozatlan névelő nem hordoz valamiféle csak órá jellemző információt: a többi determináns jelentése kb. úgy írható le, hogy ‘a határozott névelő vagy határozatlan névelő jelentése + még valami’. Például: *ezen három piros kalap* \supset *a három piros kalap* ..."

‘the definite and the indefinite article do not carry information exclusive to them: the meaning of other determiners can be described approximately as ‘the meaning of the definite or indefinite article + something else’. For instance: *ezen három piros kalap* \supset *a három piros kalap* ...’

Szabolcsi and Laczkó (1992, p. 223.)

"a névelők jelentése része a Det2-k jelentésének"

‘the meaning of articles is part of the meaning of Det2-s’ (where Det2 refers to determiners)

Szabolcsi and Laczkó (1992, p. 225.)

"it seems reasonable to look on determiners as having two functions: that of a subordinator and that of a quantifier/demonstrative ... these two functions can be either conflated or lexicalized separately."

(É. D.: the significance of this lies in the fact that Szabolcsi analyzes articles as subordinators)

Szabolcsi (1994, p. 218.)

²⁶Some of the Hungarian examples above involve article deletion triggered by a determiner embedded in a Nominative possessor. In Section 4.2.5 I will come back to these data.

"a disztribúciója leginkább a határozott névelőére emlékeztet"
 'its distribution primarily resembles to that of the definite article' (on *minden* 'every',
 though later on in the article the claim is that *minden* functions as an indefinite article)

Kornai (1989)

"Noun phrases extended by an *-ik* quantifier or an *e/eme/ezen* type of demonstrative
 act as definite noun phrases ... *-ik* quantifiers and demonstratives also seem to play
 the role of a definite determiner."

É. Kiss (2002, p. 154.)

In the light of this intuition, determiners instantiate the lexicalization problem: on their own, they appear to perform the function of D, and so they should spell out in D(P), but when they co-occur with the article they don't perform the D function and appear in a lower position, too. These two uses feature the same lexical items in different guises, though. The spanning analysis proposed here captures this intuition in a natural and straightforward way via the Superset Principle. Used on their own, determiners spell out D. They properly contain all features of the definite article and linearize in its position. When they co-occur with the definite article, determiners Underassociate D and linearize lower.

In the next section I will review three influential analyses of the regular (dis)appearance of the article and I will point out both similarities to and differences from my analysis.

4.2.3 Previous treatments

As already discussed in the previous section, Szabolcsi and Laczkó (1992) and Szabolcsi (1994) treat article deletion as a case of haplogy. Szabolcsi argues that while the deletion of the article appears to suggest that the definite article and other determiners compete for the same position, their co-occurrence in the presence of an intervener shows that this is not the case. But this conclusion is too sweeping. Even in a theory employing terminal spellout, it is possible to argue that the article is inserted directly into D, while non-inflecting demonstratives, for instance, are inserted into Dem and consequently move to D when an intervener doesn't prevent this.²⁷ Then in some sense determiners and the definite article do compete for the same position.

In my Nanosyntactic proposal, the definite article is indeed in competition with non-inflecting demonstratives and quantifiers: they are all possible exponents of the D position. However, Szabolcsi is right in that these elements are not all equal. While non-inflecting demonstratives and quantifiers can spell out D, the definite article cannot spell out either Dem or Q, and in this sense it is smaller than the other possible spellouts of the D head.

The fact that the presence or absence of the article in (79) – (82) does not make a difference to the interpretation is crucial for both Szabolcsi and me, but we interpret this fact in different ways. Szabolcsi (1989); Szabolcsi and Laczkó (1992) and Szabolcsi (1994) propose that the (dis)appearance of the article does not matter for semantics because it is merely deleted at PF, and in any case it does not contribute the definite interpretation to the noun in the first place. Specifically, the source of definiteness in (79) – (82) is the determiner rather than the definite article, and the latter merely serves as a subordinator that enables the NP to function as an argument. The definite article is thus analogous to the complementizer.

This approach needs to say something additional about why the presence or absence of the definite article in front of a bare noun makes a significant difference for the interpretation. Compare:

- | | | | | |
|-------|----|----------------------------------|----|------------------------------------|
| (108) | a. | ötlet idea 'idea, an idea' | b. | az ötlet the idea 'the idea' |
|-------|----|----------------------------------|----|------------------------------------|

²⁷An analysis similar to this was put forth in É. Kiss (2002); see below.

Szabolcsi proposes that in (108-b) the article is still just a subordinator, and it is rather a phonologically null determiner that contributes the definite interpretation. The article merely agrees with the null determiner in definiteness/specificity: if the determiner is definite or specific, then the definite article is chosen for D; and if the determiner is non-specific, then the null indefinite article appears in D.

Szabolcsi further suggests that cross-linguistically, the subordinator and the quantifier/demonstrative functions can be either conflated or lexicalized separately, and that in Hungarian they are lexicalized separately in a systematic way because the article is a pure subordinator. I also suggest that the definite article lexicalizes just one function. However, I suggest that the separate lexicalization of D and determiners is not systematic in Hungarian: with non-inflecting demonstratives and quantifiers conflation materializes in the language as well.

I interpret the article's lack of significance for definiteness in (79) – (82) in the following way. D does contribute definiteness to DP, which is transparent in (108-b). The reason why the absence of the article in (79) – (82) does not affect the meaning is because determiners are associated to a proper superset of the features of the definite article. When the D position is not spelled out by the article in the relevant examples, its features are still present inside determiners. This account can straightforwardly capture the difference between (108-a) and (108-b) without positing a null determiner and therefore it is structurally more economical than Szabolcsi's proposal. It can further dispense with the concord between the null determiner and the article. This is a welcome result because there is no independent evidence for concord on D in Hungarian.

In sum, my analysis has the following points in common with Szabolcsi (1994): i) the definite article does not play the very same role as determiners and does not occupy exactly the same syntactic position, ii) the reason why they cannot co-occur contiguously is not a 'deep one', as Szabolcsi puts it, iii) when the article is missing in front of determiners, the D position is still present in the structure, and iv) the roles played by the definite article and determiners can be lexicalized either separately or together. I break with Szabolcsi when I claim that i) the definite article and determiners do compete for the D position, ii) D has an overt phonological reflex even when it occurs contiguously with determiners (only the exponent is not exclusive to D), iii) D does contribute significantly to the interpretation of DPs, and iv) some lexical items in Hungarian lexicalize both the definite article and the determiner functions.

É. Kiss (2002) argues that non-inflecting demonstratives and my spanning quantifiers act as DPs, and she aims to capture this fact by a movement analysis. Specifically, she suggests that the relevant quantifiers and demonstratives raise from their merge-in positions and land in spec, DP to check the [+ definite] feature of D. She further suggests that due to economy considerations, D is not spelled out in this case. Our proposals are similar in that in the case of article deletion we both assume the presence of the DP projection and tie the spellout of non-inflecting demonstratives and quantifiers to this projection. I diverge from É. Kiss' analysis in rejecting the phrasal status of non-inflecting demonstratives and suggesting that the D position is effectively spelled out by demonstratives and quantifiers.

Bartos (1999) discusses the intervention effects of this section in the context of object agreement. Hungarian verbs agree both with their subjects and their objects. Agreement with the subject involves ϕ -features, while agreement with objects indicates, loosely speaking, the definiteness of the object (though for ease of exposition this is suppressed in the examples where it is not relevant). Simplifying matters a bit, definite objects trigger the appearance of one type of verbal paradigm, while indefinite objects result in the appearance of another type of verbal paradigm.²⁸

Crucial for Bartos is the minimal pair in (109), where the sentence without the definite article results in indefinite agreement and the sentence containing the definite article triggers definite agreement.

- (109) a. El-éget-ek / *el-éget-em (*a) minden től-ed kapott
 away-burn-INDEF.1SG / away-burn-DEF.1SG the every ABLAT-2SG received
 level-et.
 letter-ACC
 'I burn every letter received from you.'

²⁸The suffixes indicating the ϕ -features of the subject and the definiteness of the object are separate in certain combinations of person and number and fused in others. This need not concern us here.

- b. El-éget-em / *el-éget-ek a tól-ed kapott minden
 away-burn-DEF.1SG / away-burn-INDEF.1SG the every ABLAT-2SG received
 level-et.
 letter-ACC
 ‘I burn every letter received from you.’
 Bartos (1999, p. 103., ex. 12.)

On the basis of this piece of data Bartos puts forth the following hypothesis. Hungarian verbs bear definite agreement when their object is of category DP. In (109-a) there is no D projection, hence there is no definite agreement either. In (109-b), on the other hand, DP is projected by virtue of the presence of the definite article, and this yields definite agreement on the verb. Thus for him, (109) does not feature an intervention effect.

Bartos needs to say something additional about quantifiers ending in *-ik*, however. While these quantifiers always trigger definite agreement, in (110-b) they appear lower than D.

- (110) a. El-éget-em / *el-éget-ek (*a) valamelyik könyv-et.
 away-burn-DEF.1SG / away-burn-INDEF.1SG the a.certain book-ACC
 ‘I burn a (certain) book of mine.’
- b. El-éget-em / *el-éget-ek a tól-ed kapott valamelyik
 away-burn-DEF.1SG / away-burn-INDEF.1SG the ABLAT-2SG received a.certain
 könyv-et.
 book-ACC
 ‘I burn a (certain) book of mine received from you.’

He suggests that quantifiers ending in *-ik* must be licensed by a D, which may be phonologically null. He does not address the question of why that D must be covert when it is string-adjacent to *-ik* quantifiers and why it has to be overt otherwise, though.

Note that while *minden* and *-ik* quantifiers have the exact same distribution (do not appear contiguous to the definite article but co-occur with it and follow it in the presence of an intervener), in this analysis they receive a different treatment. *Minden* is suggested to project just a NumP; *-ik* quantifiers are proposed to be contained in a DP. Bartos realizes this problem and discusses an alternative that would make his assumption compatible with the idea that there is a D projected above *minden*. Referring to Szabolcsi’s haplology rule, he proposes that if there is a deleted D in (109-a), then the deletion must take place post-syntactically but before morphology (Bartos, 1999, 2001b). The choice of the verbal paradigm is then made in the morphological component, in between syntax and phonology.

This solution is incompatible with the view of syntax advocated in this thesis. Nanosyntax does not have a separate morphological component, and so it cannot accommodate a post-syntactic pre-morphological space for operations like obliteration either.

In contrast to Bartos, I claim that there is a DP projection both in (109-a) and (109-b). Neither the D node itself, nor its phonological content undergoes deletion at any point in the derivation. D receives a spellout in both examples; in (109-a) it is spanned by *minden* and in (109-b) it is spelled out by the definite article. Therefore in my analysis the identical syntactic behaviour of *minden* and *-ik* quantifiers receives the same explanation.

Note that my analysis leads me to conclude that DP-hood is not a sufficient condition for definite object agreement to appear. Mostly independently of my considerations, Coppock and Wechsler (to appear) have reached the same conclusion. In Chapter 9 I will briefly revisit object agreement and argue that it is triggered by a feature that is part of some lexical items spelling out D (e.g. the definite article and *-ik* quantifiers) but it is missing from other lexical items spelling out D (for instance *minden* and first and second person personal pronouns). This will capture both the identical distribution of *minden* and other determiners and their difference with respect to the kind of object agreement they induce. The presence of D is thus a necessary but not sufficient condition for definiteness agreement on the verb.

4.2.4 Extending the analysis to proper names

On the preceding pages I suggested that in addition to the definite article, non-inflecting demonstratives and some quantifiers may also lexicalize the D position in Hungarian. In this section I argue that some proper names also span up to D.

In argument positions, Hungarian proper names fall into three classes on the basis of their co-occurrence with the definite article. Proper names in the first class always co-occur with the definite article. Names of rivers, lakes, seas and mountains regularly fall into this group.

- (111) a Duna, az Állami Operaház, az Egyesült Államok, az Antarktisz, az Etna
the Danube, the National Operahouse, the United States, the Antarctica, the Etna

Proper names of the second class do not occur contiguous to the definite article. Names of cities and countries are typical members of this group.

- (112) *az Európa, *a Budapest, *a Magyarország
the Europe, the Budapest, the Hungary

The third class contains proper names that fall into class one for some speakers and class two for other speakers. Personal names are infamous representatives of this group: in colloquial Hungarian and many dialects they do take the article, but in Standard Hungarian they occur without it. Normative grammars treat (113) as ungrammatical (c.f. Bencédy et al., 1988, a university grammar for Hungarian language and literature majors), but in my Hungarian it is entirely felicitous (in fact, it sounds stilted without the article).²⁹

- (113) %a Szabó János, %a Szabó, %a János
the Szabó John, the Szabó, the John

Similar facts are well known from other languages as well, c.f. English **(the) Hague*, **(the) London*, or the Italian and German examples below.

- (114) a. (Il) Gianni mi ha telefonato.
(the) Gianni called me up.
b. La Callas / *Callas ha cantato.
the Callas / Callas sang
(Longobardi, 1994, p. 622., ex. 24. and 25.) Italian
- (115) %der Hans, die Karla
the Hans, the Karla German

That proper names have some inherent connection to D has been long recognized in the literature. Longobardi (1994) argues that in Romance proper names may undergo N to D movement, but this is not possible for common nouns. This idea has been adopted for Hungarian in particular by Bartos (1999), who suggests that Hungarian proper names that do not occur next to the definite article raise to D themselves. The same idea appears in É. Kiss (2002, 2005) as well: É. Kiss argues that proper names are DPs and that they move from N to D. Szabolcsi and Laczkó (1992) and Szabolcsi (1994) also incorporate a link between proper names and D into their theory. They claim that Hungarian proper names always have an underlying D, and depending on the type of the proper name, it may or may not appear on the surface.

I base my proposal on this widely accepted proper name – D connection and suggest that the basic difference between Hungarian proper names requiring and disallowing a contiguous article lies in the size of the lexical entries in question. Argument proper names must always be as big as DP.³⁰

²⁹In my dialect at least, the use of the definite article with personal names requires some personal familiarity with the referent. It is possible to use the article with personal acquaintances or contemporary dignitaries and celebrities but not with well-known historical figures.

³⁰I do not claim that this extends to common nouns. There is no reason to think that the subject of (i) is bigger than NumP.

- (i) Három katona vacsorázik.
three soldier dine
'Three soldiers are dining.'

Proper names requiring the contiguous article spell out only N, therefore the D position must be lexicalized separately. Proper names disallowing the contiguous article, on the other hand, span D themselves. This analysis is a variety of the definite description theory of proper names advocated in Geurts (1997); Elbourne (2005); Matushansky (2006b, 2008) and Ghomeshi and Massam (2009), among others.

The size of the lexical entry for personal names varies across speakers. In Standard Hungarian they spell out D, while in colloquial Hungarian and the relevant dialects they don't. If the relevant proper names span N and D, then we predict that an intervener that separates N from D will force the separate spellout of D and the obligatory appearance of the definite article. This prediction is borne out indeed. Proper names that cannot occur contiguously to the definite article require its presence when modified by an adjective, for instance.³¹

(116) *az Európa, *a Budapest, *a Magyarország
the Europe, the Budapest, the Hungary

(117) a. *(az) ókori Európa
the old-world Europe
b. *(a) szép Budapest
the beautiful Budapest
c. *(a) hagyománytiszteelő Magyarország
the tradition.respecting Hungary

(118) shows Standard/normative Hungarian judgments for personal names.

(118) a. (*a) Szabó János, (*a) Szabó, (*a) János
the Szabó John, the Szabó, the John
b. *(az) ügyes Szabó János / Szabó / János
the skillful Szabó John / Szabó / John
c. *(az) én János-om
the I John-poss.1sg
'my John'

(119) demonstrates the disruption effect of participial relatives on proper names.

(119) a. (*a) Francis Ford Coppola
the Francis Ford Coppola
b. *(az) Oscar díj-jal jutalmazott Francis Ford Coppola
the Oscar prize-COMIT rewarded Francis Ford Coppola
'Oscar winner Francis Ford Coppola'

The same phenomenon can be observed in English, too (and according to Matushansky, 2006b also in French, Hebrew and Dutch).

The proposal is that in (117) and (118-b) the head introducing the adjective separates D from N,^{32,33} in (118-c) the intervener is Poss2, while in (119-b) the intervener is the head introducing the

³¹This fact has been pointed out in numerous works, including but not limited to Kornai (1985, 1989); Bencédy et al. (1988); Szabolcsi and Laczkó (1992); Bartos (1999); É. Kiss (2005).

³²Recall that we have already seen a similar phenomenon in connection with classifiers in Chapter 3. The relevant contrast is between (i) and (ii), where *darab* spans Cl and Num and the adjective merged between these two positions acts as an intervener.

- | | | | | |
|------|----|---|----|--|
| (i) | a. | *egy darab fej lila hagyma one CL _{generic} CL _{head} purple onion 'a purple onion' | b. | *egy darab szem norvég krumpli one CL _{generic} CL _{eye} Norwegian potato 'one Norwegian potato' |
| (ii) | a. | ?egy darab nagy fej hagyma one CL _{generic} big CL _{head} onion 'a big onion' | b. | ?egy darab nagy szem krumpli one CL _{generic} big CL _{eye} potato 'one big potato' |

³³In analyses employing N to D movement it is suggested that the adjective blocks the movement, c.f. É. Kiss (2005). As adjectives are mostly taken to be phrasal, in these analyses, too, it should be the adjectival head rather

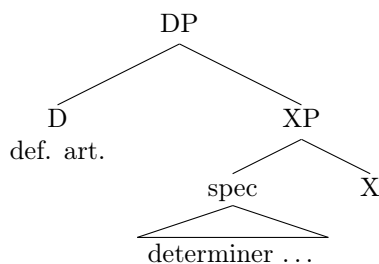
participial relative (pRelCl). That is, this is exactly the same phenomenon that we have seen for non-inflecting demonstratives and spanning quantifiers (except for adjectives, which are generated lower than quantifiers and non-inflecting demonstratives and therefore cannot act as interveners between these and D).

4.2.5 Revisiting haplology vs. spanning

In the preceding sections I argued against Szabolcsi's haplology analysis of article deletion in Hungarian and I suggested that the pattern is best described in terms of spanning. Specifically, I proposed that Hungarian has multiple lexical items that can lexicalize the D position and the use of these lexical items yields the apparent deletion of the article under the right circumstances. The pertinent lexical items include non-inflecting demonstratives, certain quantifiers and some proper names.

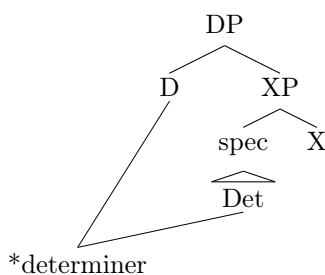
In several cases the haplology account and the spanning analysis can capture the data with equal ease. However, there is one scenario in which they yield radically different predictions. The relevant examples include a determiner in specifier position that ends up string-adjacent to the definite article.

(120)



As haplology is a surfacy phonological rule without regard to structural composition, it predicts that in (120) the article does not appear on the surface. Spanning, on the other hand, predicts that (120) will contain an adjacent article and determiner, as the heads they spell out are not adjacent on the main projection line.

(121) wrong lexicalization

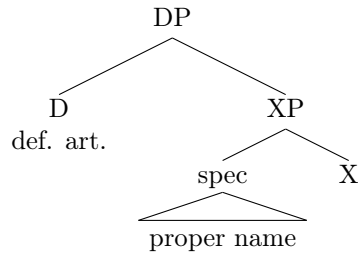


We have already seen that non-inflecting demonstratives and proper names are on the same projection line as D, and thus a spanning account can naturally capture their article-deleting effect. We have also seen that quantifiers are in specifiers and thus they yield precisely the configuration in (121). A spanning approach thus needs to say something additional about them. I suggested that in this case it is the null head spelling out Q that spans the D position, and thus the behaviour of non-inflecting demonstratives, certain proper names and the relevant quantifiers can be unified and captured in a uniform fashion.

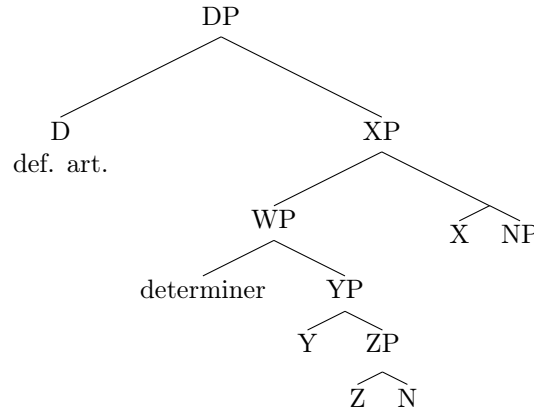
To make the picture complete, however, we should also examine proper names embedded in specifiers as well as quantifiers embedded inside specifiers, i.e. cases like (122) and (123).

than the adjective itself that blocks movement. In analyses that treat adjectives as adjuncts, this blocking effect is entirely unexpected.

(122)



(123)



Structures like (122) and (123) materialize with Nominative possessors as well as participial relatives headed by quantifiers. The relevant portion of the functional sequence is repeated below.

(124) DP > Poss2P > pRelClP > DemP > pRelClP > Q

Let us begin with Nominative possessors containing non-inflecting demonstratives, spanning quantifiers or proper names. We have already seen that non-pronominal Nominative possessors do not co-occur with the definite article. Under the assumption that all Nominative possessors are in spec, Poss2P or its equivalent, as in Szabolcsi (1994), the fact that the article is ungrammatical in (125) through (127) strongly supports the haplology approach over the spanning account.

(125) (*az) [eme fiú] barát-ja
 the this boy friend-POSS.3SG
 'this boy's friend'

(126) (*a) [minden fiú] barát-ja
 the every boy friend-POSS.3SG
 'every boy's friend'

(127) (*az) Európa vezető-je
 the Europe leader-POSS.3SG
 'Europe's leader'

There is good indication, however, that non-pronominal Nominative possessors (or certain parts of them) end up in the DP rather than in Poss2P with pronominal Nominative possessors. This conclusion has been argued for in both Bartos (1999) and É. Kiss (2002). Below I briefly summarize their arguments.

An intriguing characteristic of possessed noun phrases is that regardless of the definiteness of the possessor and the possessee, they always trigger definite object agreement on the verb. Bartos (1999) argues that only DPs can trigger definite object agreement, thus possessive constructions must be as big as DP. That the Nominative possessor's surface position is in the DP layer is supported the Bartos' observation that Nominative possessors determine what kind of operator positions the whole DP can(not) occupy in the clause. As is well known, the Hungarian preverbal field contains three zones: a topic, a (distributive) quantifier and a focus/predicate operator zone (É. Kiss, 1994; Szabolcsi, 1997; Csirmaz and Szabolcsi, in press, among others). The asterisk in (128) marks iterable phrases.

(128) Topic* > Distributive Quantifier* > Focus/predicate operator

As shown in Bartos (1999), when the Nominative possessor's leftmost element is a numeral or quantifier, then it is the numeral or quantifier that determines in which preverbal zone the whole nominal phrase can appear in. Observe the parallels between the a) and the b) sentences. (In the examples below, particle > verb order means lack of focus, while verb > particle order means the presence of focus. The b) examples feature the verb with definite object agreement.) NumPs can be either topicalized or focused, and so can possessive constructions with a NumP possessor (129).

- (129) a. [Tíz feltaláló-t] meg-látogat / látogat meg.
 ten inventor-ACC PRT-visit / visit PRT
 'He visits ten inventors.'
 b. [Tíz feltaláló főnök-é-t] meg-látogat-ja / látogat-ja meg.
 ten inventor boss-POSS.3SG-ACC PRT-visit-DEF.3SG / visit-DEF.3SG PRT
 'He visits ten inventors' bosses.'

Noun phrases quantified by *kevés* 'few' must be focused, and so must possessive constructions in which the possessor is quantified by *kevés*.

- (130) a. [Kevés feltaláló-t] látogat meg / *meg-látogat.
 few inventor-ACC visit PRT / *PRT-visit
 'He visits few inventors.'
 b. [Kevés feltaláló főnök-é-t] látogat-ja meg / *meg-látogat-ja.
 few inventor boss-POSS.3SG-ACC visit-DEF.3SG PRT / *PRT-visit-DEF.3SG
 'He visits few inventors' bosses.'

Finally, noun phrases quantified by *minden* 'every' cannot be focused, and neither can possessive constructions in which the possessor is quantified by *minden*.

- (131) a. [Minden feltaláló-t] meg-látogat / *látogat meg.
 every inventor-ACC PRT-visit / *visit PRT
 'He visits every inventor.'
 b. [Minden feltaláló főnök-é-t] meg-látogat-ja / *látogat-ja meg.
 every inventor boss-POSS.3SG-ACC PRT-visit-DEF.3SG / *visit-DEF.3SG PRT
 'He visits every inventors' bosses.'

Recall that possessive constructions are DPs. If the numeral or quantifier is in spec, Poss2P, buried under the D layer, then their prominent role in the distribution of the DP remains mysterious. Bartos suggests that the numeral or quantifier in fact raises from inside the possessor phrase and merges into D. This accounts for the lack of the article and the fact that the numeral or quantifier plays a major role in the distribution of the nominal projection. Bartos further suggests that proper name possessors undergo the same raising to D, and this is why proper names that do not tolerate a contiguous article are not preceded by one in the Nominative possessor position either (c.f. (127) above).³⁴

(132) [_{DP} [_D numeral/quantifier_i [_{Poss2P} t_i+N [_{Poss2'} Poss2 ... possessee]]]]

(133) [_{DP} [_D proper name_i [_{Poss2P} t_i [_{Poss2'} Poss2 ... possessee]]]]

On the basis of entirely different considerations, É. Kiss (2002) also argues that non-pronominal Nominative possessors should be represented differently from pronominal ones. Pronominal and non-pronominal Nominative possessors have a different distribution with respect to inflecting demonstratives: while the former can co-occur with these demonstratives, the latter cannot. É. Kiss suggests that this is because non-pronominal nominative possessors compete with inflecting demonstratives for spec, DP. Pronominal possessors, on the other hand, are lower in the structure. The reason why Nominative possessors do not co-occur with the definite article is due to an economy constraint, from which inflecting demonstratives are exempt.

³⁴In (132) I use my own Poss2 label but the structural representation is faithful to that in Bartos (1999).

- (134) a. *ez-t a kisfiú barát-já-t
 this-ACC the boy friend-POSS.3SG-ACC
 ‘this friend of the boy’s’
 b. ?ez-t a te barát-od-at
 this-ACC the you friend-POSS.2SG-ACC
 ‘this friend of yours’

Differ as they may in the details of the analysis, Bartos (1999) and É. Kiss (2002) share the basic claim that the position of non-pronominal Nominative possessors is different from that of pronominal Nominative possessors, and that the former are tightly linked to the DP layer. Whichever analysis we adopt, the apparent problem for spanning in (135) to (137) dissolves.

- (135) (*az) [**eme** fiú] barát-ja
 the this boy friend-POSS.3SG
 ‘this boy’s friend’
 (136) (*a) [**minden** fiú] barát-ja
 the every boy friend-POSS.3SG
 ‘every boy’s friend’
 (137) (*az) **Európa** vezető-je
 the Europe leader-POSS.3SG
 ‘Europe’s leader’

In Bartos’ analysis, the bolded items undergo movement to D. In É. Kiss’ analysis the possessors are in spec, DP. In (137) the economy constraint accounts for the lack of the article, while in (135) and (136) the bolded items are not string-adjacent to D and thus do not fall under the purview of the haplology rule in the first place. Given that a commitment to Bartos’ or É. Kiss’ analysis is not necessary for my present purposes, I will not take a strong stand with regard to the exact representation of non-pronominal Nominative possessors. What is important for our purposes is that these possessors do not occupy exactly the same spec, Poss2 position as pronominal Nominative possessors do, and thus (135) through (137) can be accommodated into the spanning proposal advocated here.

Turning to non-finite relative clauses, we find that a determiner embedded in such a constituent can happily be string-adjacent to a definite article. This puts the haplology approach at an important disadvantage. Some Googled examples are provided in (138)–(139).

- (138) a [minden izm-ot át-mozg-at-ó] vízitorna
 the every muscle-ACC through-move-CAUS-ing water.exercise
 ‘The water exercise that moves all muscles’³⁵
 (139) Meg-talál-t-ák a [minden HD DVD és Blu-ray filmet dekódol-ó] kulcs-ot
 PRT-find-PAST-3PL the every HD DVD and Blu-ray film-ACC decode-ing key-ACC
 ‘The key that decodes every HD DVD and Blu-ray film has been found’³⁶

(138)–(139) both feature the quantifier *minden* ‘every’, but they would be equally grammatical with the spanning quantifier *valamennyi* ‘each’, with *-ik* quantifiers and with a non-inflecting demonstrative as well. C.f.:

- (140) a [valamennyi izm-ot át-mozg-at-ó] vízitorna
 the each muscle-ACC through-move-CAUS-ing water.exercise
 ‘the water exercise that moves each muscle’

³⁵<http://www.nana.hu/test-es-lelek/fitnessz/aquafitnessz-a-minden-izm-ot-atmozgato-vizitorna-19043.html>, accessed 09. 11. 2010

³⁶http://webcache.googleusercontent.com/search?q=cache:P-NddUK4Oe0J:blog.xorp.hu/megtalaltak-a-minden-hd-dvd-es-blu-ray-filmet-dekodolo-kulcsot+%22a+minden%22&cd=39&hl=no&ct=clnk&gl=no&lr=lang_hu%7Clang_no, accessed 09. 11. 2010

- (141) a [mindegyik izm-ot át-mozg-at-ó] vízitorna
 the every muscle-ACC through-move-CAUS-ing water.exercise
 ‘the water exercise that moves every muscle’
- (142) a [némelyik izm-ot túlságosan igény-be vevő] vízitorna
 the some muscle-ACC overly service-ILLAT taking water.exercise
 ‘the water exercise that unduly presses some muscles into service’
- (143) az [ezen/eme izm-ok-at jól át-mozg-at-ó] vízitorna
 the this/this muscle-PL-ACC well through-move-CAUS-ing water.exercise
 ‘the water exercise that extensively uses these muscles’

Proper names that reject an adjacent article can also be string-adjacent to the article when embedded in a participial relative, c.f. (144):

- (144) az [Európa egész terület-é-n meg-talál-hat-ó] növény-faj-ok
 the Europe whole area-POSS-SUP PRT-find-POT-PRTCP plant-species-PL
 ‘the plant species that can be found all over Europe’

Szabolcsi (1994) is also aware of this pattern, and in fn. 13. she states that the haplology rule needs to be refined to accommodate such examples but she does not provide the refined rule or state how to capture the pattern in a non-stipulative way. While there is no doubt that the haplology rule could be modified to capture the above data, it is important to emphasize that the refined rule would somehow state that determiners embedded in participial relatives do not count for haplology, and thus it would make recourse to a structural rather than a linear property of these elements.³⁷ (138)–(144) thus clearly support a structural approach to article deletion.

The final piece of data that I will consider here involves a participial relative headed by a definite article. If such a relative is embedded in a noun phrase that has its own definite article then the two article positions end up being adjacent on the surface. Schematically:

- (145) def. art. [_{pRelCl} def. art ...] N

Based on (138)–(144), we might expect that this configuration yields two articles at PF, too. This expectation, however, is not borne out: only one article can be pronounced. C.f. (146) from É. Kiss (2002, p. 178.):

- (146) a művésznő-vel való beszélgetés
 the artist-COMIT being interview
 ‘the interview with the artist’

That (146) contains two Ds in the structure is evident by its meaning (both the interview and the artist are unique definite entities in the universe of discourse) as well as its variants in (147-a) (with the complement in postnominal position) and in (147-b) (with the complement extracted). In these examples both articles are obligatorily present.

- (147) a. a beszélgetés a művésznő-vel
 the interview the artist-COMIT
 ‘the interview with the artist’
 b. ?[A beszélgetés t_i] nagyon tetsz-ett a művésznő-vel_i.
 the interview very.much please-PAST the artist-COMIT
 ‘The interview with the artist pleased me very much.’
 (É. Kiss, 2002, p. 178., ex. 62. a.)

Thus even though it is not possible to pronounce two articles in (146), the structure of this example corresponds to (148).

³⁷C.f. Szabolcsi and Laczkó (1992, p. 230.), where it is explicitly stated that it is the deeper position of the determiner that makes these cases grammatical (though it is left unexplained how or why).

- (148) ✱ [p_{RelCl} a művész_{COMIT}-vel való] beszélgetés
 the the artist-COMIT being interview
 ‘the interview with the artist’

There is no way to capture this fact with spanning; the only sensible interpretation of the data is that one of the articles is deleted by haplology. At first blush, this appears to make superfluous the whole enterprise of capturing article deletion with spanning. If we cannot do without haplology in (148), then why not use it elsewhere too? The spanning proposal advocated here can be reasonably entertained only if (148) can be shown to be sufficiently different from the other article deletion cases.

It turns out that (148) is indeed different from the other deletion cases discussed in this chapter. The observation is very simple: (148) features two identical lexical items next to each other, while in the cases where I claim spanning is going on the deletion is triggered by a non-identical lexical item. As haplology generally deletes identical strings, it is possible to rule out the two articles in (148) by haplology and maintain the spanning account for determiners proper.

This approach is supported by the fact that an identical article haplology rule, in fact, characterizes English as well. C.f. (150), modeled on examples in Gloston (1995):

- (149) a. The video of *Sherlock Holmes*.
 b. The *Sherlock Holmes* video.
- (150) a. The video of *The girl with the dragon tattoo*.
 b. *The *The girl with the dragon tattoo* video.

I suggest that the rule against adjacent definite articles in Hungarian is a syntactic OCP effect. In other words, it is a special instance of what has been commonly called ‘Identity Avoidance’, ‘Antihomophony’ or ‘Repeated Morph Constraint’ (c.f. Menn and MacWhinney, 1984; Gloston, 1995; Grimshaw, 1997a; Yip, 1998; Plag, 1998; Ackema, 2001; Neeleman and van de Koot, 2006; Riemsdijk, 2008 for relevant discussion).

Identity avoidance is mostly known to be triggered by phonological identity. Ackema (2001) and Neeleman and van de Koot (2006), however, argue for the existence of syntactic haplology as well. In syntactic haplology, it is the adjacency of identical syntactic features rather than the adjacency of identical phonology that is subject to the Repeated Morph Constraint (see also Grimshaw, 1997a). Neeleman and van de Koot (2006) document cases in which identical content with dissimilar phonology gives rise to an application of haplology. As already pointed out by Ortman and Popescu (2001), the Hungarian article deletion is sensitive to the content rather than the phonology of *a(z)*: an *az a(z)* sequence is perfectly grammatical if the first *az* is a demonstrative and the second is the definite article.

- (151) az az ember
 that the person
 ‘that person’

Therefore the Hungarian article deletion must be an instance of syntactic haplology. Neeleman and van de Koot (2006) also survey the strategies that languages recruit in order to comply with the Repeated Morph Constraint. Deletion of one of the identical segments, as in Hungarian, turns out to be a common strategy.³⁸ Note that if something intervenes between the two articles, both

³⁸Ancient Greek features a restriction against a string of identical articles similar to the one we see in Hungarian (and English). Ancient Greek has two constructions for possessives: a center-embedded construction, with the possessor appearing between the possessee and the possessee’s article (i), and a postposed construction, with the possessor following the possessee (ii).

(i) [h-ee [t-ón leg-ónt-oon] tólm-a]
 the-NOM.FEM the-GEN.MASC.PL speak-ing-GEN.MASC.PL courage-NOM.FEM
 ‘the courage of those speaking’ (Gloston, 1995, p. 353., ex. 31. b.)

(ii) [h-ee tólm-a] [t-ón leg-ónt-oon]
 the-NOM.FEM courage-NOM.FEM the-GEN.MASC.PL speak-ing-GEN.MASC.PL
 ‘the courage of those speaking’ (Gloston, 1995, p. 353., ex. 31. a.)

of them appear on the surface. (152) reflects the judgment of Alberti and Balogh (2004), I find this sentence entirely felicitous.

- (152) [?]Elintéz-em a [sajnos a legjobb barát-om-at is érintő]
 take.care.1SG the unfortunately the best friend-POSS.1SG-ACC too concerning
 ügy-et.
 case-ACC
 ‘I take care of the case that unfortunately also concerns my best friend.’
 (Alberti and Balogh, 2004, ex. 13.)

To conclude, I concur with É. Kiss (2002) that there is an article-related haplology rule in Hungarian, but it only applies to a string of two adjacent definite articles and not to article plus determiner sequences. The spanning account of non-inflecting demonstratives, certain quantifiers and proper names thus turns out to be entirely feasible; and in light of (138) – (144) it is superior to the across-the-board application of haplology, too.

4.2.6 The article that wouldn’t go away

In the previous sections I discussed cases in which the definite article was expected to overtly surface in the noun phrase but it didn’t. Let us now turn our attention to cases in which its appearance is obligatorily triggered by another nominal modifier. The relevant modifiers are inflecting demonstratives and dative possessors. Inflecting demonstratives always appear with the definite article, and in definite possessive constructions so do dative possessors.³⁹ This is so even if the head noun is a proper name that otherwise cannot appear with the definite article (i.e. if it spans the D position).

- (153) a. (*a) Tromsø
 the Tromsø
 b. ez a Tromsø
 this the Tromsø
 ‘this Tromsø’
 c. *ez Tromsø
 this Tromsø
 intended: ‘this Tromsø’
- (154) a. (*a) Kína
 the China
 b. Maó-nak a Kíná-já-t
 Mao-DAT the China-POSS-ACC
 ‘Mao’s China’

As (i) shows, two adjacent non-homophonous articles are perfectly grammatical. However, center-embedding becomes consistently unavailable when it would result in adjacent homophonous articles.

- (iii) [t-ées arkh-ées] [t-ées pól-coos]
 the-GEN.FEM dominion-GEN.FEM the-GEN.FEM city-GEN.FEM
 ‘of the dominion of the city’ (Gloston, 1995, p. 353., ex. 34. a.)

- (iv) *[t-ées [t-ées pól-coos] arkh-ées]
 the-GEN.FEM the-GEN.FEM city-GEN.FEM dominion-GEN.FEM
 ‘of the dominion of the city’ (Gloston, 1995, p. 353., ex. 34. b.)

Ancient Greek

The OCP rules in Ancient Greek and Hungarian, however, use different strategies to avoid article repetition. Ancient Greek has an independently available alternative word order, which becomes obligatory in the relevant cases. Hungarian, on the other hand, PF-deletes one of the articles. It also appears to be the case the the Ancient Greek article deletion is sensitive to phonological rather than featural identity. I refer the reader to Gloston (1995) for a detailed exposition of the facts.

³⁹In possessive constructions, the article can be missing if the possessee is indefinite:

- (i) Láttam David Fincher-nek három film-jé-t.
 see-PAST.1SG David Fincher-DAT three movie-POSS-ACC
 ‘I saw three movies of David Fincher.’

- c. *Maó-nak Kíná-já-t
 Mao-DAT China-POSS-ACC
 ‘Mao’s China’ (Alberti and Balogh, 2004, ex. 3. d.)

The relevance of these cases for article haplogy was first pointed out in Alberti and Balogh (2004). They observe that (153) and (154) are problematic for Szabolcsi’s (1994) haplogy analysis, as the article ends up being adjacent with the proper name but it cannot undergo deletion. It is therefore a significant advantage of the current proposal that it correctly predicts the pattern in (153) and (154). I will discuss these examples in turn.

Let us begin with inflecting demonstratives. As already discussed in this chapter, the mainstream position is that inflecting demonstratives are base-generated in their surface position, that is, in spec, DP. It is only Ihsane and Puskás (2001) and the present proposal that argue for the surface position being a derived one. The idea that inflecting demonstratives are merged lower and reach their surface position via movement turns out to be crucial in the explanation of (153).

In the beginning of this chapter I proposed that inflecting demonstratives are base-generated in spec, DemP, and they subsequently raise to spec, DP. Consequently, every noun phrase containing an inflecting demonstrative also contains a Dem head.

$$(155) \quad [_{DP} \text{infl. dem. } [_{D'} D [_{DemP} t_{infl.dem} [_{Dem'} Dem [\dots N]]]]]]]$$

Proper names do not have an indexical meaning component, they do not express either the proximal or the distal variety of the Dem head. This means that proper names do not spell out Dem⁰. This immediately derives (153): the Dem head acts as an intervener between N and D, and forces these two positions to be spelled out by two separate morphemes.

So far I motivated the raising approach to inflecting demonstratives on semantic grounds only. The argument was that specific interpretations are tied to specific projections in the phrase marker, and if a constituent is interpreted as a demonstrative, it must have passed through spec, DemP. The pattern in (153) provides syntactic evidence for the correctness of this position. Thus again, we see how a lexicalization algorithm may have an impact on how we set up the functional sequence: spanning helps to detect traces.

Let us now turn to dative possessors. On the model advocated here, the pattern in (154) is most naturally captured in the same way as (153): the article appears overtly due to an intervening head. As (154) is a possessive construction, it necessarily contains such a head. As I will explain in detail in Chapter 7, possessive constructions are built with the help of PossP. PossP is situated right above nP; its head is spelled out overtly by the possessedness suffix *-ja/-je/-a/-e* (glossed as POSS), and its specifier hosts possessors themselves in the beginning of the derivation.

$$(156) \quad [_{DP} D \dots [_{PossP} \text{possessor } [_{Poss'} Poss (-ja/-je/-a/-e) [\dots N]]]]]]$$

Proper names do not have a possessive meaning component, thus they are not exponents of the Poss head. This is corroborated by the fact that the Poss head has its own spellout. (In example (154), POSS is fused with first person singular possessive agreement and has the form *-om*.) This, in turn, means that the presence of the Poss head in possessive constructions causes a disruption effect. It prevents proper names from spanning N and D, thereby it results in the separate lexicalization of N and D.

In conclusion, the pattern in (153) and (154) provides one of the subtlest and most relevant sources of evidence in favour of the whole approach presented here.

4.3 Summary

Let us recapitulate the main points of this chapter. I showed that the functional sequence of the DP between numerals and case markers contains quantifiers, participial relatives, Nominative and Dative possessors, inflecting and non-inflecting demonstratives as well as the definite article in the following order:

$$(157) \quad \text{dat. poss} > \text{infl. dem.} > \text{def. art.} > \text{nom. poss.} > \text{part. rel.} > \text{infl. dem.} > \text{part. rel.} \\ > \text{quantifier}$$

I argued that these constituents provide evidence for the functional sequence in (158).

(158) DP > Poss2P > pRelCIP > DemP > pRelCIP > QP > NumP > pRelCIP

In this bit of the functional sequence, too, there reside elements that instantiate the lexicalization problem. Non-inflecting demonstratives, some quantifiers and proper names may appear on their own, without the definite article. In this case they appear to be the source of definiteness themselves, and appear to be in D(P) on the surface. Under the right circumstances, however, they co-occur with the definite article. In this case the article is the contributor of definiteness, and non-inflecting demonstratives, some quantifiers and proper names appear lower than D. These alternations don't affect the shape of the lexical items involved. I argued that the Superset Principle offers a genuine insight into how these alternations happen; it provides constrained theory of the way such polysemy can arise.

The way structure and lexicalization interact in the higher portion of the Hungarian DP supports a non-terminal approach to spellout. The well-known observation that an intervener forces determiners and proper names to co-occur with the article receives a natural account in terms of spanning. The unified analysis of intervention phenomena also offered an insight into the representation of participial relatives, for which we had no clear clues otherwise.

Finally, in a detailed comparison of Szabolcsi's haplology analysis and my spanning proposal I concluded in line with É. Kiss (2002) that haplology does play a role at PF, but its role is much more limited than suggested in Szabolcsi (1994). In particular, haplology comes into play only when two definite articles end up being adjacent in the DP. All the other cases of apparent article deletion were given a principled structural account.

- (6) a. az-ok mellett a ház-ak mellett
 that-PL next.to the house-PL next.to
 ‘next to those houses’
 b. *az-ok a ház-ak mellett
 that-PL the house-PL next.to
 ‘next to those houses’

K and P thus especially strongly interact in Hungarian: one group of Ps select for cases and the other group of Ps behave like cases.

This pattern raises two fundamental questions: i) what is the relation between K and P, and ii) how to characterize the dressed versus naked P divide. The aim of this chapter is to solve these two mysteries (which, I will argue, are tightly linked to the lexicalization problem) and to shed light on some theoretical issues pertaining to case markers and adpositions.

The chapter is structured as follows. The rest of Section 1 is devoted to the inventory of case markers and Ps in Hungarian. Section 5.2 lays out the distribution of dressed and naked Ps. In Section 5.3 I propose a Nanosyntactic account of the observed patterns. Section 5.4 shows how the analysis captures the distributional differences and similarities between the two types of Ps. In Section 5.5 I turn to the nature of the relationship between P and K and refine the analysis. Finally Section 5.6 rounds off the chapter.

5.1.1 The inventory of Hungarian case markers

Hungarian has a rich inventory of nominal suffixes. Which of these suffixes are case markers is a question that to date has not received a consensual answer in the literature. According to the strictest counts, there are 16 cases excluding the phonologically zero Nominative (Payne and Chisarik, 2000) or 17 cases including the Nominative (Antal, 1961; Kornai, 1986). Depending on how casemarkerhood is defined, other authors identify up to 30 case markers in the language.

For the purposes of this chapter, nothing crucial hinges on the exact number of case suffixes. The main contribution of this chapter is the novel analysis of the distribution of postpositions in Section 5.3, therefore I will not enter into a discussion of what is a case marker in Hungarian. (The case markers selected by adpositions are included even in the most restrictive lists of cases and their status as cases has not been debated, c.f. Antal, 1961; Kornai, 1986; Payne and Chisarik, 2000; Kiefer, 2006.)

For the sake of explicitness, and the reader’s convenience, however, I include here the definition of case markers from Payne and Chisarik (2000). Payne and Chisarik suggest that a nominal suffix is a case marker if it can mark noun phrases with a full range of determiners and premodifiers; and it is stranded in noun phrase ellipsis and attaches to the linearly last (originally prenominal) modifier.² The suffixes that satisfy these criteria are given in table 5.1. For the sake of completeness, I have added Nominative to Payne and Chisarik’s list.

²This property of noun phrase ellipsis has been already discussed in Chapter 3 and will not be elaborated on here.

| Name of case | spell-out | meaning |
|--------------|--------------|----------------------------|
| Nominative | -∅ | subject |
| Accusative | -t | object |
| Dative | -nak/nek | possessor, goal, recipient |
| Instrumental | -val/vel | with, instrument/companion |
| Illative | -ba/be | to interior |
| Inessive | -ban/ben | at interior |
| Elicative | -ból/ből | from interior |
| Subative | -ra/re | to exterior |
| Superessive | -on/en/ön | at exterior |
| Delative | -ról/ről | from interior |
| Allative | -hoz/hez/höz | to proximity |
| Adessive | -nál/nél | at proximity |
| Ablative | -től/től | from proximity |
| Causal | -ért | for the sake of |
| Terminative | -ig | until, as far as |
| Translative | -vá/vé | into (change of state) |
| Temporal | -kor | at (temporal only) |

Table 5.1: Hungarian case markers

Genitive case is conspicuous by its absence in table 5.1. Hungarian uses Dative case in many instances where Genitive would be expected, for instance on possessors, and the consensual view is that Hungarian lacks Genitive case altogether. In Chapter 8, however, I am going to argue that the so-called possessive anaphor *-é* is the Genitive case marker, in fact (c.f. also Bartos, 2001a).

5.1.2 The inventory of Hungarian postpositions

As already mentioned before, Hungarian has two classes of adpositions: dressed Ps have complements without visible case and naked Ps have oblique complements.

- (7) a ház előtt
the house in.front.of
‘in front of the house’ dressed P
- (8) a ház-on keresztül
the house-SUP through
‘through the house’ naked P

The terms ‘dressed P’ and ‘naked P’ come from Marác (1986) and were meant to suggest that dressed Ps have something that naked Ps don’t. Hungarian postpositions agree with pronominal DP-complements. Marác’s original observation is that with dressed Ps the agreement is suffixed to the postposition itself, while with naked Ps the agreement is suffixed to the case-marker (leaving the P agreementless, or naked). I will use these labels because they are well-known in the literature on Hungarian PPs. In addition, these terms are appropriate for my analysis, too, as I will suggest that dressed Ps have a K feature that naked Ps do not. That is, one can think of dressed Ps as ‘wearing’ a K feature as an additional garment in addition to what naked Ps have.

The two types of postpositions are listed in tables 5.2 and 5.3.³ Note that postpositions are not partitioned into the dressed and naked classes based on their semantics. One finds Place-denoting, Path-denoting and non-spatial postpositions in both groups. Hungarian is thus different from German, for instance, where the choice of case correlates with the Place/Path distinction (Dative case goes with Place and Accusative case goes with Path).

³The list has been compiled on the basis of Kenesei et al. (1997) and Asbury (2008a), the former claims to be near-exhaustive. I have modified the glosses to reflect the three-way distinction of *at*, *to* and *from* marked postpositions. The reason for shading some of the rows in both tables will be clarified later on.

| postposition | meaning | case | agreement with pronouns |
|------------------|-----------------------|--------------|---------------------------------|
| <i>alul</i> | below | superessive | doesn't co-occur with a pronoun |
| <i>belül</i> | inside of | superessive | doesn't co-occur with a pronoun |
| <i>felül</i> | over | superessive | doesn't co-occur with a pronoun |
| <i>innen</i> | on this side of | superessive | doesn't co-occur with a pronoun |
| <i>kívül-re</i> | outside-to, beside-to | superessive | doesn't co-occur with a pronoun |
| <i>kívül-ről</i> | outside-from | superessive | doesn't co-occur with a pronoun |
| <i>túl-ra</i> | beyond-to | superessive | doesn't co-occur with a pronoun |
| <i>túl-ről</i> | beyond-from | superessive | doesn't co-occur with a pronoun |
| <i>(fogva)</i> | as a result of | adessive | doesn't co-occur with a pronoun |
| <i>(fogva)</i> | from (time) | ablative | doesn't co-occur with a pronoun |
| <i>(kezdve)</i> | beginning from | ablative | doesn't co-occur with a pronoun |
| <i>(kivéve)</i> | except for | accusative | yes, on the case-marker |
| <i>(nézve)</i> | regarding | sublative | yes, on the case-marker |
| <i>át</i> | through, across | superessive | yes, on the case-marker |
| <i>együtt</i> | together | instrumental | yes, on the case-marker |
| <i>hasonlóan</i> | similarly to | allative | yes, on the case-marker |
| <i>képest</i> | compared to | allative | yes, on the case-marker |
| <i>keresztül</i> | through | superessive | yes, on the case-marker |
| <i>kívül</i> | outside, beside | superessive | yes, on the case-marker |
| <i>közel</i> | close to | allative | yes, on the case-marker |
| <i>szembe</i> | opposite.to | instrumental | yes, on the case-marker |
| <i>szemben</i> | opposite.at | instrumental | yes, on the case-marker |
| <i>szemből</i> | opposite.from | instrumental | yes, on the case-marker |
| <i>szemközt</i> | opposite.at | instrumental | yes, on the case-marker |
| <i>túl</i> | beyond | superessive | yes, on the case-marker |
| <i>végig</i> | (along) to the end of | superessive | yes, on the case-marker |

Table 5.2: Naked postpositions

| postposition | meaning | agreement with pronouns |
|----------------------|--------------------------|-------------------------|
| <i>alatt</i> | under.at | yes, on the P |
| <i>alá</i> | under.to | yes, on the P |
| <i>alól</i> | under.from | yes, on the P |
| <i>előtt</i> | in.front.of.at | yes, on the P |
| <i>elé</i> | in.front.of.to | yes, on the P |
| <i>elől</i> | in.front.of.from | yes, on the P |
| <i>felett/fölött</i> | above.at, over.at | yes, on the P |
| <i>föle</i> | above.to, over.to | yes, on the P |
| <i>fölül</i> | above.from, over.from | yes, on the P |
| <i>köré</i> | around.to | yes, on the P |
| <i>körül</i> | around.at | yes, on the P |
| <i>között</i> | between.at, among.at | yes, on the P |
| <i>közé</i> | between.to, among.to | yes, on the P |
| <i>közül</i> | between.from, among.from | yes, on the P |
| <i>mellett</i> | near.at | yes, on the P |
| <i>mellé</i> | near.to | yes, on the P |
| <i>mellől</i> | near.from | yes, on the P |
| <i>mögött</i> | behind.at | yes, on the P |
| <i>mögé</i> | behind.to | yes, on the P |
| <i>mögül</i> | behind.from | yes, on the P |
| <i>felé</i> | towards | yes, on the P |
| <i>felől</i> | from the direction of | yes, on the P |
| <i>által</i> | by | yes, on the P |

| postposition | meaning | agreement with pronouns |
|--------------------|---------------------------------|--|
| <i>ellen</i> | against | yes, on the P |
| <i>helyett</i> | instead of | yes, on the P |
| <i>iránt</i> | towards | yes, on the P |
| <i>miatt</i> | because of | yes, on the P |
| <i>nélkül</i> | without | yes, on the P |
| <i>szerint</i> | according to, in the opinion of | yes, on the P |
| <i>után</i> | after | yes, on the P |
| <i>javára</i> | in favour of | yes, even with a lexical DP |
| <i>kedvéért</i> | for the sake of | yes, even with a lexical DP |
| <i>létére</i> | despite being | yes, even with a lexical DP |
| <i>részére</i> | for (DAT) | yes, even with a lexical DP |
| <i>révén</i> | through, by means of | yes, even with a lexical DP |
| <i>számára</i> | for (DAT) | yes, even with a lexical DP |
| <i>ellenére</i> | despite | doesn't co-occur with a pronoun |
| <i>esetén</i> | in case of | doesn't co-occur with a pronoun |
| <i>folytán</i> | as a consequence of | doesn't co-occur with a pronoun |
| <i>gyanánt</i> | as | doesn't co-occur with a pronoun |
| <i>múlva</i> | in, after (time) | doesn't co-occur with a pronoun |
| <i>nyomán</i> | based on | doesn't co-occur with a pronoun |
| <i>óta</i> | since (point of time) | doesn't co-occur with a pronoun |
| <i>során</i> | in the course of | doesn't co-occur with a pronoun |
| <i>tájban/tájt</i> | around (point in time) | doesn't co-occur with a pronoun |
| <i>útján</i> | by way of | doesn't co-occur with a pronoun |
| <i>végett</i> | with the aim of | co-occurs with a pronoun only in nonstandard Hungarian, then yes |

Table 5.3: Dressed postpositions

Let us now turn our attention to those items in table 5.2 that appear in the shaded rows. É. Kiss (1999, 2002) observe that these naked postpositions are derived from verbs by adding the *-va/-ve* suffix and argues that these are not true postpositions, but participles subcategorizing for case-marked nouns, in fact. I agree with her and exclude these items from the discussion.

This already leads to a significant simplification of the pattern. Above, naked Ps were defined as postpositions taking nouns in some oblique case. The only exception is *kivéve* ‘except for’, which takes an Accusative-marked complement. Now *kivéve* is transparently built up of the verbal particle *ki* ‘out’, the verb *vesz* ‘take’ and the participial suffix *-va*. Compositionally, this should give ‘taking X out (from the discussion)’, which is exactly what *except for* means. Naked Ps thus can be accurately defined as Ps taking oblique complements.

Antal (1961); É. Kiss (1999, 2002) and Trommer (2008) do not categorize the rest of the items in table 5.2 as postpositions either. É. Kiss (2002), for instance, treats them as adverbs instead. The arguments for not including naked Ps in the class of adpositions seem to be very strong at first. In particular, i) naked Ps can be separated from their complements by various movement operations while dressed Ps cannot, ii) naked Ps can be intransitive while dressed Ps cannot, and iii) dressed Ps bear agreement and copy onto demonstratives while naked Ps do not. However, contra Antal (1961); É. Kiss (2002) and Trommer (2008) I will argue that naked Ps are nevertheless true Ps. I will show that all the differences boil down to the size of the lexical items involved: dressed Ps spell out a larger piece of structure than naked Ps do. Consequently, I will place naked Ps inside an extended PP in syntax. Marác (1989, 1986, 1984); Payne and Chisarik (2000); Kádár (2009) also treat naked Ps as postpositions. For detailed arguments concerning the categorial identity of naked Ps and adpositions, see Kádár (2009) (she suggests that the label PP could be extended to adverbs in general); Asbury (2005); Asbury et al. (2007); Asbury (2008a,b) (she argues that naked Ps are categorially adpositions and that ‘adverb’ is a function rather than a category); and Hegedűs (2006, 2007) (she proposes that naked Ps originate in the Path head that also houses directional case-markers and dressed Ps).

5.2.2 Adjacency effects

Dressed Ps are inseparable from their complement, while naked Ps can appear discontinuous to their complement in various structures to be detailed below. Being affixes, case markers are inseparable from the DP they attach to, and thus in this respect pattern with dressed Ps.

Word order

Dressed Ps must follow their complement without exception. Some of the naked Ps, on the other hand, may also precede their complement. In this case they are interpreted contrastively and bear stress.

- (14) a. a tó mellett
the lake next.to
'next to the lake'
- b. *mellett a tó
next.to the lake
'next to the lake'
- (15) a. a mező-n keresztül
the field-SUP through
'through the field'
- b. keresztül a mező-n
through the field-SUP
'through the field'

Degree modification

Modification in PPs is generally restricted to degree-modifiers and measures. Such modifiers can never intervene between a dressed P and its complement. The modifier in this case has to precede the DP-P sequence. Some naked Ps, on the other hand, allow degree-modifiers to appear between the DP and the postposition.

- (16) a. *a tükör egészen mellett
the mirror wholly next.to
'right next to the mirror'
- b. egészen a tükör mellett
wholly the mirror next.to
'right next to the mirror'
- (17) a. az épület-en egészen kívül
the building-SUP wholly outside
'totally outside the building'
- b. egészen az épület-en kívül
wholly the building-SUP outside
'totally outside the building'

P-stranding with wh-movement

The complement of naked Ps can be extracted by wh-movement, leaving the postposition stranded. This is not possible with dressed Ps: the postposition must be pied-piped with the wh-element.

- (18) Mi- n_i ment-él t_i át?
what-SUP go.PAST-2SG through
'What did you go through?'
- (19) a. *Mi $_i$ ment-él t_i mögött?
what go.PAST-2SG behind
'What did you go behind?'
- b. Mi mögött ment-él?
what behind go.PAST-2SG
'What did you go behind?'

Transitivity

All dressed Ps must have a complement, but some naked Ps can be used intransitively, too. In this case they express a (spatial) relation with respect to a deictic center understood from the context: *here*, unless the context dictates otherwise.

- (20) a. A ház a tó előtt van.
the house the lake in.front.of be.3SG
'The house is in front of the lake.'
- b. *A ház előtt van.
the house in.front.of be.3SG
'The house is in front of'.⁵

⁵The sentence is grammatical with the irrelevant interpretation 'It is in front of the house', with a *pro* Figure and *the house* as the Ground complement of the P.

- (21) a. A hang a szobá-n kívül-ről jött.
 the sound the room-SUP outside.of-from come.PAST
 ‘The sound came from outside of the room.’
 b. A hang kívül-ről jött.
 the sound outside.of-from come.PAST
 ‘The sound came from outside.’

5.2.3 Morphological effects

Pronominal grounds and agreement in the PP

When postpositions take a pronominal complement, a person-number agreement marker must appear in the PP. Marácz (1986) made two observations about this agreement marker. Firstly, the agreement paradigm in PPs is identical to the agreement paradigm in possessives. Secondly, postpositions taking a complement without visible case bear agreement themselves, while in the case of postpositions taking an oblique complement the agreement is suffixed to the case-marker. The paradigm for possessives is given in (22), dressed and naked Ps with pronominal complements are shown in (23) and (24). In (24) SUP stands for Superessive (meaning *onto*), the case selected by the postposition *kívül* ‘outside of, apart from/besides’.⁶

(22) Possessive agreement paradigm

- | | |
|---|--|
| <p>a. ház-am house-POSS.1SG ‘my house’</p> <p>b. ház-ad house-POSS.2SG ‘your house’</p> <p>c. ház-a house-POSS.3SG ‘his house’</p> | <p>d. ház-unk house-POSS.1PL ‘our house’</p> <p>e. ház-atok house-POSS.2PL ‘your house’</p> <p>f. ház-uk house-POSS.3PL ‘their house’</p> |
|---|--|

(23) Dressed P with pronominal DP

- a. (én) alatt-**am**
(I) under-1SG
‘under me’
- b. (te) alatt-**ad**
(you) under-2SG
‘under you’
- c. (ő) alatt-**a**
(he) under-2SG
‘under him’
- d. (mi) alatt-**unk**
(we) under-1PL
‘under us’
- e. (ti) alatt-**atok**
(you) under-2PL
‘under you’
- f. (ő) alatt-**uk**
(he) under-3PL
‘under them’

(24) Naked P with pronominal DP

- a. (én) rajt-**am** kívül
(I) SUP-1SG outside.of
‘apart from me’
- b. (te) rajt-**ad** kívül
(you) SUP-2SG outside.of
‘apart from you’
- c. (ő) rajt-**a** kívül
(he) SUP-3SG outside.of
‘apart from him’
- d. (mi) rajt-**unk** kívül
(we) SUP-1PL outside.of
‘apart from us’
- e. (ti) rajt-**atok** kívül
(you) SUP-2PL outside.of
‘apart from you’
- f. (ő) rajt-**uk** kívül
(he) SUP-3PL outside.of
‘apart from them’

Person-number agreement also appears in the extended nominal projection when case markers take a pronominal complement. Case makers behave like dressed Ps and the case markers selected by

⁶As already mentioned and shown in (24), the personal pronoun is optionally overt. The Superessive case suffix *-ra/re* appears on personal pronouns as the allomorph *rajt-*.

naked Ps: they host the agreement marker and may appear without an overt personal pronoun.⁷

- | | | | | |
|------|----|---|----|---|
| (25) | a. | (én) rajt-am I SUP-1SG 'on me' | d. | (mi) rajt-unk we SUP-1PL 'on us' |
| | b. | (te) rajt-ad you SUP-2SG 'on you' | e. | (ti) rajt-atok you SUP-2PL 'on you' |
| | c. | (ő) rajt-a he SUP-3SG 'on him' | f. | (ők) rajt-uk he SUP-3PL 'on them' |

As already mentioned in Section 5.1.2, the distribution of the agreement marker has given rise to the names 'dressed' and 'naked' postpositions, and the place of the agreement marker has been treated as the definitive cut among postpositions in much work, for instance Marácz (1989); É. Kiss (2002); Hegedűs (2006) and Asbury (2008b). Asbury (2008b) even uses the terms inflecting and non-inflecting postpositions to refer to the two classes. However, I will argue that it is rather the case-marking on the complement that is the definitive cut, and the distribution of the two classes falls out from this property. Consequently in this thesis 'dressed' P should be understood as a P taking a complement without visible case, and 'naked' P should be understood as a P taking an oblique complement.

Demonstrative concord

As we have seen in Chapter 4, inflecting demonstratives must occur with the definite article, and must bear the same plural and case marking as the noun they modify.

- | | | | | |
|------|----|---------------------------------------|----|--|
| (26) | a. | ház-ak-at house-PL-ACC 'houses' | b. | az-ok-at a ház-ak-at that-PL-ACC the house-PL-ACC 'those houses' |
|------|----|---------------------------------------|----|--|

Dressed postpositions must also be copied onto the determiner, like case markers.

- (27) az-ok *(mellett) a ház-ak mellett
that-PL next.to the house-PL next.to
'next to those houses'

Note that in postnominal position adpositions are free morphemes, but in a postdemonstrative position only some of them are. Specifically, dressed Ps that begin with a consonant attach to the demonstrative like suffixes (when the demonstrative does not bear plural agreement). Observe (29), where the consonant of the postposition makes the consonant of the demonstrative go away, and the suffix-like attachment of the postposition is also reflected in the orthography.

- | | | | |
|------|---|------|---|
| (28) | az alatt a fa alatt that under the tree under 'under that tree' | (29) | amellett a fa mellett that.next.to the tree next.to 'next to that tree' |
|------|---|------|---|

⁷The pronoun can also be overt, as in (i). It has been repeatedly argued in the literature, however, that in case-inflected pronouns, the stem is not the pronoun but the case marker, and the pronoun stands in an appositive-like relation to the case marker (Bartos, 1999; Moravcsik, 2003). This analysis is supported by several considerations, among them the facts that the case marker does not show vowel harmony, which is otherwise obligatory (cf. *vén-nél* vs. **vén-nál* old.one-adess 'at the old one' as opposed to *én-nál-am* vs. **én-nél-em*) and that the *v* of the comitative case suffix *-val/vel* does not undergo assimilation to the preceding consonant, which is otherwise obligatory (c.f. *vén-nel* vs. **vén-vel* old.one-comit 'with the old one' as opposed to *én-vel-em* vs. **én-nel-em* I-comit-1sg 'with me'.)

- | | | | | | | |
|-----|----|-------------------------------------|----|--|----|--------------------------------------|
| (i) | a. | én-nál-am I-ADESS-1SG 'at me' | b. | te-től-ed you-ABLAT-2SG 'from you' | c. | ő-hozz-á he-ALLAT-3SG 'to him' |
|-----|----|-------------------------------------|----|--|----|--------------------------------------|

In contrast to dressed PPs, naked PPs cannot be copied onto the demonstrative.

- (30) *az-ok-hoz közel a ház-ak-hoz közel
 that-PL-ALLAT close.to the house-PL-ALLAT close.to
 ‘close to those houses’

Compare (30) with its grammatical version (31), in which only the Case-marker gets copied onto the demonstrative.⁸

- (31) az-ok-hoz a ház-ak-hoz közel
 that-PL-ALLAT the house-PL-ALLAT close.to
 ‘close to those houses’

5.2.4 Shared properties of postpositions

The foregoing discussion may give the impression that dressed PPs only share distributional characteristics with case markers. This is not the case, however. Dressed PPs also have properties that group them with naked PPs rather than cases. Backward and forward conjunction reduction, for instance, are possible with both dressed and naked PPs but not with case markers.

Backward conjunction reduction⁹

- (32) a. az asztal mögött és a szék mögött
 the table behind and the chair behind
 ‘behind the table and behind the chair’
 b. az asztal és a szék mögött
 the table and the chair behind
 ‘behind the table and the chair’
- (33) a. az asztal-on túl és a szék-en túl
 the table-sup beyond and the chair-sup beyond
 ‘beyond the table and beyond the chair’
 b. az asztal-on és a szék-en túl
 the table-SUP and the chair-SUP beyond
 ‘beyond the table and the chair’
- (34) a. az asztal-on és a szék-en
 the table-SUP and the chair-SUP
 ‘on the table and on the chair’
 b. *az asztal és a szék-en
 the table and the chair-SUP
 ‘on the table and on the chair’

⁸The literature sometimes makes the claim that the naked P *kívül* ‘outside of, apart from/besides’ can exceptionally copy onto demonstratives. In my idiolect this is highly marked and can only apply to the ‘apart from’ meaning of *kívül*, and never to the locative meaning *outside of*.

(i) ez-en kívül a ház-on kívül
 this-SUP besides the house-SUP besides
 ‘besides/apart from this house’
 NOT: ‘outside of this house’

⁹(32-a) and (32-b) mean slightly different things: (32-b) refers to a single space that is behind both the table and the chair. A similar difference exists between (34-a) and (34-b). Given the semantics, (32-b) and (34-b) are best viewed as DP conjunction under PP rather than a conjunction of two PPs plus conjunction reduction.

Forward conjunction reduction

- (35) a. az asztal mögött és az asztal előtt
the table behind and the table in.front.of
'behind the table and in front of the table'
b. az asztal mögött és előtt
the table behind and in.front.of
'behind and in front of the table'
- (36) a. az asztal-on innen és az asztal-on túl
the table-SUP on.this.side and the table-SUP beyond
'on this side of the table and beyond the table'
b. az asztal-on innen és túl
the table-SUP on.this.side and the beyond
'on this side of and beyond the table'
- (37) a. az asztal-on és az asztal-ra
the table-SUP and the table-SUBL
'on the table and onto the table'
b. *az asztal-on és -ra
the table-SUP and SUBL
'on the table and onto the table'

While (32) through (37) may be explained with the suffixal nature of case markers versus the free morpheme status of postpositions, some other tests also group the two kinds of Ps together to the exclusion of case markers. Both dressed and naked Ps with a Place or Source meaning can be turned into pre-nominal modifiers by the suffix *-i*. This is not possible for case marked nouns.

- (38) a ház mögött-i pad (39) a folyó-n túl-i ház
the house behind-i bench the river-SUP beyond-i house
'the bench behind the house' 'the house beyond the river'
- (40) *a ház-ban-i pad
the house-INESS-i bench
'the bench in(side) the house'

Further, both dressed and naked Ps with a Place denotation can be adorned with the Delative case marker (*-ról/ről* 'from exterior') or the Sublative case marker (*-ra/re* 'to the exterior') to yield Source or Goal expressions.¹⁰ On the other hand, Delative and Sublative cannot stack on top of Place denoting case markers.

- (41) a ház mögött-ről (42) a folyó-n túl-ról
the house behind-DELAT the river-SUP beyond-DELAT
'from behind the house' 'from beyond the river'
- (43) *a ház-ban-ról
the house-INESS-DELAT

Finally, in contrast to case markers, neither dressed nor naked Ps exhibit vowel harmony with the nominal stem.

¹⁰For dressed Ps this is a marked option, it is more common to use a postposition that expresses Goal or Source in itself, as in (i).

- (i) a ház mögül
the house behind-DELAT
'from behind the house'

Case marked forms like (41) cannot support a person-number (agreement) marker, and some speakers reject them altogether.

5.2.5 Interim summary

Let us briefly summarize the distribution of postpositions and case markers. Postpositions taking a complement without visible case must follow their complement and cannot be separated from it. They do not allow the intervention of degree-modification, P-stranding in *wh*-questions and cannot be used intransitively. They copy onto inflecting demonstratives and agree with a pronominal complement.

Postpositions taking an oblique complement do not copy onto the demonstrative and do not bear agreement with a pronominal complement. Some of them can also directly precede their complement and can be separated from it by a degree-modifier or P-stranding, and can be used intransitively. Being ‘naked’ is thus a necessary but not sufficient condition for being separable from the complement.

Case markers and dressed Ps share their syntactic properties, and their differences are all phonological or morphological in nature. Dressed Ps also have properties in common with naked Ps, and thus stand in the middle ground between cases and naked Ps.

The tri-partite division between dressed Ps, naked Ps and case markers has no correlation with the type of meaning expressed. We find spatial and non-spatial meanings in all three groups, and spatial meanings also come in Place, Goal Path and Source Path flavours in all three groups. The differences between dressed Ps, naked Ps and case markers thus cannot be sought in semantic terms; they rather have to be captured by the grammar.

| | cases | dressed Ps | naked Ps |
|-----------------------------------|-------|------------|-----------|
| visible case on the complement | N/A | — | OK |
| directly precede the noun | — | — | OK(some) |
| intervening degree-modification | — | — | OK(some) |
| stranding in <i>wh</i> -questions | — | — | OK(some) |
| used intransitively | — | — | OK(some) |
| copying on demonstrative | OK | OK | — |
| bear agreement | OK | OK | — |
| vowel harmony | OK | — | — |
| deletion under conjunction | — | OK | OK |
| modification by <i>-i</i> | — | OK | OK(some) |
| Sublative or Delative suffixation | — | OK(Place) | OK(Place) |

Table 5.4: Morphological and syntactic characteristics of the two types of Ps

An optimal analysis of these patterns links (the lack of) visible case on the DP to the (in)separability of the P and the DP; and it also captures the fact that dressed Ps have mixed case and P properties. In the following sections I attempt to outline a proposal that can do this. I will argue that the adjacency effects as well as the morphological effects fall out from the way the functional sequence is lexicalized by case markers and postpositions.

For the sake of simplicity, I will draw head-final trees to represent the head-finality of Hungarian PPs. In Chapter 10 I will return to the issue of how to linearize the functional sequence.

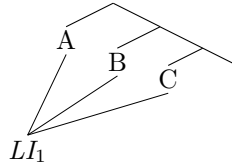
5.3 Lexicalizing the positions above D

5.3.1 Recapitulation: disruption effects and Underassociation

Although this has already been discussed in the previous chapters, I would like to briefly recapitulate how movement and base-generated interveners change the spell-out possibilities of syntactic structures. Suppose that a lexical item *LI* can span the features A, B and C. If these features are contiguous in the syntactic representation, then *LI* can spell them out at once, as in (45).

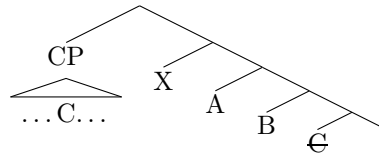
$$(44) \quad LI \Leftrightarrow \{A, B, C\}$$

(45)



If, however, movement or a base-generated intervener breaks the contiguity, then A, B and C will have to be spelled out by two different lexical items. (46) shows a movement scenario where C is separated from A and B and cannot be spelled out together with them.

(46)



How A, B and C are spelled out in a structure like (46) depends on what kind of vocabulary items are available in the language. Suppose that *LI* can Underassociate (i.e. not function as the exponent of) A and B but not C. Then it can shrink down to spell out C alone. Alternatively, if there is a lexical item that can spell out only C, then it is employed as the exponent of C. What happens to A and B? Again, this depends on the lexical items available in the language: they may be spelled out separately or together.

I have mentioned in the previous chapters that the empirical evidence tells us that lexical items spanning multiple terminals sometimes simply cannot underassociate some of their features (Svenonius, 2009; Starke, 2011). Consider now what happens in a structure like (46) if *LI* cannot Underassociate its highest and lowest features (in our example, A and C). This means that this lexical item is entirely unshrinkable and consequently the spellout of a structure like (46) cannot contain *LI* (it cannot spell out A, B and C at once but it cannot shrink down to C or A and B either).

In what follows I will argue that this is exactly what happens with dressed Ps. To anticipate the analysis, I will propose that dressed Ps spell out both case and P features, but they cannot shrink at all. Any kind of movement would separate their two features from each other, and thus yield a structure that cannot be lexicalized with a dressed P. As a result, these adpositions are always contiguous to their complement and cannot be separated from it.

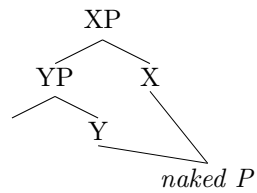
5.3.2 Dressed Ps span case, naked Ps don't

Recall that the consensual view of (spatial) case markers in the Hungarian literature is that they are suffixal P elements; and that along with many other authors, I take naked Ps to be true adpositions that occupy some projection in the extended PP. Taken together, this means that the PP must be decomposed into two layers, at the very least: a higher layer that is spelled out by naked Ps and a lower layer that is spelled out by the spatial case makers. I will label the layer spelled out by spatial case markers as KP, and the higher layer spelled out by naked Ps as PP. Their fine-grained decomposition and semantics will be thoroughly discussed in Section 5.5.

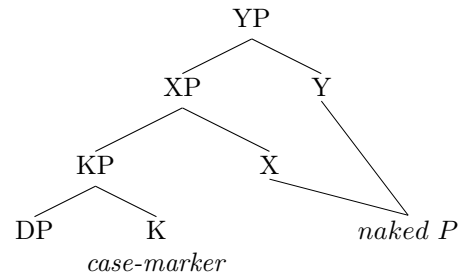
(47) $[[[DP \text{ a határ}]_{-on} \text{ }_{KP}] \text{ túl} \text{ }_{PP}]$
 the border-SUP beyond
 ‘beyond the border’

I suggest that the crucial difference between dressed and naked Ps is whether P and K are lexicalized by the same lexical item or not. Let us begin with naked Ps. These adpositions spell out some material above KP, inside PP, but they do not spell out KP. KP is spelled out by an independent morpheme, the case-marker. As there are Place, Path and non-spatial naked Ps as well, there must be variation among the individual naked postpositions as to how many and exactly which features they spell out in the P-domain. In the trees below, X and Y stand for any projection in the extended PP. These structures do not intend to suggest that naked Ps spell out exactly two features, this is merely a representational convenience.

(48) Lexical entry of a naked P



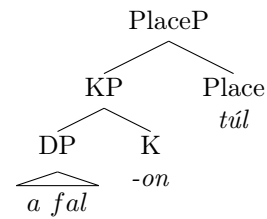
(49) PP with a naked P



A specific example:

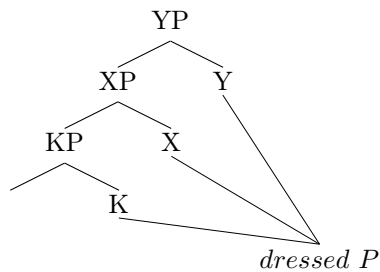
(50) a fal-on túl
the wall-SUP beyond
'beyond the wall'

(51)

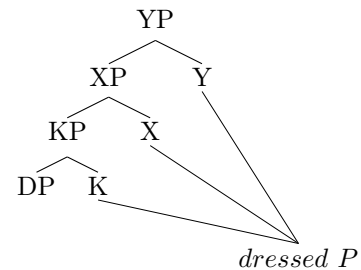


Let us turn to dressed postpositions. The complement of these postpositions does not bear morphologically visible case. This fact has been interpreted in the literature in two ways. Marácz (1986, 1989) suggest that these complements bear the morphologically null Nominative case, while É. Kiss (2002) and Asbury (2008b) argue that they are caseless. I propose that the feature shared by all dressed Ps, spatial and non-spatial, is that in addition to P, they spell out K as well.

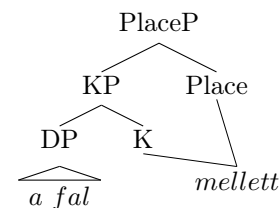
(52) Lexical entry of a dressed P



(53) PP with a dressed P



A specific example:

(54) a fal mellett
the wall next.to
'next to the wall'

This means that there is a K in the structure of dressed PPs, but that K is swallowed by the P, leaving the complement to be the spell-out of merely DP. This captures the intuitions of both Marácz on the one hand and É. Kiss and Asbury on the other. É. Kiss and Asbury are right in that there is no Nominative case layer in between the dressed P and its complement. However, Marácz is right in that there is a case-related syntactic projection in the representation of dressed PPs.

This proposal amounts to saying that the very same chunk of structure can be lexicalized in two ways: by a dressed P alone, or by a case marker plus naked P combination. Therefore here it is highly relevant that the effect of the Maximize Span economy principle can be obviated if a

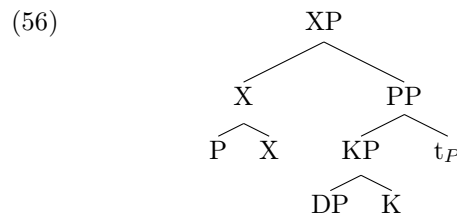
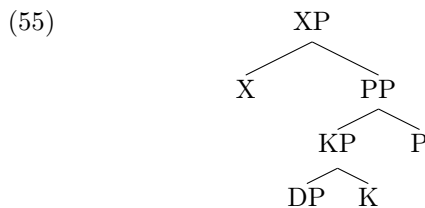
less economic lexicalization gives rise to a different meaning. Dressed Ps on the one hand and case marker plus naked P combinations on the other give rise to different meanings indeed. There are Place and Path denoting Ps in both classes, but each adposition adds a different lexical-conceptual meaning to the syntactic-grammatical features Place or Path, thus they all yield a different kind of Place or Path. For instance, dressed *között* ‘between’ and naked *szemben* + Comitative case ‘opposite to’ both project up to PlaceP and yield a place denotation, but the different lexical-conceptual meaning associated to these Ps guarantees that they do not compete with each other. It would not be possible to use a dressed P and get a PlaceP with the meaning ‘opposite to’, therefore dressed Ps don’t block *szemben* + Comitative case, or any other case marker plus naked P string.

5.4 Capturing the distribution via size

5.4.1 Accounting for the adjacency effects

Word order

Hungarian adpositions follow their complement in the neutral order. For dressed Ps this is the only available order. Some naked Ps can also precede their complement, and this non-neutral order is associated with emphasis on the postposition. Asbury (2008b) suggests that the P > KP order might be a result of movement of the P to a higher focus projection, while Hegedűs (2007) suggests that this order arises by movement of the P from Path to a higher *p* head. I capitalize on this idea and analyze the P > KP order as a result of P-movement. Such a movement thus targets a P-feature or P-features, but leaves P’s KP complement in situ. The structures before and after movement are schematized in (55) and (56) respectively. P stands for any feature in the extended PP.



Nanosyntax is a theory that uses post-syntactic spellout, the Lexicon is accessed only after the structure has been built. In light of this consider how (56) could be lexicalized. Dressed Ps are specified for spelling out both P and K. Theoretically, it should be possible for dressed Ps to shrink (via the Superset Principle) and spell out either P or K, leaving the other feature to be spelled out by some other lexical item. The empirical data, however, tell us that neither of these options is workable: it is not possible to separate dressed Ps from their complement. That is, dressed Ps must be unshrinkable lexical items. Since they cannot Underassociate either P or K, they can only be matched to a piece of structure in which these features are contiguous.

This is not the case in (56). Due to the movement the P-feature and K are not adjacent to each other (recall that only the highest copy of moved elements counts for spell-out purposes). This means that a representation like (56) cannot be matched to a dressed P, and so the P > KP order is ungrammatical.

(57) a tükör mellett
the mirror next.to
‘next to the mirror’

(58) *mellett a tükör
next.to the mirror
‘next to the mirror’

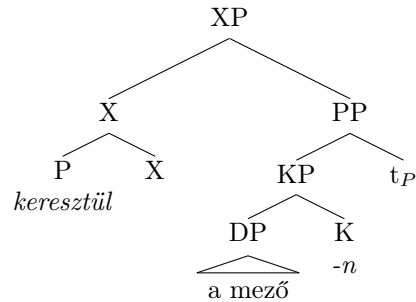
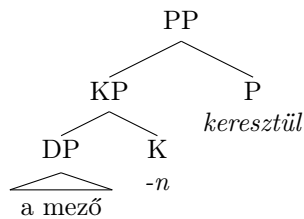
We thus see here a clear instance of the lexicalization algorithm and the lexical entry of a morpheme having an effect on word-order: movement scatters the features that could be co-lexicalized by a dressed P, and the dressed P cannot be used to lexicalize this structure.

The separation of P from K does not pose comparable problems for naked Ps, as in this case P and K are spelt out by different morphemes. In (56) P can be matched to the lexical entry of a naked P and K can be matched to the case-marker, just like when no movement takes place.¹¹

- (59) a mező-n keresztül
the field-SUP through
'through the field'

- (61) keresztül a mező-n
through the field-SUP
'through the field'

(60)



While in principle it is possible to analyze the P > KP order above as failure of KP to move instead of P-movement, there is a scenario that clearly involves movement of P away from KP. The relevant data involve adpositions functioning as verbal modifiers. The immediately preverbal position in Hungarian is called the verbal modifier position. This position is open to some naked Ps, as evidenced by (63), but not to any of the dressed Ps.

- (63) Mari keresztül-ment a mező-n.
Mary through-go.PAST.3SG the field-SUP
'Mary went through the field'

- (64) a. *Mari mellett-ment a tükör.
Mary next.to-go.PAST.3SG the mirror
'Mary went next to the mirror.'
b. Mari a tükör mellett ment.
Mary the mirror next.to go.PAST.3SG
'Mary went next to the mirror.'

Just as in (57)–(62), we see again that dressed Ps must follow their complement at all times but some naked Ps may also precede it. The analysis of (63) and (64-a) proceeds along the lines outlined above. P and K do not form a contiguous sequence after movement in either (63) or (64-a). This is a problem only for dressed Ps, however, as these must be matched to adjacent P and K features. (63) is ruled in because in this case P and K are spelled out by different morphemes.¹²

Degree modification

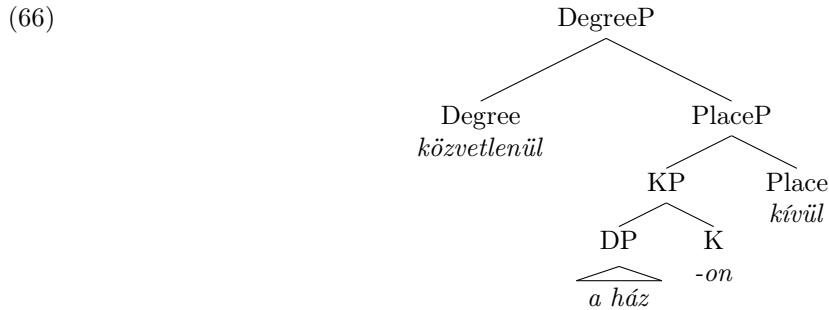
Degree modifiers have been argued to be harboured by a designated functional projection DegreeP in Koopman (2000); den Dikken (2010) and Svenonius (2008b, 2010). I will follow this line of thinking here. As already discussed, degree modifiers can always precede the DP. I take this to be the unmarked option which involves no movement. An example with a naked P is given below.

¹¹Given that Hungarian adpositions in a prenominal position give rise to a contrastive reading, in (62) I tentatively assume that XP is FocP. In (62) I depict this as head-movement of P to X (i.e. Foc). However, this is only a representational convenience. Whether this extraction is best characterized in terms of head movement or phrasal movement, it does not affect the argumentation. The point is that separating P from KP does not yield the right context for lexicalization by a dressed P.

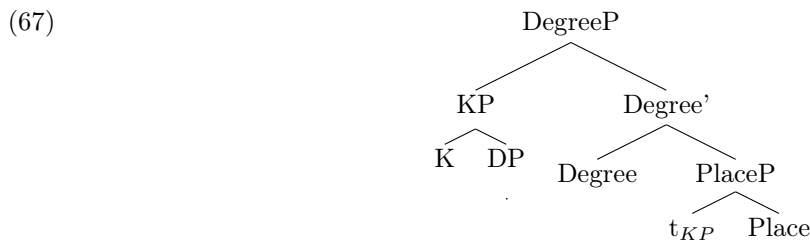
Note that adpositions in general do not give rise to a contrastive interpretation, therefore there is no Foc feature in their lexical representation. As a result, the movement in (62) could not be represented as one lexical item spanning both P and X.

¹²I will address the issue of why not all naked Ps allow the intervention of degree modification or can appear in the verbal modifier position in Section 5.4.4.

- (65) közvetlenül a ház-on kívül
 right the house-SUP outside.of
 ‘right outside of the house’

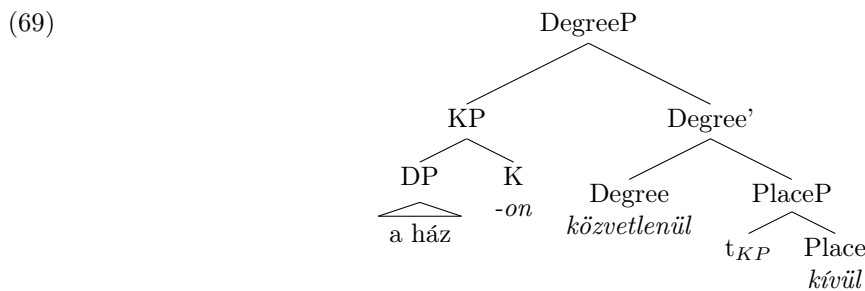


Structures in which the degree modifier intervenes between the postposition and the complement are derived by moving KP into the specifier of DegreeP, leaving the P-features behind. This gives the representation in (66).



Consider now how this structure can be lexicalized. In the case of naked Ps the P-feature and K are spelled out by different morphemes. Whether movement takes place or not, at post-syntactic spell-out it is possible to match K to the case-marker and the P-feature to the naked P (69).

- (68) a ház-on közvetlenül kívül
 the house-SUP right outside.of
 ‘right outside of the house’



Dressed Ps, however, lexicalize both the P-feature(s) and K. They can be matched to a chunk of structure in which these features form a contiguous sequence. This is not the case in (67). The movement disrupted the K – P sequence, and when it comes to post-syntactic spell-out, there is no span in this tree that is identical to the lexical entry of a dressed P. A structure like (67) thus cannot be lexicalized with a dressed P.

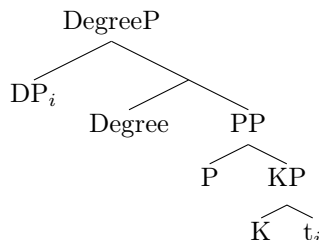
- (70) közvetlenül a ház mellett
 immediately the house next.to
 ‘immediately next to the house’

- (71) *a tükör közvetlenül mellett
 the mirror immediately next.to
 ‘immediately next to the mirror’

The immobility of DP

A valid objection that could be raised here is why it is not possible to move just DP to the specifier of DegP, without breaking the contiguity of K and P. If this was possible, it would produce structures like (72).

(72)



This structure is perfectly lexicalizable by a dressed P: K and P are adjacent heads in the tree. If DP-movement was a licit operation in Hungarian, then DP would be routinely separable from a dressed P. Given that this is not the case, we need to exclude the possibility of DP extraction from KP altogether. That DP cannot be extracted from under KP is a correct empirical generalization (c.f. the data in the preceding section); the question is why this is so. The reason, I suggest, is very simple: in (72) DP is not the maximal extension of the noun phrase.

Researchers often talk about DP-movement, but what is really meant by this term is the movement of the maximally extended noun phrase. Before it had been widely acknowledged that case has its own projection on the NP-spine, the maximal extension of the noun was DP indeed. But if KP is recognized as part of the NP f-seq, ‘DP-movement’ must really be KP-movement. Thus the term ‘DP-movement’ is literally movement of DP only for those who don’t subscribe to the existence of KP, and for everybody else it really means KP-movement.

In a $KP > DP$ decomposition nobody would think that K can be stranded by DP, and in general it is not thought to be possible to extract a phrase that is just smaller than the maximal extension of the noun in any given situation. DP is immobile in (72) because it is KP rather than DP that is the maximal extended projection of the noun.

This contrasts with Grimshaw’s view that there is no important cut-off point around DP, and the maximal extension of NP is PP. In my view there is a significant juncture at KP in the nominal functional sequence, and the projections related to the computation of location or path are found in a separate functional sequence built on KP. In Section 5.5 I will elaborate on this view in detail and lay out the fine-grained decomposition that motivates this approach.

Being the maximal extended projection of NP makes KP ‘special’ in a sense. One way in which this ‘special’ nature of KP manifests is its ability to move. There is a natural and long-established parallel here with the architecture of the clause. That the structure of nominal and clausal projections show similarities has been repeatedly pointed out in the literature, for instance in Abney (1987); Lamontagne and Travis (1987); Bittner and Hale (1996); Szabolcsi (1987, 1994); Alexiadou et al. (2007) and others, and CP has been argued to be similar either to DP or KP.

It is well known that the maximal extension of the clause, CP, can move, but the category that is just smaller than the maximal extension, i.e. TP, cannot (c.f. Abels, 2003b for examples and discussion). In a syntactic decomposition that makes use of KP, the natural nominal counterpart of CP is KP, as both are the maximal extensions of the core lexical projection in their f-seq. The immobility of DP under KP is thus the same issue as the immobility of TP under CP. Abels (2003b) provides an in-depth analysis of this phenomenon that crucially relies on phases and anti-locality. In his theory, what I called above the ‘special’ nature of KP would translate into being a phase.^{13,14} In Chapters 8 and 9 I will come back to the phasehood of K and will show how it interacts with various agreement phenomena.

Another way in which KP is special is reflected in the long-standing observation that (overt) noun phrases need case. Differently put, KP is autonomous: it is the required and right size for a nominal projection to exist. In a $KP > DP$ decomposition this means that every noun phrase

¹³Abels discusses the immobility of VP under vP, TP under CP, and DP under PP, but he does not discuss KP or phasehood internally to the nominal projection. Thus he makes no claim regarding the phasehood of KP.

¹⁴That noun phrases correspond to a phase (or phases) is a widely held position, c.f. for instance Radford (2000); Svenonius (2003b); Fukui and Zushi (2008); Heck et al. (2008); Kramer (2009).

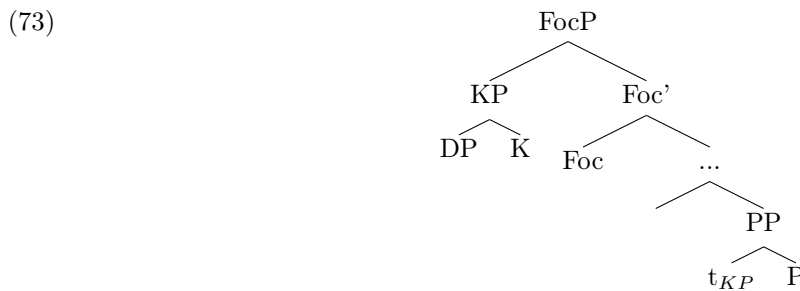
must be topped off by a KP, even if not all possible projections are projected in between N and K. In other words, NumP or DP are not crucial for nominal projections, but KP is.

Government and Binding theory expressed the requirement for case as the Case Filter: case was seen as the tool that made nouns visible for thematic relations. Minimalism dispensed with the Case Filter, but has not yielded a deep understanding as to why case is required on nominals. As Pesetsky and Torrego (2011, p. 72.) formulate it: "many fundamental questions, including the reason why case should exist at all, do not yet have substantive answers". This thesis is not the place to attempt to resolve the very big question of why KP is required on every nominal projection. For convenience, I will follow Gillian Ramchand's suggestion (p.c.) that case is the piece of glue that enables nominals to bear a relation to something else in the proposition.

To sum up this section, KP represents an important juncture in nominal projections: it is autonomous and movable (and as I will argue below in connection with the (in)transitivity of Ps, it can be replaced by a null pronoun that represents an implicit ground). That DP cannot move away from and strand KP follows from the nature of KP, rather than DP. Specifically, it is KP that is the maximal extended projection of nouns, and this makes the category right under it immovable. (See Abels, 2003b for formalization of this idea.)

Wh-movement

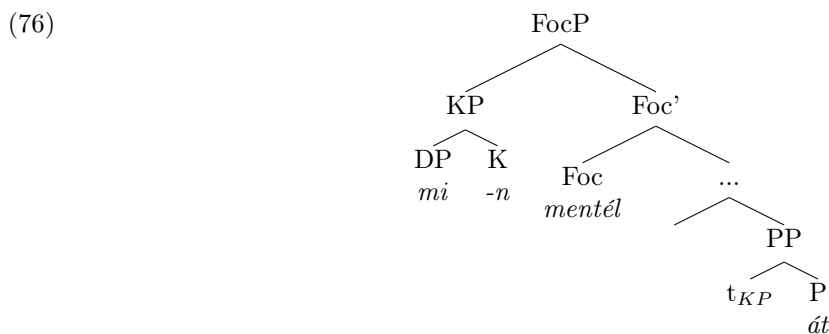
The analysis of the data with wh-movement is identical to the account developed for other movements, and it should be obvious by now. The structure of a wh-question with a stranded postposition is as in (73): KP is attracted to spec, FocP and the P-features stay in situ.



(73) cannot be lexicalized with a dressed P, as K and P are not adjacent, but a naked P can be matched to the P and the case-marker to K without any problems.

(74) * Mi_i ment-él t_i alatt?
 what go.PAST-2SG under
 'What did you go under?'

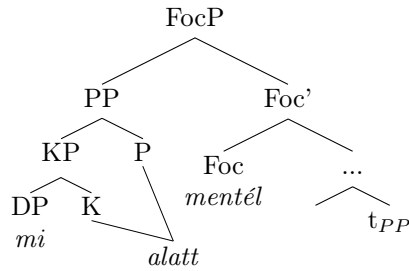
(75) $Mi-n_i$ ment-él t_i át?
 what-SUP go.PAST-2SG through
 'What did you go through?'



If PP is pied-piped with KP, the P and K remain adjacent in the structure after movement, too. This makes it possible for a dressed P to spell out the structure.

(77) Mi alatt ment-él?
 what under go.PAST-2SG
 'What did you go under?'

(78)



We have now accounted for all the data points that show that naked Ps are separable from their complement but dressed Ps are not. All sentences with extraction from a dressed PP were ruled out on account of K and the rest of P being separated. Given that dressed Ps cannot shrink, movement of either K or P yields a structure which cannot be matched to the lexical entry of a dressed P. We can see that in the lexicalization algorithm of Nanosyntax, lexical representations can constrain word-order possibilities. Specifically, certain movements are ruled out not because they violate syntactic principles (e.g. locality) and lead to a crash in narrow syntax, but because they yield structures which cannot be properly matched to the lexical items we want to use, and so cannot be spelled out with these lexical items.

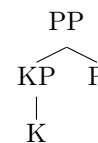
Transitivity

Some naked Ps can be used intransitively, but dressed Ps must have a complement. How does this fact follow from the proposed analysis? Let us consider the structure of intransitive Ps. In Dékány (2009) I suggested that intransitively used Ps lack a syntactic complement. An intransitive naked P thus has the structure in (79), and an intransitive dressed P looks like (80).

(79)



(80)



I suggested that the structure in (80) is uninterpretable because it contains a K ‘hanging in the air’. Case allows DPs to surface in the clause, all DPs and only DPs need case. Conversely, KP can only be erected on top of a DP. With a DP radically missing from the structure, K has no function at all, and this causes (80) to be uninterpretable. By way of contrast, naked Ps do not spell out K, and when they appear without a complement, not only the DP but the whole KP is absent from the structure. Such a PP is entirely interpretable.

Here I would like to propose a different analysis. Consider the meaning conveyed by an intransitively used P. An example is given (81).

(81)

- a. Az iskola közel van a határ-hoz.
The school close be.3SG the boarder-ALLAT
‘The school is close to the boarder.’
- b. Az iskola a közel van.
The school close be.3SG
‘The school is close (by).’

(81-b) has no overt Ground, nevertheless the sentence implies the presence of an implicit Ground. In particular, *közel* ‘close to’ is interpreted with respect to the utterance’s deictic center, which functions as the Ground of the seemingly intransitive P.

The reference of the deictic center must be inferred from the context: it could be located with respect to the speaker’s present or past position or with respect to a third party who is the topic of the conversation. In other words, the location that *close* refers to in *the school is close (by)* entirely depends on the context in which the sentence is uttered. This is reminiscent of how the reference of third person pronouns is computed: the reference of *he*, *she* and *it* must always be fixed with the help of the context. I suggest that the deictic center is represented in the syntax by a phonologically covert pronoun, pro_{deic} , and this is in turn the complement of the P in (81-b).

The question now is why this pronoun cannot be the complement of dressed Ps. I suggest that pro_{deic} is a pro-KP, in other words, it replaces KP in syntax. This follows naturally from the form of the PP in (81-b): not only the complement is missing, but also the case-marker that the P subcategorizes for (Allative in the example at hand). Note that case markers do not require a phonologically overt host. When the complement of a case marker is a pronoun, the pronoun can stay covert. In this case the case marker appears to function as the stem and it hosts person-number agreement with the covert pronoun.

- (82) *hozz-ám, ról-ad, től-e, nál-unk, hozz-átok, benn-ük*
 ALLAT-1SG DELAT-2SG ABLAT-3SG ADESS-1PL ALLAT-2SG INESS-3PL
 ‘to me, from/off o you, from him, to us, at you, in them’

(82) clearly shows that pronouns don’t need an overt host. If pro_{deic} replaced DP, we would expect the case marker required by the naked P to surface overtly, cliticize onto the covert pronoun and show agreement with it, as in (83).¹⁵ However, (83) does not have a reading in which the Ground is the deictic center inferred from the context. In this PP the Ground can only be understood as a third person personal pronoun.

- (83) *Az iskola közel van hozz-á.*
 the school close be.3SG ALLAT-3SG
 ‘The school is close to it.’
 NOT: ‘The school is close (by).’

Pro_{deic} thus cannot replace DP, it can only replace KP. Consider now the PP-structure in (84), which is the structure of both dressed and naked Ps.

- (84)
- $$\begin{array}{c}
 \text{PP} \\
 \swarrow \quad \searrow \\
 \text{KP} \quad \text{P} \\
 \swarrow \quad \searrow \\
 \text{DP} \quad \text{K}
 \end{array}$$

Naked PPs spell out only P, therefore the replacement of KP by pro_{deic} is unproblematic (and it also makes the case-marker disappear). Dressed Ps, on the other hand, spell out both K and P. If pro_{deic} replaces KP in a dressed PP, this forces the dressed P to Underassociate its K feature and spell out only P. The Superset Principle makes this possible in principle. I have argued, however, that dressed PPs belong to the class of lexical items to which the Superset Principle cannot apply: they cannot be compressed either upwards or downwards. This causes dressed Ps to be incompatible with pro_{deic} .

In sum, the fact that dressed Ps cannot have a pro_{deic} complement follows from the size of the lexical items involved. Pro_{deic} can only replace KP, and dressed Ps must spell out K, therefore only one of them is possible in any given PP.

5.4.2 Potential counter-examples: can dressed PPs be separated from their complement?

Is there extraction from dressed PPs, after all?

I have emphasized that the relationship of dressed Ps and their complements is a very close one: these postpositions cannot be separated from their complement either by way of extraction or an intervening degree modifier. Some data, however, seem to contradict this generalization. In (85), the P seems to have been extracted from a dressed PP. It appears in the so-called verbal modifier position (it precedes the verb in neutral sentences and follows the verb in sentences with focus and negation). In this configuration an agreement-marker appears on the postposition even with R-expression complements (recall that Ps normally agree only with pronouns), and the complement

¹⁵The Superessive case *-on/en/ön* appears in the form *rajt-* when its complement is a pronoun rather than a lexical noun. This is an allomorphic variation that should not distract the reader.

- b. a fiú-k-nak nehéz a könyv-e
 the boy-PL-DAT heavy the book-POSS.SG
 ‘the book of the boys is heavy’

The similarities with the possessive construction have been repeatedly pointed out in the literature. Many analyses hypothesize an actual, formal or frozen possessive structure in dressed PPs (c.f. Marác, 1986; É. Kiss, 1999, 2002; Surányi, 2009b; Rákosi, 2010 and Laczkó and Rákosi, 2011).¹⁸ This possessive structure, in turn, is often exploited to explain the dative-marked putative extraction from dressed PPs.

If the parallels are due to a shared possessive syntax indeed, then extraction from dressed PPs could proceed along the same lines as extraction from possessive constructions. That is, the Ground, like the possessor, can move to a peripheral escape hatch position in the containing phrase (DP for possessives, PP for dressed Ps), and in this position it gets dative case (c.f. Marác, 1984).

In Section 5 I will discuss the fine-grained decomposition of my K and P and I will argue that PPs do indeed have an underlying possessive structure.¹⁹ However, a ‘movement to and dative assignment in an escape hatch’ analysis of (85) leaves unexplained why the agreement marker appears on the P once the complement is separated from it. Dressed Ps agree only with pronominal complements but not with full DP-complements.

- (90) (én) mellett-em
 I next.to-1SG
 ‘next to me’

- (91) a ház mellett-(*e)
 the house next.to-POSS.3SG
 ‘next to the house’

This means that a simple extraction analysis of (85) and (87-a) fails to provide a descriptively adequate analysis of the facts.

A resumptive pro analysis of discontinuous dressed PPs

Marác (1984) and in part É. Kiss (2002) suggest that apparent dative-marked extraction from dressed PPs involves a PP-internal resumptive *pro*. Marác (1984) suggests that in the pertinent cases the subject of the PP is a *pro*, which is bound by the dative marked constituent (the latter is extracted from the escape hatch of the PP). É. Kiss (2002), on the other hand, suggests that resumptive *pro* is involved only in a subset of the relevant cases. She observes that with the extraction of a plural complement the agreement on the adposition can be either singular or plural. This is similar to the agreement possibilities of extracted possessors.

- (92) (A fiúk előtt) szép jövő áll a fiúk előtt.
 the boy-PL in.front.of beautiful future stand.3SG the boy-PL in.front.of
 ‘A beautiful future is ahead of the boys.’

- (93) A fiú-k-nak szép jövő áll előtt-e/előtt-ük.
 the boy-PL-DAT beautiful future stand.3SG in.front.of-POSS.3SG/in.front.of-POSS.3PL
 ‘A beautiful future is ahead of the boys.’
 (É. Kiss, 2002, pg. 190, the glosses have been modified)

É. Kiss (2002) proposes that dressed PPs have the structure of possessive phrases. The version of (93) with singular agreement on the postposition involves plain possessor extraction, while the version with the plural agreement involves a *pro* possessor. In the latter case the dative possessor is generated outside the PP in a hanging-topic-like construction.

I agree with Marác (1984) that all instances of apparent extraction from dressed PPs, that is, both the variant with the singular and the one with the plural agreement, involve a PP-internal

¹⁸Adpositions expressing an axial part in the sense of Svenonius (2006) are all dressed Ps in Hungarian. For axial part denoting Gungbe adpositions, Aboh (2005, 2010b) also suggest an underlying possessive structure. A possessive structure for locative PPs in more general was proposed in Terzi (2005, 2008); Botwinik-Rotem and Terzi (2008).

¹⁹É. Kiss (1999) and Rákosi (2010) point out some differences between possessive constructions and dressed PPs. Hegedűs (2010b) argues that a possessive analysis of dative Grounds is on the right track for earlier stages in the language but not in contemporary Hungarian. I refer reader to these works for details.

resumptive *pro*.²⁰ The reason for this is the already mentioned fact that PPs don't agree with lexical complements, and in a plain extraction analysis of the singular agreeing variant the source of the agreement remains mysterious. (É. Kiss does not give an explanatory account of why the extraction is obligatory with the overt P-suffix.) A resumptive *pro* analysis of apparent extraction from dressed PPs enables us to keep two robust generalizations that we see again and again: i) these Ps agree only with pronouns and ii) they are inseparable from their complement.²¹

This analysis is supported by several considerations. First, the existence of null resumptive *pros* has been argued for independently in den Dikken (1999); É. Kiss (2002); Gervain (2002, 2003, 2004) and Gervain (2005) (in connection with possessive structures and sentences with long operator movement). Second, null resumptive *pros* are always invoked in Hungarian to account for otherwise inexplicable, mysterious agreement facts, and apparent extraction from dressed PPs involves precisely such a mysterious agreement pattern. Finally, cross-linguistically we often see that in non-P-stranding languages or with non-P-stranding Ps adjacency violations between the adposition and its complement are obviated by the inclusion of a resumptive pronoun in the clause. For specific examples I refer the reader to Aboh's (2004a; 2005; 2010b) discussion of Gungbe (Gbe) and Muriungi's (2006) observations about Kĩitharaka (Bantu, Kenya). Both languages feature strandable and non-strandable Ps. Their non-strandable Ps become separable from their complement if the DP is resumed by an overt resumptive pronoun adjacent to the adposition. The claim here is that Hungarian uses exactly the same strategy with dressed Ps, only the resumptive pronoun used in Hungarian PPs has no phonetic form.

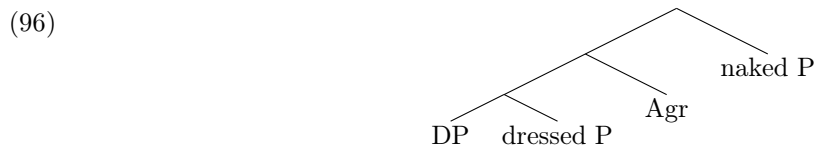
5.4.3 Accounting for the morphological effects

Agreement

While with naked Ps pronominal agreement appears on the case-marker, with dressed Ps it appears on the P.

- | | | | |
|------|---|------|--|
| (94) | (én)-vel- em szemben I-INSTR-1SG opposite 'opposite to me' | (95) | (én) alatt- am I under-1SG 'under me' |
|------|---|------|--|

We can approach the distribution of the agreement marker in two ways. In approach number one, the agreement marker has a fixed position in the PP; it occupies the same structural slot in both dressed and naked PPs. This would entail that dressed Ps are merged lower than the agreement, but naked Ps are merged higher than the agreement and consequently higher than dressed Ps, too.



The idea that naked Ps are merged higher than dressed Ps is considered in Hegedűs (2006). Hegedűs argues that verbal particles are merged high, above PathP, and that (at least in some cases) naked Ps are merged in the position of verbal particles. She also points out that it is not the case that naked Ps only combine with case-inflected nouns: they may co-occur with dressed PPs as well.

²⁰The difference in number agreement does not necessarily point to a difference in structure. With plural Dative possessors, too, number agreement on the possessee is optional, it can be either plural or singular. The choice is dialect-based. den Dikken (1999) proposes that the singular is a default value for agreement with plural dative possessors, and I suggest that the same is true with agreement in the PP as well.

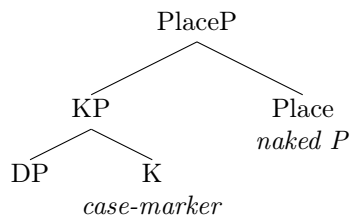
²¹See Surányi (2009b,a) for an alternative account. Surányi proposes that the postposition bearing the agreement and the dative marked complement form a movement chain, to which chain reduction has applied. Crucially, his account does not involve garden variety extraction of the Ground from dressed PPs either. Instead, the whole PP moves, and the two copies undergo chain reduction (full spellout of the tail, spellout of the head in the upper copy). His account is similar to the one advocated here on a further point, too: Surányi suggests that after the deletion process the complement of the adposition is a *pro*.

- (97) *át* *a* *híd* *alatt*
 through the bridge under
 ‘through under the bridge’

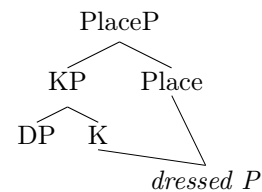
If naked Ps are merged above dressed Ps, this is expected. But such combinations have a peculiar word order: the naked P must precede the noun. This is surprising, as the neutral position of Hungarian adpositions is always postnominal (in this case, the naked P it should be after the noun plus dressed P unit). It thus remains mysterious why the naked P appears where it does. A further complication with a structure like (96) is that naked Ps do have Place and Path denotations, irrespective of whether they occur with an oblique complement or a dressed P. Therefore the natural place for them to be merged are Place and Path. Merging them above Path (or sometimes low, sometimes high, as suggested in Hegedűs (2006)) does not capture this meaning. Given the foregoing considerations, I reject the structure in (96).²² (96) is also incompatible with the dissertation’s general approach to agreement. In Part II, Chapter 6, I will argue that AgrPs projected by agreement morphemes conflict with the syntax-semantics mapping I assume.

This brings us to approach number two, whereby place-denoting dressed and naked Ps always spell out Place, and path-denoting dressed and naked Ps always spell out Path (or Place and Path).

- (98) place-denoting naked P



- (99) place-denoting dressed P



This entails that the agreement morpheme cannot appear in the same place in dressed and naked PPs. If agreement is the spell-out of a specific Agr node, then depending on the type of postposition to be used, Agr would have to be merged at different points in the functional sequence. This is undesirable. However, it has already been proposed in Marác (1989) and in Asbury (2008b) that agreement does not have a dedicated projection in Hungarian. Instead, it is merely the morphological reflex of the operation Agree in the PP. This view is perfectly compatible with the structures in (98) and (99) as well as with my assumptions in Part II, and I will carry it over to my analysis. I will assume that it is K and DP that stand in the Agree relationship, but nothing in the analysis hinges on this. (See Asbury, 2008b for a different proposal on what the agreeing features are.)

Let us compare the place of the agreement in naked and dressed PPs and on simple case-marked pronouns.

- (100) *(én)-vel-em* szemben
 I-COMIT-1SG opposite
 ‘opposite to me’ naked P
- (101) *(én) alatt-am*
 I under-1SG
 ‘under me’ dressed P
- (102) *(én-)hozz-ám*
 I-ALLAT-1SG
 ‘to me’ case marked pronoun

I propose that the agreement does have a fixed position in some sense, only not fixed with respect to the postposition. It has a fixed place with respect to K, instead. Specifically, agreement

²²I will return to naked P plus dressed P combinations in more detail in Section 5.5.7, where I show that they are compatible with approach number two as well.

cliticizes onto the morphological word that spells out (or contains) K. In such a scenario the analysis presented in the preceding sections makes the following predictions. In the case of dressed Ps agreement appears on the postposition, while in the case of naked Ps or simple case-marked pronoun it is on the DP bearing the case-marker. As (100)–(102) show, this is the case indeed.

Demonstrative copying

Let us turn to demonstrative constructions now. With simple case-marked DPs, the demonstrative agrees with the noun in number and case.

- (103) ez-ek-et a ház-ak-at
 this-PL-ACC the house-PL-ACC
 ‘these houses’

The simplest way to describe this is that the phonological exponents of Number and Case get copied onto the demonstrative. Chapter 8 will provide a formal characterization of this process, but for the present purposes the descriptive generalization will be sufficient. In my analysis this immediately entails that there will be a difference between dressed and naked Ps with respect to demonstrative concord. As naked Ps do not spell out K, they cannot copy onto the demonstrative. In a naked PP the case-marker spells out case, therefore the copying of the case-marker is predicted. This corresponds to the facts, as demonstrated in (104).

- (104) a. az-ok-on a ház-ak-on belül
 that-SUP the house-PL-SUP inside.of
 ‘inside of those houses’
 b. *az-ok-on belül a ház-ak-on belül
 that-PL-SUP inside.of the house-PL-SUP inside.of
 ‘inside those houses’

Dressed Ps, on the other hand, spell out K, therefore they have to be copied onto the demonstrative. Again, the prediction is borne out.

- (105) az-ok *(fölött) a fá-k fölött
 that-PL above the tree-PL above
 ‘above those trees’

5.4.4 Why all naked Ps are not equal

We have seen repeatedly that dressed Ps show a more uniform behavior than naked Ps do. All dressed Ps must have a complement, and none of them allow the intervention of a degree modifier or a P > Ground order. Naked Ps do not behave uniformly with respect to these tests. Only some of them can be used intransitively or allow modifier-intervention or P > Ground order. For instance *képest* ‘compared to’ does not allow the intervention of degree (or other) modifiers, and can only follow its complement. *Szemből* ‘opposite-from’ allows the intervention of degree modifiers, but cannot precede its complement. *Közel* ‘close to’ allows both modifier-intervention and P > Ground order. Naked Ps thus form a heterogenous class. This is an important point, often glossed over in other studies of the Hungarian PP, which tend to lump all naked Ps together with respect to these word-order possibilities.

How can the proposed analysis capture the heterogeneity of naked Ps? Note that naked Ps are defined negatively in some sense: they spell out some feature(s) in the P-layer but they do not spell out K. Their unifying feature is thus something they do *not* do. There is no reason to expect that all members of a class defined like this behave identically in all respects (just like it is not the case that all free morphemes *not* taking tense marking behave identically either). The analysis allows naked Ps and their complements to move independently of each other, but does not force them to do so. The feature they spell out in the P-domain is not the same for all naked Ps; they carry different lexical-conceptual information and depending on their meaning, may or may not have a suitable landing site.²³ These factors all influence whether a particular naked P allows extraction

²³That the meaning of the naked postposition influences whether the P can move is clear when a postposition has both a spatial and a temporal reading (e.g. *át*, which means ‘through’ both in space and time). In these cases

or not.

5.4.5 Interim summary

Let us briefly summarize the results of the foregoing discussion. I have proposed that dressed Ps spell out K and some P-feature(s) as well, and they cannot Underassociate either of their features. Naked Ps, on the other hand, spell out only some P-feature(s). The analysis delivers the following empirical generalizations:

- dressed Ps take complements without visible case, naked Ps take case-marked complements
- movement from the P-layer is illicit with dressed Ps but allowed with naked Ps
- extraction of KP is illicit with dressed Ps but allowed with naked Ps
- dressed Ps must have complements, naked ones can be intransitive
- dressed Ps must and naked Ps cannot copy onto the determiner

Making a further assumption that the agreement morpheme cliticizes onto the phonological word that contains K, we also derive the following fact:

- agreement surfaces on dressed Ps and on the complement of naked Ps

The proposed analysis can capture the facts with few assumptions. Specifying the feature content of lexical entries is necessary in any theory, as these features determine where the lexical entry can be inserted into the structure. In the lexicalization algorithm I have adopted one morpheme may be specified for multiple terminals, this comes for free in the model. If we specify the feature content of dressed and naked Ps in the way I proposed, only one assumption (*viz.* that dressed Ps cannot shrink) is needed to derive the first five bulleted points, and one further assumption derives the last point.

Let us turn now to the issue of how we can distinguish this proposal from possible alternatives. In a framework that does not allow one morpheme to spell out several terminals we could say that naked Ps are merged in P, while dressed Ps are merged in K and undergo movement to P. The problem is that we know from naked PPs that KP can be the target of extraction, therefore it remains mysterious why a KP from which a dressed P has been moved out cannot extract.

Another possible alternative would be that dressed Ps spell out only P-features, like naked Ps do, with the difference that they select for a complement in the (morphologically null) Nominative case. Again, this analysis falls short of explaining why the complement of a dressed P cannot move: it needs to be stipulated that a KP under a dressed P must stay put. See also Kenesei (1992, pp. 581–586.) for ample arguments that the complement of dressed Ps does not bear the morphologically null Nominative case, rather the adposition functions as a case marker.

The analysis also solves the problem of how to group case-markers and postpositions. Marác (1989) proposes that dressed and naked postpositions belong to the same category and case-markers belong to a separate one. For É. Kiss (2002), on the other hand, case-markers and dressed postpositions belong to one category, and naked Ps belong to a different category (that of adverbs, as already mentioned in Section 5.1.2). The intuition behind Marác's grouping is that naked Ps and dressed Ps have something in common, while É. Kiss's grouping suggests that case-markers and dressed Ps share important properties. In fact, both are true. The present analysis captures this. The feature-specification of dressed Ps expresses that they are similar to both case-markers and naked Ps, because they share features with both. It is predicted that tests sensitive to the presence of K group dressed Ps with case-markers, but tests sensitive to the presence of a P-feature

consistently only the spatial reading allows the P to be in pre-nominal position. However, this is not to say that the meaning influences the extraction possibilities in a direct way. Surányi (2009b), for instance, shows that temporal PPs are merged higher than directional PPs. He argues that so-called verbal modifiers (constituents that directly precede the verb in neutral sentences) are extracted from a low *v*P-internal position, and temporal P(P)s cannot be verbal modifiers because they are merged higher than this low extraction site. The meaning is thus important only to the extent that it correlates with syntactic height.

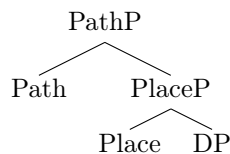
are expected to group dressed Ps with naked Ps. This in turn explains why finding a definitive partitioning between case-markers and postpositions has proven to be elusive. As Asbury (2008a, p. 12.) observes: "morphosyntactic diagnostics have been proposed for distinguishing cases and postpositions, but these do not lead to a clear-cut divide".

5.5 What this analysis tells us about the case vs. adposition debate

5.5.1 The decomposition of PP

Research on the internal structure of PPs has converged on the conclusion that there exists a rigid and articulated PP-internal functional hierarchy. While different researchers assume different numbers and types of projections, they agree that PPs comprise at least a PlaceP and a PathP, with the latter dominating the former.

(106)



The structure in (106) goes back to Jackendoff (1983). Syntactic arguments for the structure in (106) have been presented in van Riemsdijk (1990); Koopman (2000); Riemsdijk and Huybregts (2002); den Dikken (2010) and Svenonius (2010), among others. The decomposition has been supported by semantic arguments, too: Zwarts (2005); Zwarts and Winter (2000) and Pantcheva (2011) argue that Paths are compositionally built from Place denotations, and Kracht (2008) argues that different layers of the PP correspond to different semantic types. The structure in (106) has been applied in the analysis of Hungarian PPs in recent research such as Hegedűs (2006); Asbury et al. (2007) and Asbury (2008b).

Different researchers further decompose Place and Path to a different extent. Svenonius (2010) suggests that the internal structure of PlaceP is as in (107). Kracht's (2008) similar sequence is shown in (108).

(107) PathP > *p*P > DegP > DeixP > LocP > AxialPartP > KP
(Svenonius, 2010)

(108) P_{dir} > P_{stat} > $P_{axialpart}$ > P_{loc}
(Kracht, 2008)

Pantcheva (2009, 2010, 2011) split up PathP into various sublayers as shown in (109).

(109) (Scale) > Route > (Scale/Bound) > Source > (Scale/Bound) > Goal > Place
(Pantcheva, 2011, ch. 5.)

Certain proposals aim for a maximal parallel in the decomposition of Place and Path; some of these are shown in (110) through (112).

(110) DegP(Path) > PathP > CP_{place} > DegP_{place} > Place > PP > AgrP > PP
(Koopman, 2010)

(111) CP_{path} > DxP_{path} > AspP_{path} > P_{dir} > CP_{place} > DxP_{place} > AspP_{place} > P_{loc}
(den Dikken, 2010)

(112) R_{path} > Mod_{path} > Path > P_{loc} > R_{place} > Mod_{place} > Place
(Noonan, 2010)

Most projections in the fine-grained decompositions in (107) through (112) will not figure in the discussion to follow. While I believe that Degree, for instance, is well motivated in the extended PP, and that Pantcheva's decomposition of Path is on the right track, I will not represent these projections in my trees because for the present purposes nothing hinges on them. Some of the extra structure in the lower portion of the decomposed Place, however, will play an important role in the discussion in Section 5.5.3.

5.5.2 The problem of distinguishing case markers from postpositions

In certain languages the distinction between case markers and adpositions might seem clear-cut, and a naive view may have it that the two categories straightforwardly bifurcate along the lines of morphologically bound vs. morphologically free. That this view is way too simplistic can be shown by the existence of morphologically free (structural) case markers in various languages. (113)–(116) provide a selection of unbound pre- and postnominal cases from nominative-accusative and ergative-absolutive languages.

- (113) Waitna ba sula ba **ra** kaik-an.
 [man the] [deer the ACC] see-PST.3
 'The man saw the deer.' (Bittner and Hale, 1996, p. 4. ex. 3. a.) Miskitu
- (114) Ti **tō** ε kuyan te kupe wā.
 [he ERG] [his body the] wash PRG
 'He is washing his body.' (Bittner and Hale, 1996, p. 4. ex. 3. b.) Shokleng
- (115) na-v-en-eLi **ti** kai **tu** telu a panguDal.
 PERF-buy-AF [NOM Kai] [ACC three A pineapple]
 'Kai bought three pineapples.' (Tang, 2004, p. 398. ex. 34. a.) Paiwan
- (116) 'olo'o uli **e** le teine le ta'avale.
 PRG drive [ERG the girl] [the car]
 'The girl is driving the car.' (Bittner and Hale, 1996, p. 5. ex. 4. b.) Samoan

That the morphologically bound vs. morphologically free divide does not reflect a deeper syntactic difference is clearly illustrated by the following quotes.

We may agree, then, for our present purposes, with Hjelmslev, who suggests that the study of cases can be pursued most fruitfully if we abandon the assumption that an essential characteristic of the grammatical category of case is *expression in the form of affixes on substantives*. I shall adopt the usage first proposed, as far as I can tell, by Blake (1930), of using the term case to identify the underlying syntactic-semantic relationship, and the term case form to mean the expression of a case relationship in a particular language — whether through affixation, suppletion, use of clitic particles, or constraints on word order.

Fillmore (1968, p. 21., original emphasis)

A marker does not necessarily have to be attached to the phrasal head to be counted as nominal case; it is only required that the marker show a sufficient degree of bondedness (phonological integration) with its host noun in basic syntactic constructions — i.e. in non-expanded, head-only NPs. The reason for doing this is that postpositions (independent words), phrasal clitics and inflectional case morphemes are diachronically interconnected on a grammaticalization cline, and it seems rather arbitrary to set up cut-off points on it.

Iggesen (2008)

One must always keep in mind that there is some degree of arbitrariness in the distinction between case affixes and adpositions as it is recognized in the descriptions of individual languages.

Creissels (2009, p. 611.)

In Hungarian it is particularly clear that suffixhood is not a good diagnostic for separating case markers from adpositions (c.f. Sebestyén, 1965; Antal, 1961; Asbury, 2005, 2008a; Asbury et al., 2007). We have already seen that depending on the context, Hungarian case markers and postpositions show a different degree of morphological/phonological freedom: consonant-initial postpositions attach to demonstratives in an affix-like manner, and case makers on pronouns are more like adpositions in that they do not require the overtness of the pronoun. The relevant examples are repeated below.

- | | | | |
|-------|---|-------|---------------------------------------|
| (117) | afölött a fa fölött that.above the tree above 'above that tree' | (118) | (én) nál-am I ADESS-1SG 'at me' |
|-------|---|-------|---------------------------------------|

Semantics is not a reliable device to separate case markers from adpositions either. The same meaning that is expressed by an adposition in one language is encoded by a case marker in another (119).

- | | | |
|-------|-------------------------|---|
| (119) | a. with the book | b. a könyv- vel the book-COMIT 'with the book' |
|-------|-------------------------|---|

This can also be observed within dialects of the same language, or even within the same dialect. Standard Hungarian expresses multiplication by the suffix *-szor/szer/ször*, while the Transylvanian dialect uses this suffix only with the numeral *one* and higher numerals take the adposition *versën* (Imre, 1971, p. 317).²⁴

Standard Hungarian

- | | | | |
|-------|------------------------------------|---|--|
| (120) | a. egy-szer one-times 'once' | b. három-szor three-times 'three times' | c. öt-ször five-times 'five times' |
|-------|------------------------------------|---|--|

Transylvanian Hungarian

- | | | | |
|-------|------------------------------------|---|--|
| (121) | a. egy-szer one-times 'once' | b. három versën three times three times | c. öt versën five times 'five times' |
|-------|------------------------------------|---|--|

Conversely, the spatial configuration of static location can be expressed by a case marker, an adposition or a combination thereof in the same language.

- | | | | | | |
|-------|---|-------|---|-------|---|
| (122) | a ház-on the house-SUP 'on the house' | (123) | a ház alatt the house under 'under the house' | (124) | a ház-on the house-SUP kívül outside 'outside of the house' |
|-------|---|-------|---|-------|---|

It has been noted by many authors that Hungarian case markers are monosyllabic and show vowel harmony with the noun, while dressed postpositions are largely polysyllabic and never show vowel harmony (Antal, 1961; Sebestyén, 1965; Asbury et al., 2007; Trommer, 2008). But syllable

²⁴The multiplicative is not a case suffix, (120) and (121) merely illustrate that the suffix vs. adposition divide does not have a semantic correlate.

count and vowel harmony are not foolproof tests either. Case suffixes are all monosyllabic, but there exist monosyllabic postpositions, too. *Tájt* ‘around (time)’ is a case in point, but bisyllabic *között* ‘between’ also often reduces to *közt*.²⁵ Postpositions never show vowel harmony, but in certain dialects some case markers also have only one form. Standard Allative *-hoz/hez/höz* is non-alternating *-ho* in Vas and western Zala counties, standard Adessive *-nál/nél* is non-alternating *-ná* in western and southwestern Transdanubia, and standard Sublative *-ra/re* is non-alternating *-rē* in the Nyitra region (Sebestyén, 1965; Kálmán, 1966; Imre, 1971).

Further, diachronic data show that in earlier stages of the language case markers did not harmonize. (125) gives a selection of non-harmonizing case forms from the *Funeral speech and prayer* (1192–1195), the first known continuous Hungarian prose text. The corresponding forms from contemporary Hungarian are given in (126) for comparison.

- (125) miloszt-ben, jóv-ben, foi-a-nec
 grace-INCESS, good-INCESS, species-POSS-DAT
 ‘in grace, in good things, to (his) species’
 (transliteration from Szilágyi, 1983, pp. 89–90)
- (126) malaszt-ban, jó-ban, faj-á-nak
 grace-INCESS, goods-INCESS, species-POSS-DAT
 ‘in grace, in goods, to (his) species’

In sum, neither morphological nor semantic or phonological criteria are sufficient to draw a definitive line between Hungarian case markers and postpositions. The idea that case markers and adpositions are realizations of the same category has emerged quite early on (Fillmore, 1968; Emonds, 1985). More recently, and in particular in the context of Hungarian, É. Kiss (2002); Asbury (2005); Asbury et al. (2007); Hegedűs (2007); Asbury (2008b); Trommer (2008); Surányi (2009b) and Kádár (2009) have argued that there is no categorial distinction between adpositions and case markers in Hungarian.²⁶ This view will be adopted in this thesis as well: both spatial cases and adpositions will be taken to occupy positions in an extended PP.²⁷

5.5.3 Integrating the proposal into the Path > Place decomposition

Given my decomposition of Hungarian PPs in (127)–(128) and the Path > Place decomposition of spatial expressions agreed on in the literature, the question that I would like to address now is how the two decompositions can come together into one functional sequence.

²⁵Note also that if naked Ps are true adpositions, which is the view advocated in this thesis, then the phonological clue is even less reliable: *túl* ‘beyond’ and *át* are monosyllabic, too.

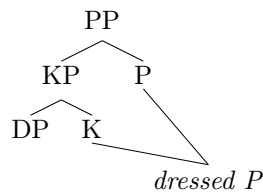
²⁶É. Kiss (2002); Trommer (2008) and Surányi (2009b) do not extend this claim to naked Ps, though.

²⁷This approach nicely ties in with the fact that case markers have evolved from postpositions. Example (i), from the *Deed of Foundation of the Abbey of Tihany* (1055), one of the oldest written texts that contain Hungarian words, shows that today’s Sublative case marker used to be a postposition. The contemporary equivalent is given in (ii).

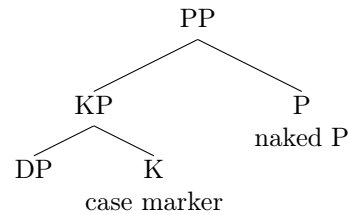
- (i) Feheruuaru **rea** menē hodu utu **rea**
 Fehérvár SUBLAT going military road SUBLAT
 ‘the road going to Fehérvár’
- (ii) a Fehérvár-**ra** menő hadi út-**ra**
 the Fehérvár-SUBLAT going military road-SUBLAT
 ‘the road going to Fehérvár’

In the present approach the change from *rea* to *-ra* can be described in purely (morpho)phonological terms, without positing a categorial change. See Hegedűs (2010a) for a generative analysis of the postposition-to-case-marker cline.

(127) dressed Ps



(128) naked Ps



At the beginning of the thesis I argued that four variables must be settled before a complete functional sequence of any extended projection can be set up: i) how the functional sequence is mapped onto the interpretive component (syntax-semantic mapping), ii) how the functional sequence is lexicalized, iii) how Agreement is represented in syntax and iv) how the functional sequence is linearized. I assumed that the syntax-semantic mapping proceeds in a seamless compositional fashion: that particular interpretations are tied to particular projections in the structure, and that the meaning of a syntactic structure sheds light on its internal composition. That is, if a particular interpretation *I* is available in projection *Pr*, and a certain structure has the meaning component *I*, then that structure also must contain *Pr*. Conversely, if a certain structure does not have *I* as a meaning component, then that structure does not contain *Pr*.

The projections Path and Place have very easily identifiable meaning contributions to the structure, therefore we will begin with identifying what serves as their spell-out in spatial dressed and naked Ps. Path and Place correspond to the node I labeled P in the foregoing discussion, that is, my P has an internal structure with two sublayers: Path over Place.

As I have already mentioned, the dressed vs. naked divide does not correlate with a semantic difference, and we find place, path, and other abstract Ps in both groups. Some examples are given in below.

dressed P: Place

(129) a híd alatt
the bridge under
'under the bridge'

naked P: Place

(130) a híd-on túl
the bridge-SUP beyond
'beyond the bridge'

dressed P: Path

(131) a híd alá
the bridge to.under
'to under the bridge'

naked P: Path

(132) egy híd-on át
one bridge-SUP through
'through a bridge'

dressed P: abstract

(133) a híd nélkül
the bridge without
'without the bridge'

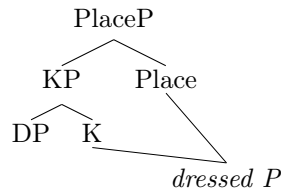
naked P: abstract

(134) a gyerek-vel együtt
the child-COMIT together
'together with the child'

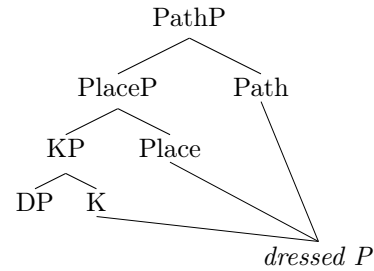
For now I am going to focus on spatial P only, the more abstract adpositions will be taken up at the end of the chapter. Given the interpretive evidence, I will take both (129) and (130) to be PlacePs and both (131) and (132) to be PathPs (apart from the obvious difference of what kind of location or path is being referred to, there is no salient meaning difference between (129) and (130) on the one hand and (131) and (132) on the other, therefore it is not warranted to posit more structure for naked Ps than for dressed Ps or vice versa).

Combining my proposal with the Path > Place decomposition means that place denoting dressed Ps spell out K and Place, and path denoting dressed Ps spell out K, Place and Path.

(135) Place denoting dressed P

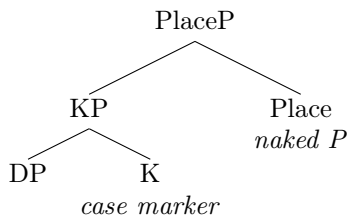


(136) Path denoting dressed P

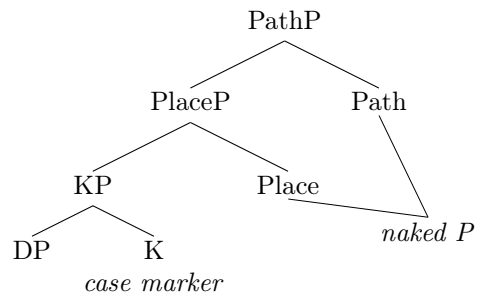


In a similar fashion, place denoting naked Ps spell out only Place and path denoting naked Ps spell out Place and Path.²⁸

(137) Place denoting naked P



(138) Path denoting naked P



According to the structures in (135) through (138), the Place node does not directly combine with the DP. Instead, this relationship is mediated by a projection I labeled K. The literature, in fact, is full of proposals that hypothesize a projection (or projections) between PlaceP and DP. Of the decompositions in (108) to (112), I would like to give prominence to the following two, which come with a very precise characterization of the semantic contribution of the various projections proposed.²⁹

(139) $P_{dir} > P_{stat} > P_{axialpart} > P_{loc}$ (Kracht, 2008)(140) $DegP > PlaceP > AxialPartP > KP$ (Svenonius, 2008b)

Given the obvious parallel between the structures, the semantics attributed to the projections of (139) and (140) are also very similar. Let us begin with Kracht's projections and their semantic characterization. Simplifying matters a bit, his P_{loc} is applied to the DP and yields a region. This region is compressed to a point and serves as the origin of the coordinate frame. $P_{axialpart}$ establishes the coordinate frame and P_{stat} (my Place) picks out a location. This yields a function 'goodness of fit', which tells for each coordinate point how well it fits. P_{dir} (my Path) describes a change in the goodness of fit through time.

Let us now turn to Svenonius' functional sequence. His K(ase) shifts objects to eigenplaces (the region occupied by the object, see Wunderlich, 1991). AxPart is a function from eigenspaces to regions that are normally subparts of the eigenspaces (front, interior, top, and so on). Place (which is identical to my Place) picks out spaces on the basis of the subparts established by AxPart. *In front of*, for instance, comes about when the subpart of the object's eigenspace chosen by AxPart is the front part of the object, and Place picks out a space on the basis of this. DegP serves as the locus of degree modifiers.

In sum, it is common to both Kracht (2008) and Svenonius (2008b) that a Place denotation is built up gradually, via the mediation of two projections between DP and Place. The first one

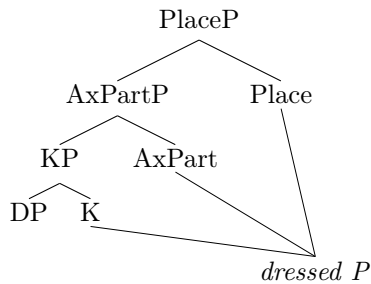
²⁸There is perhaps room for variation here, it is possible that all or some path denoting naked Ps spell out only Path and the case marker spells out both K and Place. For my purposes nothing important turns on this; the point is that naked Ps spell out the same higher bit of the structure that dressed Ps do.

²⁹(140) has also been shown to be able to handle temporal and other abstract non-spatial PPs, to which we are going to return in Section 5.5.8.

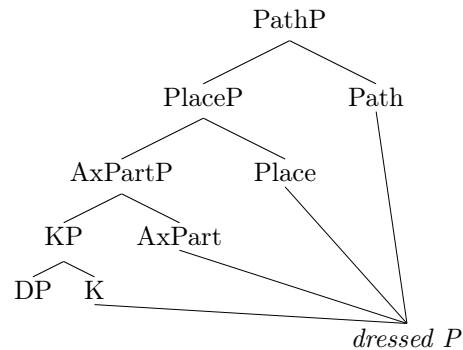
of these yields a spatial region (P_{loc}/K), and the second one ($P_{axialpart}/AxPart$) establishes an extended location on the basis of this region. A specific spatial location is not created before Place is merged into the structure.

In (135) to (138) I suggested that the functional sequence contains a part that is intermediate between D and Place and I labeled it K. We have now seen that my K has various analogues in the literature, and that it can be decomposed into two sublayers (at least): AxPart and K (using Svenonius' labels). (135) to (138) therefore have the revised structure in (141) through (144).

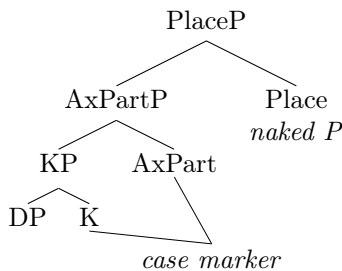
(141) Place denoting dressed P



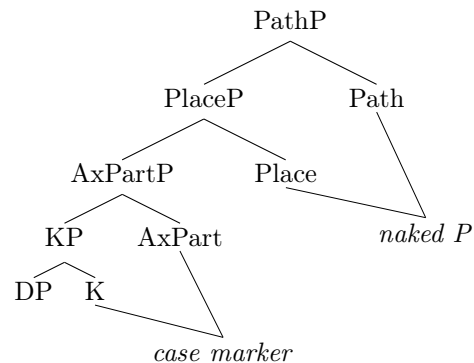
(142) Path denoting dressed P



(143) Place denoting naked P



(144) Path denoting naked P



5.5.4 Refining the structure

My proposal that dressed Ps spell out a bigger chunk of structure than naked Ps do, coupled with Svenonius' decomposition of PPs, led to the structures in (141) through (144). But while the Svenonius' decomposition is semantically motivated, and I believe that (141) to (144) contain the right intuition, there are two outstanding issues that these structures are ill-equipped to handle. This gives reason to revisit and refine (but by no means radically revise) (141) – (144).

The first issue has to do with the projection that Svenonius labels as K. It will be recalled that the function of this projection is to shift the object of the adposition into its eigenplace (the region occupied by the object). It is clear, though, that this K has little to do with the category that we usually call 'case'. The projection that we usually call KP and which hosts case markers is required on all DPs, whether they are embedded under PP related projections or not. But it would be hard to explain why all DPs need to be shifted into their eigenspace before they merge into the phrase-marker, or in other words, why the building of the nominal projection cannot stop at DP. Conversely, it would be hard to argue that KP, in the usual sense that encompasses structural and lexical cases, shifts the DP into its eigenspace. Accusative direct objects or dative indirect objects, for instance, are embedded under a KP in the usual sense but there is no evidence for a shift into eigenplaces in their meaning, as far as I can tell.

KP, in the usual sense, is part of the nominal projection. Earlier I have argued that KP represents an important cut-off point of the nominal functional sequence, which is reflected in

its autonomy (i.e. its ability to exist without further projections on top of it) and its ability to move. KP, in the sense of Svenonius, is clearly part of the PP projection. As it merely represents an intermediate step in the incrementally built Place or Path denotation, it does not correspond to a crucial juncture of the functional sequence either. It is not clear why a projection yielding eigenspaces would be autonomous and would be able to move, but a projection yielding Axial Parts could not. If there is a cut-off point anywhere in the Svenonius sequence, it is between DP and KP.

In sum, while I find the presence of Svenonius' KP well motivated in PP structures, it is clearly not the same projection as the garden variety KP that I have hypothesized to be the lowest node of dressed PPs.

The second issue has to do with possession. I have already mentioned that Hungarian dressed Ps have grammaticalized from possessive noun phrases, and that the agreement in PPs has the same form as in possessed noun phrases (even though synchronically there are differences between dressed PPs and possessive DPs, for instance). Researchers such as Marácz (1986); É. Kiss (1999, 2002); Surányi (2009b); Rákosi (2010) and Laczkó and Rákosi (2011) have suggested that Hungarian adpositional and case marked DPs have an actual or frozen possessive structure. This intuition, however, cannot be expressed in (141) through (144).

The connection to the possessive is certainly not unique to Hungarian. Spatial locative PPs and possessive structures cross-linguistically have a lot in common, and this makes it imperative to have a syntactic representation that can express this. Certain Gungbe adpositional phrases are similar to (or are) possessive constructions (Aboh, 2004a, 2005, 2010b). In one type of PP construction Hebrew locatives form a construct state with their complement, in another type they form a free state form with it (Botwinik-Rotem and Terzi, 2008; Botwinik-Rotem, 2008b, see also Danon, 2008 for the Construct State analysis of Hebrew PPs). When Greek adpositions take clitic complements, the clitic must be Genitive (Terzi, 2010). Finnish projective Ps take genitive complements; certain Tzeltal adpositions are prefixed by the possessive marker (Svenonius, 2006). In English, Spanish, Persian and Kham the complement of (some or all) Ps is marked the same way as the possessor (Svenonius, 2006; Pantcheva, 2008; Terzi, 2010). In Japanese the complement of projective Ps is marked with Genitive case (Takamine, 2006). At least some of the prepositional complements are marked with Genitive in Aghul (Northeast Caucasian) as well (Lander, 2009). The list could be continued. The inventory of languages that show some connection between PP and possessive structures is just too lengthy to be ignored, but Svenonius' decomposition has no room for the possessive semantics.

I suggest that both the KP-problem and the possessive-problem can be remedied by a small change to the lower portion of Svenonius' PP-decomposition. I base my proposal on Terzi's (2005) suggestion that the Ground of PPs is syntactically the possessor of an unpronounced noun PLACE. This structure has been argued for in various forms in Terzi (2007, 2008, 2010); Botwinik-Rotem (2008a,b); Botwinik-Rotem and Terzi (2008); Pantcheva (2008) and Noonan (2010). A underlying possessive structure is also suggested for Gunge adpositional structures in Aboh (2004a, 2005, 2010b). A null PLACE is used in Katz and Postal's (1964) analysis of *here* and *where*, and in Kayne's (2005a) and (2010) analyses of *here* and *there*, too. Carstens (1997, 2008) also make use of silent locative nouns in the analysis of Bantu locative noun classes. Carstens (2008, p. 150.) characterizes the silent locative noun as "a sort of 'place' noun".

The idea in Terzi (2005 et. seq.) is that the null PLACE is a nominal element that projects its own DP. PP projections proper like Place are erected on top of PLACE's full nominal projection, and the DP appears as the post-nominal possessor of PLACE. This is shown in (145) (from Botwinik-Rotem and Terzi, 2008, ex. 30.).

(145) $PP_{loc} > DP > XP > NP (PLACE) > DP$

Note that Botwinik-Rotem and Terzi's DP corresponds to a KP in my decomposition. They do not use K, and they assign a genitive marked clitic the category DP, but in my analysis it would have to be a KP. C.f. Carstens' (1997) similar decomposition of Chichewa locatives, with the complement of the empty place noun being a KP indeed.

(146) $DP > NumP > NP (empty\ place\ noun) > KP$ (Carstens, 1997)

In (145) the P-complement has its own full-blown nominal functional sequence, and so does the PLACE noun embedding it. This structure can easily account for the observed nounyness of adpositions in many languages (PPs do contain a nominal PLACE layer). It also sheds light on the long-standing debate of whether P is a lexical, functional or semi-functional category. The choice between these options has so far remained undetermined. Botwinik-Rotem and Terzi suggest that this is because PPs contain both a lexical (PLACE) and a functional (P_{loc}) part, and that a similar duality underlies the notion of ‘semi-functional categories’ in general.

(145) is highly reminiscent of and compatible with Svenonius’ decomposition. PP_{loc} corresponds to Svenonius’ Place. XP corresponds to AxPart. Both of them have the function of restricting the denotation of their complement to a subset. These parallels are explicitly discussed in Svenonius (2008b). The most salient difference is that Botwinik-Rotem and Terzi assume a silent NP PLACE between DP and AxPart instead of Svenonius’ K, and they also assume that PLACE projects its own DP.

What I am going to adopt from Botwinik-Rotem and Terzi (2008) is that the Ground is the syntactic complement and possessor of a silent place-denoting noun. To avoid confusion with the functional Place head, I am going to label the silent place-denoting noun as N_{place} . The structure I propose for Hungarian PPs is shown in (147).³⁰

(147) PlaceP > AxialPartP > N_{place} > KP

I argue that the Ground is a fully fledged nominal projection, i.e. a garden variety KP (not the KP of the Svenonius type). This KP is the complement of a silent noun N_{place} .

Given that the Ground is a possessor, I suggest that the value/flavour of K is the same as that of a possessor, and that this is how the possession relationship between KP and N_{place} is encoded in the syntax. The reason that cross-linguistically the complement is often marked the same way as the possessor is that in the PPs of the relevant languages K is spelled out by an independent morpheme. In Hungarian PPs, this K is not spelled out on its own, therefore the DP is not formally marked as a possessor on the surface. Instead, this K undergoes co-spellout with the next higher head(s) in the structure. Dressed Ps, case markers subcategorized for by naked Ps and case markers that don’t appear under naked Ps all spell it out together with other heads.

The projection $N_{place}P$ has the meaning ‘the place of the KP’s denotation’. This is roughly the meaning that Svenonius attributes to his KP. AxPart is built on top of $N_{place}P$. I do not see evidence for a DP between AxialPartP and PlaceP in Hungarian, therefore I will not include it in the structures.

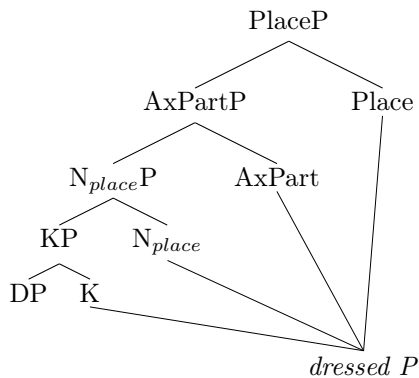
(147), in essence, is a minimal change to the Svenonius decomposition. Svenonius argues that (his) K turns the DP into its eigenspace, its set of points in space. (147) elaborates on how this is done: the turning into an eigenspace function is achieved via a possession relation with a silent N_{place} as the possessee. That is, the Ground, for instance *the house*, is turned into its eigenspace via the possession relationship ‘the place of the house’. Basically, $N_{place}P$ is identical to Svenonius’ KP, except for its label, and the setup of the functional sequence of PPs is not different from that suggested by Svenonius.

The only change to Svenonius’ functional sequence is the claim that the Ground is topped off by a KP in the usual sense, i.e. of the kind found in Nominative or Accusative or Lexical case marked nominal projections. The building of any PP-related structure, including what Svenonius calls KP, can only happen after the merger of the garden variety KP on top of the Ground.

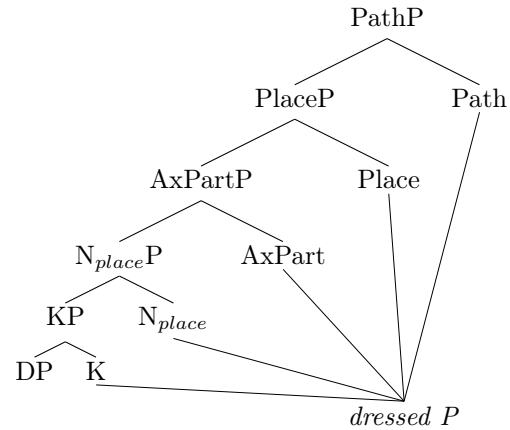
The revised and final structures of dressed and naked Ps are given in (148) through (151).

³⁰A complementation relationship between PLACE and the Ground is also proposed in Botwinik-Rotem and Terzi (2008); Botwinik-Rotem (2008b,a); Terzi (2008). On the other hand, Terzi (2007, 2010) suggest that PLACE and the Ground form a Small Clause, with PLACE as the subject and the Ground as the predicate. I adopt the complementation structure here because it will lead to a more insightful explanation of the agreement marker’s position than a Small Clause analysis. Further, a Small Clause analysis would result in a fixed specifier (for PLACE) and an open complement position (for the Ground). This kind of structure is not attested with idioms, and therefore it is better to avoid it here as well.

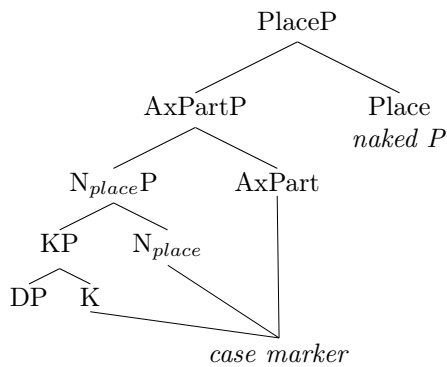
(148) Place denoting dressed P



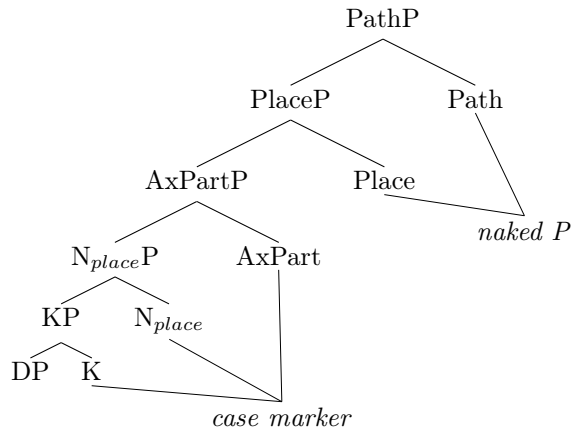
(149) Path denoting dressed P



(150) Place denoting naked P



(151) Path denoting naked P



These representations have numerous advantages over the ones they replace. Firstly, they are able to express that garden variety case-marked DPs, including Nominative, Accusative or Lexical case marked DPs, and PPs contain the same kind of case projection. Recall that this KP has a few ‘special properties’ (in Abels’ 2003 system, phasal properties), for instance it is movable but its complement cannot be extracted. The reason why neither ordinary case markers nor dressed PPs can be separated from their complement is that they both spell out K.

Secondly, it provides the natural cut-off point in the sequence that I argued for earlier: KP hosting the case marker of the possessor is the maximal extension of the possessor’s nominal sequence.

Thirdly, the proposal captures the intuition that some general possessive relation holds in spatial PPs, and it makes the identity of the possessor and the possessee very precise (the Ground is the possessor, N_{place} is the possessee).

Fourthly, we now also have a principled way of explaining that the agreement has the same form as the possessive agreement: it is possessive agreement in fact. Finally, we can also give a more explanatory account of the position of the agreement marker than the one offered in Section 5.4. In garden variety possessive structures, the agreement appears on the possessee. In PPs, there are three configurations: i) dressed PPs, ii) naked PPs and iii) PPs with case markers not selected by naked Ps. In these configurations the agreement appears i) on the dressed P itself, ii) on the case marker selected by the naked P, and iii) on the case marker, respectively. In every case, the agreement appears on the morpheme that spells out the possessee N_{place} . In dressed PPs this morpheme is the adposition, and in every other case this morpheme is the case marker.

The proposed structure and lexicalization patterns thus correctly predict the distribution of the agreement marker without having to posit that naked Ps are higher than dressed Ps (an issue to which I return below).

5.5.5 Spatial case markers with and without naked Ps

Let us now turn to the structure of spatial cases. Hungarian has nine spatial cases, encoding a three-way distinction between ‘at’, ‘towards’ and ‘from’ and a three-way distinction between ‘interior’, ‘exterior’ and ‘proximity’.

| | at | towards | from |
|-----------|-------------------------------|-------------------------------|---------------------------|
| interior | Inessive: <i>-ban/ben</i> | Illative: <i>-ba/be</i> | Elative: <i>-ból/ből</i> |
| exterior | Superessive: <i>-on/en/ön</i> | Sublative: <i>-ra/re</i> | Delative: <i>-ról/ról</i> |
| proximity | Adessive: <i>-nál/nél</i> | Allative: <i>-hoz/hez/höz</i> | Ablative: <i>-tól/től</i> |

Table 5.5: Hungarian spatial cases

We have seen above that they can be embedded under naked Ps. However, they also have a free-standing use. That is, they can occur on their own, without an embedding naked P. This use is illustrated in (152).

- (152) a. a ház-ban
the house-INESS
‘in the house’
- b. a ház-on
the house-SUP
‘on the house’
- c. a ház-hoz
the house-ALLAT
‘to the house’
- d. a ház-ról
the house-DELAT
‘from/off the house’

Crucially, the meaning contribution of case markers is very different in the free-standing use and in combination with naked Ps. The meanings in table 5.5 emerge only in the free-standing use. When the same case markers are embedded under a naked P, they lose this meaning entirely and don’t appear to have any meaning contribution. The meaning of case marker + naked P combinations seems to be equal to the meaning of the naked P only, and the case marker functions just as a grammatical glue that is necessary for grammaticality but has no meaning. Consider the following examples.

- (153) a ház-hoz
the house-ALLAT
‘to the house’
- (154) közel
close
‘close (by)’
- (155) a ház-hoz közel
the house-ILLAT close
‘close to the house’
- (156) *a ház közel
the house close
‘close to the house’

(153) shows the free-standing use of the Allative case-marker. Its semantic contribution is the Path meaning ‘to the proximity of’, as indicated in table 5.5. (154) features the intransitive use of the naked P *közel* ‘close’. This example shows that the semantics of closeness is baked into the naked P, it does not require a case marker for that meaning to emerge. Note that case-markers do not need an overt host, they can also cliticize onto a covert pronoun, as in (157). In this case they show agreement with the covert pronoun.

- (157) hozz-á
ALLAT-3SG
‘to him’

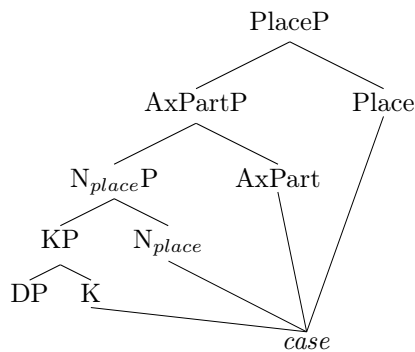
This means that the lack of the pronoun in (154) cannot be due to the lack of an overt host. Instead, it is truly not necessary for the ‘close’ meaning to emerge. When the naked P *közel* ‘close’

is used transitively, the case marker obligatorily appears (155). Note, however, that its ‘to the proximity of’ meaning completely vanishes. (155) has a Place denotation ‘close to the house’. This meaning is composed of the meanings of *the house* and *közel*, as if the case marker wasn’t even there.

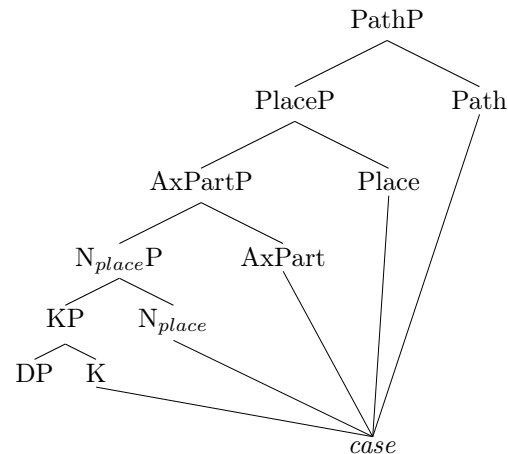
Case markers thus instantiate the lexicalization problem. They have two different uses, which correlate with different semantics. At the same time, both uses are related to the PP-zone, and can be traced back to a single lexical entry. In what follows, I will suggest that the two uses are related to each other by the Superset Principle.

Let us begin with the free-standing use of case markers. I follow the claim in the recent literature that there is no categorial difference between spatial cases and spatial adpositions: both sit in an extended PP projection. Thus DPs with a place denoting case marker have the exact same internal decomposition as DPs with place denoting adpositions (Place > AxPart > N_{place} > K > DP) and DPs with path denoting case markers have the same internal decomposition as DPs with path denoting adpositions (Path > Place > Axpart > N_{place} > K > DP). I suggest that in their free-standing use, case markers spell out all the projections above DP, like dressed Ps do.

(158) Place denoting case marker



(159) Path denoting case marker



The presence of K, N_{place} , and AxPart in case marked DPs is motivated by their semantics. Recall that a Place is built from a DP gradually, in the following steps. $N_{place}P$ yields eigenspaces; AxPart is a function from eigenspaces to regions which are subparts of the eigenspaces (front, interior, top, etc.). Place picks out spaces on the basis of the subparts established in AxPart. This entails that the presence of K, N_{place} and AxPart is required in every locative PP (Place does not operate on the direct output of either DP or K).³¹ On the presence of a possessive structure in the representation of nouns bearing local case markers, c.f. also Surányi (2009b).

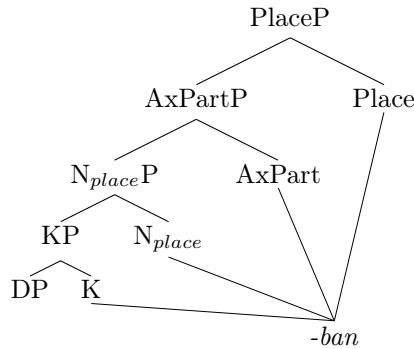
As a specific example, consider the case marked DP in (160).

(160) a ház-ban
the house-INESS
‘in the house’

This is a PlaceP with the following structure:

³¹AxPart was originally proposed to host adpositional elements with nominal-like properties such as English *behind*, *in front of*, *on top of* (Svenonius, 2006). In later work Svenonius argues that AxPart is, in fact, present in every locative PP, even if that PP does not have a specialized AxPart morpheme (e.g. *in the house*). This is necessary precisely because of the way the semantics is set up. I thus follow Svenonius (2008b) in positing an AxPart in every locative PP.

(161)

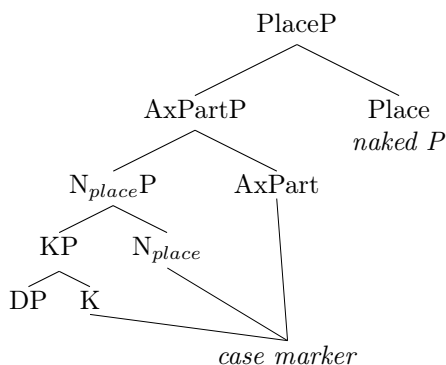


In the projections indicated in (161), the following semantic operations take place. $N_{place}P$ constructs the eigenspace of the house: the set of points in space occupied by the house. $AxPart$ narrows down this set of points to the set of points on the side of the house (literally, to the set of points that constitute the sides of the house). $Place$ picks out a region in space on the basis of this; in our case it picks out the region in space that is enclosed by the sides of the house, i.e. the set of points that are found inside the house.

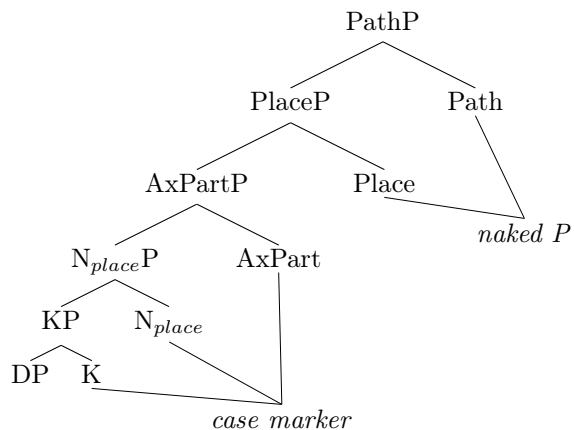
Note that the functions of $AxPart$ and $Place$ are truly different, and that it is possible to construct minimal pairs of spatial configuration by keeping the value of $AxPart$ constant and changing the value $Place$ only. *In* and *outside of* is a minimal pair like this. We have already seen above how the meaning of *in(side of)* comes about. Consider now *outside of*. To get this meaning, first $N_{place}P$ constructs the eigenspace of the house, the set of points occupied by the house in space. $AxPart$ then narrows this down to the set of points on the side of the house. So far, everything is identical to the way we derived *in*. At this point, however, $Place$ picks out a region in space on the basis of the output of $AxPart$ differently: it picks out the region in space that is not enclosed by the sides of the house. It is thus possible to manipulate $AxPart$ and $Place$ differently.

Turning to case markers embedded under naked Ps, I suggest that in this case they Underassociate their $Place$ (and $Path$) features. They spell out the features from and including K up to but not including $Place$. This was already implicit in the structures for naked Ps in (143) and (144). I repeat the relevant trees here as (162) and (163).

(162) Place denoting naked P



(163) Path denoting naked P



These representations convey the observed semantic inertia of case markers selected by naked Ps: case markers in this use do not contribute a $Place$ or $Path$ meaning to the structure because they do not spell out the $Place$ and $Path$ heads. The reason why they are required as a kind of glue can be traced back to the Exhaustive Lexicalization Principle. This principle requires every syntactic feature to receive a spellout. Naked Ps do not spell out K and the lower P features. $Place$, however,

Naked Ps thus select for case and do not modify it, and an adjunction analysis does not capture the semantics of naked PPs.

5.5.7 Against naked Ps being higher than dressed Ps

We now have the full picture of the structure of dressed PPs, naked PPs and DPs with spatial case markers. A possible alternative to my proposal is that naked Ps are higher in the functional sequence than dressed Ps and case markers. Following the literature, I suggested that spatial case markers not selected by a naked P project a PlaceP or PathP. A logical possibility is that spatial cases spell out the same amount of structure both when they stand on their own and when they are selected by a naked P. This would mean that naked Ps must be merged higher than suggested here.

Naked Ps select for the following cases: Superessive ‘on’, Allative ‘to proximity’ and Comitative ‘with’. When Superessive stands on its own, then it spells out the projections K through Place. When Allative stands on its own, it spells out the projections K through Place. This has already been established. It is possible, then, that a naked P selecting for Superessive is merged above Place, and a naked P selecting for Allative is merged above Path.

The problem with this is that it would duplicate the Place and Path heads, without being able to assign a different semantics to them. Consider the naked P *alul*. *Alul* can be used intransitively. In this case it means ‘down, below’ and it is interpreted with respect to a contextually salient deictic center, usually *here*. In (169) *alul* projects a PlaceP and spells out the Place head.

- (169) A konnektor alul van.
 the socket down be.3SG
 ‘The socket is down (there)/below/underneath.’

In its transitive use *alul* takes the Superessive *-on/en/ön* ‘on’ case, in this use it means ‘below something’. If the Superessive *-on/en/ön* ‘on’ selected by *alul* spells out Place, then there have to be two PlacePs right above one another. However, there is no clear evidence that their semantic function is different, which in turn means that there is no motivation for a Place > Place split.

Graver yet is the problem with *közel* ‘close to’, which selects for the Allative *-hoz/hez/höz* ‘to proximity’. *Közel* ‘close to’ can be used without a complement, as in (170).

- (170) A bolt közel van.
 the store close be.3SG
 ‘The store is close by.’

The PP in (170) is a PlaceP, and so *közel* ‘close to’ spells out Place itself. But if the selected Allative spells out all the projections up to and including Path, and *közel* ‘close to’ is Place, then there has to be a PlaceP above Path as well. This kind of recursion has not been motivated in the literature.³³ This is an undesirable consequence also because ‘normal’ Place and the Place spelled out by *közel* ‘close to’ cannot be distinguished on the basis of their semantic contribution, i.e. they are not two different types of Places. (There is of course a meaning difference between the PlaceP ‘close by X’ and ‘under X’, but this is a difference in the lexical-conceptual content of the Ps, rather than a difference in the semantic function of Place. That is, this is a non-grammatical *dog* vs. *cat* type of difference.)

The conjecture that naked Ps are merged higher than dressed Ps (and case markers) receives initial support from expressions like (171), where naked and dressed Ps can co-occur. However, (171) also presents a problem with its word order because the naked P cannot be post-nominal (which is the unmarked position for Ps in Hungarian).

³³Svenonius (2010) suggests that Paths can be turned into Places indeed by a so-called G-function merged above Path. This happens in (i).

- (i) There is a mill over the hill.

Over is a PathP, but it is used with a Place meaning here. The idea is that the G-function’s semantics is ‘at the end of a journey’, thus (i) means ‘there is a mill at the end of the journey over the hill’. It is clear that this G-function is not involved in the meaning of *közel valami-hez* ‘close something-Allat’ *close to something*: there is no meaning component ‘at the end of a journey’ here.

compositionally from the semantic contribution of the PP-projections. The ‘before’ interpretation arises in a similar compositional fashion. In the phrase *before the lecture* the Ground *the lecture* is first turned into a set of points occupied by the lecture on the timeline. AxPart narrows down this set to its first few points (the beginning of the lecture). Place picks out a set of points situated before the beginning of the lecture on the timeline.

Turning to causal PPs, Roy and Svenonius (2009) argue that here the Ground is the cause and the Figure is the resulting event or effect. In causal PPs the Ground is mapped onto a causal space, or in other words, onto all events that the complement may cause (motivate, force, enable, require, etc.). AxPart selects a subpart of these events, for instance the set of all consequences or all enabled events. On the basis of this Place picks out a specific (set of) event(s) that give the exact relation of the Ground and the Figure.

On this account, the internal make-up of spatial, temporal and causal PPs is identical. The difference between these PPs is thus much like the difference between *dog* and *cat*. The functional categories involved are the same, and the difference boils down to the lexical-conceptual information associated to the projections.

The vast majority of Hungarian PPs are spatial, temporal or causal. Their structure and semantics is now accounted for. Very few remain which do not fit either category. The outliers include dressed *helyett* ‘instead of’, *nélkül* ‘without’, or naked *együtt* ‘together with’ and *képest* ‘compared to’. Whether the Place > AxPart > N_{place} > K > DP decomposition can also capture their internal structure or not remains a topic for further research. But even if the answer turns out to be no, it does not provide a direct counterargument against the Place > AxPart > N_{place} > K > DP sequence of spatial, temporal and causal PPs. Note that in this chapter I have disregarded the question of where the external argument of the PP is introduced. This must obviously be done in a projection of its own, and that projection must be integrated into the Place > AxPart > N_{place} > K > DP sequence. It is possible that the outlier Ps spell out just the external argument introducing layer.

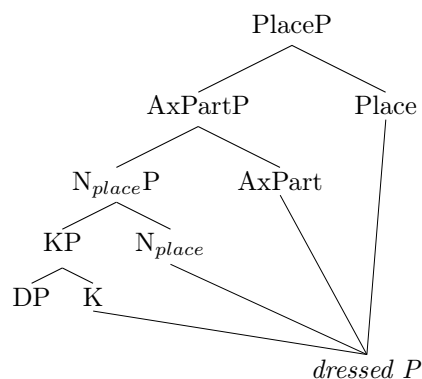
The reason why I did not discuss the question of where the external argument or Figure of PPs is introduced is that the existing proposals are very different, and their evaluation would take up a lot of space without contributing much to the main topic of this chapter (the relationship between case markers and adpositions on the one hand and to the characterization of dressed and naked Ps on the other).

Svenonius (2003a) and Svenonius (2010), for instance, argue that the Figure is introduced rather high up in the structure by a *p* head, which is merged between Deg (of Place) and Path. Botwinik-Rotem (2008b), on the other hand, argues that the source of the external semantic role is the silent NP PLACE. The proposals of Svenonius (2010) and Botwinik-Rotem (2008b) thus represent two extremes: the former suggests that the external argument is introduced in the highest projection within PlaceP, and the latter suggests that it is introduced in the lowermost projection of PlaceP. Given that the position of the Figure does not directly bear on the main issues of this chapter, I will not pursue this issue here.

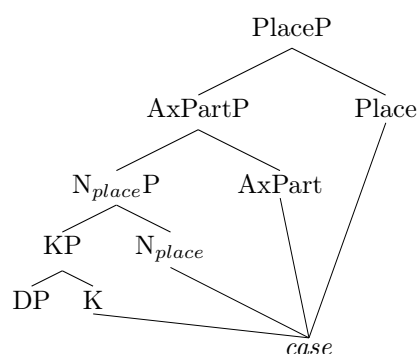
5.6 Summary

Internally to the Hungarian PP, case markers instantiate the lexicalization problem. On their own, they contribute a spatial Place or Path meaning, but combined with naked Ps they lose this meaning and merely serve as a grammatical glue between the noun and the adposition. At the same time, they occupy related positions in the extended PP in both cases. As in the previous chapters, I used the Superset Principle to tackle this problem. I suggested that in their free-standing use, case markers spell out the range of projections from K to Place/Path. When embedded under naked Ps, on the other hand, they spell out just a subset of these projections, corresponding to K and the lower P-projections. The loss of Place and Path meaning in this case is due to the Underassociation of the higher category features. The proposed structures for dressed and naked Ps as well as free-standing case markers is summarized in (173) through (175).

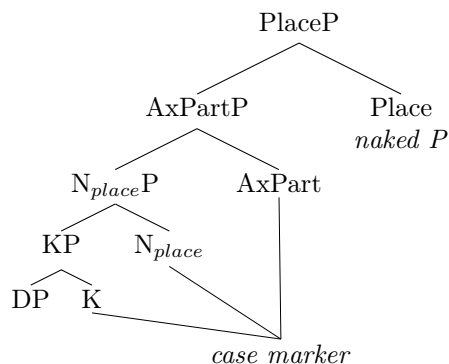
(173) Place denoting dressed P



(174) Place denoting case marker



(175) Place denoting naked P



The crucial driving factor behind this proposal is the syntax-semantics mapping I assume. DPs with place denoting dressed Ps, place denoting free-standing case markers and place denoting case + naked P combinations are all analyzed as structures with the same size: PlaceP. I rejected the idea of merging naked Ps higher than this as well as other alternatives on the basis of compositional semantics.

At the beginning of this chapter I asked two fundamental questions. First: what is the relationship of adpositions and case markers? The answer to this question is that the functional sequence of adpositional DPs and case marked DPs consist of the same projections, Path > Place > AxPart > N_{place} > K. Second: how should we characterize the dressed vs. naked divide in Hungarian adpositions? The answer to this question is that both dressed and naked Ps are situated on the spine of the extended PP projection. Specifically, both of them are contained in PlacePs and PathPs. Dressed Ps and naked Ps, however, lexicalize the same zone of the functional sequence differently. Specifically, dressed Ps lexicalize K in addition to adpositional projections. The difference in their size was shown to have important repercussions for what kind of structures they can be used to lexicalize.

As far as the broader theoretical issues of general PP structure are concerned, I argued that Place does not directly combine with DP. Instead, their relationship is mediated by intermediate projections. The lowest of these is a garden variety KP, which is the maximal extension of the noun phrase corresponding to the Ground. The next higher projection encodes a possessive relationship, whereby the Ground is the possessor of a phonologically null noun N_{place} . The semantic output of this possessive relationship is the eigenspace of the Ground, which is further modified and narrowed down by AxPart before Place and Path are merged into the structure. Table 5.6 summarizes the semantic contribution of each projection. Table 5.7 shows how the Place semantics of the phrase *above the box* is built up gradually.

| | |
|-------------|--|
| Place | region picked on the basis of the subset of points denoted by KP |
| AxPart | subset of points denoted by KP |
| N_{place} | set of all points denoted by KP, the place of KP |
| KP | |

Table 5.6: The semantic contribution of P-projections

| | |
|-------------|--|
| Place | above the box |
| AxPart | set of points on top of the box |
| N_{place} | set of all points denoted by the box, the place of the box |
| KP | the box |

Table 5.7: The derivation of *above the box*

Part II

The agreement problem

Chapter 6

The functional sequence meets the agreement problem

This chapter addresses the theoretical and empirical challenges that agreement raises for setting up a functional sequence of any extended projection. The main question from this perspective is whether agreement morphemes project their own phrases, and if so, whether the large variation in the cross-linguistic position of agreement markers in the clause (or indeed any extended projection) should be handled with a flexible functional sequence or multiple AgrPs at all the relevant points, in the spirit of Zanuttini's (1997a) analysis of NegPs.

Given that my focus will be the way agreement markers interact with the functional sequence, I will not present a complete review of the literature on agreement. Consequently, rather than providing a comprehensive list of the relevant bibliography at each point, the works cited point to some of the most influential or more recent analyses.

In accordance with the general aims of this chapter, I will not touch upon issues such as partial agreement, discontinuous agreement, inverse agreement, anti-agreement or how agreement relates to case. These are fascinating phenomena in their own right, but they are not directly relevant for the purposes of the chapter.

6.1 The problem of deciding whether a morpheme is agreement or not

Agreement is a ubiquitous phenomenon of natural language that has intrigued scholars for a long time. In generative grammar many approaches to agreement have been conceived, and, as it is usually the case, these approaches often embrace opposing conclusions and solutions. However, before we turn to the theoretical and empirical challenges surrounding agreement as well as the variety of analyses offered to deal with them, it is worth pointing out that a question that often arises is whether a certain piece of morphology is the actual exponent of a functional category or merely agreement with it, the actual exponent being phonologically zero.

In certain cases, conventional wisdom has it that agreement of some sort is clearly involved in the structures. A relevant example is DP-internal agreement between the noun and its modifiers for number, gender and case, as in the Modern Greek example in (1).¹

- (1) a. i amerikanid-a ginek-a
 the-FEM.SG.NOM American-FEM.SG.NOM woman-FEM.SG.NOM
 'the Americal woman' (genitive)

¹The DP-internal agreement displayed by (1) is known as 'concord'. Given the widely held assumption that 'regular' agreement and concord are derived by the same mechanism (Carstens, 2001, 2008; Koopman, 2006), concord will not receive a separate discussion here. See, however, de Chene (2004) and Giusti (2008) for claims that Agreement and Concord are different notions.

- b. ton amerikanid-on ginek-on
 the-FEM.PL.GEN American-FEM.PL.GEN woman-FEM.PL.GEN
 ‘the American women’ (genitive) (Alexiadou, 2001, ex. 17.) Modern Greek

A different type of example is provided by the elaborate suffixaufnahme system of Kayardild (Tangkic, Australian), detailed in Evans (1995) and Round (2009). Kayardild has five types of cases: i) adnominal case relates NPs to NPs, ii) relational case relates core arguments to the verb (nominative) or peripheral arguments to the clause (location, destination), iii) modal case indicates TMA, iv) associating case links NPs with nominalized verbs, and v) complementizing case applies to clauses, indicating that they are an argument of the matrix or that marked coreference relationships hold between matrix and subordinate (Evans, 1995, ch. 3.4). These cases appear in the order indicated in (2) (associating and complementizing case fill the same slot in (2) and don’t co-occur).

- (2) stem + adnominal + relational + modal + associating/complementizing

Crucially, all five types of cases appear on every word in their domain. A simple PP is shown in (3), where the instrumental appears both on the actual instrument and its owner.

- (3) dangka-karra-nguni mijil-nguni
 man-GEN-INSTR net-INSTR
 ‘with the man’s net’ (Evans, 1995, ex. 3.47) Kayardild

In (4) the above PP is embedded in a clause with the TMA indicator modal ablative case (MABL) *na*. This morpheme stacks on every word in its domain, including those in the PP.

- (4) maku yalawu-jarra yakuri-na dangka-karra-nguni-na mijil-nguni-na
 woman catch-PST fish-MABL man-GEN-INSTR-MABL net-INSTR-MABL
 ‘The woman caught some fish with the man’s net.’ (Evans, 1995, ex. 3.48)

(5) minimally differs from (4) in also containing the complementizing oblique case (COBL) *ntha*. This yields altogether four cases on *dangka* ‘man’.

- (5) maku-ntha yalawu-jarra-ntha yakuri-naa-ntha dangka-karra-nguni-naa-ntha
 woman-COBL catch-PAST-COBL fish-MABL-COBL man-GEN-INSTR-MABL-COBL
 mijil-nguni-naa-nth
 net-INSTR-MABL-COBL
 ‘The woman must have caught fish with the man’s net.’ (Evans, 1995, ex. 3.50)

That the Modern Greek and Kayardild examples above contain agreement morphemes is supported by both morphological and interpretational considerations. As for the morphological considerations, only nouns come from the lexicon with gender features baked into them, therefore in the Greek example the gender feature of the adjective and the article must be agreement morphemes that merely reflect the value of the gender on the noun. As far as interpretation is concerned, it is clear that a feature like singular or a case like Instrumental is interpreted only once, on the nominal head and on the Instrument respectively, therefore their other occurrences must be non-interpreted agreement morphemes. All this is conventional wisdom.

However, in a variety of cases it is subject to debate whether a certain piece of morphology represents a contentful functional category or merely agreement. This is because the number of occurrences of a morpheme/feature does not provide a sensible diagnostic for agreementhood. Depending on the phenomenon and the analysis, a morpheme appearing only once in the containing maximal XP may still be agreement, and multiple exponents of the same feature in the containing maximal XP do not necessarily mean that agreement is involved either.

The plural occurring with quantified nouns is an example of a morpheme that is often taken to represent agreement even if it appears only once in the containing maximal projection. As is well known, whether a noun modified by a numeral or quantifier bears plural morphology or not is subject to cross-linguistic variation: English and Norwegian require overt plural marking in these

cases, while Hungarian and Kurdish reject it.²

- | | | |
|-----|---|--------------------------|
| (6) | a. seven book-s b. sju eple-r seven apple-PL 'seven apples' | English Norwegian |
| (7) | a. hét könyv-(*ek) seven book-PL 'seven books' b. mamoste, du mamoste teacher, two teacher 'a teacher, two teachers' (Ortmann, 2000, ex. 6.) | Hungarian Kurdish |

Some works take the plural co-occurring with numerals and quantifiers to be the actual exponent of a functional category such as Num or Div (Borer, 2005 is a prominent representative of this group). Others view it as merely agreement (c.f. Farkas and de Swart, 2010, Ionin and Matushansky, 2004, 2006, the latter two explicitly argue that agreement is with the entire extended NP and is semantic in nature). Yet others recognize the existence of both 'real' and agreement plurals (Borer and Ouwayda, 2010). Thus the fact that the plural occurs only once in (6) does not guarantee that it is not an agreement morpheme.³

Examples of the converse case, where a certain morpheme or feature has multiple appearances but agreement is not necessarily taken to be involved, is presented by Romance, Bantu and Semitic clitic doubling phenomena and verbal subject or object cross-referencing affixes ('verbal agreement') in non-*pro*-drop languages.⁴ Incorporated or phonologically bound pronouns, clitics, and agreement markers are infamously difficult to tease apart on empirical grounds, especially because of the well-known grammaticalization cline in (8) (but see Zwicky and Pullum, 1983 for some pointers).

- (8) pronoun > clitic > agreement marker

As an example of a clitic doubling construction, consider the Spanish examples below. Pronominal direct objects are clitic doubled in all varieties of Spanish (9), while non-pronominal direct objects are optionally clitic doubled in the Río de la Plata, Argentina dialect (and some others), as shown in (10).^{5,6}

- | | | |
|------|---|-----------------------|
| (9) | La llamaron a ella her 3PL-call A her 'They called HER.' (Suñer, 1988, ex. 4. a.) | Spanish |
| (10) | Juan la sacó la nota sin esfuerzo. Juan it.FEM.CL got-3SG the grade without effort 'Juan got the grade without effort.' (Franco, 2000, ex. 38.) | Southern Cone Spanish |

A definitive analysis of clitics, and more importantly for us, of clitic doubling constructions has proven elusive. In the following summary of the most influential approaches to clitic doubling and agreement markers, I include in brackets the language which provided the empirical basis of the investigation, because, as suggested by some sources, it is likely that different languages require

²There may also be intra-language variation in this respect, c.f. English *every apple* and *all apples*. I will ignore this issue here.

³The nature of Hungarian plural marking will be extensively discussed in Chapter 9.

⁴These are often argued to be the same phenomenon, c.f. for instance Manzini and Savoia (2002, 2004a,b, 2007, 2009). This chapter follows this line of thinking and makes no important theoretical distinction between clitics and agreement affixes. Where they are referred to under different names, it is only to follow descriptive traditions. A further relevant phenomenon is clitic left dislocation, which involves clitic doubling with a full DP on the left periphery of the clause but not in focus. For reasons of space, the literature on CLLD is not reviewed here.

⁵The *a* of (9), not glossed by Suñer (1988), has various functions. In the example at hand it marks Accusative. Thanks to Antonio Fábregas for discussion and clarification regarding these examples.

⁶Depending on the language and the dialect, clitics may not co-occur with full NP doubles (French objects), clitics may double subjects (Italian varieties), direct and indirect objects (Italian, Spanish, Bantu) and there may be a divide on the basis of whether the double is pronominal or not (Standard Spanish objects).

different analyses.

Doubling clitics have been analyzed as agreement for instance by Rizzi (1986) (Trentino Italian), Poletto (1995) (Veneto Italian), Sportiche (1996) (French dative clitics), Suñer (1988) and Franco (2000) (Spanish object clitics). On the other hand, Borer (1984) (Hebrew genitives, Spanish, French) and Jaeggli (1986) (Spanish) have analyzed clitics as non-agreemental base-generated elements on the head V or N, with the full DP double occupying the argument position. According to a different proposal, doubling clitics are D elements. They either project their own DP that is flanked by VP shells (Torrego, 1995, Spanish, the full DP is merged in spec, VP) or this D is in the extended projection of the object argument (Uriagereka, 1995 for Spanish, the full DP doubles occupy spec, DP). Yet a different suggestion is that clitics are independent heads that project their own CliticP in the clausal spine above the verb phrase (Sportiche, 1996; Cocchi, 2000; Manzini and Savoia, 2002, 2004a,b, 2007, 2009; Ouali, 2011) or inside the vP (Papangeli, 2000). Sportiche (1996) (French accusative clitics) and Ouali (2011) (Tamazight Berber object clitics) suggest that the full DP doubles are merged in the vP-intenal argument position; while Manzini and Savoia (2002, 2004a,b, 2007, 2009) (Italian subject and object clitics) and Cocchi (2000) (Spanish and Bantu object clitics) argue that the doubles are merged as focus or topic. Papangeli (2000) (Modern Greek object clitics) proposes that the clitic phrase is merged as the complement of the verb and takes the DP double as its complement.

Turning to morphemes that are generally characterized as subject or object ‘agreement’ in descriptive terms, we find the same debate and the same types of proposals. In polysynthetic languages, for instance, both Baker (1996) and Jelinek (1984) take the full DP arguments to be adjuncts. But while Baker analyzes Mohawk argument cross-referencing markers as spellouts of the head’s case feature (essentially, as agreement, with an analysis that is equivalent to Borer’s 1984 treatment of clitics) and suggests that there are null pronouns in the argument positions, Jelinek (1984) argues that the cross-referencing markers in Warlpiri (as well as in Spanish and pro-drop languages in general) are clitic pronominal arguments of the verb. More recently Adger et al. (2010) proposed that the agreement markers of Kiowa are the spellout of uninterpretable ϕ features on the argument introducing verbal heads. They are prosodic clitics valued by the full DP arguments introduced in the regular argument positions (that is, they are real agreement morphemes).

As we can see from this cursory overview, doubling of the same set of features within the clause does not entail the conclusion that agreement is involved, and there is more than one way to accommodate the full DP doubles into the syntax.

That the number of occurrences of a feature (or feature bundle) has no bearing on its status as agreement or contentful functional head/phrase is clearly shown by Zeijlstra’s (2004) analysis of n-words and Manzini and Savoia’s (2007) analysis of Italian subject markers. Zeijlstra (2004) argues that negative concord arises when the presence of a (c)overt negative operator is signaled by the uNeg feature of n-words. In strict negative concord languages the interpreted operator is covert. If there are multiple n-words in a sentence in such a language, then a feature occurs and receives overt spellout multiple times but none of the pronounced instances correspond to the actually interpreted feature (i.e. all of them are agreement).

Manzini and Savoia (2007) examine the subject markers of the Castellazzo Bormida example in (11), among others. In this northern Italian dialect clitic doubling co-occurs with verbal inflection: (11) contains a full lexical subject DP, an expletive subject clitic (CLS) and a verbal inflection cross-referencing the subject (INFL).

- (11) ir maz'næi i 'drwəm-u də 'lɔ
 the children CLS sleep-INFL in here
 ‘The children sleep in there.’

(Manzini and Savoia, 2007, ch. 2., ex. 22. a.)

Castellazzo Bormida

Manzini and Savoia argue that neither subject-related morpheme is agreement. D is projected in three different bits of the functional sequence of the clause, VP, IP and CP. The three subject-related morphemes spell out these Ds. They share the same reference because their referential properties are compatible with each other, and this allows an interpretation in which they are in a chain construal. In other words, they are assigned the same reference and the same argumental slot (but crucially the chain does not involve movement).

To sum up this section, before we think about the syntactic representation of agreement as such, we must carefully examine each and every morpheme suspected to be agreement, and decide whether it is agreement indeed or rather a phonologically weak exponent of a contentful functional category or phrase.

6.2 The syntactic representation of agreement

6.2.1 The rise and fall of AgrP

Agreement was first suggested to project its own Agreement phrase on the clausal spine in Pollock's (1989) seminal article, and the existence of AgrP soon became broadly accepted in the mainstream theory. Pollock suggested that Agreement is dominated by Tense in the functional hierarchy. However, Chomsky (1991) noted that there would be both theoretical and empirical motivation for placing Agr above Tense: Agr holds a government relation to the subject in spec, TP and is found outside of tense morphology in a number of languages. Chomsky suggests that this can be reconciled with Pollock's $T > \text{Agr}$ ordering if there are two Agr nodes, in fact: AgrS for subject agreement above Tense, and AgrO for object agreement below Tense. The latter functions as the landing site of object shift and ECM related object movement. In Chomsky (1993) he suggests that the agreeing NP always establishes a structural spec-head configuration with the relevant Agr head. This view is still upheld in Koopman (2003, 2006).

AgrO was soon followed by AgrDO and other agreement phrases in all kinds of extended projections including DP (possessive agreement), PP (adpositional agreement), CP (complementizer agreement) and Small Clauses. See Belletti (2001) for a overview of the role of AgrP in these.

AgrPs were especially useful for researchers working on morphologically rich languages with extensive agreement paradigms such as Hungarian. Subject and object agreement morphemes in the verbal domain or possessive agreement morphemes in the nominal domain could now be placed into different Agr heads, allowing for these morphemes to be easily integrated into syntactic structures and receive essentially the same type of treatment as other inflectional morphemes.

Chomsky's approach to AgrPs, however, changed with Chomsky (1995). In chapter 4.10. he eliminated Agr nodes altogether in favour of multiple specifiers, and argued that strong features originally assigned to AgrS and AgrO reside in T and v respectively. Beginning with Chomsky (2000, 2001a,b) he treats agreement in terms of the basic grammatical operation Agree, a relationship that holds between a matching Probe and a Goal in its search domain.

Agree has been argued to be constrained by phases in various works, including Csirmaz (2006) and Rouveret (2008). This is a natural assumption, as phases signal domains that are sent off to Spell Out and become unavailable for further operations. Consequently, anything that is shipped off to the interfaces is unavailable for Agreement operations as well.

Chomsky's original conception that Agree is only able to probe downwards has been called into question for instance in Rezac (2003); Baker (2008); Hicks (2009); Zeijlstra (2010); Bader (2011) and Diercks (2011). Other controversies around Agree include whether Agree consists in feature value assignment (Chomsky, 2001b) or sharing (Frampton and Gutmann, 2000; Pesetsky and Torrego, 2007; Danon, 2011), whether unvalued features are also necessarily uninterpretable (Chomsky, 2000, 2001b) or this implication does not hold (Pesetsky and Torrego, 2007), and whether the ϕ features of the probe get valued as a bundle (Chomsky, 2001b) or the different ϕ features act as separate probes (Béjar, 2003, 2008; Rezac, 2003). In Section 6.3 will return to how the thesis takes stand on these issues.

6.2.2 Problems with AgrP

A strong reason why AgrPs had to be eliminated from Chomsky's theory is that Agr, unlike T or V, for instance, has no interpretable features (Chomsky, 1995). As Chomsky views language as a perfect solution to legibility conditions imposed by the interfaces, a projection that has no instructions either to the PF or the LF interface cannot exist. But for Chomsky's approach the gravest problem with AgrP is that uninterpretable features are eliminated from the derivation, and this would ultimately leave a putative AgrP without a label (Chomsky, 2000).

Apart from these purely theoretical considerations, AgrP also raises empirical problems. As Fuß (2005, ch.3.) points out, in contrast to other functional categories Agr has very limited appearances as a free morpheme. Free AgrS markers occur only in SVO languages with the order AgrS T V. This is unexpected if agreement projects its own phrase.

Further, the relative ordering of agreement markers with other morphemes is notoriously unstable from a cross-linguistic point of view. In a study of 530 languages, Julien (2002, 2007) show that all attested orders of tense, aspect, and main verb can be derived by assuming i) a non-lexicalist model of inflectional marking where syntax is solely responsible for morpheme order, ii) the base-generated order $T > Asp > V$ and iii) a few types of simple and constrained movement operations (upward directed head movement and phrasal movement). The category of verbal Agreement (both with subjects and objects), however, does not fit into this neat picture, because agreement does not appear to have a fixed position in the functional sequence.⁷ In some languages it is high, above tense markers, in others it seems to be as low as Voice. Julien concludes that agreement does not have a fixed position because it does not have its own projection. Instead, agreement features are added to other independently established functional heads in the clause, such as Fin, T, Asp, or Voice.⁸

While Julien (2002, 2007) focuses exclusively on verbal agreement, the position of possessive agreement in the DP can also be easily shown to be subject to great variation. In her (2003) study of nominal inflectional morphology, Moravcsik writes: nominal "affixes whose order varies from one language to another include case and possessor marker, and number and possessor marker" (Moravcsik, 2003, p. 225.). Examining just a handful of (rather randomly selected) languages, I have found that cross-linguistically the possessive agreement can appear in any of the positions indicated in (12).

(12) N < poss agr < plural < poss agr < case < poss agr

In Chuvash, for instance, the possessive agreement appears in the lowest indicated position, between the noun and the plural marker (Johanson, 2009 as well as Johanson, 1973, cited in Moravcsik, 2003).

(13) kil-**ěm**-sen-čen
house-POSS.1SG-PL-ABL
'from my houses' (Johanson, 2009, p. 245.) Chuvash

The same order is exhibited by Huallaga Quechua (Myler, 2009) and Kharia, a South Munda language, too (Peterson, 2011).

(14) wasi-**n**-kuna-chaw
house-3.poss-plural-in
'in his/their houses' (Myler, 2009, p. 52., ex. 20.) Huallaga Quechua

(15) ayo aba ro boker kulam=**dom**=ki=ya? kaʔa sumboʔ=te
mother father and brother.in.law brother=3poss=pl=gen foot base=obl
'at the feet of his mother, father, brothers-in-law and brothers'
(Peterson, 2011, p. 58., part of ex. 20.) Kharia

Possessive agreement appears in the middle position, between the plural marker and the case suffix, in Standard Hungarian, for instance. The suffix *-a/-e/-ja/-je*, glossed as POSS, is the possessedness marker. It is non-agreemantal in nature (Bartos, 1999) and is often fused with person-number agreement (but not in this case). The plural morpheme, which regularly takes the form *-k*,

⁷That the position of agreement is subject to cross-linguistic variation in the clausal spine has already been noted in Ouhalla (1991), for instance, who interpreted this fact as evidence for a flexible functional sequence. See also Ouali (2011) for a recent proposal along the same lines.

⁸Cinque (1999) suggests that the variation is due to the existence of multiple Agr phrases in the clause. What is subject to cross-linguistic variation is which of these projections is/are filled overtly. This can potentially handle the ordering problem but not the other problems discussed above. In a similar fashion, Manzini and Savoia (2004b) argue that 'agreement' (which they analyze as a pronominal clitic) has projections at multiple positions in the clause, and doubling effects arise as a result of lexicalizing more than one of these at the same time.

appears as *-i* after the possessive marker. The plural is followed by the person-number agreement and the case marker.

- (16) a. ház-a-i-**nk**-at
house-POSS-PL-POSS.1PL-ACC
'our houses'
- b. kert-je-i-**nk**-et
garden-POSS-PL-POSS.1PL-ACC
'our gardens'

The N-Pl-Agr-Case order is also exhibited by Turkish and Kolyma Yukaghir⁹, an East Siberian isolate (Maslova, 2003). (The examples I have found from these languages have no separate non-agreemental possessedness marker).

- (17) teşekkür-ler-**im**-i
thank-PL-1SG.POSS-ACC
'my thanks' (Plank, 2006, part of the first example) Turkish

Possessive agreement appears in the same position in Bolivian Quechua, too, but with the twist that in this language person and number agreement are expressed by different morphemes (Myler, 2009).¹⁰

- (18) wasi-kuna-**n-ku**-pi
house-PLURAL-3.POSS-PLURALITY.OF.POSSESSOR-in
'in their houses' (Myler, 2009, p. 52., ex. 21.) Bolivian Quechua

Finally, possessive agreement appears outside of case suffixes in Finnish (Finno-Ugirc) and Evenki (Tungusic), for instance.

- (19) a. ma-i-tte-**nsa**
country-PL-GEN-POSS.3
b. ko-i-tte-**nsa**
moth-PL-GEN-POSS.3
(Kanerva, 1987, ex. 33.) Finnish

- (20) a. hyv-i-llä-**si**
good-PL-ADESS-POSS.2SG
b. paho-i-lla-**ni**
bad-PL-ADESS-POSS.1SG
(Kanerva, 1987, ex. 52.) Finnish

- (21) Nungan halgan-il-va-**v** ga-ra-n.
he leg-PL-ACC.DEF-1SG.POSS take-NFUT-3SG
'He took (i.e. touched) my (own) legs.'
(Nedjalkov, 1997, p. 145. ex. 558. a.) Evenki

Nichols (1973) and Comrie (1980) report that agreement following case is also typical of Baltic Finnic languages in general, as well as Mordvin and Samoyedic. Representative examples are given below.

- (22) jalga-do-**m**
friend-ABL-1SG
'from my friend' (Nichols, 1973, p. 228.) Mordvin

- (23) (pidør^o) serako-m-t^o te-m-t^o
you.SG white-ACC-2SG reindeer-ACC-2SG
'your white reindeer' (Nikolaeva, 2003, ex. 9.) Tundra Nenets

⁹Yukaghir possessive suffixes "mark the Possessive relation between the referent of the noun phrase and some third person/entity which is not the subject of the clause within which the noun phrase occurs" (Maslova, 2003, p. 79.). It is thus not entirely clear whether this marker is the exponent of a pure possessive relation without agreement that has a limited distribution, or it involves agreement for third person.

¹⁰Huallaga and Bolivian Quechua are mutually unintelligible, therefore they are best regarded as different languages rather than dialects (Myler, 2009).

We can see from this short survey that cross-linguistically agreement is all over the place in the DP. Note that the order of the plural and case markers is the same in Chuvash, Kharia, the discussed Quechua languages, Hungarian, Turkish, Finnish and Evenki (noun-pl-case), it is only the position of the agreement that is subject to variation across these languages. (I have no information about the location of the plural in Mordvin. In Tundra Nenets, the plural is fused either with the agreement marker or a case marker.)

Even more disturbingly, this may happen internally to a single language as well. For instance, certain possessive agreement and postposition combinations in Cheremis and Vogul seem to be in free variation (Comrie, 1980, p. 85.).

- (24) a. sorla-**m** dene
sickle-1SG with
'with my sickle'
b. sorla dene-**m**
sickle with-1SG
'with my sickle' Cheremis
- (25) a. kol-**əm** tīwr-ən
'into my house'
b. kol tīwr-**əm**-n
'into my house' Vogul

A similar variation is found in Eastern Mari (Plungian, 2001). In this language "the possessive marker may occur before or after case and number suffixes; the corresponding forms are in free variation" (p. 675).

- (26) taŋ-βlak-**em** or taŋ-**em**-βlak
friend-PL-1SG
'my friends'
- (27) čeβer-eš-**em** or čeβer-**em**-eš
beautiful-LOC-1SG
'in my beautiful' Eastern Mari

Table 6.1 summarizes the position of the possessive agreement morpheme in the languages discussed in this section. The fact that agreement has no fixed position in the DP either cross-linguistically or in certain cases even internally to a single dialect poses a serious challenge for the view which assumes a syntax-morphology isomorphism (i.e. the Mirror Principle) and an invariant functional sequence with a single AgrP for each agreement type (subject, object, possessive, and so on).

| N | < | poss agr | < | plural | < | poss agr | < | case | < | poss agr |
|---|---|------------------|---|--------|---|------------------|---|------|---|----------|
| | | Chuvash | | | | Standard Hung. | | | | Finnish |
| | | Huallaga Quechua | | | | Turkish | | | | Mordvin |
| | | Kharia | | | | Kolyma Yukaghir | | | | Samoyed |
| | | | | | | Bolivian Quechua | | | | Evenki |

Table 6.1: The position of agreement markers

6.2.3 Agreement morphemes without AgrP

Giving up AgrPs in mainstream syntax has brought along the need to come up with new ways of representing the agreement morphemes of natural language. Proposals about how this should be done can be divided into three main groups.

The first approach to agreement morphemes is to claim that they are not agreement, in fact. Instead, they are the actual arguments of the verb: incorporated pronouns (Bresnan and McHombo, 1987: Chichewa objects, Taraldsen, 1992, Diercks, 2011: Lubukusu objects) or clitics/clitic pronouns (Jelinek, 1984: Warlpiri, Cocchi, 2000: Bantu and Romance, Manzini and Savoia, 2004a,b, 2009: Italian). Alexiadou and Anagnostopoulou's (1998) claim that verbal agreement in null sub-

ject languages has the categorial status of a pronoun (+D, + interpretable ϕ -features) is a closely related idea, but they do not go all the way to claiming that the agreement bears the theta role of the verb. Reanalyzing agreement as an argument is particularly feasible for languages in which the agreement/clitic is in complementary distribution with an full DP argument, such as Irish subjects and prepositional objects (Ackema and Neeleman, 2004).

The second approach to agreement morphemes is that they are bona fide agreement, and that they are exponents of features present in narrow syntax. These features are part of the feature matrices of functional heads that can be motivated on independent grounds, such as v, Asp, or T. Proponents of this approach include Chomsky (2000, 2001b); Julien (2002, 2007) as well as Baker (1996) (for Mohawk), with some differences as to exactly which functional heads bear the relevant features. A variation of this approach is proposed by Fuß (2005). His claim is that there are discrete Agr nodes in narrow syntax but they do not project a phrase. Instead, they are adjoined to other functional heads as in (28). (He also acknowledges the need for dissociated agreement, though.)



The third approach to agreement morphemes is that they are bona fide agreement, but they are not present in narrow syntax at all. This is the standard position of Distributed Morphology (Halle and Marantz, 1993; Embick and Noyer, 1999 and Embick and Noyer, 2007, among others, c.f. Baker, 1996 and Fuß, 2005 for analyses that make use of this idea only in certain cases but not others). The claim is that agreement morphemes are dissociated morphemes: they are adjoined to functional heads post-syntactically but before Vocabulary Insertion, in the morphological component of grammar.



Bobaljik (2008) argues that this analysis is supported by the ordering of morphological case assignment and agreement. Morphological case is assigned in the morphological component, and agreement depends on morphological case (i.e. follows it in the order of operations). Consequently, agreement must be a post-syntactic operation, too.

6.2.4 Against treating agreement on a par with negation

As Cinque (1999) points out, claims about the functional sequence exhibiting cross-linguistic variation always build on the distribution of negation and agreement. It appears that it is not possible to find one fixed position for either of these elements in the functional sequence: they both occur at different heights in different languages. Cinque briefly suggests that instead of taking this as evidence for the flexibility of the functional sequence, we should rather assume multiple NegPs and AgrPs.

Zanuttini's seminal work on negation (Zanuttini, 1997a,b, 2001) examines the distribution of negative markers with respect to the finite verb, participles and adverbs. On the basis of these tests, Zanuttini argues for the existence of four different NegPs, shown in (31).

(31) **NegP₁/PolP** > TP₁ > **NegP₂** > TP₂ > **NegP₃** > AspP_{perf} > AspP_{gen/prog} > **NegP₄**

The judgments that form the empirical basis of the hierarchy in (31) are solid, and since nobody would want to argue that negation is not represented in the functional sequence, they inevitably lead to the postulation of several NegPs.

At this point the following objection may be raised against an AgrP-less syntax. Negation and agreement are similar in that neither can be assigned a unique position in the functional sequence. There is no doubt that negation is represented in the functional sequence by its own projection, and there is no doubt that there is more than one such projection. Conceptual simplicity, then, dictates that the default solution for agreement should be exactly the same: multiple AgrPs at every point where agreement morphology is attested, just like Cinque (1999) suggests.

The default solution, however, is applicable only if everything else is equal, and this is clearly not the case for negation and agreement. On the one hand, negation makes a clear semantic contribution to the clause, while the hallmark of true agreement morphemes is that they do not. On the other hand, Zanuttini's different NegPs also have slightly different meaning/featural contributions. NegP₁ can host an emphatic affirmative marker as well as a negative marker. Its negative marker is required to co-occur with postverbal negative indefinites and has features that match a yes/no operator. NegP₂ is the only phrase for presuppositional negative markers. NegP₃ and NegP₄ are both non-presuppositional and their semantic contribution is hard to tease apart. Zanuttini speculates that NegP₄ interferes with the raising of negative indefinites and it is used only if the language can mark negative elements as having focal stress.

Zanuttini's conclusions receive support from Ramchand (2004) and Munshi and Bhatt (2009) as well. Ramchand (2004) argues that the two different forms of negation in Bengali represent different negation strategies in semantics and give rise to subtly different interpretations. Munshi and Bhatt (2009) propose that Kashmiri has two positions for negation, with different semantic contributions: the lower corresponds to sentential negation, while the higher is linked to 'light negation' and allows 'expletive' negation.

Thus it appears that with careful examination different NegPs can be shown to have a different semantic contribution. I am not aware of a similar suggestion for true agreement markers (and given that the basic attribute of real agreement is lack of meaning contribution, such a proposal would be self-contradictory). Consequently, even though they share some properties, the different treatment of negation and agreement is well motivated.

6.3 The approach to Agreement adopted in this thesis

6.3.1 The position of agreement in grammar

In Part I of the dissertation I adopted the Nanosyntactic approach to the lexicalization problem. A central claim of Nanosyntax is that morphological phenomena fall out from the interaction of syntax and spellout, and grammar has no post-syntactic morphological component. The only approach to agreement that is consistent with this view is that the operation Agree as well as agreement morphemes are in the syntax proper — this is what I will assume in the chapters to come.

However, the fact that only this view is consistent with the assumed lexicalization algorithm doesn't mean that it is necessarily correct, too, and I must ask whether this approach is indeed tenable. This is a pressing question especially in light of Bobaljik's (2008) observation that agreement depends on morphological case. Bobaljik argues that morphological case is assigned in the morphological component, and agreement operates on the output of morphological case. Therefore the crucial point is whether morphological case can be shown to be part of narrow syntax.

Preminger (2011, ch. 5.) argues that this is indeed the case. He shows that while in quirky-subject languages morphological case feeds ϕ -agreement, in non-quirky-subject languages ϕ -agreement feeds movement to the canonical subject position. The order of operations is therefore as in (32).

$$(32) \quad \text{morphological case} \rightarrow \phi\text{-agreement} \rightarrow \text{syntactic movement}$$

Preminger argues that since the last operation is part of narrow syntax, all other operations preceding it must be part of syntax, too. This means that placing agreement morphemes into syntax is at the very least a plausible enterprise, and the position taken in this thesis can be reasonably entertained.

This is good news for the Nanosyntactic lexicalization algorithm. If it wasn't plausible to place agreement into narrow syntax, if it could be dealt with only in a morphological component, then

the chosen lexicalization algorithm would be seriously challenged, and Part I of the thesis would have to be rethought. This is not the case, however. It turns out that the lexicalization algorithm leads to a view of agreement which receives support from empirical considerations, and thus a coherent picture emerges.¹¹

6.3.2 The representation of agreement morphemes

In Chapter 1 I spelled out my assumptions about the syntax-semantics mapping. I argued for a very tight mapping, in which there is no place for empty heads that don't contribute to the semantic interpretation. The hallmark of agreement is that it duplicates some information without having a contribution of its own. Therefore it follows from the syntax-semantics mapping that agreement morphemes cannot be hosted in AgrPs dedicated to this purpose.

This leaves two possible ways to represent agreement. On the one hand, agreement morphemes may be added to the feature matrix of functional heads, as in (33). For analyses that place agreement into syntax but don't assume separate AgrPs, this is the standard approach. On the other hand, agreement morphemes may be non-projecting terminals in the spirit of Fuß (2005). This approach is shown in (34).



From a theoretical point of view (34) has the positive disadvantage that it requires two types of terminals, projecting and non-projecting ones. As non-projecting ones are limited to agreement, from an empirical point of view, I do not see any advantages to (34). (33), on the other hand, doesn't require any special tools for agreement, it makes use of feature bundling already available in the theory. Therefore in this thesis I will adopt the approach in (33).

6.3.3 The linearization of agreement morphemes

My primary source of evidence for the functional sequence is compositionality. But as agreement markers have no semantics, they don't have scope either. Baker (1996, p. 30.) writes: "agreement morphemes, unlike tense and aspect, are semantically vacuous; thus, there is no way of locating them in a syntactic tree by investigating their scope with respect to other items". This in turn means that I will not be able to use my main source of evidence to locate agreement morphemes in f-seq. Instead, I will have to rely on the evidence presented by morpheme order.

In the approach that I adopted in Section 6.3.2, an important but frequently forgotten or ignored problem arises for the linearization of agreement morphemes. In particular, this approach entirely underdetermines where the agreement morphemes added to the functional head in question linearize. With one agreement feature added to a functional head, three possibilities arise. The functional head and the agreement morpheme may be spelled out by a single morpheme, a portmanteau. This is the easy case, as the linearization issue doesn't arise. In this case the phonological form of the functional head is expected to vary according to the value of the agreement morpheme. For instance, if an uNum agreement morpheme is added to a head, then the spellout of the head is expected to reflect whether uNum is valued as singular or plural by the goal. Examples where this possibly happens are furnished by North American Indian languages, in which suppletive verb forms cross-reference the number of intransitive subjects and transitive objects (data from Booker, 1982, p. 15.).

| | | | | | |
|------|----------|----------------|--------------|-----------|-------|
| (35) | | singular | dual | plural | |
| | Mikasuki | <i>coko:l-</i> | <i>wi:k-</i> | <i>iʔ</i> | 'sit' |

¹¹The Nanosyntactic approach to case markers is explored in detail in Caha (2009). The interested reader is invited to consult this work.

| | | | | |
|------|------------|--------------|-----------------------|-------------|
| (36) | | singular | plural | |
| | Biloxi | <i>tohó</i> | <i>t^hi</i> | ‘lie’ |
| | Chitimacha | <i>nu:p-</i> | <i>tuw-</i> | ‘die’ |
| | Diegueño | <i>pam</i> | <i>nəkəmic</i> | ‘get there’ |
| | Hopi | <i>paki</i> | <i>yungya</i> | ‘enter’ |

On the other hand, if the functional head and the agreement are spelled out by two different morphemes, then the issue of linearization arises. There are two logical possibilities in this scenario: the agreement may be linearized either in front of the spellout of the functional head, or behind it. It is usually tacitly assumed that agreement comes after the spellout of the head, but nothing forces this in the theory. Verbal and nominal agreement markers that are likely to spell out in front of the head they are added to are provided in (37) and (38).¹²

| | | |
|------|--|--------|
| (37) | Zeeme nawazi ze -puunanai | |
| | you-PL knife 2ps-buy | |
| | ‘You all bought a knife.’ (Baker, 1985, p. 397., ex. 54. a.) | Huicol |

| | | |
|------|--|--------|
| (38) | à-č ⁰ k ⁰ ən-c ⁰ a rə-y ⁰ n-k ⁰ à | |
| | det-boy-PL POSS.3PL-house-PL | |
| | ‘the houses of the boys’ (Wratil and Gallmann, 2011, p. 11., ex. 9. b.) | Abkhaz |

In Chapters 8 and 9 I will argue that Hungarian also features agreement morphemes that linearize in front of the functional head they are added to. In particular, I will analyze the plural marker on demonstratives and strong third person plural pronouns as an uNum agreement feature added to K. This agreement precedes K in the order of suffixes, so it linearizes in front of the hosting head.

The space of options is even bigger when not one but two agreement features are added to a head, and both agreement features have their own spellout separate from the spellout of the other agreement and the hosting head. In Bolivian Quechua, for instance, possessive agreement cross-references both the number and the person of the possessor, and the two agreement features have their own spellout. On the assumption that uPerson and uNumber reside on the same head, Bolivian Quechua instantiates the scenario described above.¹³

| | | |
|------|--|------------------|
| (39) | wasi-kuna- n-ku -pi | |
| | house-PLURAL-3.POSS-PLURALITY.OF.POSSESSOR-in | |
| | ‘in their houses’ (Myler, 2009, p. 52., ex. 21.) | Bolivian Quechua |

In this scenario, both agreement morphemes may spell out in front of the exponent of the head (in either order), or both may spell out after it (again in either order), or one may spell out in front it and the other behind it (yet again two options depending on which goes where).

The linearization of agreement morphemes is going to be a recurrent issue in the thesis. Let me foreshadow that I will not have a generalization or solution to offer on this point. At the appropriate places I will remark on the position of morphemes that I identify as agreement, but I will not go beyond descriptive adequacy on this particular point. Whether there are overarching generalizations about the linearization of agreement morphemes internally to particular languages or cross-linguistically is a question that must be settled on the basis of a wide and broad empirical basis. This thesis looks at the functional sequence of the Hungarian xNP. This domain of inquiry is too small to settle the matter.

There are indications that the linearization of agreement morphemes is possibly subject to broad generalizations or at least to general tendencies. For instance, the order of agreement morphemes

¹²Assuming that the Huicol verbal agreement feature is hosted by the verb, it spells out in front of the hosting category indeed. I cannot exclude the alternative that the agreement is hosted in some higher functional head. In that case this conclusion doesn’t follow. The same considerations apply to the Abkhaz agreement marker. I am not in a position to determine the exact position of the agreement in these examples. They are just included here as cases where agreement linearization in front of the host is an analytical option.

¹³It is possible, of course, that uPerson and uNumber reside on discrete heads. I am not in a position to determine whether this is so. This is not necessary for the present concerns, however, as the purpose of this example is merely to show the logical possibility.

on a modifier often replicate the order of suffixes on the modified head. The latter, in turn, reflect the functional sequence. Some examples are given below. (40) shows that adjectival agreement morphemes in Tundra Nenets (Samoyedic) line up in the same order as the suffixes on the noun. (41) from Old Georgian shows that the Suffixaufnahme type of plural and case marking on the modifyee replicate the order of the same suffixes on the noun *key*.

- (40) (pidør°) serako-**m-t**° te-**m-t**°
 you.SG white-ACC-2SG reindeer-ACC-2SG
 ‘your white reindeer’ (Nikolaeva, 2003, ex. 9.) Tundra Nenets
- (41) k̄liṭe-**n-i** sasupevel-isa ca-ta-**jsa-n-i**
 key-PL-NOM kindgom-GEN heaven-OBL.PL-GEN-PL-NOM
 ‘(the) keys of the kingdom of (the) heavens’
 (Plank, 1995, p. 14. ex. 9.) Old Georgian

These particular examples involve phrasal modifiers, and one may want to argue that in Tundra Nenets, for instance, there is a separate KP merged on top of adjectives, too, and the identical order results from identical movements in xNP and xAP. But with agreement on functional heads (as opposed to agreement on phrasal modifiers) this argument is inapplicable. The following Brazilian Portuguese examples, for instance, feature Number agreement on a functional head, D. Agreement on D follows D, just like the number morphology follows N.

- (42) o cachorro
 the-M.SG dog-M.SG
 ‘the dog’ (King and Dalrymple, 2004, p. 91. ex. 52. a.)
- (43) os cachorros
 the-M.PL dog-M.PL
 ‘the dogs’ (King and Dalrymple, 2004, p. 94. ex. 59. a.) Brazilian Portuguese

How strongly the suffix order on phrasal modifiers and functional heads correlates with the order of suffixes on the modified head is an empirical issue that awaits future research.

As far as the relative order between different agreement morphemes is concerned, there are indications of tendencies or generalizations in this area, too. Trommer (2003) examines a sample of 58 languages that feature separate agreement markers for the subject’s person and number features. He finds that these languages exhibit 80 ordering patterns: 10 cases in which both are a prefix, 30 cases in which both are a suffix, and 40 mixed cases (one prefix, one suffix). He also finds that irrespective of the prefix/suffix issue, in 70 cases (87.5%) person agreement precedes number agreement, and in only 10 cases (12.5%) does number agreement precede person agreement. In such broad surveys, it is of course difficult to control for phonologically bound clitics, let alone the issue of whether the two agreement features reside in the same head or not. The preference for person preceding number is highly significant, but without further inquiry it is not possible to tell whether it means that person probes tend to reside in higher heads in f-seq, or person and number probes tend to be in the same head with a preference for person to linearize as first.

Svenonius (2007) touches upon the relative order of agreement with the Agent and the Patient. Based on the sample in Haspelmath et al. (2005), he finds 172 languages which have separate, co-occurring agreement markers for these categories. Of these, 95 (56%) feature agent agreement before patient agreement, 57 (33%) do the other way around, and 19 (11%) have both orders. Again, there is a clear preference for A before P, but phonologically bound clitics and languages in which these agreement features reside in separate heads are not controlled for.

To summarize, the approach that treats agreement morphemes as spellouts of agreement features added to interpretable heads runs into the problem of not predicting how the agreement linearizes with respect to the exponent of the head itself or other agreements on the same head. As the thesis adopts this approach, it also inherits this problem.

However, it is important to point out that the problem has a generality which goes beyond this particular view, and the positioning of agreement morphemes is not straightforward in other approaches either. In the theory of Fuß (2005), terminals for agreement are adjuncts to other

terminals. Fuß argues that via the directionality of adjunction, his approach can capture both agreement prefixes and suffixes. While this is true, his theory also has the problem of describing rather than predicting the position of agreement with respect to the hosting head. DM's treatment of agreement in terms of dissociated morphemes runs into exactly the same problem: adding morphemes post-syntactically makes no predictions about whether those morphemes will end up as prefixes or suffixes. This is an important point. If dissociated morphemes could capture the linearization of agreement morphemes in an insightful manner, it would constitute a strong argument in favour of a morphological component of grammar. This, in turn, would seriously challenge the adopted spellout algorithm and all of Part I. But dissociated morphemes do not explain the prefix or suffixhood of agreement morphemes in a principled way, and so agreement doesn't require rethinking Chapters 2 through 5.

It may appear that the only approach that can actually predict the order of agreement morphemes with respect to each other and functional heads is the one which operates with dedicated AgrPs. This is a misinterpretation, however: this approach also stipulates the order, only it stipulates it via the functional sequence. Consider why. Large chunks of the functional sequence can be motivated by compositional semantics. For instance, if the goal is to build a nominal f-seq, then the sequence had better start with a nominal core. If one wants to have multiple units, it is motivated to make units first, and apply counting subsequently (Num > Cl). It is also motivated to merge Num below K, as Num is an 'internal' business of xNP, while K serves to embed xNP into the larger sentence context. But as already pointed out above, agreement markers have no scope. This means that the position of AgrPs in f-seq can be motivated only on the basis of word order, precisely the thing that the position of AgrPs is intended to capture. Differently put, the argument is circular: the position of agreement markers is captured by the position of AgrPs in f-seq, and the position of AgrPs in f-seq is motivated (and supported) only by the position of agreement markers. This is the very definition of stipulation. This means that re-introducing AgrPs into f-seq would bring no empirical payoffs. This is significant in the context of this work. I would have to loosen up the syntax-semantics mapping I assume if AgrPs were the only sensible way to capture the position of agreement morphemes. This is not the case, however, and I will continue to assume the tight mapping between the two components in Parts II and III as well.

Having noted the problem with the linearization of agreement morphemes and the fact that this thesis will not have any insights to offer on this matter, I will turn to the mechanism of Agree used in Part II.

6.3.4 The technicalities of Agree

As long as Agree is in syntax, the adopted syntax-semantics mapping and lexicalization algorithm do not rule in or out any particular technical implementations of this operation, as far as I can tell. However, as Part II will unfold, the empirical data I consider will be more compatible with some implementations than others. At the appropriate points I will discuss the analytical options and the choices I make in detail, but it will be useful to foreshadow the conclusions here.

Most importantly, cross-linguistic and Hungarian-internal considerations in Chapter 8 lead me to admit the possibility of Reverse Agree. The DP-internal concord phenomena that I will look at receive the most elegant solution in terms of this operation. There are two ways to do Reverse Agree: to assume that the particular probe (or probes in general) can only look upwards (Baker, 2008; Zeijlstra, 2010), or to assume that probes first look for a matching goal downwards, and they do Reverse Agree only if this search does not yield a match (Rezac, 2003; Béjar and Rezac, 2009).¹⁴ My proposal about the distribution of probes and goals in Chapter 9 will support the latter view. The data I consider, however, are not compatible with Rezac's (2003) idea that Reverse Agree can target only the specifier of the head with the probe. Instead, it will require Reverse Agree to probe up to the phase boundary (c.f. Baker, 2008).

As for the manner of valuation, I adopt the feature sharing view. In Chapter 8 I argue that Suffixaufnahme with inflecting demonstratives involves Agree between two unvalued K features, and these are valued only when the higher K agrees with a third, valued K. Agree between two

¹⁴Strictly speaking, Rezac (2003) and Béjar and Rezac (2009) do not make use of Reverse Agree. They argue that the head and its phrasal projection are featurally identical, thus at the projection of the phrasal node the specifier falls into the search domain of the head. This said, I will loosely apply the term Reverse Agree to this view, too.

unvalued features is compatible only with the feature sharing approach (Frampton and Gutmann, 2000; Pesetsky and Torrego, 2007; Danon, 2011). In Chapter 9 I will adopt some ideas from Danon (2011). As she also uses feature sharing, a consistent picture will emerge.

ϕ -completeness is a mainstream assumption that I will not adopt. I do not have empirical arguments against it from Hungarian, but Rezac's (2003) arguments for a universally split ϕ -probe are convincing to my mind. I will also not adopt the activation condition. In Chapter 8 I will argue that in languages with adjectival concord for number or definiteness, for instance, the relevant probes on the adjective agree with Num and D directly, and these categories do not necessarily have a K feature.

6.3.5 Agreement vs. concord

Agreement proper is feature co-variance between a head and its arguments, while concord is feature co-variance between a head and its modifiers. It is a matter of debate whether different mechanisms underlie these phenomena (Chomsky, 2001b; de Chene, 2004; Giusti, 2008, 2009)¹⁵ or they can be unified under Chomsky's Agree (Carstens, 2000, 2001, 2008; Koopman, 2006; Baker, 2008; Schoorlemmer, 2009; Danon, 2011). In this thesis I will assume without argument that the same Agree mechanism underlies both phenomena. This is the maximally minimalist approach and it leads to the conceptually most elegant solution. Of course this does not automatically mean that this approach is right, too: it still has to be argued for. This, however, is not the task of the present dissertation, and I refer the reader to the works cited above for ample discussion on this issue.

¹⁵Chomsky (2001b) does not discuss concord in detail. However, in a footnote he writes: "There is presumably a similar but distinct agreement relation, Concord, involving Merge alone" (p. 42., fn. 6).

Chapter 7

Possessive agreement and appositives

7.1 Feature co-variance in the Hungarian KP

Internally to the Hungarian DP, we find both feature co-variance between a head and its arguments (agreement) and feature co-variance between a head and its modifiers (concord). Agreement obtains between the head noun and its possessor: the head noun (the possessee) inflects for the ϕ -features of the possessor (person and number only, as Hungarian doesn't have gender).

- (1) a. az én asztal-**om**
the I table-POSS.1SG
'my table'
- b. a mi asztal-**unk**
the we table-POSS.1PL
'our table'

In Chapter 5 I argued that postpositional ϕ -feature agreement is also possessive agreement between a possessor (the Ground) and a possessed, phonologically empty noun PLACE.

- (2) a. alatt-**am**
under-1SG
'under me'
- b. alatt-**unk**
under-1PL
'under us'

As far as concord is concerned, it materializes on one type of nominal modifier only: inflecting demonstratives. These agree with the noun in number, case, dressed Ps and a variety of possessive suffix (the latter will be detailed in Chapter 8). Adjectives, possessors, classifiers, numerals and quantifiers don't exhibit any concord.

- (3) ez-**ek-et** a gyertyá-**k-at**
this-PL-ACC the candle-PL-ACC
'these candles'
- (4) ez **alatt** a gyertya **alatt**
this under the candle under
'under this candle'

A further co-variance in features occurs between nouns and their appositive modifiers. Appositive modifiers are postnominal in Hungarian and share some nominal suffixes with the noun they modify. Below I will argue that this is not concord in the usual sense, however. The nominal suffixes in appositives belong to and are stranded by an elided noun heading the appositive.

- (5) az esernyő-**k-et**, a piros-**ak-at**
the umbrella-PL-ACC the red-PL-ACC
'the umbrellas, the red ones'

This chapter looks at possessive agreement and the suffixes of appositives, and aims to determine if these morphemes represent agreement or spell out functional heads. The suffixes of inflecting demonstratives will be taken up in detail in Chapter 8.

The chapter is organized as follows. The focus of Section 2 is possessive agreement. As this agreement is sandwiched between other suffixes of the head noun, it is directly relevant for setting up the nominal functional sequence. I will refrain from providing an analysis of the mechanics

of possessive agreement in general, as this is largely orthogonal to my main concern, the order of functional heads in the noun phrase. Instead I will focus on those aspects of possessive agreement that bear on the functional hierarchy, in particular on its varying placement across dialects and constructions.

In Section 3 I turn to nominal suffixes on appositives, and examine whether their suffixes instantiate functional heads internal to these modifiers or they are merely agreement. This question is relevant for the functional sequence internal to these modifiers, as opposed to the functional sequence of the main projection line. I will conclude that the relevant nominal suffixes instantiate actual functional heads rather than agreement.

7.2 Possessor-possessee agreement

7.2.1 The morphology of possession

This section lays out the order and function of the morphemes that line up on a possessed noun. Possessive structures in general, and these morphemes in particular will not be analyzed in this thesis. However, the following discussion is necessary so that the subsequent demonstration of the attested ordering permutations can make use of the already established categories. Readers who are familiar with the morphological make-up of the possessee in Hungarian can skip this discussion and go straight to Section 7.2.2.

Before we delve into the morphological details of Hungarian possessive constructions, one terminological caveat is in order. Possession is a relationship that holds between two entities: the entity that is the possessor and the entity that is being possessed. The first one is simply called the ‘possessor’, while the second is known under various labels such as ‘possessed’, ‘possessee’ and ‘possessum’. To avoid potential confusion, I will consistently – and rather arbitrarily – use the term ‘possessee’.

Let us now turn to the details of Hungarian possessive morphology. Hungarian marks the person and the number of pronominal possessors on the possessee (there is no agreement with R-expression possessors, c.f. Bartos, 1999; É. Kiss, 2002). A full paradigm of the noun *csont* ‘bone’ is provided below: (6) shows a singular head noun, while (7) shows a head noun marked for plural.

| (6) singular possessum | (7) plural possessum |
|--|---|
| a. <i>csont-om</i> bone-POSS.1SG ‘my bone’ | a. <i>csont-ja-i-m</i> bone-POSS-PL-POSS.1SG ‘my bones’ |
| b. <i>csont-od</i> bone-POSS.2SG ‘your bone’ | b. <i>csont-ja-i-d</i> bone-POSS-PL-POSS.2SG ‘your bones’ |
| c. <i>csont-ja</i> bone-POSS ‘his bone’ | c. <i>csont-ja-i</i> bone-POSS-PL ‘his bones’ |
| d. <i>csont-unk</i> bone-POSS.1PL ‘our bone’ | d. <i>csont-ja-i-nk</i> bone-POSS-PL-POSS.1PL ‘our bones’ |
| e. <i>csont-otok</i> bone-POSS.2PL ‘your bone’ | e. <i>csont-ja-i-tok</i> bone-POSS-PL-POSS.2PL ‘your bones’ |
| f. <i>csont-j-uk</i> bone-POSS-POSS.3PL ‘their bone’ | f. <i>csont-ja-i-k</i> bone-POSS-PL-POSS.3PL ‘their bones’ |

In (6-c), (6-f) as well as throughout (7), the noun is directly followed by a suffix glossed as POSS. Depending on the (morpho)phonological environment, this morpheme appears in the forms *-ja*, *-je*, *-a* and *-e* (see Rácz, 2010 for a recent comprehensive discussion). It encodes the property

7.2.2 The representation of possessive morphology in f-seq

In the previous section we have seen that there are two different possession related morphemes in the Hungarian xNP. The possessedness suffix *-ja/-je/-a/-e* expresses the property of being possessed, while the possessive agreement cross-references the ϕ -features of the possessor.

I have also indicated that the possessedness suffix *-ja/-je/-a/-e* it is not an agreement morpheme. There are three arguments for this position in the literature (Mel'čuk, 1973; Bartos, 1999). Firstly, it is used without regard to the ϕ -features of the possessor (c.f. example (7)). Secondly, it also appears with R-expression possessors, which do not trigger any agreement (10).

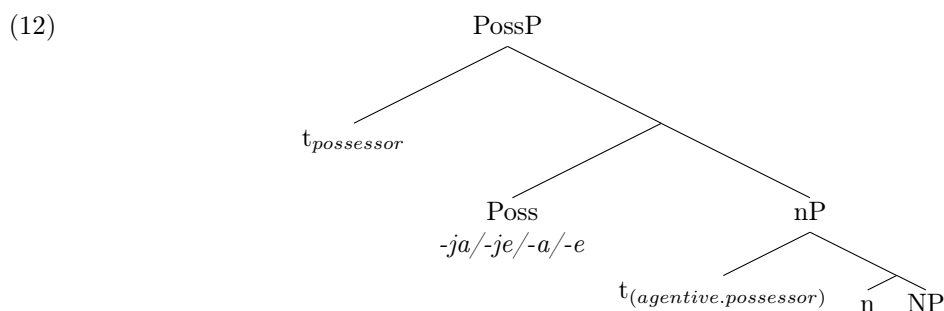
- (10) János csont-ja
 John bone-POSS
 'John's bone'

Finally, it is used in idiomatic expressions which do not contain or imply an actual possessor.

- (11) A csudá-já-t!
 the wonder-POSS-ACC
 'dang!, darn!'

This means that regardless of whether one wants to represent agreement morphemes in narrow syntax, the possessedness suffix must have its own node and its own projection in syntax.

As the possessedness suffix is closer to the noun than any other nominal suffix, we can conclude that its projection PossP is fairly low in the structure. The literature converges on the conclusion that PossP is right above nP in the functional sequence, and its specifier serves as the merge-in position of possessors.³ As we have seen in Chapter 4, possessors move out of this position and depending on whether they bear Nominative or Dative case and whether they are pronominal or not, they land in different positions in the region between NumP and KP.



Let us turn now to the suffixes cross-referencing the possessor's ϕ -features. The most extensively studied agreement is verbal agreement, and within that category, subject-verb agreement. Agreement for the ϕ -features of the possessor closely resembles this phenomenon in the nominal domain. The syntactic and semantic parallel between the subject-predicate and possessor-possessee agreement has been made many times in the literature. This is accentuated by the existence of a morphological parallel between verb-argument and possessor-possessee agreement in many languages, whereby the possessive agreement paradigm is similar or identical to the verbal agreement paradigm(s) (Siewierska, 1998). In as much as genuine agreement morphemes exist, subject-verb agreement is prototypical example, so is agreement with the possessor.

All of the above mentioned similarities between subjects and possessors materialize in Hungarian. On the syntactic side, it has been repeatedly claimed that possessive agreement, like verbal agreement, licenses Nominative case on the external argument of the predicate (Nominative subjects, Nominative possessors) and licenses *pro*-drop of that argument (Kornai, 1985; Szabolcsi, 1989; Szabolcsi and Laczko, 1992; Szabolcsi, 1994).⁴ On the morphological side, the possessive agreement paradigm is identical to the verbal agreement paradigm (with the catch that agreement

³Possessors with an agentive θ -role belonging to deverbal nouns are possibly an exception to this: they originate in spec, nP and spec, PossP is a derived position for them. C.f. the discussion in Bartos (1999).

⁴However, in Chapter 8 I am going to conclude with Bartos (2001a) and É. Kiss (2002) that these possessors are actually caseless.

with singular possessors is identical to verbal endings in the definite conjugation, while agreement with plural possessors is identical to the indefinite verbal conjugation, c.f. Szabolcsi, 1994).

Possessive agreement morphemes in Hungarian display all the characteristics of genuine agreement morphemes. Firstly, they occur on the possessed noun but express inherent features of an argument of that noun rather than features inherent to the host noun itself. How these features end up on the head noun and how they acquire their value from the possessor is a topic that has a very extensive literature, and I have nothing interesting to contribute to this discussion.

Secondly, the placement of possessive agreement morphemes among the inherent features of the head noun, the possessee, is subject to variation not only cross-linguistically (c.f. Chapter 6), but also internally to Hungarian, across different dialects and constructions. In the next section we are going to examine these ordering permutations.

Thirdly, possessive agreement morphemes in Hungarian pass the ‘failed agreement test’ of Preminger (2009, 2011). Preminger argues that agreement morphemes can be reliably distinguished from doubling clitics in contexts where the purported syntactic relation between the agreement marker/clitic and its associated full DP is blocked for some reason but the resulting expression is still grammatical. He suggests that in such a situation “failed Agreement should result in the appearance of a morpheme with default features (if the resulting utterance is grammatical at all)”, but “failed clitic doubling should result in the wholesale absence of the relevant morpheme” (Preminger, 2009, p. 623.). In Chapter 5 I have mentioned in passing that plural Dative possessors can trigger singular agreement for all speakers, and they can also trigger plural agreement for a subset of speakers.

- (13) a. a nő-k-nek a kalap-ja
 the woman-PL-DAT the hat-POSS
 ‘the women’s hat’
 b. %a nő-k-nek a kalap-juk
 the woman-PL-DAT the hat-POSS.3PL
 ‘the women’s hat’ (den Dikken, 1999, from ex. 16.)

Den Dikken (1999) argues that the singular agreement in (13-a) is an instance of default agreement, resulting from a scenario in which a proper agreement relation cannot be established with the possessor. If this is on the right track, which I believe it is, (13) provides evidence in favour of treating possessive agreement morphemes as genuine agreement rather than doubling clitics.⁵

I conclude that possessive agreement morphemes represent genuine agreement. In the approach to agreement adopted here, this means that they don’t project their own phrase. Instead, they spell out features bundled together with functional heads in f-seq. As agreement morphemes don’t have scope, their position in the functional sequence must be determined on the basis of word order. (14) shows that on the surface, possessive agreement is flanked by number and case morphology.

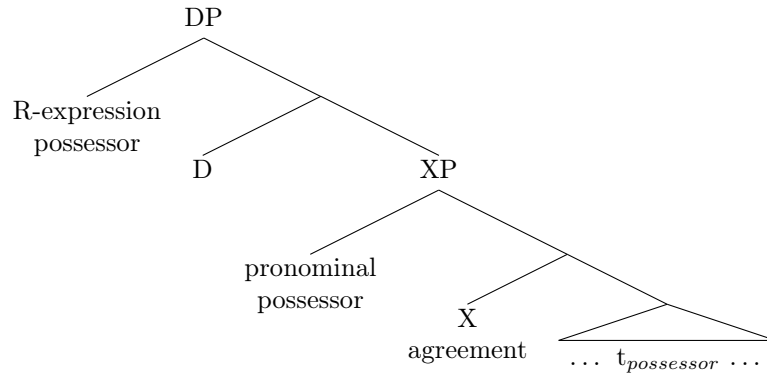
- (14) a mi ház-a-i-nk, kert-je-i-nk
 the we house-POSS-PL-POSS.1PL garden-POSS-PL-POSS.1PL
 ‘our houses, gardens’

It is common wisdom in the literature that possessive agreement morphemes are associated to the head that hosts pronominal possessors (and in some dialects also proper name possessors). The projection of this head is the complement of D.

⁵Recall from Chapter 5 that the same alternation manifests itself with apparently extracted dressed PPs as well:

- (i) (A fiúk előtt) szép jövő áll a fiúk előtt.
 the boy-PL in.front.of beautiful future stand.3SG the boy-PL in.front.of
 ‘A beautiful future is ahead of the boys.’
 (ii) A fiú-k-nak szép jövő áll előtt-e/előtt-ük.
 the boy-PL-DAT beautiful future stand.3SG in.front.of-POSS.3SG/in.front.of-POSS.3PL
 ‘A beautiful future is ahead of the boys.’
 (É. Kiss, 2002, pg. 190, the glosses have been modified)

(15)

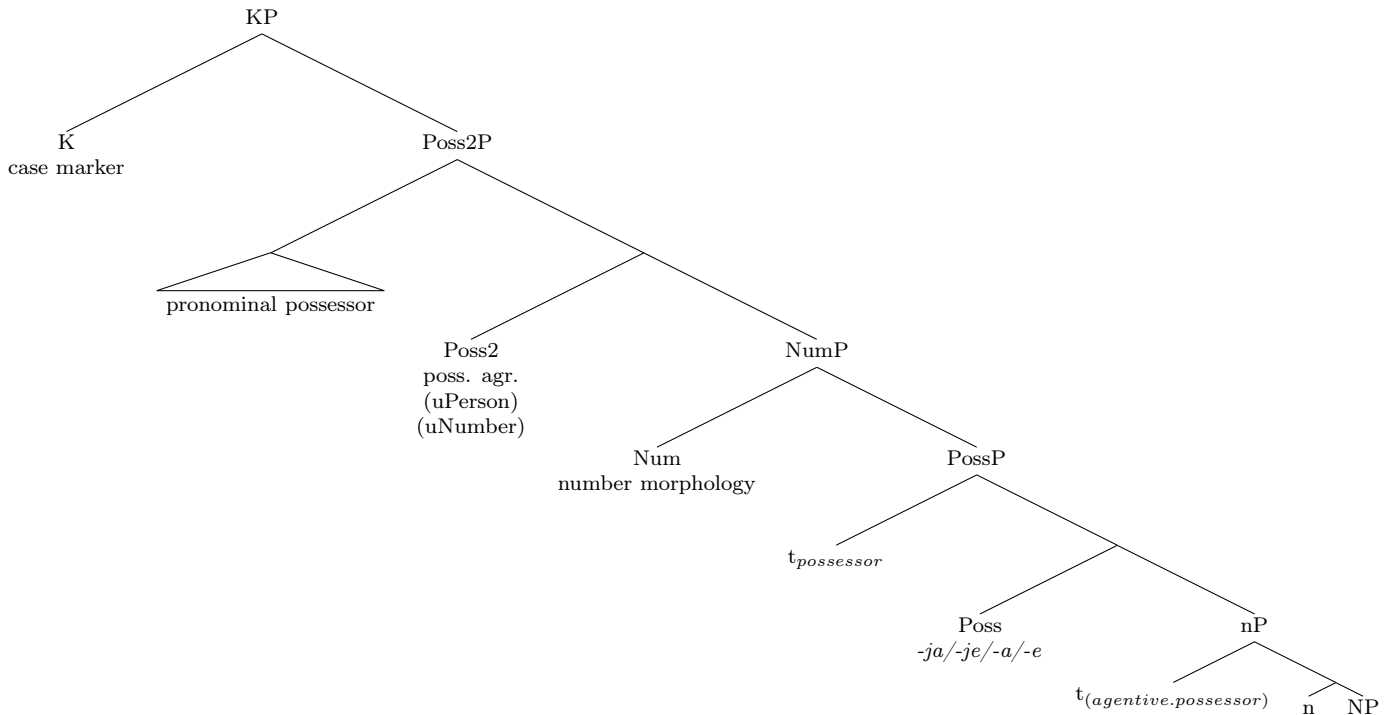


This correctly captures the word order, and to the very limited extent that semantic arguments are applicable to agreement morphemes, also makes sense from a semantic point of view (possessive agreement is on a head that is independently linked to possessors).

The literature calls the XP of (15) AgrP, because the phrase itself is taken to be projected by the agreement morpheme (Szabolcsi, 1994; Bartos, 1999; É. Kiss, 2002). In the present approach, this cannot be the case. The existence of the phrase labelled AgrP is uncontroversial. But in my analysis XP is not literally projected by the agreement, it merely hosts the uPerson and uNumber features that track the possessor. It is either the case that the spellout of X^0 itself is zero, or possessive agreement morphemes are portmanteaus for the X head and the uPerson and uNumber features on it. To reflect the analysis that XP is related to possessors but it is not projected by the agreement, I will call it Poss2P.

To conclude this section, possessive marking does not automatically mean agreement marking. Hungarian has two types of possessive suffixes: the possessedness suffix that expresses the property of being possessed, and agreement suffixes that cross-reference the ϕ -features of the possessor. The former is not agreemental in nature, and it projects its own phrase in the functional sequence, PossP. The latter are genuine agreement morphemes. In the present approach they are hosted by the Poss2 head.

(16)



These two types of possessive markers are able to occur independently of each other: some languages have only possessedness markers, others have only possessive agreement, and yet others

have both.

Possessedness marker only: Karbi (Tibeto-Burman)

- (17) a. *tebul a-keŋ*
table poss-leg
'the leg of the table'
b. *la a-hem*
3sg poss-house
'his/her house' (Dixon, 2010, p. 269. ex. 39–40)

Agreement only: Turkish

- (18) a. *ev-im*
house-POSS.1SG
'my house'
b. *ev-in*
house-POSS.2SG
'your house (informal)'
c. *ev-iniz*
house-POSS.2SG
'your house (formal)'
d. *ev-i*
house-POSS.3SG
'his/her/their house'
e. *ev-imiz*
house-POSS.1PL
'our house'
f. *ev-iniz*
house-POSS.2SG
'your house'
g. *ev-leri*
house-POSS.3PL
'their house(s)'
(Göksel and Kerslake, 2005, p. 69.)

Possessedness marker and agreement: Anong (Tibeto-Burman)

- (19) a. ηa^{31} $k^h a^{31}$ a^{31} $k^h a\eta^{31}$
I POSS 1ST.POSS grandfather
'my paternal grandfather'
b. ηa^{31} $k^h a^{31}$ ηu^{31} $k^h a\eta^{31}$
you POSS 2ND.POSS grandfather
'you paternal grandfather' (Sun and Liu, 2009, p. 58.)

7.3 Possessive agreement defies the Mirror Principle

Hungarian nominal morphology conforms to the Mirror Principle; nominal suffixes line up behind the noun in the reverse order of the functional projections that they instantiate. The noun – possessedness suffix – plural – case order reflects a hierarchy that we have independent evidence for: it is common knowledge that possessors are merged low, below number (or dividedness) information, and number information is in turn merged lower than case.

There are, however, some cases in which ordering permutations between certain nominal suffixes are allowed, either across dialectal or idiolectal varieties. In all the (not so numerous) discussions of these cases that I have come across, one of the two morphemes that get reordered is the possessive agreement suffix. Therefore I suggest the following tentative generalization.

- (20) Generalization (tentative):
When the order of two nominal suffixes is subject to variation in Hungarian, one of the suffixes in question is always ϕ -feature agreement with the possessor.

7.3.1 Agreement and the plural on the possessee

In Standard Hungarian the order of nominal suffixes is possessedness marker followed by the plural (-i allomorph) followed by agreement (and case).

- (21) Standard Hungarian:
noun – plural – possessive agreement – case

- (22) a mi kert-je-i-nk
the we garden-POSS-PL-POSS.1PL
'our gardens'

This is the same morpheme order that we have observed for Turkish, Kolyma Yukaghir and Bolivian Quechua in Chapter 6.

In some varieties of Hungarian the order of the possessive agreement and the plural is reversed with respect to the Standard order.

- (23) some varieties of non-standard Hungarian:
noun – possessive agreement – plural – case

Example (24) is from the Gőcsej dialect, while example (25) is representative of the Southwestern and Őrség dialects (Kálmán, 1966, p. 53). Note that plural's *-k* allomorph is used instead of *-i*, as here the plural does not immediately follow a possessedness suffix *-ja/-je/-a/-e*.

- | | | | |
|------|---|------|--|
| (24) | a. ház-ank-ok house-POSS.1PL-PL 'our houses' | (25) | őkr-ötök-ek ox-POSS.2PL-PL 'your oxen' |
| | b. kert-ünk-ök garden-POSS.1PL-PL 'our gardens' | | |

In chapter 6 we have seen that this order is standard in Chuvash, Huallaga Quechua and Kharia.

To capture the order of suffixes, I suggest that in these nonstandard varieties the uPerson and uNumber agreement features are added to a functional head below NumP. This conclusion is supported by the lack of a distinct possessedness suffix *-ja/-je/-a/-e*, too. Recall from (6) that in Standard Hungarian, if the possessee is singular, then in first and second person singular and plural, there is only one suffix on the possessed noun. Bartos (1999) argues that this is because in these forms the possessedness marker and the agreement end up adjacent to each other, and undergo Fusion. Fusion is not possible if the possessum is plural, because the plural marker intervenes between the possessedness marker and agreement.⁶ Compare now the possessed forms of *kert* 'garden' in Standard Hungarian and Gőcsej Hungarian.

- | | | |
|------|--|--------------------|
| (26) | kert-je-i-nk garden-POSS-PL-POSS.1PL 'our gardens' | Standard Hungarian |
| (27) | kert-ünk-ök garden-POSS.1PL-PL 'our gardens' | Gőcsej Hungarian |

Crucially, in (27) there is no distinct possessedness marker, we don't get something like (28). This is because the agreement features being merged low, they are adjacent to the possessedness marker *-ja/-je/-a/-e* (the exponent of the Poss head). As the plural does not intervene between the possessedness marker and the agreement features any more, they can undergo Fusion/co-spellout.⁷

⁶This explanation can be directly transposed into the Nanosyntactic spell-out algorithm used in this dissertation. Suppose that the agreement suffixes span Poss, Num with a singular specification and Poss2 with the uPerson and uNumber features. In a structure with Poss2 > Num(sg) > Poss, all three heads are spelled out by the agreement morpheme (the Maximize Span principle). But in a structure like Poss2 > Num(pl) > Poss, the agreement cannot spell out all three heads because it is not a good match for Num(pl). This forces Poss2 (with the agreement features) and Poss to be spelled out by two separate morphemes. This is the same intervention phenomenon that we have seen elsewhere in the dissertation (c.f. the analysis of non-inflecting demonstratives in Chapter 4). I will refrain from fleshing out this analysis in detail, because it would add nothing substantial to Bartos' original insight.

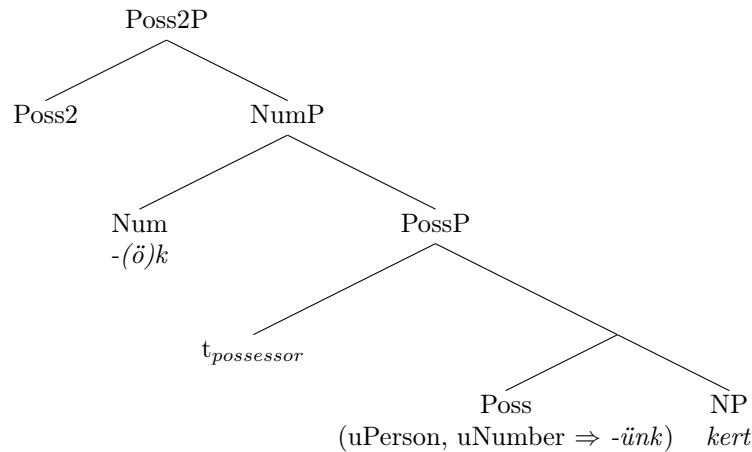
⁷In (i) there may be a separate possessedness suffix, though. Based on the standard dialect, we would expect (ii), not (i).

- | | | | |
|-----|---|------|--|
| (i) | ház-ank-ok house-POSS.1PL-PL 'our houses' | (ii) | *ház-unk-ok house-POSS.1PL-PL 'our houses' |
|-----|---|------|--|

- (28) *kert-je-ünk-ök
 garden-POSS-POSS.1PL-PL
 ‘our gardens’

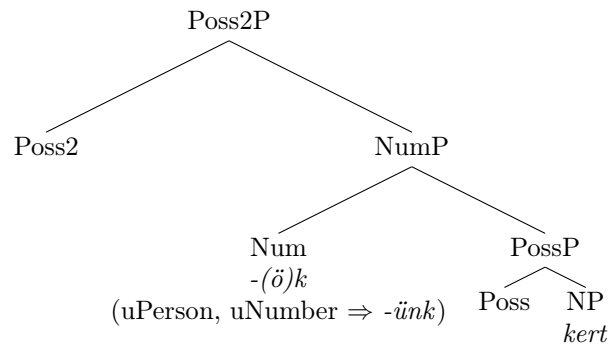
In Göcsej/Órség/Southwestern Hungarian, the functional head that bears the uPerson and uNumber features is possibly Poss.

- (29) Órség, Göcsej, Southwestern Hungarian



It is also possible, however, that uPerson, uNumber are added to Num and spell out as prefixes to it, as in (30).

- (30)



I will not attempt to make a principled choice between these options here because that would not contribute substantially to the main point here, which is the possibility of linearizing the agreement markers at different points in different varieties of Hungarian.

Note that the Göcsej/Órség/Southwestern dialects provide evidence against the conjecture that the phrase hosting pronominal nominative possessors in its specifier (‘AgrP’, my Poss2P) is projected by the agreement morpheme itself. I do not have data from Göcsej/Órség/Southwestern Hungarian in which an overt nominative possessor pronoun co-occurs with the possessed nouns in (24) and (25), and I don’t speak this variety myself. It is fair to assume, however, that this co-occurrence is possible – there is no reason to suspect otherwise, and the ban on an overt pronominal possessor would be strange indeed. As in Göcsej/Órség/Southwestern Hungarian the agreement

Therefore the segmentation may be the following, with separate possessedness and agreement markers:

- (iii) ház-a-nk-ok
 house-POSS-POSS.1PL-PL
 ‘our houses’

But this is not necessarily so: we may simply see a phonological quirk of the given dialect here, whereby its linking vowel is different from the one used in the standard variety. In any case, in (24-b) there is clearly no separate possessedness suffix.

marker precedes the plural, it is either in Num or below Num. Consequently it could not possibly project the phrase hosting the nominative pronominal possessor, which is above NumP. Note that this reasoning is independent of whether agreement markers project their own phrase or not. Even under an analysis in which they do, (24) and (25) strongly argue against a direct correlation between their projected AgrP and the surface position of Nominative pronominal possessors.

7.3.2 Agreement and the plural on possessor pronouns

The Hungarian equivalent of English *mine* also features some variability in suffix ordering, but more on an idiolectal than on a dialectal level. Pronouns like *yours* or *ours* are morphologically complex and fairly easily segmentable in Hungarian. They comprise the pronominal nominative possessor stem (suppletive in some person-number combinations) followed by the so-called possessive anaphor *-é*,⁸ ϕ -feature agreement and a case marker. The following examples show this decomposition.

- | | | | |
|------|---|------|--|
| (31) | mi-é-nk-nek we-é-POSS.1PL-DAT 'to ours' | (32) | ti-é-tek-et you-é-POSS.2SG-ACC 'yours (acc)' |
|------|---|------|--|

If the possessee is marked for the plural, then the plural marker appears where expected: in front of the agreement suffix. (33) and (34) thus show the same morpheme order as the possessee does in Standard Hungarian.

- | | | | |
|------|---|------|---|
| (33) | ti-e-i-tek-et you-é-PL-POSS.2SG-ACC 'your ones (acc)' | (34) | mi-e-i-nk-nek we-é-PL-POSS.1SG-DAT 'to our ones' ⁹ |
|------|---|------|---|

The first person plural possessive *mine*, however, has two varieties. In the order that conforms to the pattern of the above examples, the possessive anaphor is followed by the plural, which is in turn followed by the agreement marker (35). In the other variety, on the other hand, the possessive anaphor is directly followed by the agreement, which is in turn followed by the plural (36).^{10,11} Notice that this is the same order permutation that we have seen before: the agreement can directly precede the plural marker (Göcsej Hungarian, Chuvash, Huallaga Quechua, Kharia) or can directly follow it (Standard Hungarian, Turkish, Kolyma Yukaghir, Bolivian Quechua).¹²

⁸The possessive anaphor appears to be a stand-in for ellipted possessed nouns. It it never co-occurs with an overt head noun or the possessedness suffix *-ja/-je/-a/-e*. In the surface string, it appears to occupy the same linear position as the possessed noun + possessedness suffix unit would.

- | | |
|------|--|
| (i) | possessive pronoun – (nominal modifiers) – possessee – possessedness suffix – (plural)– agreement – case |
| (ii) | possessive pronoun – possessive anaphor – (plural) – agreement – case |

For the ease of parsing, the reader can substitute 'possessed thing/noun' for *-é* in the glosses. In Chapter 8 I will analyze *-é* in detail.

⁹There is some suppletion in these examples, as the possessive anaphor *-é* is shortened to *-e*. This does not affect the clarity of the morpheme order, though.

¹⁰Irrelevantly, the pronominal stem is suppletive in either case: instead of *én*, it appears as *eny*.

¹¹The reader will recall that *-k* and *-i* are allomorphs of the plural without any meaning difference: *-k* is the default form and *-i* is used after the possessedness suffix *-ja/-je/-a/-e*. As the possessive anaphor *-é* is a stand-in for the possessee + possessedness suffix unit, it is always followed by the *-i* allomorph.

¹²According to Kornai (1989), the second person singular pronominal possessor, shown in (i), also has two morpheme orders in the plural. (ii) features the expected morpheme order. (The pronoun is suppletive, *ti* instead of *te*, and *-é* is shortened to *-e*, but this aside the morpheme order is entirely regular). (iii) on the other hand, has the unexpected pronoun-*é*-agreement-plural order, just like *enyéme*.

- | | | | | | |
|-----|-------------------------------------|------|--|-------|---|
| (i) | ti-é-d you-é-POSS.2SG 'yours' | (ii) | ti-e-i-d you-é-PL-POSS.2SG 'your ones' | (iii) | ti-é-d-ek you-é-POSS.2SG-PL 'your ones' |
|-----|-------------------------------------|------|--|-------|---|

(iii) does not exist in my Hungarian.

- (35) eny-é-i-m-et
I-é-PL-POSS.1SG-ACC
'mine (ones)'
- (36) eny-é-m-ek-et
I-é-POSS.1SG-PL-ACC
'mine (ones)'

Bartos (1999) argues that in the unexpected (36), *enyém* 'mine' is a grammaticalized, non-analyzable unit, this is why it is marked for the plural as any garden variety non-possessed noun.

- (37) enyém-ek-et
mine-PL-ACC
'mine ones'

The arguments in favour of this position are the following. Firstly, the unexpected variety shows up only in 1sg, the most frequently used pronoun. Secondly, many speakers accept only one of the two morpheme orders, and most of those who accept both use them with a difference in meaning. In particular, the exceptional *eny-é-m-ek* is the default form, and the expected *eny-é-i-m* has a very specific narrow meaning 'my family, my relatives' (c.f. also Kornai, 1989). In his short discussion of these data, Szolcsányi (2007) also points out a meaning difference between the two orders, but in exactly the opposite direction. He claims that (38) can refer to either 'my children' or 'my apples', but with (39) there is a strong dispreference against human referents.

- (38) az eny-é-i-m érett-ebb-ek
the I-é-PL-POSS.1SG ripe-COMP-PL
'mine are more ripe/mature'
- (39) az eny-é-m-ek érett-ebb-ek
the I-é-POSS.1SG-PL ripe-COMP-PL
'mine are more ripe'

Thirdly, in dialectal varieties of *yours*, *ours*, *theirs* etc., one can find grammaticalized, opaque instances of pronoun stem + possessive anaphor *-é* combinations in all persons and numbers. In these cases the original possessive anaphor often undergoes a phonological change (becomes *i* or *e*), and a regular possessive anaphor appears after the stem in the undistorted *-é* form. These can be found in (40). The corresponding possessive forms in my own non-standard dialect are given for comparison in (41). In this variety, *-é* has already undergone the phonological change, but as no extra *-é* is present it is perhaps still segmentable and the forms are not entirely opaque.

- (40) a. %enyimé
'mine'
b. %tiedé
'yours'
c. övé
'his'
d. %mienké
'ours'
e. %tieteké
'yours'
f. %övéké
'theirs'
- (41) a. %enyim
'mine'
b. %tied
'yours'
c. övé/%üvé
'his'
d. %mienk
'ours'
e. %tietek
'yours'
f. övék/%üvék
'theirs'

I do not contest Bartos' claim that the unexpected order *eny-é-m-ek* is grammaticalized and opaque, especially because in Standard Hungarian the same ordering freedom is not allowed either with other personal pronouns, or, crucially, with first person singular possessors that co-occur with an overt possessed noun + possessedness suffix string. In other words, the ordering variations are possible only in the context of the possessive anaphor *-é*.

- (42) a csont-ja-i-m-at
the bone-POSS-PL-POSS.1SG-ACC
'my bones'
- (43) a. *a csont-om-ok-at
the bone-POSS.1SG-PL-ACC
b. *a csont-ja-om-ok-at
the bone-POSS-POSS.1SG-PL-ACC

I point out, however, that in some languages the position of possessive agreement markers can vary according to the values of the ϕ -features of the possessor. Compare the Lilloet and Squamish examples in (44) and (45). Lilloet first person singular possessors are cross-referenced by a prefix, while other possessors are cross-referenced by a suffix (van Eijk, 1997, p. 145.; Dryer, 2008). Squamish first and second person singular possessors are cross-referenced by a prefix, second person plural possessors are cross-referenced by a circumfix, while other possessors are expressed by a suffix (Kuipers, 1967, p. 87.; Dryer, 2008).

- | | | | |
|------|---|--|---------|
| (44) | a. n-tmix ^w 'my land' | d. tmix ^w -kał 'our land' | Lilloet |
| | b. tmix ^w -su 'your land' | e. tmix ^w -lap 'your land' | |
| | c. tmix ^w -s 'his land' | f. tmix ^w -i 'their land' | |
-
- | | | | |
|------|------------------------------|------------------------------------|----------|
| (45) | a. ?n-snəx°iλ 'my canoe' | d. snəx°iλ-čət 'our canoe' | Squamish |
| | b. ?ə-snəx°iλ 'thy canoe' | e. ?ə-snəx°iλ-ja̱p 'your canoe' | |
| | c. snəx°iλ-s 'his canoe' | f. snəx°iλ-s-uit 'their canoe' | |

In a language sample of 902 languages, Dryer (2008) has found 32 languages that make use of both possessive prefixes and suffixes, with neither primary.¹³ Thus the possibility of different values for the cross-referenced ϕ -features correlating with different linear positions is independently attested with possessive agreement.

Thus far we have seen that possessive agreement markers do not have a fixed position in the order of nominal affixes. Instead, their position is subject to variation across different languages, dialects, even within the same idiolect, and it can be influenced by the value of the ϕ -features involved. All this variation speaks against adopting an agreement-as-moved-argument or an AgrP type of account of possessive agreement (and agreement in general).

7.3.3 Agreement and case on postpositions (non-standard)

It has been discussed many times by now that in Standard Hungarian, dressed Ps are followed by a person-number agreement marker.

- | | |
|------|--|
| (46) | a. elé-m, elé-d, elé to.in.front-1SG to.in.front-2SG to.in.front.3SG 'to in front of me, to in front of you, to in front of him' |
| | b. elé-nk, elé-tek, elé-jük to.in.front-1PL to.in.front-2PL to.in.front-3PL 'to in front of us, to in front of you, to in front of them' |

Some dressed postpositions end in the remnant of the once widespread lative suffix *-á/é* expressing a Goal Path, for instance *elé* 'to.in.front', *fölé* 'to.above'. In certain nonstandard Hungarian varieties, including mine, it is possible to add an extra Illative case marker *-ba/be* to these postpositions (Sebestyén, 1965). When the extra case marker is added, it can either precede the agreement or follow it, without a concomitant change in meaning.

¹³In some of these languages, however, the prefix- or suffixhood is influenced by other factors. In Chimariko (extinct isolate, formerly spoken in California), for instance, agreement on inalienably possessed nouns is prenominal, while agreement on alienably possessed nouns is suffixal (Jany, 2009).

Standard

- (47) élé-m
to.in.front-1SG
'to in front of me'

Non-standard

- (48) élé-m-be
to.in.front-1SG-ILLAT
'to in front of me'
- (49) élé-be-m
to.in.front-ILLAT-1SG
'to in front of me'

Standard

- (50) élé-d
to.in.front-2SG
'to in front of you'

Non-standard

- (51) élé-d-be
to.in.front-2SG-ILLAT
'to in front of you'
- (52) élé-be-d
to.in.front-ILLAT-2SG
'to in front of you'

This permutation possibility is mentioned both in Sebestyén (1965) or Moravcsik (2003), but none of them make note of the fact that with a third person plural pronoun only the adposition – agreement – Illative case order is possible (at least in my idiolect).¹⁴ This intuition is confirmed by a quick Google search: (53-a) gives 73 hits, while (53-b) gives zero. (The standard form *élé-jük* without the extra Illative case gives 475 000 hits).

- (53) a. élé-jük-be
to.in.front-3PL-ILLAT
'to in front of them'
- b. *élé-be-jük
to.in.front-ILLAT-3PL

I don't have anything insightful to say about the source and position of the extra Illative case marker. However, it is worth pointing out that once again, an ordering freedom involves the person-number agreement marker and another morpheme, and that the ϕ -features of the possessor influence the possible position(s) of the agreement marker.

7.3.4 An order that doesn't look Mirror, but it is

Finally let me turn to an apparent ordering inconsistency that turns out to conform to the expectations if examined carefully. Consider the nominal phrases in (54) and (55): the former with a possessed noun, and the latter with a case marked personal pronoun. In Chapter 5 I argued that the agreement on (55) is possessive agreement. In light of this, the order of case markers and possessive agreement appears to be dependent on whether the nominal base is an R expression or a pronoun.

- (54) szem-em-ben
eye-POSS.1SG-INNESS
'in my eye'
- (55) (én)-benn-em
I-INNESS-POSS.1SG
'in me'

¹⁴Further, with a third person singular pronoun, the agreement cannot co-occur with the case marker at all (in my idiolect, at least):

Agreement only

- (i) élé-je,
to.in.front-3PL
'to in front of him'

Agreement plus Illative case

- (iii) *élé-be-je
to.in.front-ILLAT-3PL
'to in front of him'

Illative case only

- (ii) élé-be,
to.in.front-3PL-ILLAT
'to in front of him'

- (iv) *élé-je-be
to.in.front-3PL-ILLAT
'to in front of him'

Let me point out at the start that it has been repeatedly argued in the literature that with case-inflected pronouns like (55), the real stem is a *pro* (or the case marker), and the overt pronoun is just an appositive-like modifier. While surprising at first glance, this analysis is supported by several considerations. Firstly, the pronoun is entirely optional. (56) is just as good:

- (56) benn-em
 INESS-1SG
 ‘in me’

Secondly, the case marker attached to a pronoun does not show vowel harmony, it has a fixed value for each case marker (front for some, including Inessive, and back for others, like Adessive). Vowel harmony is obligatory with R expressions.

- | | | | |
|------|---|------|---|
| (57) | a. a szem-ben the eye-INESS ‘in the eye’ b. *a szem-ban the eye-INESS ‘in the eye’ | (59) | a. a szem-nél the eye-ADESS ‘at the eye’ b. *a szem-nál the eye-ADESS ‘at the eye’ |
| (58) | a. én-benn-em I-INESS-1SG ‘in me’ b. *én-bann-am I-INESS-1SG ‘in me’ | (60) | a. *én-nél-em I-ADESS-1SG ‘at me’ b. én-nál-am I-ADESS-1SG ‘at me’ |

Finally, the *-v* of the comitative case suffix *-val/vel* does not undergo assimilation to the preceding consonant with a pronominal base, but this is obligatory with an R expression base.

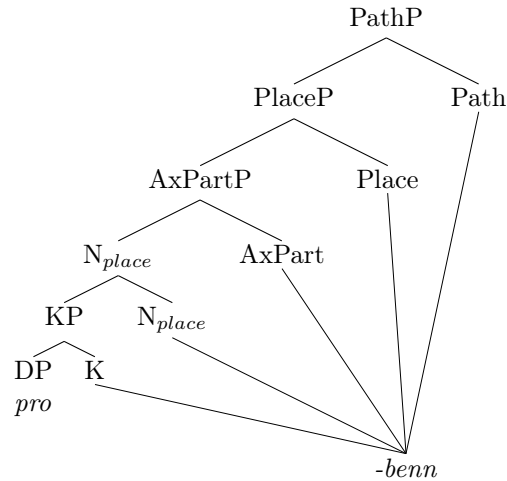
- | | | | |
|------|---|------|---|
| (61) | a. a szem-mel the eye-COMIT ‘with the eye’ b. *a szem-vel the eye-COMIT ‘with the eye’ | (62) | a. *én-nel-em I-COMIT-1SG ‘with me’ b. én-vel-em I-COMIT-1SG ‘with me’ |
|------|---|------|---|

These arguments against treating the overt pronoun as the actual stem of (55) are convincing, and I will treat (55) as a nominal expression headed by *pro*. This, however, has no bearing on the fact that the possessive agreement and the case marker appear in a different order in (54) and (55); this fact still needs to be accounted for.

In Chapter 5 I argued that case markers spell out, among other P-heads, a silent N_{place} . N_{place} participates in a possession relationship: it is the possessee, and its complement KP (the Ground) is the possessor. The proposed structure (with a DP-*pro* as the Ground) is shown in (64).

- (63) (én)-benn-em
 I-INESS-1SG
 ‘in me’

(64)



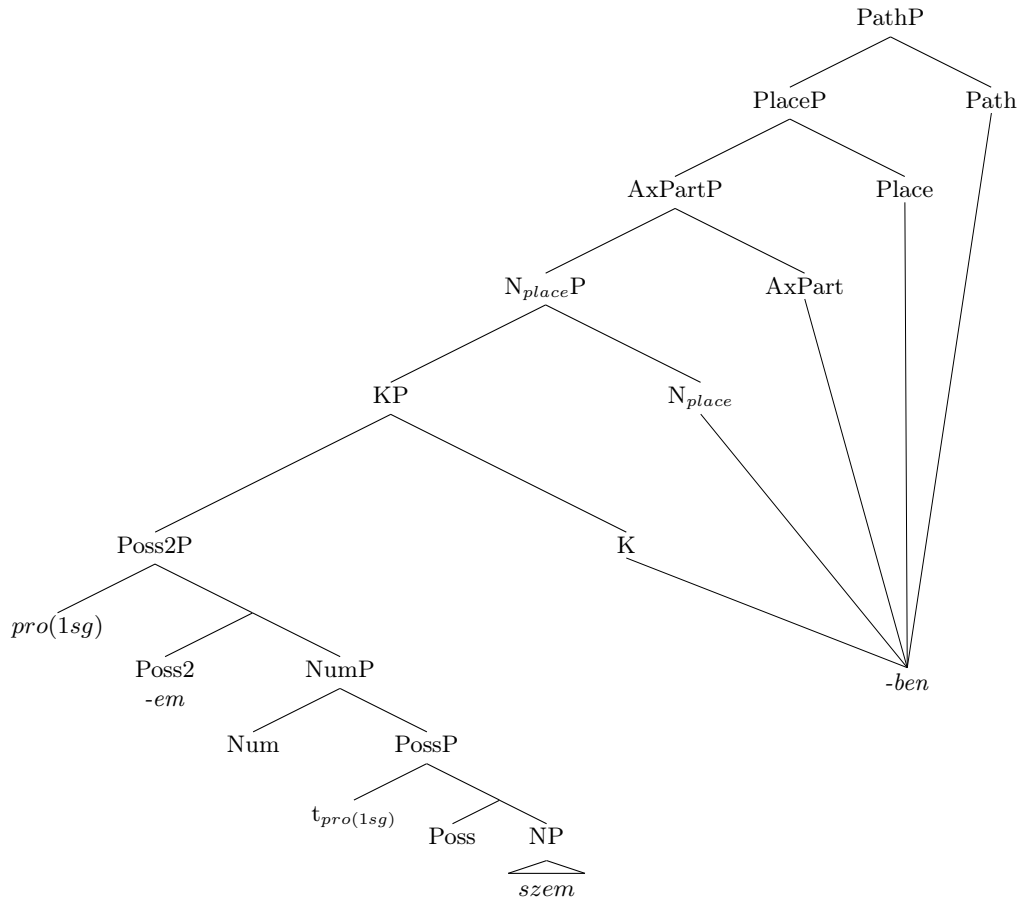
The order of agreement and case markers is thus consistent in (54) and (55) in a relative sense: the agreement always spells out on the possessee. However, the ordering can be shown to be consistent in absolute terms, too. To wit, the agreement morphemes in (54) and (55) occur at different places because they mark two different possession relationships.

The agreement in (55), as we have seen, is a reflex of the possession relationship between KP, which functions as the Ground, and the silent N_{place} . The agreement in (54) (repeated here as (65)), however, is a reflex of a possessive relationship internal to the Ground KP (it cross-references the pronominal possessor of the head noun *eye*). In other words, in (65) the possessor of the silent N_{place} is itself a possessed noun phrase, *my eye*.

(65) szem-em-ben
 eye-POSS.1SG-INESS
 'in my eye'

(66) [in [*possessee* PLACE [*possessor* my eye]]] =
 [in [the PLACE [of my eye]]]

(67)



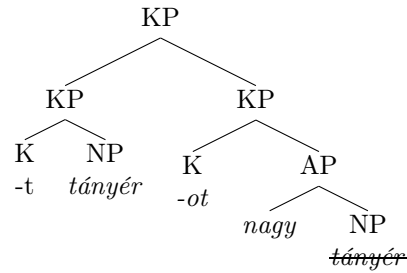
The apparent ordering difference between (63) and (65) is thus epiphenomenal: these examples feature two different agreements in two different phrases (one internal to KP, another internal to the PP). The more pertinent question is thus why (65) does not display the agreement at both places, as in (68); i.e. once below the case suffix to mark the possessedness of *bone*, and once after the case suffix to mark the possessedness of *N_{place}*.

- (68) *csont-om-ban-agr
 bone-POSS.1SG-INNESS-AGR
 'in my bone'

The answer to this question follows from the general make-up of possessed noun phrases. Recall from Section 7.2.1 that only pronominal possessors have their ϕ -features cross-referenced on the possessee, and there is no agreement (overt or covert) with R-expression possessors. In (63) the Ground has no possession relationship internal to it, the Ground is a simple pronoun. Given the pronominal nature of the Ground, there is agreement between the pronoun and the silent *N_{place}* possessee. In (65), on the other hand, the possessor of the silent *N_{place}* is *my eye*, an R-expression. The lack of agreement after the case suffix in (65) is thus reducible to the category of the possessor.

One last issue remains to be addressed. For possessive agreement between a possessor and a possessee, I assumed that the agreement features reside in *Poss2*, the phrase that hosts nominative possessors in its specifier on the surface, and which is located above *NumP* in the hierarchy. If we now look back at the structure of case markers and postpositions, like in (55), there is no *Poss2P*. The agreement features thus reside somewhere else. It is clear that they reside somewhere in the PP sequence, between the silent noun *N_{place}* and the *Place* node. I suggest that they are on the silent noun *N_{place}*, as *N_{place}P* is the only phrase in this sequence that has anything to do with possession. That the *uNumber* and *uPerson* features of possessive agreement can reside in both

(76)



This analysis correctly predicts that the distribution of nominal suffixes in elliptical noun phrases and appositives is the same. In garden variety elliptical DPs, nominal suffixes are not elided together with the head noun. Instead, they cliticize onto the edge of the remaining overt material in the DP (c.f. Chapter 3). That is, the suffixes of the noun must appear on the last overt element, and they cannot appear anywhere else.

- (77) a. három(*-at) szép(*-et) kert-et
 three-ACC nice-ACC garden-ACC
 ‘three nice gardens’
 b. három(*-at) szép-et
 three-ACC nice-ACC
 ‘three nice ones’
 c. három-at
 three-ACC
 ‘three ones’
- (78) a. nagy(*-ok) piros(*-ak) mangó-k
 big-PL red-PL mango-PL
 ‘big red mangos’
 b. nagy(*-ok) piros-ak
 big-PL red-PL
 ‘big red ones’
 c. nagy-ok
 big-PL
 ‘big ones’

Appositive modifiers containing more than one word follow the same pattern: the nominal suffixes can surface only on the linearly last modifier.¹⁶

- (79) a. kert-et, három(*-at) szép-et
 garden-ACC, three-ACC nice-ACC
 ‘gardens, three ones’
 b. kert-et, három-*(at)
 garden-ACC, three-ACC
 ‘gardens, three ones’
- (80) a. a mangó-k, a nagy(*-ok) piros-ak
 the mango-PL the big-PL red-PL
 ‘mangos, big red ones’
 b. a mangó-k, a nagy-*(ok)
 the mango-PL the big-PL
 ‘mangos, big ones’

¹⁶It would also be possible for both adjectives or both the numeral and the adjective to bear the nominal suffixes, but that would be a different construction: multiple apposition.

- (i) a mangó-t, a nagy-ot, a piros-at
 the mango-ACC the big-ACC the red-ACC
 ‘the mangos, the big ones, the red ones’

Chapter 8

Demonstrative concord

8.1 Introduction

The central problem addressed in this chapter is the correct characterization of the process by which Hungarian demonstratives share certain suffixes of the noun they modify. In Chapter 4 we have seen that Hungarian possesses two types of demonstratives: non-inflecting demonstratives, which correspond to (spanning) heads in the nominal functional sequence, and inflecting demonstratives, which are phrasal in nature and move from spec, DemP to spec, DP.

- (1) ama/eme könyv
that/this book
'that/this book' non-inflecting demonstrative
- (2) az/ez a könyv
that/this the book
'that/this book' inflecting demonstrative

We have also seen that inflecting demonstratives obligatorily share the plural suffix and the case suffix/dressed P of the head noun.

- (3) ez-ek-et a könyv-ek-et (4) ez-ek alatt a könyv-ek alatt
this-PL-ACC the book-PL-ACC this-PL under the book-PL under
'these books' 'under these books'

In addition to the plural and case/dressed P, inflecting demonstratives also obligatorily share the so-called 'possessive anaphor' suffix *-é*. The possessive anaphor has an intricate distribution, which will be detailed in Section 8.7. For the present purposes, it will suffice to say that *-é* surfaces in elliptical possessive noun phrases, it appears to replace the possessed head noun, and it cliticizes onto the possessor. Its effect is somewhat similar to that of English *one*-pronominalization, though they are certainly not equivalent.

- (5) a gyerek-é
the child-é
'the child's one'

Now when the possessor is marked with the 'possessive anaphor' *-é*, its demonstrative modifier also has to be adorned with this affix.

- (6) ez-é a gyerek-é
this-é the child-é
'this child's one'

The aim of this chapter is twofold. Firstly, it seeks to answer whether the suffixes that appear on the demonstrative spell out contentful functional heads or are agreement morphemes. I will address this question in Sections 8.2 through 8.6. To anticipate the main idea, I will argue for a

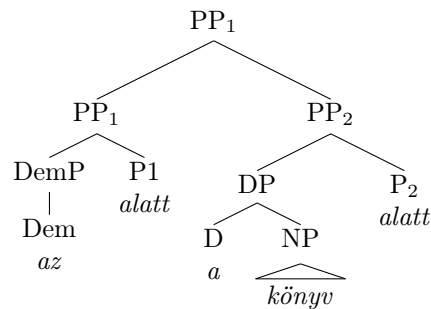
mixed solution: I will suggest that the plural on the demonstrative is an agreement, but the case marker spells out a K head. Secondly, the chapter explores what exactly the suffix *-é* is, and how *-é* concord fits within the overall picture of demonstrative concord in the language. This will be the topic of Section 8.7, where I will suggest that *-é* is the spellout of a genitive K head.

8.2 Demonstratives are not appositives

Both inflecting demonstratives and appositives share certain nominal suffixes, for instance the plural and case markers, with the head noun. Given this similarity, and the fact that no other noun satellite shows any concord, it is tempting to treat inflecting demonstratives as a subtype of appositives, thus unifying two phenomena under one heading. This approach is pursued in Ortman (2000).

- (7) az alatt a könyv alatt
that under the book under
'under that book'

- (8) The appositive analysis of inflecting demonstratives by Ortman (2000) (to be rejected)



Even though there is some initial plausibility to the hypothesis (for instance it meshes well with the fact that demonstratives are on the periphery of the nominal functional sequence), there is quite a bit of evidence against the proposal. In this section I first review the arguments against the appositive hypothesis mounted in Moravcsik (1997); Bartos (1999, 2001a) and Payne and Chisarik (2000). Then I develop two new empirical arguments against the appositive analysis of inflecting demonstratives.

Before we proceed, let me first acknowledge that an appositive reading is always available for demonstrative + article + noun strings. Thus (9) is ambiguous between two readings. One reading is a true appositive one, and can be rendered in English by *under that one*, *under the book*. The other reading is the non-appositive demonstrative reading we are interested in here. This can be rendered in English by *under that book*.

- (9) az alatt a könyv alatt
that under the book under
'under that book'
'under that, under the book'

In what follows, I will assume an adjunction structure for the appositive reading *under that*, *under the book*, though I will not discuss this reading in any detail.

The first and most obvious counterargument against the apposition analysis of the *under that book* reading comes from the semantics of demonstrative constructions. As (9) is ambiguous, it must be associated with two distinct structures. If the adjunction analysis is the correct one for the appositive *under that*, *under the book* interpretation, then the demonstrative reading *under this book* must be associated with a different structure.

Secondly, garden variety DPs containing inflecting demonstratives have demonstrably different prosodic properties from appositive constructions. While the appositive reading *under that one*, *under the book* allows a pause between the demonstrative and the rest of the structure (indicated

by an obligatory comma after the demonstrative), this is impossible for the *this book* reading we are interested in here. In addition, in appositive constructions the modified phrase has a specific intonation. Again, this is impossible for the *this book* reading.

Finally, the non-appositive *under that book* reading also differs from true appositives such as the *under that, under the book* reading in its syntax. Appositives allow the coordination of two singular demonstratives with an appositive noun marked for the plural, and they also allow a plural demonstrative followed by two coordinated singular appositive nouns. Put differently, appositives allow for a semantic number agreement between the demonstrative(s) and the noun(s).

Appositives

- (10) ez és az, (vagyis) a ház-ak
 this and that that.is the house-PL
 ‘this and that, that is, the houses’
- (11) az-ok, (vagyis) a ház és a kert
 that-PL that.is the house and the garden
 ‘those, that is, the house and the garden’

In non-appositive demonstrative constructions the number marking on the demonstrative and the noun must be morphologically identical, no semantic agreement is possible.

Demonstratives

- (12) *ez és az a házak
 this and that the house-PL
- (13) *az-ok a ház és a kert
 that-PL the house and the garden
- (14) ez és az a ház
 this and that the house
 ‘this house and that house’
- (15) az-ok a ház-ak és kert-ek
 that-PL the house-PL and garden-PL
 ‘those houses and gardens’

Demonstrative and true appositive constructions also behave differently with respect to morphological number marking when the head noun is modified by a numeral or quantifier. Hungarian nouns modified by quantifiers or numerals are morphologically singular.

- (16) három füzet-(*ek)
 three notebook-PL
 ‘three notebooks’

In appositive structures, the modifiee and the appositive modifier must both refer either to a singular entity or multiple entities, their overall number specifications cannot be different.

- (17) ez, (vagyis) a ház / *ház-ak
 this that.is the house / house-PL
 ‘this, that is, the house’
- (18) ez-ek, (vagyis) a ház-ak / a ház és a kunyhó
 this-PL that.is the house-PL / the house and the hut
 ‘these, that is, the houses / the house and the hut’
- (19) *ez-ek, (vagyis) a ház
 this-PL that.is the house
- (20) ez és az, (vagyis) a ház-ak / *ház
 this and that that.is the house-PL / house
 ‘this and that, that is, the houses’

While nominal phrases like (16) refer to multiple entities, their demonstrative modifier must not bear plural marking (21).

- (21) ez a három füzet
 this the three notebook
 ‘these three notebooks’

If the string following the demonstrative was an appositive, then the demonstrative should be plural, too, as in the genuine appositive construction in (22).

- (22) ez-ek, (vagyis) a három füzet
 this-PL that.is the three notebook
 ‘these, that is, the three notebooks’

The above arguments against the appositive analysis of inflecting demonstratives have already been discussed in Moravcsik (1997); Bartos (1999, 2001a) and Payne and Chisarik (2000).

The logic applied to the data in (17) through (21) can also be used to argue against the appositive treatment of inflecting demonstratives in DPs containing the so-called associative plural marker. The associative plural suffix *-ék* means ‘X and his group/associates/company’, so *János-ék* ‘John-ASS.PL’ means *John and his group/associates/company*. Nouns adorned with the associative plural thus refer to multiple (non-identical) entities. Crucially, the associative plural is a suffix that does not take part in demonstrative concord. If a noun bearing this suffix is modified by a demonstrative, then the demonstrative must not be marked for plurality with either the associative or the garden variety plural.

- (23) ennél a lány-om-ék-nál
 this.ADESS the daughter-POSS.1SG-ASS.PL-ADESS
 ‘at the place of this daughter of mine and her associates’
 (Bartos, 2001a, ex. 4. h.)
- (24) *ez-ék-nél a lány-om-ék-nál
 this-ASS.PL-ADESS the daughter-POSS.1SG-ASSOC.PL-AT
 ‘at the place of this daughter of mine and her associates’
 (Bartos, 2001a, ex. 4. h.)
- (25) *ez-ek-nél a lány-om-ék-nál
 this-PL-ADESS the daughter-POSS.1SG-ASS.PL-ADESS
 ‘at the place of this daughter of mine and her associates’

The *ennél* of (174) is morphologically singular, and when used on its own as a discourse anaphoric demonstrative, it can only refer to a singular entity. The noun *lányoméknál*, on the other hand, has a plural referent. In appositive structures the modifiee and the appositive modifier must both refer either to a singular entity or multiple entities, and their overall number specifications cannot be different. (174) thus cannot involve apposition. By the same logic, the appositive approach would predict either (175) or (176) to be grammatical, but neither of them is.

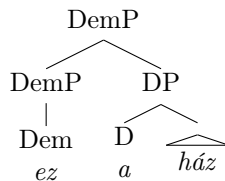
We have seen that with true appositives the modified phrase bears a special intonation and it is possible to insert a pause between the modified phrase and the appositive. If we apply the pause and the special appositive intonation to the examples in (174) and (176), and thus turn them into real appositives, the judgments become exactly reversed. The minimal pair of the grammatical (174) becomes ungrammatical, and the minimal pair of the ungrammatical (176) is impeccable.

- (26) *ennél, (vagyis) a lány-om-ék-nál
 this.ADESS that.is the daughter-POSS.1SG-ASS.PL-ADESS
 ‘at him/her, that is, at the place of my daughter and her associates’
- (27) ez-ek-nél, (vagyis) a lány-om-ék-nál
 this-PL-ADESS that.is the daughter-POSS.1SG-ASS.PL-AT
 ‘at them, that is, at the place of my daughter her associates’

A further new counter-argument against the appositive analysis of demonstratives, which to the best of my knowledge has not been discussed in the literature so far, comes from the distribution of dative possessors. (29) shows Ortmann’s analysis for a DP like (28).

- (28) ez a ház
 this the house
 ‘this house’

(29)

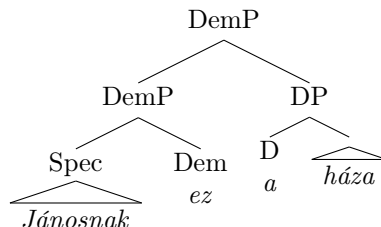


Consider now the possible structural positions of Dative possessors. As the reader will recall from Chapter 4, these can co-occur with (and always precede) inflecting demonstratives.

- (30) János-nak ez a ház-a
 John-DAT this the house-POSS
 ‘this house of John’s’

To accommodate the dative possessor into the structure such that it ends up to the left of the demonstrative, it could be placed either inside the lower DemP (for instance in its specifier) or outside of it as an adjunct (either to the lower or the higher DemP). Ortmann argues for the former option, as depicted in (31).

(31)



However, regardless of whether the specifier of DemP or an adjunct of DemP analysis is adopted for dative possessors, the possessor and the possessee end up in two different phrases. This is obviously a problem for both compositional semantics and syntax.

Compositional semantics requires that the possession relationship between *John* and *the house* be established by local relationship between the possessor and the possessee at some point in the derivation. No such relation exists between the Demonstrative possessor and the possessee in (31), they are generated in different phrases.

On the syntactic side, appositive modifiers are optional by definition and their deletion always gives rise to a grammatical phrase. This is not the case with (31), however. Deleting the claimed appositive modifier *a ház* ‘the house’ yields *Jánosnak ez*, ‘John-DAT this’, which is ungrammatical and cannot be paired with a coherent meaning.

In addition, there is some internal self-contradiction to the proposal as well. Ortmann writes: “the Hungarian noun phrase ultimately projects to a DemP” (p. 276). If so, then it is unclear why D and Dem cannot co-occur within the same extended NP. In (8), (29) and (31), D and Dem are always in separate extended NPs. If the highest layer in the NP is DemP, then one would expect to find phrases with a Dem on top of phonologically filled Ds and Ns.

To summarize, the appositive analysis of inflecting demonstratives does not deliver the correct empirical results.

8.3 Suffixes participating in demonstrative concord

We have already seen in the previous chapters that the plural marker, case markers and dressed Ps copy onto demonstratives.

- (32) ez-**ek** a kabát-**ok**
 this-PL the coat-PL
 ‘these coats’

- (33) ez-**t** a kabát-**ot**
 this-ACC the coat-ACC
 ‘this coat’

- (34) ez **alatt** a kabát **alatt**
 this under the coat under
 ‘under this coat’

Other nominal suffixes such as the possessedness suffix, possessive agreement markers, and the associative plural do not appear on the demonstrative.¹ Nor do naked Ps, as we have already seen many times.

- (35) a. az a motor-ja
that the motor-POSS.3SG
'that motor of his'
b. *az-a a motor-ja
that-POSS the motor-POSS
'that motor of his' possessedness suffix
- (36) a. ez a motor-om
this the motor-POSS.1SG
'this motor of mine'
b. *ez-em a motor-om
this-POSS.1SG the motor-POSS.1SG
'this motor of mine' possessive agreement
- (37) a. ennél a lány-om-ék-nál
this.ADESS the daughter-POSS.1SG-ASS.PL-ADESS
'at this daughter of mine's'
b. *ez-ék-nél a lány-om-ék-nál
this-ASS.PL-ADESS the daughter-POSS.1SG-ASS.PL-ADESS
'at this daughter of mine's' associative plural
- (38) a. ez-en a híd-on át
this-SUP the bridge-SUP via
'via this bridge'
b. *ez-en át a híd-on át
this-SUP via the bridge-SUP via
'via this bridge' naked P

Table 8.1 summarizes which affixes do and do not take part in demonstrative concord.²

¹The associative plural can be shown to sit in a different position from the garden variety multiplicative plural, as it can co-occur with the *-i* allomorph of the latter. (For some reason, the default *-k* allomorph and the associative plural don't co-occur.) See Bartos (1999) for some speculations. C.f. the example below as well as (37-a):

- (i) a lány-a-i-m-ék
the daughter-POSS-PL-POSS.1SG-ASS.PL
'my daughters and their associates'

I will return to the associative plural in Chapter 9.

²Readers familiar with Hungarian demonstrative concord have no doubt noticed that the 'possessive anaphor' *-é* is not mentioned in the above discussion. As already indicated in the introduction of this chapter, *-é* does indeed copy onto the demonstrative.

- (i) ez-é a gyerek-é
this-é the child-é
'this child's (one)'
NOT: the child's this one

(i), however, represents a fundamentally different structural configuration from the other cases of demonstrative concord discussed here. In DPs containing the possessive anaphor *-é* the possessee cannot be overtly modified. Thus in (i) the demonstrative can only be understood to modify the possessor. In other words, it is the child that is proximal, not his/her possession. This in turn means that (i) features a demonstrative internally to the functional sequence of the possessor.

In this section I am focusing on plural and case concord between the head noun and its demonstrative modifier in spec, DP. Concord involving *-é* will be taken up in Section 8.7.

| affixes: concord | affixes: no concord |
|------------------|---|
| plural | associative plural |
| case | possessive agreement |
| dressed P | naked P |
| | possessedness marker <i>-ja/-je/-a/-e</i> |

Table 8.1: Demonstrative concord

On the widely accepted assumption that dressed Ps are case markers (c.f. my analysis in Chapter 5 and references cited there), the suffixes on the left hand side of the table can be characterized as ϕ -features and case. These features are known to be highly prone to participating in agreement and concord cross-linguistically, thus it is not surprising that they are involved in Hungarian demonstrative concord as well.

It is not immediately obvious, however, what is common to the suffixes on the right hand side of the table. The possessedness marker *-ja/-je/-a/-e* marks that the head noun is possessed, this is not a ϕ -feature. Possessive agreement encodes ϕ -features, but these are the ϕ -features of the possessor, an argument of the head noun, rather than features of the head noun itself. Thus it is not very surprising that these features are not repeated on the demonstrative. In Chapter 5 I argued that naked Ps are not case markers. The proposed functional sequence of PPs is repeated in (39) from Chapter 5 for the reader's convenience.

(39) [[[[[[N ... D] K_{Ground}] N_{place}] AxPart] Place] Path]

Thus far, the division between copying and non-copying suffixes correlates with the distinction between ϕ -features and case features of the head noun on the one hand and everything else on the other. Whether this is the correct characterization of the bifurcation or not depends on the analysis of the associative plural. On the one hand, the associative plural is a qualitatively different plural than the garden variety plural, and it doesn't take part in demonstrative concord. These facts might be used to argue that it does not express a ϕ -feature. On the other hand, the associative plural does take part in subject-predicate agreement, which could be an argument for treating it as a ϕ -feature of some sort. In Chapter 9 I will argue that the plural interpretation of the two kinds of plurals comes from the same feature, [group]. I will further argue that the reason why the associative plural doesn't figure in demonstrative concord is because from the demonstrative's position, the number feature of the Num head can be reached with a simpler search than the number feature of the Associate Plural head.

To summarize, my proposal is that copying and non-copying suffixes do not split cleanly along the lines of ϕ -features and case features of the head noun versus everything else. The associative plural is also the exponent of a ϕ -feature related to the head noun. The reason why it doesn't copy is due to its position in f-seq (see Chapter 9, Section 9.7.2 for a detailed exposition).

8.4 Demonstrative concord involves Agree

We now know what sort of nominal suffixes take part in concord, but we don't yet know how to characterize the phenomenon of demonstrative concord itself. It is important to point out right at the start that demonstrative concord cannot be described as literal copying of phonological material from the noun onto the demonstrative. If a suffix contains a linking vowel, its quality is always fixed by its immediate base: by the demonstrative when it is on the demonstrative, and by the noun when it is on the noun. (40) shows that the vowel quality can be different on the demonstrative and the noun.

(40) ez-ek a diák-ok
 this-PL the student-PL
 'these students'

Allomorphy is also always fixed with respect to the immediate base of the suffix. Consider (41), a plural possessed noun. As we have already seen, the plural marker that normally takes the form $-(V)k$ surfaces as *-i* after the possessive marker.

8.4.1 The insides of demonstratives

It is uncontroversial that demonstratives are not monolithic units, and that they can be decomposed into multiple features (Ihsane and Puskás, 2001) or multiple morphemes (Rooryck, 2003; Leu, 2008). Frequently used arguments for this position build on the fact that demonstratives often share their initial phonemes with definite articles but end differently, and that demonstratives can be resumed by a reinforcer (the latter is supposed to be merged as part of the demonstrative and be stranded later on). The following examples summarize some recently proposed decompositions for demonstratives.

Feature decompositions:

- (46) Brugè (2002)
demonstrative: + referential, + deictic
- (47) Ihsane and Puskás (2001)
demonstrative: + specific, + definite

Syntactic decompositions:

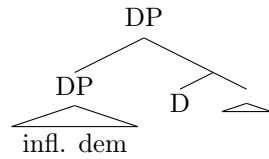
- (48) Déchaine and Wiltschko (2002)
English *this, that* = [_D th- [_{phi} is/at]]
- (49) Rooryck (2003)
Dutch *dit, dat* = definiteness+proximal/distal+[gender+definiteness]
- (50) Klinge (2008)
- a. *the* = ostension
 - b. *th+at* = ostension + deicticity
 - c. *th+is* = ostension + deicticity + proximity
- (51) Leu (2008)
demonstrative: [_{AP} the(definite marker)+agreement HERE]
- (52) Kayne and Pollock (2010)
English *th+at, th+is* = definite article + deictic element corresponding to *here/there*
- (53) Roehrs (2010)
- a. demonstrative: DemP > FP > DeicP
 - b. English *th+is* = definite marker + proximal deictic element
 - c. German *dies* = *d* (Dem) + (FP) + *ies* (Deic)

The consensus that emerges from these works is that minimally, demonstratives have a deictic component encoding distance from the speaker as well as a definiteness component. The definiteness component is, in turn, often argued to be the reason why demonstratives end up so high in the functional sequence (their surface position is commonly identified as D⁰ or the specifier of DP). Giusti (1997); Brugè (1996, 2002) and Roehrs (2010) suggest that demonstratives raise to DP because they check a [+ referential] feature with D; Bernstein (1997) and É. Kiss (2002) hypothesize that the movement is due to the checking or interpretation of a [+ definite] feature; while Ihsane and Puskás (2001) suggest that demonstratives check a [+ specificity] feature in their surface position as well as a [+ definite] feature along the way.

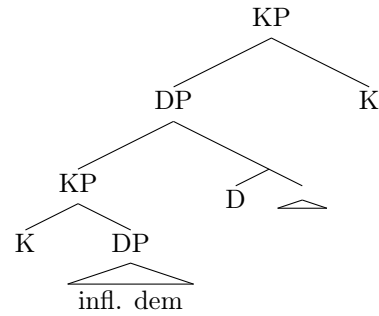
It is also uncontroversial that Hungarian inflecting demonstratives are phrasal and sit in some high specifier position in the nominal functional sequence. The Hungarian literature, however, assumes that inflecting demonstratives have a much more elaborate structure than indicated in (46) through (53). Specifically, inflecting demonstratives are analyzed as complete nominal projections themselves, that is, as DPs or KPs (Kenesei, 1992; Bartos, 1999, 2001a).⁵

⁵But see Ihsane and Puskás (2001) for a different view. They argue for an articulated DP-internal left periphery similar to the one in CP, and suggest that inflecting demonstratives are in spec, SpecificP, the nominal counterpart of TopP. They analyze inflecting demonstratives as a DemP projected by a Dem head, without further internal decomposition.

(54)



(55)

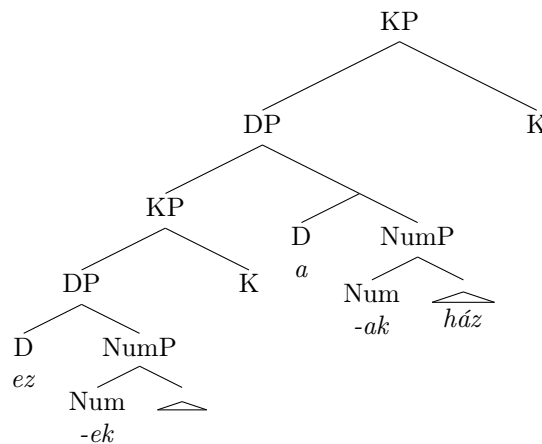


The reason why demonstratives are thought to be DP or KP is that this explains why demonstratives are the only type of noun modifier that share the case marking of the noun: only they are of category DP/KP, and only DP/KP needs case. I note here that this argument does not have much force, as non-nominal adnominal modifiers like numerals and adjectives exhibit case concord in countless languages (see, for instance, the examples in Section 8.5). However, as this section unfolds, I will argue on independent grounds that inflecting demonstratives are DPs indeed.

Bartos (1999) suggests that not only are inflecting demonstratives contained in a DP, but their plural and case marking represent actual functional heads internal to the demonstrative's nominal functional sequence. This is shown in (57).

- (56) ez-ek a ház-ak
 this-PL the house-PL
 'these houses'

(57) the representation of (56) in the analysis of Bartos (1999)



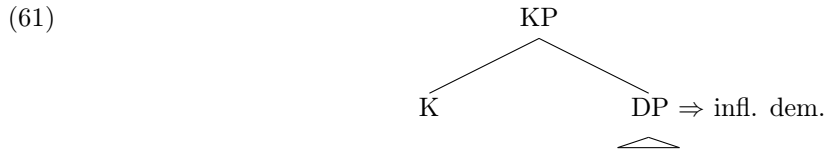
This analysis raises the question of why not all nominal suffixes take part in demonstrative agreement. In other words, if the inflecting demonstrative has a whole full-fledged nominal projection behind it, why is it that the possessive suffix, possessive agreement or the associative plural can never be realized in it? Why is it not possible to include phrasal modifiers like adjectives or possessors in the nominal sequence of the demonstrative? Why is it not possible to include an overt definite article in the DP of the demonstrative, if the demonstrative has a [+ definite] feature? If these noun satellites and functional heads cannot appear overtly because they cannot be projected in the first place, what makes the nominal sequence of demonstratives 'defective'? Further, how should we capture the fact that the demonstrative of the Palóc and Northeastern dialects has concord for case but it doesn't have concord for the plural (c.f. the descriptive works of Kálmán, 1966; Király, 1991; Kiss, 2006)?

- (58) El kell-ene fűrész-el-ni az-t a fá-k-at.
 away must-COND saw-INF that-ACC the log-PL-ACC
 'Those logs should be sawn (into pieces).' (Kiss, 2006, p. 530.)

Palóc Hungarian

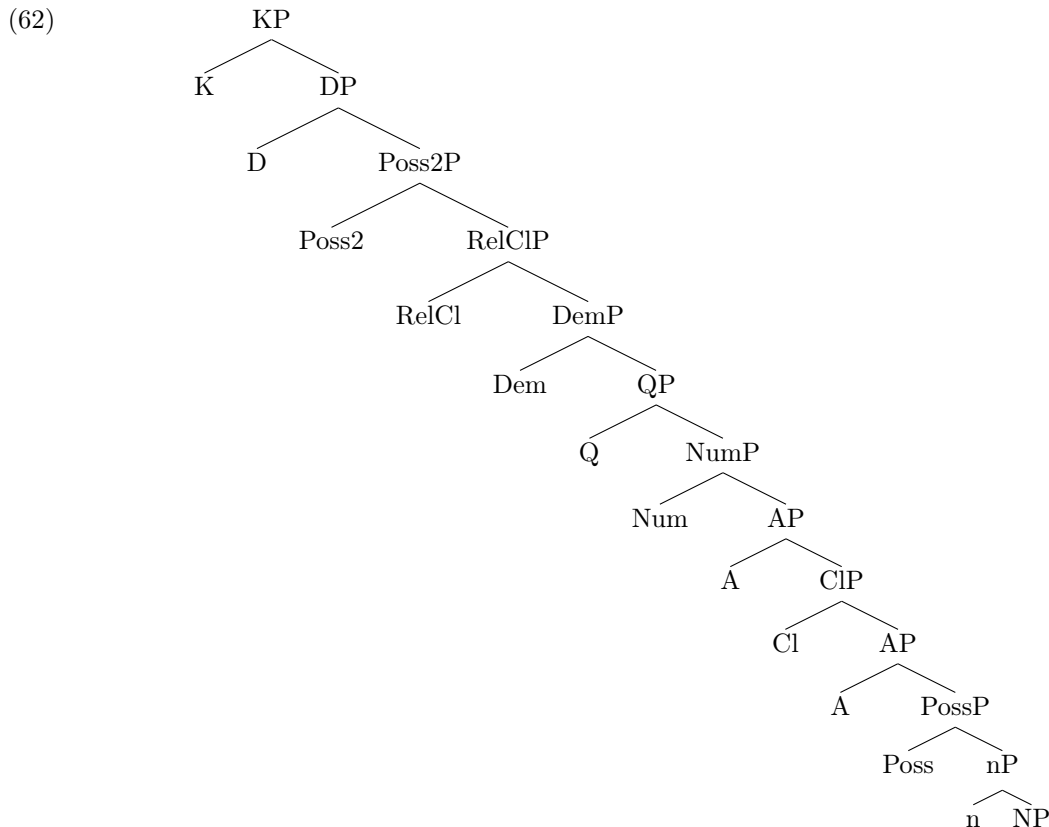
- (59) Hággyuk ez-t a gyerek-ék-et táncol-ni.
 let.IMP.1PL this-ACC the child-PL-ACC dance-INF
 ‘Let us let these children dance.’ (Király, 1991, p. 538) Palóc Hungarian
- (60) ez-t a ház-ak-ot
 this-ACC the house-PL-ACC
 ‘these houses’ (Kálmán, 1966, p. 85.) Northeastern Hungarian

I suggest that the least stipulative analysis that accounts for all of these issues comprises three points: i) inflecting demonstratives are pro-DPs, ii) their case marking is the spellout of a KP embedding them, but iii) their plural marking is an agreement rather than a spellout of a functional head. (61) gives a simplified representation of the structure emerging from these claims.



Let us see each of the three components of the analysis in detail. If inflecting demonstratives spell out a whole DP, then it immediately follows that no DP-internal heads or phrasal modifiers can appear inside them. However, we must independently address the question of just how much internal structure there is internally to the demonstrative’s DP, and where the [+/- proximal] feature responsible for the deictic interpretation resides in that sequence.

In the preceding chapters I have set up the nominal functional sequence as in (62).



Is it plausible to say that an inflecting demonstrative spells out a phrase in which all of these projections are present? Arguably not. There is no reason to assume PossP, Poss2P, APs, ClP, NumP, QP or RelClP internal to the demonstrative’s DP. In Chapter 1, I argued that the presence of functional projections in the DP can be identified on the basis of their semantic contribution to the structure. If we consider what *this* or *that* mean, there is no discernible meaning component

in them that could or should be attributed to any of the above mentioned projections. I am going to argue that this is not so for NP, Dem and D, however.

Given the assumption that inflecting demonstratives are nominal phrases, their functional sequence must be projected from (or put differently, it must bottom out in) an NP. That *ez* ‘this’ and *az* ‘that’ must contain information about being ‘nouny’ is also confirmed by the fact that not all deictic lexemes are nouns. Apart from deictic nouns, Hungarian also has deictic adjectives, adverbs, quantifiers and locatives.

| | | |
|------|---|--------------------|
| (63) | <i>ez, az</i> ‘this’, ‘that’ | Noun |
| (64) | <i>ekkorá, akkorá</i> ‘this.big’, ‘that.big’ | Size adjective |
| (65) | <i>ilyen, olyan</i> ‘like.this’, ‘like.that’ | Adjective/Adverb |
| (66) | <i>így, úgy</i> ‘in.this.manner’, ‘in.that.manner’ | Manner Adverb |
| (67) | <i>ennyi, annyi</i> ‘this.much’, ‘that.much’ | Numeral/Quantifier |
| (68) | <i>itt, ott</i> ‘here’, ‘there’ | PlaceP |
| (69) | <i>ide, oda</i> ‘to.here’, ‘to.there’ | GoalP |
| (70) | <i>innen, onnan</i> ‘from.here’, ‘from.there’ | SourceP |
| (71) | <i>erre, arra</i> ‘in.this.direction’, ‘in.that.direction’ | RouteP |

In all of these demonstratives, proximal deixis is always expressed by some form involving a front unrounded vowel (*e, i* or *í*), and distal deixis is expressed by some form involving a back rounded vowel (*a, ú* or *o*). *E, i* and *í* are thus plausibly exponents of a proximal deictic head, and *a, o* and *ú* are the exponents of a distal deictic head. In any case, ‘deicticity’ is a cross-categorial feature that can appear in many types of extended projections, not only DPs.⁶ To make sure that the inflecting demonstratives *ez* ‘this’ and *az* ‘that’ always have an (ad)nominal use, they must contain an N feature.

We have already seen many examples of the adnominal use of inflecting demonstratives. However, they also have a discourse anaphoric use without a change in phonological form. The *ez* of (72-b) is an anaphoric pronoun that takes its reference from a previously mentioned entity in the discourse context.

- (72) a. Holmes suggests that we should go on a holiday.
 b. *Ez egy nagyon jó ötlet.*
 this a very good idea
 ‘This is a great idea.’

To capture the distribution of the discourse anaphoric *ez*, i.e. to account for the fact that it replaces nominal phrases, it must be a nominal ‘thing’ and must contain an N. The null hypothesis is that the adnominal *ez/az* and the nominal *ez/az* of (72-b) are the same lexical item. Then it follows that the adnominal use of inflecting demonstratives is also projected from an N.

While the DP of inflecting demonstratives must contain an N, it is also clear that inflecting demonstratives cannot be merely pro-NPs. This would leave unexplained the impossibility of overt modifiers on top. To exclude the possibility of all overt heads and modifiers, inflecting

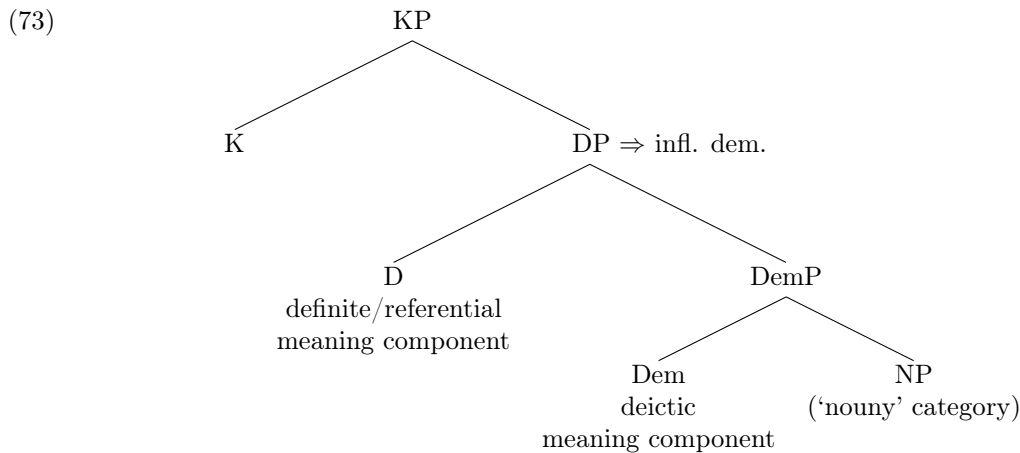
⁶Some deictic forms in (63) through (71) may simply be suffixed *ez* ‘this’ and *az* ‘that’. *Ennyi, annyi* ‘this much, that much’ look like *ez, az* ‘this, that’ suffixed by *-nyi* ‘-ful’, which is used to derive quantities from nouns. But the other forms do not easily lend themselves to an *ez/az*+X decomposition.

demonstratives must spell out both the bottommost layer, NP, and the topmost layer, DP.⁷ Then it follows that no head or modifier between N and D can appear overtly.

It is conventional wisdom that definiteness or referentiality is a feature associated with the D head, and that indefinite phrases lack the DP layer entirely rather being topped off by a [- definite] D. If this is so, then we can account for the ‘definiteness’ or ‘referential’ meaning component of inflecting demonstratives identified by so many authors without further assumptions. Inflecting demonstratives are definite because they spell out the DP layer, which is projected only in definite noun phrases.

Let us now turn to the question of where the [\pm deictic] feature resides in the demonstrative’s DP. Recall from Chapter 4 that Hungarian also has non-inflecting demonstratives. All the tests that show that inflecting demonstratives are phrases fail for non-inflecting demonstratives; they are not phrasal elements. I analyzed them as lexical items that spell out a Dem + D head sequence. When we consider non-inflecting demonstratives, it is clear that the [\pm deictic] feature resides in the Dem head rather than D. All lexical items that spell out Dem have a [\pm deictic] feature. On the other hand, the definite article, which spells out only D, has no [\pm deictic] feature. To achieve maximal uniformity between the functional sequence of demonstratives and the functional sequence of the head noun they modify (the N of (62)), I suggest that the DP of demonstratives also obligatorily contains a Dem head. This is the locus of the deictic meaning component of demonstratives, both inflecting and non-inflecting ones.

To sum up the discussion about the insides of inflecting demonstratives, I suggested that the lexical items in question are pro-DPs. In other words, they don’t just replace a head sequence but an entire DP constituent. This DP constituent contains three layers: an NP that is responsible for the nounlike distribution of inflecting demonstratives, a DemP that contributes deicticity, and a D that contributes definiteness. The pro-DP is topped off by a KP, the spellout of which is the case marker found on inflecting demonstratives.



There would be no harm in assuming APs, NumPs, QPs, etc. inside the DP of inflecting demonstratives. Even if these phrases were projected internally to inflecting demonstratives, they could not receive an overt spellout because the demonstrative already spells out the whole DP. However, given that the presence of these projections cannot be justified on the basis of the semantics, I will assume that they are not projected, and that inflecting demonstratives are specified in the lexicon as the spellout of a DP that contains only the three layers depicted in (73).

(73) does not contain a Num head. Even if it did, it would be spelled out by the demonstrative. Inflecting demonstratives, however, do have an overt plural suffix. In the next section we turn to the question of how plural (and case) is represented in the sequence of (73).

8.4.2 Case concord as KP, plural concord as an agreement feature

In principle, case concord on demonstratives can be represented either as an uK feature added to another functional head, or as an actual K head that takes its value from another K head in the

⁷‘Topmost’ not counting KP, as case has its own spell-out.

structure. As the tree in (73) already foreshadowed, I will take the latter track.

If case concord was merely the spellout of an uK agreement feature, we would be hard pressed to find the head it is added to. The only available heads are N, Dem and D. However, all of them are ‘trapped’ inside the DP spelled out by the demonstrative, and it is not straightforward how any features added to these heads could avoid being spelled out by the pro-DP demonstrative. This problem does not materialize if case concord is represented as a K head. Assuming a separate K head also allows for a better parallel between the extended nominal projections of the head noun and the demonstrative (both are projected from an N and are topped off by K), and, as I will explain immediately below, the separate K head also provides an ideal position for the plural marker, which I analyze as an agreement morpheme.

Let us now turn to plural concord. Since the seminal work of Ritter (1991), it is hardly controversial that the locus of number marking in the DP is in the Num head. It is, however, an entirely different issue whether the plural morpheme of individual languages spells out this Num head or whether it is agreement, and it is yet another issue whether the plural marker of nominal satellites is an exponent of the Num head or not.

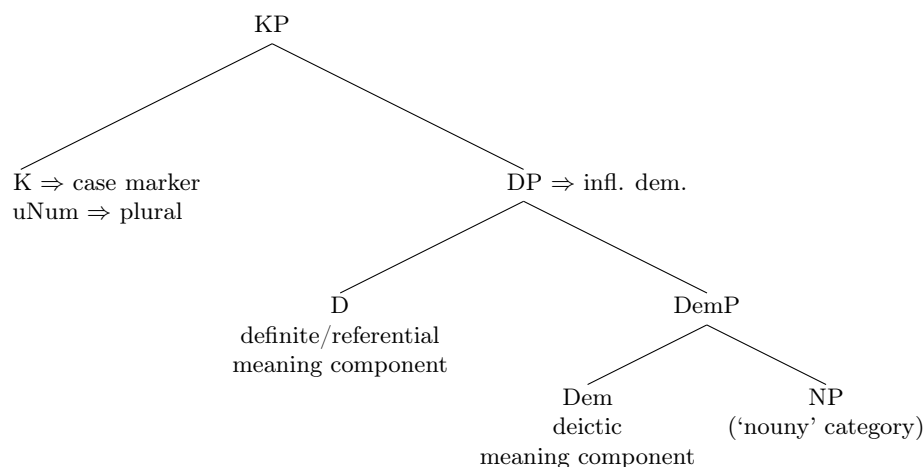
In the demonstrative’s functional sequence shown in (73) there is no NumP. The reason for this has been explained in the previous section. To recapitulate, if the plural spelled out Num, then the demonstrative would have to be a smaller pronoun, either below or above Num⁰. In this case either nominal modifiers below or above Num⁰ should be able to occur overtly, but they don’t. The complementary distribution of inflecting demonstratives with these modifiers internally to the demonstrative’s xNP is captured in a principled manner if inflecting demonstratives ‘eat up’ the relevant positions. But even if there was a NumP in (73), the plural marker could not be the exponent of that Num head: the inflecting demonstrative spells out DP and this prevents any DP-internal material from being lexicalized by another lexeme. Thus on the demonstrative, the plural must be an agreement morpheme, the lexicalization of a uNumber agreement feature.

The next question to address is which head the uNumber feature is added to. There are multiple reasons to think that the head in question is the highest one in the sequence, K. Firstly, in Chapter 5 I argued that KP is a phase. In order for the uNumber feature to be able to look out of the KP phase, it must be located on its edge. Secondly, if uNum was sitting on D, it would probably be spelled out by the pro-DP demonstrative. Even if this could be avoided by some technical solution and KP weren’t a phase, it would be embedded too deeply in the functional sequence of the demonstrative to c-command out of it, and it could not reach the number information of the head noun.

Thirdly, the D head in the main projection line of the head noun is never adorned with uNumber. In Chapter 4 I argued that both the definite article and non-inflecting demonstratives spell out D, but none of them inflect for number. Allocating uNum to the D of inflecting demonstratives thus would introduce an unwanted asymmetry between the nominal functional sequence of the head noun and the demonstrative. In the next chapter I am going to argue that the K of the head noun also has an uNum agreement feature. Adding the demonstrative’s uNumber to the demonstrative’s K allows the two functional sequences to be uniform.

To recapitulate, I have suggested that the case marker on the demonstrative is not an agreement morpheme. Instead, it is the spellout of an actual K head that takes its value from another K in the structure (the K of the head noun). The plural marker on the demonstrative, on the other hand, is a real agreement morpheme. It is the spellout of an uNumber agreement feature added to the K head. The internal structure of inflecting demonstratives is summarized in (74).

(74)

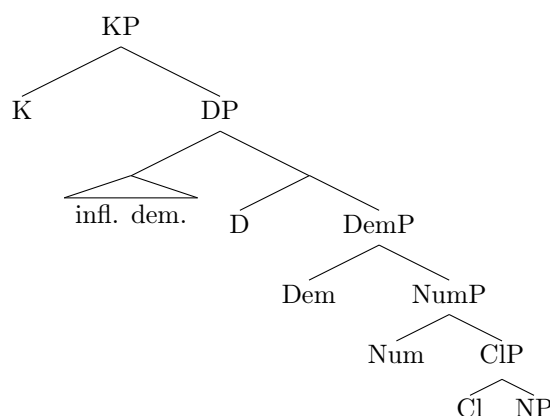


Let us now turn to the dialects that have no plural concord. In the proposed system these can be handled very easily: the K of these dialects simply doesn't have an uNumber agreement feature. Their representation is thus exactly as in (73). Which nominal modifiers show concord for which nominal features in which language is notoriously unpredictable, therefore such variation regarding the presence or absence of agreement features is not unexpected at all. If the plural was the spellout of the Num head internally to the DP of the demonstrative, then either the whole NumP should come and go across dialects, or we would have to assume that in the Palóc dialect the Num that is in the functional sequence of the demonstrative is obligatorily spelled out with a null morpheme. Neither option is very elegant.⁸

8.5 Demonstrative concord via Reverse Agree

Let us take a look at the simplified functional sequence in (75). Inflecting demonstratives are shown in their surface position, in spec, DP. The proposal that they are merged in spec, DemP has no bearing on the issues at hand.

(75)



As already pointed out by Bartos (2001a), the demonstrative is above the locus of number marking, Num, but it is below K. On the standard assumption that the plural marker is the spellout of Num, it is not possible to capture the two types of agreement by exactly the same mechanism. Bartos proposes that plural agreement on the demonstrative is the result of upward percolation of the plural feature, while case agreement is the outcome of downward percolation of the case

⁸According to Rácz (1991), in some dialects phrasal demonstratives do not inflect either for number or case (hence my term 'inflecting demonstratives' would be a misnomer for these). The phrasal demonstratives of these dialects either spell out the whole KP, or they are not topped off by KP in the first place. Without further testing, it is not possible to tell which option is the correct one.

feature. While feature percolation is not part of the Minimalist toolbox, the basic problem remains: the structural relationship between the demonstrative and K and the demonstrative and Num is different because the demonstrative is above Num but below K.

Plural concord can be easily captured if we apply Chomsky's Agree system to DP-internal concord. The unvalued number feature of the demonstrative can probe and find the plural in its search domain. Agree can take place, and the unvalued feature on the demonstrative can be valued by the number specification of the head noun.

Case concord, however, doesn't fit Chomsky's Agree system. At the point when the demonstrative is merged, case is not in the structure yet, and the demonstrative does not move above K at any point in the derivation. If case agreement is the result of the Agree operation, which is the most parsimonious assumption, then the case probe must be able to look upwards, outside its *c*-command domain (c.f. Rezac, 2003; Béjar, 2003; Baker, 2008; Hicks, 2009; Zeijlstra, 2004, 2010; Diercks, 2011; Workneh, 2011; Bader, 2011, among others). To my mind, this is indeed the most elegant analysis of case concord on Hungarian demonstratives, as well as of many cross-linguistic concord phenomena (see the Section 8.6).⁹

Rezac (2003) and Béjar and Rezac (2009) argue that unvalued features first always probe into their complement, and they subsequently probe into their specifier only if they don't find a suitable match in their *c*-command domain. They suggest that probes cannot look beyond the specifier of the head in which they reside. Restricting upward probing to the specifier of the category involved will not work for demonstrative case concord, as case is not contained in the same projection as the demonstrative. To capture case concord, it is necessary to have a wider domain for Reverse Agree, for instance up to the next phase boundary as suggested in Baker (2008).

Reverse Agree can successfully account for case concord on demonstratives. But if number information is represented in the DP only in NumP, then Bartos' conclusion that plural concord and case concord apply in opposite directions is unavoidable.¹⁰ Combining Reverse Agree up to the phase boundary with Rezac's proposal that probes first look down and only then upwards allows a unification of plural and case concord to some extent, though. Specifically, unvalued features do not have to be tagged whether they probe downwards or upwards. The direction of agreement follows from the architecture of the functional sequence, it depends on whether the interpretable counterpart of the uF feature in question is merged lower or higher than uF itself.

Applying this line of thinking to Hungarian inflecting demonstratives, both the unvalued Num and K probe downwards in the first cycle. The unvalued Number feature finds a match in the number feature of the head noun and gets valued. The unvalued K, however, does not find a match downwards. Then it has to look upwards, and check at every subsequent instance of merge whether a matching valued feature is available or not. It is possible to value the unvalued K feature on the demonstrative only when the K of the head noun is merged to top off the nominal functional sequence. Like this both plural and case concord make use of the same mechanism.

This is not the only way to unify case and plural concord, however. In the above line of reasoning, the necessity of downward probing was motivated by the assumption that number information is available at the DP only at one point, in NumP. To my mind, it is beyond controversy that Num is the position where information about numerosity is introduced into the structure and it is in this position that number information is interpreted. But this does not necessarily mean that this is the only place where number information is available. Specifically, it is possible for higher (and lower) heads to contain an unvalued uNum agreement feature that is valued by the

⁹Upward probing doesn't mean that Agree is devoid of locality constraints. Rezac (2003) argues that only a head's specifier is in the search domain of the head, and search into the specifier is possible only if search in the complement doesn't lead to a match. Baker (2008) suggests that upward probing is limited by the phase boundary. This is compatible with the analysis advocated here: KP is the next phase boundary upwards from demonstratives, so Agree does not have to cross a phase-boundary.

¹⁰If demonstratives are merged low, somewhere between NP and APs (Brugè, 1996, 2002; Vangsnæs, 1999; Guardiano, 2009; Roehrs, 2009, 2010; Roberts, 2011), then Reverse Agree can account for both plural and case concord. Plural concord can take place in the low base position when Num is merged, then demonstratives can raise to their surface position and probe upward to value their case feature. Crucially, this kind of analysis would have to build on cross-linguistic evidence that cannot be supported by empirical data from Hungarian. While I believe that such arguments are generally not invalid, I will not adopt the low merge-in position of demonstratives here. It is not incompatible with anything I say in this dissertation, but there are ways to unify the directionality of plural and case concord without making recourse to trace positions we don't have direct evidence for, and I will pursue these directions instead.

interpretable and valued feature in Num. In that case number information is introduced and interpreted invariably at Num, but the information about the value of that feature is available at more than one point in the DP.

I have already indicated that in Chapter 9 I will argue for an uNum feature in the K of the main projection line. To anticipate why, I will briefly outline the reasoning here. On mainstream assumptions, DPs are built incrementally and ϕ -features are scattered in the nominal phrase: gender features reside in NP, number features in NumP and person features in DP. Danon (2011) observes that this is incompatible with another mainstream Minimalistic assumption: ϕ -completeness. ϕ -completeness requires that the goal targeted by DP-external probes be ϕ -complete. However, gender, number and person are introduced at different points in the derivation, and no single head contains all of them. She proposes that the contradiction can be resolved if the ϕ -features are all collected on one head. She argues that D contains not only the person feature, but also unvalued number and gender features. These features are valued by their interpretable counterparts in NP and Num. In the end, D ends up with valued instances of all kinds of ϕ -features.

This has two advantages. Firstly, it resolves the above mentioned contradiction. Secondly, it ensures that ϕ -features introduced lower in the DP, such as gender and number, have instances on the phase edge. The interpretable instances of gender and plural trapped in the domain of the DP phase, the Phase Impenetrability Condition makes them unavailable for probes. Having higher instances on D, however, offers a way out of this problem.¹¹

As I have already indicated in Chapter 6, I will not worry about ϕ -completeness. Many researchers argue that ϕ -features do, in fact, probe separately from each other (c.f. Rezac, 2003; Béjar and Rezac, 2009). The second point, however, is highly relevant for this thesis, as I assume that the extended nominal projection is a phase. Danon takes DP to be the maximal extension of N. In my analysis the maximal extension of N is K. Therefore for me, the ϕ -features need to collect on K rather than D.

Now if all ϕ -features collect on K, then plural concord and case concord on Hungarian inflecting demonstratives could be captured in a uniform fashion. Case concord can only be captured by Reverse Agree. If K harbours an instance of the Number feature, then Reverse Agree can also cover plural concord: the plural feature of the demonstrative can probe upwards and receive its value from the instance of the Number feature on K. In this scenario there is no need to assume downward Agree from the demonstrative at all (but the uNumber feature on K can only get its feature valued by downward Agree, so it is not possible to eliminate this kind of Agree entirely).

To sum up, I suggested that plural concord and case concord on the demonstrative can be unified in one of two ways. The first way is to not fix the direction of Agree for the demonstrative's unvalued features. In this case both the unvalued case and plural feature probe downwards first. If this does not result in a match and valuation, they subsequently need to probe upwards. Given the make-up of the functional sequence, only case concord has to make use of this option. The second way is to fix the direction of Agree for the demonstrative's unvalued features as Reverse Agree. In this case both features are valued by the instances of ϕ -features residing in K. In Chapter 9 I am going to propose an analysis for the associative plural. That will only be compatible with the first (Béjar-Rezac) method.

8.6 Reverse Agree: evidence from cross-linguistic concord phenomena

The argument for Reverse Agree developed in the previous section crucially relies on the assumption that case is represented in narrow syntax, and that it is the highest functional head in the extended nominal projection. Not everybody shares this assumption, however.

Giusti (2008), for instance, represents case in syntax without a KP. She assumes that the maximal extended nominal projection is DP, and case is represented high in the nominal structure, on D. In her approach, it would be possible to account for both plural and case concord on Hungarian demonstratives by downward Agree. If case is represented on D, then the demonstrative could have its case feature valued by downward agree after it moves to its surface position in spec,

¹¹Danon bases her theory entirely on theoretical considerations. On the basis of empirical data from Amharic, Workneh (2011) has independently reached the same conclusions.

DP. While this analysis could work parochially for Hungarian, it would not be able to capture the bigger cross-linguistic picture of DP-internal case concord.

In Hungarian (as well as English), the demonstrative is the only nominal modifier that exhibits any kind of concord with the head noun.¹² In many languages, however, adjectives, numerals and quantifiers also exhibit case concord. The following examples are illustrative.

- (76) ton amerikanid-on ginek-on
 the-FEM.PL.GEN American-FEM.PL.GEN woman-FEM.PL.GEN
 ‘the American women’ (genitive) (Alexiadou, 2001, ex. 17.) Greek
- (77) v nov-om avtomobil-e
 in new-M.SG.LOC car(M)-SG.LOC
 ‘in a new car’ (Corbett, 2006, p. 133. ex. 32.) Russian
- (78) kolme-t miehe-t
 three-ACC/NOM.PL men-ACC/NOM.PL
 ‘three men’ (Brattico, 2010, ex. 5. b.) Finnish
- (79) serako-xõt° te-xõt°
 white-ABL.PL reindeer-ABL.PL
 ‘from white reindeer (pl)’ (Nikolaeva, 2003, ex. 7.) Tundra Nenets

As adjectives, numerals and quantifiers are lower than DP, it is not possible to maintain that case is represented high in the nominal phrase and avoid Reverse Agree at the same time.

One possible response to this is to deny that case is represented high in the functional sequence. DM, for instance, advocates a post-syntactic approach to case (quite independently of the directionality of Agree), whereby case is not represented in narrow syntax at all. But again, this is a solution that can avoid Reverse Agree only parochially, in the narrow empirical domain of case concord. If we cast the empirical net wider to include concord in other features as well, Reverse Agree becomes unavoidable.

Features that often spread to nominal modifiers via concord in the DP include Gender, Number and Case (but not Person, c.f. Baker, 2008). In the Modern Greek and Russian examples, for instance, nominal modifiers show concord for all three features. In the Finnish and Tundra Nenets examples modifiers agree for case and number. It is accepted wisdom that Gender is very low in the structure. Whether it is baked into N or it is represented by a functional head right above N in *n*, downward Agree can take care of Gender concord on adjectives, numerals, demonstratives and articles alike.

Number concord, on the other hand, calls for a Reverse Agree solution. On the broadly accepted assumptions that Num > Adj > N is the base-generated order and information about number is not introduced before Num is merged, number concord on adjectives must involve upward probing.¹³ If Reverse Agree wasn’t possible, then we would expect that only those adjectives can show number concord that have moved above NumP. There are languages that exhibit this pattern indeed. Finnish is one of them. Observe the plural marking of the pre-numeral adjective versus the singular marking of the post-numeral adjective in (80).¹⁴

- (80) minä odotin ne pitkästyttävä-t kolme loputon-ta minuutti-a.
 I waited those.ACC boring.PL.ACC three endless.PART.SG minute-SG.PART
 ‘I waited those boring, endless three minutes.’
 (Brattico, 2011, p. 1049. ex. 22.) Finnish

It appears that in Finnish number concord can only operate via downward Agree. However, the pattern in (80) is admittedly rare. Well-known Indo-European languages work differently, all of their adjectives exhibit number concord. This means that they make use of a slightly different

¹²On the basis of a cross-linguistic survey, Moravcsik (1997) and Moravcsik (2003) suggest that this reflects a linguistic universal: if only one type of nominal modifier shows concord in a language, then it is always the demonstrative.

¹³Baker (2008) also discusses upward probing with adjectives, but he focuses on predicative adjectives and does not elaborate on adnominal adjective concord.

¹⁴Finnish numerals assign Partitive case to the nouns and nominal modifiers in their domain, hence the pre-numeral adjective is Accusative but the post-numeral one of Partitive. This has no bearing on the issue at hand.

variety of Agree, namely Reverse Agree.

The argument laid out above also extends to low pronominal possessors that agree for the number of the possessee. (81) is a relevant example from the Sogn dialect of Norwegian, where the noun(phrase) undergoes short movement and lands above the merge-in position of possessors but below adjectives (Vangsnes, 1999).¹⁵

- (81) alt detta góá øle mitt
 all.N.SG this.N.SG good.N.SG beer-DEF.N.SG my.N.SG
 ‘all this good beer of mine’ (Vangsnes, 1999, p. 127. ex. 18.) Sogn Norwegian

An argument in the same vein can be made for definiteness concord as well. In Icelandic, for instance, adjectives are unique among nominal modifiers in showing definiteness concord.¹⁶ On the standard assumption that definiteness is represented in DP or DefP, definiteness concord on adjectives must involve Reverse Agree.

- (82) alla fræga karla
 all.ACC.M.PL famous.ACC.M.PL.INDEF men.ACC.M.PL
 ‘all famous men’ (Sigurðon, 2004, p. 93. ex. 85. b.)
- (83) alla þessa fjóra frægu karla
 all.ACC.M.PL these.ACC.M.PL four.ACC.M.PL famous.PL.DEF men.ACC.M.PL
 ‘all these four famous men’ (Sigurðon, 2004, p. 93. ex. 83. b.) Icelandic

Again, the response to this could be that number is an interpretable feature on N (Giusti, 2008), and that definiteness is also a feature of the noun, but these conjectures have no independent justification and would lead back to a Strong Lexicalist approach to morphology that is currently rejected by most linguists.¹⁷

I conclude that Reverse Agree is the most elegant solution not only to case concord (in Hungarian and elsewhere), but also to number and definiteness concord in the languages that have them.

8.7 Demonstrative concord with -é

8.7.1 The meaning and distribution of -é

We have already seen in this chapter that Hungarian has a so-called possessive anaphor suffix *-é*. Let us recapitulate what we know about it. The suffix *-é* cliticizes onto nominative possessors and roughly means ‘that of X, possession of X’ (where the exact reference of ‘that’ or ‘possession’ must be recovered from the context). It is restricted to elliptical contexts (84) and predicative position (85).

- (84) a. János barát-ja el-ment, Péter-é itt marad-t.
 John friend-POSS away-go.PAST.3SG Peter-é here stay-PAST.3SG
 ‘John’s friend has left, Peter’s one stayed here.’
- b. (i) Which bone was lost?
 (ii) A Morzsi kutya-é.
 the Morzsi dog-é
 ‘Morzsi dog’s.’

¹⁵Admittedly, an alternative analysis of the word order in (81) is also possible: the possessor could be high, in a position that is equivalent to the Hungarian Poss2P, with AP having moved above it. If this is so, then (81) cannot be used as an argument for Reverse Agree (the possessor raised above NumP and can probe downwards).

¹⁶Definiteness agreement on adjectives is a common phenomenon in Scandinavian languages. Apart from Icelandic, it is also found in Norwegian, Faroese and Swedish (Julien, 2005). If the so-called double definiteness construction of Scandinavian is taken to be definiteness agreement on the noun (Roehrs, 2009), then that agreement, too, must involve Reverse Agree.

¹⁷There exists a recent line of research which suggests that by the time the DP is completed, all nominal ϕ -features are collected on one head, but this is envisaged as a derivational process rather than inherent feature specification, and the head in question is identified as D rather than N (Danon, 2011; Workneh, 2011). As ϕ -features are accessible to probes external to the DP, they must accumulate on a high head to be visible for these probes.

- (96) a. correct parse for (95): [ez-é a diák]-é
 b. wrong parse for (95): *[ez-é [a [diák-é]]]

This fact cannot be due to an incompatibility between the semantics of *-é* and the semantics of potential modifiers of the possessee. The antecedent of the DP with *-é* can happily contain a demonstrative, numeral/quantifier and/or and adjective, and the DP with *-é* can take its reference either from just the noun, or a bigger structure that contains both the noun and its modifiers. C.f.:

- (97) János eme toll-a-i és Péter-é-i
 John this pen-POSS-PL and Peter-é-PL
 ‘these pens of John and Peter’s i) pens ii) these pens’
- (98) Móka Miki három szendvics-e és Maci Laci-é
 Móka Miki three sandwich-POSS and Maci Laci-é
 ‘Móka Miki’s three sandwiches and Maci Laci’s i) sandwich ii) three sandwiches’ (Bartos, 1999, p. 43, ex. 30.)
- (99) a tanár nyolc piros toll-á-t és az okos diák-é-t
 the teacher eight red pen-POSS-ACC and the clever student-é-ACC
 ‘the teacher’s eight red pens and the clever student’s i) pens ii) eight red pens’ (Laczkó, 2007a, p. 327. ex. 7.)

I take these data to indicate that in DPs with *-é* a relatively big chunk of structure is replaced by a pro-form. This pro-form, however, does not replace the plural marker, the possessive agreement and the case marker that would normally appear on the possessee. These suffixes remain overt and line up on *-é*.¹⁸

- | | | | | |
|-------|----|---|----|---|
| (100) | a. | János csont-ja John bone-POSS ‘John’s bone’ | b. | János-é John-é ‘John’s’ |
| (101) | a. | János csont-ja-i John bone-POSS-PL ‘John’s bones’ | b. | János-é-i John-é-PL ‘John’s ones’ |
| (102) | a. | János csont-ja-i-t John bone-POSS-PL-ACC ‘John’s bones’ | b. | János-é-i-t John-é-PL-ACC ‘John’s ones (acc)’ |
| (103) | a. | a ti the you csont-ja-i-tok-at bone-POSS-PL-POSS.2PL-ACC | b. | ‘your bones’ a ti-é-i-tek-et the you-é-PL-POSS.2PL-ACC ‘your ones’ |

Exactly how big a structure is replaced by the pro-form and what position *-é* is merged in will be the topic of Section 8.7.3.

8.7.2 Previous analyses of *-é*

I am aware of two different Minimalist analyses of *-é*: Bartos (1999); Knittel (1998) on the one hand and Bartos (2001a) on the other.¹⁹ I will discuss them in turn, pointing out the data they do (not) account for.

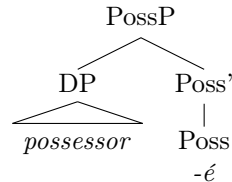
¹⁸Note that the plural appears in the allomorph that is used after the possessedness suffix (*-i*), and not in the default *-k* form.

¹⁹Laczkó (2007a) proposes an analysis of *-é* in the LFG framework. He claims that it is an overt "pro possessive noun head", "the functional and semantic head of the whole nominal expression" (p. 334). This proposal is reminiscent of Lotz’s (1968) descriptively oriented approach: "*-é* is substituted for the stem portion of the head of the nominal phrase; it points to this segment – and to the attributes, if any" (p. 634.).

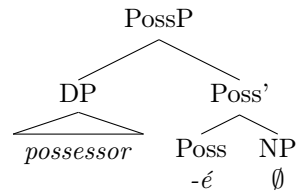
Bartos (1999); Knittel (1998)

The central idea in Bartos' (1999) analysis is that *-é* doesn't co-occur with the possessedness suffix *-ja/-je/-a/-e* because they compete for the same position: the Poss head. The reason why the head noun, the possessee, cannot co-occur with the possessive anaphor is either that *-é* is an intransitive Poss variant (104), or that it takes a phonologically zero anaphoric NP complement (105). In the latter analysis *-é* is not the anaphor itself, rather its complement is (c.f. also Knittel, 1998).

(104)



(105)



The possessedness suffix *-ja/-je/-a/-e* is linearized as a suffix on the possessee. The reason why *-é* ends up on the possessor instead is that in DPs with *-é* the possessee is phonologically empty. *-É*, however, requires an overt host, and in order to fulfill this requirement it cliticizes onto the possessor as a last resort.

This analysis accounts for the complementary distribution between *-é* on the one hand and the possessee as well as the possessedness suffix *-ja/-je/-a/-e* on the other hand. It also explains why a plural marker following *-é* has to be the *-i* allomorph. The same allomorph of the plural is used after the possessedness suffix *-ja/-je/-a/-e* as well. One can thus say that the *-i* allomorph is conditioned by a preceding Poss exponent.

(106) csont-ja-i/*k
bone-POSS-PL
'his/her bones'

(107) a diák-é-i/*k
the student-é-PL
'the student's ones'

However, this analysis does not explain the different distribution of the possessedness suffix *-ja/-je/-a/-e* and *-é* in demonstrative concord. Recall that if the possessor has a demonstrative modifier, *-é* has to occur on it. This is impossible for the possessedness suffix *-ja/-je/-a/-e*, however. If both morphemes spell out the Poss head, the source of this difference remains a mystery. Further, this proposal does not capture the fact that in DPs with *-é* the possessee cannot have overt modifiers. Adjectives, numerals and demonstratives are merged above PossP, and no direct or indirect link can be established between *-é* and these higher projections.

The second problem could be easily solved if *-é* was the pro-form itself, and it replaced a bigger piece of structure, essentially 'swallowing' the position of these modifiers. The reason why Bartos does not go for this account is that the plural marker can appear overtly after *-é* (107), and he takes the plural to be the spellout of the Num head. This forces him to treat the pro-form as a small category.

Bartos (2001a)

Bartos (2001a) suggests an entirely different analysis. His main concern is to explain why *-é* takes part in demonstrative concord. He proposes that *-é* is not the exponent of the Poss head. Instead, it is analyzed as a Genitive case marker on the possessor. The arguments for this position are the following.

Firstly, Hungarian has a great number of cases, but it does not appear to have a separate Genitive case (the Genitive function is expressed by the Dative case). If *-é* is the Genitive case

marker, the gap in the paradigm can be eliminated. A related argument, though not mentioned by Bartos, is that the missing Genitive of Hungarian is an exception with respect to Blake's case hierarchy. Blake (1994, 2001) observe that a cross-linguistic examination of case inventories yields the case hierarchy in (108).

(108) nom – acc/erg – gen – dat – loc – abl/inst – others

In Blake (2001, p. 156.) he comments on (108) as follows. "This hierarchy is to be interpreted as follows. If a language has a case listed on the hierarchy, it will usually have a least one case from each position to the left. Thus if a language has a dative case it will have a genitive, an accusative or ergative or both, and a nominative." Hungarian doesn't conform to this generalization because it has a gap in the middle of its case inventory, it has cases from all positions of the hierarchy except the Genitive. If \acute{e} is the Genitive case indeed, then Hungarian ceases to be an exception to the Blake hierarchy.

Secondly, \acute{e} takes the whole of the possessor phrase in its scope, not only the head of the possessor phrase (c.f. (91) through (95)). In this respect it is very much like case markers. Finally, \acute{e} appears in the linear sequence of nominal suffixes exactly where case markers do: on the right edge, following the plural and the possessive agreement suffixes.²⁰

(109) a diák-ja-i-m- \acute{e}
the student-POSS-PL-POSS.1SG- \acute{e}
'my students' (one)'

(110) (mi)-vel-ünk
we-COMIT-1PL
'with us'

(111) mi- \acute{e} -nk
we- \acute{e} -1PL
'ours'

This analysis explains why \acute{e} copies onto the demonstrative but the possessedness marker $-ja/-je/-a/-e$ doesn't. These morphemes are not exponents of the same head. \acute{E} is a case marker and takes part in demonstrative concord like all case markers, while the possessedness suffix $-ja/-je/-a/-e$ is the exponent of the Poss head. Not being a ϕ -feature, it does not take part in demonstrative concord.

Under the assumption that \acute{e} is a Poss head, the distribution of the $-i$ plural allomorph is straightforward and unified: it always appears after a Poss exponent. But this is also entirely compatible with the idea that \acute{e} is a case marker. Given that there is a possessor in the structure, there must also be a Poss head. The distribution of the $-i$ allomorph is thus conditioned by a preceding Poss head, whether that has an overt exponent or not.

However, this proposal does not readily explain that a genitive-marked possessor cannot co-occur with the possessedness marker $-ja/-je/-a/-e$ and an overt possessee. The fact that the elided possessee cannot have overt modifiers does not follow either.

Interim summary

The strengths and weaknesses of the two analyses of \acute{e} are summarized in table 8.2. '+' stands for 'explains it', while '-' means 'doesn't explain'.

²⁰ \acute{E} can also be followed by a plural suffix, a possessive agreement marker or a case marker. However, any suffix following \acute{e} belongs to the extended projection of the possessee rather than the possessor. Therefore the suffixes after \acute{e} are irrelevant for the argument.

(i) [a diák-ja-i-m]- \acute{e} -i-t
the student-POSS-PL-POSS.1SG- \acute{e} -PL-ACC
'my students' ones (acc)'

(ii) [az ti]- \acute{e} -i-tek-et
the you- \acute{e} -PL-POSS.2PL-ACC
'your(pl) ones'

(iii) a diák-ja-i-m-at
the student-POSS-PL-POSS.1SG-ACC
'my students'

| | Bartos (1999), Knittel (1998) | Bartos (2001) |
|--|-------------------------------|---------------|
| no overt possessee or <i>-ja/-je/-a/-e</i> | + | - |
| no overt modifiers | - | - |
| demonstrative concord | - | + |
| <i>-i</i> plural allomorph | + | + |

Table 8.2: Previous analyses of *-é*

In the next section I will develop an analysis of *-é* that combines the best features of the two analyses.

8.7.3 *-É* is the Genitive case

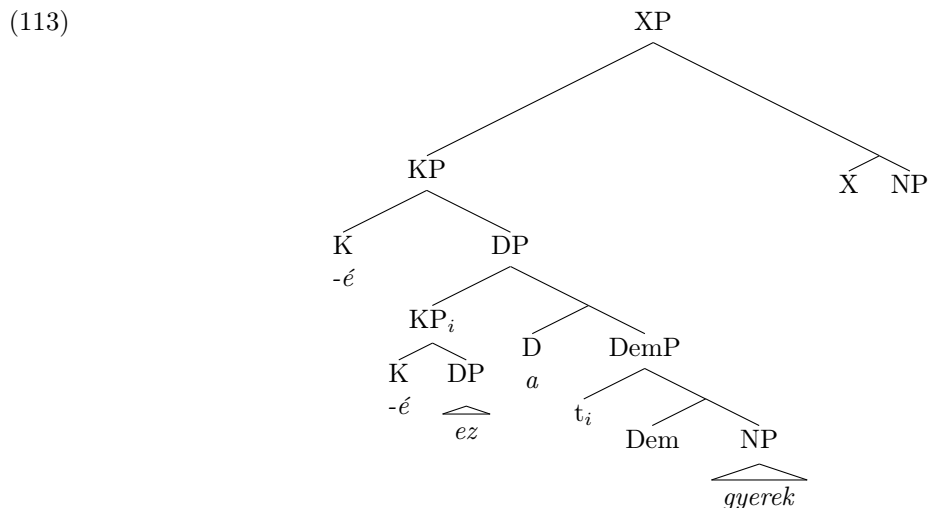
My proposal about *-é* builds on Bartos' insights and combines components from both of his analyses. As I have already mentioned above, the distribution of the *-i* allomorph can be captured quite easily if we assume that instead of being conditioned by the possessedness suffix *-ja/-je/-a/-e* itself, *-i* appears after any Poss exponent. In the remainder of this chapter I will consider this matter settled.

The task, then, is to account for the three remaining properties of *-é*: i) its participation in demonstrative concord, ii) its complementary distribution with the possessee and the possessedness suffix *-ja/-je/-a/-e*, and iii) the lack of overt modifiers on the possessee.

In Section 8.3 I characterized demonstrative concord as a process that copies the values of ϕ -features from the head noun to its demonstrative modifier. The analysis of *-é* as a Poss head (or alternatively as a lexical item spanning the anaphoric N and Poss) does not, cannot give an illuminating explanation why it copies. Concord does not extend to *-ja/-je/-a/-e*, which is a Poss exponent beyond the shadow of a doubt, and if *-é* is Poss, then the suffixes that take part in demonstrative concord do not form a natural class. Treating *-é* as a Genitive case marker on the possessor, on the other hand, automatically explains why it obligatorily copies. It also allows us to characterize the copying suffixes as a natural class. I conclude with Bartos (2001a) that *-é* is the exponent of Genitive case.

As in DPs with *-é* the possessee cannot have overt modifiers, the demonstrative that precedes the possessor and inflects for *-é* modifies the possessor. (112) expresses the proximity of *the child*, and it cannot mean that the child has a proximal possession. The structure of the possessor in (112) is treed in (113): *-é* concord is case concord between the possessor and its demonstrative modifier.

- (112) *ez-é a gyerek-é*
 this-é the child-é
 'this child's one'
 NOT: 'this one of the child's'



That (112) features a demonstrative in the functional sequence of the possessor rather than the possessee is also evident from the way plural marked nouns interact with *-é*. If the possessor is marked for plural, then the demonstrative preceding it is also marked for the plural. Consider the following noun phrases.

- (114) a. a lány-ok
the girl-PL
'the girls'
- b. ez-ek a lány-ok
this-PL the girl-PL
'these girls'

In (115), the plural noun phrase of (114-b) functions as the possessor, and the plural suffix obligatorily appears on the demonstrative, too.

- (115) ez-ek-é a lány-ok-é
this-PL-é the girl-PL-é
'these girls' (one)'

The plural marking of the possessee, on the other hand, does not copy onto the demonstrative. Consider (116-b), where the possessor *the girl* is morphologically and semantically singular, but the possessee is plural (this is indicated by the plural marker *-i* following the possessive anaphor *-é*).

- (116) a. a lány-é
the girl-é
'the girl's (one)'
- b. a lány-é-i
the girl-é-PL
'the girl's ones'

Now if (116-b) is preceded by the demonstrative, then the demonstrative mustn't bear plural marking.

- (117) ez-é a lány-é-i
this-é the girl-é-PL
'this girl's ones'
- (118) *ez-é-k a lány-é-i
this-é-PL the girl-é-PL
'this girl's ones'

(117) and (118) show that the number marking on the demonstrative tracks the number marking of the possessor. This is straightforwardly explained by the position of the demonstrative inside the functional sequence of the possessor.

I emphasize this point here so much because later on we will see that to a limited extent, there is also concord between the demonstrative of the possessor and features in the extended projection of the possessee. Concord involving *-é*, however, is entirely internal to the possessor's projection.

Further evidence for *-é* as the Genitive case comes from the interaction of demonstratives and 'Nominative' possessors. Bartos (2001a) and É. Kiss (2002) argue that morphologically unmarked possessors in Hungarian are caseless rather than Nominative. The motivation for this position is the (im)possible forms of demonstratives modifying possessors or serving as possessors themselves. To set up the problem, we need to revisit the distinction between morphologically unmarked ('nominative') and morphologically marked (dative) possessors.

- (119) a tanár ház-a
the teacher house-POSS
'the teacher's house'
- (120) a tanár-nak a ház-a
the teacher-DAT the house-POSS
'the teacher's house'

Given that Nominative case is phonologically null in Hungarian, the possibility arises that 'Nominative' possessors are caseless. É. Kiss (1998); Bartos (2001a) argue that this is on the right track indeed. Analyzing 'Nominative' possessors as caseless nominals can be supported from the distribution of demonstratives modifying possessors or serving as possessors themselves. Observe the data in (121) and (122). While R-expressions can be either marked or unmarked possessors, inflecting demonstratives can only be Dative marked, whether they serve as a modifier of the possessor (122) or they fulfill the possessor function on their own (121). In other words, inflecting demonstrative can neither serve as unmarked possessors themselves, nor can they modify unmarked possessors.

- (121) a. *(az) ez ház-a
the this house-POSS
'the house of this'
- b. ennek a ház-a
this.DAT the house-POSS
'the house of this'
- (122) a. *(az) [ez a tanár] ház-a
the this the teacher house-POSS
'this teacher's house'
- b. [ennek a tanár-nak] a ház-a
this.DAT the teacher-DAT the house-POSS
'this teacher's house'

The inflecting demonstratives in (121-a) and (122-a) appear in a bare form, without a suffixed plural or an overt case marker. In general, this bare form is fully grammatical in both pronominal (123) and adnominal position (124).

- (123) Ez le-es-ett.
this down-fall-PAST.3SG
'This fell (down).'
- (124) Ez a levél le-es-ett.
this the leaf down-fall-PAST.3SG
'This leaf fell (down).'

Inflecting demonstratives can also happily serve as possessors themselves or modify possessors as long as the possessor is morphologically marked with dative case. Examples (121-b) and (122-b) are exemplar.

To sum up the pattern, inflecting demonstratives can appear without overt suffixes, they can function as pronominal possessors and can also function as adnominal modifiers of possessors, yet they produce ungrammaticality in (121-a) and (122-a). É. Kiss (1998, 2002) and Bartos (2001a) suggest that this surprising idiosyncrasy immediately becomes understandable if demonstratives require case marking but unmarked possessors don't have case.²¹ This account of the contrast between (121-a) and (122-a) on the one hand and (121-b) and (122-b) on the other corroborates the analysis of *-é* as a Genitive case marker.

In the analysis of Bartos (1999) and Knittel (1998) *-é* is the exponent of the Poss head. *-É* ends up on the possessor as a last resort operation. *-É* is affixal in nature, it requires a host to cliticize to. The noun being elliptical, the closest element that can fulfill this function is the possessor. In this analysis the host of *-é* is the morphologically unmarked possessor.

Crucially, inflecting demonstratives can appear either as pronominal *-é* possessors or as adnominal modifiers of *-é* possessors.

- (125) Ez-é le-es-ett.
this-é down-fall-PAST.3SG
'This one's (one) fell down.'
- (126) [Ez-é a fiú-é] le-es-ett.
this-é the boy-é down-fall-PAST.3SG
'This boy's (one) fell down.'

If Bartos (1999) and Knittel (1998) were on the right track, then the demonstrative of (125) and (126) was just as Nominative or just as caseless as the demonstratives of (121-a) and (122-a).

²¹A valid question, not addressed by either Bartos (2001a) or É. Kiss (2002), is why inflecting demonstratives require case, while R-expressions can do without it. In the model proposed here, inflecting demonstratives have a whole KP on top (with an unvalued K feature), rather than an agreemental uK feature added to some functional head. Therefore the question is: what prevents inflecting demonstratives, but not R-expressions, from appearing in a position not immediately dominated by a KP?

Cardinaletti and Starke (1999) argue that weak pronouns must always be in a local configuration with a case-assigner, which they characterize as an Agr⁰ node. In my model, being embedded under a KP is equivalent to being in a local configuration with a case-assigner. I suggest that inflecting demonstratives are weak pronouns in the sense of Cardinaletti and Starke (1999), and this is why they have to be topped off by a KP. Their status as weak pronominals fits well with the fact that they cannot have a [+human] referent, and that they are always discourse-anaphoric. In contrast to garden variety weak pronouns, however, inflecting demonstratives can be coordinated and they admit modification by adverbs that modify the whole noun phrase. I suggest that this is precisely because they meet the case-assignment requirement by having a KP on top rather than being in a spec, AgrP. Cardinaletti and Starke (1999) argue that only noun phrases with a case feature can be coordinated or modified by the relevant adverbs – inflecting demonstratives with a KP on top meet this requirement.

Note, however, that this proposal is independent of the rest of the argumentation in this section. Whatever the reason behind the case-requirement is, the fact that *-é* marked possessors admit demonstrative modification supports the analysis of *-é* as a case-marker.

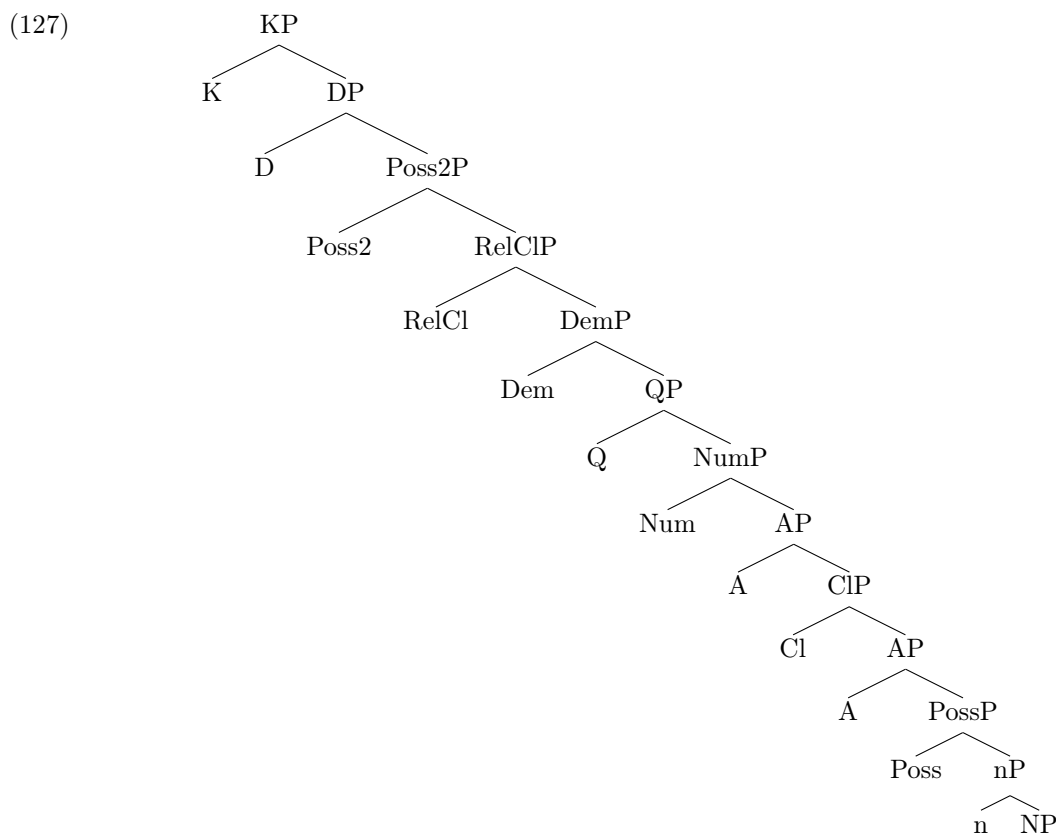
Then the explanation of the ungrammaticality of (121-a) and (122-a) could not be maintained, and the acceptability contrast between these examples would remain without any explanation.

If, however, *-é* is a Genitive case marker, as Bartos (2001a) and this thesis argue, then the account of the ungrammaticality of (121-a) and (122-a) can be maintained. The demonstratives of (121-a) and (122-a) cannot get case and this causes a crash. The same problem does not arise for the demonstratives of (125) and (126), on the other hand, as they are marked with Genitive case.

8.7.4 Co-occurrence restrictions in the context of *-é*

Let us now turn to the complementary distribution between *-é* and the possessee, the possessedness suffix *-ja/-je/-a/-e* as well as any overt modifiers of the possessee. I suggest that these elements cannot appear overtly because a sizable part of the possessee's projection is spelled out by a phonologically null anaphoric *pro*-element. That is, the incompatibility with overt modifiers is captured in the same way as the lack of modifiers internally to the inflecting demonstrative's xNP (Section 8.4.1).

How big is this *pro*? Consider the extended nominal functional sequence that emerges from Part I of the thesis.



In Chapter 4 I have concluded with É. Kiss (2002) that pronominal nominative possessors and proper name possessors of some dialects sit in spec, Poss2P, while (other) nominative R-expression pronouns sit in spec, DP. Dative possessors are higher, on the outer edge of the nominal projection, possibly adjoined to it. Possessors with *-é* are like Nominative possessors. Pronominal *-é* possessors are preceded by the definite article, non-pronominal ones don't co-occur with the definite article of the main projection line, and finally *-é* possessors cannot be extracted from the big KP.²² I conclude that *-é* possessors have the same surface position as Nominative possessors.

As the possessive *pro* anaphor does not replace the *-é* possessor itself, the anaphoric element must be smaller than Poss2P. To allow for an overt possessor and exclude all overt nominal modifiers

²²If they were extractable, they should be able to strand the plural marker and the case marker of the possessee. This doesn't materialize.

on the most salient reading: *this book of yours* versus *that book of yours*. (132-b) differs from it not only in having an overt pronoun, but also in invoking a non-restrictive interpretation of the demonstrative. But the effect with (131) is even stronger, because it doesn't allow for the non-restrictive interpretation either. This requires an explanation.

I suggest that inflecting demonstratives don't co-occur with *-é* possessors because they have their merge-in position below Poss2. The null anaphoric *pro* does not have a deictic interpretation baked into it, therefore it is unlikely that it contains a Dem head to begin with. If this is so, then possessive constructions with *-é* simply lack the position where an inflecting demonstrative modifier of the possessee could be merged.

I have explained why the *-é* possessor, possessive agreement, the definite article and a case marker can co-occur with the anaphoric possessive *pro* element. These elements are base-generated above the constituent that the *pro*-anaphor replaces. There is one other nominal suffix, however, which can appear overtly in the functional sequence of the possessee: the plural marker.

- (133) a ti-é-i-tek-et
 the you(pl)-é-PL-POSS.2PL-ACC
 'your(pl) ones'

Recall that the reason why Bartos (1999) rejects the idea of a structurally big *pro*-form is that he takes the plural to be the exponent of the Num head. The analysis presented above has three components: i) there is a *pro*-form in the projection of the possessee, ii) anything that cannot appear overtly is a spellout of something that would be merged where the *pro*-form is, and iii) anything that can appear overtly is the spellout of something merged above the *pro*-form. This led to the conclusion that the *pro*-form is as big as the complement of Poss2P. If we follow the same logic, then the unavoidable conclusion is that rather than being spellout of the Num head, the plural morpheme is the spellout of something sitting higher. This is exactly the approach that I will adopt. I suggest that the Hungarian plural marker that we see with the anaphoric null *pro* is not the spellout of the Num head itself. Instead, it is the spellout of an uNum agreement feature added to some higher functional head than Num.

The order of suffixes is the same in both non-elliptical xNPs and in xNPs with *-é* (plural preceding agreement preceding case).

- (134) a város-a-i-tok-at
 the city-POSS-PL-POSS.2SG-ACC
 'your(pl) cities (acc)'

- (135) a ti-é-(null pro)-i-tek-et
 the you.PL-é-(null pro)-PL-POSS.2PL-ACC
 'your ones' (acc)

To capture the word-order correctly, the agreemental plural that co-occurs with *pro* cannot spell out in a head higher than the Poss2 head. At the same time, everything below the Poss2 head is spelled out by *pro*. This leaves only one possible place for the plural: the Poss2 head itself. I conclude that the plural that we see in (134) and (135) is the exponent of an uNum agreemental

According to the syntax-semantics mapping adopted in the thesis, position always correlates with interpretation. I have argued that passing through spec, PossP is an integral ingredient of being interpreted as the possessor. In view of the analysis proposed here, this must be qualified. Further, if Nominative and *-é* possessors end up at the same position on the surface but only Nominative ones are associated to the low PossP, then it is predicted that the two kinds of possessors have interpretational differences. If such a semantic difference is found, it confirms the approach here, and it can also shed light on the proper semantic contribution of PossP.

Nominative and *-é* possessors indeed have slightly different interpretations. Consider the possible relationships between the Nominative possessor and the possessee in (137).

- (137) János fénykép-e
 John photograph-POSS
 ‘John’s photograph’

In (137), the picture could be either in the possession of John (and taken of him or somebody/something else), or it could be a photo taken of John in somebody else’s possession. The first interpretation purely indicates being in possession of something, while in the second interpretation the possessor is rather thematically related to the possessee.

Consider now the possible relationships between an *-é* possessor and the possessee. As an answer to a question, the *-é* possessor may have either the pure ‘in possession of’ interpretation, as in (138), or the thematic interpretation, as in (139).²⁷

- (138) a. Ki-nek a könyv-e tűn-t el?
 who-DAT the book-POSS-ACC disappear-PAST.3SG PRT
 ‘Whose book has disappeared?’
 b. János-é.
 John-é
 ‘John’s.’
- (139) a. Ki-nek a kép-e van a könyv elej-é-n?
 who-DAT the picture-POSS be.3SG the book front-POSS-SUP
 ‘Whose picture is on the cover of the book?’
 b. János-é.
 John-é
 ‘John’s.’

However, when an *-é* possessor doesn’t have a syntactic antecedent, and is used in a predicative structure, for instance, then the thematic interpretation doesn’t arise and only the ‘in possession of’ meaning is available.

- (140) Ez a fénykép János-é.
 this the photograph John-é
 ‘This photograph is John’s.’

(140) can only mean that John is in possession of the photograph, but it cannot refer to a photograph taken of John and being in Mary’s possession. As far as I know, this kind of interpretational restriction on *-é* possessors has not been observed before.

I suggest that the explanation of this data should be sought in the following direction. The thematic possession reading is tied to PossP. As *-é* possessors are not related to PossP, they cannot access the thematic reading qua structure. *-É* possessors do not rule out this reading, though. They are simply vague, and in absence of a context there is no source for the thematic semantics. However, in a context of a discourse, they can get a more specific reading, and can inherit the interpretational possibilities from their linguistic antecedent. (140) has only the ‘in possession of’ reading because the null pronoun has no antecedent from the context. In (139), however, the context provides an explicit (Dative possessor) antecedent that itself has the thematic reading. Qua context, this can be inherited by the *-é* possessor as well.

²⁷Note that in (139-a), the *-é* on ‘cover’ is not the Genitive *-é* under consideration here. It is the *-e* allomorph of the possessedness suffix *-ja/-je/-a/-e*, which undergoes lengthening when followed by another suffix (c.f. the *-e* form in (138-a)). This is a regular phonological process that need to concern us here.

The idea that Nominative possessors are associated to both spec, PossP and their surface position, while *-é* possessors are associated only to the latter position, coupled with the adopted syntax-semantics mapping, leads to the prediction that the two kinds of possessors cannot have entirely identical readings. Further, since it is Nominative possessors that are associated to more positions, it is predicted that they can access a wider range of interpretations qua structure. The data go in exactly this direction, and this confirms the approach taken here.

One final issue remains to be addressed about the distribution of *-é* possessors, namely that they appear only in the context of the null anaphoric *pro* (141), and vice versa, this *pro* appears only with *-é* possessors (142).

- (141) a. János-(*é) csont-ja
 the John-é bone-POSS
 ‘John’s bone’
- (142) a. Ez a csont János-*(é).
 this the bone John-é
 ‘this bone is John’s’
- b. János-*(é)-t kér-em.
 John-é-ACC want-1SG
 ‘I want John’s (one).’

I can see two ways to approach this issue: one based on selection, and one based on economy or consistency of structure building. In a selection-based approach, Poss2 comes in two varieties or ‘flavours’, and one flavour selects for the anaphoric null *pro*. This analysis is the less satisfactory one. Firstly, selection is poorly understood. Secondly, selection is not enough to capture the totality of facts involved. In particular, the flavour of Poss2 that selects for the null *pro* also places restrictions on its specifier (it admits only a Genitive specifier, c.f. (142)), and this cannot be formulated in terms of selection. This restriction could perhaps be captured by a specifier-head checking or matching requirement on Poss2 (similarly to the semantic matching requirement standardly posited for Adj and Adv heads and their specifiers).

As far as I can see, selection plus specifier-head matching is the only way to restrict the distribution of *-é* possessors for both Bartos (1999) and Bartos (2001a). Bartos (1999) suggests that *-é* is the spellout of the low Poss head, and it cliticizes onto Nominative possessors. If this is so, then it must be a different flavour of the Poss head than the one hosting the possessedness marker *-ja/-je/-a/-e*. The *-é* Poss head is choosy and can only co-occur with an anaphoric complement (or it’s intransitive) and a Nominative possessor. The *-ja/-je/-a/-e* Poss head, on the other hand, selects for a non-anaphoric complement and can accommodate either Nominative or Dative specifiers. In the analysis of Bartos (2001a), *-é* is the Genitive case marker, and Genitive possessors are inserted in spec, PossP. This analysis, too, requires two flavours of Poss as well as selection and spec-head matching. One flavour of the Poss head spells out as *-ja/-je/-a/-e* and selects for a non-anaphoric complement, but it cannot occur with Genitive possessors. The other flavour of Poss is spelled out as zero, it selects for an anaphoric complement (or it’s intransitive) and is compatible only with Genitive possessors.

I consider selection-based accounts as last resort, because they don’t provide genuine insight into the nature of the problems they are meant to explain. Therefore it is an advantage of the present proposal that it allows approaching the restrictive environment of the anaphoric *pro* and Genitive possessors from a different angle. In particular, I suggest that possessors may be base-generated high in Poss2 only as a last resort. If PossP is projected and its specifier is open for a possessor, then this position must be filled. Via phrasal spellout, the anaphoric null *pro* spells out the Poss head as well as its specifier, among other positions. Therefore in the context of this anaphoric *pro* only those possessors can be used that are generated high, i.e. Genitive possessors. On the other hand, when PossP is projected but the anaphoric *pro* is not used for lexicalization, spec, PossP must be filled by a possessor. Therefore without the anaphoric *pro*, Genitive possessors don’t have a chance to surface, and spec, Poss2P is filled by movement.

How to formalize the constraint that requires spec, PossP to be filled is a question I will not address here, but I would like to flag the directions in which the explicitly stated constraint could be sought. This restriction might be formulated as an economy condition, as an earliness condition, or as a condition on the consistency of structure building (with some overlap between these areas). The fact that the analysis doesn’t have to stop at re-stating the facts (like selection) but allows to ask this question paves the way for a better understanding of possessive structures in the future.

8.7.6 Suffixaufnahme with -é possessors

The plural marker and case markers that potentially follow the possessive anaphor -é unambiguously belong to the possessee.

- | | | | | |
|-------|----|---|----|---|
| (143) | a. | a lány-é-t the girl-é-ACC 'the girl's (one) (acc)' | d. | a lány-é-i-t the girl-é-PL-ACC 'the girl's ones (acc)' |
| | b. | a lány-é-tól the girl-é-ABLAT 'from the girl's (one)' | e. | a lány-é-i-tól the girl-é-PL-ABLAT 'from the girl's ones' |
| | c. | a lány-é-nak the girl-é-DAT 'to/of the girl's (one)' | f. | a lány-é-i-nak the girl-é-PL-DAT 'to/of the girl's ones' |

The reason they end up on the -é possessor on the surface is that the head noun is not overt. We have seen in Chapter 3 and Section 8.2 of this chapter that the plural marker and case markers are not picky about their host. In the absence of an overt noun they cliticize onto the right edge of the remaining overt DP.

- | | | |
|-------|----|---|
| (144) | a. | három(*-at) szép(*-et) kert-et three-ACC nice-ACC garden-ACC 'three nice gardens' |
| | b. | három(*-at) szép-et three-ACC nice-ACC 'three nice ones' |
| | c. | három-at three-ACC 'three ones' |
-
- | | | |
|-------|----|--|
| (145) | a. | nagy(*-ok) piros(*-ak) mangó-k big-PL red-PL mango-PL 'big red mangos' |
| | b. | nagy(*-ok) piros-ak big-PL red-PL 'big red ones' |
| | c. | nagy-ok big-PL 'big ones' |

(143) features the same effect. With the anaphoric possessive *pro* spelling out most of the possessee's functional sequence, the rightmost overt element becomes the -é possessor.²⁸

Lipták and Saab (2010) observe that avoiding the stranded suffix filter this way is a characteristic of agglutinative languages. Observe how Quechua, an agglutinative language, produces the same effect as (143). Quechua marks its possessors with Genitive case. When the possessee and its agreement marker are elided, the case marker remains overt and attaches to the Genitive marked possessor. This phenomenon is known as hypostasis (Plank, 1995; Moravcsik, 1995).

²⁸That suffixes following -é are stranded by the non-pronounced possessee rather than being agreement morphemes on the Genitive possessor is especially clear with pronominal -é possessors. The reader will recall that possessees agree for the person and number of pronominal possessors. This agreement is remains overt in the presence of the anaphoric possessive *pro*.

- | | |
|-----|---------------------------------------|
| (i) | ti-é-tek you-é-POSS.2PL 'yours' |
|-----|---------------------------------------|

If the suffixes following -é were agreement morphemes on the Genitive possessor, then the pronoun in (i) would have to agree with itself.

- (146) Hwan-pa wasi-n-ta rika-a.
 John-GEN house-3SG-ACC see-1SG
 ‘I see John’s house.’ (Blake, 2001, p. 103. ex. 28.)

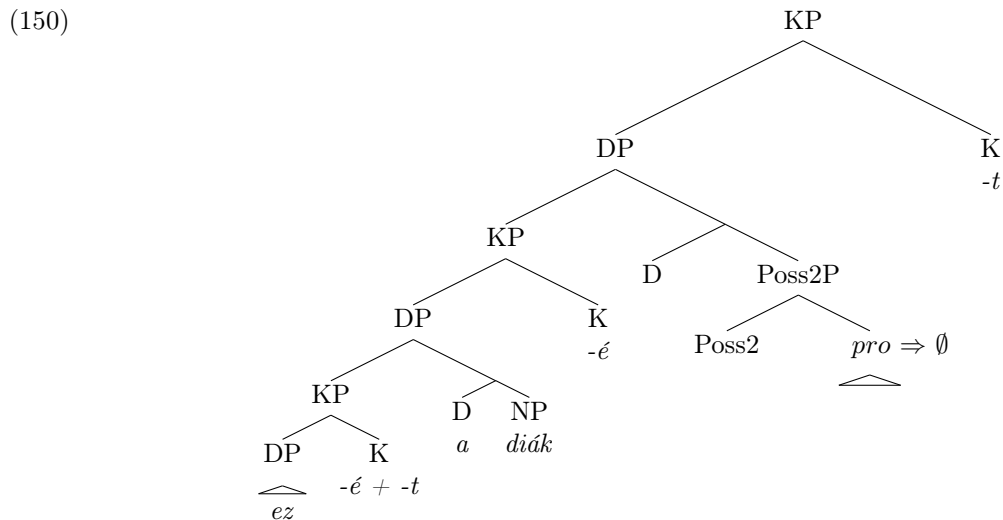
- (147) Hwan-pa-ta rika-a.
 John-GEN-ACC see-1SG
 ‘I see John’s (house).’ (Blake, 2001, p. 103. ex. 29.) Huallaga Quechua

In conclusion, (143) involves two different case markers on two different KPs. They end up adjacent on the surface via the non-pronunciation of a category in between them.

Let us see now what happens when the possessors in (143) have a demonstrative modifier. In this case the demonstrative shows a Suffixaufnahme effect: it has concord for both the Genitive of the possessor and the case of the possessee.

- (148) ez-é-t a diák-é-t
 this-é-ACC the student-é-ACC
 ‘this student’s one (acc)’ accusative case

- (149) ez-é-n a diák-é-n
 this-é-SUP the student-é-SUP
 ‘on this student’s one’ superessive case



We have seen that the case marker following *-é* on the possessor is ‘inherited’ from the possessee. It sits in the extended projection of the possessee and ends up on the possessor ‘by accident’, due to the deletion of its host noun. The case marker following *-é* on the demonstrative, on the other hand, is obviously an agreement morpheme.

Non-genitive possessors do not exhibit the demonstrative Suffixaufnahme phenomenon. Nominative possessors cannot be modified by an inflecting demonstrative in the first place (c.f. above). Dative possessors can be modified by an inflecting demonstrative, and the demonstrative agrees in case with the possessor (151). But these demonstratives cannot inflect for the possessee’s case marker in addition (152).

- (151) ennek a tanár-nak a diák-ja
 this.DAT the teacher-DAT the student-POSS
 ‘this teacher’s student’

- (152) ennek-(*et) a tanár-nak a diák-já-t
 this.DAT-ACC the teacher-DAT the student-POSS-ACC
 ‘this teacher’s student’

It appears that the Genitive construction is cross-linguistically the most prone to Suffixaufnahme. Plank (1995, p. 83.) writes: (modifiers) "practicing Suffixaufnahme are prototypically the Genitive, whose prototypical function is to encode nominal attributes, especially those denoting possessors". This claim is also substantiated in Malchukov (2009, p. 636.): "The most widespread pattern of Suffixaufnahme involves the genitive signalling the dependency within the NP in combination with an external case signalling agreement with the head". The Awngi (Cushitic, Afro-Asiatic) and Dyirbal (Pama-Nyungan, Dyirbalic) examples below are illustrative.²⁹

- (153) woliji-w-des aqí-w-des ḡón-des
 old-GEN-ABL man-GEN-ABL house-ABL
 'from the old man's house'
 (Lander, 2009, p. 585. ex. 7.) Awngi
- (154) a. [ba-ḡu-l yara-ḡu midi-ḡu] guda
 det-GEN-MASC man-GEN small-GEN dog
 'the small man's dog'
- b. ḡayguna [ba-ḡu-l-jin-du yara-ḡu-njin-du midi-ḡu-njin-du]
 1SG.O det-GEN-MASC-LINK-ERG man-GEN-LINK-ERG small-GEN-LINK-ERG
 guda-ḡgu baja-n
 dog-ERG bite-PAST
 'The small man's dog bit me.'
 (Dixon, 2010, p. 269. ex. 37–38.) Dyirbal

This can be viewed as an additional argument for the Genitive analysis of -é.

The Hungarian demonstrative Suffixaufnahme construction comes with a twist, though. In the above examples, the possessor itself agrees for the possessee's case, and if the possessor has modifiers that can agree in case, those also inflect for the possessee's case. In (148) and (149), on the other hand, the possessor itself doesn't appear to agree for the possessee's case. As discussed at length, the suffixes following the -é of the possessor, including the 'extra' case marker, are the 'left-overs' of the possessee's projection. The demonstrative modifier of the possessor, on the other hand, does agree for the possessee's case. Thus it seems that agreement for the possessee's case skips the possessor but propagates onto its modifier.

This pattern is, in fact, not exceptional. Plank (1995, p. 93.) asserts that Suffixaufnahme on both the possessor and its modifier(s) is "an exception rather than the rule". The most deeply embedded modifiers sometimes link back only to their immediate modifiee, and sometimes they link back only to the head noun of the whole construction. Old Georgian, Hurrian, Dyirbal are representatives of the latter group, and on the basis of (148) and (149) Hungarian is also of this type.

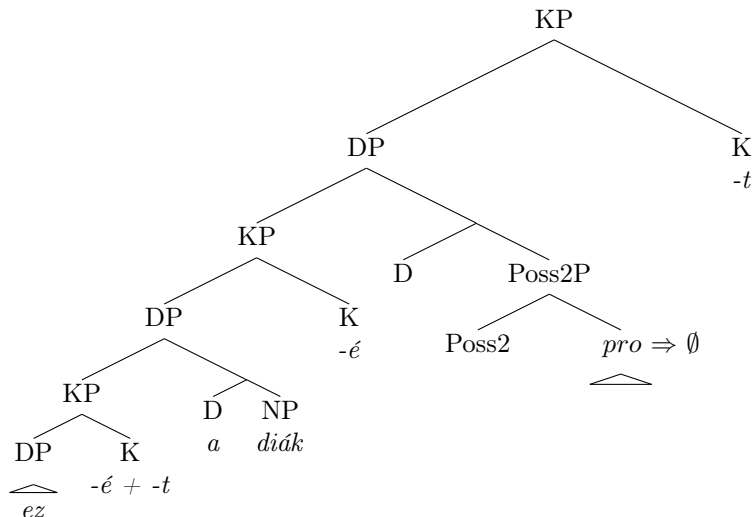
- (155) Immoria-ve KUR Mizirre-ve-ne-ve evri-ve
 Immoria-GEN land Egypt-GEN-ne-GEN lord-GEN
 'of Immoria, of the land of Egypt's lord'
 (Plank, 1995, p. 14. ex. 8.) Hurrian
- (156) kḡiṭe-n-i sasupevel-isa ca-ta-jsa-n-i
 key-PL-NOM kindgom-GEN heaven-OBL.PL-GEN-PL-NOM
 '(the) keys of the kingdom of (the) heavens'
 (Plank, 1995, p. 14. ex. 9.) Old Georgian

While this pattern of Suffixaufnahme may not be exceptional, the way in which it arises requires some discussion. Consider again the structure of KPs with demonstrative Suffixaufnahme.

- (157) ez-é-t a diák-é-t
 this-é-ACC the student-é-ACC
 'this student's one (acc)'

²⁹In the Dyirbal example the Genitive and Ergative case markers are separated by a linking suffix -(n)jin.

(158)



The KP of the demonstrative and the KP of the possessee are separated by a third KP layer in the middle, that of the possessor. As KP is a phase and nothing is visible for KP-external probes except what is on K, the fact that Suffixaufnahme skips the possessor presents an apparent problem (the KP of the demonstrative is not on the edge of the possessor's KP and cannot see out of the possessor's projection). To have both our cake and eat it, I suggest that the *-é* possessor also has concord with the possessee's case, only this is not signaled by an overt exponent. (The details of how and why this happens will be taken up presently.) Thus concord between the small and the big KP is mediated by the KP in the middle. If this KP in the middle did not show concord with the biggest KP, then concord between the biggest and the smallest KP would be technically impossible.

One caveat on the theory of Agreement is in order before I take up the Hungarian demonstrative Suffixaufnahme phenomenon in more detail. The way this construction works in (157) is best captured if we adopt the feature sharing view of Agree (Frampton and Gutmann, 2006; Pesetsky and Torrego, 2007; Schoorlemmer, 2009; Adger, 2010a; Danon, 2011). Consider the order of agreement operations in (157). The first KP that is completed is that of the demonstrative, the smallest and most deeply embedded one. This KP has to get the case feature of the biggest KP, that of the possessee, via the KP in the middle (i.e. the KP of *-é*). Therefore an Agree relation must be established between the smallest and the middle KP. However, when the KP in the middle is completed, the case feature of the biggest KP is not yet merged in the structure. Therefore the agreemental case feature on the smallest KP has to be able to agree with the agreemental case feature of the intermediate KP at the point when the latter is not yet valued. This means that contra Chomsky (2001b), agreement between two unvalued features must be legitimate.

That the case feature of the biggest KP finally ends up on the smallest KP is elegantly captured by feature sharing, however. When the biggest KP is completed and the possessee gets its case feature, the intermediate KP agrees with it and has its own agreemental case feature valued. Feature sharing creates permanent links between instances of features, and one feature value is shared by all feature-instances in an agreement chain. Given that the smallest KP has an agreement relationship with the KP in the middle, and the KP in the middle has an agree relationship with the biggest KP, the merger of the biggest KP automatically values the agreemental case features of both the intermediate and the smallest KP. If Agree was an operation that creates transient links between instances of features, the smallest KP could not acquire case features from the biggest KP.

Let us return now to the Hungarian data. Hungarian obviously tolerates demonstrative Suffixaufnahme constructions. Why would it want to delete a case from the case stack of the possessor, then? I argue that it is again a PF phenomenon. The problem is not the case stack itself, nor the fact that three cases would pile up on the possessor. The reason why either the concordial case of the possessor or the possessee's case is deleted is that they spell out the same way. In effect, we are dealing with a word-internal phonological or morphological OCP effect here. Note that the two cases would not necessarily end up adjacent: in (164) they would be separated by the

Interestingly, (165) has no well-formed counterpart. Omitting the analytical case marker from the demonstrative is just as bad.

- (166) *ez-é a diák-é-val
 this-é the student-é-COMIT
 ‘with this student’s one’

The phonologically even more independent dressed Ps don’t copy onto the possessor’s demonstrative either. They can simply be omitted from the demonstrative, this produces a grammatical result.³⁰

- (167) *ez-é helyett a diák-é helyett
 this-é instead.of the student-é instead.of
 ‘instead of this student’s one’
- (168) ez-é a diák-é helyett
 this-é the student-é instead.of
 ‘instead of that belonging to this student’ dressed P

Suffixaufnahme on demonstratives is thus licensed only if the second case marker can be phonologically integrated into its stem to a significant degree. There is a trade-off between the need for the Suffixaufnahme effect and the degree to which the second case marker can integrate into its host. With synthetic cases this conflict is resolved in favour of the Suffixaufnahme effect, with dressed Ps it is resolved in a different way, and with analytic case markers the conflict cannot be satisfactorily resolved. This is evidently a (morpho)-phonological effect and as such its detailed explanation falls outside the scope of this thesis.³¹

8.7.7 Further research: the associative plural

Before I summarize the main points of this chapter, I would like to briefly touch upon one data point that I have not covered so far, and which deserves a more detailed study than I can offer here. We have already seen that the multiplicative plural has to copy onto the demonstrative. The associative plural, on the other hand, cannot. Consider (169), where a possessed noun phrase bears the associative plural marker. If this phrase is modified by an inflecting demonstrative, the associative plural cannot copy onto the demonstrative (170).³²

- (169) a lány-om-ék
 he daughter-POSS.1SG-ASS.PL
 my daughter and her associates
- (170) *ez-ék a lány-om-ék
 this-ASS.PL the daughter-POSS.1SG-ASS.PL
 (Bartos, 2001a, ex. 4. f.)

³⁰The judgments reported here reflect my own native speaker intuition. There seems to be some speaker variation with respect to these data. According to Bartos (2001a) other cases are "minimally tolerable", he judges them as ‘?’*. He shares my judgment about dressed Ps. He also reports that his reviewer accepts only Accusative case, and even that only marginally. So there appears to be a hierarchy among Hungarian cases that reflects how easily they take part in the demonstrative Suffixaufnahme construction:

(i) Accusative > Superessive > Other > Dressed Ps

We can read this hierarchy in the following way: if a speaker accepts a case in the Suffixaufnahme construction, then s/he judges all other cases to the left of it to be at least as good (or better). Different speakers draw the acceptability line at different points.

The hierarchy also shows the degree of phonological independence of case markers: cases to the right are more independent and cases to the left are integrated into their stem to a higher degree. (See the Appendix to this chapter). That the two hierarchies coincide is not an accident. See further below.

³¹Plank (1995) discusses cases in which Suffixaufnahme is attested only with a subset of the cases available in a particular language. Hungarian thus entirely falls within the range of attested variation with respect to Suffixaufnahme.

³²The discussion of this section owes heavily to Bartos (2001a).

In fact, there does not seem to be a grammatical way to say what (170) would like to express. Adorning the demonstrative with the multiplicative plural leads to a distinctly odd expression (171), and leaving the demonstrative without any marking of plurality is entirely out (172).

- (171) ??ez-ek a lány-om-ék (172) *ez a lány-om-ék
 this-PL the daughter-POSS.1SG-ASS.PL this the daughter-POSS.1SG-ASS.PL
 (Bartos, 2001a, ex. 4. f.)

The judgments are slightly different when the noun bears an associative plural followed by a phonologically overt case marker, as in (173).

- (173) a lány-om-ék-nál
 the daughter-POSS.1SG-ASSOC.PL-ADESS
 ‘at my daughter’s’

In this case a fully grammatical phrase ensues if the demonstrative has no plural marker whatsoever but it shares the case marker of the noun.

- (174) ennél a lány-om-ék-nál
 this.ADESS the daughter-POSS.1SG-ASSOC.PL-ADESS
 ‘at this daughter of mine’s’ (Bartos, 2001a, ex. 4. h.)

Copying the associative plural or affixing the garden variety plural onto the demonstrative both lead to ungrammaticality.

- (175) *ez-ék-nél a lány-om-ék-nál
 this-ASSPL-ADESS the daughter-POSS.1SG-ASSOC.PL-ADESS
 ‘at this daughter of mine’s’ (Bartos, 2001a, ex. 4. h.)
 (176) *ez-ek-nél a lány-om-ék-nál
 this-PL-ADESS the daughter-POSS.1SG-ASSOC.PL-ADESS
 ‘at this daughter of mine’s’

We can summarize these data in the Associative Plural Concord Generalization:

- (177) Associative Plural Concord Generalization:
 The associative plural doesn’t take part in demonstrative concord. A noun that bears the associative plural marker can be modified by a demonstrative only if the noun in question bears a phonologically overt case marker.

At present I have nothing interesting to say about what explains the restriction in (177). As far as I see, this phenomenon does not contradict anything I say in this chapter, and I will leave its resolution to further study.

8.8 Summary and conclusion

This chapter had two main goals. The first was to find out whether the nominal suffixes on the demonstrative were agreement morphemes or the spellouts of functional heads. I argued that inflecting demonstratives spell out a DP with the internal structure DP > DemP > NP. This accounts for the lack of overt modifiers internal to their xNP. I suggested that inflecting demonstratives are embedded by a KP, and their case marker is the spellout of this functional head. The value of this head is established by Reverse Agree with the head noun's KP. I argued that DP-internal concord phenomena across languages receive an elegant account via Reverse Agree. I analyzed the plural marker of inflecting demonstratives as an agreement. In particular, I suggested that it is the exponent of an uNum feature on K.

The second goal was to account for the syntax of the so-called 'possessive anaphor' *-é*, with a special emphasis on its involvement in demonstrative concord. Following Bartos (2001a), I argued that *-é* is the Genitive case in Hungarian, and it copies onto the demonstrative because all K exponents do. I suggested that the real anaphor is phonologically zero, and its size is responsible for the limited modification possibility of *-é* structures. I further suggested that *-é* possessors are inserted directly into their surface position.

The chapter also analyzed Suffixaufnahme with *-é* concord in detail. I have discussed how the Hungarian Suffixaufnahme phenomenon fits into the typology of Suffixaufnahme across languages, and argued that the pattern in Hungarian involves deletion of concordial case on the possessor's K. I also suggested that the Hungarian data are most compatible with the feature sharing view of Agree, which allows two unvalued instances of a feature to enter into an Agree relation and creates permanent links between instances of features in general.

8.9 Appendix

In this appendix I summarize the empirical data which show the differences between the synthetic cases Accusative and Superessive on the one hand and the analytic cases on the other hand. These phenomena are discussed in Bartos (2000) and Rebrus (2000), but these works are written in Hungarian and therefore they are not accessible to an international audience.

The diminished phonological freedom of Accusative and Superessive is manifested when these cases appear on pronouns. Recall from Chapter 7 that a pronoun bearing a case marker may be covert, and even if there is an overt pronoun, its case marker is phonologically not integrated into it (lack of vowel harmony, lack of *-v* assimilation with the Comitative case *-val/-vel*). With the exception of Accusative and Superessive, all case markers have the same phonological shape whether they appear on a covert pronoun or on an overt R-expression.

| | | | | |
|-------|----|--|----|----------------------------------|
| (178) | a. | könyv-nek book-DAT 'to a book' | b. | nek-em DAT-1SG 'to me' |
| (179) | a. | könyv-től book-ABLAT 'from a book' | b. | től-em ABLAT-1SG 'from me' |
| (180) | a. | könyv-ben book-INESS 'in a book' | b. | benn-em INESS-1SG 'in me' |
| (181) | a. | könyv-vel book-COMIT 'with a book' | b. | vel-em COMIT-1SG 'with me' |

Accusative and Superessive are different both from other cases and from each other. Superessive *-on/-en/ön* has a suppletive form *rajt-* when it doesn't have an overt host.

- (182) a. könyv-ön
book-SUP
'on a book'
- b. *on/en/ön-am
SUP-1SG
'on me'
- c. rajt-am, rajt-ad, rajt-a, rajt-unk, rajt-atok, rajt-uk
SUP-1SG SUP-2SG SUP-3SG SUP-1PL SUP-2PL SUP-3PL
'on me, on you, on her/him, on us, on you, on them'

Accusative case, on the other hand, must have an overt host; the pronoun it qualifies must be overt (and in first and second persons the pronouns are suppletive, too³³). This shows that Accusative has even less phonological freedom than Superessive.

- (183) a. könyv-et
book-ACC
- b. *t-em
ACC-1SG
'me'
- c. engem, téged, ő-t, mink-et, titek-et, ő-k-et
I.ACC you.ACC s/he-ACC we-ACC you.PL-ACC s/he-PL-ACC
'me, you, s/he, us, you, them'

Furthermore, when a noun stem has an oblique and a non-oblique variant, then the Accusative regularly occurs with the oblique one. The Superessive often takes the non-oblique stem, which again shows the greater degree of integration of the Accusative (Moravcsik, 2003). Analytic cases always occur with the non-oblique stem.

| | hand | bird | crane(bird) | horse |
|-------------|------|--------|-------------|-------|
| non-oblique | kéz | madár | daru | ló |
| oblique | kez- | madar- | darv- | lov- |

Table 8.3: Oblique and non-oblique stems of some nouns

- (184) kez-et, madar-t, darv-at, lov-at
hand-ACC bird-ACC crane-ACC horse-ACC
- (185) kéz-en, madár-on, daru-n, lov-on
hand-SUP bird-SUP crane-SUP horse-SUP
- (186) kéz-nek, madár-nak, daru-nak, ló-nak
hand-DAT bird-DAT crane-DAT horse-DAT

³³C.f. the nominative pronouns:

- (i) én, te, ő, mi, ti ő-k
I you s/he we you s/he-PL
'I you s/he we you they'

- | | |
|---|--|
| (5) János-é-i John-é-PL 'John's ones' | (6) *János-é némelyik/fehér John-é some.certain/white Intended: 'John's certain one/white one' |
|---|--|

Finally, the ordinary plural is clearly not the same element as the associative plural: they co-occur, they have a different semantics and only the ordinary plural triggers plural agreement on the demonstrative (c.f. Chapter 8). The differences notwithstanding, both types of plurals reject counters and trigger plural agreement on the predicate. Are these similarities purely coincidental or is there a deeper, principled explanation for them?

The purpose of this chapter is to provide an account of the conundrums laid out above. In addition to addressing the above issues, I will also touch upon the semantics of pronominal plurality and make a hitherto unnoticed generalization about the plural marking of third person pronouns.

9.2 The cross-linguistic (non)-complementarity of the plural and classifiers

9.2.1 A claim about complementarity

The interaction between classifiers and plurals has been a topic of interest for a long time. Most of the discussion centers around a cross-linguistic generalization observed in an unpublished paper by Mary Sanches, which was first quoted in writing by Greenberg (1972) and then elaborated in more detail in Sanches and Slobin (1973). The generalization states that if a language makes heavy use of classifiers, then that language will not have obligatory plural marking. I cite here the original formulation of the generalization, as well as some remarks made by the authors on potential counter-examples, because it will be instructive to see what other authors have made of the original claim.

It is the purpose of this paper to explore an hypothesis involving the interrelated occurrence of two structural features in a number of the languages of the world. The features are: (1) numeral classifiers and (2) plural marking. The hypothesis can be stated as follows: if a language includes numeral classifiers as its dominant mode of forming quantification expressions, then it will also have facultative expression of the plural. In other words, it will not have obligatory marking of the plural on nouns.

(Sanches and Slobin, 1973, p. 4, original emphasis)

Sanches and Slobin do not claim a complete complementarity between classifiers and the plural. Their hypothesis allows the co-occurrence under two distinct, well-defined conditions. A language can have obligatory plural marking as long as it does not use numeral classifiers as the *dominant* mode of forming quantified phrases, or a language can have optional plural marking even if it uses numeral classifiers as the dominant mode of forming quantified phrases. It is only languages that make heavy use of numeral classifiers and have obligatory plural marking that constitute a counter-example to the generalization. About the very few languages that exhibit this pattern indeed, Sanches and Slobin make the following claim:

The exceptions — those languages which have both numeral classifiers and obligatory plurals — are clearly in the minority, and, in most cases, their status with regard to one characteristic or the other is somewhat doubtful.

(Sanches and Slobin, 1973, p. 8.)

They further add that these languages

[...] indicate that there may be exceptional circumstances in which a language uses both forms in a single expression. A quick survey of these exceptional languages reveals that (1) either the plural or the classifier system is ‘weakly’ developed and that (2) they are located geographically in what we might call a transition area where groups of languages of (at least) two different genetic affiliations have been in contact for a long time. It also seems possible that the prevailing conditions in the structure of quantification expressions in these languages represent a state of change from the dominance of one feature, i.e. either classifiers or plural marking, to the other as a result of a contact situation.

(Sanches and Slobin, 1973, p. 13, original emphasis)

The restricted co-occurrence of classifiers and the plural observed by Sanches and Slobin (1973) was later modified to a claim about complete complementarity in a number of works, most importantly in T’sou (1976); Chierchia (1998) and Borer (2005).

The hypothesis advanced in this paper is that the study of nominal classifier systems suggests an important hypothesis that the use of nominal classifiers and the use of the plural morpheme are in complementary distribution in natural language. More concretely, it suggests that either a) a natural language has either nominal classifiers or plural morphemes, or b) if a natural language has both kinds of morphemes, then their use is in complementary distribution.

(T’sou, 1976, p. 1216.)

This hypothesis is much more restrictive than the one made by Sanches and Slobin (1973). Sanches and Slobin, as we have seen above, allow for the co-occurrence of classifiers and the plural in two distinct scenarios. T’sou’s hypothesis, on the other hand, doesn’t make the co-occurrence possible under any circumstances.

This stricter claim about complementarity is at the heart of two very influential theories about the syntax and semantics of nominal phrases: Chierchia’s (1998) Nominal Mapping Parameter and Borer’s (2005) proposal about the nature of the mass vs. count distinction. The latter theory suggests that the complementarity follows from structural considerations: both classifiers and the plural are exponents of Div and so they compete for the same position.

9.2.2 Counter-examples

In spite of the predictions of T’sou (1976); Chierchia (1998) and Borer (2005), it is known that the complementarity between classifiers and the plural is not perfect.¹

¹The list includes Russian and Bulgarian, two well-studied languages generally thought to lack classifiers. While it is true that these languages do not feature numeral classifiers prominently, they both possess a handful of classifiers (c.f. Cinque and Krapova, 2007 on Bulgarian and Yadroff, 1999; Pesetsky, 2009 on Russian). These can co-occur with portmanteau morphemes that express the combination of plural number and some case on the noun. The combination of sporadically used classifiers and an obligatory plural is precisely one of the scenarios in which Sanches and Slobin (1973) do not expect complementarity.

| language | variety | source(s) |
|----------------------|-----------------|--|
| Algonquian lgs. | | (Aikhenvald, 2000, ch. 4.1) |
| Arabic | Oman-Zanzibar | (Greenberg, 1972) |
| | Egyptian Arabic | (Greenberg, 1972) |
| | Lebanese | (Borer and Ouwayda, 2010) |
| | Standard | (Borer and Ouwayda, 2010) |
| Armenian | | (Gebhardt, 2009, p. 258.) |
| Bulgarian | | (Cinque and Krapova, 2007; Borer and Ouwayda, 2010) |
| Ejagham | | (Aikhenvald, 2000, ch. 4.1; Ikoro, 1996, p. 101) |
| Halkomelem | | (Wiltschko, 2008) |
| Mayan | Akatek | (Zavala, 2000) |
| | Jacalteco | (Craig, 1977) |
| | Yucatec | (Butler, under review; Allan, 1977) |
| | Itzaj | (Gebhardt, 2009, p. 192.; citing Hofling, 2000) |
| Nivkh | | (Matthissen, 2003, p. 227.; Aikhenvald, 2000, ch. 4.1) |
| Nootka | | (Sanches and Slobin, 1973; Aikhenvald, 2000, ch. 4.1) |
| North Arawak | | (Aikhenvald, 2000, ch. 4.1) |
| Ojibwe | | (Allan, 1977, p. 294.) |
| Ossetian | | (Greenberg, 1972) |
| Persian | | (Gebhardt, 2009, p. 20., 56.) |
| Russian | | (Pesetsky, 2009) |
| South Dravidian lgs. | | (Aikhenvald, 2000, ch. 4.1) |
| Tajik | | (Ido, 2005, p. 37.) |
| Tarascan | | (Sanches and Slobin, 1973; Aikhenvald, 2000, ch. 4.1) |
| Tariana | | (Aikhenvald, 2003, ch. 5. and 8.) |
| Tlingit | | (Sanches and Slobin, 1973; Aikhenvald, 2000, ch. 4.1) |
| Tucano | | (Aikhenvald, 2000, ch. 4.1) |
| Yuki | | (Aikhenvald, 2000, ch. 4.1) |
| Vietnamese | | (Goral, 1979) |

Table 9.1: Languages in which Cl and Pl co-occur

Further languages that may belong to this list include Dutch, German and English. Diminutives in Dutch and German have classifier-like properties and some researchers analyze them as such, yet they can co-occur with plural marking (De Belder, 2008, 2011; Ott, 2011). Alexiadou and Gengel (to appear: a), Alexiadou and Gengel (to appear: b) and Taraldsen (2009) analyze the English pro-form *one* as a classifier. If this is on the right track, then English is a counterexample as well (c.f. *I want the red ones*).² Regardless of whether these analyses turn out to be right or misguided, the languages of various genetic and areal affiliations from table 9.1 testify that the cross-linguistic complementary distribution of classifiers and the plural is a strong tendency rather than a linguistic universal.³

9.2.3 Approaches to the (non)-complementarity

The literature is well aware of co-occurring classifiers and plurals. The reactions fall into two groups: those that take complementarity to be the default case and focus on explaining the cases of co-occurrence, and those that take exactly the opposite standpoint.

The theories in the first group suggest that the counter-examples have either been mis-analyzed, or they involve a special plural or a special classifier. Borer (2005) suggests that the Dutch

²Further, depending on the analysis of units words such as *stand*, *ear*, *stalk*, *piece* etc., expressions such as *two strands of hair*, *two ears of corn*, *two stalks of celery*, *five pieces of candy* may also provide counter-examples from English.

³In table 9.1, the following languages have obligatory plural marking as well as classifiers: Nootka, Tlingit (Sanches and Slobin, 1973; Aikhenvald, 2000), Tucano, North Arawak, Yuki, Nivkh, Ejagham, South Dravidian languages and Algonquian languages (Aikhenvald, 2000). Consequently, the Sanches-Slobin hypothesis expects them not to make heavy use of classifiers. I am not in a position to ascertain whether this is borne out or not.

diminutive is an element that is licensed in the presence of a classifier but it is not the classifier itself, therefore its co-occurrence with the plural is not a counterexample to the complementarity. Borer and Ouwayda (2010) argue that the Arabic plural co-occurring with the divisor -AH is an agreement marker rather than the head of DivP. Naturally, only plurals heading DivP compete with classifiers, agreement plurals don't. Wiltschko (2008) argues that the Halkomelem plural is an adjunct to an acategorial root, hence it does not compete for the classifier's position. Butler (under review) proposes that the Yucatec Mayan plural can co-occur with numeral classifiers because this plural is syntactically an adjunct to DP. Svenonius (2008a) proposes that there are three classifier related projections in the DP: *n* for noun classifiers, Sort (my CL) for numeral classifiers and Unit (my Num) for unit classifiers. He suggests that the plural is inserted into Sort, so it competes with numeral classifiers. Any classifier that co-occurs with the plural belongs to one of the other two classifier groups. In a similar vein, Ott (2011) has two different classifier projections, UnitP and NumP/SortP, and he submits that the plural competes with Sort classifiers for the same position but it can freely co-occur with Unit classifiers.

The theories in the second group assume a projection entirely dedicated to the plural and another entirely dedicated to the classifier (though they don't agree on which phrase is higher). These theories assume that (unless something special happens) the plural doesn't compete with the classifier for the same position, and they need to say something additional about the cases of complementarity. De Belder (2011) suggests that if a language doesn't allow the plural to co-occur with classifiers, then their phrases are co-projected in that language. Gebhardt's (2009) proposal is that complementarity obtains when the projections for the classifier and the plural are DM-style fused. Zhang (2011) argues that when the plural doesn't co-occur with classifiers then the projection housing either one or the other is simply not projected in the structure. Taraldsen (2009) uses lexical items spanning Pl^0 and Cl^0 .

The majority of the above mentioned analyses, whether they belong to group one or two, assume that in the languages in which they are in complementary distribution, classifiers and the plural do indeed compete for spelling out the same head (either because there is a single position provided for them in the first place, or because the originally provided two positions undergo fusion or co-spellout). I will follow this line of thinking when I take up the complementarity issue in Hungarian in the next section.

9.3 The complementarity with classifiers in Hungarian

9.3.1 The data

The consensual view of the literature on the Hungarian plural is that it is the exponent of the Num head. This view, however, does not explain why the plural cannot co-occur with classifiers.⁴ Classifiers sit in ClP, an entirely different projection.

- (7) ez-ek a (*rúd) szalámi-k
 this-PL the CL_{stick} salami
 'these sticks of salami'

Borer (2005) suggests that the English plural, and plural markers in general, are the divisors. That is, they are harboured in the Cl head rather than in Num. If this is on the right track for the Hungarian plural, then the general complementary distribution between the plural and classifiers is accounted for. However, as already pointed out in Dékány and Csirmaz (2010) and Csirmaz and Dékány (2010), the distribution of the Hungarian plural marker differs from that of classifiers in many important respects.

⁴As already discussed in Chapter 3, this restriction is lifted in elliptical contexts.

- (i) ez-ek a szem-ek
 this-PL the CL_{eye-PL}
 'these ones' (small spherical objects)

In Chapter 3 I proposed an analysis of this exceptional co-occurrence. I suggested that in general the plural and classifiers want to fill the same position. In ellipsis, however, the classifier can occupy the noun position. When this happens the classifier has the distribution of nouns, and thus co-occurs with the plural, as in (i).

Firstly, classifiers need a licenser (numeral, quantifier of demonstrative) to appear overtly. The plural doesn't need a licenser.

- | | | | |
|-----|---|-----|---|
| (8) | *(ez a) szem cukor this the CL _{eye} candy 'this piece of candy' | (9) | *(sok/három) szem cukor many/three CL _{eye} candy 'many/three pieces of candy' |
|-----|---|-----|---|

Related to this fact, but logically independent from it is the second difference: bare nouns can co-occur with the plural but not with classifiers.

- | | | | |
|------|--|------|-------------------------------------|
| (10) | *fej saláta head lettuce 'the head of lettuce' | (11) | saláták lettuce-PL 'lettuces' |
|------|--|------|-------------------------------------|

Thirdly, agreement with both DP-internal and external probes is sensitive to the plural but it is not sensitive to classifiers. As for DP-internal agreement, the plural must take part in demonstrative concord, but classifiers cannot do so.⁵

- | | | |
|------|--|--|
| (12) | a. ez-ek a ház-ak this-PL the house-PL 'these houses' | b. *ez a ház-ak this the house-PL 'these houses' |
| (13) | a. *ez szem a szem mogyoró this CL _{eye} the CL _{eye} hazelnut 'this hazelnut' | b. ez a szem mogyoró this the CL _{eye} hazelnut 'this hazelnut' |

As far as agreement with an external probe is concerned, verbal agreement is sensitive to the presence or absence of the plural but it has no relation to the presence or absence of classifiers (or numerals).

- | | |
|------|---|
| (14) | Vendég-ek érkez-t-ek/*érkez-ett. guest-PL arrive-PAST-1PL/arrive-PAST.3SG 'Guests arrived.' |
| (15) | Három szál gyertya van/*van-nak az asztal-on. three CL _{thread} candle be.3SG/be-3PL the table-SUP 'There are three candles on the table.' |

Fourthly, the definite article can freely co-occur with the plural marker but not with classifiers (see Chapter 3 for related discussion).

- | | | | |
|------|--|------|---|
| (16) | *a fej saláta the Cl _{head} lettuce 'the head of lettuce' | (17) | a saláták the lettuce-PL 'the lettuces' |
|------|--|------|---|

Fifthly, the plural and classifiers have complementary distribution with respect to counters (numerals and quantifiers): only classifiers can co-occur with them.

- | | | | |
|------|--|------|---|
| (18) | hét szál virág seven CL _{thread} flower 'seven flowers' | (19) | hét virág-(*ok) seven flower-PL 'seven flowers' |
|------|--|------|---|

Two further properties of classifiers and the plural accentuate the above differences (though in and of themselves, these don't necessitate a categorial difference between them): classifiers are free morphemes but the plural is a bound suffix; and the plural and classifiers linearize in different positions in the noun phrase (the plural follows the head noun while classifiers precede it).

⁵This difference cannot stem from the free versus bound nature of the morphemes in question. Dressed Ps are free morphemes, just like classifiers, but they do take part in demonstrative concord. C.f. the discussion in Chapters 5 and 8.

- (20) a. *rágó-k*
 chewing.gum-PL
 ‘chewing gums’
- b. két **csík** *rágó*
 two CL_{strip} chewing.gum
 ‘two chewing gums’

Table 9.2 summarizes the distribution of the plural marker and classifiers in Hungarian.

| | plural | classifiers |
|---------------------------|--------|-------------|
| requires a licenser | – | + |
| agreement sensitive to it | + | – |
| co-occurs with def. art. | + | – |
| co-occurs with counters | – | + |
| co-occurs with bare Ns | + | – |
| bound | + | – |
| follows N | + | – |

Table 9.2: Pl and Cl in Hungarian

These facts clearly show that the Hungarian plural marker is not the same type of syntactic element as classifiers. Nevertheless, it is in complementary distribution with it. How is this to be explained?

9.3.2 The Hungarian plural as a ‘plural classifier’

In the previous section we have seen that cross-linguistically classifiers are often in complementary distribution with the plural, but this is only a strong tendency rather than a linguistic universal. Therefore it not possible to come up with a definitive analysis of the plural as such, or a definitive analysis of classifiers as such. I also believe that it is not plausible to analyze all cases of co-occurrence in the same way. Consequently it is only possible to provide an analysis of the plural in language X, or an analysis of classifiers in language X. In this section I will attempt to characterize the function and structural position of the Hungarian plural marker.

As I have already indicated at the end of the previous section, the analysis will build on Borer’s idea that a plural that doesn’t co-occur with classifiers is a classifier of some sort itself. I suggest that the Hungarian plural is a sort of classifier indeed, though different from the other overt classifiers or the covert classifier. (What this difference exactly entails will be taken up presently.)

This approach is supported by the existence of so-called plural classifiers in well-known classifier languages such as the Chinese languages, Thai or Bengali (Cheng and Sybesma, 2005; Borer, 2005; Piriawiboon, 2010; Greenberg, 1972). Plural classifiers have the following characteristics: i) they are commonly characterized as classifiers, ii) they imply that there is more than one referent, iii) at the same time they cannot be used together with counters (i.e. they are used only with a demonstrative or in bare classifier + plural expressions), iv) they are general classifiers in the sense that unlike ordinary classifiers, they can co-occur with any noun without imposing selectional restrictions on the noun. The following examples illustrate.⁶

- (21) a. *Wo xiang mai ben shu*
 I want buy Cl_{volume} book
 ‘I want to buy a book.’
- b. *san ben shu*
 three Cl_{volume} book
 ‘three books’
- c. *Wo xiang mai xie shu*
 I want buy Cl_{pl} book
 ‘I want to buy some books.’

⁶In Mandarin, bare classifier + noun strings may only have an indefinite interpretation. In Cantonese, on the other hand, these strings may have either a definite or an indefinite interpretation (Cheng and Sybesma, 2005). This difference is reflected in the translations but it is orthogonal to the issue at hand.

- d. *san xie shu
three Cl_{pl} book
'three books'
(Cheng and Sybesma, 2005, ex. 29., 32., 33.) Mandarin
- (22) a. bun syu
Cl_{volume} book
'the book'
- b. saam bun syu
three volume book
'three books'
- c. di syu
Cl_{pl} book
'the books'
- d. *saam di syu
three Cl_{pl} book
'three books'
(Cheng and Sybesma, 2005, ex. 27., 32., 33.) Cantonese

The Hungarian plural shares properties with both plural markers and plural classifiers. It is mostly like other plural markers, but crucially, it is like plural classifiers in that it rejects modification by counters. I suggest that this is because the Hungarian plural does both the job of Num and the job of Cl. Differently put, the plural is a spanning lexical item (c.f. Taraldsen, 2009) for Cl and Num.⁷ In order to ensure full complementarity, it cannot Underassociate either its Cl or Num feature.

Taking the plural to be an exponent of Num has several advantages over taking it to be just a Cl exponent as in Borer (2005). Firstly, it reflects the semantics of the plural: unlike other overt classifiers, it is not number neutral. Instead, it has a built-in number information. This is best captured if it spells out a Num carrying the [+ plural] feature. Secondly, connecting the plural to Num makes it a ϕ -feature. This in turn allows a unified characterization of the features that take part in DP-internal concord processes (person, number, case) and subject-predicate agreement (person, number, associative plural). In particular, they are the ϕ -features plus the case feature, which are cross-linguistically most prone to participate in agreement.⁸ Finally, this is fully consonant with the mainstream view that the Hungarian plural is the exponent of the Num head – in fact, I am not aware of any analysis that has ever posited otherwise.

Let me close this section with some notes on Hungarian-internal variation. The distribution of the plural is not uniform across Hungarian dialects. Gergely Kántor (p.c.) informs me that in his idiolect, the plural can co-occur with classifiers. He kindly provided the following examples.

- (23) Csak úgy nyom-ta magá-ba a vekni kenyér-ek-et.
just like pust-PAST.3SG self-ILLAT the CL bread-PL-ACC
'He was devouring several loaves of bread.'
- (24) Cső kukoricá-k tűn-t-ek el az asztal-ról.
CL sweetcorn-PL disappear-PAST-3PL away the table-DELAT
'Several ears of sweetcorn have disappeared from the table.'

I suppose that it is significant that both (23) and (24) emphasize the amount or quantity of the noun involved. However, I don't want to speculate on these points of variation here, and I will leave the analysis of the plural and classifiers in this variety for another occasion.

⁷This proposal is similar in spirit to Borer's analysis of plural classifiers in the Chinese languages. She suggests that plural classifiers perform both the dividing and the counting function; in her terms, they assign range to both $\langle e \rangle_{Div}$ and $\langle e \rangle_{\#}$. Our analyses differ in execution and detail, however.

⁸How to characterize the associative plural as a ϕ -feature without making DP-internal concord sensitive to it is a topic of Sections 9.4 and 9.7.2.

9.4 Excursus on the associative plural

The associative plural (a.k.a. familiar plural, group plural) *-ék* has already been mentioned in passing in Chapter 8. We have seen that it encodes that the noun belongs to a non-homogenous group, and has human associates who have a near-equal status to that of the noun's referent (Corbett, 2000; Moravcsik, 2003).⁹

- (25) János-ok
John-PL
'more than one person named John'
- (26) János-ék
John-ASS.PL
'John and his associates/folks/company/cohort, John and them'

This poorly researched suffix exhibits both similarities and differences with respect to the ordinary plural. They are similar in that they both reject co-occurrence with counters and they both require plural agreement on the predicate.

- (27) a. a két igazgató-(*k)
the two director-PL
'the two directors'
- b. a két igazgató-(*ék)
the two director-ASS.PL
'the two directors and their company'
- (28) a. az igazgató-k jön-nek
the director-PL come-3PL
'the directors are coming'
- b. az igazgató-ék jön-nek
the director-ASS.PL come-3PL
'the director and his company are coming'

In spite of the above similarities, there are also important syntactic differences between the ordinary and the associative plural. Firstly, they co-occur, therefore they cannot occupy the same position in the functional sequence.

- (29) a barát-a-i-d-ék-at
the friend-POSS.PL-POSS.2SG-ASS.PL-ACC
'your friends and their associates (acc)'

Secondly, inflecting demonstratives must show concord for the ordinary plural but they cannot do so for the associative plural.

- (30) ez-ek a lány-ok
this-PL the girl-PL
'these girls'
- (31) a. *ez-ék-nél a lány-om-ék-nál
this-ASS.PL-ADESS the daughter-POSS.1SG-ASS.PL-ADESS
'at this daughter of mine and her company'
- b. ennél a lány-om-ék-nál
this.ADESS the daughter-POSS.1SG-ASS.PL-ADESS
'at this daughter of mine and her associates'
(Bartos, 2001a, ex. 4. h.)

⁹The associative plural in Hungarian is restricted to proper names, kin terms, friends, occupations, titles and the noun *neighbour*. Ordinary nouns are infelicitous with the associative plural.

- (i) a. a testvér-em-ék
the sibling-POSS.1SG-ASS.PL
'my sibling and her associates'
- b. a tanár-om-ék
the teacher-POSS.1SG-ASS.PL
'my teacher and her associates'
- c. az igazgató-ék
the director-ASS.PL
'the director and her associates'
- d. *a nő-ék
the woman-ASS.PL
'the woman and her associates'

This is an interesting research problem in its own right. However, as the chapter unfolds I will argue that the main importance of this pattern is that it sheds new light on some properties of the ordinary plural.

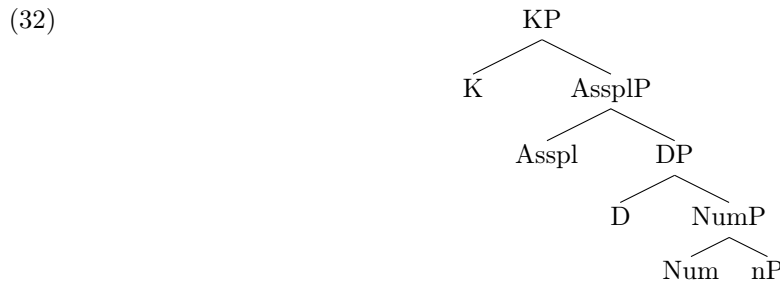
The properties of the two plural markers are summarized in table 9.3.

| | ordinary plural | associative plural |
|--|-----------------|--------------------|
| rejects counters | yes | yes |
| requires plural agreement on the predicate | yes | yes |
| concord on inflecting demonstratives | yes | no |

Table 9.3: The ordinary vs. the associative plural

9.4.1 The associative plural in the functional sequence

The Hungarian associative plural is not an allomorph of the ordinary plural, the two kinds of plurals spell out different functional heads. This is evidenced by the fact that they can co-occur. Observing that the associative plural normally only occurs with definite noun phrases, Bartos (1999) suggests that AssPIP is projected above DP.



Assuming that the linear order of Hungarian nominal suffixes conforms to the Mirror Principle, the order supports Bartos' hypothesis. The associative plural is further away from the noun than the ordinary plural as well as the possessive agreement. Therefore it must be projected higher than NumP and Poss2P.

- (33) a barát-a-i-d-ék-at
 the friend-POSS-PL-POSS.2SG-ASS.PL-ACC
 'your friends and their associates (acc)'

The structure in (32) is substantiated by the different scope properties of the two plurals, too. Bartos (1999) shows that the ordinary plural scopes under the definite article. In (34) it is not necessary that we can identify any of the policemen. What is specific and definite here is the whole group 'policemen', rather than the individual members of the group. This would be unexpected if the plural applied to the article + noun unit. Consequently it is the definite article that scopes over the plural rather than the other way around.

- (34) Maci Laci-t meg-ver-t-ék a csendőr-ök
 Maci Laci-ACC PERF-beat-PAST-3PL the policeman-PL
 'The policemen beat up Maci Laci.' (Bartos, 1999, p. 54. ex. 57.)

Extending the above logic to the associative plural, the conclusion is that this morpheme scopes over the definite article. In (35) exactly one person is specific and definite: the director. This interpretation arises only if the associative plural scopes over the article + noun unit.

- (35) az igazgató-ék
 the director-ASS.PL
 'the director and her associates'

On the common assumption that scope reflects the merge-in position of constituents, (34) and (35) is exactly what we expect under (32). In Section 9.6 we will see further evidence for the hierarchy in (32) from the compositional semantics of plural pronouns.

In what follows, I will assume that AssplP is projected only if its value is positive. That is, if a noun phrase has no associative plural meaning component, then AssplP is entirely missing from the functional sequence.

9.4.2 $-ék \neq -é + -k$

The segmental composition of the associative plural $-ék$ has given rise to the hypothesis that it can be decomposed into the possessive anaphor $-é$ and the garden variety plural $-k$ (Lotz, 1968, 1988; Abondolo, 1988; Balogh, 2000). The advantages and the disadvantages of this approach have been discussed in M. Korchmáros (1995) (cited in Bartos, 1999 and Moravcsik, 2003), which I haven't seen, and Moravcsik (2003). I will briefly summarize Moravcsik's (2003) discussion here, and offer new – I believe conclusive – arguments that this decomposition is untenable. This point is important because the discussion in the rest of the chapter will make use of a projection dedicated exclusively to the associative plural (AssPIP), and arguments concerning the compositional semantics of pronouns as well as those referring to word order will rely on AssPIP.

The decomposition of $-ék$ into the possessive anaphor $-é$ and the ordinary plural $-k$ has four advantages. Firstly, the decomposition explains that both the possessive anaphor and the associative plural contain an $-é$ that is invariant in form and isn't affected by vowel harmony. However, there exist other nominal suffixes, too, which are invariant in form. The Finalis case marker $-ért$, for instance, also begins with an invariant $-é$ vowel, but nobody has ever thought that it contains the possessive anaphor $-é$. Secondly, both $-é$ and $-ék$ always occur with the base form of the nominal stem even if there exists an oblique stem alternant. But again, many suffixes, including case suffixes such as the previously mentioned Finalis, always occur with the base form of the noun stem. Thirdly, neither the ordinary plural nor the associative plural is compatible with counters. Finally, in some Dunántúl dialects the ordinary plural is used to express both garden variety plurality and associative plurality. While the last two facts are suggestive, they are hardly conclusive, and the decomposition runs into insurmountable difficulties both semantically and syntactically.

Moravcsik (2003) aptly points out that the decomposition does not produce the correct compositional semantics for the associative plural. The association component of $-ék$ might be attributed to the possessive $-é$, and the plurality component to $-k$, but there are two bits of meaning that cannot come from either. Firstly, possessions marked by $-é$ can be inanimate, non-human animate or human, but the associates introduced by $-ék$ must be human. Secondly, while an $X +$ associative plural $-ék$ string refers to a group that properly includes X , the referent of an $X +$ possessive anaphor $-é +$ plural $-k$ string doesn't include X , only X 's possessions.

In principle, the compositionality problem could be overcome by postulating one or more null morphemes that could contribute the missing pieces of meaning. However, even this decomposition turns out to be insufficient when we consider the distribution of $-é$, $-k$ and $-ék$. I believe that the co-occurrence of the $-i$ allomorph of the plural and the associative plural is a knock-down argument against the decomposition in and of itself. If $-i$ is the exponent of the Num head, which is supported by plenty of evidence, then the $-k$ of $-ék$ cannot also be the exponent of Num.

- (36) a barát-a-i-d-ék-at
 the friend-POSS-PL-POSS.2SG-ASS.PL-ACC
 'your friends and their associates (acc)'

However, to make the case against decomposition complete, I offer here some additional arguments that I haven't seen in the literature I had access to. I will begin by showing that the associative plural doesn't morphologically contain the ordinary plural, and then I will move on to an argument indicating that it doesn't contain the 'possessive anaphor' $-é$ either.

Firstly, $-é$ is always followed by the $-i$ allomorph of the plural rather than the default $-k$ allomorph.¹⁰

¹⁰As discussed in Chapter 7, there is one exception to this generalization: the *eny-é-m-ek* variant of the possessive pronoun 'mine'.

- (37) a. János-*é*-i
John-*é*-PL
'the ones of John'
- b. *János-*é*-k
John-*é*-PL
'the ones of John'

If the associative plural was made up of the possessive anaphor *-é* and the garden variety plural marker in Num, we would counterfactually predict its form to be *-éi*.

Secondly, while both the ordinary plural and the associative plural require plural agreement on the predicate, agreement on inflecting demonstratives is sensitive only to the ordinary plural (see above). If the associative plural contained the ordinary plural marker, we would expect the two suffixes to pattern identically in this respect. This difference in agreement also excludes the possibility that the two plurals are related by movement, with (36) featuring an overt spellout of the lower copy.

Thirdly, the real possessive *-é* is in complementary distribution with the possessee, the possessedness marker *-ja/-je/-a/-e*, and any phrasal modifiers below Poss2P (c.f. the discussion in Chapter 8). The associative plural, on the other hand, can happily co-occur with these elements.

- (38) a. **barát-a-i-d-ék-at**
the friend-POSS-PL-POSS.2SG-ASS.PL-ACC
'your friends and their associates (acc)'
- (39) a. **fiatal-abb testvér-em-ék**
the young-COMP sibling-POSS.1SG-ASS.PL
'my younger sibling and her associates'

These arguments lead me to conclude that the associative plural is not built from the 'possessive anaphor' *-é* and the garden variety plural *-k* in Num. Such a decomposition has several mispredictions and fails to provide a descriptively adequate account of the data. I would like to emphasize that I am not arguing against a general feature-decomposition of the associative plural marker. What I am arguing against is that the *-é* of *-ék* is the same morpheme and sits in the same position as the 'possessive anaphor' *-é*, and that its *-k* is identical to the plural marker that spells out the Num head.

Indeed, the associative plural comprises several bits of meaning, and this points to the conclusion that it spells out multiple features boundled together in the AssPl head. In the next section I will examine of these features in detail.

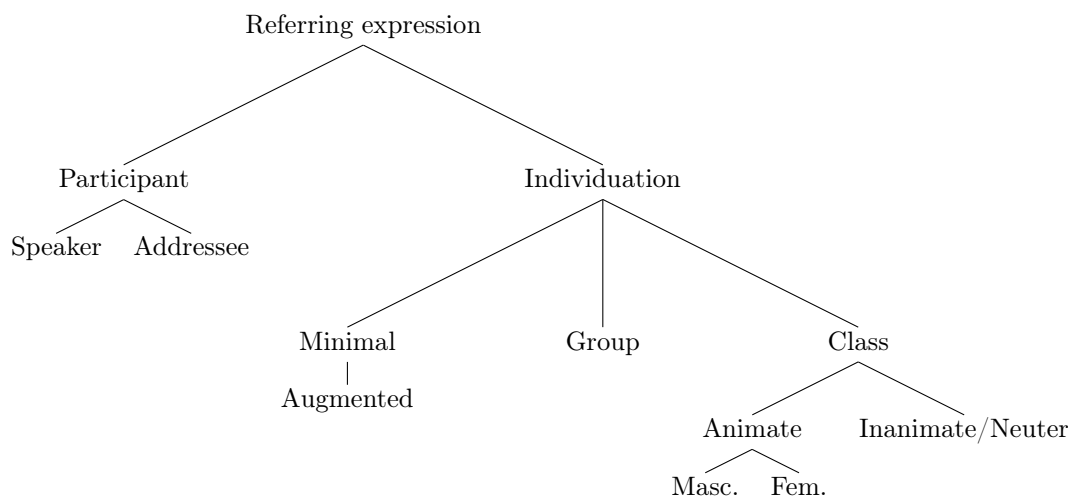
9.4.3 The relationship of the two plurals

As I have already mentioned above, the associative plural has several meaning components/features. One of these features contributes the meaning that the *-ék* phrase has more than one referent. I suggest that this is a [group] feature. I further suggest that it is this feature that the associative plural and the ordinary plural have in common. That is, the Num head in Hungarian can have one of two values: singular or group. In other words, pluralization in Hungarian corresponds to group formation.

The reason why the ordinary plural yields a homogenous group is that in the Num head, the [group] feature is not bundled together with other features. A Num head with a group feature takes the denotation of CIP as its input and creates a group of it. There is no feature there that would contribute inhomogeneity, and in absence of such a specification the group is interpreted as homogenous. In the Associative Plural head, on the other hand, the group feature is bundled together with other features. These features carry the semantics of inhomogeneity and the [+human] interpretation. So by compositionality the AssPl head comes to mean 'an inhomogenous group with human referents'.

'Group' as a Number value was first proposed by Harley and Ritter (2002). Harley and Ritter (2002) set up a universal feature hierarchy in the form of (40). In (40), the Participant node represents the features of Person and the Individuation node represents Number (for Harley and Ritter, Class is a dependent of Number).

(40)



Harley and Ritter comment on the Individuation node in the following way:

"Number, specified by the INDIVIDUATION node and its dependents, is encoded as follows: Singular is encoded by a bare INDIVIDUATION node, which receives its interpretation as if it had a minimal dependent, or (in a more complex system) by an INDIVIDUATION node with an overt Minimal dependent; Plural is encoded by an INDIVIDUATION node with a Group dependent. Dual occurs when both a Group and a Minimal are present (two being the 'minimal group'), and trial or paucal number when Group, Minimal and Augmented are present."

(Harley and Ritter, 2002, p. 27.)

The idea that I take over from Harley and Ritter (2002) is that Number can have a specification that yields singular meaning or a specification that yields plural meaning, and that the latter involves a group feature. I will not adopt the possibility of underspecification, though,¹¹ and I will not have anything to say about their Class and Participant nodes. I will call their Minimal feature 'singular'. This is purely for purposes of convenience and does not reflect a theoretical difference. The reason why I use this label is that Hungarian doesn't have a dual or a paucal. In the Harley–Ritter system this means that in Hungarian Minimal and Group don't co-occur, and the Augmented feature doesn't come into play at all. Consequently the presence of Minimal always leads to a singular interpretation in Hungarian.

To summarize, the proposal is that Num may have a group feature, while AssPl always has that feature. Any properties that the ordinary plural and the associative plural share can be traced back to this feature. In Num, the group feature is not bundled together with other features. In AssPl group is bundled together with other features. This is the source of the semantic difference between them.

Singular

Ordinary plural

Associative plural

{Num: singular} ⇒ ∅

{Num: group} ⇒ -k

$$\left\{ \begin{array}{l} \text{goup} \\ \text{human} \\ \dots \end{array} \right\} \Rightarrow -\acute{e}k$$

As the chapter unfolds, I will come back to the distributional differences and similarities between the two kinds of plurals and explain them in detail at the appropriate points.

¹¹That is, singular will always be Num: singular, and it cannot be an 'empty' Num without any specifications. Recall from Chapter 2 that Nanosyntax is not compatible with heads without any features in them.

9.5 The complementarity of the plural with counters

In Section 9.3.2 I made a proposal about the complementary distribution of the plural with classifiers. But why does the plural not co-occur with counters? According to a widely accepted assumption, this is due to economy. Specifically, it is assumed that the Hungarian Num projection is subject to an economy rule akin to the Doubly Filled Comp Filter. That is, the specifier and the head of Num cannot be overly filled at the same time (c.f. É. Kiss, 2002).

However, this cannot be the whole story. While Hungarian numerals are in spec, NumP indeed (and one may want to argue that so are quantifiers like *néhány* ‘some’, *sok* ‘many’, *hány* ‘how many’ and the like), Hungarian also has a QP. As already discussed in Chapter 4, QP immediately dominates NumP and it houses *minden* ‘every’ as well as the so-called *-ik* quantifiers in its specifier (*melyik* ‘which’, *bármelyik* ‘any’, *valamelyik* ‘a certain’, *semelyik* ‘no, none’, etc.).

- (41) [_{QP} Minden [_{NumP} tíz falu]] épít-s-en egy templom-ot.
 every ten village build-IMP-3SG a church-ACC
 ‘Every ten villages must build a church.’

Melyik ‘which’ stands out among these words because it is the only one that can co-occur with the plural.

- (42) *melyik* gyerek / gyerek-ek?
 which child / child-PL
 ‘which child? which children?’

As for the rest of the quantifiers that occupy spec, QP, at least three of them are true counters (i.e. inherently associated to quantity information): *minden* ‘every’, *mindegyik* ‘each’ and *semelyik* ‘no’. And while they are not in a specifier-head configuration with the plural in Num, they still cannot co-occur with it.¹² Therefore a Doubly Filled Comp Filter type of account cannot cover the whole range of data.

- (43) *minden* / *mindegyik* / *semelyik* gyerek-(*ek)
 every / each / no child-PL
 ‘every / each / no child’

An account in terms of PF-deletion also wouldn’t work, as quantified nouns trigger singular agreement on the predicate.

- (44) *minden* / *mindegyik* / *három* gyerek táncol
 every / each / three child dance.3SG
 ‘every / each / three child(ren) dance(s)’

Further, the associative plural also rejects counters. As we have already seen, this morpheme is above D, and it is not related to Num by movement. Therefore any account that pins the complementarity of numerals and the plural on their local relationship has to have an unrelated explanation for (45).

- (45) a két igazgató-(*ék)
 the two director-ASS.PL
 ‘the two directors and their company’

The most elegant account of the above pattern would capture the co-occurrence restrictions between the two kinds of plurals and counters in a uniform fashion. I do not see how a syntactic explanation could achieve this, and I suggest that the source of the complementarity is in the semantics instead. In particular, the [group] feature is semantically incompatible with (further) counting. Fleshing out this proposal in detail would require a formal semantic account of [group] as well as the English type plural and counters. It is beyond the ambitions of this thesis to attempt

¹²One may want to argue that *mindegyik* ‘each’ doesn’t co-occur with the plural because it morphologically contains the numeral ‘one’: *mind-egy-ik* ‘every-one-ik’. This concern, however, doesn’t arise for *minden* ‘every’ and *semelyik* ‘no’.

On the basis of their distribution and morphology, the pronouns in (46) fall into two natural classes: first and second person pronouns on the one hand and third person pronouns on the other (c.f. Bartos, 1999). First and second person pronouns have a suppletive plural form (46) and induce indefinite agreement on the verb (47).

- | | | | | |
|------|----|---|----|---|
| (47) | a. | Lát-sz minket. see-2SG.INDEF us 'You can see us.' | b. | Lát-unk titeket. see-1PL.INDEF you.PL.ACC 'We can see you(pl).' |
|------|----|---|----|---|

In addition, they have a curious form in the Accusative paradigm. With both singular and plural pronouns, the (possibly suppletive) stem is obligatorily followed by a morpheme that is segmentally identical to possessive agreement.¹³ In plural pronouns this morpheme is obligatorily followed by the visible Accusative marker (it is missing in certain dialects, though), and in singular pronouns the overt appearance of the Accusative marker is prohibited (but again, it is licit in certain dialects, c.f. den Dikken (2004) on variation in this regard).¹⁴

- | | | | | |
|------|----|-----------|----|---|
| (48) | a. | én I | b. | eng-em-(%et) I-POSS.1SG-ACC 'me' |
| (49) | a. | te you | b. | tég-ed-(%et) you-POSS.2SG-ACC 'you (acc)' |
| (50) | a. | mi we | b. | mi-nk-et we-POSS.1PL-ACC 'us' |
| (51) | a. | ti you | b. | ti-tek-et you-POSS.2PL-ACC 'you (acc)' |

In the typology of Cardinaletti and Starke (1999), the Hungarian first and second person pronouns *én*, *te*, *mi*, *ti* are strong pronouns: they always refer to human entities, they can be freely coordinated, they can appear in peripheral positions (focus, left-dislocation, isolation) without having a discourse-prominent antecedent, and they cannot be modified by noun-phrase internal modifiers but they admit adverbs modifying the whole noun phrase.

Third person personal pronouns contrast with first and second person pronouns in many respects. These pronouns have morphologically transparent plural marking and case marking, the latter without any possessive morphology (52), and they induce definite agreement on the verb (53).

¹³Den Dikken (2004) suggests that the possessive morphology of first and second person Accusative pronouns indicates that these pronouns are embedded in a possessive structure indeed, with the pronominal stem being the possessee. I think that assuming a possessive structure for these pronouns is on the right track, but I won't pursue the specific nature of that structure here.

¹⁴Across the board in Hungarian, the accusative case suffix is optional after a first or second person possessive agreement suffix.

- | | |
|------|---|
| (i) | Meg-kap-t-am a level-ed-(et)/level-etek-(et). PERF-receive-PAST-1SG the letter-POSS.2SG-ACC/letter-POSS.2PL-ACC 'I have received your(sg/pl) letter.' |
| (ii) | Meg-kap-t-ad a level-em-(et)/level-ünk-(et). PERF-receive-PAST-2SG the letter-POSS.1SG-ACC/letter-POSS.1PL-ACC 'You have received my/our letter.' |

In Standard Hungarian the plural pronouns seem to have grammaticalized with the Accusative case marker, while the singular pronouns have grammaticalized without it.

- (52) a. \check{s}
s/he
- b. \check{s} -k
s/he-PL
'they'
- c. \check{s} -k-et
s/he-PL-ACC
'them'

In the typology of Cardinaletti and Starke (1999), the third person singular pronoun \check{s} is a strong pronoun: it must have [+ human] reference. The third person plural pronoun \check{s} -k, on the other hand, is ambiguous between a strong and a weak pronoun. \check{O} -k may have [+ human] reference but it doesn't have to, which is a characteristic of weak pronouns. However, in preverbal position, in coordination and in the context of adverbial modification it loses the possibility of the [- human] interpretation. In other words, in these positions it shows the characteristics of strong pronouns.¹⁵

- (53) a. Lát-t-am \check{s} -k-et.
see-PAST.1SG s/he-PL-ACC
'I saw them.'
(Cardinaletti and Starke, 1999, p. 147., ex. 6. a.) [± human]
- b. \check{O} -k-et nem lát-t-am.
s/he-PL-ACC not see-PAST.1SG
'I didn't see them.' [+ human]
- c. Lát-t-am \check{s} -k-et és a mellett-ük lev \check{o} -k-et.
see-PAST.1SG s/he-PL-ACC and the next.to-3PL being-PL-ACC
'I saw them and those next to them.'
(Cardinaletti and Starke, 1999, p. 147., ex. 6. b.) [+ human]
- d. Lát-t-am \check{s} -k-et is.
see-PAST.1SG s/he-PL-ACC too
'I saw them, too.' [+ human]

9.6.2 The plurality of first and second person pronouns

In the previous section we have seen that a host of morphological and syntactic phenomena distinguish between first and second person pronouns on the one hand and third person pronouns on the other. Morphological plural marking is one of these phenomena: first and second person pronouns are portmanteaus, while plural third person pronouns have a segmentable ordinary plural marker.

- (54) a. én
I
- b. te
you
- c. \check{s}
s/he
- d. mi
we
- e. ti
you
- f. \check{s} -k
s/he-PL
they
- g. *én-ek
I-PL
- h. *té-k
you-PL

In this section I will argue that this correlates with a difference in the kind of plural feature involved (though neither phenomenon is the cause of the other).

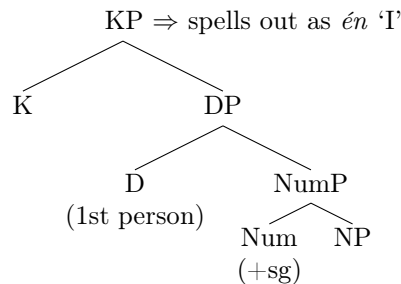
I analyze first and second person pronouns as lexical items that spell out a big constituent within the DP, very much like the the anaphoric *pro* of Chapter 8. These pronouns have an inherent, built-in person and number feature both in the singular and the plural. I assume that

¹⁵Cardinaletti and Starke (1999) distinguish a third group of pronouns, too: clitic pronouns. They argue that clitic pronouns don't bear (lexical) word-stress, they are phonologically reduced, they are syntactically a proper subset of weak pronouns, and occur in some functional head. In the extended nominal projection, this constellation of properties correctly characterizes possessive agreement morphemes. However, I analyze them as agreement features added to functional heads, rather than projecting heads.

this is because the nodes that carry number and person features are spelled out by these lexical items.

First and second person pronouns are never directly suffixed by a visible case marker. Accusative marked first and second person pronouns are embedded in a possessive structure, as we have seen, and the case marker follows the possessive agreement, if overt at all. In case pronouns are suffixed by an oblique case, the pronouns themselves remain covert. In Chapter 7 I summarized well-known facts from the literature that point to the conclusion that the pronominal stem with case markers is always a *pro*, and the optional overt pronoun is in an adjoined position. Given that they don't surface in the complement position of an overt K but they can occur in the position of Nominative noun phrases, I suggest that first and second person singular and plural pronouns *én*, *te*, *mi*, *ti* spell out the whole KP with a Nominative specification of K.¹⁶

(55) feature specifications of a first person singular pronoun



This proposal dovetails with that of Weerman and Evers-Vermeul (2002) and Neeleman and Szendrői (2007), who have spent considerable effort to demonstrate that pronouns may spell out phrasal categories such as KP or DP.

Contra Bartos (1999, 2000, 2001b); É. Kiss (2002), I assume that definiteness agreement is dependent on but not identical to having a D layer. In other words, the presence of the DP layer is a necessary but not a sufficient condition to induce definite agreement on the verb. This allows me to include the D head in the lexical representation of all pronouns and capture the fact that their denotation is always definite. I assume that definiteness agreement is induced by lexical items that meet two conditions: they spell out D and have an idiosyncratic feature [+def. agr.] for triggering such agreement.¹⁷ Differently put, [+def. agr.] can be added to D but not to any other functional head. Some lexical items spell out D with the additional [+def. agr.] feature while others spell out D without this feature. Consequently these D-exponents do not behave uniformly with respect to definiteness agreement. (C.f. also the discussion of spanning quantifiers in Chapter 4.) I refer the reader to den Dikken et al. (2001); den Dikken (2004) and É. Kiss (2005) for interesting, very different suggestions why these pronouns trigger indefinite agreement in object position.¹⁸

Turning to first and second person plural pronouns, it has been pointed out in the literature several times that semantically they are associative plurals of the corresponding singular pronouns rather than garden variety plurals thereof (Lyons, 1968, ch. 7.2.2, Bartos, 1999, ch. 2.3., Moravcsik, 2003, Siewierska, 2004, ch. 3.2.1, Bhat, 2004; Vassilieva, 2005; Wiltschko, 2008; Kratzer, 2009; Wechsler, 2010). That is, *we* means 'I and my associates' rather than $I_1 + I_2 + I_3 \dots$, and *you_{pl}* can mean either 'you and your associates' or $you_1 + you_2 + you_3 \dots$, but the associative interpretation

¹⁶They have to be moderately shrinkable, though, as they take the same form as caseless possessors, too:

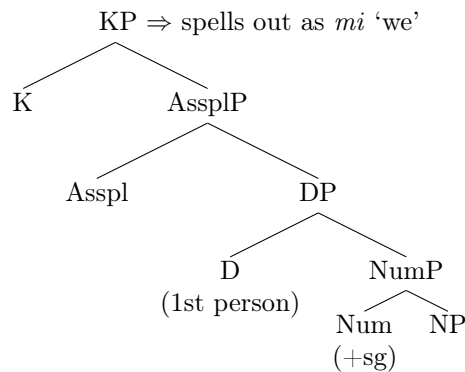
- | | | | |
|-------|--|------|---|
| (i) | az én ház-am the I house-POSS.1SG 'my house' | (ii) | a te ház-ad the you house-POSS.2SG 'your house' |
| (iii) | a mi ház-unk the we house-POSS.1PL 'our house' | (iv) | a ti ház-atok the you house-POSS.2PL 'your house' |

¹⁷Coppock and Wechsler (to appear) also argue that a particular feature other than D is involved in definiteness agreement. In contrast to the track taken here, however, they don't assume that having a D featural specification is a necessary condition for definiteness agreement.

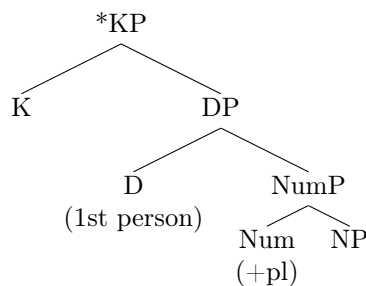
¹⁸C.f. also Kratzer (2009), who argues that third person pronouns are definite descriptions, while first and second person pronouns are not.

doesn't emerge for third person plural pronouns (*they* is always $he_1 + he_2 + he_3 \dots$). Taking the semantic intuition seriously, I suggest that in Standard Hungarian first and second person plural pronouns are associative plurals of the corresponding singular pronouns syntactically, too. That is, their plural marking comes from an associative plural feature rather than the garden variety plural in the Num head. This feature-composition is obscured by the portmanteau nature of these pronouns, but it is reflected in their semantics. In the current proposal, first plural pronouns have the feature specifications in (56) rather than in (57).¹⁹

(56) correct feature specifications of a first person plural pronoun



(57) incorrect feature specifications of a first person plural pronoun



If I am right in assuming that first and second person personal pronouns contain a D (c.f. also den Dikken, 2004; É. Kiss, 2005) and they are pluralized by the associative plural, then we have further evidence for the hierarchy AssPl > D. In particular, if *én* 'I' contains a D and *mi* 'we' is compositionally built from it, then the associative plural must merge above D.

9.6.3 The plurality of the third person pronoun

Let us now turn to third person pronouns. These pronouns have an agglutinative plural and accusative marking like ordinary nouns do (c.f. (59)).

¹⁹I haven't taken an explicit stand on where person features are represented in the DP, and whether Person has its own projection or interpretable person features are bundled together with some other head. With the kinds of diagnostics that I am using for setting up the functional sequence (word order, semantic scope, one lexical item appearing at more than one position), I don't see a straightforward way to determine this. The person of the head noun is not marked with a morpheme specialized for this purpose. R-expressions are always third person and this is not marked explicitly. Pronouns can also be first and second person, but precisely in these cases we have suppletive morphology, so we don't see the person features spelling out separately.

While I am not able to give a definitive answer to where person features are, it is clear to me that they must be below the AssPIP, otherwise it would not be possible to derive the meaning of first person plurals in a compositional fashion. If *we* is 'I+associative plural', then first the first person singular pronoun must be built, and since that already contains a person information, the person feature(s) must reside lower than AssPIP.

In the structures below I will place person features into D (Ritter, 1995; Aboh, 1998, 2004a; Longobardi, 2009; Danon, 2011). This, however, is merely a representational convenience, and should not be taken as a direct endorsement of this particular approach.

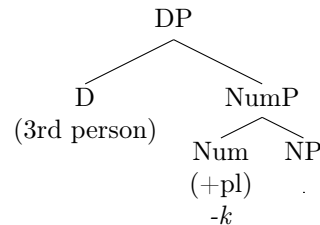
I also don't address the question of whether 3rd person is a feature or the lack of person features, or whether the different values of the person feature are arranged in a hierarchy or geometry or they are all primitives on the same level. While I believe that the first position is correct, this issue is orthogonal to the present inquiries and I will not pursue it here.

- (58) σ , σ -k, σ -k-et
 s/he s/he-PL s/HE-PL-ACC third person pronoun
- (59) $v\sigma$, $v\sigma$ -k $v\sigma$ -k-et
 son.in.law, son.in.law-PL, son.in.law-PL-ACC
 ‘son in law, sons in law, sons in law(acc)’ R-expression

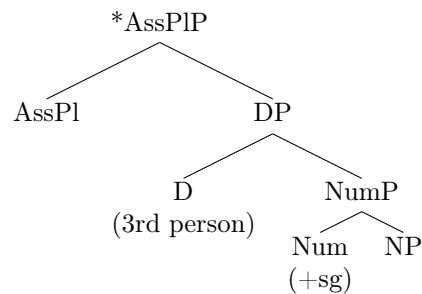
(58) shows that the pronoun σ is number neutral: like garden variety nouns, it is compatible with both a singular and a plural number specification. The standard treatment of this pattern is that σ doesn’t have a built-in number feature. Instead, its number suffix is the spellout of the Num head, and the pronoun itself is either base-generated in N and moves to D (É. Kiss, 2005) or it is base-generated directly in D (Bartos, 1999).

As the interpretation of third person plural pronouns is additive rather than associative, and they explicitly bear the ordinary plural marker on their sleeve, I concur with the standard approach: their feature specification comes from the Num head.

- (60) correct feature specifications of a third person plural pronoun

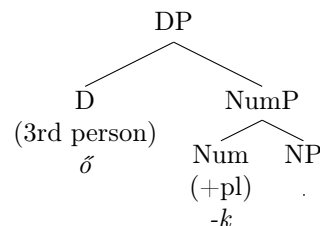


- (61) incorrect feature specifications of a third person plural pronoun



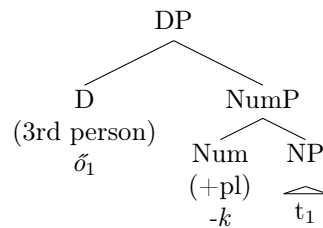
Given the agglutinative nature of its plural and case marking, I don’t take the σ stem of the third person plural pronoun to spell out KP. The fact that σ is always a strong pronoun but σ -k has both a strong and a weak reading presents additional complications that the correct structure needs to take into account. Cardinaletti and Starke (1999) argue that weak pronouns are i) structurally smaller than strong ones and ii) don’t represent the case feature internally. For weak pronouns, I will follow the standard account, whereby third person pronouns are rather small. As to the question of whether the pronoun is base-generated in D (Bartos, 1999) or it is merged in N and D is a derived position (É. Kiss, 2005), both approaches have advantages and drawbacks, too. The Bartos approach is entirely in line with Abney’s (1987) proposal that pronouns are intransitive D heads.

- (62) Bartos’ (1999) structure for σ -(k)



É. Kiss' (2005) proposal, depicted in (63) is superior in that it can derive the structure of the string in (64).

(63) É. Kiss' (2005) structure for δ -(*k*)



(64) a nagy Ő
 the big s/he
 'the One, the love of your life'

(64) is an idiom that has exceptional syntactic composition: the pronoun is modified by an adjective, and the D position is occupied by the definite article. (64) is underivable in Bartos' approach. However, (64) does not represent a productive pattern: pronouns, including third person pronouns, generally do not admit adjectival modification, nor do they co-occur with the definite article. The fact that (64) represents the exception rather than the rule is unexpected in É. Kiss' analysis.

Linearization might be a further factor that supports (63) over (62). If suffixes could easily and generally be associated with their host in the way it is done in (62), then the order of two or more suffixes would not be expected to conform to the Mirror Principle in such an overwhelming majority of cases.²⁰

As far as strong pronouns are concerned, I will argue in Section 9.8 that they spell out a bigger piece of structure and their plural is an agreement marker.

9.7 Number on the edge

The reason why the chapter on the plural marker got a place in Part II is that some researchers argue that (in some languages or some instances) the plural marker is an agreement morpheme rather than the direct exponent of a contentful functional head. Thus far, I assumed without argument that the Hungarian plural marker modifying the head noun is the spellout of Num⁰. In this section I am going to provide some motivation for this position. I will also show that paired with the (slightly modified) Béjar-Rezac approach to the directionality of Agree, the presence of [group] in Num and AssPl gives the right predictions about both the similarities and differences in agreement between the two kinds of plurals.

9.7.1 Theoretical background: goal features accumulate on the phase edge

In order to lay the groundwork for the analysis, I will begin by summarizing the main points of Danon (2011). In this lucid and well-argued paper Danon points out that there is an incompatibility between two mainstream Minimalist assumptions: ϕ -completeness and what she calls "distributed noun phrases". ϕ -completeness is the requirement that only goals with a complete set of ϕ -features can enter into an Agreement relationship with the probe. The general, often implicit assumption is that the highest head in nominal phrases is DP, and D(P) is ϕ -complete. "Distributed noun phrases" is Danon's term for the widely accepted assumption that noun phrases have an articulated internal structure, in which different ϕ -features are introduced on (i.e. distributed among) different functional heads. It is easy to see that unless something additional is said, it is not possible to maintain both ϕ -completeness and "distributed noun phrases" at the same time.

²⁰To be fair, Bartos (1999) uses a specific, DM-based linearization algorithm that he calls 'on-line morphology', and discusses linearization issues in detail.

In order to resolve the conflict, Danon suggests that ϕ -features are in a way ‘collected’ at the top of the noun phrase (which is DP for her). She argues that in Chomsky’s Agree system, the accumulation of all ϕ -features on D can be achieved if, for instance, D is endowed with an interpretable person feature as well as uninterpretable gender and number features. As she points out, however, this doesn’t solve all the problems. Given that DP is a phase, external probes cannot reach into the domain of D. This means that all features that are visible for external probes must accumulate on D. Enriching D with uninterpretable gender and number features is not satisfactory because uninterpretable features are deleted upon valuation, therefore the number and gender features of D are gone by the time the external probes are merged and probe. Thus even if all ϕ -features gather on D, Chomsky’s system of Agree leads to the prediction that external probes won’t be able to agree for number and gender. This is clearly a wrong prediction.²¹

Danon suggests that the feature-sharing approach to Agree (Frampton and Gutmann, 2006; Pesetsky and Torrego, 2007; Schoorlemmer, 2009; Adger, 2010a) has the potential to overcome this problem in a non-stipulative way. In the feature-sharing view, Agree establishes a permanent link between two instances of a feature and crucially, it doesn’t result in the deletion of uninterpretable features. Thus enriching D with uninterpretable ϕ -features and adopting the feature-sharing view of Agree is a combination that allows maintaining ϕ -completeness and “distributed noun phrases” and at the same time makes ϕ -features visible for external probes.

In Chapter 8 I have already adopted the feature-sharing view of agree. This was motivated by empirical data of the Suffixaufnahme phenomenon. Danon’s just reviewed arguments provide further support for this position; and her analysis fits into the overall approach of this dissertation in a natural way. My proposal for Hungarian will build on her insights.

As I have already indicated in Chapter 8, ϕ -completeness does not play a role in this thesis and I am not convinced either of its theoretical necessity or its empirical correctness (c.f. in particular work by Rezac and Béjar). Visibility to external probes, on the other hand, is of paramount importance in the present work. As I take KP to be a phase, all features that are accessed by external probes must accumulate on the edge of KP.²²

Which features are such that they are interpreted below K but they are available to KP-external probes in Hungarian? Person and Number are visible for both subject-predicate agreement and possessor-possessee agreement: the predicate inflects for the Person and Number of the subject, and the possessee inflects for the Person and Number of the possessor.

- | | | | | |
|------|----|---|----|--|
| (65) | a. | mi ír-unk we write-1PL ‘we are writing’ | b. | mi magas-ak vagy-unk we tall-PL be-1PL ‘we are tall’ |
|------|----|---|----|--|

The plurality of the associative plural marker is also accessed by external probes, because KPs containing an AssPIP obligatorily trigger plural agreement on the predicate.

- | | | | |
|------|---|------|--|
| (66) | János-ék ír-nak John-ASS.PL write-3PL ‘John and his associates are writing’ | (67) | János-ék magas-ak John-ASS.PL tall-PL ‘John and his associates are tall’ |
|------|---|------|--|

Above I argued that the plurality of the associative plural and the plurality of the Num head involve the same feature value, [group]. Therefore in order to represent the plurality of the associa-

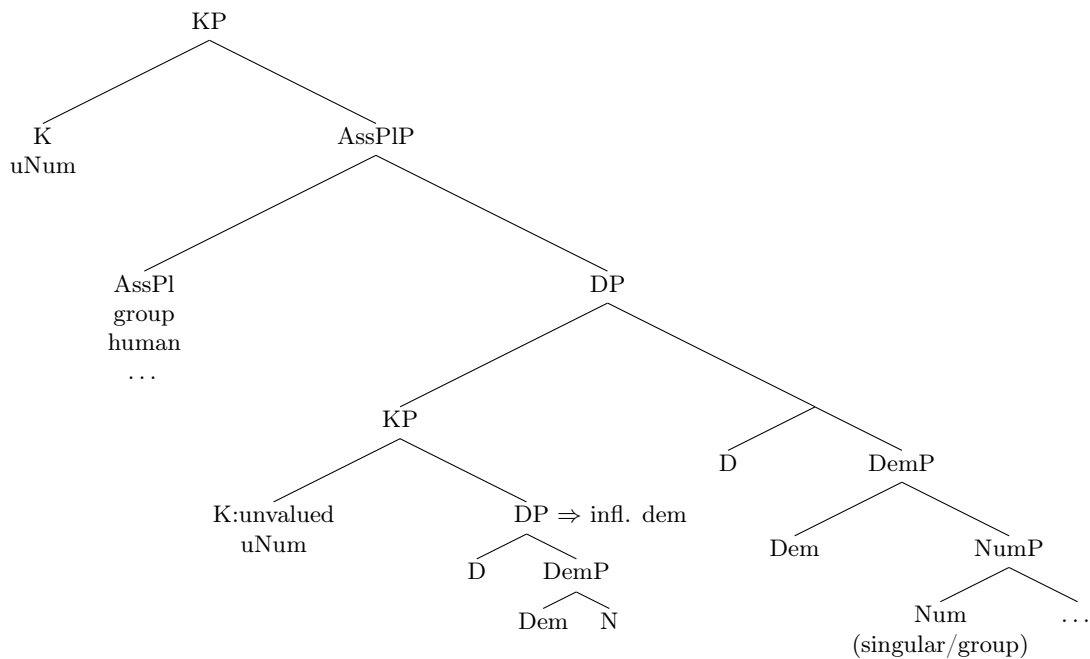
²¹Heck et al. (2008) also make the observation that features visible for external probes must gather on the phase head of noun phrases. However, their technical implementation involves feature movement to the edge rather than the addition of extra features to the phase head. On this model, the above mentioned problem doesn’t arise: the features that accumulate on the edge are higher copies of lower interpretable features. As we will see, however, the Heck et al. (2008) approach cannot be directly transposed into Hungarian.

²²It might be argued that if a phase spells out only when the next higher phase head is merged, then phase-internal features remain visible for external probes long enough, and they don’t need to collect at the phase edge (c.f. Svenonius, 2003b for an overview of various approaches to phase theory). Note, however, that this approach is not applicable to all phases across the board. In particular, matrix CPs must also be spelled out and sent to the interfaces, but they are not embedded under a phase head. Therefore this model cannot capture the spellout of all phases in a uniform manner. Implicit in my discussion is that the target of spellout is the complement of the phase head (DP/AssPIP) rather than the whole phase (KP), and that the trigger of phase-spellout cannot be the next higher phase head.

for a match by Reverse Agree. The other possibility is to directly specify the direction of Agree for probes. This is in the spirit of Baker (2008) (though he argues that such parameters are set for languages as a whole, rather than for individual features/lexical items). In this scenario the directionality of Agree for the demonstrative's uNum and K probes can be entirely unified by specifying both for Reverse Agree. Since a number feature is present on the K head of the main projection line, the demonstrative could get all of its feature-values from that K.

Now that the analysis of the associative plural is in place, I would like to argue that it is the Béjar–Rezac method that delivers the correct results; namely probes search their c-command domain first, and probe upwards only if this doesn't lead to a match. Consider why. Num can have one of two values: [singular] or [group]. An uNum searching for a matching goal will be valued by the closest goal that has either of these values. If the probes of the demonstrative are specified for upward Agree, then the demonstrative is predicted to show plural agreement in the presence of an associative plural, regardless of what value the Num head has. This is because the associative plural contains the closest matching feature in the upward direction (70).

(70)

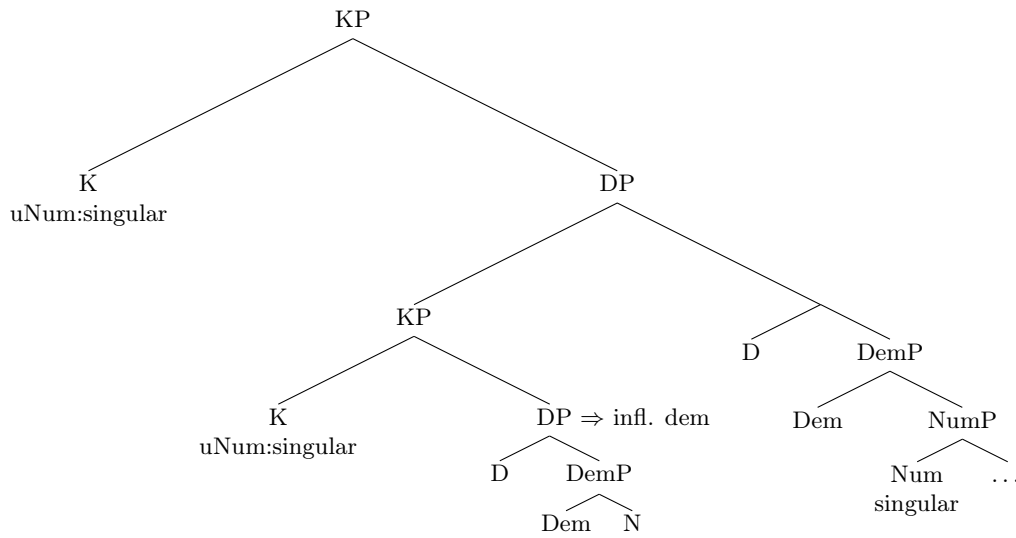


This is a major misprediction, as the demonstrative always agrees with the value of the Num head and it is entirely insensitive to the presence or absence of the associative plural.

The modified Béjar–Rezac approach (modified because upward Agree must go beyond the probe's specifier in Hungarian), on the other hand, correctly delivers both the differences in demonstrative agreement and the similarities in predicate agreement for the two kinds of plurals. Let us go through the possible scenarios in detail. If there is no associative plural in the structure, then only the Num head provides a matching goal for uNum probes. Therefore both the uNum of the demonstrative and K agree with the Num head and they end up with the same value.

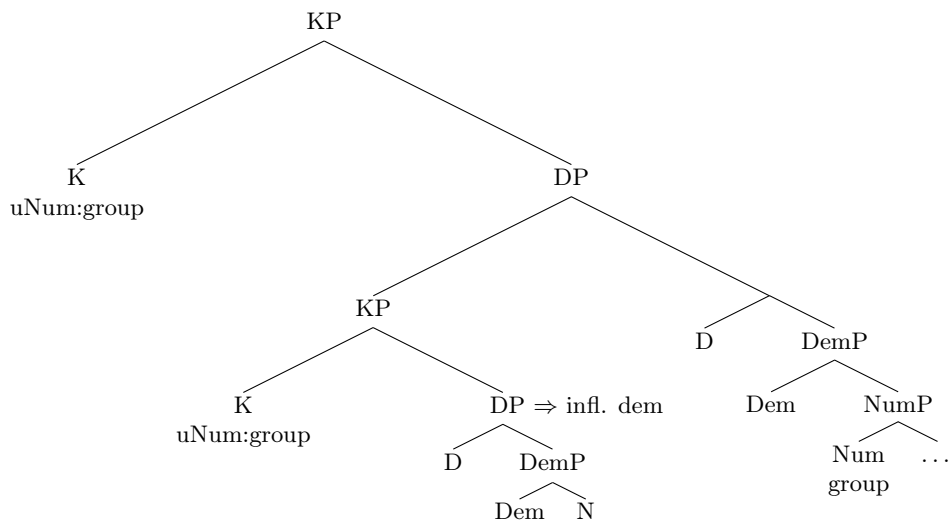
- (71) Ez a diák olvas.
 this the student read.3SG
 'This student is reading.'

(72)



(73) Ez-ek a diák-ok olvas-nak.
 this-PL the student-PL read.3PL
 ‘This student is reading.’

(74)



If the AssPIP is projected and the value of the Num head is singular, then demonstrative agreement is singular (75) while predicate agreement is plural (76).

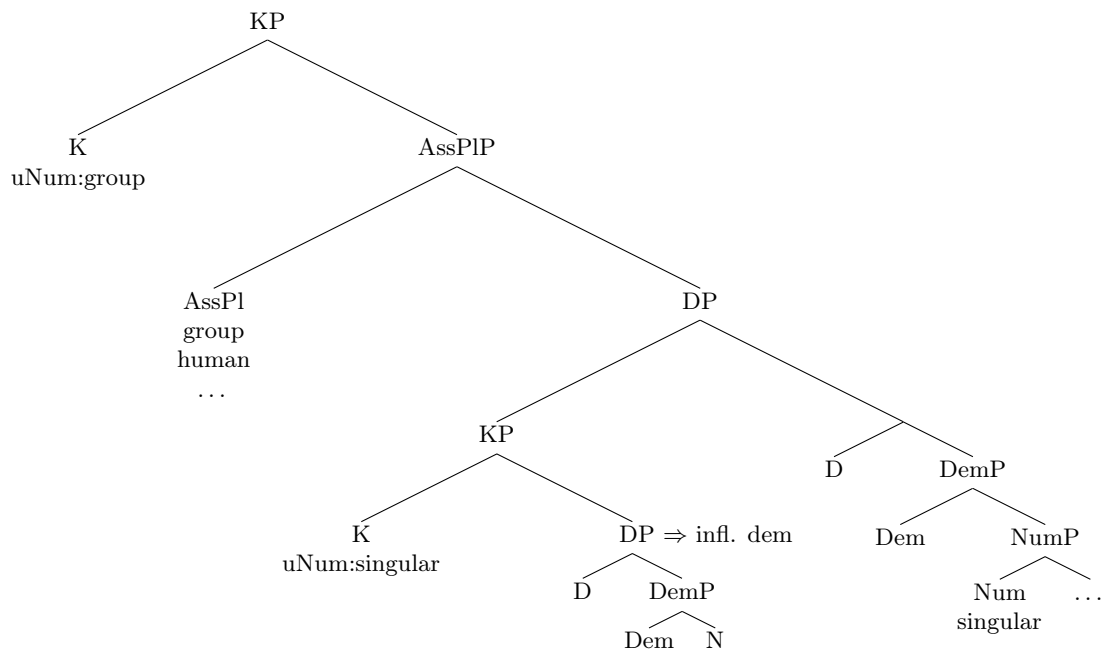
- (75) a. *ez-ék-nél a lány-om-ék-nál
 this-ASS.PL-ADESS the daughter-POSS.1SG-ASS.PL-ADESS
 ‘at this daughter of mine and her company’
- b. *ez-ek-nél a lány-om-ék-nál
 this-PL-ADESS the daughter-POSS.1SG-ASS.PL-ADESS
 ‘at this daughter of mine and her company’

- c. *ennél a lány-om-ék-nál*
 this.ADESS the daughter-POSS.1SG-ASS.PL-ADESS
 ‘at this daughter of mine and her associates’
 (Bartos, 2001a, ex. 4. h.)

- (76) *A lány-om-ék olvas-nak.*
 the daughter-POSS.1SG-ASS.PL read-3PL
 ‘My daughter and her company are reading.’

These data fall out from locality considerations in the following way. The demonstrative’s position is between the Num head and the AssPl head. When the demonstrative’s *uNum* feature starts probing downwards, it finds a matching goal in the Num head. It is valued by the Num head as singular. *uNum* is now satisfied and the presence of the group feature above the demonstrative doesn’t have any effect on the demonstrative’s Num value. However, when the K of the head noun’s projection starts probing, the closest matching goal is provided in the AssPl head. Therefore the *uNum* of this K is valued as [group] irrespective of what the value of the Num head is. As external probes only see the *uNum* on this K, they will show plural agreement.

(77)



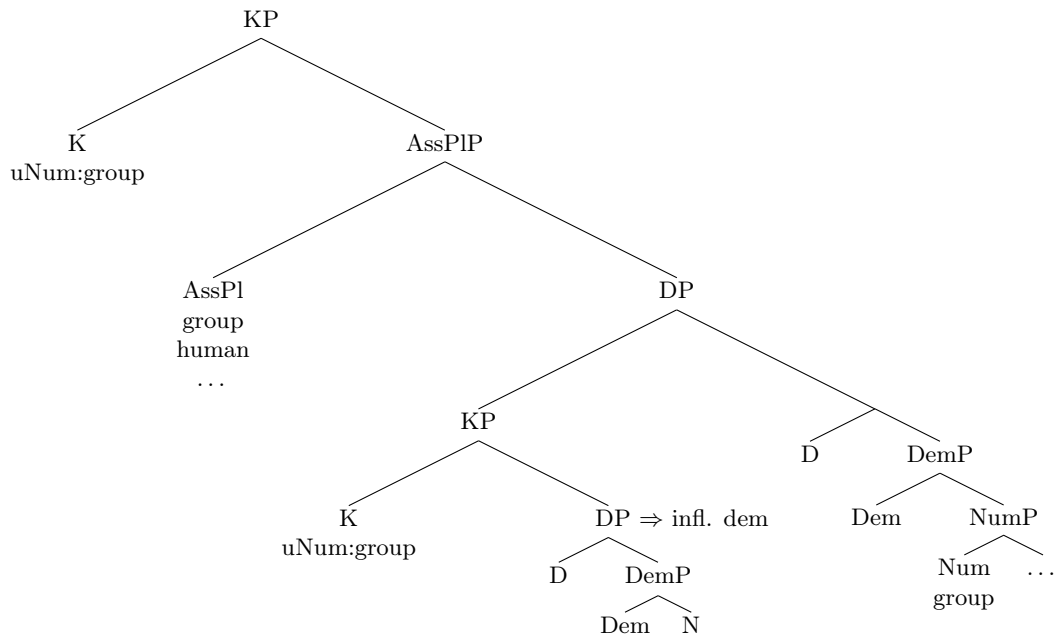
The idea that the same feature gives the plural interpretation of the Num head and the AssPl head yields a simple and elegant account of this scenario. If it wasn’t the case, if a plural Num head and AssPl had no overlap in feature content (e.g. Num:group and an entirely different AssPl feature), then the story would have to be more complicated. External probes show plural agreement with both a plural Num head and the AssPl head. Therefore K in general would have to have both *uNum* and *uAssPl* features. In the scenario depicted in (77), the *uNum* feature of K would get a singular specification from the Num head and the *uAssPl* feature would be valued by the AssPl head. Then one would have to come up with a story about why the external probes disregard the singular Num specification on K and show plural agreement with the AssPl feature of K instead. While it may not be difficult to come up with such a story, on the present account (76) is explained without an auxiliary hypothesis.

Finally, if AssPIP is projected and the value of the Num head is group, then all kinds of agreement are plural. This falls out without further assumptions.

- (78) *ez-ek-nél a lány-a-i-m-ék-nál*
 this-PL-ADESS the daughter-POSS-PL-POSS.1SG-ASS.PL-ADESS
 ‘at these daughters of mine and their company’

- (79) A lány-a-i-m-ék olvas-nak.
 the daughter-POSS-PL-POSS.1SG-ASS.PL read-3PL
 ‘My daughters and their company are reading.’

(80)



The interest of these cases is that there is no double plural agreement on the predicate. Again, if the plural Num head and AssPl had no feature overlap, the picture would have to be more complicated. External probes that agree for number would have to have an uNum feature that they use with plural noun phrases (81-a), and an uAssPl feature that they use with noun phrases containing an associative plural (81-b).

- (81) a. az igazgató-k jön-nek
 the director-PL come-3PL
 ‘the directors are coming’
- b. az igazgató-ék jön-nek
 the director-ASS.PL come-3PL
 ‘the director and his company are coming’

It is already telling that the phonological shape of the agreement is the same in both cases. It would be difficult to argue that (81-b) involves semantic agreement: quantified noun phrases show that Hungarian doesn’t have semantic plural agreement between the predicate and a noun phrase that has more than one referent but no plural feature.

- (82) sok/három igazgató jön/*jön-nek
 many/three director come.3SG/*come-3PL
 ‘many/three directors are coming’

Now if a predicate had both an uNum and an uAssPl feature, then a subject like (83) should result in the valuation and overt spellout of both of those features, as in (84). But instead, only (85) is grammatical.

- (83) a lány-a-i-m-ék
 the daughter-POSS-PL-POSS.1SG-ASS.PL
 ‘my daughters and their company’
- (84) *A lány-a-i-m-ék olvas-nak-nak.
 the daughter-POSS-PL-POSS.1SG-ASS.PL read-3PL-3PL
 ‘My daughters and their company are reading.’

- (85) A lány-a-i-m-ék olvas-nak.
 the daughter-POSS-PL-POSS.1SG-ASS.PL read-3PL
 ‘My daughters and their company are reading.’

The facts that the shape of the agreement is identical in (81-a) and (81-b) and that (84) is ungrammatical fall out from the analysis without further assumptions because both K and predicates have only one probe for number (uNum). The associative plural and the ordinary plural have a feature overlap, they both contain [group], and plural agreement is triggered by this feature.

9.7.3 The plural spells out in Num⁰ by default

In the preceding paragraphs I argued that features which are accessible to external probes accumulate on the phrase edge in the form of agreement features. This double representation raises the question of whether these features spell out in their base position, or at the phase edge. Below I will argue that in the default case all of these features spell out in their base position.

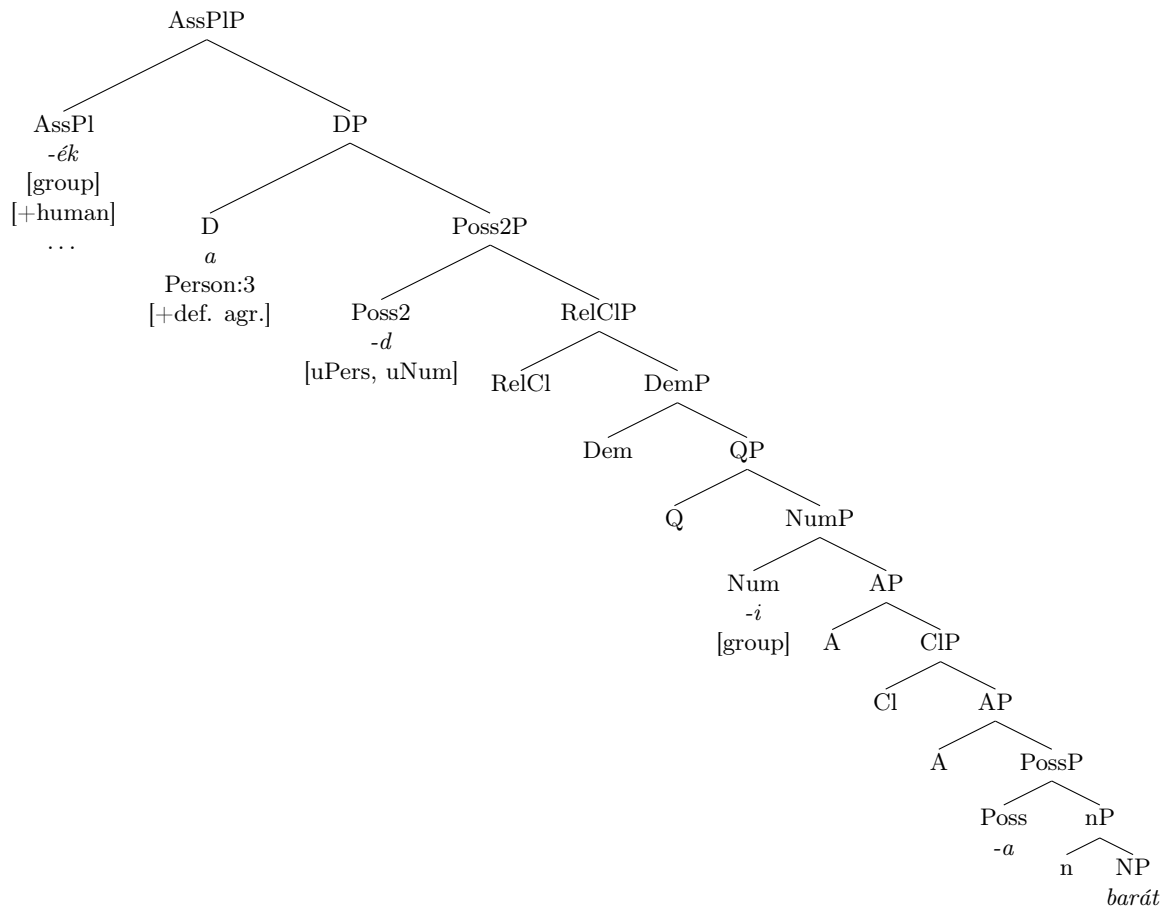
Let us first examine caseless nominals. Caseless noun phrases are not topped off by a phase head, therefore agreement-inducing features do not have to be represented at two places to be visible to external probes – they are already and automatically accessible for agreement purposes in their base position. Therefore in this case it is clear that everything is spelled out in its base position.²⁶ The caseless possessor of (86) bears all the nominal suffixes it possibly can.

- (86) a barát-a-i-d-ék ház-a
 the friend-POSS-PL-POSS.2SG-ASS.PL house-POSS
 ‘the house of your friends and their folks’

The positions where these morphemes appear in the standard approach (Bartos, 1999; É. Kiss, 2002) are shown in (87). I will take (87) to be correct.

²⁶Recall that I am not assuming ϕ -completeness. In theories that make use of this assumption, the agreement-introducing features need to collect at one point in the extended noun phrase even if it lacks the case layer (though in this case the features do not have to accumulate at the top).

(87) the position of features and morphemes in caseless nominals

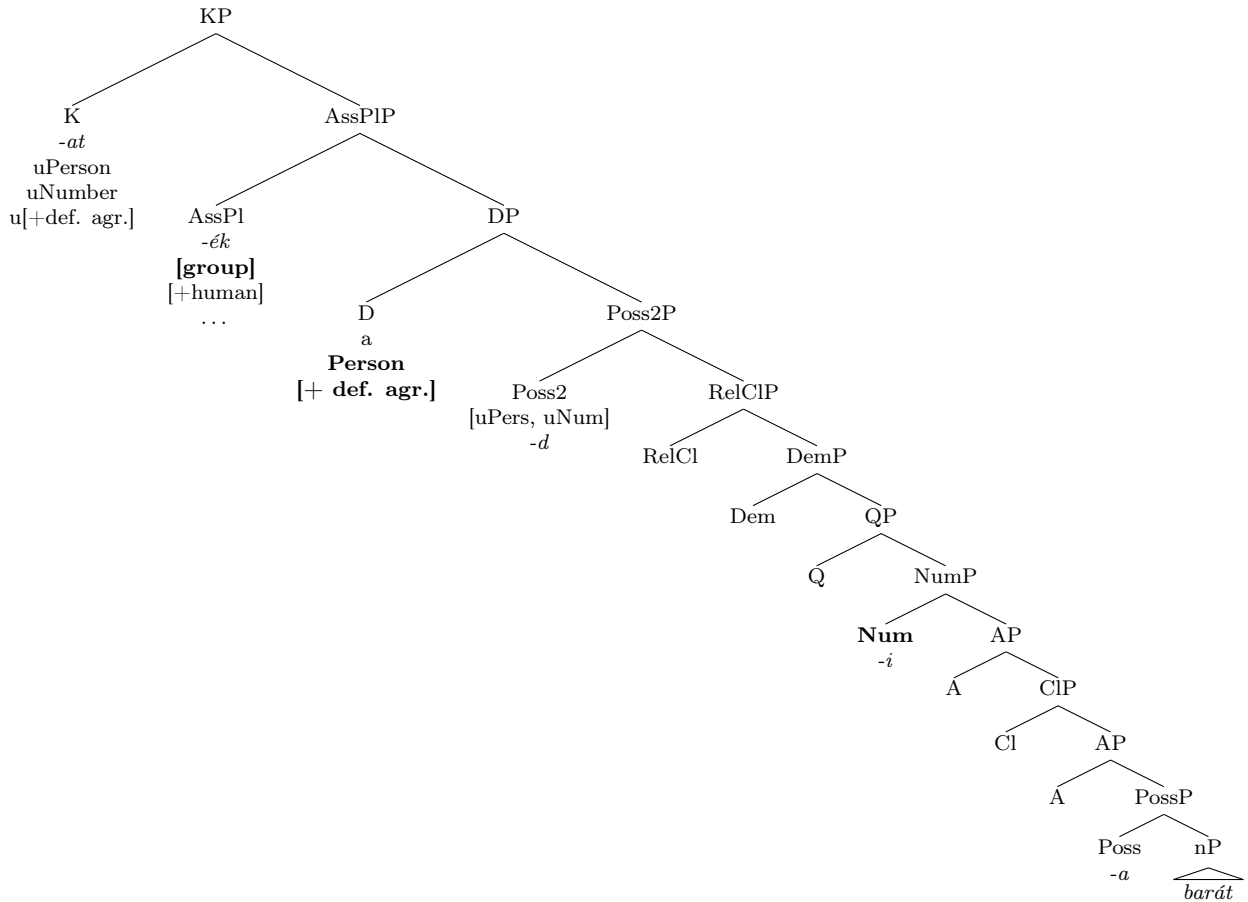


Let us now turn to nominal phrases with a KP layer, such as (88).

- (88) a barát-a-i-d-ék-at
 the friend-POSS-PL-POSS.2SG-ASS.PL-ACC
 ‘your friends and their folks’

Due to the merger of the phase head, the Person, Number and [+ def. agr.] features (bolded in (89)) must accumulate on K. (89) shows the base-position of DP-internal features as well as the phase head K enriched with the relevant features.

(89) the position of features and their associated morphemes in KPs



In noun phrases with a KP it becomes clear that the Num feature which ‘doubles’ on the phase edge must spell out in its base position. This is because the ordinary plural precedes the possessive agreement (88). Person and Number agreement with the possessor is invisible to external probes and there is no reason to believe that it is represented at the phase edge. Thus if the ordinary plural is spelled out on K rather than in Num, the possessive agreement is wrongly predicted to immediately follow the possessedness marker and precede the ordinary plural.²⁷ Given this evidence, I will assume for the sake of consistency that all other features that double on the phase edge also spell out in their interpretable positions below K.

9.7.4 The marked case: plural spells out on K

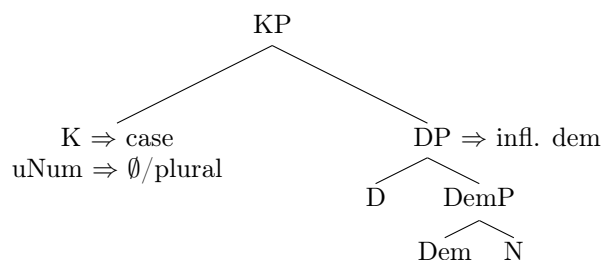
Following Danon, I have argued on theory-internal grounds that features visible for external probes double on the phase edge. On empirical grounds, I argued that these features nevertheless spell out in their base position. A legitimate point that may arise here is whether there is any non-theory internal, empirical evidence supporting the presence of the relevant features on K. As Person and [+ def. agr.] are always spelled out together with other features, we have the best chance to find overt evidence for K’s agreemental uNum feature.

I would like to argue that there is empirical evidence for the presence of this feature on K in three constructions. The first of these involves inflecting demonstratives. In Chapter 8 I suggested

²⁷This is also the reason why the Heck et al. (2008) approach in terms of feature movement to the edge cannot be upheld in Hungarian. Heck et al. (2008) argue that the moving features are spelled out in their landing site rather than in their launching site. This is crucial for them to derive Scandinavian definiteness marking. But as detailed above, this approach would make the wrong prediction about the position of the ordinary plural with respect to the possessive agreement. The movement story would also raise problems for the lexicalization of the plural and the definiteness agreement feature (in Chapter 4 I argued that the latter is included in the lexical specification of the definite article and non-inflecting demonstratives).

that inflecting demonstratives spell out a whole DP. This DP is topped off by a K head, which is spelled out by the case marker of demonstratives. I further argued that the K of demonstratives has an uNum agreement feature which is spelled out overtly by the plural marker. If this is on the right track, then inflecting demonstratives wear K's uNum feature on their sleeve.

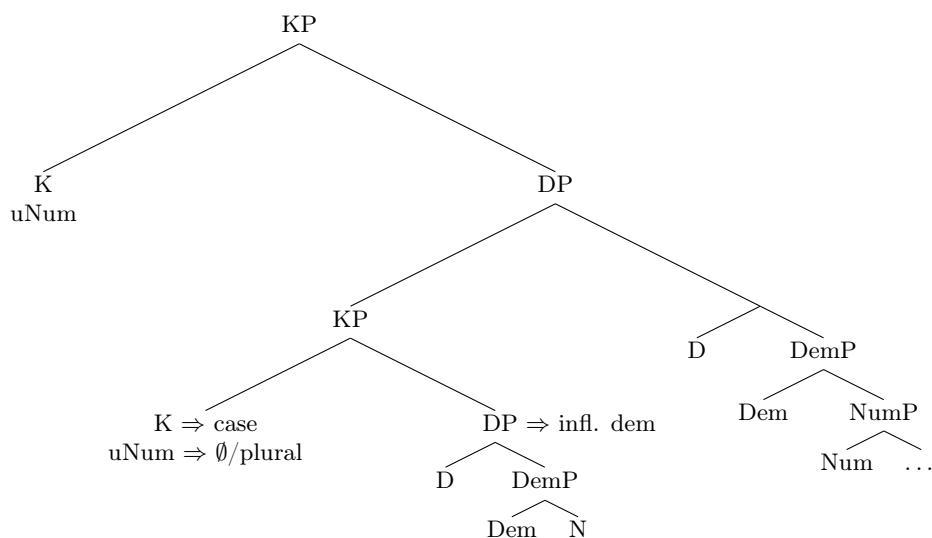
(90)



I posited that the plural marker of demonstratives is on K because other noun modifiers cannot appear with demonstratives. I captured this by having demonstratives spell out all of DP and placing the plural marker into K. The reason why in Section 9.7.3 I posited an uNum feature on the K of the head noun is because external probes must be able to access this feature in spite of the phasehood of K. These two lines of thought converge on the same conclusion: K has a uNum agreement feature.

Note also that having an uNum feature on the head noun's K makes the xNPs of the head noun and the inflecting demonstrative parallel (91). This is a good result.²⁸

(91)



The second piece of evidence for uNum on K comes from dialects with double plural marking in possessive noun phrases. Antal (1961) describes Órség Hungarian as a dialect that can optionally spell out either the first, the second or both plurals of (92).

- (92) a. **diszó-j-i-m-ak**
 pig-POSS-POSS.1SG-PL
 'my pigs'
 b. **ujj-a-ji-m-ak**
 pig-POSS-PL-POSS.1SG-PL
 'my fingers' (Antal, 1961)

Órség Hungarian

²⁸K on the demonstrative is entirely like the K of the head noun, except that the K feature of the demonstrative is without a value and therefore has to look for another K to agree with. Even this slight difference can be eliminated under the assumption that K is never base-generated with a value. Instead, it receives its value from a case-assigner via an Agree process. Note that this requires a Reverse Agree solution, which I have independently argued for in Chapter 8.

Kálmán (1966) reports similar data from Ormányság (part of today's Baranya county in the Transdanubia region) and Slavonia (part of today's Croatia).

- (93) a. lov-a-**ji-nk-ak**
horse-POSS-PL-POSS.1PL-PL
'our horses'
- b. öreg-e-**i-nk-ek**
elderly-POSS-PL-POSS.1PL-PL
'our elderly people' (Kálmán, 1966, p. 76.) Ormányság and Slavonia Hungarian

Végh (1959); Imre (1971) and Kiss (2006) also confirm that double plural marking is possible in these dialects.

- (94) a. ökr-e-**ji-nk-ek**
ox-POSS-PL-POSS.1PL-PL
'our oxen'
- b. tehen-e-**ji-m-ek**
cow-POSS-PL-POSS.1SG-PL
'my cows'
- c. tik-a-**ji-m-ak**
chicken-POSS-PL-POSS.1SG-PL
'my chickens' (Imre, 1971, p. 314.) Órség and Hetés Hungarian

I submit that the linearly second plural of these dialects is nothing else than the overt spellout of uNum on K.

Finally, I suggest that the plural marking of third person strong pronouns is also the spellout of uNum in K. I will motivate this proposal in detail in the next section.

9.8 Agreement plural on strong third person pronouns

9.8.1 Strong and weak third person pronouns

We have already seen that the third person singular pronoun \check{s} is always a strong pronoun, while the third person plural pronoun $\check{s}-k(et)$ is ambiguous between a strong and a weak pronoun.

(95) shows that the strong third person singular Accusative pronoun $\check{s}-t$ can appear either postverbally or preverbally, and it can be freely coordinated. Irrespective of its position, $\check{s}-t$ always has a human referent.

- (95) a. Nem lát-t-am $\check{s}-t$.
not see-PAST.1SG s/he-ACC
'I didn't see him/her.' [+ human]
- b. $\check{O}-t$ nem lát-t-am.
s/he-ACC not see-PAST.1SG
'I didn't see him/her.' [+ human]
- c. $\check{O}-t$ és a mellette levő-t.
s/he-ACC and the next.to.3SG being-ACC
'Him/her and the one next to him/her.' [+ human]

(96) shows that the third person plural pronoun $\check{s}-k$ can also appear post- and preverbally and in coordinations, but its interpretation depends on the position it occupies in the clause. In particular, the [+ human] interpretation is possible across the board, while the [- human] reading is restricted to postverbal position. As only weak pronouns can have a [- human] interpretation, I conclude that the preverbal and coordination-internal positions are reserved for strong pronouns.

When it comes to an overt third person plural pronoun in the same position, it doesn't surface in the expected *ő-k* form. Hungarian possessors exhibit anti-agreement with third person plural possessors: the plural feature of the possessor is marked only in the possessive agreement but not on the possessor itself. In other words, in this particular syntactic position *ő* and *ő-k* become homophonous. Similar anti-agreement is not attested with R-expression possessors.²⁹

(100) Anti-agreement with pronominal possessors

- a. az ő csont-j-uk
the he bone-POSS-POSS.3PL
'their bone'
- b. *az ő-k csont-j-uk
the s/he-PL bone-POSS-POSS.3PL
'their bone'
- c. *az ő-k csont-ja
the s/he-PL bone-POSS(3SG)
'their bone'

(101) No anti-agreement with R-expression possessors³⁰

- a. *a vő csont-j-uk
the son.in.law bone-POSS-POSS.3PL
'the sons-in-law's bone'
- b. a vő-k csont-ja
the son.in.law-PL bone-POSS(3SG)
'the sons-in-law's bone'
- c. *a vő-k csont-j-uk
the son.in.law-PL bone-POSS-POSS.3PL
'the sons-in-law's bone'

On a popular approach to this pattern, the overt plural marking of *ő-k* undergoes phonological deletion in order to avoid too many plural markers in one nominal expression (Csirmaz, 2006; Bartos, 1999; É. Kiss, 2002).

Now with an overt third person plural pronoun (the plurality is unambiguously indicated by the agreement), the possessor has to have [+ human] interpretation.

- (102) az ő hely-ük
the s/he place-POSS.3PL
'their place', eg. John and Mary's place, but not the boxes' place [+ human]

I conclude that the caseless or 'Nominative' possessor position is reserved for strong pronouns.

The second position where only strong pronouns are admitted is the apparent complement position of oblique case markers and PPs.³¹ The pronominal complement of oblique cases and PPs can remain covert, and in this case it can have either [+ human] or [- human] referent.

- (103) Csinál-t-am neki egy doboz-t.
make-PAST-1SG DAT.3SG a box-ACC
'I made a box for him/it.'
(The box can be for a person or a storage place for a thing.) [± human]

²⁹Anti-agreement doesn't obtain with subject-verb agreement either.

- (i) No anti-agreement with pronominal subjects
- | | |
|---|---|
| <p>a. ő-k ír-nak s/he-PL write-3PL 'they write'</p> | <p>b. *ő ír-nak s/he write-3PL 'they write'</p> |
|---|---|

³⁰Recall that in Standard Hungarian R-expression possessors don't induce any agreement on the possessee. This is what rules out (101-c).

³¹The use of the qualifier 'apparent' will be clarified below.

- (104) Küld-ök hozzá egy doboz-t.
 send-1SG ALLAT.3SG a box-ACC
 ‘I send to her/it a box.’
 (I send the box to a person, or I send a box to go with some thing.) [+ human]

As expected, an overt σ is compatible only with the [+ human] interpretation.³²

- (105) Csinál-t-am ő-neki egy doboz-t.
 make-PAST-1SG s/he-DAT.3SG a box-ACC
 ‘I made a box for him.’
 (The box can be for a person or but not a storage place for a thing.) [+ human]
- (106) Küld-ök ő-hozzá egy doboz-t.
 send-1SG s/he-ALLAT.3SG a box-ACC
 ‘I send a box to her.’
 (I send the box to a person, but I cannot send a box to go with some thing.) [+ human]

The overt third person plural pronoun behaves exactly as in the caseless possessor position. That is, its *-k* marker does not appear on the surface, its plural reference is only recoverable from the agreement on the case/P, and it cannot have a [- human] reference.

- (107) Csinál-t-am ő-neki-k egy doboz-t.
 make-PAST-1SG s/he-DAT-3PL a box-ACC
 ‘I made a box for him.’
 (The box can be for a person or but not a storage place for a thing.) [+ human]
- (108) Küld-ök ő-hozzá-juk egy doboz-t.
 send-1SG s/he-ALLAT-PL a box-ACC
 ‘I send a box to her.’
 (I send the box to a person, but I cannot send a box to go with some thing.) [+ human]

Again, I conclude that the apparent complement position of oblique case markers is reserved for strong pronouns.

9.8.3 Interim summary and emerging generalizations

To summarize the discussion, the following positions admit only strong pronouns: preverbal, co-ordination internal, caseless possessor positions and the apparent complement position of oblique cases and Ps. The latter two can be unified by characterizing them as positions not in a local configuration with a case marker.

That caseless possessors are not in a local configuration with a case marker is trivially true. Cardinaletti and Starke (1999) argue that weak pronouns must always be in a local configuration with a case marker or a case position. This straightforwardly explains why caseless possessors must be strong.

The apparent complement position of oblique cases and Ps is also not in a local configuration with a case marker. At first blush, this seems contradictory. However, recall from Chapter 7 that the overt pronoun that co-occurs with case markers is actually not in the complement position. This is shown by the fact that the case markers are phonologically not integrated with the pronoun: they cannot show vowel harmony, and the regular consonant-assimilation of the Comitative suffix cannot take place. These facts would be completely inexplicable if the pronoun was actually embedded by the case marker. In Chapter 7 I adopted Moravcsik’s (2003) position that the overt

³²The ‘possessive anaphor’ *-é*, which I analyzed in Chapter 8 as the Genitive case, is exceptional among the oblique cases because it requires an overt complement. In other words, a pronominal complement of *-é* cannot be dropped. However, the overt pronoun with *-é* behaves exactly like the pronouns that co-occur with other oblique case markers: it can only receive a [+ human] interpretation, and it cannot have an overt plural marker. I assume that the reason why *-é* requires an overt host has no deep syntactic reason, it is simply phonologically less independent than the other oblique case markers. Note that the Accusative case marker behaves in a similar fashion with regard to *pro*-drop: its pronominal complement must be overt and cannot be dropped.

pronoun is in some adjoined position. Irrespective of where that position is, it is certainly not in a local configuration with the case marker, therefore the appearance of weak pronouns is excluded.³³

I also propose that the same analysis holds for the apparent pronominal complement of dressed Ps.³⁴ Dressed Ps don't show vowel harmony under any circumstances, therefore the level of phonological integration into the pronoun cannot serve as a clue here. However, the pronominal 'complements' of dressed Ps behave exactly like the apparent pronominal 'complements' of oblique case markers: the pronoun can remain covert and receive either a [+ human] or a [- human] interpretation; if they overtly appear, however, then they can only have a [+ human] referent and plural pronouns lose their overt plural marking.

- (109)
- | | | |
|----|---|-----------|
| a. | a mellette levő the next.to.3SG being 'the one next to it' (the Ground can be a person or a thing) | [± human] |
| b. | az ő-mellette levő the s/he-next.to.3SG being 'the one next to him/her' (the Ground can be a person but not a thing) | [+ human] |
| c. | az ő mellett-ük levő the s/he next.to-3PL being 'the one being next to him/her' (the Ground can be a person but not a thing) | [+ human] |

Therefore it stands to reason to assume that the overt pronouns that appear with dressed Ps do not occupy the real complement position of the P, but are adjoined exactly like the pronominal 'complements' of oblique case markers. This analysis is also consistent with the structure proposed for dressed Ps in Chapter 5. There I argued that dressed Ps spell out a span of heads, the lowest of which is an oblique K. In light of this analysis, the uniform behaviour of pronominal complements of oblique cases and dressed Ps is correctly predicted to be uniform.

I further suggest that the adjoined pronoun in this case is of category DP, not KP. This is supported by the following considerations. Firstly, the adjoined pronoun never has a visible case marker of its own, therefore it can only be either caseless or Nominative. Secondly, the overt pronoun identifies the features of the covert pro, and therefore it is plausibly of the same category. The covert pro is the complement of KP, that is, of category DP. This in turn means that the adjoined pronoun is also most plausibly DP. Finally, the covert pro inherits its feature specifications from its antecedent. If the overt pronoun is present, it is the antecedent of the pro. If the overt pronoun was Nominative, pro would inherit this specification. However, this would lead to a feature clash with the oblique pronoun that embeds pro. I conclude that it is at the very least plausible that the overt pronoun is of category DP.

We are now in a position to make some hitherto unnoticed generalizations. As far as the weak

³³Note that it is not the case that case-markers cannot be phonologically integrated into pronouns in general. Inflecting demonstratives, which need to be embedded under a K layer (c.f. Chapter 8) show regular phonological integration with case markers (and dressed Ps). Case markers show vowel harmony with inflecting demonstratives, the final *z* of the demonstrative undergoes assimilation to a following consonant (or it is dropped in preconsonantal position), and the *v* of the Comitative case suffix also undergoes consonant assimilation to the preceding consonant *z*.

- | | | |
|------|--|---------------------------------------|
| (i) | a. én-nál-am I-ADESS-1SG 'with me' | b. ennél this.ADESS 'at this' |
| (ii) | a. én-vel-em I-COMIT-1SG 'with me' | b. ezzel this.COMIT 'with this' |

(i) and (ii) show that inflecting demonstratives, which must be in the complement position of K, behave differently from apparent personal pronominal complements of K. This, in turn, strongly supports the view that the latter do not occupy the actual complement position of K.

³⁴This also trivially holds for the apparent complement of naked Ps, and naked Ps always take a nominal complement with the help of an oblique case marker.

third person plural pronoun is concerned, it always appears in the form δ - k . Whenever δ - k loses the overt plural marker without losing the plural meaning, it is always the strong pronoun that is used.

- (110) Generalization 1:
The weak pronoun δ - k never loses its plural marker.
- (111) Generalization 2:
The strong pronoun can lose its plural marker without losing the plural meaning.

If the above line of reasoning is correct, and the apparent complement of oblique pronouns and dressed Ps is of category DP without being embedded in a KP, then we can also make the following generalization:

- (112) Generalization 3:
The strong pronoun δ - k loses its overt plural marking in caseless contexts.

In unequivocally case-marked positions, that is, as Nominative subjects and as Accusative objects, the strong pronoun δ - k cannot lose its case marker without losing the plural meaning. The contexts below feature δ and δ - k in the preverbal position incompatible with weak pronouns.

- (113) a. \check{O} - k jön- nek . b. * \check{O} jön- nek . c. \check{O} jön.
s/he-PL come-3PL s/he come-3PL s/he come.3SG
'They are coming.' 'They are coming.' 'S/he is coming.'
- (114) a. \check{O} - k - et nem lát- t - am . b. \check{O} - t nem lát- t - am .
s/he-PL-ACC not see-PAST.1SG s/he-ACC not see-PAST.1SG
'I didn't see them.' 'I didn't see him/her.'
NOT: 'I didn't see them.'

Another, more illuminating way of formulating Generalization 3 is given below:

- (115) Generalization 3.b:
The overt appearance of the plural marker on the strong δ - k depends on the presence of an embedding K layer.

In the next section I will present a proposal why this is so.

9.8.4 Strong pronouns have an agreement plural: an account of anti-agreement with possessors

Previously, I suggested that the structure of weak third person plural pronouns is as in (116).

- (116)
-
- ```

graph TD
 DP --> D["D
(3rd person)"]
 DP --> NumP
 NumP --> Num["Num
[group]"]
 NumP --> NP
 NP --> delta["δ"]

```

Let us now turn to the structure of strong third person plural pronouns and their loss of plural marking (also known as anti-agreement). This phenomenon has been discussed in various works, see e.g. den Dikken (1998, 1999); Bartos (1999); É. Kiss (2002); Chisarik and Payne (2003); Csirmaz (2006) for discussion. Bartos (2001a) and Csirmaz (2006), for instance, propose an economy constraint to capture the pattern. They suggest that when both the possessor and the possessee are marked with the plural suffix, one of the plurals is deleted due to economy considerations. However, it cannot capture the fact that it is the plural of the pronoun that is deleted rather than

the plural of the agreement. In other words, there is no principled way to explain why (117-a) is in and (117-b) is out rather than the other way around.

- (117) Anti-agreement with pronominal possessors
- a. az ő csont-j-uk  
the he bone-POSS-POSS.3PL  
'their bone'
  - b. \*az ő-k csont-j-uk  
the s/he-PL bone-POSS-POSS.3PL  
'their bone'
  - c. \*az ő-k csont-ja  
the s/he-PL bone-POSS(3SG)  
'their bone'

If one of the plural markers undergoes deletion, one would expect that it is the uninterpretable agreement plural that goes, rather than the interpretable plural of the pronoun. In what follows, I will outline an analysis in which the deleted plural is indeed an agreement plural.

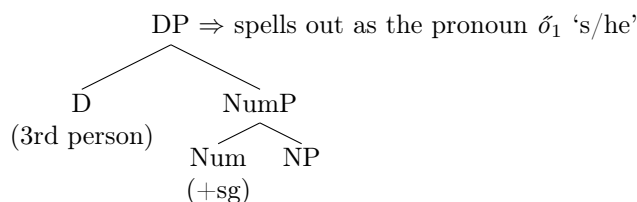
In my account of the strong third person plural pronoun I will take Generalization 3.b as my point of departure. Garden variety plural marking is independent of the presence of the case layer: caseless R-expression possessors happily co-occur with plural marking.

- (118) No anti-agreement with R-expression possessors<sup>35</sup>
- a. \*a vő csont-j-uk  
the son.in.law bone-POSS-POSS.3PL  
'the sons-in-law's bone'
  - b. a vő-k csont-ja  
the son.in.law-PL bone-POSS(3SG)  
'the sons-in-law's bone'
  - c. \*a vő-k csont-j-uk  
the son.in.law-PL bone-POSS-POSS.3PL  
'the sons-in-law's bone'

There is no doubt that this plural marking is the exponent of the garden variety plural in Num. If the plural marking of third person pronouns behaves differently, and its presence is tied to the K layer, then the most reasonable explanation is that that plural is actually in the K layer. In other words, the plural marking we see on third person pronouns is the spellout of the agreemental plural in K, argued for in Section 9.7.

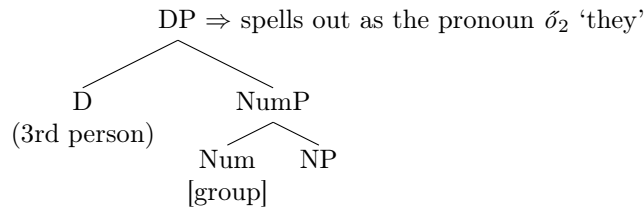
When strong third person pronouns appear without a KP layer on top, the third person singular and plural pronoun always come out as homophonous, as *ő*. I suggest that we should take this fact at face value: the strong pronouns *s/he* and *they* are homophonous in Hungarian. I propose that their structure is as in (119) and (120). Third person strong pronouns spell out the whole DP. The singular version has a singular specification in Num, and the plural version has a plural specification in Num, but their phonological form is the same.

(119)



<sup>35</sup>Recall that in Standard Hungarian R-expression possessors don't induce any agreement on the possessee. This is what rules out (118-c).

(120)



In caseless contexts, their form is indistinguishable. A probe that agrees with (119) or (120), however, can see their number specification (they are not buried under a phase head), and the agreement overtly reflects the singular vs. plural specification in  $\delta_1$  and  $\delta_2$ . This is the derivation of the anti-agreement phenomenon: the probe in the functional sequence of the possessee unambiguously shows the number specification of the caseless possessor.<sup>36</sup> The reason why R-expression possessors keep their plural marking is that their plural marking is in Num, thus the presence or absence of the K layer doesn’t make a difference to its overt appearance.

In case strong third person pronouns are embedded under a K layer, their phonology becomes clearly distinguishable:  $\delta$  versus  $\delta$ -*k*. I suggest that with third person pronouns, the agreemental Num feature in K is spelled out overtly. This can be thought of as an instance of allomorphic variation: the uNum feature of K receives a zero spellout in the default case but it takes the form *-k* if it follows a plural third person pronoun. Recall that allomorphic variation is also attested with the exponent of Num: it is *-k* in the default case and *-i* if it follows a possessedness marker *-ja/-je/-a/-e*.

The uNum agreement feature, as before, can see the number specification of  $\delta_1$  and  $\delta_2$ , and its phonological shape is adjusted accordingly:  $\emptyset$  in the default case and with singular third person pronouns, *-k* with plural third person pronouns. The reason why there is no anti-agreement in subject-verb agreement is that subjects are embedded under a Nominative case layer, hence the agreement explicitly shows their different number values.

(121) No anti-agreement with pronominal subjects

- a.  $\delta$ -k    ír-nak  
       s/he-PL write-3PL  
       ‘they write’
- b. \* $\delta$     ír-nak  
       s/he write-3PL  
       ‘they write’

To sum up the discussion, I suggested that the third person plural pronouns that lose their overt plural marking are always strong pronouns, and the loss of the plural marking is tied to caseless environments. I proposed that this is because the plural marking of strong pronouns *is* in K: third person singular and plural pronouns are homophonous, and the number difference becomes visible only when some probe agrees for the number feature contained in the pronoun.

## 9.9 Conclusions

The central problem of this chapter was the distribution of the Hungarian plural marker. After reviewing evidence for the cross-linguistic non-complementarity of classifiers and the plural, I turned to the complementarity in Hungarian. I showed that the Hungarian plural marker is akin to the so-called ‘plural classifiers’ of South East Asian languages, and I suggested that it spans the

<sup>36</sup>This analysis is in part reminiscent to the account presented in Chisarik and Payne (2003), though there are important differences between the two approaches. Chisarik and Payne (2003) argue that apparently ‘Nominative’ possessors bear Genitive case, in fact, and they suggest that Genitive marked singular and plural third person pronouns are homophonous. Crucially, in their theory the homophony materializes only in this particular context, and the real Nominative  $\delta$  and  $\delta$ -*k* do feature the same lexical entry. The proposal advanced here has two major departures from this position: I take ‘Nominative’ possessors to be caseless, and for me it is caseless singular and plural third person pronouns that are homophonous.

Cl and the Num heads. This accounts for its complementary distribution with classifiers. I further argued that the complementarity with counters is due to the semantics of the [group] feature.

As for the associative plural and its relationship to the ordinary plural, I suggested that they share the [group] feature. This accounts for the similarities in their distribution. I attributed the semantic differences between them to the bundling of [group] together with other features in AssPl. I derived their differences from their position in the functional sequence and a modified Béjar-Rezac type of approach to Agree.

I also argued that the syntactic and semantic plural feature of first and second person plural pronouns comes from the associative plural marker rather than the ordinary plural. These pronouns contrast with third person plural pronouns, which receive their plural specification from the Num head the same way as garden variety nouns do.

The standard approach to the Hungarian plural marker is that it is the exponent of the Num head. For the most part, I followed this approach, but I also argued that the plural marker sometimes instantiates agreement. Specifically, I argued for an uNum feature in K, which occurs overtly on inflecting demonstratives, strong third person pronouns and in the possessive xNPs of certain dialects.

In all cases, the plural agreement is linearized in front of the functional head that it is added to. In Chapter 6 I have already anticipated that modeling agreement markers in terms of features added to functional heads does not predict whether an agreement feature spells out in front of or after the exponent of the head with which it is associated. It is usually tacitly assumed that agreement features linearize after the exponent of the relevant head. This, however, is not a logical necessity, and in principle nothing prevents agreement features from spelling out in front of the the exponent of the head with which they are associated. This possibility appears to materialize with agreemental uNum features in Hungarian.

The generalization that governs the spellout of the plural Num head and the plural agreement feature in K is that (in Standard Hungarian) only one of them can be overt at a time. I argued that this is an OCP like effect, and it is line with the general principle that requires sparing use of the plural in the Hungarian KP. Of the Num head and the uNum feature of K, the one that is spelled out overtly by *-k* is the lowest one that can. In the default case, this is the Num head, and the uNum feature remains silent. The uNum in K is spelled out overtly by *-k* only when the Num head doesn't, for instance when it is not in the structure in the first place or it is spelled out as part of a bigger constituent. This is the case with inflecting demonstratives and third person strong pronouns, which spell out a DP constituent.

Admittedly, there is more to be said about whether the linearization of the plural agreement morpheme can be traced back to some deeper principle (e.g. the shape of the functional sequence or a structured bundle) or it is a linearization specification baked into the lexical entry of the agreement plural (c.f. Bye and Svenonius, forthcoming). With the theoretical toolbox concerning agreement that I have adopted in this thesis, I see no way of going beyond the descriptive generalization at the moment, and I have to leave the resolution of this issue for further investigation.

## Part III

# The linearization problem





## Chapter 10

# The functional sequence meets the linearization problem

### 10.1 Introduction

In the previous chapters, we have seen how the spellout algorithm and the treatment of agreement constrain the possible forms of the functional sequence underlying linguistic utterances. In this last chapter we turn to the interaction of the functional sequence and linearization.

That the chosen linearization algorithm influences the setup of the functional sequence is hardly equivocal. Given a particular surface order and a small set of movement (and if one makes use of them, also morphological) operations that can affect the structure, the possible form of the underlying sequence is highly constrained. I illustrate here with two short examples.

As the first example, consider the relative order of the stem and its suffixes in (1).

- (1) noun–suffix<sub>1</sub>–suffix<sub>2</sub>

If the linearization algorithm adopted for the formation of morphological words is strictly head movement, then the underlying structure is unambiguously (2-a).

- (2) a. [ suffix<sub>2</sub> [ suffix<sub>1</sub> [ noun ]]] ⇒  
b. [ noun–suffix<sub>1</sub>–suffix<sub>2</sub> [ ~~noun~~–~~suffix<sub>2</sub>~~ [ ~~noun~~ ]]]

On the other hand, if morphological words can also be formed by phrasal movement, then the functional sequence might also be as in (3-a).

- (3) a. [ suffix<sub>1</sub> [ suffix<sub>2</sub> [ noun ]]] ⇒  
b. noun [ ( ~~noun~~ ) suffix<sub>1</sub> [ ( ~~noun~~ ) suffix<sub>2</sub> [ ~~noun~~ ]]]

As the second example, suppose that the chosen across the board linearization principle is Brody's (2000a) Mirror. Mirror, formally given in (4), is an axiom of Brody's Mirror Theory.

- (4) Mirror  
The syntactic relation "X complement of Y" is identical to an inverse-order morphological relation "X specifier of Y".  
(Brody, 2000a, p. 42.)

Informally speaking, (4) amounts to saying that a sequence of heads that take each other as complement is always spelled out in the inverse order (c.f also Baker, 1985): if X is the syntactic complement of Y, then X precedes Y in the linear order. In other words, if a morpheme A is morphologically not dependent on (i.e. a suffix to, incorporated into or cliticizes onto) a morpheme B, then B is not the complement of A. Instead, B must be a specifier.

This has a clear and immediate effect if we consider English auxiliaries. English auxiliaries are generally considered to spell out head positions on the clausal spine, such that they take (each other and) the lexical verb as a syntactic complement. However, as auxiliaries do not form

a morphological word with the lexical verb (or each other, for that matter), Mirror forces the conclusion that the verb is not a syntactic complement to the auxiliaries. Instead, it has to sit in a specifier position as in (5) (Brody, 2000b, p. 29., ex. 2., Brody, 2004, p. 149. ex. 2.).



It is thus clear that given a particular linearization algorithm, there is only a narrow space in which one can work one's way from the surface order back to the base-generated sequence.

In the previous chapters, I have set up a functional sequence for the Hungarian nominal projection and identified the merge-in position of various nominal modifiers. The purpose of this chapter is to determine what kind of linearization algorithm yields the surface order from this in the shortest, cleanest and most elegant way. The reason why this is necessary is twofold. On the one hand, while Hungarian features the base-generated order  $\text{Dem} > \text{Num} > \text{Adj} > \text{N}$ , I argued that some constituents move internally to KP. I must make sure that getting these constituents to their surface position does not cause a clash with any other assumptions I made throughout the dissertation. On the other hand, in contrast to many linguists, I did not use word order either as the only or as the main source of evidence for the functional sequence. I did not make any knock-down arguments on the basis of word order either. Up to this point, my sources of evidence for the functional sequence were: i) compositional semantics, ii) scope, iii) distribution, iv) portmanteau morphemes (the assumption that the features packed into lexical items must be in a local configuration in a tree where the lexical item can be felicitously used), v) universalist considerations and vi) word order.

Of these, compositional semantics was the primary criterion, and everything else had to work around it. If different considerations pointed to different conclusions, then it has always been the semantic consideration that I was unwilling to give up. Word order was the least important source of evidence. Most of the time it didn't contradict my assumptions, therefore there was no need to discuss it.

The kind of lexicalization algorithm I used and the existence of agreement loosen up the relationship between the functional sequence and word order, however. Therefore I must show now that the assumptions about spellout and agreement in the thesis smoothly feed into a pretty picture about word order, too.

## 10.2 Order in the Hungarian nominal phrase

### 10.2.1 Pre-N: lack of roll-up and cyclic N(P) movement

Building on cross-linguistic investigations of word order by Greenberg (1963) and Hawkins (1983), Cinque (2005a) determines the universal underlying order of demonstratives, numerals, adjectives and the noun as in (6).

- (6)  $\text{Dem} > \text{Num} > \text{Adj} > \text{N}$

This is precisely the order that we find in the Hungarian noun phrase.

- (7) eme három szép lány  
 this three beautiful girl  
 'these three beautiful girls'

This means that Hungarian doesn't employ either cyclic or roll-up NP movement in the noun phrase.

This is not to say that Hungarian lacks KP-internal phrasal movements altogether. We have already seen that KP-internal phrasal movement affects possessors and inflecting demonstratives. Possessors move from spec, PossP to spec, Poss2P (pronominal caseless 'Nominative' possessors and *-é* possessors) or to spec, DP (caseless 'Nominative' non-pronominal possessors and non-pronominal *-é* possessors) or adjoin to KP (dative possessors). Inflecting demonstratives move



- c. a javaslat, [amit tegnap terjeszt-ett-ek elő], ...  
 the proposal that yesterday put-PAST-3PL forth  
 ‘the proposal, which was put forth yesterday, ...’ non-restrictive RC

Rijkhoff (2002, ch. 6.3.3. and p. 310.) reports that Dutch, Georgian and Turkish, as well as two other Finno-Ugric languages, Finnish and Udmurt, exhibit the exact same pattern as Hungarian: participial relatives are prenominal (c.f. Chapter 4), while finite relatives are postnominal.<sup>1</sup>

The other types of postnominal phrasal modifiers are exemplified in (13) through (15).

- (13) a javaslat hogy költöz-z-ünk Budapest-re  
 the proposal that move-IMP-1PL Budapest-SUBLAT  
 ‘the proposal that we should move to Budapest’ *hogy*-clause
- (14) a javaslat-ot, a ti-é-d-et  
 the proposal-ACC, the you-é-POSS.2SG-ACC  
 ‘the proposal, your one’ appositive
- (15) a. bízalom a munkatárs-ak-ban  
 trust the colleague-PL-INESS  
 ‘the truest in the colleagues’  
 b. a tárgyalás-ok a fegyverszünet-ről  
 the talk-PL the armistice-DELAT  
 ‘the talks about the armistice’  
 c. a kép a kandalló fölött  
 the picture the fireplace above  
 ‘the picture above the fireplace’ oblique modifier

While in this thesis I will have very little to say about postnominal phrasal modifiers, I would like to make two short remarks on them. The first remark concerns the merge-in position of postnominal phrasal modifiers. It has been observed that in spite of their postnominal position, none of them can be focussed together with the noun; if the noun is focussed, these modifiers must be left in situ (Horvath, 1986; Kenesei, 1992, 1994; Bartos, 1999; É. Kiss, 2002). Given that focussing is the most reliable constituency test in Hungarian, this points to the conclusion that none of these phrases form a constituent with – and so none of them actually instantiate a complement of – the noun.<sup>2</sup> Instead, they are higher in the structure.<sup>3</sup>

The second remark concerns the surface position of finite relatives and *hogy*-clauses. Across languages, there is an overwhelming preference for relative clauses to follow the noun irrespective of the order of V and O (Hawkins, 1983; Svenonius, 2007; Cinque, 2005b; Biberauer et al., 2007, among others).<sup>4</sup> This is generally linked to the length or complexity of relative clauses, and so the reasoning obviously extends to Hungarian *hogy*-clauses as well.

That complex material (i.e. a constituent which is long or heavy in terms of phonology or structure) is preferred at the right edge of a domain is an old observation. Behagel formulated his *Gesetz der Wachsenden Glieder* (‘The Law of Growing Constituents’) as early as 1932 (see É. Kiss, 2008 for its recent application to word order in the Hungarian postverbal field). This tendency has been formulated under different names, such as Dik’s (1997) Principle of Increasing Complexity and LIPOC or Hawkins’s (1983) Heavyness Serialization Principle.<sup>5</sup>

<sup>1</sup>According to Mallinson and Blake (1981, p. 287.), the use of postnominal relative clauses is encouraged by prescriptive grammars, but in practice they are not widely used. Rijkhoff (2002) also mentions that English relative clauses cannot be directly translated into postnominal relatives in Turkish.

Finnish and Udmurt also share with Hungarian the flexible positioning of participial relatives.

<sup>2</sup>This is corroborated by the fact that these modifiers also preferably or obligatorily appear separated from the noun when it functions as a possessor (Bartos, 1999).

<sup>3</sup>In the literature on Hungarian, this is rather uncontroversial for relative clauses and *hogy*-clauses. É. Kiss (2002) treats PP-complements as true complements of the noun, but see Adger (to appear) for a different view (not based on Hungarian).

<sup>4</sup>Moreover, VO languages have N-RC order as a very strong correlation (Mallinson and Blake, 1981, ch. 3.3., Dryer, 1992; Cinque, 2005b), and Hungarian has a default SVO order. Hungarian is an infamous non-configurational language that allows a wide variety of constituent orders, but I think it is safe to say that in the unmarked case SVO order ensues.

<sup>5</sup>See also Rijkhoff (2002) and Siewierska (1988) for discussion on the interaction of heavyness and word order.

- (16) Principle of Increasing Complexity  
There is a preference for ordering constituents in an order of increasing complexity.  
(Dik, 1997, p. 404.)
- (17) Language Independent Preferred Order of Constituents (LIPOC)  
Other things being equal, constituents prefer to be placed in an order of increasing complexity, which is defined as follows:  
a. clitic < pronoun < noun phrase < adpositional phrase < **subordinate clause**;  
b. for any category, X: X < X coordinating element X;  
c. for any categories X and Y: X < X [subordinating element Y].  
(Dik, 1997, p. 411.)
- (18) Heavyness Hierarchy:  

$$\text{Rel} \geq \text{Gen} \geq \text{Adj} \geq \left\{ \begin{array}{l} \text{Dem} \\ \text{Num} \end{array} \right\}$$
 where " $\geq$ " means 'grater than, or equal to, in heavyness'  
(Hawkins, 1983, p. 81.)
- (19) Heavyness Serialization Principle:  

$$\text{Rel} \geq_R \text{Gen} \geq_R \text{Adj} \geq_R \left\{ \begin{array}{l} \text{Dem} \\ \text{Num} \end{array} \right\}$$
 where " $\geq_R$ " means 'grater than, or equal to, in heavyness'. That is, heavier noun modifiers occur to the right. (Hawkins, 1983, p. 81.)

Hawkins suggests that heavyness has the following components: length and quantity of morphemes, quantity of words, syntactic depth of branching nodes and inclusion of dominated constituents. Unlike with English heavy NP shift, for instance, the length and quantity of morphemes and words that constitute Hungarian nominal modifiers is immaterial for their surface position; the position always depends on the category of the modifier. Compare the lengthy participial relative in (20) and the shorter finite relative and *hogy*-clause in (21).

- (20) a [hosszas vita és egyeztetés után tegnap elfogad-ott] törvény szerint  
the lengthy debate and xyz after yesterday accept-PRTCP law according.to  
...  
'according to the law that was accepted yesterday after a lengthy debate and collation'
- (21) a. a törvény, ami igazságtalan, ...  
the law which unjust  
'the law, which is unjust, ...'  
b. a javaslat, hogy marad-j-unk  
the proposal that stay-imp-1pl  
'the proposal that we should stay'

Thus if complexity is at work in the positioning of finite relatives and *hogy*-clauses, then the criterion of complexity is the amount of functional structure internal to the modifier rather than its phonological length (participial relatives admittedly have a smaller functional sequence than either finite relatives or *hogy*-clauses).<sup>6</sup>

In the rest of the chapter I will not have much to say about postnominal phrasal modifiers, and I will focus on postnominal affixes instead. The interested reader is encouraged to consult Kenesei (1992, 1994); Bartos (1999) and É. Kiss (2002), among others, for more details on postnominal phrasal modifiers.

<sup>6</sup>It is not obvious, though, how a complexity account would extend to appositives and oblique modifiers. These cases might require a different explanation (though Bartos (1999) proposes that modifiers of the type (15-c) may be reduced relatives). See É. Kiss (2002) for a proposal about oblique modifiers.

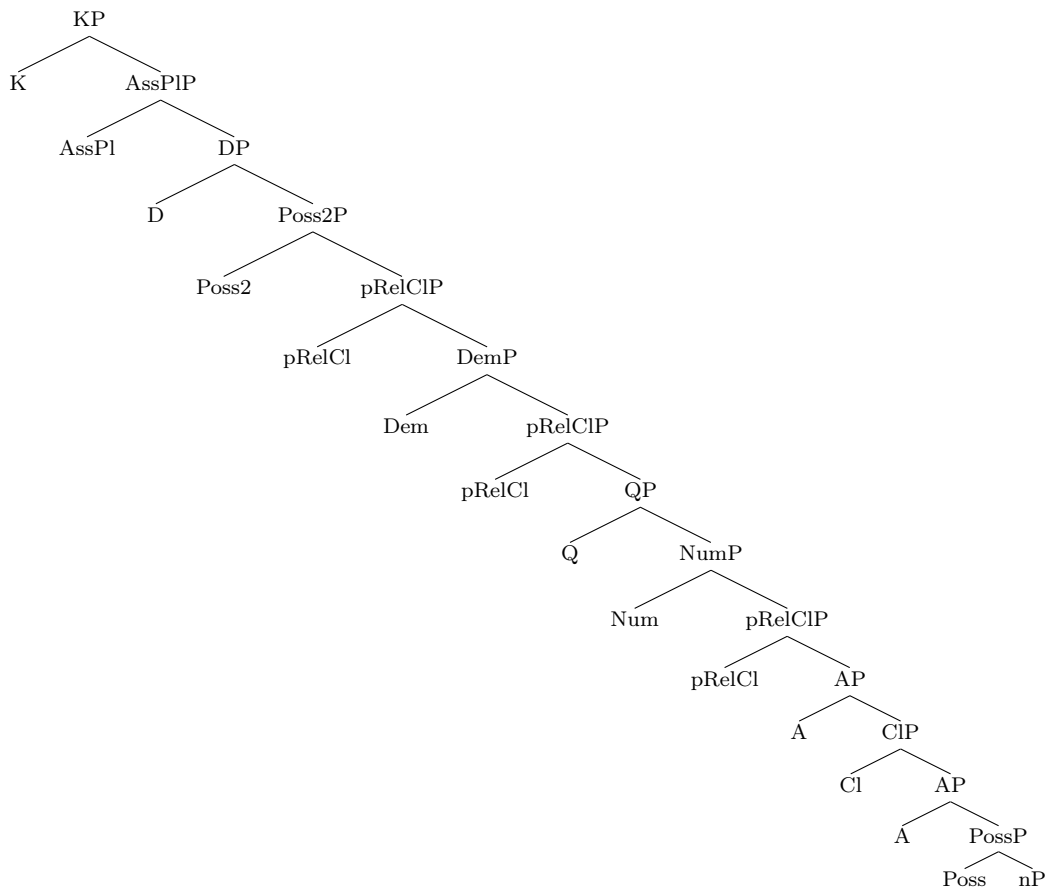
### 10.2.4 Interim summary: the functional sequence of the nominal phrase

Empirically, the surface order of modifiers in the Hungarian noun phrase is as in (22).<sup>7</sup>

- (22) a. dative possessor > inflecting demonstrative/R-expression caseless or *-é* possessor > definite article > pronominal caseless or *-é* possessor > participial rel. cl. > non-inflecting demonstrative > participial rel. cl. > quantifier > numeral > participial rel. cl. > adjective > classifier > adjective >
- b. > noun >
- c. > possessedness suffix *ja/-je/-a/-e* > plural suffix > possessive agreement suffix > associative plural suffix > case suffix/dressed P > naked P

The investigations in Chapters 2 through 9 gave rise to (23) as the hierarchy underlying (22).

(23)



The prenominal order of modifiers corresponds to their base-generated order (except in the case of possessors and inflecting demonstratives). Phrasal modifiers except for finite relative clauses are all prenominal. Thus unlike in many Romance or Semitic languages, N(P) does not undergo cyclic or roll-up movement. Therefore apart from the movement of possessors and inflecting demonstratives already discussed above, the prenominal order is fairly uninteresting.

The most interesting issue for linearization is how to bring together the noun and its affixes: as much as five suffixes (plus a non-suffixal P) may accumulate on the nominal head. In the next section I will run various linearization algorithms on (23) to see what they have to say about the derivation of noun-suffix and suffix-suffix order.

<sup>7</sup>(22) shows every noun modifier investigated in this thesis. Some pairs are mutually exclusive, for instance the plural and the associative plural don't co-occur with numerals, inflecting demonstratives don't co-occur with non-inflecting demonstratives, dative possessors don't co-occur with caseless possessors, etc.

## 10.3 Putting the pieces together

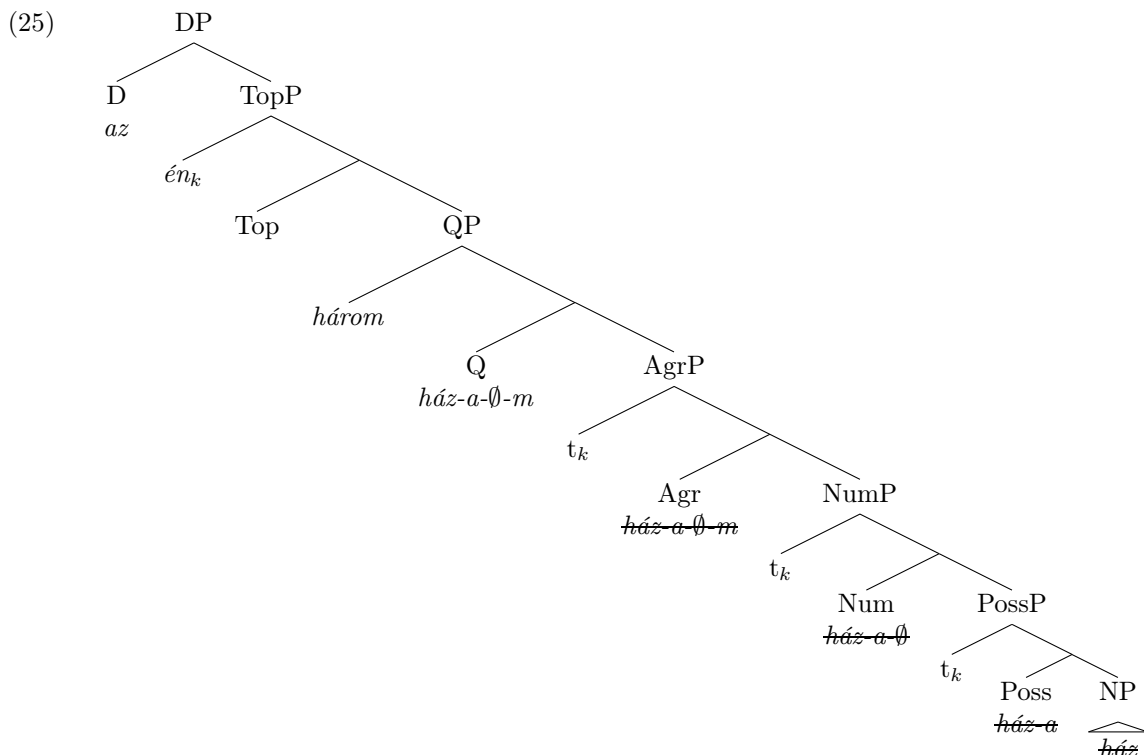
### 10.3.1 Head movement

Head movement as an explanation of complex head formation enjoyed wide currency in Government and Binding. Later work uncovered several theoretical problems with head movement, such as its counter-cyclic nature or the way it complicates the c-command requirement on traces. These problems sparked a lively debate about the status of head movement in syntactic theory. Some researchers still use head movement in its original form (Holmberg, 2000; Julien, 2002, 2007; Roberts, 2010), others have reconceptualized it in terms of reprojection (Bury, 2003; Koenean, 2000; Surányi, 2005, 2007, 2008; see in particular Georgi and Müller, 2010 for the application of this idea to noun phrases). A popular approach is to recast head movement in terms of (remnant) phrasal movement (Koopman and Szabolcsi, 2000; Mahajan, 2003; Nilsen, 2003; Müller, 2004 and Bentzen, 2007 among many others on verbal projections, and Shlonsky, 2004 and Cinque, 2005a on DPs). Finally, there have also been attempts to see it as a partly syntactic, partly morphological operation (Matushansky, 2006a) as well as to relegate it from narrow syntax entirely into the PF component (Chomsky, 2001b; Boeckx and Stjepanović, 2001).

Whatever its exact mechanism is, and whichever component of grammar it takes place in, the effect of head-movement is the displacement of a head to a higher position. Consequently, the analysis of the Hungarian noun+suffixes complex in terms of head movement raises the same set of problems as the head movement analysis of the English verb+suffix complex. That is, while the suffixes do end up on the head, the head certainly does not appear to be as high as the merge-position of the suffixes. If K and N, for instance, were associated by head movement, then N would end up very high and would be predicted to precede all nominal modifiers, contrary to fact.

Knittel's (1998) analysis particularly clearly displays the drawbacks of the head-movement analysis. His example (80), which is the derivation for (24), is reproduced here as (25).<sup>8</sup>

- (24) az én három ház-am  
 the I three house-POSS.1SG  
 'my three houses'

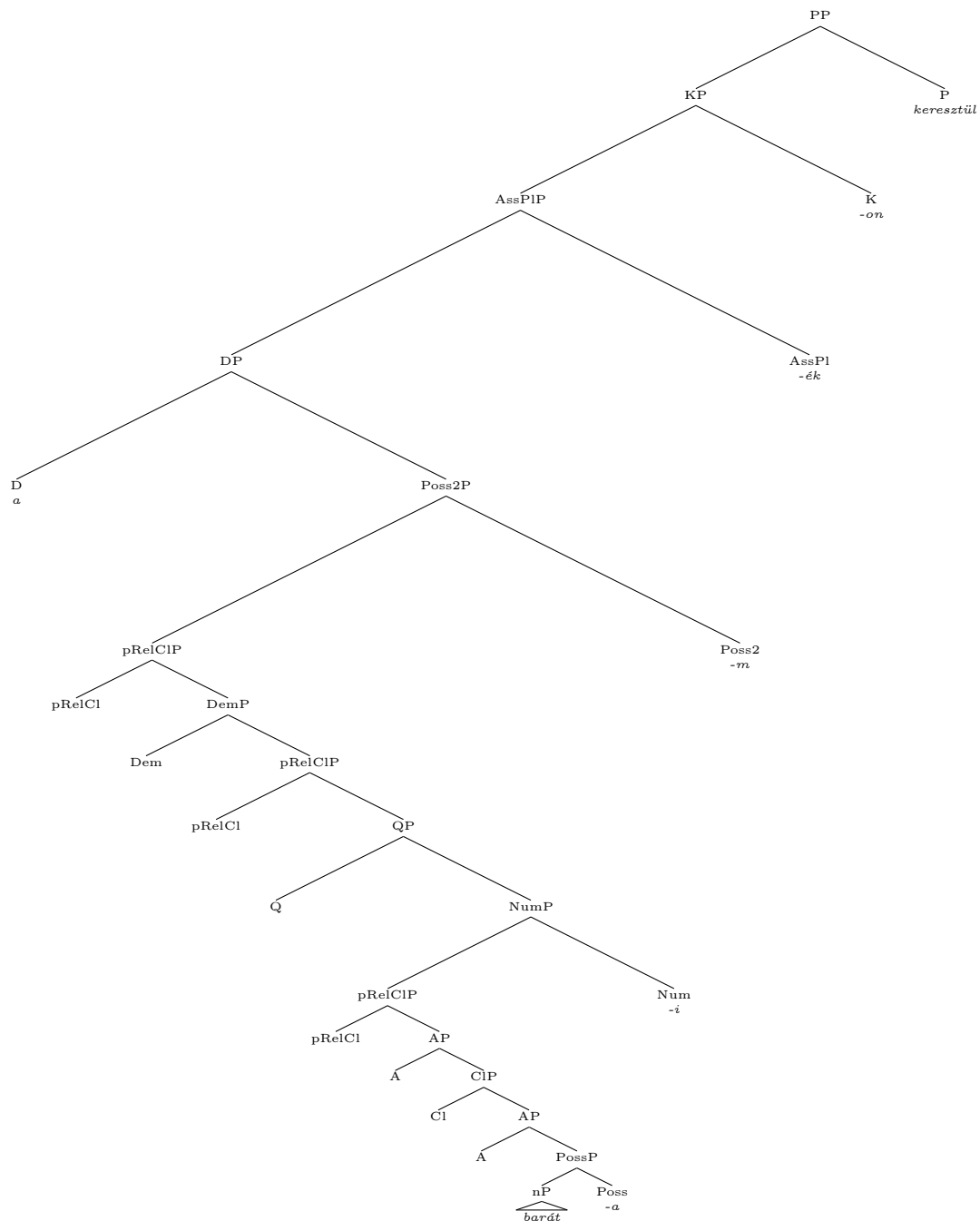


<sup>8</sup>He decomposes the first person singular possessive agreement ending into a possessedness marker *-a* and an agreement *-m*. In Chapter 7 I argued with Bartos (1999) that these two morphemes are actually merged in first and second person singular, and *-a* is a linking vowel here. This, however, has no bearing on the main point here.





(29)



As I will shortly summarize in the next section, Kayne (1994) argues for a universal specifier-head-complement base-generated order, and this rules out the possibility of structures like (29). More importantly than any theoretical considerations, however, linguistic research has also uncovered a number of empirical problems with the head-last parameter. In particular, head-last orders have properties that do not follow from the head-last parameter.

These properties become apparent with a series of non-affixal heads 'generated to the right'. As the Hungarian KP contains at most one non-affixal head to the right, namely a postposition, these problems do not come to the surface within the empirical focus of this thesis. If we look outside of the Hungarian KP and turn to head-last orders with a series of non-affixal heads, however, the problems stand out quite sharply. The properties of the Hungarian verbal complex may serve as a good illustration here.

The Hungarian tensed verb may be followed by a number of infinitival verbs, which take each other as complements. A possible, much discussed scenario is illustrated in (30), where bigger numbers mark lower positions in the hierarchy. VM stands for verbal modifier, an umbrella term for verbal particles, bare nouns, small clause predicates, etc.<sup>9</sup>

- (30)      1            2            3            VM-4  
           fog > akar > kezd > szét-szed  
           will      want      begin      apart-take

In neutral sentences (i.e. sentences without focus or negation), the VM obligatorily raises to the position immediately preceding the first auxiliary. This yields  $VM > 1 > 2 > 3 > 4$  as the order of neutral sentences.

neutral order:  $VM > 1 > 2 > 3 > 4$

- (31) Szét fog-om akar-ni kezd-e-ni szed-ni a rádió-t.  
       apart will-1SG want-INF begin-INF take-INF the radio-ACC  
       ‘I will want to begin to take apart the radio.’  
       (Olsvay, 2004, p. 294. ex. 10.)

In non-neutral sentences a focused constituent or the negative operator occupies the immediately pre-1 position, and the VM cannot undergo the movement in (31). Instead, it immediately precedes the lowest verb, in our case, 4. In non-neutral sentences it is possible to get the straight order  $Foc/Neg > 1 > 2 > 3 > VM-4$ , the totally inverted  $Foc/Neg > 1 > VM-4 > 3 > 2$  order in (32), or the partially inverted order  $Foc/Neg > 1 > 2 > VM-4 > 3$  shown in (33).<sup>10</sup>

totally inverted order:  $1 > VM-4 > 3 > 2$

- (32) Nem fog-om szét-szed-ni kezd-e-ni akar-ni a rádió-t.  
       not will-1SG apart-take-INF begin-INF want-INF the radio-ACC  
       ‘I will not want to begin to take apart the radio.’  
       (Olsvay, 2004, p. 295. ex. 12. b.)

partially inverted order:  $1 > 2 > VM-4 > 3 >$

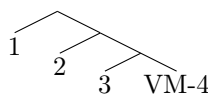
- (33) Nem fog-om akar-ni szét-szed-ni kezd-e-ni a rádió-t.  
       not will-1SG want-INF apart-take-INF begin-INF the radio-ACC  
       ‘I will not want to begin to take apart the radio.’  
       (Olsvay, 2004, p. 295. ex. 12. a.)

The head-complement parameter may capture these data by underspecifying infinitival verbs with respect to the head-first and head-last setting. However, there are at least two properties of verb clusters and multiple head-last orders in general that this approach cannot capture. Firstly, while inversion can stop at any point in the series of heads (yielding partially reversed orders such as (33)), it cannot start at any point. Instead, it has to start with the lowest verb. This rules out orders like  $*1 > 3 > VM-4 > 2$ .

- (34) \*Nem fog-om kezd-e-ni szét-szed-ni akar-ni a rádió-t.  
       not will-1SG begin-INF apart-take-INF want-INF the radio-ACC  
       ‘I will not want to begin to take apart the radio.’

This does not follow on the head-parameter model. As shown in (37), (34) is perfectly derivable.

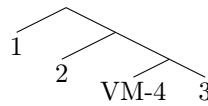
- (35) basic order



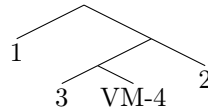
<sup>9</sup>Verbal modifiers possibly have a post-verbal base-position, a detail which need not concern us here.

<sup>10</sup>See Szendrői and Tóth (2004) for an exposition of the entire complexity of the empirical issues. Hungarian verbal clusters have been extensively analyzed in Koopman and Szabolcsi (2000) and the contributions in É. Kiss and Riemsdijk (2004), among many others.

- (36) inversion stops in the middle: OK



- (37) inversion starts in the middle: \*



Secondly, while in the straight ('head-first') order other material such as adverbs or the arguments of the verb can be interspersed with the verb sequence, an inverted ('head-last') order cannot be broken up by other material. This extends to the inverted section of partially inverted orders. I show this point here with the possible placements of the object, which is the complement of the verb (*szét*)-*szed* '(apart)-take' marked by '4'. Compare (38) and (39) with (31): in the straight order of the latter the object felicitously follows *szét-szed* 'apart-take'.

totally reversed order: 1 > VM-4 > (\*object) > 3 > (\*object) > 2 > (object)

- (38) Nem fog-om szét-szed-ni (\*a rádió-t) kezd-eni (\*a rádió-t) akar-ni (a not will-1SG apart-take-INF the radio-ACC begin-INF the radio-ACC want-INF the rádió-t).  
radio-ACC  
'I will not want to begin to take apart the radio.'  
(Olsvay, 2004, p. 295. ex. 12. b.)

partially reversed order: 1 > 2 > (object) > VM-4 > (\*object) > 3 > (object)

- (39) Nem fog-om akar-ni (a rádió-t) szét-szed-ni (\*a rádió-t) kezd-eni (a not will-1SG want-INF the radio-ACC apart-take-INF the radio-ACC begin-INF the rádió-t).  
radio-ACC  
'I will not want to begin to take apart the radio.'  
(Olsvay, 2004, p. 295. ex. 12. a.)

Head-final structures appear to have the properties discussed above across languages and constructions. This has led to the postulation of the Final-over-Final-Constraint (Holmberg, 2000; Biberauer et al., 2007, 2008, 2009, submitted).

- (40) The Final-over-Final-Constraint (FOFC)  
If  $\alpha$  is a head-initial phrase and  $\beta$  is a phrase immediately dominating  $\alpha$ , then  $\beta$  must be head-initial. If  $\alpha$  is a head-final phrase, and  $\beta$  is a phrase immediately dominating  $\alpha$ , then  $\beta$  can be head-initial or head-final. (Biberauer et al., 2008, p. 97.)

FOFC correctly rules out both types of unattested orders (inversion starts in the middle, inverted material flanks the object or adverbs). But as Biberauer et al. (2008) emphasize, it does not follow from the head-parameter. On page 104. they write: "FOFC cannot be stated by appealing to the Head Parameter as this can only rule out non-occurring patterns via stipulation, and it is also not obvious how a unified account of the violations and nonviolations [of FOFC – D. É.] could be formulated in terms of this parameter."

The general problems with the head-last parameter discussed above cast doubt on (29) as an adequate treatment of Hungarian nominal suffixes. I conclude that (29) is not the most elegant way of delivering the linear order. With this I will move on to the discussion of phrasal movement in the next section.

### 10.3.3 Phrasal movement

Kayne (1994) argues against directionality parameters and suggests that the linearization of syntactic structures is governed by the Linear Correspondence Axiom: asymmetric  $c$ -command maps onto precedence relations. This predicts either specifier-head-complement or complement-head-specifier as the universal order. He argues that typological considerations support specifier-head-complement as the universal underlying order, and that orders which deviate from this pattern must be derived by movement.

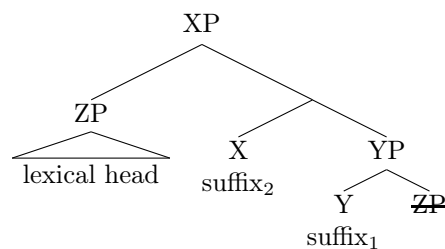
This approach enjoys tremendous acceptance, and has inspired a large body of literature that uses remnant movements and roll-up movements to derive constituent order as well as stem-suffix order. Prominent analyses that apply phrasal movement in the linearization of morphological complexes include Koopman and Szabolcsi (2000); Mahajan (2003); Holmberg (2000); Julien (2002, 2007); Svenonius (2007).<sup>11</sup>

Before we begin to explore the alternatives within the family of phrasal movement approaches, I must note that there is a pervasive asymmetry in the way researchers view affixal and non-affixal constituents following the noun (or the lexical head of projections in general), and that this asymmetry doesn't follow on the phrasal movement theory of morphological complexes. Since the introduction of Baker's (1985) Mirror Principle, we tend to think that in the vast majority of cases postnominal modifiers that form a morphological word with the noun (i.e. nominal suffixes) line up in the mirror order of their syntactic hierarchy. In other words, the linear order of postnominal affixes tells something very important about the structure in a direct way. On the other hand, especially since Cinque's (2005a) analysis of DP-internal word order, we also tend to think that the order of postnominal non-affixal material does not reflect the base-generated syntactic hierarchy. In other words, the linear order of postnominal non-affixal material does not tell anything about the structure directly. In view of the fact that the distinction between morphologically bound and free morphemes is generally taken as a (morpho-)phonological specification irrelevant for syntax, this is somewhat surprising.<sup>12</sup>

Differently put, if postnominal affixes and postnominal free morphemes arise via the same phrasal movement mechanism, then why is it that in the overwhelming majority of cases the order of nominal suffixes mirrors the syntactic projection line, while the order of morphologically free postnominal Dem, Num and Adj may or may not mirror it? As far as I am able to tell, there is nothing inherent in phrasal movement approaches that would derive this.

Phrasal movement accounts of suffix order on the lexical head overgenerate because phrasal movement does not have to target the next higher projection (41). And even when phrasal movement does target the next higher projection, in the subsequent step the phrase may move on either cyclically (42) or in a roll-up fashion (43).<sup>13</sup>

(41)

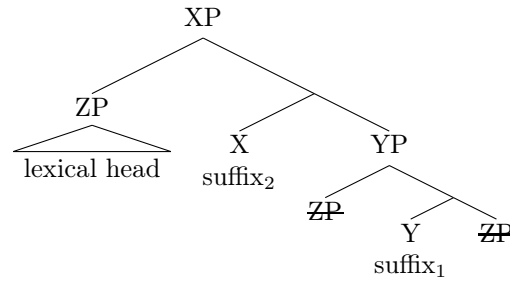


<sup>11</sup>These analyses retain head movement to varying degrees. While it plays an important role in Holmberg (2000) and Julien (2002), for instance, Koopman and Szabolcsi (2000, ch. 1.) assume that an overt head cannot adjoin to an overt head, thus they rule out head movement as a device of creating head-suffix orders. Mahajan (2003) is even more radical and argues for eliminating head movement from syntax entirely. This is immaterial for the issue at hand, as we have seen above that accumulating Hungarian suffixes on the noun by head movement is a hopeless enterprise.

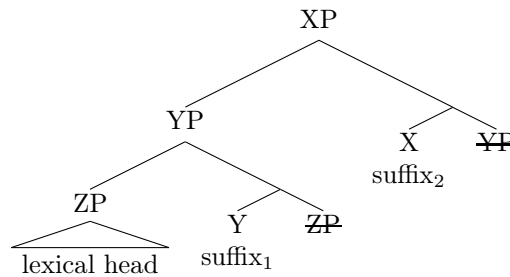
<sup>12</sup>As we will see later in the chapter, Brody's Mirror Theory is an approach that incorporates this dichotomy directly into the theory.

<sup>13</sup>C.f. also the discussion in Adger et al. (2010, p. 97.).

(42)



(43)



Only one of these possibilities, namely (43) yields a suffix order that mirrors the syntactic hierarchy, which leaves it unexplained why other orders are so exceedingly rare — and why they are not rare with postnominal phrases.

Having noted this gap in the theory, we now turn to its application in the Hungarian KP.

#### Phrasal movement to word order projections

An issue that arises with the phrasal-movement approach to morphological complexes is what the landing site of the moved XP is. Some analyses assume separate projections for this purpose. Cinque (2005a, 2009), for instance, suggest that there is an AgrP above every ‘contentful’ functional projection he examines, that is, AP, NumP and DemP. In a similar vein, in the analysis of the Hungarian verbal complex Koopman and Szabolcsi (2000) hypothesize VP+ and InfP+ projections above every verb and infinitival projection respectively. These serve as the landing site of moved XPs (p. 31: “VP+ is the constituent dedicated to complex verb formation”). Their LP(cp) works in a similar way, only it is dedicated to the licensing of moved CPs. Koopman and Szabolcsi, in fact, make use of even more projections than this. On p. 43. they write:

"in addition to the licensing positions motivated by Case and other feature-checking reasons, we need a series of "stacking positions" above all XPs that are not exempted from the "move one category at a time" convention"

Koopman and Szabolcsi (2000, p. 43.)

Cinque’s (2005a) AgrPs and Koopman and Szabolcsi’s (2000) XP+ and LP(xp) projections are, in effect, ‘word order projections’. They have no semantic import, their head is regularly phonologically empty and their specifier is regularly occupied by internal merge. They are motivated only by the phenomenon they aim to explain, that is, by word order. Koopman and Szabolcsi comment on this in the following way:

"The assumption of stacking positions is clearly against the minimalist spirit: it is difficult to see what feature might be checked in them. They are more reminiscent of adjunction to CP in the barriers framework. However, since it is possible to employ them in a completely mindless, mechanical fashion, we choose to live with them as a provisional solution that we hope will give way to a more insightful one."

Koopman and Szabolcsi (2000, p. 44.)

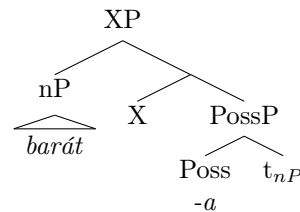
To the best of my knowledge, no insight about word order projections have come to light yet.

An approach to movement in terms of stacking- or Agr phrases results in an explosion of the functional sequence, and the proliferation of projections motivated by only linearization. As I will show below, assuming word order projections as the landing sites of roll-up movements is not enough in the Hungarian KP. Further ‘evacuating’ projections (similar to Koopman and Szabolcsi’s licensing projections) are necessary to remove specifiers from between two suffixes.

- (44) a barát-a-i-m-ék-on keresztül  
 the friend-POSS-PL-POSS.1SG-ASS.PL-SUP via  
 ‘via my friends’

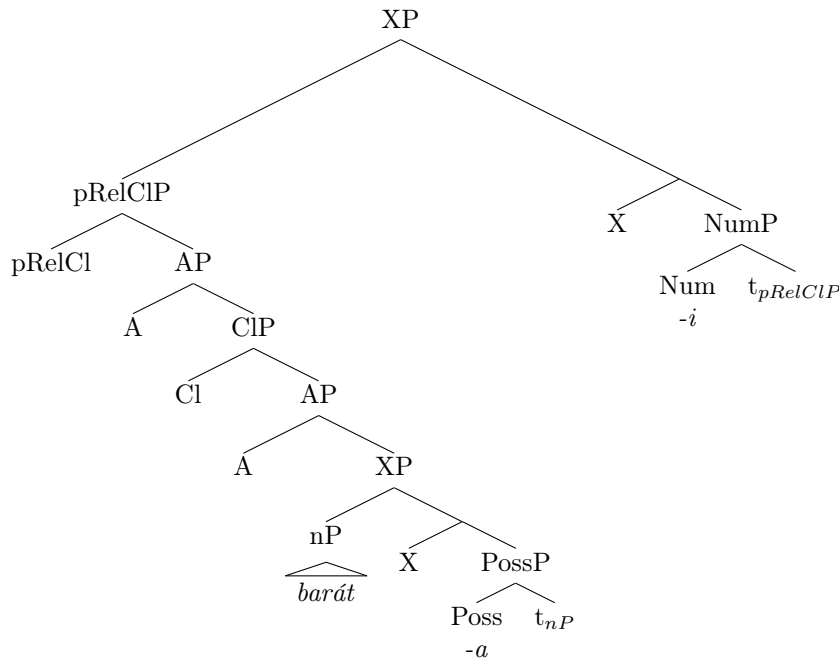
The derivation of the order in (44) is as follows.<sup>14</sup> In the first step the tree is built up to the word order projection XP above PossP, and nP moves to spec, XP. As possessors move out of spec, PossP, the movement to XP brings together the noun and the possessedness marker.

(45)



In order to derive the postnominal position of the plural, and linearize it behind the possessedness marker, the phrase marker is built up to the XP above NumP, and the category immediately below NumP must raise to spec, XP (46). In our current example, this derives the correct order.

(46)



Note, however, that in contrast to the specifier of PossP, the specifier of NumP is potentially overtly filled (by a numeral). While it is true that a Num head filled with the plural marker will never have an overt specifier (due to the incompatibility of the plural and counters), a Num head with a singular specification is perfectly compatible with numerals. If the complement of NumP raises to XP irrespective of the value of the Num head, then the movement in (46) derives not only

<sup>14</sup>To avoid any connotations that AgrP or LicensingP may have, I label all word order projections as XP.

the correct (47), but also the wrong (48).

(47) low phrasal modifiers > noun > Poss > Num (plural)

(48) low phrasal modifiers > noun > Poss > numeral > Num (sg)

(48) is incorrect, as numerals are prenominal. Several fixes are possible here, though all of them are rather stipulative. Firstly, the numeral could move above XP to create the desired surface order (49).

(49) numeral > [low phrasal modifiers > noun > Poss] > ~~numeral~~ > Num (sg) > ~~[low phrasal modifiers > noun > Poss]~~

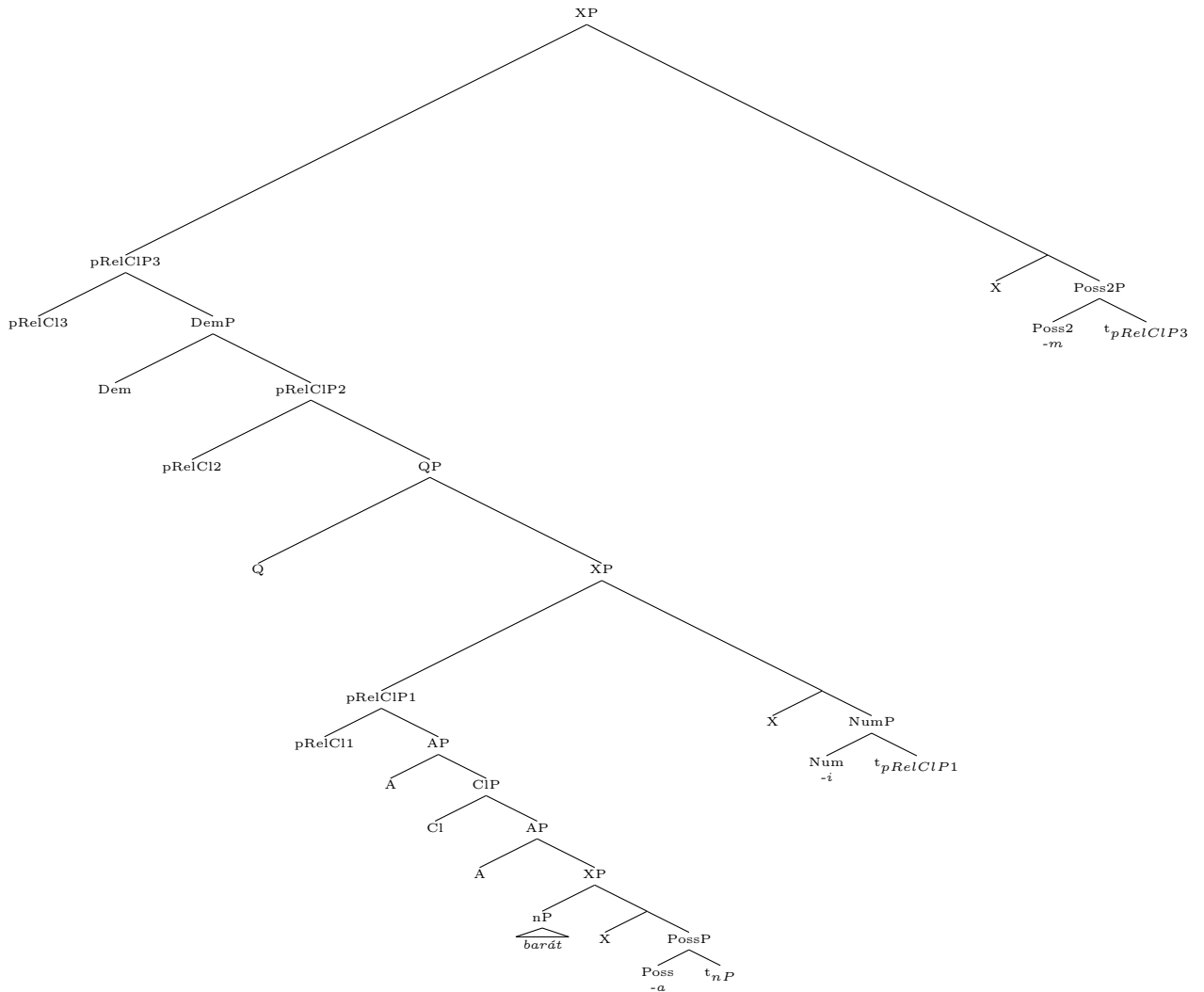
This is a classic Kayne-style derivation in the sense that it reorders the relative position of two constituents multiple times. However, (49) is excluded by Cinque's (2005a) theory on noun-phrase internal movement because the movement doesn't include an NP.

Secondly, it is possible to assume that only the plural Num head triggers phrasal movement to its dominating XP. As the target of movement is not NumP itself, this would require some tight selectional of checking relation between XP and NumP. Thirdly, it is possible that only the plural Num head has the XP on top to begin with.

To summarize, phrasal movement above NumP creates an empirical problem with three potential solutions. One of these does not comply with Cinque (2005a), and the other two are not independently motivated or particularly enlightening.

In the next step the tree is built up to the XP above Poss2P, and the category immediately below Poss2P undergoes movement to spec, XP. This movement aims to bring together the noun+possessedness marker+plural suffix complex with the possessive agreement (50).

(50)



Nothing further is needed to get the relevant string of example (44). But this is only because (44) has a silent *pro* possessor. The inclusion of any overt possessor that sits in spec, Poss2P (i.e. pronominal caseless and *-é* possessors and in some dialects proper name possessors) creates a problem. After phrasal movement to the XP above Poss2P, these possessors intervene between the noun+possessedness marker+plural suffix complex and the possessive agreement, creating the wrong order in (52) instead of the correct (51).

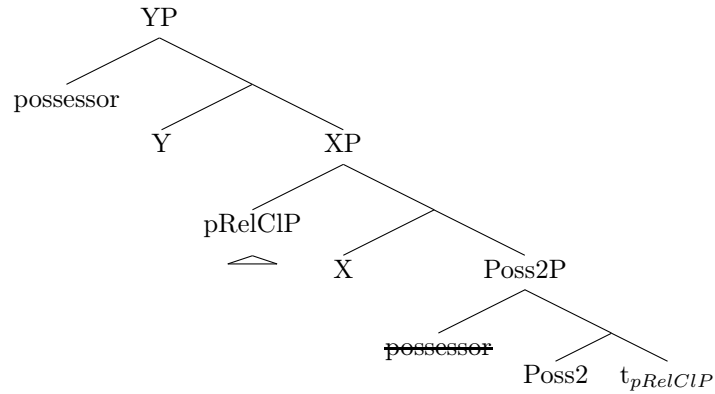
(51) az én barát-a-i-m-ék-on keresztül  
 the I friend-POSS-PL-POSS.1SG-ASS.PL-SUP via  
 ‘via my friends’

(52) [ numeral > low phrasal modifiers > noun > Poss > Num (plural) ] > possessor > poss. agreement

There is only one possible fix here: moving the possessor above XP. As already pointed out before, possessor movement is in compliance with Cinque’s (2005a) hypothesis on what can move in the DP. This movement requires an additional word order movement to the specifier of an additional word order projection.

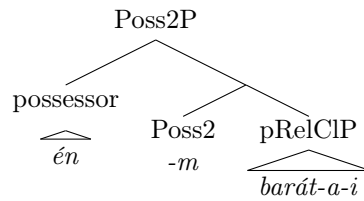


(53)



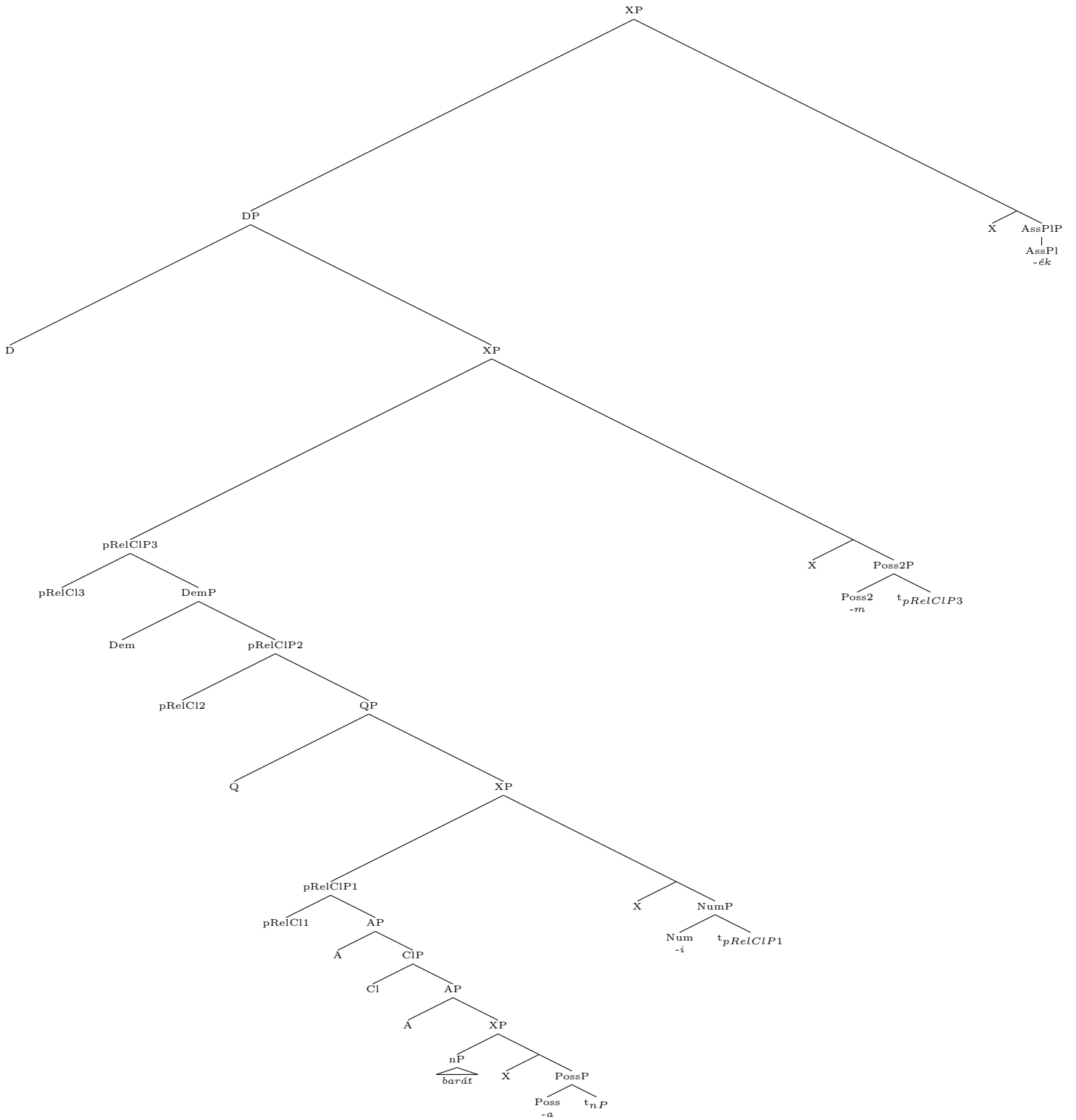
The other two possibilities that were raised in connection with a singular Num head are not applicable here, because an overt possessor results in a scenario in which the head and the specifier of Poss2P are filled at the same time (this never happens for NumP). Assuming that a Poss2P with a filled specifier doesn't have an XP on top or it doesn't trigger movement XP yields the wrong word order, where the possessive agreement cliticizes onto the possessor rather than the noun+suffixes complex.

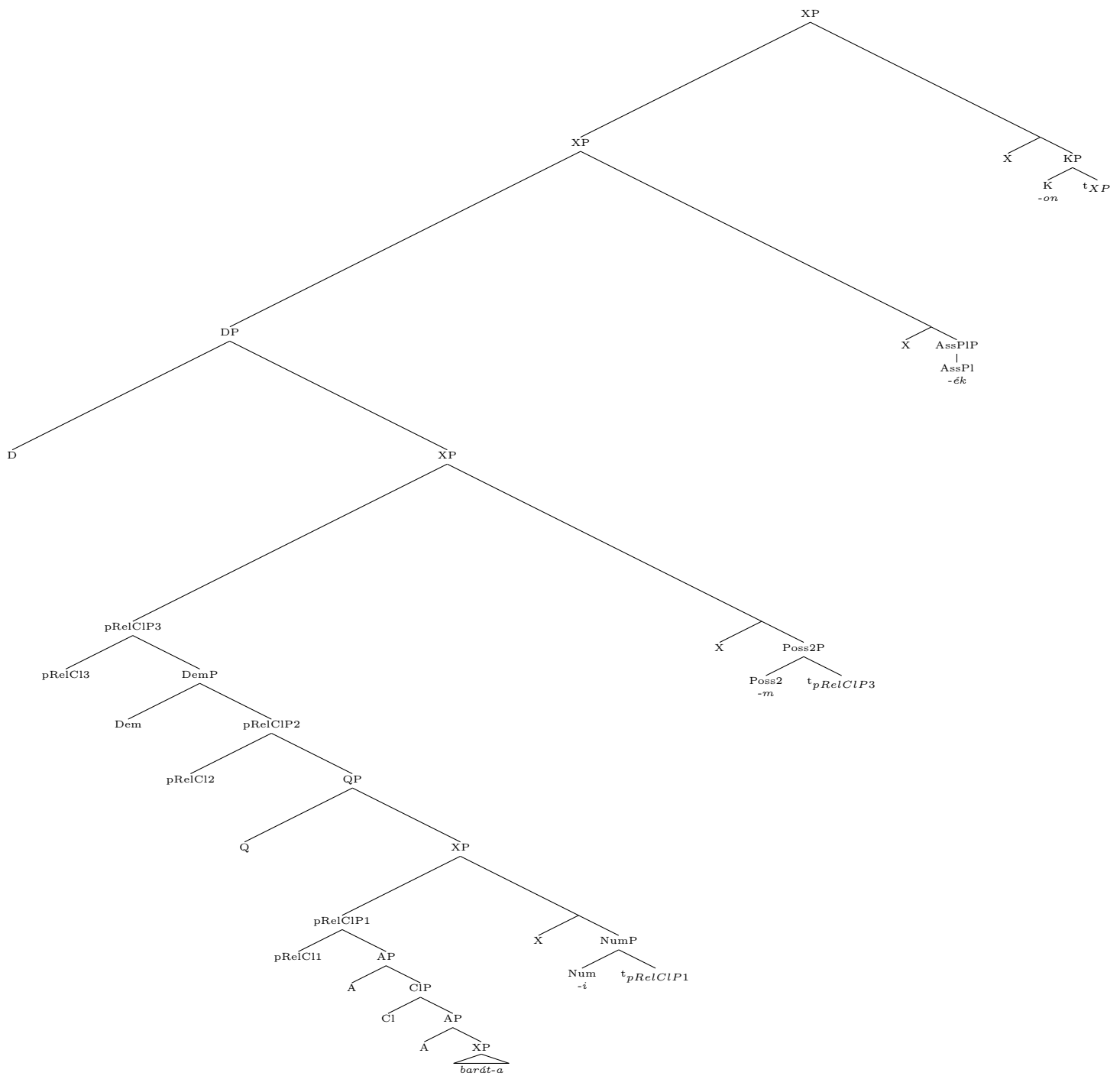
(54)



The subsequent movement takes the complement of AssPIP to the XP above AssPIP (55). Finally the complement of KP moves to the XP above KP (56).

(55)

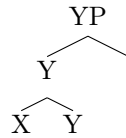




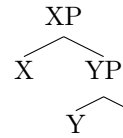
If the case marker is followed by a naked P, as in (44), then another roll-up movement takes KP to the XP above P in a similar fashion.

Julien (2002, 2007) argue that four syntactic configurations may result in X and Y forming a morphologically complex word [XY]: they could be part of a complex head (57), X could be the next higher head from Y (58), X may be the last element of the specifier of Y (59) and finally Y may be the leftmost element of the specifier of X's complement (60).

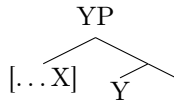
(57)



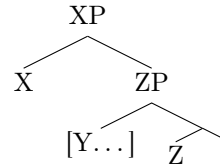
(58)



(59)



(60)



The derivation outlined above is a variation on Julien's third option, (59).

In order to derive a sequence of suffixes by phrasal movement to XP, two conditions must be met in general. First, the moved category always has to have the noun or a nominal suffix as the rightmost overt element. This condition is met in Hungarian due to the type of pied-piping applied (*picture of who*-type). Secondly, the suffixes must head projections that don't have overtly filled specifiers. This condition can only be met in Hungarian with further enrichment of both the functional sequence and the types of word order movements.

To summarize, phrasal movement to word order projections can derive the desired order if i) word order movements are Cinque-compliant and the moved category always contains NP, ii) movements involve the marked *picture of who*-type pied-piping, and iii) there exist word order projections to which offending, intervening specifiers move out. It is possible to produce the desired word order, but the amount of independently unmotivated projections and movements which are required to do so make this approach a very costly one.

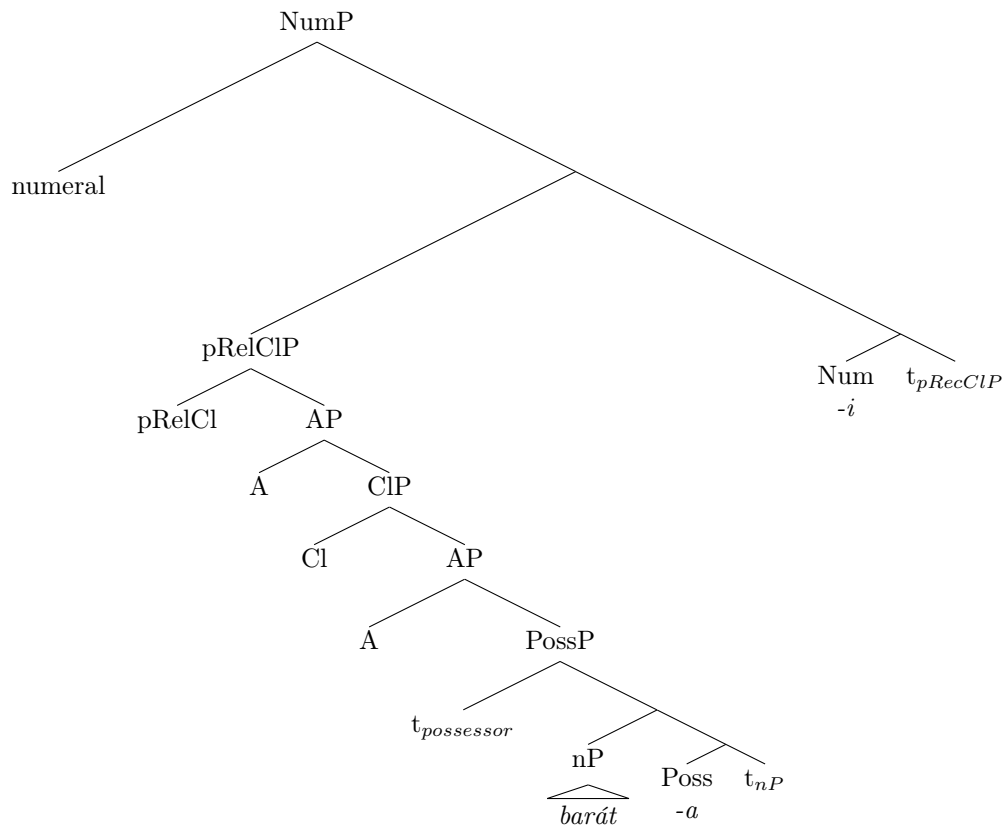
#### Phrasal movement to second specifiers

An alternative to the above derivation within the phrasal movement approach is to assume that roll-up structures make use of second specifiers of independently motivated functional projections. This model is developed in Myler (2009). Myler suggests that a functional head can get a specifier either by external merge or by internal merge, and that these two options are not mutually exclusive. That is, a head may have two specifiers: one hosting material semantically related to the head, and another hosting an XP that has undergone roll-up movement. Myler argues that there is no intrinsic ordering on internally and externally merged specifiers. This, in turn, means that each functional head can specify whether the roll-up movement targets the inner or the outer specifier.

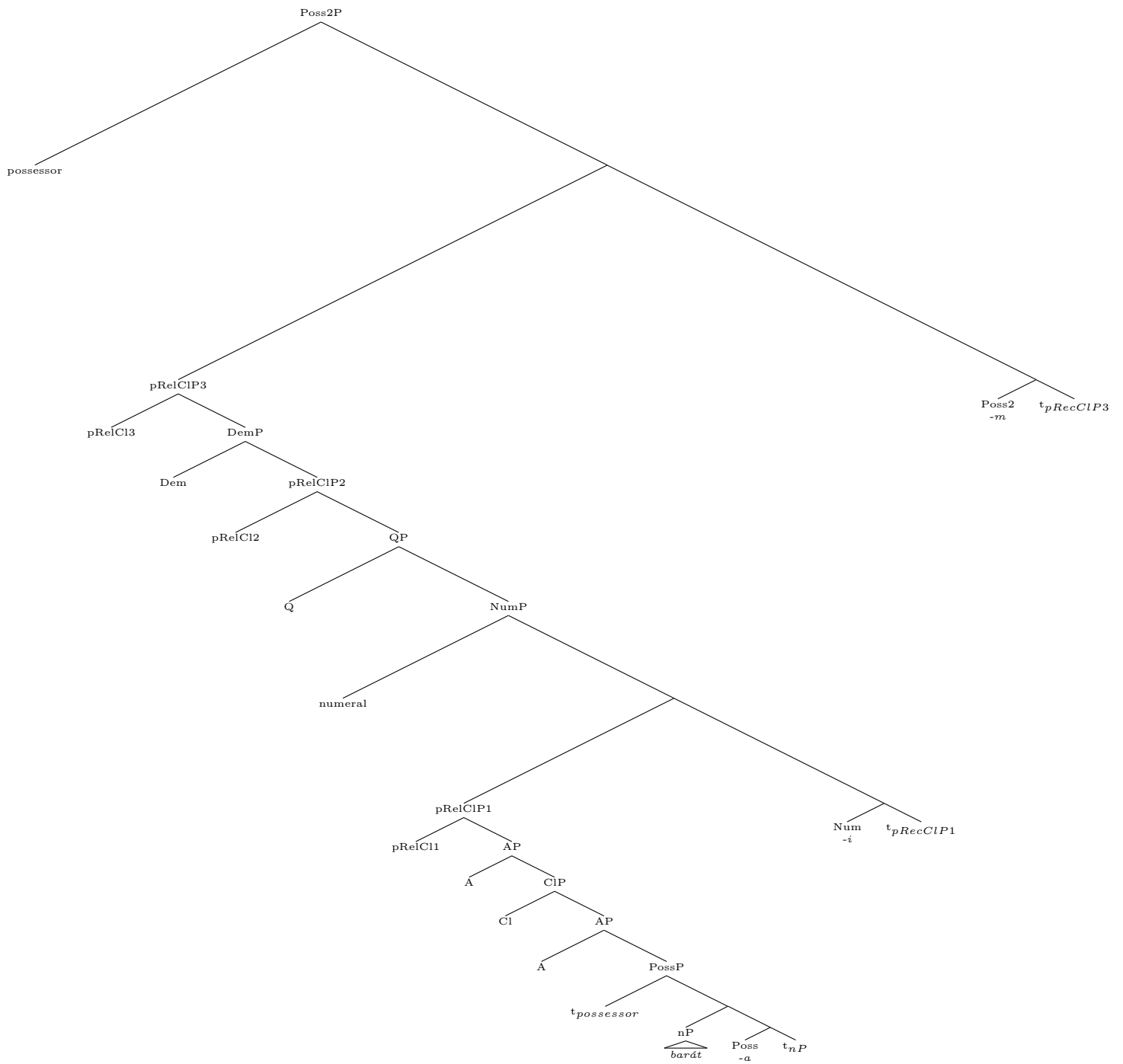
If roll-up targets the external specifier, then the underlying order of specifiers becomes reversed on the surface. If roll-up targets the internal specifier, on the other hand, then in essence we get tucking in. Crucially, in the latter case it is only the underlying order of the specifiers that is preserved, and the order of heads is reversed. The two options are schematized in (62) and (61).



(64)



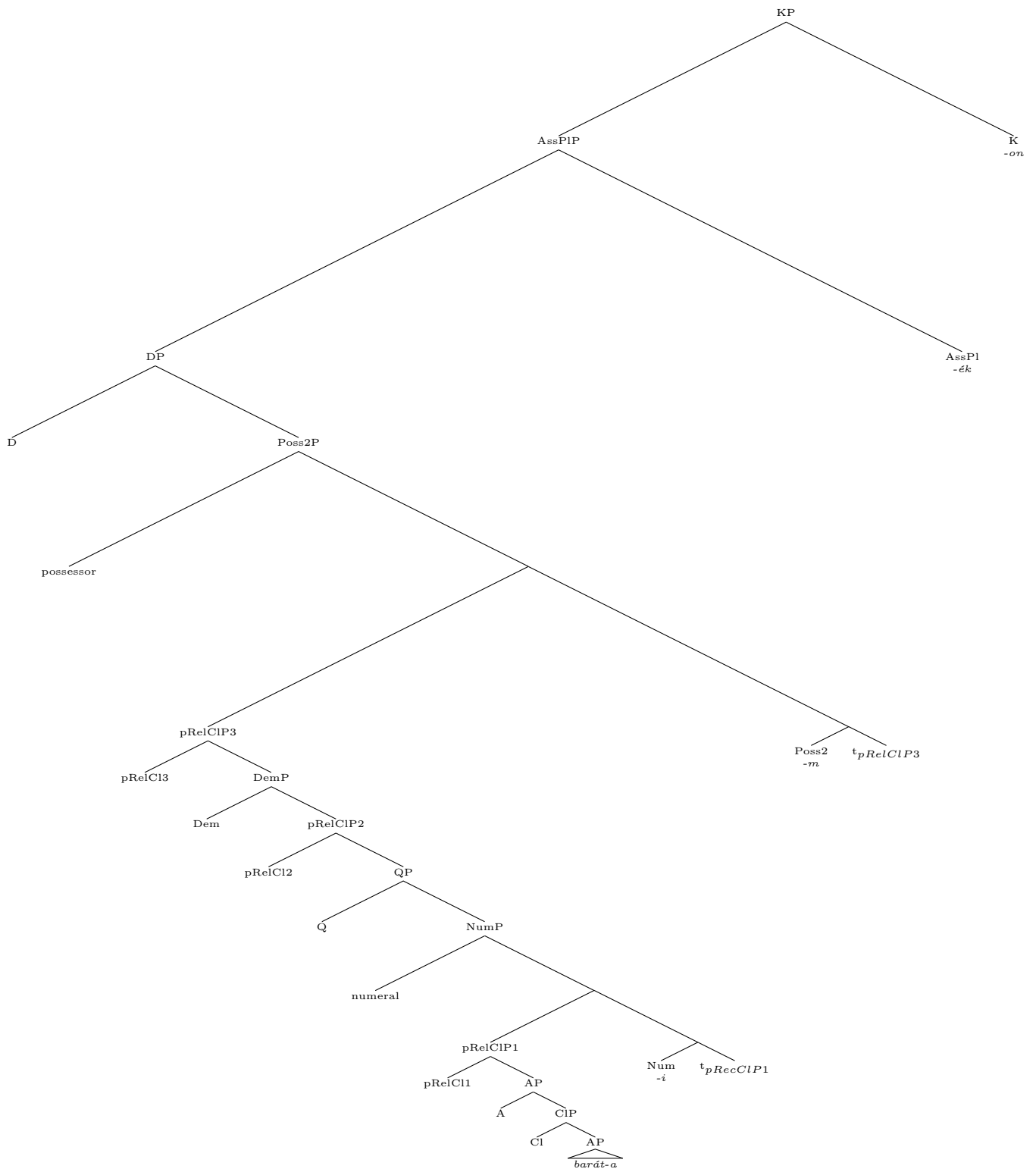
(65)



In the last two steps AssPIP's complement raises to the specifier of AssPIP, and KP's complement raises to the specifier of KP (66). If the case marker is followed by a naked P, an additional movement raises KP to the P's specifier. I have not identified any material that would occupy the specifier of these projections by external merge. In the previous chapters I assumed with É. Kiss (2002) that Dative possessors are adjoined to the highest projection in the nominal projection, which for me is KP. However, it is also possible that Dative possessors occupy spec, KP — I do not see any empirical evidence that could adjudicate this matter. If Dative possessors are in spec, KP indeed, then they must occupy the outer specifier (as they precede all KP-internal material).



(66)



In sum, in a model that assumes phrasal movement into second specifiers the Hungarian order can be derived under the assumptions that i) word order movements are Cinque-compliant and the moved category always contains NP, ii) movement involves pied-piping of the marked *picture of who*-type, and iii) movement targets inner specifiers (at least in the cases we have overt evidence for).

#### Phrasal movement adjoining to XP

Within the family of phrasal movement approaches, there is a third possible alternative, too: phrasal movement adjoining to an XP rather than targeting an outer specifier. This is schematized in (67).



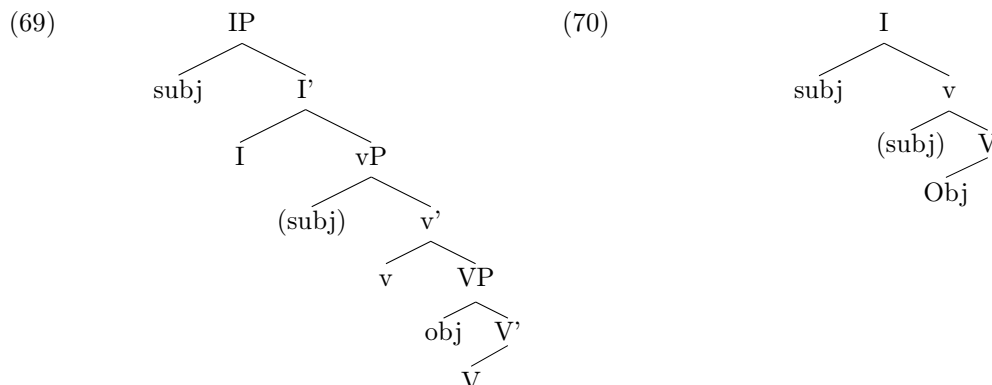
Like Myler's system, this approach can do roll-up movements without cluttering the functional sequence with word-order projections. I won't discuss this possibility in detail because it would require the same type of derivation as phrasal movement to word order projections, modulo the XPs themselves, and would also run into the same type of difficulties with NumP and Poss2P.

### 10.3.4 Mirror Theory

Brody's Mirror Theory, as already mentioned above, takes syntactic structure to be translated into morphological word formation in a very direct way. I will assume some familiarity with Mirror Theory here; I will briefly summarize the basic tenets of the theory but this is meant as a short reminder rather than a proper introduction to the framework. Apart from Brody's own work (Brody, 2000a,b, 2004; Brody and Szabolcsi, 2003), this approach has been adopted by Abels (2003b,a); Svenonius (2009) and Adger et al. (2010). See also Adger (2010b), Adger (to appear) for a system that gives representations very similar to Mirror Theoretic ones.

Mirror Theory has two main axioms: Telescope and Mirror. Telescope concerns representations: a head can ambiguously represent  $X^{min}$  and its phrasal projection. That is, traditional trees like (69) can be reduced to representations like (70), where I, I' and IP are all represented by the I node.

- (68) Telescope:  
A single copy of a lexical item can serve both as a head and as a phrase. (Brody, 2000a, p. 41.)

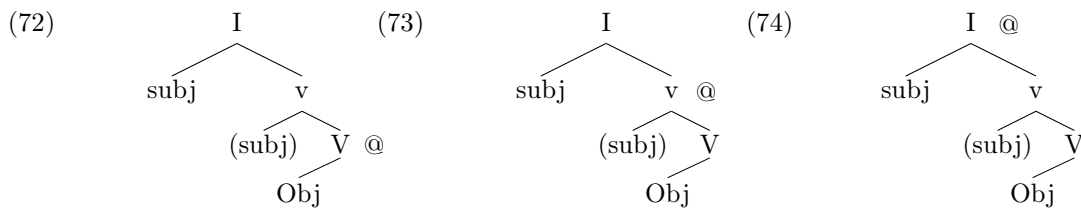


The node I in (70) represents  $I^0$  on its own, and it represents IP when taken together with everything it dominates.

Mirror concerns linearization: specifiers are always spelled out in front of the head they are associated with, and the syntactic complement line is spelled out in an inverse order. Thus in (70), the complement line is spelled out in the order V-*v*-I.

- (71) Mirror  
 The syntactic relation "X complement of Y" is identical to an inverse-order morphological relation "X specifier of Y".  
 (Brody, 2000a, p. 42.)

The morphological word V-*v*-I is spelled out in the highest strong position in the syntactic projection line, and in the absence of any strong positions, it is spelled out in the lowest projection. In other words, the morphological word V-*v*-I is spelled out in V if neither V, nor *v* or I are strong, it is spelled out in *v* if *v* is strong but I is weak, and it is spelled out in I if I is strong. The position of the spellout is marked by the @ sign.



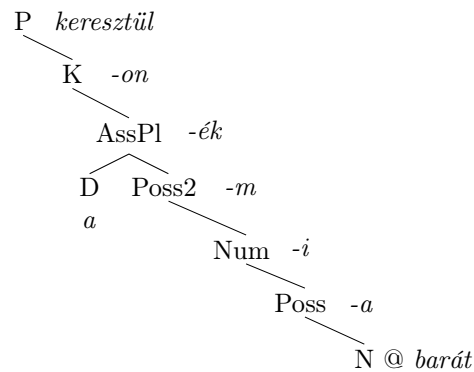
Trivially, if @ is not at the lowest position and the morphological word is spelled out higher, we get the effect of head movement. This, in turn, has an effect on linearization in the way head movement usually does: (72) yields the order subject > (subject) > object > V-*v*-I, (73) gives subject > (subject) > V-*v*-I > object, and (74) results in subject > V-*v*-I > (subject) > object.

Applied to the Hungarian nominal projection, Mirror Theory has some unique consequences for the structure. As syntactic complementation always yields morphological words, Mirror entails that if a dependent of the head does not form a morphological word with it, then that dependent is a specifier rather than a head on the syntactic complement line. For the Hungarian nominal projection, this means that classifiers, non-inflecting demonstratives and the definite article, which we normally think of as prenominal non-suffixal heads, must be specifiers in Mirror Theory. They cannot be represented on the main projection line of N because they do not form a morphological word with the noun.

Of the overt heads, only Poss, Num, Poss2, AssPl, K and P may be on the main projection line of N. One way of capturing this is shown in (76), where indeed all and only these morphemes are on the main line of N.

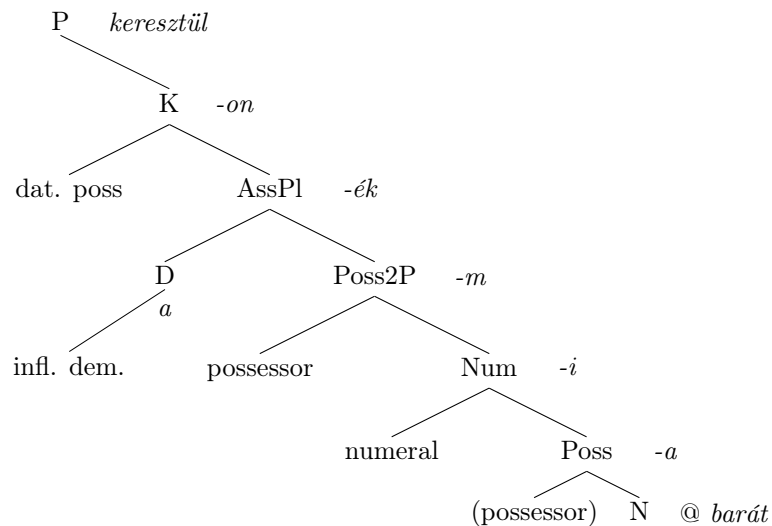
- (75)    a   barát-a-i-m-ék-on                      keresztül  
          the friend-POSS-PL-POSS.1SG-ASS.PL-SUP via  
          ‘via my friends’

(76) (first pass)



(77) shows the positions where some of the other noun satellites may be accommodated in (76).

(77) (first pass)



Adjectives and relative clauses are not shown in (76) or (77). These projections don't have their head filled overtly, therefore it is difficult to know whether they should be represented on the main line, basically as null affixes on the noun, or they should be viewed as prenominal non-suffixal heads. I will tentatively adopt the former view, that is, I will assume that  $A^0$  and  $pRecCl^0$  are affixal in nature and host adjectives and participial relatives in their specifier. As far as I see, however, nothing crucial hinges on this decision.<sup>15</sup>

(77) yields the correct order dative possessor > inflecting demonstrative > article > possessor > numeral > N > suffixes. It is difficult to see, however, how or where this simplistic view could accommodate classifiers and non-inflecting demonstratives. As already mentioned above, these cannot be on the main line because they don't form a morphological word with the noun. It is also a problem that in (76) or (77) Poss2 is the complement of AssPl and not D. D, in fact, has no complement at all, which does not correctly reflect the hierarchical structure of noun phrases. Including classifiers and inflecting demonstratives in specifier positions in (77) would lead to the same problem: they would not be integrated into the hierarchy in the right way. Below I will outline a Mirror Theoretic structure that captures both the order and the hierarchical relations.

The most crucial fact for a Mirror Theoretic representation of the Hungarian KP is that only a subset of the nominal modifiers that we normally think of as overt heads appear behind the noun and form a morphological word with it. Table 10.1 summarizes the positions of the overt modifiers normally considered to be heads in the nominal f-seq, 'pre' stands for 'prenominal and doesn't form a morphological word with N', while 'post' means 'postnominal and forms a morphological

<sup>15</sup>See Brody and Szabolcsi (2003) for some discussion on the Mirror Theoretic representation of phonologically empty heads.

word with N'. As the table shows, the directionality of the heads switches six times.

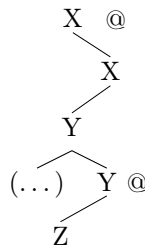
|      |      |       |     |       |     |      |     |      |
|------|------|-------|-----|-------|-----|------|-----|------|
| post | post | post  | pre | post  | pre | post | pre | post |
| P    | K    | AssPl | D   | Poss2 | Dem | Num  | Cl  | Poss |

Table 10.1: The linearization of overt heads in the Hungarian xNP

To capture this pattern, a more elaborated structure is necessary than (77) allows. Below I will attempt to outline a possible representation to capture all the complexity of table 10.1. It will be crucial that Mirror in (71) is not a biconditional: syntactic complementation always results in morphological word formation, but Mirror "does not require that all morphological words be expressed in the mirrored syntactic form" (Brody, 2000a, p. 43).<sup>16</sup>

Before I show the steps leading to the final representation of the Hungarian KP, it will be useful to discuss two configurations that I will make use of repeatedly. The first is when the structure changes from a postnominal head to a prenominal head. The representation of such flips is schematized in (78).

(78) posthead to prehead

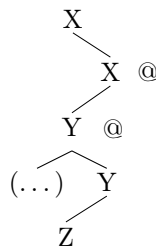


Post-head to pre-head flips come about when both the higher and the lower category has two segments, with the lower category spelling out in its lower segment and the higher category spelling out in its higher segment.<sup>17</sup> In (78), Z is the specifier of Y, thus Z is linearized in front of the lower segment of Y. As Y spells out in the lower segment, Z will precede it and Y will spell out behind everything contained in Z. This is how I will derive the suffixhood of most suffixes in the sequence.

Y is the specifier of X, and it is linearized in front of the lower segment of X. In order for X to come out as a pre-head rather than as a post-head, it must spell out in the higher segment. (78) thus yields the order X > Z > Y (c.f. also (5) at the beginning of this chapter).

The second bit of structure that will come up again and again is (79), which provides flips from a pre-head to a post-head.

(79) prehead to posthead



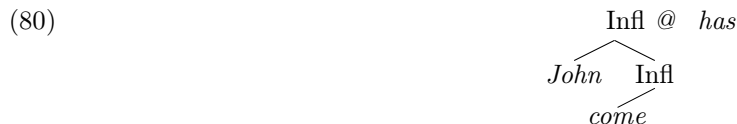
This structure is linearized in the following way. Z is the specifier of Y, so it precedes the lower segment of Y. As Y is spelled out in the higher segment, however, it will precede Z and everything

<sup>16</sup>See fn. 12. of Brody (2000a, p. 43. and fn. 12.) for more discussion of this issue.

<sup>17</sup>Readers familiar with Mirror Theory have no doubt noticed that (78) as well as the presently discussed (79) are strictly speaking not compatible with Mirror Theory. These trees feature two specifiers to one head, which is not a legitimate representation in Mirror Theory. I will nevertheless use them as templates, both here in the abstract discussion and in the explanation of the specific example, because they correctly derive the desired linearization flips. I will return to the true status of the upper segments after the linearization has been sketched. Till then, these upper segments should be taken as placeholders for some other, yet unidentified label.

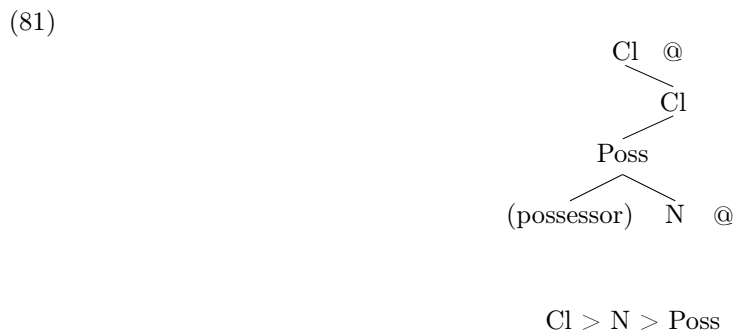
Z contains. Y is the specifier of X, and it is linearized in front of the lower segment of X. If X is spelled out in the lower segment, as indicated in the tree, then Y and everything it contains will precede X. (79) thus yields the linear order  $Y > Z > X$ .

Posthead to prehead and prehead to posthead flips do not constitute theoretical inventions on my part, all the ingredients can be found in Brody's works. The crucial ingredient of the to-prehead flip is that the higher category, X, has two segments, and the lexical items associated to these segments spell out in the higher segment. Observe (80) from Brody (2000b, p. 29. ex. 2.): the to-prehead flip uses the same technology (with the insignificant difference that in my examples only one of the segments will be spelled out by an overt morpheme, and here one may want to analyze *has* as bi-morphemic).



The to-posthead flip uses the idea that morphological words can but do not have to be represented by a complement line. There are no actual examples showing this in Mirror Theoretic works, but the idea is clearly spelled out in prose in Brody (2004, p. 147.) and Brody (2000a, p. 43; esp. fn. 12).

With these tools in place, we can now turn to the proposed representation. As it is difficult to parse (and explain) all the linearization information present in the final tree at once, I will show the linearization stagewise, going bottom-up in the tree. The lowest bit of the structure up to Cl contains a flip from a post-head to a pre-head.<sup>18</sup>

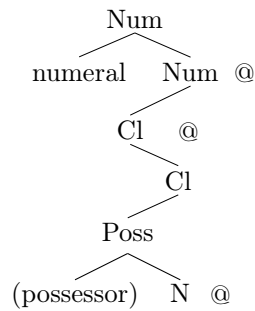


As Poss is a suffix to and forms a morphological word with N, it is on the main line of N and takes N as its right daughter. This yields  $N > Poss$  order. (Poss has a copy of the possessor in its specifier, but as possessors move out of this position, this does not play a role in linearization.) Poss is the specifier of Cl, and Cl spells out in the higher segment, thus the order at this point is  $Cl > N > Poss$ .

Putting a Num on top of Cl includes a flip from a pre-head to a post-head. The representation is shown in (82).

<sup>18</sup>The order that each representation gives rise to is given for the reader's convenience below each tree.

(82)

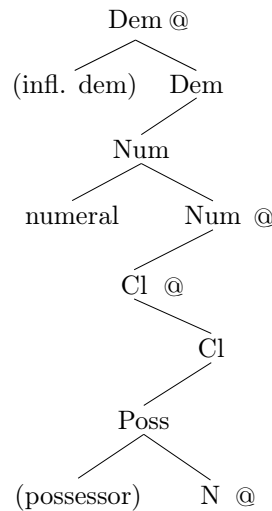


numeral &gt; Cl &gt; N &gt; Poss &gt; Pl

The numeral being the highest specifier of (82), it linearizes in front of all other constituents. Num is spelled out in the lower segment, so it follows its specifier, Cl, and everything dominated by Cl. The order at this point is numeral > Cl > N > Poss > Pl.

Embedding Num under Dem requires a flip from post-head to pre-head. (83) shows the structure.

(83)

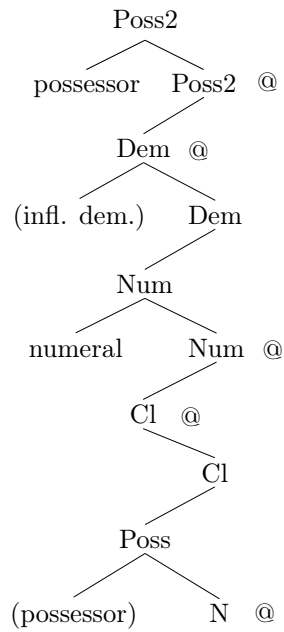


non-infl. dem &gt; numeral &gt; Cl &gt; N &gt; Poss &gt; Pl

Num is the specifier of Dem, everything it contains is linearized before the lower Dem segment. But as (non-inflecting) Dem is linearized in its higher segment, it will precede rather than follow Num. The order at this point is non-infl. dem > numeral > Cl > N > Poss > Pl. The specifier of Dem contains the merge-in point of inflecting demonstratives, but as these will move higher, this has no effect on the linear string.

The next higher head in the hierarchy is Poss2, its merger involves a flip from pre-head to post-head.

(84)



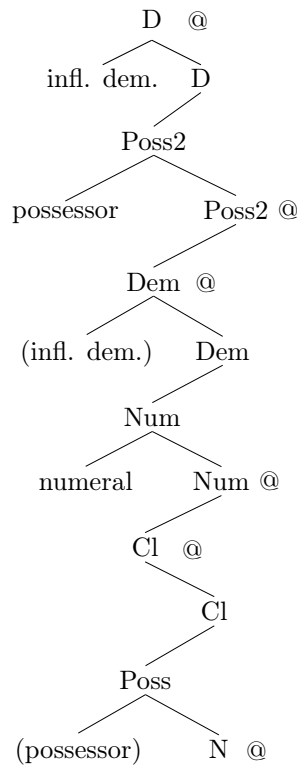
possessor > non-infl. dem > numeral > Cl > N > Poss > Pl > poss. agr.

The higher copy of the (caseless or  $-\acute{e}$ ) possessor is the specifier of (the higher segment of) Poss2, and precedes everything that is in the structure so far. Dem is the specifier of the lower Poss2 segment and linearizes in front of it. As Poss2 is spelled out in precisely this segment, it will follow everything inside Dem. (84) linearizes as possessor > non-infl. dem > numeral > Cl > N > Poss > Pl > poss. agr.

The subsequent step is to embed Poss2 under D. This requires a flip from post-head to pre-head. Inflecting demonstratives land in the higher specifier of D and precede everything in the structure. Poss2 is the lower specifier of D, and precedes the lower segment of D. D, however, is spelled out in the higher segment, therefore it precedes Poss2 and the nodes dominated by Poss2. We get the order infl. dem > art > possessor > non-infl. dem > numeral > Cl > N > Poss > Pl > poss. agr.



(85)



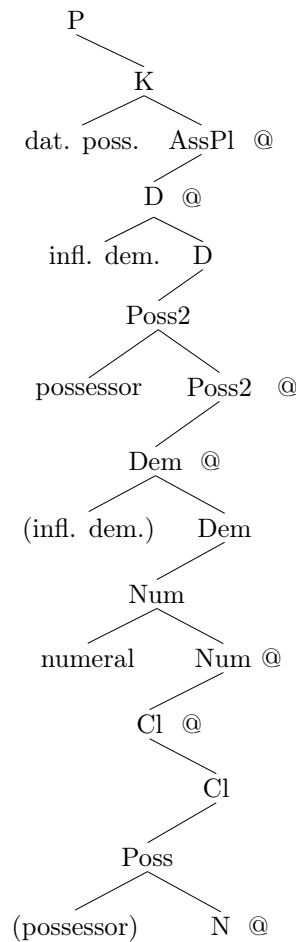
infl. dem > art > possessor > non-infl. dem > numeral > Cl > N >

Poss > Pl > poss. agr.

The way a full KP/PP is built is shown in (86). The last step requires one more flip, a pre-head to a post-head one between AssPl and D. Above AssPl, there are no flips. AssPl, K and P can all be represented in a straight complement line, because they line up in the inverse order. In order for them to form a morphological word with the noun, this complement series has to be spelled out in the lowest position, which is AssPl in (86). This way they follow everything dominated by D. This yields the required order *dat. poss > infl. dem > art > possessor > non-infl. dem > numeral > Cl > N > Poss > Pl > poss. agr > ass.pl > K > P*.<sup>19</sup>

<sup>19</sup>Mirror Theory also has a way to accommodate phrasal modifiers which are high in the structure but end up linearly behind the lexical category they modify. This is exactly what is required for Hungarian postnominal phrasal modifiers. I will not discuss this matter here. For theoretical discussion and specific examples, I refer the reader to Brody and Szabolcsi (2003); Brody (2004); Adger et al. (2010); Adger (to appear).

(86)



dat. poss > infl. dem > art > possessor > non-infl. dem > numeral > Cl > N  
 > Poss > Pl > poss. agr > ass. pl > K > P

Two brief comments on this representation. The first has to do with Ps. All dressed Ps form a morphological word with their complement, and all of them are inseparable from it. Therefore it is justified to represent all dressed Ps as in (86). Naked Ps, on the other hand, split into two groups: some of them are separable from their complement, including *keresztül* ‘via’ featured in the examples, while others are not (c.f. Chapter 5). It is possible to capture this distinction in Mirror Theory by specifying the two subgroups differently with respect to how they combine with KP. Those that are inseparable are straightforwardly represented by (86), it is fair to assume that these form a morphological word with their complement and so they are on the same line as K. On the other hand, naked Ps that can be separated from their KP complement presumably don’t form a morphological word with KP. Instead, they take KP as their left daughter (i.e. specifier). This still derives the fact that they come last in the extended PP, but it allows them to be more loosely connected to KP.

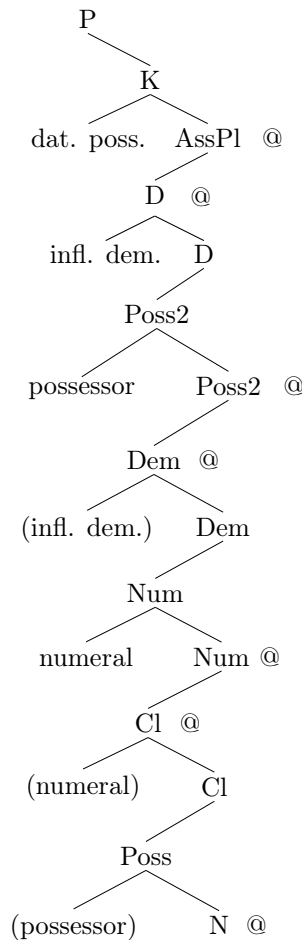
The second comment has to do with the fact that most heads in (86) have two segments. Except in the case of Cl, both segments have a specifier connecting to them. What we normally think of as the syntactic complement of a category is inserted at the lower segment, while what we normally think of as the syntactic specifier of a category is inserted at the higher segment. But this is not so for Cl. Given that for every other phrase Mirror Theory gives a clean picture, it would be desirable to fix this one exception.

The problem with the higher segment of Cl, in fact, reflects a general gap in our structure: in Chapter 3, I have not identified any material that could fill the specifier of ClP. This is a rather

strange state of affairs; syntactic heads are in general able to take specifiers. The specifier of *v*/VP, for instance, has been represented as empty for a long time, until it was discovered that this is the merge-in position of subjects (Koopman and Sportiche, 1991). If Cl could be shown to take a specifier, then both Cl segments would be motivated by factors other than linearization.

The solution to this problem is already available in the literature. Borer and Ouwayda (2010) and Zhang (2011) argue that numerals are merged in spec, CIP, and spec, NumP is a derived position for them.<sup>20</sup> If this is on the right track, then the higher segment of Cl is the position where numerals enter the structure, and its existence does not need to be stipulated. I will assume that this is the case indeed, and that the fully articulated structure of (86) is as in (87).

(87)

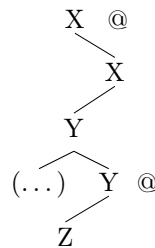


In the previous chapters, the gap in spec, CIP has not caused any problems and didn't require specific attention. Moreover, no empirical or theoretical factors seemed to bear on the merge-in position of numerals. The movement from spec, CIP to spec, NumP is string-vacuous (because Num<sup>0</sup> comes out as a suffix, when overt at all), and so I refrained from positing this movement. In Mirror Theory, however, this gap stands out quite sharply, and positing spec, CIP as the base position of numerals gives a cleaner, neater picture than other alternatives. (87) is therefore superior to (86).

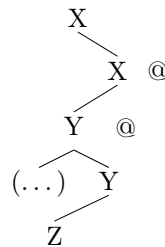
Let us now return to the structures providing posthead to prehead and the prehead to posthead flips. They are repeated as (88) and (89) for the reader's convenience.

<sup>20</sup>Corver (2001) and Corver and Zwarts (2006) also argue that spec, NumP is a derived position for numerals, but they suggest that numerals are merged as predicates below the noun.

(88) posthead to prehead



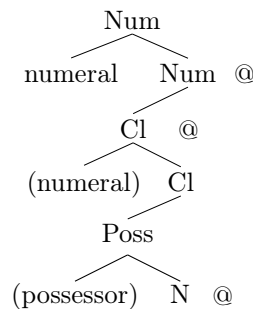
(89) prehead to posthead



As I have already pointed out at the beginning of the discussion, the way I used these structures in (87) is not entirely in compliance with Mirror Theory. In (87) most heads have two segments, and each of them have a specifier. The lower specifier is filled by what we generally take to be the complement of that head, while the higher specifier is filled by what we generally take to be the specifier of that head.

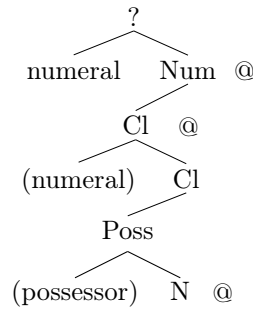
Mirror Theory, however, does not allow one head to have two specifiers. Brody (2000a, section 4.3) argues that the specifier-head relationship is biunique. If a category that we normally take to be the complement of X does not form a morphological word with X, and so it is represented as a specifier of X, then the category that generally would be taken as the specifier of X has to be the specifier of a higher head. As a specific example, consider the segment of the proposed representation in (90).

(90)



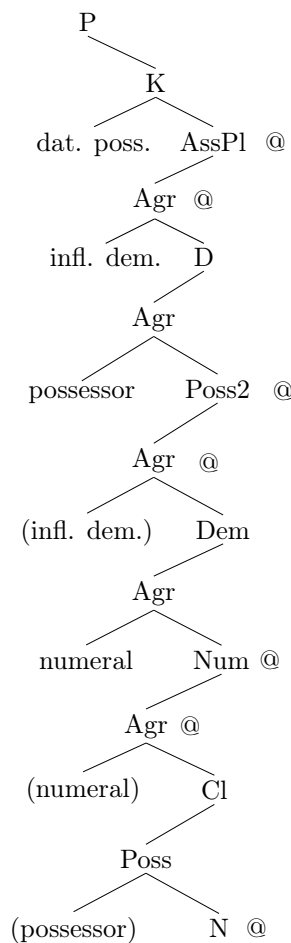
Let us focus on the category Num. Its complement is Cl(P), but Num and Cl don't form a morphological word. Therefore Cl is the specifier of Num. Now what Mirror Theory says is that in this case the numeral cannot also be the (higher) specifier of Num. Instead, it must be the specifier of a higher head. What does it mean for the structure in (87)? (87) correctly captures both the word order and the hierarchical relations, the structure should not be changed. All that needs to be adjusted is the labels of those nodes that (87) shows to be the higher segment of a head. Applied to our example above, this means that the higher Num label needs to be changed. (The same logic applies to the two segments of Cl, too, but for the sake of the exposition I will ignore that.)

(91)



What shall the labels of the higher segments be changed to? Brody (2000a) suggests that these higher segments correspond to Cinque's Agr heads or Kayne's (1998) W heads. Using the label Agr for these heads, (87) now looks like this:

(92)

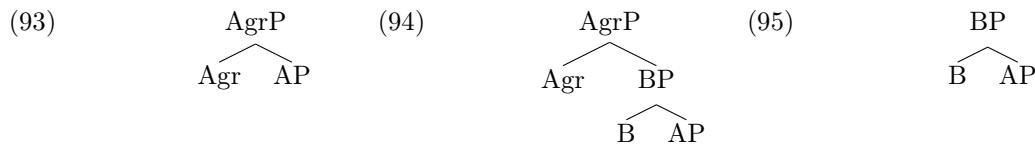


An objection that may arise here is that (92) does not appear to be more economical than phrasal movement approaches to word order projections. ((92) does not actually move phrases around their selecting heads, but then again Mirror Theory is a representational theory, so this is not really a plus here.) (92), like phrasal movement approaches, brings with it an explosion of functional structure. One may therefore wonder if (92) has any advantages over phrasal movement.

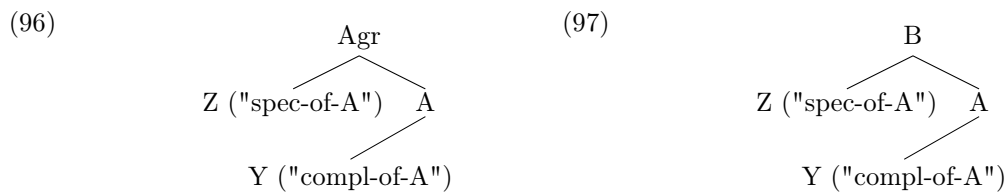
The answer is positive. Note that the use of Agr(P)s in phrasal movement approaches and in Mirror Theory are fundamentally different. In phrasal movement approaches, AgrPs are really just word order projections, which are there only to serve as the landing site of roll-up movements. At least some of the Agrs in (92), on the other hand, do have a function other than linearization:

they provide the points where a number of phrasal modifiers enter the structure. This is true for the Agrs above Cl and Dem. The Agrs above Num, Poss2 and D appear to serve as mere landing sites indeed. This means that for the categories that immediately dominate Cl and Dem, the label ‘Agr’ is misleading. These heads have a well-defined function, they cannot be viewed as void of any semantic content, and they are essential to building the functional sequence of the noun phrase. In sum, at least some of the Agrs in (92) actively build the functional sequence by providing first-merge sites for phrasal modifiers, while the Agrs of Cinque and the Ws of Kayne never do this.

There is also a further, very important difference between the word order projections of Cinque, Kayne, Koopman and Szabolcsi, etc. and the way Agrs are used in (92). As far as I understand, the word order projections of phrasal movement accounts will always be word order projections: even if it turns out that the categories they embed can be further decomposed, the AgrPs/XPs will always remain semantically empty and will not be reanalyzed as contentful projections. Consider what this means for an example like (93), where an AgrP embeds AP. If future work will show that AP can be decomposed into two projections,  $BP > AP$ , then Agr will be viewed as sitting on top of BP (94), rather than being reanalyzed into BP itself (95).



In the Mirror Theoretic representation of (92), on the other hand, the decomposition of categories embedded by Agrs can naturally lead to replacing the Agr labels by other, contentful labels. Consider the example in (96). Here the head A embeds Y (standardly, Y is the complement of A), but Y does not form a morphological word with A, so it must be A’s specifier. Z, which would standardly be taken as the specifier of A, must be the specifier of a higher head, Agr. If the position of Z in (96) is a derived one, then Agr functions as a word order projection in (96). But if A turns out to be decomposable into  $B > A$ , then the most natural thing is to say that Agr was simply the wrong label and Agr *is* B. In other words, what appears to be a word-order projection in (96) can be reanalyzed as a contentful projection, the specifier position of which happens to be the landing site of Z (97). If I understand the function of Cinque’s AgrPs and Koopman and Szabolcsi’s LPs and XP+s correctly, this kind of reanalysis is not available to them.



In current linguistic research contentful functional projections are routinely decomposed into a series of smaller projections (split CP, split IP, split DP, split VP, etc.), and the emerging picture is going towards a one to one correspondence between features and heads (c.f. especially Kayne, 2005c; Cinque and Rizzi, 2008 and Starke, 2009a).

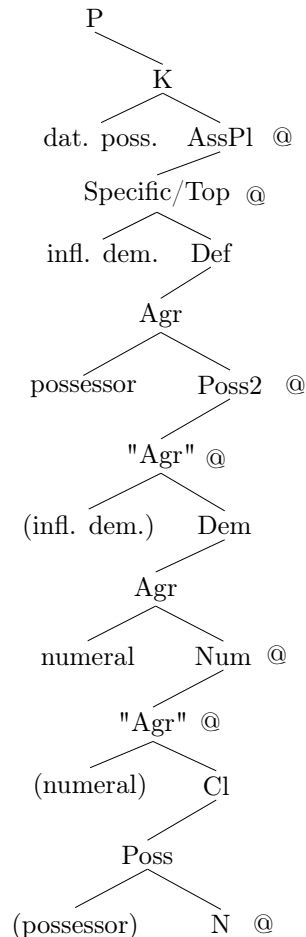
(98) "One useful heuristic which has guided much cartographic work is the maxim "one (morphosyntactic) property — one feature — one head". (Cinque and Rizzi, 2008, p. 50.)

Above I outlined a proposal that allows to replace Mirror Theoretic Agrs with more fine-grained decompositions. The ‘one feature per head’ idea expressed in (98) paves the way for just such an analysis.

In (92), there are three Agrs that appear to serve as mere word order heads, in the sense that they only serve as the landing site of moving material. These are the Agrs above Num, Poss2 and D. The idea that in a structure with a higher level of granularity Agr can be replaced by a

contentful label is most readily applicable to the Agr connected to D. The definite article, which is an exponent of D, is linked at least to specificity and definiteness. Some researchers assume separate projections for these features indeed. Ihsane and Puskás (2001), for instance, argue that D(P) is the locus of definiteness, and a higher Spec(ific)(P) (a DP-internal TopP) is the locus of specificity. If this is on the right track, then we could replace (92) by (99). (99) means that the definite article is probably a spanning head itself (spelling out Def and Specific), and that inflecting demonstratives are in the specifier of SpecificP. This is in line with the conclusion reached in Ihsane and Puskás (2001), and makes semantic sense, too (nouns modified by inflecting demonstratives are also specific).<sup>21</sup>

(99)



In (99), Agrs which do not serve as pure word order heads but for which I have not found a more precise label are placed into quotation marks. It is my contention that a close look at the syntax and semantics of Cl and Dem will identify a more suitable label.<sup>22</sup>

Whether Num and Poss2 can also be unpacked into smaller bits, allowing their Agrs to be replaced by some contentful label and function as more than just word order positions, is a topic that I leave for future research.

To recapitulate the discussion in this section, I applied Brody's Mirror Theory to the Hungarian KP, with the final representation as (99). Adopting Mirror Theory led me to embrace some proposals in the literature that so far have not been very important in the thesis. These proposals are the origin of numerals in spec, Cl and the existence of separate projections for definiteness and specificity, or some similar decomposition of D into two projections. I also suggested that

<sup>21</sup>Note that for the present purposes, it is not crucial that the labels are Specific and Definite, or that they come in this order in the sequence. The only crucial thing is that the D head is decomposed into two smaller, meaningful units.

<sup>22</sup>C.f. for instance recent work by De Belder, who decomposes the dividing projection (Cl) into smaller pieces (De Belder, 2008, 2011).

with a richer decomposition, Mirror Theory's Agrs can be replaced by contentful labels in a way that the XPs/AgrPs of phrasal movement approaches cannot. On the strong but minimalist and methodologically better motivated assumption that pure word order heads do not exist in the functional sequence, Agrs that appear to be required only to provide a landing site help to identify 'hot spots' where more careful syntactic and semantic decomposition is necessary, and where as yet unidentified projections live in the tree.

## 10.4 Interim summary

On the previous pages I ran five types of linearization algorithms on the functional sequence in (23). Head movement turned out to be empirically inadequate. The head-parameter did not cause any problems in the domain of the Hungarian KP, but against a wider empirical background this approach turns out to be inadequate as a general theory of head-lastness. Phrasal movement with word-order projections can deliver the correct order, but it came at the cost exploding the functional sequence in (23) and positing numerous otherwise unmotivated projections. The strongest contestants, to my mind, are the Myler-style roll up movements targeting a second specifier, and the Mirror Theoretic approach.

These approaches, in fact, yield similar results. With the Myler-style movements, many projections had to have two specifiers, and movement always targeted the inner specifier. In a way, the Mirror Theoretic representation in (99) expresses the same intuition. Most phrases that we think of as complements are specifiers of their embedding head, and the category standardly taken as the specifier of that head is introduced as the next higher (head's) specifier.

Given that they express the same intuition but Mirror Theory can do so with fewer movements (no roll-up, only spec-to-spec movements), I personally prefer this approach. It also gives a very neat picture of head-movement / Affix Hopping in general. All in all, I find (99) the most elegant linearization algorithm, with the Myler-style double specifier theory as the runner up among more mainstream approaches.

## 10.5 Mirror Theory meets Spanning

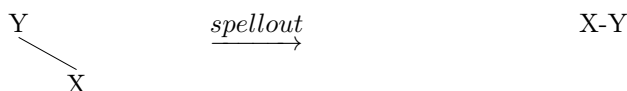
In Part I of this dissertation, I discussed the interaction of spellout and the functional sequence. To account for various phenomena, I used non-terminal spellout, in particular spanning. In this section I would like to show that spanning is entirely compatible with Mirror Theory, my chosen linearization algorithm. There are three relevant questions here: what is the status of spanning lexical items in Mirror Theory, whether the principles that regulate spellout are compatible with Mirror Theory, and whether the principles that regulate competition for insertion are compatible with Mirror Theory. I will discuss these questions in turn.

### 10.5.1 The status of spanning items in Mirror Theory

In his discussions of morphological word formation, Brody has agglutinative patterns in mind. Consider the formulation of Mirror again:

- (100) Mirror  
 The syntactic relation "X complement of Y" is identical to an inverse-order morphological relation "X specifier of Y".  
 (Brody, 2000a, p. 42.)

(100) states that if X is the complement of Y, then they form a morphological word X-Y, with X linearly preceding Y.

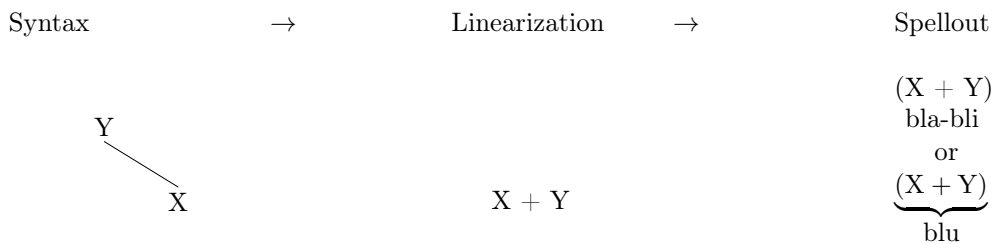


The examples of such morphological word formation in Brody's works involve separate morphemes for X and Y. However, natural language is not always agglutinative, and separate terminals

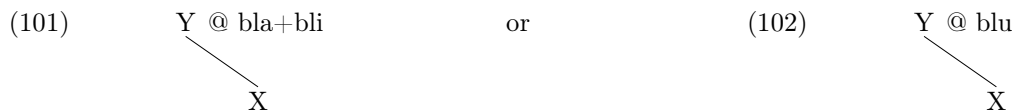


are often spelled out together in portmanteau morphemes. Portmanteaus can be naturally accommodated into Mirror Theory: they are morphological words, but have fewer morphemes than terminals and this obscures the structure and linearization internal to these morphemes.

One way of implementing this is to separate linearization from actual spellout, and apply operations in the strict order narrow syntax > linearization > morpheme insertion. This means that spellout applies at the interface, to the linear order produced by the tree rather than to the tree itself. In this view, the spellout of the above example is as below.<sup>23,24</sup>



Spellout receives the linear order X preceding Y, and depending on the vocabulary of the language, it can be spelled out by two separate morphemes or by a portmanteau. On an ordinary Mirror Theoretic tree representation:



Portmanteau morphemes thus can be captured by Mirror Theory without further enrichment of the theory (with the above outlined interface implementation being admittedly only one of several possible ones): they are simply Brodyan morphological words.

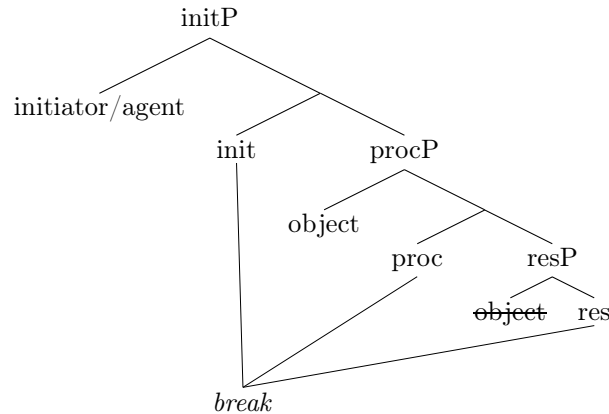
Spanning lexical items are nothing but portmanteaus for head sequences, i.e. Brodyan morphological words. Consider why. Spanning lexical items are lexical items that spell out a contiguous sequence of heads that take each other as syntactic complements. A syntactic complement line in Mirror Theory corresponds to a morphological word. Spanning items thus correspond to morphological words, with a portmanteau realization of the heads involved. In fact, they are the most conventional, most conservative morphological words: their parts are so inseparably integrated into one unit that they cannot even be distinguished on the surface.

Above I argued that Mirror Theory can accommodate spanning items in the same way it does any other complex head, i.e. by morphological word formation. Choosing Spanning as the spellout algorithm, in fact, naturally leads to Mirror Theory as the linearization algorithm. This is because in a derivational model, it is hard to see how a spanning item could undergo movement to a higher head position in the tree. In this thesis I argued for spanning lexical items, but none of them appeared to move this way. While the movement of spanning items is not immediately relevant for the empirical area I am investigating, it is an issue that requires attention in the model in general. Consider, for instance, the verbal domain. Ramchand (2008b) argues that the transitive verb *break* spells out the verbal heads *init*, *proc* and *res* (where the first two roughly correspond to *v* and *V*). The spanning structure for a verb phrase with *break* is shown in (103).

<sup>23</sup>I use + here instead of > to signal that according to Mirror, X and Y have to form a morphological word in this example.

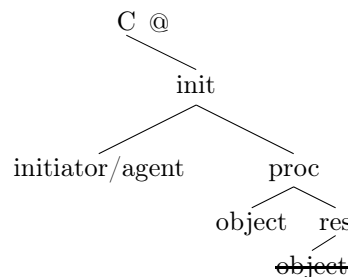
<sup>24</sup>After linearization has applied to the output of narrow syntax, this approach is very close to Newson's (2010) system (only he generates the linear order directly, without deriving it from a hierarchical structure).

(103)



In a language with V to T (French) or V to C movement (Scandinavian languages), it is not entirely clear how a span could move, and how it would form a complex head with the landing site. In Mirror Theory, however, ‘head movement’ involves morphological word formation rather than actual movement. In the relevant languages, V is the syntactic complement of, and forms a morphological word with T and C, and it is spelled out in the highest position of the morphological word (T or C). (104) shows this in simplified form.

(104)



In this approach the whole problem of how to move a span simply doesn’t arise. The use of spans thus provides an additional motivation for adopting Mirror Theory as the linearization algorithm.<sup>25</sup>

### 10.5.2 The principles regulating Nanosyntactic spellout meet Mirror Theory

Nanosyntax has two principles that regulate lexicalization: the Exhaustive Lexicalization Principle and the Superset Principle. The Exhaustive Lexicalization Principle requires every syntactic feature to be lexicalized.

(105) Exhaustive Lexicalization Principle

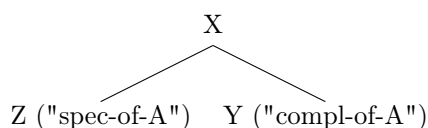
Every syntactic feature must be lexicalised. (Fábregas, 2007, p. 167.)

This principle is not embraced by Brody’s Mirror Theory. In fact, an important part of Mirror Theory builds on the idea that some functional heads remain genuinely without spellout, even without a phonologically zero spellout. Brody and Szabolcsi (2003) argue that those functional heads that don’t receive a spellout can give rise to two configurations. The category that we generally think of as their complement can be their syntactic complement (106), or it can be projected into an outer specifier (107).<sup>26</sup>

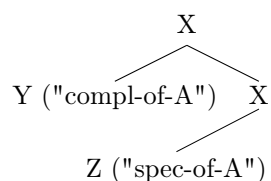
<sup>25</sup>In Part II, I also used phrasal spellout for pronouns. Phrasal spellout can be readily applied to Mirror Theoretic representations, whether spellout applies literally to chunks of the tree constructed by syntax, or to the linearized string that comprises the elements contained in the relevant phrase. As phrasal spellout of Mirror Theoretic trees is straightforward, I will not discuss it in detail here.

<sup>26</sup>Note that the higher segment of X is not an Agr here, but truly a second segment of X itself.

(106)



(107)



These configurations give rise to different orders: (106) linearizes as  $Z > Y$ , while (107) yields  $Y > Z$  (X has no spellout).<sup>27</sup> Brody (2004) and Adger et al. (2010) make extensive use of the structure in (107).

If one adopts the Exhaustive Lexicalization Principle, as I did in this thesis, then (107) cannot be a property tied to functional heads without a spellout, because such heads cannot exist. Instead, (107) will have to be tied to functional heads with zero spellout. I believe that this is a small modification that does not change the system in a significant way. In a theory which allows functional heads either to receive zero spellout or no spellout at all, the two types of heads are very hard to distinguish empirically in the first place. The possibility of the structure in (107) would be a possible diagnostic, but the conclusions one can draw on the basis of this could not be independently confirmed. Therefore I see no harm in bringing together the Exhaustive Lexicalization Principle and Mirror Theory.

Keeping the Exhaustive Lexicalization Principle is also important because the Superset Principle, extensively used in this thesis, directly follows from it.

(108)

The Superset Principle

A lexical item can spell out syntactic structures which are smaller than that lexical item.  
 (from the Nanosyntax glossary at <http://nanosyntax.auf.net/glossary.html>)

As far as I can see, this principle does not clash with any assumptions of Mirror Theory. If spellout applies directly to the tree representation, (108) applies to Mirror Theoretic representations the same way as it would to derivational representations. There are several studies on the latter by now, see Fábregas (2009) and Caha (2009), among others. If spellout applies at the interface to the already linearized string, then the categorial labels associated to the lexical item in the lexicon are arranged not in a hierarchical order, but in a linear order. Then the lexical item can be matched to a linear string if it contains (a substring of) that string. I conclude that there is no obstacle to bringing together the Superset Principle and Mirror Theory.

### 10.5.3 The principles regulating Nanosyntactic competition meet Mirror Theory

Nanosyntax also has two principles that regulate lexical competition for insertion: Minimize Junk and Maximize Span (a.k.a. Best Fit, Union Spellout Principle, or the Minimize Exponence of Distributed Morphology). I repeat them here for the reader's convenience.

(109)

Minimize Junk

When two lexical items are in competition to spellout a given span/subtree (because they both contain that span/subtree), the one which wins is the one which contains the least unused material, i.e. the least junk.

(from the Nanosyntax glossary at <http://nanosyntax.auf.net/glossary.html>)

(110)

Minimize Exponence (Maximize Span)

The most economical derivation will be the one that maximally realizes all the formal features of the derivation with the fewest morphemes. (Siddiqi, 2009, p. 4.)

<sup>27</sup>In a configuration like (107), only Z can be interpreted as the regular specifier of X, because only Z shares all features of X. Y can only be interpreted as the regular complement of X. In the previous section, when we needed extra projections to accommodate the regular specifier, we had the exact opposite scenario: the "higher specifier" was to be interpreted as the regular specifier, and the "lower specifier" was to be interpreted as the complement. This is why a structure like (107) was inapplicable, and an additional head was required to accommodate the "higher specifier".

Once it is accepted that the Superset Principle can operate on Mirror Theoretic structures, no incompatibility arises between these principles and Mirror Theory. (109) directly follows from the Superset Principle and general economy considerations. Unlike (109), (110) does not even depend on the Superset Principle, and can be used independently of it. Distributed Morphology, for instance, pairs (110) with the Subset Principle. (110) is a pure economy principle, which can be adopted by any syntactic framework, including Mirror Theory.

#### 10.5.4 The linearization of agreement morphemes in Mirror Theory

In Part II of this dissertation I examined agreement phenomena in the Hungarian KP. If in that part I had come up with a theory about how agreement morphemes added to functional heads linearize, I could have called this section ‘The linearization of agreement morphemes meets Mirror Theory’. However, in Part II I did not have a proposal about this issue, and I have not found a solution already on the market either. Bringing together agreement morphemes and Mirror Theory therefore awaits future research.<sup>28</sup>

While the problems of linearizing agreement morphemes carry over from Part II to Part III, and to Mirror Theory, no new problems arise for agreement from adopting Mirror Theory. The issues are exactly the same. If an agreement morpheme is added to a functional head and both have an overt spellout, what is their linear order? Does the order follow from a general heuristics (e.g. keep the order in which the interpretable versions of the features are base-generated)? Does it follow from an idiosyncratic property of the agreement morpheme, or the functional head to which it is attached? Does it have to be defined separately for every functional head – agreement pair? Further, if two agreement morphemes are added to the same head, and both spell out overtly, what is their linear order with respect to each other and the functional head?

As far as I can tell, a theory that will work on garden variety derivational trees will also work for Mirror Theory without further add-ons.

## 10.6 Summary

This chapter examined the interaction of linearization and the functional sequence. I started with a demonstration of how the chosen linearization algorithm may influence the posited base sequence. Then I summarized the linear positions and proposed base-generation sites of nominal modifiers, and ran five linearization algorithms on the proposed functional sequence. Head movement turned out to be entirely inadequate, as it cannot capture the (multiple) interleaving of prenominal free and postnominal affixal heads. The head-parameter doesn’t cause any problems for the Hungarian KP, but I rejected it on the grounds that it is problematic when applied to a larger empirical basis. Phrasal movement to word order projections can derive the order at the price of many movements. Proponents of this theory will not be put off by this, but I see the complexity of the derivation as a motivation to search for other alternatives. Among more mainstream, derivational approaches, I have found Myler’s idea the best fit for my data. I showed that the Hungarian word order can be captured by movements into inner specifiers. This still requires a good number of movements, but less than phrasal movement to word order projections.

Among the linearization algorithms surveyed, I found Mirror Theory the most satisfactory. I argued that a simplistic "all-suffixes-in-one-complement-line" analysis cannot capture the whole complexity of the data, and I proposed a representation that can accommodate the interleaving of prenominal free and postnominal affixal heads. I also argued for a minor adjustment to the theory, which consists in replacing Agr nodes with contentful labels in more fine-grained decompositions. Finally I showed that spanning lexical items provide an additional argument for adopting

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<sup>28</sup>Brody himself doesn’t discuss the status of agreement morphemes. Adger et al. (2010) examine verbal agreement morphemes in Kiowa and they argue for a particular treatment of their linearization. Adger et al. (2010) argue that the relevant agreement morphemes of Kiowa are phonological clitics, which linearize at the edge of a phonological domain rather than right in the head where they reside. I will not review their solution here in detail, because it cannot be applied to agreement and concord in the Hungarian KP. The agreement morphemes I have discussed in Part II are not phonological clitics, and appear to be linearized right in or directly preceding or following the functional head to which they are added.

Mirror Theory, and that there are no inherent incompatibilities between my chosen spellout and linearization algorithms.



# Chapter 11

## Conclusion

### 11.1 The view of f-seq emerging from the thesis

In Chapter 1 I discussed the different types of evidence that bear on the shape of the functional sequence (compositional semantics, scope, distribution, portmanteau morphemes, universalist considerations, word order) and four variables that determine how to interpret the evidence from these sources. These variables are:

1. how the functional sequence is mapped onto the syntax-semantics interface
2. how the functional sequence is mapped onto the syntax-phonology interface (the lexicalization problem)
3. which morphemes represent agreement, and what status agreement markers have with respect to the functional sequence in general (the agreement problem)
4. how the functional sequence is linearized (the linearization problem)

I took a firm standpoint on the first issue: I assumed without argument that the syntax-semantics mapping is maximally elegant, and the semantics of each node is calculated compositionally on the basis of the semantics of its daughter nodes. For heads, I assumed that each and every one of them has to have a semantic contribution. For specifiers, I assumed that they must be semantically compatible with and share the interpretation of every head they get into a spec-head configuration with during the derivation. For f-seq in general, I assumed that each bit of semantics is available at exactly one point. This led to the view that if a projection P contributes interpretation  $\alpha$  to the structure, then any morpheme or constituent that has the meaning component  $\alpha$  must be in the head or specifier of P at some point in the derivation.

The theoretical goal of the thesis was to find those approaches to the other three variables that fit this syntax-semantics mapping to the highest degree.

As for the syntax-phonology mapping, I was looking for an algorithm that can provide an insightful explanation for the often observed polysemy of syntactic heads. The polysemy of heads often correlates with different positions such that insertion into the higher position includes the meaning available in the lower position plus something more. In the Hungarian xNP, I observed this pattern for classifiers, non-inflecting demonstratives, certain quantifiers and case markers. I argued that the Nanosyntactic lexicalization algorithm provides a way to capture this kind of polysemy in an enlightening as well as constrained manner.

Nanosyntax uses non-terminal spellout. Spanning, used in most of the thesis, allows one lexical item to spell out either just one terminal or a series of heads that take each other as complements. The Superset Principle states that lexical items may spell out all or just a subset of the categorial features they possibly could. This captures precisely the pattern described above: one lexical item may appear in various but related positions, and the meanings available in those positions stand in a subset-superset relation to each other.

In Part I of the thesis I showed that adopting this lexicalization algorithm allows explanatorily useful accounts of Hungarian classifiers, non-inflecting demonstratives, certain quantifiers and case

markers, and that the emerging analyses represent an improvement over previously proposed ones. The main advantages of the Nanosyntactic analyses can be summarized as follows. Firstly, a number of lexical items appear to be a bit of this category and a bit of that. The analysis of such cases has long been a battleground, because with lexicalization tied to terminals it is difficult to capture this apparent categorial ambiguity. Hungarian dressed postpositions are exemplar in this regard: they show similarities with both case markers and naked postpositions, and the question of what their category is has divided researchers. Nanosyntax avoids massive homophony in the lexicon for these items, and it doesn't require the relevant morphemes to be ambiguous or vague either. The adopted model also avoids complicating the theory of syntactic categories with cross-categoriality, and provides a natural account of lexical items with more than one semantic function. Secondly, Nanosyntax can capture the intuition that two lexical items competing for the same position can nevertheless co-occur under restricted circumstances. This appears to be the case with proper names, non-inflecting demonstratives, certain quantifiers on the one hand and the definite article on the other hand. The idea is that in this case one lexical item is bigger than the other, and can serve as an exponent of the position(s) spelled out by the smaller lexical item. Disruption effects can cause the bigger lexical item to Underassociate some of its features, which are thus freed up for spellout by the smaller lexical item. Thirdly, Nanosyntax allows the reinterpretation of many cases of rather spurious haplology as by-products of lexicalization, thereby it simplifies the grammars of languages in which such spurious haplology is observed.

Turning to the agreement problem, the adopted syntax-semantics mapping combined with the Nanosyntactic toolbox led to the view that agreement morphemes are represented in narrow syntax in the form of uninterpretable, unvalued (agreement) features added to independently justifiable functional heads. The Nanosyntactic toolbox is incompatible with the insertion of morphemes in a post-syntactic component. This prompted me to look at theories that have agreement morphemes in the syntax. Agreement morphemes don't have scope or indeed any semantic contribution. As a result, I rejected theories that posit AgrP for the sole purpose of hosting agreement morphemes. Such theories are incompatible with my assumption that every syntactic head has a semantic contribution to the structure. Most compatible with my assumptions was the model that treats agreement morphemes as spellouts of uninterpretable features hosted by contentful heads in *f*-seq.

As far as linearization is concerned, the adopted syntax-semantics mapping rules out analyses that posit empty Agr or stacking projections that serve purely as landing sites of roll-up movements. I showed that roll-up movements can still derive the order of Hungarian DP-internal modifiers if these movements target internal specifiers of independently established functional heads (Myler, 2009). I also showed that due to alternations between prenominal non-affixal and postnominal affixal heads, head movement cannot derive the order in the Hungarian xNP; and I rejected the head-complement parameter on the basis of cross-linguistic considerations. I argued that the lexicalization algorithm that derives the order in the most economical way and best fits the adopted syntax-phonology mapping is Brody's Mirror Theory. Mirror Theory is economical because it eliminates roll-up movements entirely, and it is highly compatible with Spanning because Spanning itself can be viewed as the extension of Mirror Theory to portmanteau morphemes.

The most important repercussion for the lexicalization of *f*-seq emerging from the thesis is the following: lexical items can spell out a chunk of structure, and the same chunk of structure may be lexicalized in more than one way. The most important repercussions for the shape of *f*-seq emerging from this thesis are the following: there are no Agr heads and there are no word-order heads.



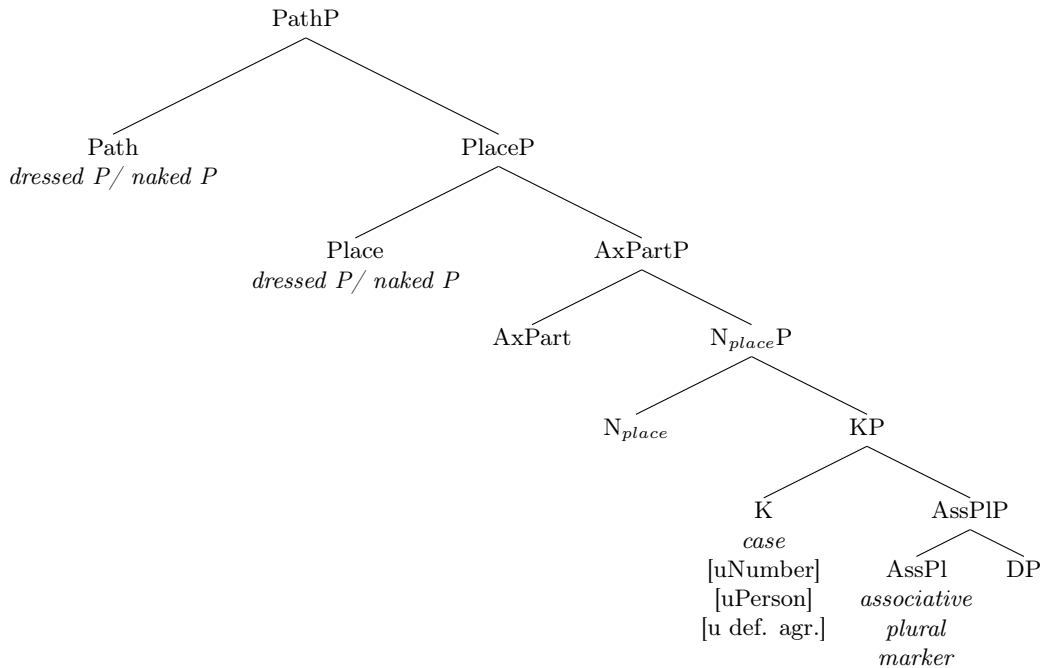
## 11.2 The shape of the Hungarian xNP emerging from the thesis

The interaction of the four variables mentioned above was examined on the empirical basis of the Hungarian xNP. The order of the noun and its modifiers in the Hungarian xNP is summarized in (1).

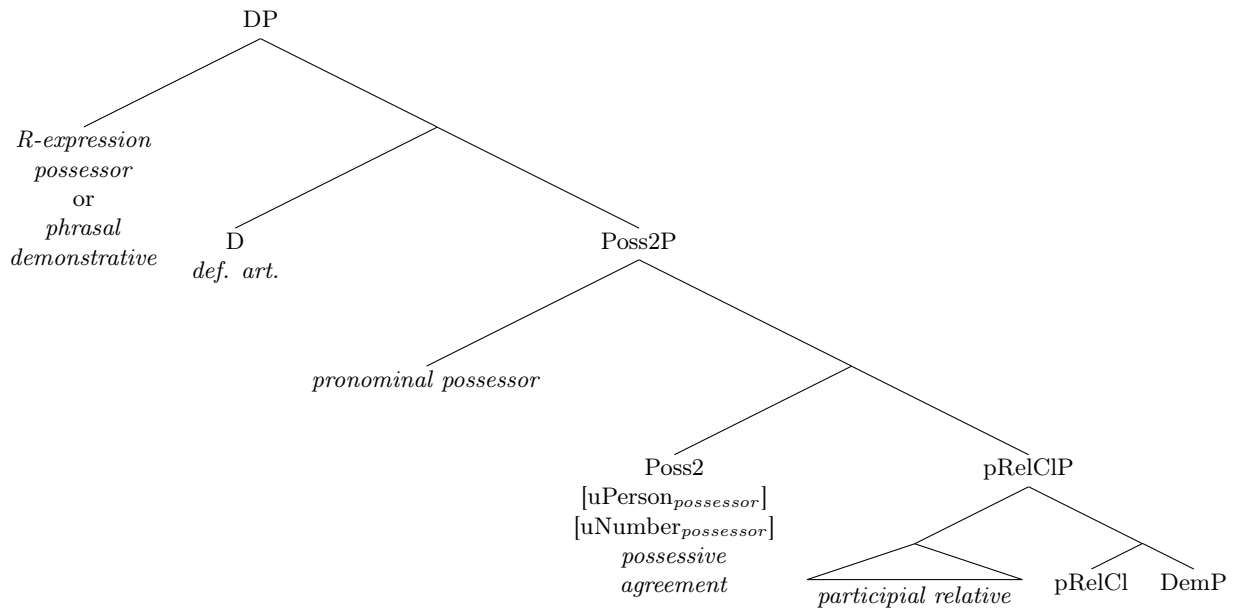
- (1)
- a. Dative possessor > phrasal demonstrative/R-expression Nominative possessor > definite article > pronominal Nominative possessor > participial rel. cl. > non-phrasal demonstrative > participial rel. cl. > quantifier > numeral > participial rel. cl. > adjective > classifier > adjective >
  - b. > noun >
  - c. > possessedness suffix *ja/-je/-a/-e* > plural suffix > possessive agreement suffix > associative plural suffix > case suffix/dressed P > naked P

Taking into consideration the general view of f-seq emerging from the thesis, the positions assigned to these items are summarized in (2) through (6). Spanning lexical items are shown in one position only.

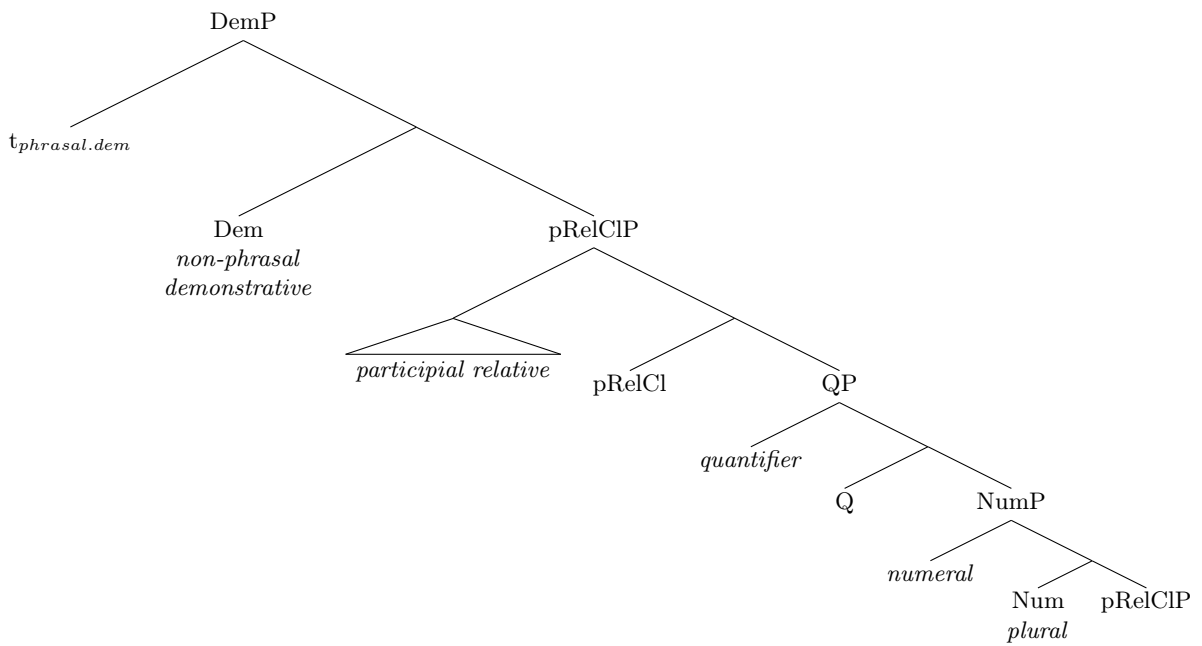
(2)



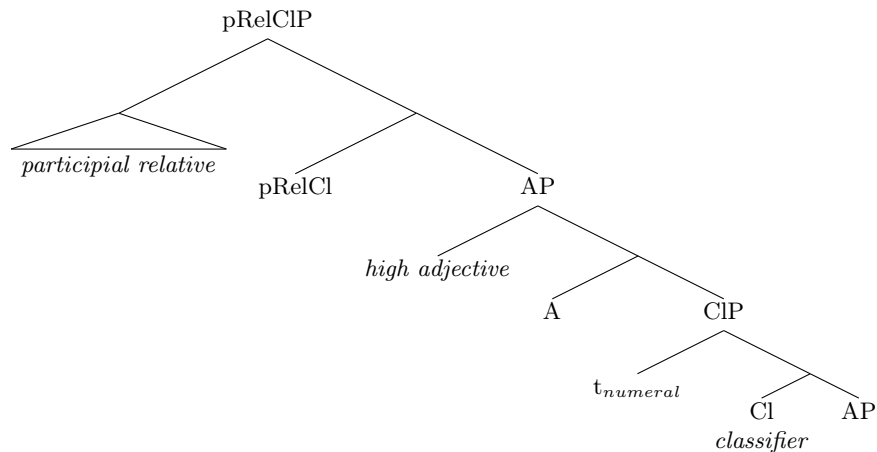
(3)



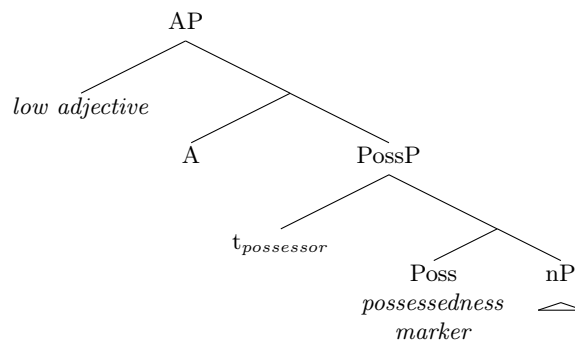
(4)



(5)



(6)



## 11.3 The contributions of the thesis

### 11.3.1 Contributions to the theory of grammar

Certain data or phenomena in the dissertation and the analyses proposed for them have consequences that go beyond the domain of the Hungarian xNP, and bear on aspects of the theory of grammar in general.

Some theories have it that extended XPs must be built in a way that projections can be missing only from the top, but it is not possible to have a ‘gap’ in the middle of the sequence. To my knowledge, this approach was first stated explicitly in Cinque (1999). Cinque argues that all adverbial projections are present in every clause, even if there is no overt material in either the head or the specifier of these projections. He assumes that when a projection is semantically inert, it has a ‘minus value’, but it is still present in the structure.

The results of the thesis do not bode well for this view. Arguments against this approach come from both semantics and lexicalization. I argued at length that if the semantic import of a projection cannot be detected in a concrete XP, then that projection is simply not present in that XP. Classifiers and demonstratives are good examples of this scenario: classifiers are missing from DPs with a mass reading, and DemP is missing from DPs that have no demonstrative element. Such DPs, however, can contain a definite article and a case marker, therefore they can be topped off by a DP and a KP. Given that ClP and DemP are merged between N and D, these DPs have a gap (ped projection) in the middle. The proposed lexical entries for proper names, inflecting demonstratives, non-inflecting demonstratives and the null head introducing quantifiers also require the existence of gaps in the middle: these lexical items can span D and some lower head which is not directly under D in the hierarchy of projections (Dem, Q, N). It is precisely the possibility of gaps that results in the use of these lexical items. Disruption effects always materialize in the context of gapped sequences and lexical items that spell out a piece of structure with a gap in the middle. Therefore

the adopted syntax-semantics mapping and the adopted syntax-phonology mapping converge on the conclusion that projections can be missing from the middle of an extended projection. This view is implicitly adopted by many researchers, but in the context of this thesis it needs to be stated explicitly.

In the domain of agreement, the surveyed cross-linguistic DP-internal concord phenomena, as well as demonstrative concord in Hungarian, point to the conclusion that probes can be structurally lower than their goals. This directly bears on the theory of Agree because it supports the existence of Reverse Agree. The amount of structure available between Hungarian inflecting demonstratives and case markers, in turn, means that unvalued features must be able to probe up to the phase boundary, and the search space cannot be limited to the specifier of the goal-bearing head. In addition, the proposed feature distribution in the Hungarian xNP supports a Béjar and Rezac (2009) type of approach to Agree, whereby unvalued features probe their c-command domain first, and they resort to Reverse Agree only if the first search doesn't yield a match. Still in the domain of agreement, the phenomenon of Suffixaufnahme with *-é* concord showed that agreement between two unvalued features is a licit operation. This, in turn, argues for a feature sharing approach to Agree.

A novel theoretical aspect of the thesis is the attempt to apply Nanosyntactic lexicalization to Mirror Theoretic representations. I have shown that this particular lexicalization algorithm and this particular linearization algorithm are compatible to a high degree. However, a unification of the two models require the rethinking of Mirror Theory's assumption that genuinely empty heads have special linearization properties, simply because Nanosyntax doesn't allow for genuinely empty heads (the Exhaustive Lexicalization Principle). A further theoretical contribution is the specific proposal that Agr projections should be eliminated from Mirror Theory by adopting more fine-grained structures.

### 11.3.2 Contributions to nominal f-seq in general

Certain points raised in the thesis carry over from Hungarian to the functional sequence of xNP in general. I would like to highlight some of them here. The analysis of the token versus type interpretation of 'count' adjectives, the decomposition of the P domain and the functional sequence of phrasal (i.e. inflecting) demonstratives was motivated on semantic grounds, therefore these arguments have validity beyond the Hungarian xNP. I argued that type readings of 'count' adjectives are obtained when they are merged into structures lacking ClP, or they are merged below ClP. I also suggested that PlaceP doesn't combine with DP directly. Instead, Place denotations are built incrementally via the projection line  $\text{Place} > \text{AxPart} > \text{N}_{\text{place}} > \text{KP}$ . Finally, I argued that phrasal demonstratives have the f-seq  $\text{DP} > \text{DemP} > \text{N}$ . This accounts for their nouny properties, their deicticity, and their definiteness.

The existence of a DemP lower than D, but still above NumP, was motivated on the basis of word-order: this is where non-inflecting demonstratives appear in the context of a disruption effect. Many analyses suggest that demonstratives are base-generated in D or spec, DP, or that demonstratives are generated fairly low in xNP. The position of non-inflecting demonstratives provides evidence for a DemP separate from DP, but still above NumP.

The origin of phrasal demonstratives in spec, DemP was supported by considerations pertaining to semantics and co-occurrence patterns. The semantic argument was that phrasal demonstratives have to be in a local configuration with the deictic Dem head at some point in the derivation. The distributional argument was that phrasal demonstratives obligatorily co-occur with the definite article even when they modify a noun that can span D. I took this to be a disruption effect caused by the Dem head introducing phrasal demonstratives. In as much as a UTAH-like principle holds across the nominal functional sequence, and nominal modifiers have to be merged consistently in the same position, this means that spec, DP is cross-linguistically a derived position for phrasal demonstratives.

The discussion of demonstratives also bears on the debate about whether cross-linguistically demonstratives have the status of phrases or heads. In some languages demonstratives appear to be phrasal, in others they have the properties of heads. Researchers have attempted to give a unified account for all demonstratives, but no consensus has emerged. Some works raised the possibility that both phrasal and non-phrasal demonstratives exist. Hungarian shows that this view is indeed

correct, as it possesses both phrasal and non-phrasal demonstratives.

The way adjectives and relative clauses are integrated into the functional sequence has long been a matter of debate, and the problem of choosing between the adjunct and the specifier analysis has proved not to be easy to solve on empirical grounds. For theory-internal reasons, I argued that adjectives and participial relatives are introduced into f-seq as specifiers rather than adjuncts. The motivation for this is that under the right circumstances the inclusion of these modifiers triggers disruption effects for spanning heads. In the adopted lexicalization model, adjuncts cannot give rise to disruption effects for spanning lexical items. This led to the conclusion that adjectives and participial relatives are introduced by a specialized functional head.

### 11.3.3 Contributions to the analysis of Hungarian

The thesis presents many novel analyses for specific Hungarian data and phenomena. The data of the SNPE in Chapter 3 are new, therefore the analysis of the SNPE is also new. The analysis of non-inflecting demonstratives, quantifiers and proper names in Chapter 4 represents a new way of thinking about certain cases of syntactic haplogy. The lack of article deletion with proper names modified by a Dative possessor or an inflecting demonstrative has not been integrated into earlier Chomskyan generative work on the topic (the data were first observed in Alberti and Balogh's 2004 paper, couched in the framework of categorial grammar). Chapter 5 gives a novel account of dressed Ps, naked Ps and case markers. The proposal captures the intuition that dressed Ps are somehow intermediate between case markers and Ps without positing intermediate categories.

In Chapter 7 I survey variation in the linear position of possessive agreement. This variability has already been observed in the descriptive literature, but only part of the data have been mentioned in previous generative works, and I am not aware of a discussion (descriptive or generative) that pulls together all the variation in the way Chapter 7 does. I exploit this variability to argue against the received view that the phrase hosting Nominative possessors on the surface is projected by the agreement marker.

Chapter 8 presents new arguments against the appositive analysis of inflecting demonstratives, and proposes a complex internal structure for them. The proposal that some instances of the Hungarian plural marker, including the plural of demonstratives, represent agreement is one of the most innovative points of this thesis. Chapter 8 also adduces new evidence for Bartos' (2001a) idea that *-é* is the exponent of the Genitive case, and presents the first proposal that derives all the properties of DPs with *-é*.

The ideas developed in Ch 9 represent an original way of looking at the Hungarian plural marker. I put forth an analysis of the complementarity with classifiers, and I explained the complementarity with counters in a novel way. I also devoted considerable attention to the associative plural, which previous generative works have mentioned only in passing. I raised new arguments against the decomposition of the associative plural into the possessive anaphor *-é* and the garden variety plural *-k*, and made a concrete proposal about the relationship between the two kinds of plural markers. Both the distributional similarities and differences of the two suffixes were shown to follow from the analysis. Last but not least, Chapter 9 also puts pronominal plurality and the structure of DPs with pronouns in a new light. The plurality of Hungarian first and second person pronouns has not yet been attributed to the Associative Plural projection, and I am not aware of analyses that posit a structural difference between the strong and weak readings of Hungarian third person plural pronouns either. The hypothesis that Hungarian has agreement plurals made it possible to view possessive anti-agreement from a new perspective.

### 11.3.4 Empirical contributions

The dissertation has presented both new data and new observations about old data. The behaviour of classifiers in what I called the SNPE, their exceptional order with respect to adjectives and the lifting of their co-occurrence restrictions represent new data that have not been observed and discussed in the literature. The observation that the general classifier *darab* has a different distribution from specific classifiers in the SNPE, too, is also a new piece of data.

The so-called 'possessive anaphor' *-é* has already been discussed in the literature, but the lack of the thematic possession reading in the predicative use has not been observed to the best of my

knowledge.

Finally, I have also proposed new generalizations about the plural marker of third person pronouns. I suggested that  $\delta$ - $k$  loses the plural marker without losing the plural meaning only in the strong use of the pronoun, and only in caseless contexts. As far as I am aware, the distribution of the plural marker on pronouns has not been formulated this way.

## 11.4 Outlook and avenues for future research

The dissertation touched upon some big picture questions that could not be explored in their entirety due to the scope of the thesis. These issues represent a fertile ground for further research.

The first of these issues is how to constrain Supersetism and Underassociation. It is clear that uncontrolled Underassociation leads to overgeneration. At the same time, it also provides an ingenious solution to many syntactic phenomena. Internally to Nanosyntax, several different restrictions are explored. In a way, Maximize Span, Minimize Junk and the Exhaustive Lexicalization Principle already constrain Supersetism: Underassociation must respect economy considerations, and it cannot take place if this would leave some feature without an exponent. Some researchers are exploring a syntactic constraint called the Foot Condition. This states that Underassociation must ‘start from the top’. That is, lexical items must always spell out the lowest feature they can (the ‘foot’ in the piece of structure associated to the lexical item). This constraint is mostly used in phrasal spellout (but see Abels and Muriungi, 2008 for its application in spanning). I didn’t adopt the Foot Condition in this thesis because it is not compatible with my analysis of classifiers. I refer the reader to Caha (2009) for more discussion on the Foot Condition.

A semantic constraint on Underassociation is explored in Ramchand (2008b). According to this, if a lexical item Underassociates some feature(s) and those features are spelled out some other lexical item in a structure (this happens with the disruption effects I have discussed), then the two lexical items must unify their lexical-conceptual content. In other words, they must be semantically highly compatible.

A third way of constraining Supersetism is to specify features in the lexical entries such that they cannot be Underassociated (Svenonius, 2009; Starke, 2011). In contrast to the previously mentioned methods, this is not an across-the-board constraint, it must be applied on the level of individual lexical items. I used this technique with pronouns and dressed Ps.

Which of these constraints or what combination of them yields the best results can be evaluated only once we have examined a large enough set of cases. With a broad enough empirical basis, we will be able to see how many cases generally thought of as polysemy can be captured by Underassociation, and we will see if interesting generalizations emerge about Supersetism.

The second point that deserves further study is the suggestion to eliminate AgrPs from Mirror Theory via more fine-grained decompositions. I raised the idea that if an AgrP is necessary in a Mirror Theoretic representation, it is a clue that at that point the decomposition is not granular enough. The feasibility of this conjecture will have to be determined by further research. However, the idea has applicability beyond Mirror Theory, and it could be easily adopted for roll-up movement as well. In particular, it is possible that roll-up movement targets the specifier of interpretable functional heads that don’t have externally merged specifiers. There is an upper limit to the number of phrasal modifiers employed by a given language in a given extended projection. With more fine-grained decompositions, the number functional heads increases, while the number of phrasal modifiers remains the same. This will inevitably lead to representations in which some projections don’t ever have an externally merged specifier. These specifier positions could serve as landing sites for roll-up movements. This would not solve the problem of having word-order movements, but at least could eliminate the word-order heads.

A significant question left open by the thesis is how to linearize agreement morphemes in a theory that doesn’t assume dedicated AgrPs for these morphemes. The chief contribution of the thesis with regard to this issue is that it points out just how burning a question this is. Intensive research into this problem on a cross-linguistic and intra-linguistic level would yield rich results; this task must be undertaken in future studies.

The most important theoretical agenda of the thesis was to eliminate unnecessary positions from syntax, and constrain representations by removing heads that don’t have a semantic import.

The approach developed here is one concrete example of what a theory with this agenda could look like. I hope that it will serve as an inspiration to future studies to pursue a syntax constrained in this way.





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