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The interaction of syntax, the lexicon and information structure in Hungarian

Tibor Laczkó

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Volume 354

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LEXICALISING CLAUSAL SYNTAX

THE INTERACTION OF SYNTAX, THE LEXICON AND INFORMATION STRUCTURE IN HUNGARIAN

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Preface

In this book, which is a substantially revised version of my dissertation submitted for the title Doctor of the Hungarian Academy of Sciences, I am reporting the results of eight years of LFG-theoretic and XLE-implementational research. For helpful comments on previous versions of parts of this book, I am grateful to the participants of the conferences at which I gave presentations, to the anonymous reviewers of my earlier publications, and, in particular, I am grateful to Tracy Holloway King and Miriam Butt, the constant editors of the LFG Conference Proceedings, for their very careful and helpful editorial comments on my LFG proceedings papers. My thanks also go to Martin Forst, Vera Hegedűs, Csaba Olsvay and György Rákosi for discussions of certain theoretical and implementational issues. My special thanks go to Gábor Alberti, who provided very useful feedback for me on my sections on GASG, the theory he developed. I am indebted to Farrell Ackerman and Louise Mycock for tremendous professional help. They kindly and generously commented on the first drafts of entire chapters, Chapter 3 and Chapter 4, respectively. I am exceedingly thankful to the two anonymous reviewers of the manuscript of this book. Their very detailed and extremely helpful comments greatly enhanced the content and, especially, the presentational aspects of the entire book. At a later point one of the two anonymous reviewers identified herself as Tracy Holloway King. Therefore, in this book I will refer to my reviewers as "Tracy Holloway King" and as "my anonymous reviewer". As usual, all remaining errors and shortcomings are my sole responsibility.

I carried out my research and wrote the larger part of this book while I worked at the Department of English Linguistics at the University of Debrecen. I am thankful to my former department and members of my research group for their collegial support and collaboration, especially to György Rákosi and Péter Szűcs. I am also grateful to my current department at Károli Gáspár University of the Reformed Church in Hungary for their support.

I also thankfully acknowledge that my research and the publication of this book was substantially supported by Project no. 111918 (*New approaches in the description of the grammar of Hungarian pronominals)* financed by the National Research, Development and Innovation Fund of Hungary, under the K funding scheme.

And there is someone without whom this whole research and book project would have been mission impossible. I am ever so grateful to my wife, Edit, for her understanding, patience, sacrifice, encouragement and support in all imaginable and unimaginable ways.

For Edit

List of abbreviations

ABS	absolutive case
ACC	accusative case
ADJ(UNCT)	closed non-subcategorised grammatical function
AdvP/ADVP	adverbial phrase
Ag/ag	agent (semantic role)
AgrP	agreement phrase
ALL	allative case
AP	adjectival phrase
AspP	aspect phrase
a-structure	argument structure
AVM	attribute-value matrix
BACK.INF	background information
CAR	verb-carrier
CAT	category
CAUS	causativising suffix
CC	copula construction
CN	constituent negation
COMP	complement; complementiser; closed propositional subcategorised grammatical function
CON	constraint component of Optimality Theory
Concat/CONCAT	concatenation
CONT	content
CONTR-TOPIC	contrastive topic
CP	complementiser phrase
CQ	constituent question
CQF	constituent question focus
c-structure	constituent structure
DAT	dative case
Def/DEF/def	definite
DEFO	definite object marker
DEV	deverbal nominalising suffix
DF	discourse function
DIR	directionality (feature)
DistP	distributional (quantifier) phrase
DO	direct object
DP	determiner phrase

D-structure	deep structure
E	Expression
ECM	Exceptional Case-Marking
EI-OpP	exhaustive identification operator phrase
EPN	(VP)external predicate negation
EPP	Extended Projection Principle
erad	eradicating (stress pattern)
EVAL	evaluator component of Optimality Theory
EvalP	evaluation phrase
[+exh]	exhaustive (focus) feature
exh	exhaustive (focus-type feature value)
EXH	exhaustivity operator
Exp/exp	experiencer (semantic role)
FN	function name
[+foc]	focus feature
FOC	focus grammatical function
FocP	focus phrase
FP	functional phrase / focus phrase
FST	finite state transducer
f-structure	functional structure
GASG	Generative Argument Structure Grammar
GB	Government and Binding Theory
GEN	generator component of Optimality Theory
GF	grammatical function
gf-structure	grammatical functional structure
H	high (accent)
H+L	high-low (accent)
HPSG	Head-Driven Phrase Structure Grammar
HunGram	Hungarian Grammar (LFG-XLE implementation)
[+id]	identificational (focus) feature
id	identificational (focus-type feature value)
ILL	illative case
INA	inherently negative adverb
INCORP	incorporation
Indef/INDEF/indef	indefinite
INDIC	indicative mood
INE(SS)	inessive case
inf	infinitive marker
Infl	inflection
INQ	inherently negative quantifier
INST	instrumental case
Inst/inst	instrumental (semantic role)
INT	interrogative phrase
INTER	interrogative (focus-type feature)

inter	interrogative (focus-type feature value)
IntP	intonational phrase
IP	inflectional phrase
IPNH	(VP)internal predicate negation, head-adjunction
IPNPh	(VP)internal predicate negation, phrasal adjunction
IRA	intermittently repeated action
ITER	iterative suffix
Juxtap	juxtaposition
L	low (accent)
LF	Logical Form
LFG	Lexical-Functional Grammar
LIP	Lexical Integrity Principle
LMT	Lexical Mapping Theory
Loc/loc	locative (semantic role)
Mod	modality
MP	Minimalist Program
NCI	negative concord item
neg	negative (focus-type feature value)
neg	negative (polarity value)
NEG	negative phrase / negative particle / negative feature
NegP	negation phrase
NLH	Non-Lexicalist Hypothesis
NMR	negative marker
NNP	non-neutral phrase
NOM	nominative case
NP	noun phrase
NUM	number (feature)
NUQ	negated universal quantifier
NW	n-word, negative concord item
[−o]	−objective
[+o]	+objective
OBJ	object (grammatical function)
OBJ_{Θ}	thematically restricted object (grammatical function)
$OBL_{(\Theta)}$	$oblique_{(THETA)}$ (grammatical function)
OT	Optimality Theory
P	plural
PARAM	parameter
PARC	Palo Alto Research Center
ParGram	Parallel Grammar
Part	participle
PART	particle
Pat/pat	patient (semantic role)
PathP	path phrase
PER(S)	person (feature)

Perf/PERF	perfectivising preverb
PF	Phonological Form
PHON	phonological feature
PhP	phonological phrase
Pl/PL/pl	plural
PlaceP	place phrase
POL	polarity feature
pos	positive (polarity value)
POSS	marker of a possession relation; possessor grammatical function
PP	prepositional/postpositional phrase
PPP	prominent preverbal position
PRED	predicate feature
PREDLINK	a grammatical function in copula constructions
PredP	predicate phrase
PRES	present (tense)
PREV	preverb
PRO/pro	pronoun/pronominal
PRON-TYPE	pronoun type
PrP	predicative phrase
PRT	particle
PST	past tense
PVC	particle-verb construction
PW	prosodic word
Q	*wh*-constituent
Q_{+FIN}	final *wh*-constituent in multiple questions
Q_{-FIN}	non-final *wh*-constituent in multiple questions
QP	quantifier phrase
[−r]	−restricted
[+r]	+restricted
RBL	Realisation-Based Lexicalism
ReALIS	REciprocal And Lifelong Interpretation System
REF-INDEX	referential index
RelP	relator phrase
S	sentence
SC	small clause
SCC	sample content cell
sem-structure	semantic structure
SENT	sentential (feature value)
SFX	suffix
Sg/SG/sg	singular
SLH	Strong Lexicalist Hypothesis
SOV	subject-object-verb (word order)
SPEC/Spec	specifier
S-structure	surface structure

STMT-TYPE	statement type
SUBJ	subject (grammatical function)
SUBJUNC	subjunctive (mood marker)
SUB(L)	sublative case
SUP/SUPERESS	superessive case
SVO	subject-verb-object (word order)
SYNSEM	syntactic and semantic features
Th/th	theme (semantic role)
TNS-ASP	tense-aspect (complex feature)
TOP	topic grammatical function
TopP	topic phrase
TP	tense phrase
TRANS	translative case
UG	Universal Grammar
UQ	universal quantifier
UQN	universal quantifier negation
Utt	utterance
VC	verbal complex
VM	verbal modifier
VoiceP	voice phrase
VP	verb phrase
VPART	particle
VSO	verb-subject-object (word order)
Vsuf	verbalising suffix
[+wh]	*wh*(-question) feature
WLH	Weak Lexicalist Hypothesis
XCOMP	open propositional subcategorised grammatical function
XLE	Xerox Linguistic Environment
XP	categorially neutral phrase (X is a category variable)
Ŷ	non-projecting category
∀	universal quantifier

CHAPTER 1

Introduction

In this book I develop a new perspective on clausal syntax and its interactions with lexical and discourse function information by analysing Hungarian sentences. In addition, I demonstrate ways in which grammar engineering implementations can provide insights into how complex linguistic processes interact.

I analyse the most important phenomena in the preverbal domain of Hungarian finite declarative and *wh*-clauses: sentence structure, operators, verbal modifiers, negation and copula constructions. On the basis of results of earlier generative linguistic research, I present the generally accepted empirical generalisations, and offer a detailed and comparative critical assessment of the most salient analyses in a variety of generative linguistic models. Then I argue for a fundamentally lexical approach to the relevant phenomena, and develop the first systematic analysis in the theoretical framework of Lexical-Functional Grammar (LFG). In addition, I report the successful implementation of various crucial aspects of this analysis in the computational linguistic platform of the theory, Xerox Linguistic Environment (XLE). With this work, I hope to improve our understanding of the interaction of syntax, information structure and the lexicon.

The implementational dimension has two interrelated functions. It serves as a reliable testing ground for the theoretical analysis and it demonstrates that implementation can be a very useful tool for exploring and understanding how complex linguistic systems work.

I argue for S and against IP as the core sentential symbol (and I also postulate CP). I employ a hierarchical, binary branching, adjunction structure for the topic field, in addition to a similar setup in the quantifier field. I handle all the question phrases other than the question phrase immediately preceding the verb in multiple constituent questions as occupying VP-adjoined positions in the quantifier field. I assume that FOCUSed constituents, verbal modifiers (VMs) and the (verb-adjacent) question phrase are in complementary distribution in Spec,VP.

I present a detailed LFG-XLE analysis of eleven Hungarian construction types involving constituents in the post-topic and preverbal zone: in the $[XP,VP]_{VP}$ quantifier position and in Spec,VP, concentrating on VMs, focused constituents, universal quantifiers and (multiple) *wh*-questions. In addition to the basic structures that are analysed in all major generative approaches to this domain of Hungarian sentence structure, I also develop coherent accounts of some marked constructions that call for special treatments in all approaches.

I propose a general LFG-XLE framework for the treatment of the fundamental types of negation by developing an account of the special uses of negative particles, capturing their interaction with negative concord items, and presenting a formal treatment of the two forms of the two suppletive negative variants of the copula.

I develop the first comprehensive LFG analysis of the five most important types of copula constructions (CCs) in Hungarian. I subscribe to the view that the best LFG strategy is to examine all CCs individually and to allow for diversity and systematic variation both in c-structure and in f-structure representations across and even within languages.

Several parts of the analysis are detailed either LFG-theoretically or XLE-implementationally (or both ways), while some other parts will hopefully provide a solid basis for a detailed and comprehensive LFG analysis and its XLE implementation to be carried out in future research.

In this introductory chapter, I first show the traits of LFG, in systematic comparison with other generative linguistic frameworks (§ 1.1). Then I give an introduction to XLE, the implementational platform of the theory (§ 1.2). Finally, I outline the structure of the book by anticipating my findings and the crucial aspects of my analysis (§ 1.3).

1.1 The framework: Lexical-Functional Grammar

In this section I first highlight those aspects of LFG that are relevant for the purposes of the book (§ 1.1.1) and then I briefly compare this model with other generative theories (§ 1.1.2).

1.1.1 On the architecture of LFG

LFG is an alternative, non-transformational generative theory developed by Joan Bresnan and Ronald Kaplan in the second half of the 1970's. For complete introductions to, or comprehensive presentations of, this model, see, for instance, Bresnan (1982a); Bresnan (2001); Dalrymple (2001); Falk (2001); Bresnan et al. (2016); Börjars, Nordlinger & Sadler (2019) and Dalrymple, Lowe & Mycock (2019).

This framework is highly modular with a considerable number of levels of representation.

- *argument-structure* (a-structure) for representing the arguments of predicates with their semantic roles
- *constituent-structure* (c-structure) for representing constituency and syntactic categories
- *functional structure* (f-structure) for representing grammatical functions and related functional features
- *phonological structure* (p-structure) for representing the prosodic properties of sentences
- *information-structure* (i-structure) or *discourse structure* (d-structure) for representing discourse-functional information
- *morphological structure* (m-structure) for representing morphologically relevant information
- *semantic structure* (s-structure) for representing the meanings of sentences

These different levels of representation are related by a variety of linking (or, in LFG terms, mapping) conventions. Falk (2001) offers a detailed discussion of these various dimensions and their multiple parallel linking potential. Consider the architecture he argues for (2001: 25) in Figure 1.1.

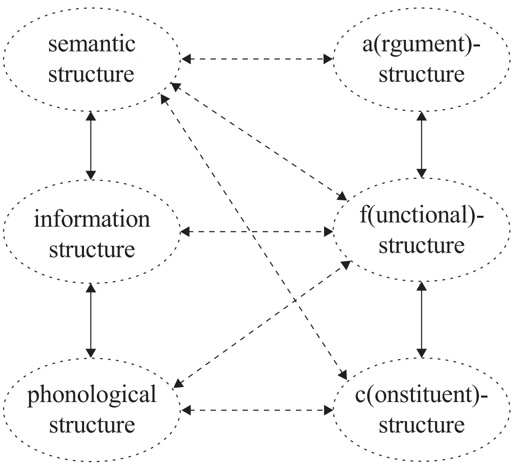


Figure 1.1 Falk's (2001) view of LFG's architecture

Notice the complexity of how these structures can multiply and directly feed specific information to other components. This figure also demonstrates that not all LFG approaches make use of all the seven dimensions (here the relevant morphosyntactic information is assumed to be represented in f-structure as opposed to a distinct m-structure). For an overview of several (partially) different LFG architecture views in general and the syntax-prosody interface in particular, see Bögel (2015).

In this framework, c-structure and f-structure are the two syntactic structures assigned to every well-formed sentence of a language. C-structure is a version of standard X-bar syntactic representation. It models 'surface' constituency relations, and, therefore, it is strongly and directly linked to p-structure, see Figure 1.1. F-structure represents the basic grammatical relations in the sentence, and, therefore, it is semantically interpreted, see Figure 1.1 again.

LFG's name expresses the two most important distinguishing features of this theory. First, it has a very articulated and powerful lexical component: it captures phenomena that are captured in the syntax in the Chomskyan tradition by means of lexical rules that can make reference to grammatical functions (see below). In this sense, it is a non-transformational generative grammar. Second, grammatical functions (and grammatical relations in general) are the basic organising notions and concepts in the system by the help of which a wide range of phenomena can be captured even across typologically radically different languages in ways that can potentially satisfy the principle of universality. For detailed argumentation, see Bresnan (1982a).

In subsequent discussions I demonstrate that LFG's phrase structure principles are considerably different from the mainstream Chomskyan system. The most salient differences are as follows.

– They are combined with LFG-style functional annotations.
– They admit exocentricity.
– They allow headless constructions.
– They reject empty categories like *pro*s, PROs and traces of moved elements.

C-structure and f-structure roughly correspond to traditional surface structure and deep structure, respectively, in the Chomskyan tradition. However, in addition to their formal-conceptual dissimilarities, there is a fundamental difference between the corresponding structures in the two approaches. The two LFG structures are simultaneously assigned to a sentence, i.e. they are parallel representations capturing two syntactic dimensions of the sentence. In this sense, LFG is a representational model. This contrasts with the fundamentally derivational nature of the Chomskyan mainstream.

The correspondence between c-structures and f-structures arises from functional annotations associated with the nodes by general principles. C-structures are designed to encode language-particular phenomena, whereas f-structures are intended to capture grammatical generalisations across languages.

In LFG the fundamental role of grammatical functions (GFs) like SUBJ(ect), OBJ(ect), OBL(ique), ADJ(UNCT) is to relate a-structure and c-structure to f-structure, i.e. they are the key elements of c-structure↔f-structure and a-structure↔f-structure mapping. They are not (syntactically) derived entities, cf. the strictly syntactically defined notion of grammatical functions in the Chomskyan mainstream. From this it follows, among other things, that LFG can make the modes of realising GFs in c-structure parametric cross-linguistically. In languages like English there are designated syntactic positions for SUBJ and OBJ, while in languages like Hungarian these GFs are morphologically and not syntactic-positionally encoded.

Let us compare the LFG analyses of the following English and Hungarian sentences, simplified for ease of exposition. In the case of the English sentence I use the emphatic auxiliary *did* for illustrative purposes from an LFG perspective.

(1) *The boy did see the girl.*

(2) a. *A fiú látta a lány-t.*
the boy.NOM see.PST.3SG.DEF the girl-ACC
"The boy saw the girl."
b. *A lányt látta a fiú.*
c. *Látta a fiú a lányt.*
d. *Látta a lányt a fiú.*
e. *A fiú a lányt látta.*
f. *A lányt a fiú látta.*

In the case of English it is only the word order in (1) that yields a grammatical sentence in the intended meaning. By contrast, all the six Hungarian word orders in (2) are possible in the same basic sense: the boy was the seer and the girl was the object of seeing, thanks to the morphological marking of the subject and object GFs (nominative vs. accusative, respectively). At this stage I abstract away from the differences between these variants in the discourse-functional domain. As is well-known, Hungarian uses designated syntactic positions for expressing discourse functions like TOP(ic) and FOC(us), see Chapters 2, 3 and 4.

The essence of the LFG analysis of (1) and (2) is that the English and the Hungarian predicates have the same argument structure in their lexical forms and the two arguments (Experiencer and Theme) are mapped onto the same two GFs in f-structure (subject and object). In English there is a single word order available; hence, we need only one c-structure representation. By contrast, the six possible Hungarian word orders require six different c-structure representations. However, all the seven distinct c-structures (one in English and six in Hungarian) are mapped onto one and the same f-structure. Consider the simplified lexical form of *see* in (3).

(3) *see*, V (↑ PRED) = 'SEE < Experiencer, Theme >'

First the (phonetic) form of the word is given (*see* is a shorthand representation), then its syntactic category (V), then its semantics is specified, which has the following formal aspects to it. (↑ PRED) is the semantic feature/attribute of the word, and the value of this feature is given between inverted commas: '…'. The first part of the value is, in theory, the formal representation of the meaning of the word, but this is conventionally indicated by only repeating the written form of the word in capitals (SEE), or SmallCaps (SEE), in other words, this is just a shorthand indicator of the semantic characterisation of the word. If a word has an argument structure, its arguments are given between angle brackets: < … >, Experiencer and Theme in this case. In (4) I exemplify two representations of the arguments in the a-structure of a predicate: (i) by using semantic role labels like Experiencer and Theme, and (ii) by using grammatical functions like SUBJ and OBJ. The latter is the much more widely used representation. Occasionally, when it is important for a particular discussion, the two versions are combined, i.e., both the grammatical functions and the semantic roles of the arguments are indicated: the GFs between the angle brackets and the semantic roles under their respective GFs. When GFs are used, there are two major representational variants: < (↑SUBJ) (↑OBJ) > and < SUBJ, OBJ >. In this book I employ the latter, as in (4), except when I cite other researchers using the former and when this makes the comparison of various analyses easier.

(4) SEE < Experiencer, Theme> $\begin{bmatrix} \text{PRED} & \text{`SEE < SUBJ, OBJ >'} \\ \text{SUBJ} & [\ \text{PRED} \quad \text{`BOY'}\ ] \\ \text{OBJ} & [\ \text{PRED} \quad \text{`GIRL'}\ ] \end{bmatrix}$

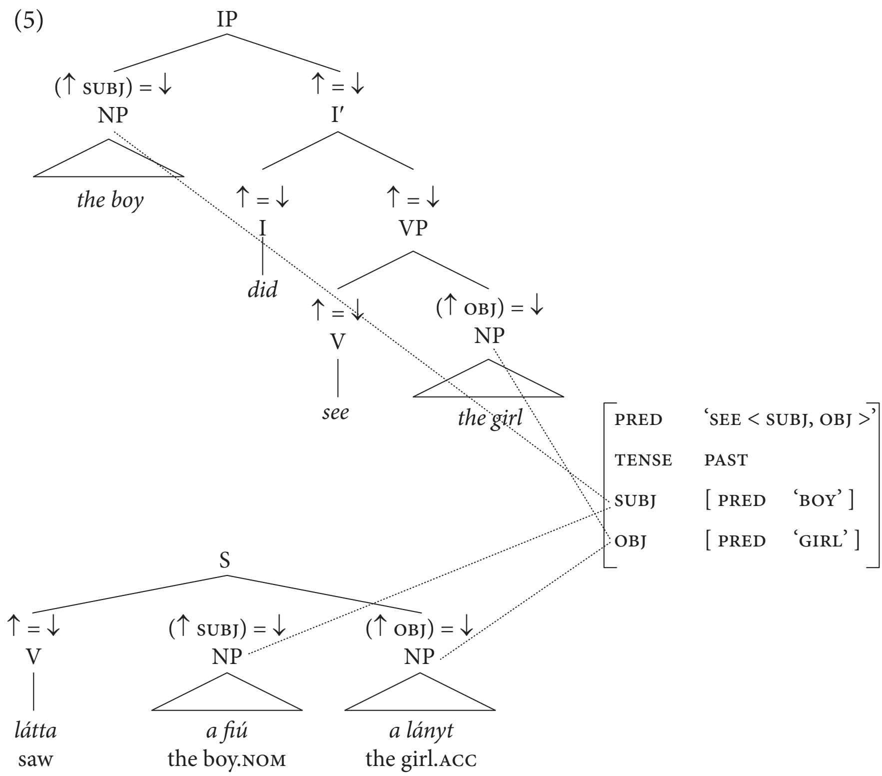
The lexical form of the Hungarian counterpart, *lát*, is the same, except for its (phonological) shape: *lát* vs. *see*. As a consequence, exactly the same a-structure to f-structure mapping takes place in both languages, see (4). On the details of this mapping mechanism, see below.

In (5) I show the c-structure representation of (1), our English example, and that of (2c), one of the six Hungarian word order variants. I discuss the choice between IP and S for the categorial representation of sentences at great length in Chapter 2.

The two most important types of functional annotations in c-structure are (↑ X) = ↓ and ↑ = ↓. (↑ X) = ↓ is to be interpreted in the following way: the X feature of the mother node is contributed by the node which the annotation is associated with. X stands for grammatical functions, cases and other features. ↑ = ↓ means that the features of the node which the annotation is associated with are shared by the mother of this node. A node associated with this annotation is called the functional head of the constituent it occurs in. As the c-structure of the English example in (5) illustrates, there can be functional coheads in a construction. In this c-structure the I is the structural (categorial) head of the IP, whereas both the I and the VP are functional heads. The former contributes the TENSE feature (value) to the f-structure of the sentence, while the latter contributes the PRED feature (value), which it shares with its own structural (categorial) and functional head, the V. This means that the functional head relationship is transitive in the following sense. If the VP is the functional head of the IP, and, in turn, the V is the functional head of the VP then, by transitivity, the V is also the functional head of the IP, in this case, one of the two functional heads of the IP.

In (5) the two NPs in both c-structures are associated with the (↑ SUBJ) = ↓ and (↑ OBJ) = ↓ functional annotations, which serve as linking devices between c-structure and f-structure. Recall that these two grammatical functions are associated with their respective NPs by virtue of the NPs' occurring in designated syntactic positions in the English c-structure, while they are associated with their respective NPs by virtue of the NPs' bearing specific case-marking, irrespective of their structural positions in Hungarian. As a consequence, the English sentence and the six Hungarian word order variants share the same f-structure shown in (5), despite the fact that their c-structures are all different.

(5)



F-structures, which are attribute/feature – value matrices, i.e., sets of ordered pairs which consist of the name of a grammatical function or function feature which is paired with its value. We can build these structures by solving the equations in the annotated c-structure tree. Börjars et al. (2019) present the typology of f-structure features and values shown in Table 1.1.

Table 1.1 Feature types and values, Börjars et al. (2019: 24)

Feature	Value type	Example
PRED	semantic form	PRED = ‘SMILE < SUBJ >’ PRED = ‘RAT’
Grammatical functions	f-structure	$\left[\text{SUBJ} \quad \begin{bmatrix} \text{PRED} & \text{MOUSE} \\ \text{NUM} & \text{PL} \end{bmatrix}\right]$
Simple features	atomic	NUM = SG, TENSE = PRES

Given the central role of grammatical functions in LFG, the theory needs a well-developed system of these GFs. For instance, Bresnan et al. (2016: 330) offer the following taxonomy.

(6) $\underbrace{\text{TOP} \quad \text{FOC}}_{\textit{non-a-fns}} \quad \overbrace{\text{SUBJ} \quad \text{OBJ} \quad \text{OBJ}_\Theta \quad \text{OBL}_\Theta \quad \text{XCOMP} \quad \text{COMP}}^{\textit{a-fns}} \quad \underbrace{\text{ADJUNCT}}_{\textit{non-a-fns}}$

(7) $\overbrace{\text{TOP} \quad \text{FOC} \quad \text{SUBJ}}^{\textit{d-fns}} \quad \underbrace{\text{OBJ} \quad \text{OBJ}_\Theta \quad \text{OBL}_\Theta \quad \text{XCOMP} \quad \text{COMP} \quad \text{ADJUNCT}}_{\textit{non-d-fns}}$

This classification has two dimensions: argument functions vs. non-argument functions and discourse functions vs. non-discourse functions. The TOP, FOC, SUBJ, OBJ and ADJUNCT functions are standardly assumed in a great number of linguistic frameworks. OBJ_Θ is a semantically restricted object function, and OBL_Θ is a semantically restricted oblique function. They are assigned to arguments bearing particular semantic roles. For instance, in an LFG analysis of (8a) *Peter* is taken to have the OBJ function and *a book* is assigned the OBJ_Θ function. By contrast, in (8b) *a book* bears the OBJ function, and *to Peter* carries the OBL_Θ function.

(8) a. *Mary gave Peter a book.*
b. *Mary gave a book to Peter.*

COMP and XCOMP are assigned to propositional arguments. The difference between them is that the former is a closed function, while the latter is an open function in the following sense. COMP is normally assigned to a finite embedded clause with its own overtly (i.e., c-structurally) expressed subject argument, see the *that*-clause in (9a). By contrast, the propositional argument receiving the XCOMP function has no c-structurally expressed subject, and this covert subject argument must be functionally controlled by an overt constituent in the matrix clause. For instance, in (9b) the covert subject of the embedded infinitival construction is functionally identified with the object argument of *told*.

(9) a. *I told Bill that he should wash the dishes.*
  b. *I told Bill to wash the dishes.*

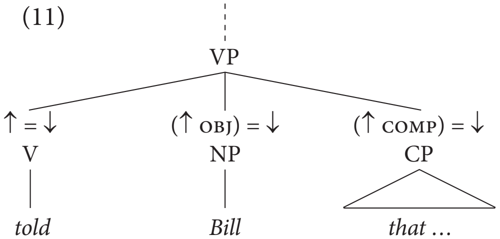
The functional control relationship is encoded in the lexical form of *tell* as used in (9b). The basic idea is that for the LFG analysis of (9a) and (9b) we need two *tell* lexical forms that are related by a rule in the lexicon (in LFG terms: a lexical redundancy rule) deriving *tell*$_2$ from *tell*$_1$. See the simplified lexical forms of *tell* in (10a) and (10b) as used in (9a) and (9b), respectively.

(10) a. *tell*$_1$, V (PRED) = 'TELL < SUBJ, OBJ, COMP >'
  b. *tell*$_2$, V (PRED) = 'TELL < SUBJ, OBJ, XCOMP >'
    (OBJ) = (XCOMP SUBJ)

As (10a) shows, *tell*$_1$ assigns the COMP (closed) GF to its third, propositional argument, in addition to assigning the SUBJ function to the 'teller' argument, and the OBJ function to the 'addressee' argument. By contrast, *tell*$_2$ assigns the XCOMP (open) GF to the same third argument, in addition to assigning the same GFs to the first two arguments as *tell*$_1$. Moreover, it functionally identifies its own (overt) object argument with the (c-structurally) unexpressed subject argument of its embedded propositional argument: (OBJ) = (XCOMP SUBJ).

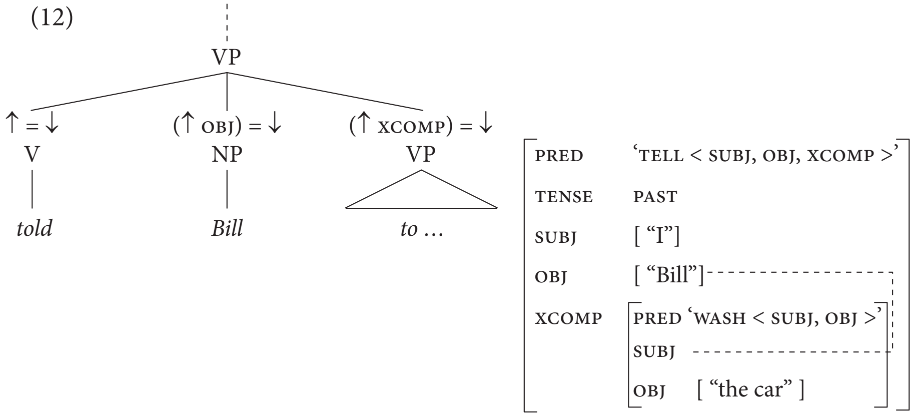
I give the skeletal partial c-structure representation and the corresponding simplified f-structure of (9a) in (11) and the skeletal partial c-structure representation and the corresponding simplified f-structure of (9b) in (12). When the internal structure of a subsidiary f-structure is irrelevant then I follow the convention of putting the linguistic material between quotation marks to indicate the place for the f-structure for that part of the sentence.

(11)



$$\begin{bmatrix} \text{PRED} & \text{`TELL < SUBJ, OBJ, COMP >'} \\ \text{TENSE} & \text{PAST} \\ \text{SUBJ} & [\text{“I”}] \\ \text{OBJ} & [\text{“Bill”}] \\ \text{COMP} & [\text{“that …”}] \end{bmatrix}$$

(12)



LFG admits multiple branching, see the c-structure of the VP in (11) and (12). The embedded CP has the COMP GF, and its c-structural and f-structural analyses are ordinary and, therefore, uninteresting here, that is why they are not spelt out. As regards (12), notice that there is no clausal representation of the propositional argument in c-structure; hence, there is no subject position to be filled by an empty category. Instead, there is a VP constituent there, receiving the XCOMP function. Given the (OBJ) = (XCOMP SUBJ) functional equation in the lexical form of *tell*$_2$, in the f-structural representation of the sentence the c-structurally ‘missing’ subject is identified with (i.e., functionally controlled by) the object argument of the matrix verb. More technically speaking, the object of the matrix predicate and the subject of its propositional argument receiving the open XCOMP GF are assumed to share the same f-structure, see the representation in (12).

The matrix verb in (9b), *tell*, is a (subject – object) ‘equi’ predicate in the classical Chomskyan terminology. One of its ‘raising’ counterparts is *believe*. Compare (9b) and (13b).

(13) a. *I believe that Bill likes music.*
b. *I believe Bill to like music.*

While *tell* has three semantic arguments, *believe* is just a two-place predicate. It has a ‘believer’ argument and a ‘believed thing’ argument. In (13a) the subject of *believe* expresses the ‘believer’ and the embedded finite clause expresses the ‘believed thing’. Compare this with (9a), where *tell* has three arguments. Given the argument structure of *believe*, it is obvious in any approach that in (13b) *believe* and its object, *Bill*, are not related semantically. They only have a formal grammatical relationship. The two famous treatments of this construction type in the Chomskyan tradition were the subject-to-object raising transformation and later the exceptional case-marking operation (ECM). As LFG rejects syntactic transformations as well as the notion of abstract cases, it handles this phenomenon, too, partially in the lexicon (in the lexical form of *believe*) and partially in the f-structure. The nature of the treatment is fundamentally the same as that of the treatment of the two constructions with *tell*, as discussed above. Compare (14) and (10).

(14) a. *believe*$_1$, V (PRED) = 'BELIEVE < SUBJ, COMP >'
b. *believe*$_2$, V (PRED) = 'BELIEVE < SUBJ, XCOMP > OBJ'
(OBJ) = (XCOMP SUBJ)

(14a) encodes that *believe*$_1$ is a two-place predicate, and it assigns the SUBJ and the (closed) propositional COMP functions to its arguments. In (14b), *believe*$_2$ is still a two-place predicate, and it assigns the SUBJ and the (open) propositional XCOMP functions to the two arguments. However, it is also capable of assigning an extra, non-thematic GF, OBJ, to an NP constituent. This special nature of OBJ here is indicated by its occurrence outside the angle brackets, which comprise the argument structure of a predicate. It is in this way that LFG captures the 'raising' idea lexically. Note that the c-structure representations and f-structure representations of (13a) and (13b) would be exactly the same as those of (9a) and (9b). The 'equi' vs. 'raising' contrast is captured at the level of argument structure (three vs. two semantic arguments) and the nature of the assignment of the OBJ function: thematic vs. non-thematic.

LFG treats subject – subject 'equi' vs. 'raising' constructions with predicates like *want* vs. *seem* in the same way, mutatis mutandis. The two major differences are as follows. *Want* is a two-place predicate (as opposed to *tell*, which has three arguments). *Seem* is a one-place predicate with a single propositional argument (as opposed to *believe*, which has two arguments). *Seem* assigns the SUBJ grammatical function to a non-thematic argument (as opposed to *believe*, which assigns a non-thematic OBJ GF). Compare (15a) with (10b) and (15b) with (14b).

(15) a. *want*, V (PRED) = 'WANT < SUBJ, XCOMP >'
(SUBJ) = (XCOMP SUBJ)
b. *seem*, V (PRED) = 'SEEM < XCOMP > SUBJ'
(SUBJ) = (XCOMP SUBJ)

In LFG, there are three important well-formedness conditions on f-structures: (i) consistency, (ii) completeness, and (iii) coherence.

Consistency requires that every function (feature) should have a unique value. This constraint blocks conflicts of values and functions. For instance, features like TENSE and CASE cannot have conflicting values. This principle is applied to the association of arguments with grammatical functions in the form of the following condition.

(16) *Function-Argument Biuniqueness:*
Each a-structure role must be associated with a unique function, and vice versa.
(Bresnan et al. 2016: 334)

This ensures that the same grammatical function will not be assigned to more than one argument within a single argument structure, and no argument will receive more than one grammatical function. The following function assignments are thus ruled out by this condition.

(17) a. * < 1 2 >
SUBJ SUBJ

b. * < 1 2 >
SUBJ OBL OBJ

Completeness manifests the following requirement. If an argument-taking predicate obligatorily subcategorises for a grammatical function, this function must appear in the relevant f-structure. This condition rules out examples like the following: **I put the book*. This sentence is ungrammatical because the predicate *put* subcategorises for three grammatical functions, but in the f-structure representation of the sentence there are only two grammatical functions realised. The function to be associated with the locative argument is missing.

The essence of the coherence condition is the following. If a subcategorisable grammatical function appears in an f-structure, that f-structure must contain a PRED which is subcategorised for that function. It is this requirement that will predict the ungrammaticality of constructions of the following kind: **John died into the kitchen*. Here the problem is that *into the kitchen* is interpreted as an argument assigned a directional oblique function (OBL_{dir}), but the predicate *die* does not subcategorise for that function.

In LFG, the module formalising the linking procedures between a-structure and f-structure is called Lexical Mapping Theory (LMT). In LMT, GFs are broken down into combinations of two atomic feature values (±restricted and ±objective), see (18).

(18)

	−o	+o
−r	SUBJ	OBJ
+r	OBL_{Θ}	OBJ_{Θ}

Each argument has a particular intrinsic feature value on the basis of its semantic role, and this value restricts the number of potential GFs to two, and then general

LMT principles add the other value, in this way determining the GF of the given argument with a particular semantic role. For instance, an Agent argument has the [–o] intrinsic specification, and from this it follows that it cannot be mapped onto an object function: it can end up having either the SUBJ or the OBL_{Θ} function. The latter function is available in passive constructions in analyses that do not assume suppression in the course of passivisation – in the case of a suppression analysis the GF of the Agent is (argument-)adjunct. For detailed introductions to, and discussions of, LMT, see Chapter 4 in Falk (2001) and Chapter 14 in Bresnan et al. (2016), for instance. Given that aspects of a-structure to f-structure mapping are not relevant for the topics in this book, in what follows I abstract away from the LMT dimension.

The following discussion of LFG's central principles and assumptions concerning c-structure representations in the theory is based on Bresnan et al. (2016). The most fundamental principle is that of lexical integrity:

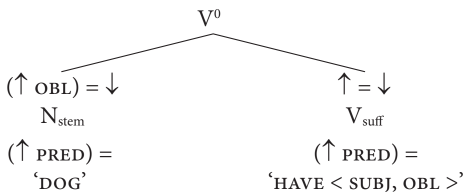
(19) *Lexical Integrity:*
Morphologically complete words are leaves of the c-structure tree, and each leaf corresponds to one and only one c-structure node.
(Bresnan et al. 2016: 92)

It is this principle, for instance, that prevents affixes, i.e., bound morphemes, from living independent syntactic lives. In other words, a bound morpheme can never occupy a distinct syntactic position on its own. Bresnan et al. (2016) emphasise the fact that this LFG principle of lexical integrity differs considerably from other views of this general concept. The crucial point is that although the internal structure of words is assumed to be invisible to the principles of c-structure, the theory allows parts of a word (i.e., the morphemes it is composed of) to make independent contributions to f-structure representation. For instance, as is well known, there are languages like Greenlandic in which a noun can incorporate into a verb morphologically (to be more precise, a verbalising suffix can attach to a noun), and the result is a morphologically complex word, a verb, a single syntactic atom of category V in c-structure representation, see Simpson (1991). Consider the following example from Bresnan et al. (2016: 366).

(20) *Angisuu-mik qimmeq-arpoq.*
big-INST dog-have.INDIC.3SG
"He has a big dog."

In this sentence *-arpoq* is a verbal suffix roughly meaning "have", and it attaches to the noun stem *qimmeq* "dog", and this incorporated noun is modified from 'outside' by an adjective in instrumental case. In an LFG approach in this synthetic word form (represented as one complex morphological entity and one syntactic atom in c-structure) various morphemes can contribute varied syntactic information at the level of f-structure; in other words, they can realise distinct f-structure 'words'. Ignoring irrelevant formal details, we can represent the sublexical structure of the verbal predicate *qimmeqarpoq* as in (21) and the f-structure of the sentence as in (22). Notice that Greenlandic is a pro-drop language, and the information about the subject of this sentence in f-structure is contributed by the verbal inflectional morphology in an LFG analysis.

(21)



(22)

$$\left[\begin{array}{ll} \text{PRED} & \text{`HAVE < SUBJ, OBL >'} \\ \text{TENSE} & \text{PRES} \\ \text{SUBJ} & \left[\begin{array}{ll} \text{PRED} & \text{`PRO'} \\ \text{PERS} & 3 \\ \text{NUM} & \text{SG} \end{array}\right] \\ \text{OBL} & \left[\begin{array}{ll} \text{PRED} & \text{`DOG'} \\ \text{CASE} & \text{INST} \\ \text{ADJUNCT} & \text{``BIG''} \end{array}\right] \end{array}\right]$$

For further details on Greenlandic noun incorporation, see Bresnan et al. (2016: 364–369). For obvious reasons, this LFG view sharply contrasts with Baker's (1988) theory of incorporation in the Government and Binding model (GB) and with the general treatment of these phenomena along the Distributed Morphology lines in the Minimalist Program (MP), see Halle & Marantz (1993, 1994), for instance.

Another widely accepted principle imposes an economical constraint on c-structure representation.

(23) *Economy of Expression:*
All syntactic phrase structure nodes are optional and are not used unless required by independent principles (completeness, coherence, semantic expressivity). (Bresnan et al. 2016: 90)

The basic idea, given the architecture of LFG, is that the presence of a c-structure node is justified if and only if it, associated with functional annotations, contributes some information to the corresponding f-structure representation. This is what Bresnan et al. (2016: 92) also call the "principle of functionality of c-structure". As I have shown above, completeness and coherence are well-formedness conditions on f-structure representation. As regards semantic expressivity, the presence of an adjunct is typically not required by either completeness or coherence, because they only involve predicate-argument relations; however, it is still justified, because an adjunct modifier has a semantic contribution (cf. *dog* vs. *black dog*). Below, we will see several examples of how this economy principle works.

It has always been one of the most fundamental assumptions of LFG that the organisation of c-structure categories can be either endocentric or lexocentric. Endocentricity is typically manifest in extremely hierarchical c-structures, a classic and best-known example being English. Lexocentricity appears in flat structures: all arguments (with the subject among them) are sisters of the verb, and the grammatical functions of the arguments are encoded morpholexically: by means of case and agreement marking. One of the most famous languages of this type is Warlpiri, an aboriginal language of Australia (see Simpson 1991, Austin & Bresnan 1996, and Bresnan et al. 2016). Hungarian was also among the first languages in this type discussed in the literature (see É. Kiss 1987, for instance). From our perspective, the well-known and widely cited generalisation is that Hungarian is non-configurational, lexocentric in Bresnan et al.'s (2016) terminology as regards the encoding of core grammatical functions, but it is configurational with respect to the expression of discourse functions like topic and focus.

It has been one of the most salient traits of the mainstream Chomskyan generative paradigm since the GB era that this paradigm postulates an underlying, uniformly endocentric (highly hierarchical) organisation of language structure, as part of Universal Grammar. By contrast, as pointed out above, LFG assumes that both endocentric and lexocentric organisations are part and parcel of UG, and they are subject to parametric variation (cf. the English vs. Warlpiri contrast in this respect). Moreover, LFG is flexible enough (in a principled manner) to admit various degrees and manifestations of mixtures of these two structural types within one and the same language.

In the domain of endocentric organisation, Bresnan et al. (2016: 103) assume the following inventory of functional and lexical X^0 categories projecting X' and X'' phrases:

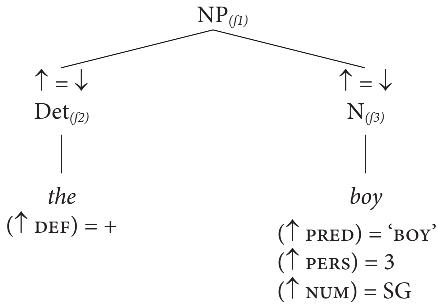
(24) a. F^0: C^0, I^0, D^0 (functional categories)
b. L^0: N^0, V^0, A^0, P^0 (lexical categories)

As I briefly pointed out in passing in connection with the c-structure representation of the English example, it is another crucial aspect of LFG that it makes a sharp distinction between a c-structure head (in endocentric constructions) and an f-structure head. Consider the following simplified example.

(25) a. *boy*, N
(↑ PRED) = 'BOY'
(↑ PERS) = 3
(↑ NUM) = SG

b. *the*, Det
(↑ DEF) = +

c.



d. $\begin{bmatrix} \text{PRED} & \text{`BOY'} \\ \text{PERS} & 3 \\ \text{NUM} & \text{SG} \\ \text{DEF} & + \end{bmatrix}_{(f1),\,(f2),\,(f3)}$

The noun *boy* is the categorial, c-structural head of the noun phrase as is widely assumed in generative approaches at large. However, as regards the functional structural representation of this noun phrase, both the noun and the definite article make their own respective contributions, based on the specifications in their lexical forms in (25a,b). The noun contributes the central meaning component by encoding that the value of the semantic (PRED) feature is 'boy' and by also specifying the values for the person and number morphosyntactic features. The article in turn contributes the positive value for the definiteness feature of the entire noun phrase. It is in this respect that LFG assumes that both the noun and the determiner are (simultaneously) functional heads of the noun phrase. In LFG terms, they are functional coheads. This is why both Det and N are associated with LFG's functional head annotation: ↑ = ↓. The informal interpretation of this annotation is as follows. My mother's f-structure features are identical to my own features. In (25c) each node in the c-structure has a unique ID label (f_n) and when the linking between c-structure and f-structure is instantiated, it is by the help of these ID labels that we can identify which portion of the f-structure corresponds to which node(s) in the c-structure. In this simple example, the noun, the determiner and the entire noun phrase share the very same f-structure. This is encoded in (25d) by associating all the three ID labels (*(f_1), (f_2), (f_3)*) with this single f-structure. There is, however, a very serious constraint on functional coheads: there can be several of them, but only one of them can contribute semantic content, i.e., in more formal LFG terms, only one of them can have a PRED feature.

Let us now see the most important default c-structure position – functional annotation correspondences in endocentric configurations, taken from Bresnan et al. (2016: 105).

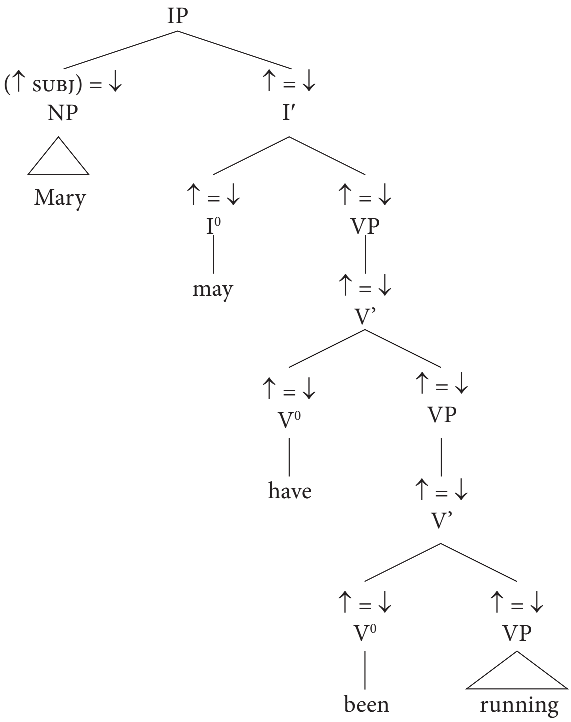
(26) a. C-structure heads are f-structure heads.
b. Complements of functional categories are f-structure coheads.
c. Specifiers of functional categories are the grammaticalised discourse functions.
d. Complements of lexical categories are the non-discourse argument functions.
e. Constituents adjoined to phrasal constituents are optionally non-argument functions.

Bresnan et al. (2016) point out a potential problem for analysing English auxiliaries as having the category I: the treatment of the non-finite forms of the auxiliaries *be* and *have*. It is only the finite forms of these auxiliary verbs that occupy the I^0 position in English, in which they, as a rule, precede *not*, the standard sentence negation particle. Consider Bresnan et al.'s examples.

(27) a. *Mary may have been running.*
b. *Mary may not have been running.*
c. **Mary not may have been running.*

If *not* follows I and precedes non-finite VP, then the auxiliary *may* must be assumed to sit in the I^0 position, and non-finite *have* and *be* must be taken to head VP projections by virtue of their being of the category V^0. Of course, *have* and *be* also have finite uses, in which case they belong to the category I^0, occupying the head position within IP. The potential problem is as follows. Whether these words are used in finite or non-finite functions, our LFG analysis should be essentially the same: they should receive the functional cohead annotation together with their sister VPs, because they always encode and contribute the same aspectual information. When they are used in their finite role, they can be treated in the same way as *may* in (28), the c-structure representation of (27a).

(28)



This is natural in the LFG system, on the basis of (26b). However, in their non-finite use they belong to the category V^0, which is a lexical category; therefore, the generalisation in (26d) should hold for the multiply embedded VPs in the representations of these sentences. That is, the complement VPs of these V^0 heads should bear a non-discourse argument function, but we would need the functional cohead annotation for them, see (28). On the basis of these facts and considerations, following proposals by Alsina (1996, 1997) and Sadler (1997), Bresnan et al. (2016: 111) extend the coherence principle optionally to the complements of lexical categories, see the augmented version of (26d) in (29).

(29) Complements of lexical categories are the non-discourse argument functions or f-structure coheads.

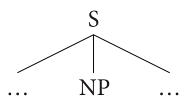
As noted above, it has been one of the most fundamental assumptions in LFG since the very beginning that Universal Grammar also provides an alternative mode of c-structure organisation called lexocentricity. Its essence is that the central syntactic functions are coded by (morphosyntactic) features carried by words and not by the configurational relations of phrases in sentence structure. Bresnan et al. (2016) mention the following (typologically diverse) languages exhibiting this property: Tagalog (Kroeger 1993), Hungarian (É. Kiss 1987, 1994a, 1995a), Malayalam (Mohanan 1982), Warlpiri (Simpson 1991), Jiwarli (Austin & Bresnan

1996), Wambaya (Nordlinger & Bresnan 1996; Nordlinger 1998), Jakaltek and other languages (Woolford 1991). In these languages, information about the grammatical relations of phrases is not c-structure-configurationally encoded; instead, they are 'lexically localised', i.e., they are directly associated with the various morphosyntactic (case or agreement) forms of the words involved. In order to capture the relevant phenomena in this language type, LFG assumes that the non-projective, exocentric category S for clauses (standing for 'sentence' or 'small clause') is also available in the categorial inventory of Universal Grammar. Non-projectivity means that S has no categorial head: we cannot identify its category with any fixed category X^0. Exocentricity means that S can have an f-structure head of a different category: V(P), N(P), A(P), etc. The non-projectivity of S also implies that it can dominate a multiplicity of distinct categories *C* in a non-hierarchical, non-endocentric configuration. In other words, it can have an entirely flat internal structure:

(30) $S \rightarrow C^*$

Here is a brief and abstract discussion of the two basic ways of how the grammatical function of an NP is identified in this language type. Let us assume that an NP occurs in the following generalised configuration, and we also know (independently) that it is not the head of the entire sentence (S).

(31)



The two possible options are as follows.

- The grammatical function of a constituent is encoded by the case-marking on that constituent. For instance, if in a language like Hungarian a noun phrase has the accusative marker attached to it then it will be taken to have the OBJ grammatical function. This strategy is called dependent-marking.
- If a language does not have case suffixes to be attached to arguments, it can have a rich inflectional verbal morphology that can impose crucial agreement constraints on its arguments with respect to person, number, gender, etc. This strategy is called head-marking.

Bresnan et al. (2016: 114) schematise these two grammatical-function-encoding strategies (associated with the constituent whose grammatical function we want to identify) as follows.

(32) a. Dependent-marking:
$(\downarrow \text{CASE}) = \kappa \Rightarrow (\uparrow \text{GF}) = \downarrow$
b. Head-marking:
$(\downarrow \text{AGR}) = (\uparrow \text{AF AGR}) \Rightarrow (\uparrow \text{AF}) = \downarrow$

(32a) expresses the following conditionality: if the given constituent has a particular case-marker *(κ)* then that constituent (as a dependent of the main predicator) bears a particular grammatical function. The encoding of the object function in languages like Hungarian takes the following form.

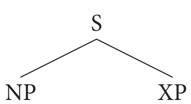
(33) $(\downarrow \text{CASE}) = \text{ACC} \Rightarrow (\uparrow \text{OBJ}) = \downarrow$

By contrast, (32b) makes the following formal statement: if the given constituent's agreement features are identical to the agreement features imposed by the main predicator (encoded by its own morphological make-up, cf. head-marking) on one of the arguments with a particular grammatical function (= argument function, AF) then the given constituent will bear that designated grammatical function. In this second lexocentric pattern the predicate is provided with the types of annotations in (34a), while the NP with the designated function has the annotations in (34b).

(34) a. $(\uparrow \text{OBJ GEND}) = \text{MASC}, (\uparrow \text{OBJ PERS}) = 3$
b. $((\downarrow \text{PERS}) = (\uparrow \text{OBJ PERS})\ \&$
$(\downarrow \text{GEND}) = (\uparrow \text{OBJ GEND})) \Rightarrow (\uparrow \text{OBJ}) = \downarrow$

Bresnan et al. (2016) also point out that cross-linguistically conditions on head-marking follow the hierarchical organisation of argument functions (see Moravcsik 1974 and Givón 1976): OBJ is encoded by head-marking if and only if SUBJ is also encoded (and head-marking rarely identifies more oblique arguments). Conditions on dependent-marking seem to follow the reversed path in the same hierarchy: the encoding of the more oblique functions typically precedes that of less oblique functions. Notice in this typological context that Hungarian, as is well-known, exhibits instances of both marking strategies.

Next, Bresnan et al. (2016) observe that the exocentric category S is not necessarily non-configurational everywhere if 'non-configurationality' is used in the sense of 'lacking a VP' or some other projection structurally encoding a distinction between a subject position and a complement position. For instance, there are many languages that manifest the subject-predicate division shown in (35), where the XP predicate phrase may have a whole range of category values: VP, NP, AP or PP.

(35)


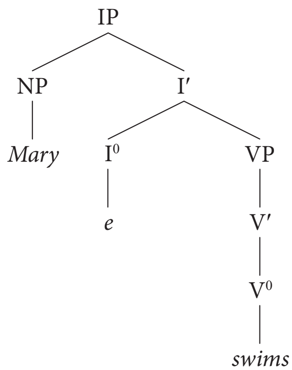
Notice that in this configuration S is not endocentric, but both the subject NP and the predicate XP are, and their positions are also fixed. In a case like this, a language may or may not employ the lexocentric strategy of function identification; it can simply utilise the positional potentials of this configuration. This can be captured in LFG's system of the principles of structure-function correspondence presented in (26) by adding the following statement.

(36) The daughters of S may be subject and predicate. (Bresnan et al. 2016: 115)

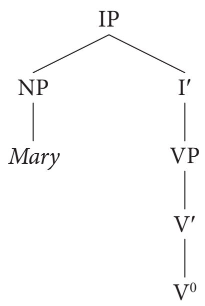
This statement licenses providing the NP with the (↑ SUBJ) = ↓ annotation and providing the XP with the ↑ = ↓ annotation.

Bresnan et al. (2016) discuss the interaction of LFG's general principle of economy of expression with the principles of structure–function mapping through the example of the English sentence *Mary swims*. They point out that on the basis of LFG's general structure–function mapping principles all the c-structures in (37) are functionally equivalent, in other words, all of them support exactly the same f-structure.

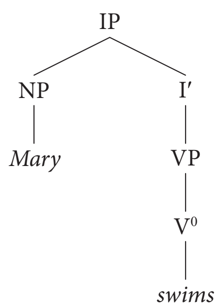
(37) a.



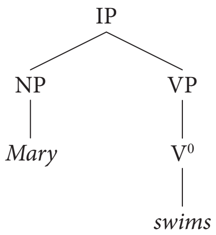
b.



c.

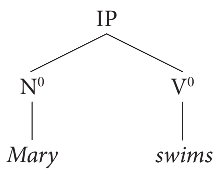


d.



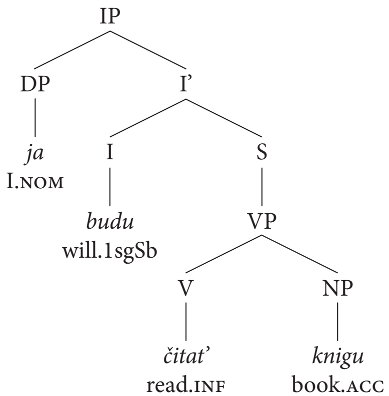
In this ‘other (i.e., functional) things being equal’ situation, the choice between the four alternatives must be determined by the economy principle, and it should be rather straightforward that (37d) is the best (that is, the most economical) c-structure representation, containing the minimally necessary nodes for supporting the required f-structure and containing no superfluous nodes. Bresnan et al. (2016) add that the representation in (38) below contains even fewer c-structure nodes than (37d) and, by this token, it can be taken to be more economical; however, it fails to support a complete and coherent f-structure to be provided by their structure-function mapping principles, because they assume that English only has endocentric structure-function mapping.

(38)



In the context of LFG’s assumption that both IP and S are available as c-structure categories for clauses in Universal Grammar, subject to parametric variation, it is noteworthy that in several LFG analyses it is also proposed that these two categorial labels coexist within one and the same language, see King (1995) for Russian, Sadler (1997) for Welsh and Sells (1998) for Icelandic, among others. For instance, Russian makes use of both configurational and case-marking principles of function specification. It is an internal subject language, which means that it has two subject positions: one in S and another in Spec,IP. S is the complement of I, which is the category of finite verbs while V is the category of infinitives. In King’s (1995) analysis, the specifier of IP has the TOPIC function, which (by default identification) is also a subject position (one of the two subject positions).

(39)

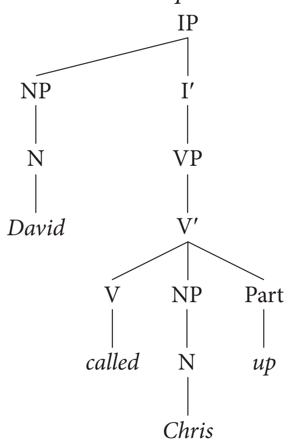


"I will read a book."

As regards the inventory of categories in c-structure representation, it is a further major difference between the Chomskyan mainstream and LFG that the latter also admits non-projecting categories (aka non-projecting words), see, for instance, Toivonen (2001, 2003), Dalrymple (2001), Bresnan et al. (2016), Börjars et al. (2019), and Dalrymple et al. (2019). The exocentric sentence symbol, S, is a good example, and several works assume that in English, Hungarian and Swedish verbal particles like *out, ki* and *ut*, respectively, also belong here, see Dalrymple (2001) for English, Forst, King & Laczkó (2010) for English, Hungarian and German, and Toivonen (2001, 2003) for Swedish. See, for instance, Dalrymple's (2001: 77) analysis of *David called Chris up*.

(40) *David called Chris up*.

a.



b. $$\begin{bmatrix} \text{PRED} & \text{‘CALL.UP} < \text{SUBJ, OBJ}>\text{’} \\ \text{SUBJ} & [\ \text{PRED} \quad \text{‘DAVID’}\ ] \\ \text{OBJ} & [\ \text{PRED} \quad \text{‘CHRIS’}\ ] \\ \text{PARTICLE} & \text{UP} \end{bmatrix}$$

Non-projecting words very often are also treated as special minor categories, see the node ‘Part’ in (40a). Sells (2000) analyses the negative particle as Neg. However, Dalrymple et al. (2019) point out that it is also possible to treat the verbal particle as a non-projecting subtype of P, or the negative particle as a non-projecting subtype of Adv, thus avoiding the introduction of minor categories like Part and Neg. These issues will be relevant in Chapter 3 on verbal modifiers and in Chapter 5 on negation.

It is also noteworthy from the perspective of this book that LFG is compatible with an alternative generative model called Optimality Theory (OT). OT was originally developed for phonology by Alan Prince and Paul Smolensky at the beginning of the 1990’s, and later was extended to other components of grammar, including syntax. In an OT approach there are input and output representations, and there is a mapping system that connects the two levels. The theory employs ranked violable constraints on constructions in language that provide the basis for finding the optimal form of a particular input construction from several possible alternatives. OT has three fundamental components, assumed to be universal: (i) generator (GEN), (ii) constraint component (CON), and (iii) evaluator (EVAL). GEN takes an input and generates a number of possible outputs, i.e., the candidate set of outputs. CON contains an inventory of strictly ordered violable constraints, which regulate the selection of the best output candidate. EVAL carries out the selection and determines which candidate will be the actual output for the given input. For more information on OT, see Dekkers et al. (2000), van der Leeuw & van de Weijer (2000) and Prince & Smolensky (2004).

LFG is compatible with OT in that an OT system can use the LFG apparatus as its GEN component, and then base its CON and EVAL on the properties of this type of GEN, see Bresnan (2000), for instance. For a collection of papers in OT-LFG, see Sells (2001). For OT-LFG proposals about the preverbal domain in Hungarian sentences, see § 2.2 in Chapter 2.

1.1.2 LFG as compared to other generative theories

In this section I briefly compare the architecture and fundamental assumptions of LFG with those of GB and MP, on the one hand, and two lexicalist models: Generative Argument Structure Grammar (GASG) and Head-Driven Phrase Structure Grammar (HPSG), on the other hand.

1.1.2.1 *On GB and MP on Hungarian*

I assume basic familiarity with the mainstream Chomskyan models. The most comprehensive and most useful source of information on the theory from the perspective of Hungarian syntax, offering a coherent analysis of all major types of Hungarian syntactic phenomena in an MP framework, is É. Kiss (2002). It is for this reason that, at various stages in the discussion, I make a systematic comparison between LFG and MP as regards the analyses of the phenomena investigated in this book by comparing my solution with É. Kiss' (2002) account, which is a classic example of what is called the cartographic mainstream of the Chomskyan generative tradition. This theoretical line crucially assumes a complex configurational system of a whole range of functional categories and their projections for hosting and encoding the basic morphosyntactic and semantic aspects of sentences. For instance, they assume focus phrases (FocP), topic phrases (TopP), distributional (quantifier) phrases (DistP), negation phrases (NegP), aspect phrases (AspP), agreement phrases (AgrP), voice phrases (VoiceP), non-neutral phrases (NNP), etc. The other MP model I systematically refer to is Surányi's non-cartographic, interface-based approach as presented in Surányi (2011). Most importantly from the perspective of this book, Surányi does not postulate either FocP or NegP. At various points, I emphasise the fact that this interface model in an MP setting is much closer in spirit to LFG by reducing the power of the syntactic component and developing a complex system of interplay among the three major components of grammar: syntax, semantics and phonology. I also discuss alternative MP proposals where appropriate,[1] and most importantly, I present the crucial aspects of É. Kiss' (1992) 'unorthodox' GB analysis of Hungarian syntax. As I explain, É. Kiss' approach is unorthodox because it has several features that go against the principles of classical GB. One of my main claims is that most of the basic aspects of her approach are empirically and intuitively solid, and they can serve as an excellent basis for

1. The GB/MP literature on Hungarian syntactic phenomena is remarkably large with respect to (i) the number of authors, (ii) the empirical coverage, (iii) the versions of the theory applied, and (iv) the depth of the analyses in these various frameworks. In Chapter 2 I give an overview of what I consider the most salient GB/MP approaches to the syntax of Hungarian finite sentences.

developing a principled, non-unorthodox LFG analysis. This is what I have set out to accomplish in this book, concentrating on the syntax of finite sentences.

1.1.2.2 *On Generative Argument Structure Grammar on Hungarian*

Generative Argument Structure Grammar (GASG), just like its general and central semantic framework, REciprocal And Lifelong Interpretation System (ReALIS), was created by Gábor Alberti and further developed by Alberti and his colleagues. For various aspects of the architecture and the principles of this theory, see Alberti (1999a, 1999b, 2000), Szilágyi, Kleiber & Alberti (2007), Szilágyi (2008), Alberti & Kleiber (2010), Alberti (2011), Nőthig & Alberti (2014), Nőthig, Alberti & Dóla (2014), and Alberti et al. (2015). Kleiber (2008) offers a detailed description, in Hungarian, of the implementation of GASG, and she puts this in a large and varied theoretical and historical context. She presents an excellent overview of some mainstream linguistic theories and mainstream directions in language technology (including the development of parsers and machine translation systems). She pays particular attention to current lexicalist theories and their implementational potential and recent results, which is, naturally, a central topic from the perspective of GASG. Alberti & Kleiber (2010) describe ReALIS, the general underlying semantic framework for GASG, in the following way.

> ReALIS […], *REciprocal And Lifelong Interpretation System*, is a new "post-Montagovian" […] theory concerning the formal interpretation of sentences constituting coherent discourses […], with a *lifelong* model […] of lexical, interpersonal and cultural/encyclopedic knowledge of interpreters in its centre including their *reciprocal* knowledge on each other. (Alberti & Kleiber 2010: 103)

This is the semantic underpinning of GASG, which consequently has a powerful and carefully developed semantic component associated with an appropriate and implementable system of syntactic, morphological and lexical components.

Alberti & Kleiber emphasise the fact that this model is "totally lexicalist": its lexicon contains lexical items with extremely complex descriptions comprising what they call properties and expectations: offers and requirements. The system does not build phrase structure trees, and the only admitted operation is unification. Word order constraints are handled in the same way as other requirements (e.g., case or agreement). The authors claim that this is a more universal approach than the application of phrase structure rules, because there are languages that hardly have any restrictions on word order (but they have much more rules governing agreement). This is one of the key differences between GASG and LFG. As I showed in § 1.1.1, LFG is a strongly lexicalist generative theory; nevertheless, it also makes crucial use of phrase structure (i.e. functionally annotated c-structure) representation, as one of the two parallel dimensions of syntactic analysis.

In GASG's parsing process first we have to identify the main predicate of the sentence. In its lexical form there are requirements that need to be satisfied by elements whose lexical forms contain the right features for the satisfaction of these requirements. In turn, these elements can also impose requirements on other elements, and so on. The operation responsible for this matching procedure is called unification. Even this 'syntactic' search is regulated by the semantic need to find the meaning of the sentence. This means that the whole architecture of GASG is semantics-driven. The lexical component, therefore, contains a large amount of varied semantic information. The lexical representation is morpheme-based (and not word based), which means that both free and bound morphemes have their own lexical forms. The authors call this approach Totally Lexicalist Morphology, and they claim that it provides a more efficient platform for universality, because it makes possible a uniform lexical-morphological analysis of corresponding constructions across languages; for instance, compare the following Hungarian example and its English translation. In the former the same aspects of meaning (e.g., causativity and modality) are expressed by bound morphemes, while in the latter they are expressed by free morphemes.

(41) *Énekel-tet-het-l-ek.*
sing-CAUSE-MAY-2SG.OBJ-1SG.SUBJ
"I may make you sing."

Word order regularities are captured in terms of rank parameters. Every requirement can be overridden by a stronger requirement; in other words, every requirement can be satisfied either directly or indirectly (in the latter case by directly satisfying a stronger requirement). Consider (42), one of the examples discussed by Szilágyi (2008: 177).

(42)

az	*én*	*okos*	*magyar*	*tanár-om*
the	I.NOM	clever	Hungarian	teacher-POSS.1SG

"my clever Hungarian teacher"

The essence of the analysis is that nouns impose different degrees of adjacency requirements on various categories, which is encoded by rank parameters in their lexical forms. In this particular example a nationality adjective has the highest rank (expressed by the lowest rank number), next in the hierarchy is an ordinary adjective, it is followed by the nominative possessor, which in turn is followed by the definite article. Consider Szilágyi's (2008: 177) representation in (43), simplified for current purposes.

(43) *az* *én* *okos* *magyar* *tanár-om*
the I.NOM clever Hungarian teacher-POSS.1SG
4 3 2 1

The nationality adjective (with its 1 rank number) satisfies the adjacency requirement directly, the other elements do so indirectly. Their fixed order is encoded by their hierarchical rank numbers; thus, any other permutations of these elements are ungrammatical.

In Chapter 3, I show how GASG handles the preverbal complementarity of verbal modifiers and focused constituents.

1.1.2.3 *On Head-Driven Phrase Structure Grammar on Hungarian*

Head-Driven Phrase Structure Grammar (HPSG), another alternative, non-transformational generative model, was developed by Carl Pollard and Ivan Sag. On its architecture and principles (at various stages of its development), see Pollard & Sag (1987, 1994), Borsley (1996), Trón (2001), and Szécsényi (2009). I assume that this theory is quite well-known, and, as I claim, very close in spirit to GASG and (to a lesser extent) to LFG, so here I only highlight those aspects of it that are immediately relevant to the comparison of the four major generative models in the next section. I take the illustrative representations from Szécsényi (2009).

HPSG, just like LFG and GASG, is a unificational and representational model. Just like LFG, it uses attribute-value matrices (AVMs). For instance, a 3SG noun in nominative case can be given the following AVM description (Szécsényi 2009: 22).

(44)
$$
{}_{\textit{word}}\begin{bmatrix} \text{CAT} & \textit{noun} \\ \text{CASE} & \textit{nom} \\ \text{AGR} & {}_{\textit{agr}}\begin{bmatrix} \text{NUM} & \textit{sg} \\ \text{PER} & \textit{3rd} \end{bmatrix} \end{bmatrix}
$$

Subject–verb agreement can be captured by the following unification-based representation (Szécsényi 2009: 23).

(45)
$$\begin{bmatrix} \textsc{cat} & s \\ \textsc{subj} & \begin{bmatrix} \textsc{cat} & noun \\ \textsc{agr}\,\boxed{1} & \begin{bmatrix} \textsc{num} & pl \\ \textsc{per} & 3rd \end{bmatrix} \end{bmatrix} \\ \textsc{obj} & \begin{bmatrix} \textsc{cat} & noun \\ \textsc{agr} & \begin{bmatrix} \textsc{num} & pl \\ \textsc{per} & 3rd \end{bmatrix} \end{bmatrix} \\ \textsc{verb} & \begin{bmatrix} \textsc{cat} & verb \\ \textsc{agr}\,\boxed{1} & \begin{bmatrix} \textsc{num} & pl \\ \textsc{per} & 3rd \end{bmatrix} \end{bmatrix} \end{bmatrix}$$

In the version of the theory developed by Borsley (1996), the English verb *loves* has the following lexical representation (Szécsényi 2009: 39).

(46)
$$\begin{bmatrix} \textsc{phon} & loves \\ \textsc{synsem}|\textsc{loc} & \begin{bmatrix} \textsc{cat} & \begin{bmatrix} \textsc{head} & verb \\ \textsc{subj} & <\textsc{np}\ \boxed{1}[nom]> \\ \textsc{comps} & <\textsc{np}\ \boxed{2}[acc]> \end{bmatrix} \\ \textsc{cont} & \begin{bmatrix} \textsc{rel} & love \\ \textsc{arg1} & \boxed{1} \\ \textsc{arg2} & \boxed{2} \end{bmatrix} \end{bmatrix} \end{bmatrix}$$

The main characteristics of this AVM are as follows. It specifies the phonological form of the word (see the PHON feature). The SYNSEM complex feature has syntactic (categorial and argument structural) values (CAT), and semantic values (CONT). Notice that this approach makes a sharp SUBJ[ect] vs. COMP[lement]s distinction among the arguments of the predicate. These relations and dependencies are syntactically (phrase-structurally) local (LOC). Non-local feature values encode long-distance dependencies manifested, for instance, by *wh*-questions in English.

Note that this model carefully distinguishes and represents different types of grammatical information in the form of a variety of feature-value correspondences; however, basically everything is captured in the lexical component. Even long-distance dependencies are encoded in specific lexical forms of predicates in terms of non-local (slash) features. The treatment of these long-distance phenomena adequately demonstrates the most crucial aspects of the theory (also expressed by its name): it is in the lexical form of the *head* of a constituent that all types of relevant information are encoded (including adjunct modifiers of the head), and *phrase-structural* configurations (with percolating features) are employed to identify local and non-local dependencies. The nature (articulation) of the representation of the argument structure of a predicate and the treatment of adjunct–predicate relations are considerably different in various versions of the theory. For a detailed discussion of these issues, see Szécsényi (2009). I present further crucial details of his treatment of VMs and foci in Hungarian, by also comparing it with approaches in other models, in Chapter 2.

1.1.2.4 *A comparison of LFG, MP, GASG and HPSG*

In this section, I briefly compare some salient properties of four generative models: LFG, my chosen framework, mainstream MP, GASG and HPSG. This general comparison is based on § 1.1.1 and § 1.1.2.1 to § 1.1.2.3 to a great extent, but not exclusively. I only concentrate on aspects that are relevant from the perspective of this book. I keep the comparative discussion at a general level and defer the comparison of analytical details to various stages of presenting my LFG account of the phenomena under investigation.

(47) *Degree of modularity*
   a. LFG: very high
   b. MP: moderate (GB: very high)
   c. GASG: very moderate
   d. HPSG: very moderate

I think these characterisations are straightforward. LFG is highly modular with all its representational levels. GB was similarly highly modular in its own way, and MP has reduced this considerably. GASG and HPSG package different types of information into a relatively reduced number of modules.

(48) *The basic architectural organising principle of the theory*
   a. LFG: representational
   b. MP: derivational
   c. GASG: representational
   d. HPSG: representational

Mainstream MP is still derivational in nature. The other three theories are representational, and one of the basic differences between them is the degree of representational modularity, see (47).

(49) *The locus of the treatment of morphological phenomena*
   a. LFG: lexicon
   b. MP: syntax
   c. GASG: syntax (strongly lexically driven)
   d. HPSG: lexicon

LFG fundamentally subscribes to the Strong Lexicalist Hypothesis: it assumes that all morphological processes (whether inflectional or word formational) take place in the lexical component. In the Chomskyan tradition the Standard Theory handled both inflectional and derivational morphology in the syntax (and the phonology). GB accepted the Weak Lexicalist Hypothesis (inflection in the syntax, word formation in the lexicon). By contrast, MP's morphology is, again, fully back to syntax. Interestingly, although GASG claims that it has a Totally Lexicalist Morphology, it seems that the real locus of combining morphemes (whether inflectional or word formational) is the syntax. However, the blueprint itself for handling morpheme combination in the syntax belongs to the lexicon. Thus, this is a kind of lexically driven morphology in the syntax. HPSG is much closer in spirit to LFG in this respect.

(50) *Importance of phrase structure*
   a. LFG: high
   b. MP: very high
   c. GASG: n/a
   d. HPSG: high

Functionally annotated phrase structures are at the heart of LFG's syntax. In MP, phrase structure is even more important, because it has been designed to encode semantic types of information by means of specific functional projections, for instance aspect (AspP). GASG strongly argues against phrase structure representation. Phrase-structure representation has an important role in HPSG, just like in LFG.

(51) *Nature of functional categories*
   a. LFG: highly constrained
   b. MP: a wide variety
   c. GASG: n/a
   d. HPSG: highly constrained

LFG basically constrains the number of functional categories to three: D(P), I(P) and C(P), and even these need to be empirically justified by the existence of at least one word (free morpheme) unquestionably belonging to that category. HPSG is similar in spirit. By contrast, in MP bound morphemes, or even morphologically never realised features can also head a variety of functional projections. In GASG there is no phrase structure; hence, there are no functional categories.

(52) *Strict endocentricity*
   a. LFG: no
   b. MP: yes
   c. GASG: n/a
   d. HPSG: no

LFG assumes that at the level of sentence structure exocentricity (S) and endocentricity (CP/IP/…) are part and parcel of the space for parametric variation across (and possibly even within) languages. GASG declares that there is no need for phrase structure in the syntax: sentences are simply strings of words. From this it follows that this criterion is not applicable to GASG. However, I think that even GASG needs a symbol for sentences (although I have not seen any in any one of the representations I am aware of), and, naturally, the most likely candidate is the S symbol. If this is the case then in (52c) the answer is *no*.

(53) *Empty categories like* pro, PRO *and* traces of moved elements *in syntax*
  a. LFG: no
  b. MP: yes
  c. GASG: no
  d. HPSG: no

Recent versions of LFG strongly reject the use of empty categories of any kind, although earlier versions of the theory did postulate empty categories in c-structure for the treatment of long-distance dependencies like *wh*-question formation, see Kaplan & Bresnan (1982), for instance. It is important to note, however, that even in these analyses no syntactic movement was assumed. Instead, unbounded metavariables were employed to encode the necessary filler–gap relations. Even so, this was a way of adapting the original transformational treatment. Later Kaplan & Zaenen (1989) proposed to dispense with such an empty category approach by applying LFG's functional uncertainty device. For a discussion and (further) arguments against empty categories in LFG, see Dalrymple, Kaplan & King (2007). By contrast, empty categories are among the hallmarks of the GB/MP tradition. My understanding is that GASG is also 'realistic' in this sense. In some (earlier) versions of HPSG an empty category was assumed in the lexical representation for the treatment of long-distance dependencies, which was involved in a HPSG style filler–gap relation, see Pollard & Sag (1994), for instance. By contrast, Sag (2005), among others, proposes a traceless treatment. For a discussion, see Szécsényi (2009).

(54) *Implementability*
  a. LFG: very strong
  b. MP: moderate
  c. GASG: strong
  d. HPSG: very strong

The characterisations in (54a-d) are my understanding of the general implementability potentials of these frameworks, i.e., to what extent their architectures and large-scale assumptions foster the development of an implementational system. As regards the actual implementation of analyses of the relevant Hungarian phenomena, there have been remarkable results in LFG (see the next section), and in this book I plan to contribute to these results considerably. There has been some (limited) implementation in GASG, and no implementation in MP that I am aware of. As I fully agree with the conviction of a great number of linguists that the proof of the generative theoretical pudding is in the implementational eating, in the future I would be very interested in comparing my LFG-theoretical and LFG-implementational results with similar results in other generative frameworks. The attested implementability of HPSG is roughly at the same level as that of LFG.[2]

1.2 The implementational platform: Xerox Linguistic Environment

In the second half of the 1990's an international project was launched for implementing LFG: Parallel Grammar (ParGram). Its fundamental goal is to write large-scale (computational) grammars with parallel analyses by covering the same phenomena across languages, by using shared devices like common features, values, node names, etc. and by aiming at developing similar analyses for similar phenomena. This collaboration started with grammar development for English, French and German, and Norwegian was also involved soon.[3] Our Lexical-Functional Grammar Research Group, with HunGram as its main research project, joined ParGram in 2008.[4]

The platform for grammar development efforts in ParGram is Xerox Linguistic Environment (XLE) developed by Ronald Kaplan and John T. Maxwell at Xerox PARC in the C Programming Language, and it uses Tck/Tk for the user interface. It has the capacity to accommodate real-size on-line lexicons and to parse very complex sentences efficiently. The capability to be used both for parsing and for generation is XLE's remarkable trait, and, thus, it can also serve as a basis for developing machine translation systems.

2. For detailed comparisons of LFG and GB/MP, see Bresnan (2001) and Falk (2001). For a comparison of GASG and GB/MP, see Nőthig & Alberti (2014) and Alberti et al. (2015).

3. So far ParGram efforts have targeted the following languages: English, French, German, Hungarian, Indonesian, Japanese, Murrihn-Patha, Norwegian, Polish, Tigrinya, Turkish, Urdu, Welsh and Wolof. For further information on ParGram and XLE, see the following sources: Butt et al. (1999a); Butt et al. (1999b) and http://ling.uni-konstanz.de/pages/xle/, http://typo.uni-konstanz.de/redmine/projects/pargram/wiki/, http://www2.parc.com/isl/groups/nltt/xle/doc/xle_toc.html, http://ling.uni-konstanz.de/pages/xle/.

4. Since then we have successfully completed two research projects, and have been active in the ParGram community.

Our HunGram has the main components of the standard XLE architecture shown in Figure 1.2. SMALLCAPS indicate components, and *italics* indicate operations.

TOKENISER		MORPHOLOGICAL ANALYSER		LEXICON		SYNTAX
tokenisation	⟹	*morphological analysis*	⟹	*lexical look-up*	⟹	*c- & f-structure representation*

Figure 1.2 HunGram's architecture

The function of the tokeniser is to segment an input string of words into tokens in an ordered sequence. Usually these tokens are inflected words, numbers and punctuation marks. Typically, an uninterrupted string of alphabetical characters constitutes a single token. However, there can be different kinds of language-specific complications for the tokeniser, e.g.:

> …the sequence *l'amour* 'love' might split into two tokens in French while *aujourd'hui* 'today' should be considered a single unit. On the other hand, a sequence of words (e.g., *ein bißchen* 'a bit', *a priori, parce que* 'because', *in order to*) may be considered as a single token for further linguistic treatment.
>
> (Butt et al. 1999a: 163)

Hungarian also manifests a special case. As is well-known, in standard Hungarian orthography, a preverb (i.e. a verbal particle) and a verb are spelt as one word when the former immediately precedes the latter. Despite this fact, the overwhelming majority of generative analyses (including mine, to be presented in § 3.1.5 in Chapter 3) assume that they occupy two distinct syntactic positions. Consequently, our tokeniser had to be 'taught' to output two tokens in these cases.

The tokens produced by the tokeniser are input to morphological analysis, which is typically carried out by a finite state (morphological) transducer (fst) in XLE grammars, including ours. The transducer associates various tags with these tokens. For instance the past tense verb *látta* and the accusative noun *lányt* receive the following tag-specifications from our fst.

(55)

	WORD	TAG-SPECIFICATION
a.	*lát-t-a*	lát "+Verb" "+Past" "+Def" "+Sg" "3P"
	see-PAST-3SG.DEF	
b.	*lány-t*	lány "+Noun" "+Sg" "+Acc"
	girl-ACC	

The grammar uses a system of sublexical rules as an interface device between morphology and syntax: the base form of the word and the finite state symbols (tags) make up the sublexical structure of the word. In the sublexical rules, all items are affixed by _BASE, to encode that they are morphological and not syntactic categories. For instance, the sublexical rule for nouns is as shown in (56). It is a c-structure rule representational convention in XLE that the functional head annotations are never indicated: if there is no (↑ x) = ↓ functional annotation associated with a node then this automatically counts as an ↑ = ↓ annotation. For more on this, see below. Thus, in (56) both sublexical constituents are taken to be functional coheads.

(56) N → N_BASE
N_SFX_BASE*.

N_BASE is the (sublexical) preterminal node for the stem, and it can be followed by any number of N_SFX_BASE tags or no tag, as is encoded by the Kleene star.

Each of these items (the base form and the tags) is represented as a separate lexical item with appropriate specifications. The general pattern is the following: (i) the item, (ii) its category, (iii) the XLE tag, and (iv) any relevant further annotation. In (57) I show our lexical representation of *lát* 'see'.

(57) lát V XLE {(PRED) = 'lát < SUBJ, OBJ >'
| @(CONCAT (PRT-FORM) '# %stem %FN)
(PRED) = '%FN < SUBJ, OBJ >'
(CHECK _PRT-VERB) = +
(PRT-FORM) $=_c$ meg}.

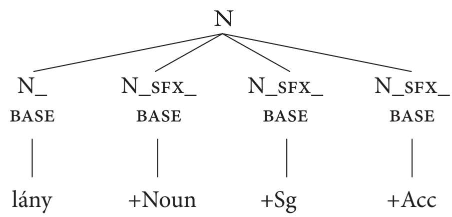
The item is *lát*, its category is V, it has a the XLE tag, and it has a disjunctive specification. The XLE tag expresses that the relevant morphological information will come from (the fst of) the XLE system. If, for whatever reason, this has to be avoided, e.g., because the fst does not yield the correct or preferred morphological analysis, then instead of the XLE tag the star symbol has to be used here, and the intended morphological information must be included in the lexical form of the word. In the first disjunct *lát* is an ordinary transitive verb by itself. In the second disjunct we have encoded that it can be combined with *meg*, the Hungarian preverb with a purely telicising function. The preverb and the verb make up a particle-verb construction (PRT-VERB) meaning "catch sight of". In this book I use the terms 'preverb' and 'verbal particle' interchangeably.

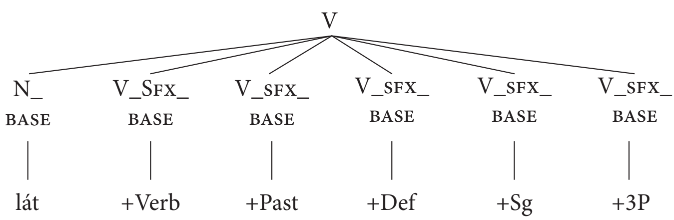
In (58) I show an example of (nominal) tag representation in our XLE lexicon.

(58) +Acc N_SFX XLE @(UP-CASE acc).

This is the tag for the accusative marker. It has a sublexical status, see below, and its function is to contribute the following information to the f-structure of the noun it is attached to (the noun stem and this tag both have the functional head annotation in sublexical structure): (↑ CASE) = acc. This is encoded by the following template: @(UP-CASE acc). Templates are convenient shorthand representations for (sets of) standard functional annotations. For instance, the standardly used template for the ↓ ∈ (↑ ADJUNCT) annotation is @(ADJUNCT). There is also a concatenation template in (57) above, the nature of which is discussed in § 3.1.4.2 in Chapter 3. Templates make the life of the grammar writer easier and they make complex functional annotations in c-structure rules and representations more comprehensible. In this book I use a considerable number of templates.

The sublexical rules operate in the same way as ordinary LFG style c-structure rules. This is how the grammar is capable of parsing the output of the morphological analyser. The result is an appropriate (partial) functional structure. The important point here is that the c-structure rule component of XLE contains both syntactic and sublexical rules associated with functional information. This component and the information coming from the lexicon jointly contribute to the building of the appropriate c-structure and f-structure representations. In (56) I gave an example of sublexical rules. In an XLE grammar it is also possible to call up the sublexical structures of terminal c-structure nodes by the help of a toggle key. In (59) and (60), I show two examples of this: the sublexical structures of *lányt* 'girl.ACC' and *látta* 'see.PAST.3SG.DEF', respectively. Recall that the _BASE affix indicates that these categories are in the sublexical domain.

(59)


(60)


In (62) below I exemplify ordinary c-structure rules. This particular rule is the 'top' portion of the DP rule I developed for our HunGram, which handles the bold parts of the examples in (61), the constituents in Spec,DP in the case of (61a, b) and the entire pronominal DP in (61c). I have simplified this rule for my current illustrative purposes. In this form, it captures the following generalisations. The Spec,DP position is optional. When it is filled, there are two options.

– The dative possessor occupies it, which is encoded in the following way: it has the possessor function: (↑ POSS) = ↓, its case is constrained to dative, and it can only occur in a possessive construction, which is ensured by a CHECK feature coming from the possessive morphology of the noun head: (↑ CHECK _POSS-MORPH) $=_c$ +. On XLE's CHECK feature device, see § 2.3.1.3 in Chapter 2.
– A demonstrative pronoun occupies it. This is regulated by the (↓ PRON-TYPE) $=_c$ demon constraint. It has the specifier function (a standard ParGram function). Its case and number must be the same as the case and number of the entire DP, which is primarily encoded by the inflection on the noun head.

The head of the DP is D'.

Alternatively, the DP rewrites as PRON. This captures the use of personal pronouns, which are assumed to be DPs in our system. As I mentioned earlier, in the XLE system the ↑ = ↓ functional head annotations are conventionally left out, and the other annotations are indicated after the category label followed by a colon.

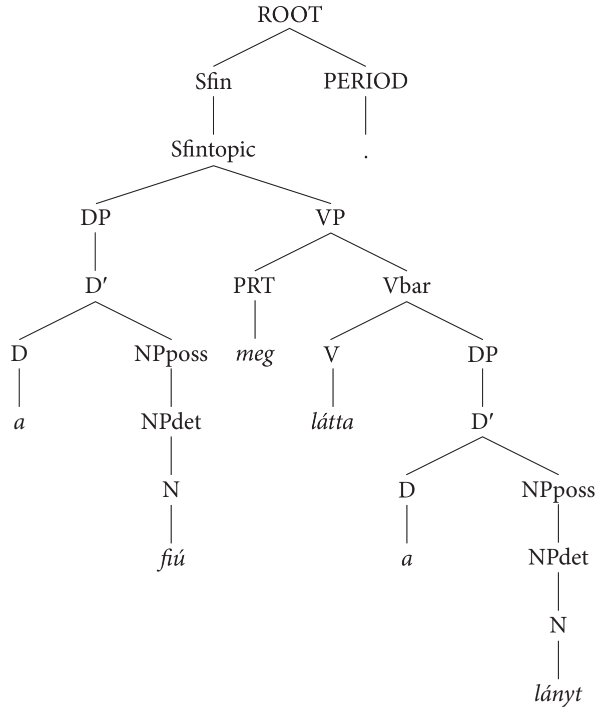
(61) a. ***János-nak*** *a* *toll-á-t*
John-DAT the pen-POSS.3SG-ACC
"John's book$_{[acc]}$"
b. ***ez-t*** *a* *toll-at*
this-ACC the pen-ACC
"this book$_{[acc]}$"
c. ***ők-et***
they-ACC
"them"

(62) DP → { (DP: { (↑ POSS) = ↓
(↓ CASE) $=_c$ dat
(↑ CHECK _POSS-MORPH) $=_c$ +
| (↑ SPEC) = ↓
(↓ NUM) = (↑ NUM)
(↓ CASE) = (↑ CASE)
(↓ PRON-TYPE) $=_c$ demon})
D'
| PRON }.

Consider the sentence in (63) and (the simplified versions of) its c-structure and f-structure parses in our HunGram in (64) and (65), respectively. Notice that in XLE's c-structure representations there are no functional annotations indicated. In discussing tokenisers above, I pointed out that in standard Hungarian orthography the verb and the immediately preceding preverb are written as one word; however, in most generative analyses they are assumed to occupy two distinct syntactic positions, see Chapter 2. Following a fairly standard convention, I indicate this discrepancy by the hash mark (#) in (63).

(63)	*A*	*fiú*	*meg#lát-t-a*	*a*	*lány-t.*
	the	boy.NOM	PERF#see-PAST-3SG.DEF	the	girl-ACC
	"The boy caught sight of the girl."				

(64)



Let me make three comments on this structure. First, punctuation marks get a separate representation. Second, XLE grammars use a whole range of specifically labelled c-structure nodes to enhance both parser and generator efficiency, which is crucial in the case of robust, large-scale grammars. For instance, Sfin = finite clause, Sfintop = finite clause containing a topic, NPposs = NP constituent (potentially) containing a nominative possessor. For more on this, see § 2.4.3 in Chapter 2. Third, PRT is the non-projecting category of preverbs (verbal particles) in HunGram, just like in its English and German ParGram counterparts. For details, again see § 2.4.3.

(65)
$$
\begin{bmatrix}
\text{PRED} & \text{`meg\#lát} < \text{[fiú], [lány]} > \text{'} \\[1ex]
\text{SUBJ} & \begin{bmatrix} \text{PRED} & \text{`fiú'} \\ \text{CASE} & \text{nom, DEF +, NUM sg, PERS 3} \end{bmatrix} \\[1ex]
\text{OBJ} & \begin{bmatrix} \text{PRED} & \text{`lány'} \\ \text{CASE} & \text{acc, DEF +, NUM sg, PERS 3} \end{bmatrix} \\[1ex]
\text{TOPIC} & \{\text{[fiú]}\} \\[1ex]
\text{CHECK} & [\text{ \_PRT-VERB +}] \\[1ex]
\text{TNS-ASP} & [\text{MOOD indicative, TENSE past}] \\[1ex]
\text{PRT-FORM} & \text{fel, STMT-TYPE decl}
\end{bmatrix}
$$

Here I only comment on those aspects of this representation that are relevant in this book. The hash-marked combination of words in the PRED feature (*meg#lát*) is one of the ways of representing (non-compositional) particle-verb constructions. For details, see § 2.4.3. Special CHECK features ensure that verbs and appropriate preverbs 'find each other' in the syntax. These features are included in the (separate) lexical forms of verbs and preverbs, see, for instance, the lexical representation of *lát* 'see' in (55). That is why this f-structure contains the CHECK [_PRT-VERB +] line. For a detailed discussion, see § 2.4.3. The subject of the sentence is also its topic. TNS-ASP stands for tense and aspect. STMT-TYPE is short for statement type, which is declarative here.

1.3 The structure and content of the book

In Chapter 2, I present the crucial aspects of an LFG (and XLE-implementable) analysis of the preverbal portion of Hungarian finite clauses. The structural representation is largely motivated by É. Kiss (1992) and Laczkó & Rákosi (2008–2013). I argue for S and against IP as the core sentential symbol (and I also postulate CP). I employ a hierarchical, binary branching, adjunction structure for the topic field, in addition to a similar setup in the quantifier field. I handle all the question phrases other than the question phrase immediately adjacent to the verb in multiple constituent questions as occupying VP-adjoined positions in the quantifier field. I argue for this treatment in a detailed fashion in Chapter 4. I assume that focused constituents, verbal modifiers and the (verb-adjacent) question phrase are in complementary distribution in Spec,VP. In addition, I suggest that LFG's parametric space that is potentially available to c-structure–function associations should be augmented along the following lines. (1) The Spec,VP position should be allowed to host the FOCUS discourse function. In general terms, this amounts to assuming that the specifier of a lexical category can be either a modifier or a DF. (2) The XP in [$_S$ XP VP] can also be a topic, in addition to a subject. (3) In cases like (2), the VP can also contain a subject. Finally, I discuss some basic implementational aspects of this LFG approach. In this chapter, I only develop the essential ingredients of my LFG-XLE analysis of the preverbal domain of Hungarian finite sentences by (i) discussing the most salient non-LFG generative accounts of the relevant phenomena, and (ii) positing this approach in the context of the architecture and fundamental principles of LFG. Thus, I pave the way for working out detailed analyses of verbal modifiers, operators, negation and copula constructions in subsequent chapters (Chapters 3–6).

In Chapter 3, I present the crucial aspects of an LFG (and XLE-implementable) analysis of the major types of Hungarian verbal modifiers. In accordance with the general approach to be outlined in Chapter 2, I assume that focused constituents, verbal modifiers and the (verb-adjacent) question phrase are in complementary distribution in Spec,VP. Following from the main topic of this chapter and for simplicity of exposition, I only formally model the complementarity (and interaction) of verbal modifiers (VMs) and focusing. I show that VMs can also be focused, and, depending on their nature, they can be used to express two types of focus: identificational focus and verum focus. I distinguish two major types of VMs: preverbs (verbal particles) belong to the first type, and the rest of VMs to the other type. I treat both compositional and non-compositional particle-verb constructions (PVCs) lexically, with both the verb and particle having their respective lexical forms with appropriate functional annotations and cross-referencing, including the use of CHECK features. The particle and the verb are analysed as functional coheads in both PVC types. All the other VMs, with their own grammatical functions, are assumed to be lexically selected by their verbs in these verbs' lexical forms. Depending on the nature of the VM involved, the verb can impose various constraints on it. Finally, I report the successful implementation of this LFG-theoretic approach in our HunGram platform.

In Chapter 4, I first offer a detailed discussion and critique of Mycock's (2010) analysis of the Hungarian operator field, based on her substantial experimental research. Against this background, I present a detailed LFG-XLE analysis of eleven Hungarian construction types involving constituents in the post-topic and preverbal zone: in the [XP,VP]$_{VP}$ quantifier position and in the Spec,VP focus/VM position, concentrating on VMs, focused constituents, universal quantifiers and (multiple) *wh*-questions. In addition to the basic structures that are analysed in all major generative approaches to this domain of Hungarian sentence structure, I also develop coherent accounts of some marked constructions that call for special treatments in all approaches. The most important aspects of my analysis are as follows. In LFG's overall non-derivational, parallel-representational framework, and in the spirit of its what-you-see-is-what-you-get principle, I assume that VMs, focused constituents and (final) *wh*-constituents compete for the same designated Spec,VP position, and I capture their complementarity by disjunctive sets of functional annotations. I also use disjunctive sets of (possibly disjunctive sets of) annotations to capture the complementarity of constituents in the $[XP,VP]_{VP}$ position. In the overwhelming majority of the constructions under investigation (universal) quantifiers and question phrases occupy this position. In addition to the regular LFG annotational apparatus, I make crucial use of XLE's CHECK features (both in c-structures and in lexical forms) to capture the complementarity of various constituents in a particular position, on the one hand, and to encode inevitable instances of context-sensitivity, on the other hand: certain constituents need to 'see each other' from and in their respective positions. My analysis is XLE-implementable, and this has been successfully tested in the case of the syntactic behaviour of several constructions under investigation.

In Chapter 5, after presenting the basic negation facts in Hungarian and discussing some salient non-LFG generative approaches, I propose a general LFG-XLE framework for the treatment of the fundamental types of negation by capitalising on É. Kiss' (1992) empirical generalisations and on the key structural aspects of her GB analysis. Then I modify and augment this LFG-XLE analysis by (i) developing an account of the special uses of negative particles, (ii) capturing their interaction with negative concord items, and (iii) presenting a formal treatment of the two suppletive negative variants of the copula. In order to ensure parsing and generation efficiency, I make use of the standard XLE devices: special syntactic categories for the negative particles involved: NEG and SEM, and specifically labelled phrasal projections: YPsnem and YPsem. I argue for using all the three modes of treating negation phenomena in the ParGram tradition in the analysis of Hungarian.

In Chapter 6, I first present some salient approaches to the fundamental types of English copula constructions (CCs). Next, I offer a detailed discussion of Hegedűs' (2013) MP analysis of several major Hungarian CC types. In addition, I relate it to several MP assumptions about CCs across languages as well as to some alternative MP accounts of Hungarian CCs. Then I develop the first comprehensive LFG analysis of the five most important types of copula constructions in Hungarian. The most significant general aspects of my approach are as follows. (1) I subscribe to the view, advocated by Dalrymple, Dyvik & King (2004) and Nordlinger & Sadler (2007), that the best LFG strategy is to examine all CCs individually and to allow for diversity and systematic variation both in c-structure and in f-structure representations across and even within languages. This means that I reject Butt et al.'s (1999a) and Attia's (2008) uniform PREDLINK approach at the f-structure level. (2) I argue against the two-tier, open, XCOMP analysis of CCs – at least in languages like Hungarian. (3) I employ the following analysis types: (i) single-tier, functional cohead (open), and (ii) double-tier, PREDLINK or OBL (closed). In this chapter, I raise and discuss two general questions: (1) What are the formal-strategic differences between MP and LFG approaches? (2) What role should be attributed to f-structure representation in the analysis of various CC types in LFG? The essence of my answers is as follows. (1) Given the architectures, principles and assumptions of the two theories, they seriously constrain the analytical strategies available in general and in the treatment of CCs in particular. All MP approaches employ a complex syntactic apparatus. They assume a uniform invariant initial structure and they derive the various CC types by means of several syntactic operations. By contrast, in LFG no such syntactic operations are possible; consequently, a lexical treatment is needed. From this it automatically follows that the partially different behaviours of CCs have to be captured by assuming several appropriate lexical forms for BE in which we encode their respective syntactic properties. (2) As I already pointed out at the beginning of this paragraph, I argue for the type of approach in the LFG framework that employs several distinct lexical forms of BE (with different argument structures) and, partially following from this, assumes that the f-structures of various CC types are different, which contrasts with the alternative view that postulates a uniform f-structure.

In Chapter 7 I reiterate the most important concluding remarks from Chapters 2–6, including the discussion of open questions, supplemented with the identification of further important and related research avenues.

CHAPTER 2

The basic structure of Hungarian finite clauses

In this chapter I develop the fundamental aspects of an LFG and XLE-implementable analysis of the preverbal domain of Hungarian finite clauses. I argue for S and against IP as the core sentential symbol, and I also postulate CP. I assume that focused constituents, verbal modifiers and the question phrase immediately preceding the verb are in complementary distribution in Spec,VP, while in multiple constituent questions all the question phrases other than the verb-adjacent question phrase occupy VP-adjoined positions in the quantifier field. In addition, I propose that LFG's parametric space that is potentially available to c-structure–function associations should be augmented along the following lines. (1) The Spec,VP position should be allowed to host the FOCUS discourse function. (2) The XP in the [$_S$ XP VP] exocentric configuration can also be a topic, in addition to a subject. Finally, I discuss some basic implementational aspects of this LFG approach.

The structure of the chapter is as follows. First I give an overview of the most salient previous generative approaches to the structure of simple finite sentences in Hungarian (§ 2.1). After this, I discuss previous LFG and LFG-compatible views of Hungarian sentence structure (§ 2.2). Then I develop my account by arguing against an LFG-style (endocentric) IP treatment of Hungarian sentences and for their (exocentric) S treatment (§ 2.3). Finally, I make some general and implementational concluding remarks (§ 2.4).

2.1 On previous generative approaches to Hungarian sentence structure

In this section, first I present what I consider the most important types of GB/MP analyses by concentrating, for the most part, on those aspects that are relevant from the perspective of my LFG approach to be developed in this book (§ 2.1.1).[1] Then in § 2.1.2 and § 2.1.3, I summarise the most important properties of two lexicalist models, GASG and HPSG, capitalising on § 1.1.2.2 and § 1.1.2.3, respectively.

Consider the sentences in (1)–(3), illustrating the most salient word order properties of Hungarian finite clauses, schematically presented in Table 2.1. Focused constituents are indicated by SMALLCAPS in these examples, see *MARINAK* "to Mary"

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1. This section and the next are substantially modified and largely extended versions of the relevant sections of Laczkó (2014a) and Laczkó (2014d).

in (2) and (3). Throughout the book this is the default representation of FOCUS, but when I cite examples from other authors, I keep their representation. VM stands for verbal modifier. This is a standardly used cover term for a range of radically different categories sharing the syntactic property of occupying the immediately preverbal position in neutral sentences. The standard description of a neutral sentence is that it does not contain negation or focus, it is not a *wh*-question, and it has level prosody. Preverbs, bare nouns, designated XP arguments, etc. are assumed to be VMs. In (1)–(3) the VM is a preverb: *oda* "to.there". For a detailed discussion and my LFG-XLE analysis of VMs, see Chapter 3.

(1) *János szerencsére minden könyv-et oda adott Mari-nak*
John.NOM luckily every book-ACC VM gave Mary-DAT
a könyvtár-ban.
the library-in
"Luckily, John gave every book to Mary in the library."

(2) *Szerencsére János minden könyv-et MARI-NAK adott (oda) a*
luckily John.NOM every book-ACC Mary-DAT gave VM the
könyvtár-ban (oda).
library-in VM
"Luckily, it was to Mary that John gave every book in the library."

(3) *Szerencsére János minden könyv-et (*oda) MARI-NAK (*oda) adott*
luckily John.NOM every book-ACC VM Mary-DAT VM gave
(oda) a könyvtár-ban (oda).
VM the library-in VM
"Luckily, it was to Mary that John gave every book in the library."

Table 2.1 Hungarian sentence articulation

TOPIC	PREDICATE				
(A) (contrastive) topic, sentence adverb	(B) quantifier	(C) focus/VM		(D) verb	(E) postverbal constituents
		(Ca) focus	(Cb) VM		

The examples in (1)–(3) and Table 2.1 illustrate the following well-known facts and basic empirical generalisations about Hungarian sentence structure.

The fundamental sentence articulation is topic–predicate (also called topic–comment in some approaches), see Table 2.1. In the topic field, the ordering of topics and sentence adverbs is free, see (1) and (2). I use the terms 'topic' and 'focus' in the following way. In general, I consider both of them discourse functional categories to be consistently represented at the level of LFG's information structure (i-structure). However, given that in this book I only concentrate on topic and focus as i-structure elements, and no other aspects of i-structure representation are relevant, for ease of exposition I include the topic and focus functions in my f-structures, which had been the standard representational convention before i-structure was added to the architecture of LFG. In the case of topics (and contrastive topics), in my analysis there are no (exclusively) designated syntactic positions for them, because they intermingle with sentence adverbs in the 'topic field'. In the case of foci, here I only deal with the encoding of the famous preverbal focus, which is generally assumed to belong to the contrastive and exhaustive type. It is also often called identificational focus with exclusion, which means that it identifies a certain member or certain members of a particular set by excluding all the other members of the set at the same time.

Basically, the word order of postverbal elements is free, see (2). However, constituents that typically have reduced stress (e.g., preverbs and pronouns) and less heavy phrases tend to occur closer to the verb than heavier phrases due to Behaghel's Law of Growing Constituents (1932), which orders constituents according to their phonological weight. For a discussion, see É. Kiss (2009a). Thus, although both word orders are grammatical in (2), the version in which the VM precedes the *a könyvtárban* "in the library" constituent is quite strongly preferred. Also, the postverbal order of the constituents in (1) sounds more natural than the other variant, in which *a könyvtárban* "in the library" would precede *Marinak* "to Mary". In addition, in this case the word order preference is reinforced by the fact that the phonologically lighter constituent is an argument of the verb, whereas the heavier constituent is an adjunct.

The VM and the focus are in complementary distribution preverbally, see (3). The VM *oda* "to.there" can neither precede nor follow the focus constituent in the preverbal domain.

As regards capturing the complementarity of the focus and the VM, the two salient solutions are illustrated in the split (C) vs. (Ca) and (Cb) sections. When I discuss various approaches below, the choice between the two solutions will be a crucial issue.

If a preverbal quantifier is present in the sentence, it follows the topic field and it is the initial constituent in the predicate domain, see (1)–(3). There can be several constituents in the quantifier field as well, and the order of the three major quantifier types is strictly constrained. For instance, Kálmán (2001) makes the following empirical generalisation about the types of quantifiers and their ordering.

(4)	*IS* "also"	*MINDEN* "every[thing]"	*SOK* "many"
	POSITION	FIELD	POSITION

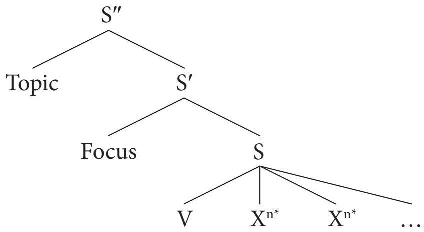
The particle *is* “also” cliticises to the right edge of a constituent. Only one *is*-phrase can precede the verb. The *minden* “every[thing]” field can accommodate more than one universal quantifier. There is a single additional position hosting constituents containing quantifiers like *sok* “many”. (5) illustrates this distribution.

(5) *János is minden könyv-et sokszor oda adott Mari-nak*
John.NOM also every book-ACC many_times VM gave Mary-DAT
a könyvtár-ban.
the library-in
“John, too, gave every book to Mary in the library many times.”

2.1.1 GB and MP approaches

É. Kiss (1981) proposes the following non-configurational flat sentence structure (S) for Hungarian.

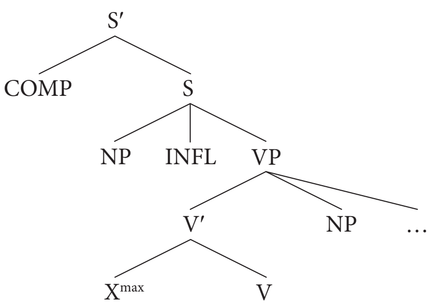
(6)



Although this structure does not even contain a VP constituent, it can be taken to be an important predecessor of É. Kiss’ (1992) seminal GB analysis.

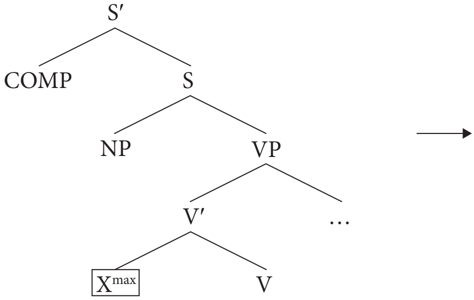
By contrast, Horvath (1986) argues that Hungarian basically is an SVO language like English with a major difference: in Hungarian there is an immediately preverbal position for one designated base-generated complement (roughly, for a VM). Consider her structure of neutral sentences with VMs, i.e., designated arguments of the verb (Horvath 1986: 64).

(7)

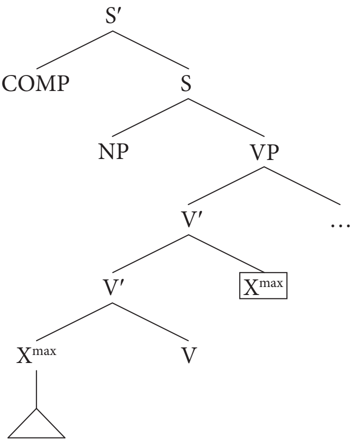


In addition, she assumes that these designated complements (VMs) are postposed, more precisely, right adjoined to V′, when there is *wh*- or FOCUS-movement into that position, see (8) from Horvath (1986: 73), which is a rather marked aspect of the analysis, given the standard assumptions about movement in GB.

(8) a.

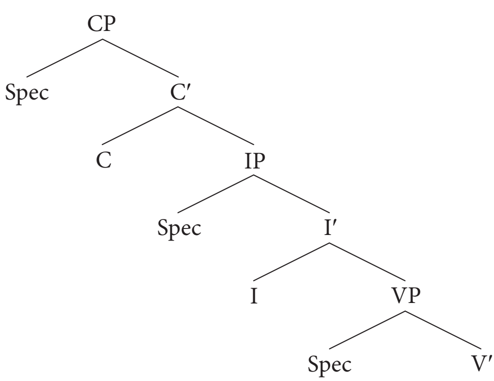


b.



Marácz (1989) criticises both É. Kiss' (1981) analysis in (6) and Horvath's (1986) configurational structure in (7), and he postulates the following configurational structure, with an underlying SOV order.

(9)

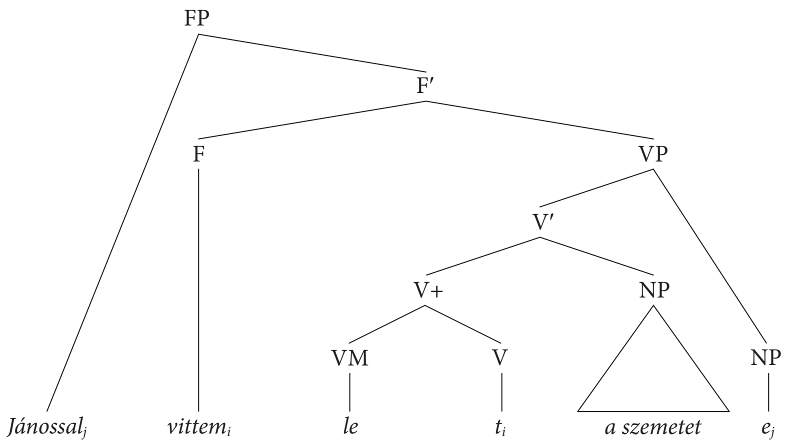


In this approach, V raises to C, and Focus/*wh*- constituents move to Spec,CP.

Brody (1990) assumes a sentence structure in which the VM and the focus constituents are in two distinct preverbal positions. The essence of his approach is that in neutral sentences the VM is base-generated to the left of the verb and they make up a V+ unit. In a non-neutral sentence, a functional projection (FP) is generated above the VP, the projection dominating the VM + V sequence. The VM occupies a preverbal position within the VP, then the V head is moved into the F head position and the focused constituent lands in Spec,FP. Thus, the preverbal complementary distributional behaviour of the VM and the focus is captured by postulating two designated positions and V-to-F head movement, which also takes care of the postverbal occurrence of the VM in the presence of a focused constituent. Consider (10b), Brody's (1990) analysis of the sentence in (10a). For this approach recast in the framework of MP's Checking Theory, see Brody (1995).

(10) a. *JÁNOS-SAL vi-ttem le a szemet-et.*
John-with take-PAST.1SG down the rubbish-ACC
"I took down the rubbish with JOHN."

b.

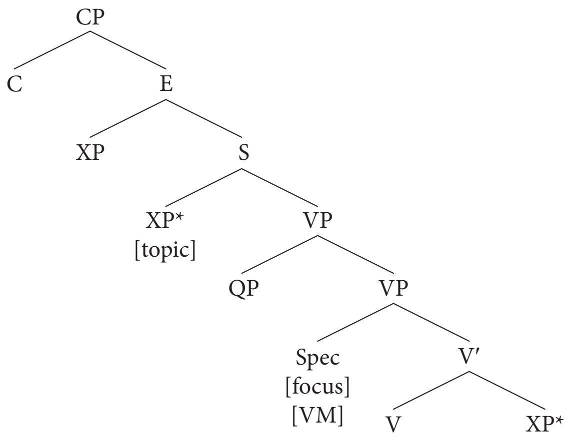


One of the most frequent critical remarks on this account has been that V+ seems to have the status of a complex head, whereas the VM is phrasal in nature: there are cases when the VM is moved to higher phrasal positions. It is worth pointing out that É. Kiss (1999) explicitly argues for the head movement of VMs to V^0.

Notice that the similarity between Horvath's (1986) approach and Brody's (1990) is that both base-generate the VM to the left of the verb. They differ in the following respects. The former assumes a phrasal position for the VM, and it accounts for the VM vs. focus complementarity by postulating that they target the same position: focus physically ousts the VM from the preverbal position. By contrast, in the latter the VM is more like an element in an incorporated position from which it has to 'excorporate' when necessary, and the VM and the focus target distinct syntactic positions, and the complementary distribution effect is achieved by V-to-F movement.

The typical functional projection assumed for hosting focused constituents in the GB/MP setting is F(oc)P. However, Kenesei (1992) and Horvath (1995) posit the focused constituent in Spec,IP, and É. Kiss' (1992) extremely influential GB approach assumes that foci and VMs are in complementary distribution in Spec,VP, see her structure in (11). Horvath (2013) postulates a special projection, see (21) below.

As regards the treatment of topics, contrastive topics and sentence adverbials, É. Kiss (1992) assumes that topics and sentence adverbials are in a flat structural field dominated by an S node, while contrastive topics are left-dislocated elements outside the S domain, dominated by an E(xpression) node, and they are base-generated there, and this entire E constituent is, in turn, dominated by CP.

(11)


Fundamentally, É. Kiss (1994a) adopts this approach with two significant modifications that are relevant from our present perspective. (1) She replaces the exocentric S node with TP (Tense Phrase). (2) She assumes that if the sentence contains only one topic then this constituent occupies the Spec,TP position, and if there is more than one topic, the additional topics are iteratively adjoined to TP.

É. Kiss' (1992) seminal GB account strongly motivated important parts of our implemented Hungarian grammar, Laczkó & Rákosi (2008–2013), on which my approach outlined in Laczkó (2014a) and presented in this chapter heavily relies. It is noteworthy that É. Kiss' (1992) analysis has the following important unorthodox aspects to it from the standard GB perspective.

- It applies an exocentric sentence structure, dominated by S. The postulation of an additional exocentric E node for hosting left-dislocated constituents is unorthodox even in generative frameworks outside the Chomskyan mainstream. It is also noteworthy that É. Kiss (1994a), the English version of É. Kiss (1992), is one degree less unorthodox in that instead of S it uses the endocentric TP projection.
- There are flat (non-binary-branching) parts of the structure, dominated by S and V′.
- No FP projection (focus or functional phrase) is postulated.

As I argue in § 2.3.2, all these marked features can be accommodated in an LFG framework in a natural and principled fashion.

There is an insurmountable problem with É. Kiss' (1992) approach (insufficiently and incompletely addressed in that work): she is forced by her system to assume that *all* constituents moved into Spec,VP are focused constituents, because their movement from their postverbal base-generated positions below V′ is triggered by their need (either inherently or driven by discourse requirements) to acquire the focus [+F] feature from the verb in Spec,VP. It is easy to see that this makes the treatment of ordinary VMs in neutral sentences empirically and intuitively implausible. In Laczkó (2014b) I discuss various types of VMs which can unquestionably occur in Spec,VP in neutral sentences without any focus stress and interpretation.

É. Kiss (1992, 1994a) treats (preverbal) quantifiers as constituents adjoined to VP, which is basically a Hungarian style overt manifestation of GB's famous Quantifier Raising operation. If there is more than one preverbal quantifier in the sentence, they are iteratively adjoined to VP. Later on, more in the spirit of MP, it was generally assumed that quantifiers, too, have their own functional projections, see, for instance, Szabolcsi (1997) and Brody & Szabolcsi (2003). É. Kiss (2002) also subscribes to this view and, motivated by Szabolcsi (1997), she assumes that quantifiers sit in the specifier position of the DistP functional projection. Dist is short for 'distributive', and the rationale behind this label is that quantifiers occurring in this position obligatorily have a distributive interpretation. É. Kiss (2002), in accordance with the mainstream MP view, also assumes that both topics and sentence adverbials have their own functional projections: TopP and EvalP, respectively. In addition, despite their differential prosodic, categorial and scopal properties, É. Kiss claims that what are called 'contrastive topics' simply belong to the general class of ordinary topics. As regards the treatment of VMs and foci, in a sense, É. Kiss (2002) proposes an interesting 'in-between' solution. She assumes a verb-initial, flat VP and generates either of the following two functional projections above it: AspP or FP. In the former case, the VM is moved into Spec,AspP, which results in a VM + V sequence. In the latter case, the constituent to be focused lands in Spec,FP, forcing the VM to remain in its base-generated position. I think that this is an in-between solution for the following reason. In both cases, there is a single position preceding the verb; however, these designated positions are in two different 'dimensions', they cannot co-occur. In other words, in the crucial respect É. Kiss postulates two distinct syntactic structures for neutral and focused sentences. In § 2.2, where I discuss previous LFG analyses, I point out that Gazdik (2012) develops an analysis in a similar spirit.

Surányi's (2011) non-cartographic interface model is highly relevant for this book not only with respect to its treatment of sentence structure and the VM–focus relationship, the major issues in this chapter, but also with respect to its relation to universal quantifiers, which is relevant for Chapter 4 in this book, and negation, which is relevant for Chapter 5.

In contrast to the cartographic tradition, Surányi dispenses with the focus functional projection (FP) and other syntax-internal devices for handling focus, and he assumes that overt or covert identificational movement is governed by the interaction of (A) certain general properties of grammar such as (i) theory of movement, (ii) Stress-Focus Correspondence, and (iii) economy; and (B) certain parametric properties of the Hungarian language such as (i) the left-headedness of the intonational phrase, and (ii) the EPP property of the category T(ense). In his analysis, VMs and focused constituents are assumed to be in complementary distribution. They target the Spec,TP position to satisfy the EPP. To begin with, consider Surányi's (2011: 181) analysis of a neutral sentence containing a VM. In what follows, I keep his representations and examples intact.

(12) a. *El* *küldte* *János* *a* *level-et* *Mari-nak.*
PRT sent.3SG John.NOM the letter-ACC Mary-to
"John sent the letter to Mary."
b. [$_{TP}$ XP$_{VM}$ [$_T$ V] [$_{AspP}$ ~~XP~~$_{\cancel{VM}}$ [$_{Asp}$ ~~V~~] […]]]
c. [$_{TP}$ *El* [$_T$ *küldte*] [$_{AspP}$ ~~*el*~~$_{\cancel{VM}}$ [$_{Asp}$ ~~*küldte*~~] […]]]

In the course of the derivation, both the verb and the VM pass through AspP, which is below TP. T has the 'EPP' property, which cannot be satisfied merely by the movement of the verb to T. In addition to this, the constituent from the specifier position of the next lower projection has to be raised to Spec,TP, as schematised in (12b) and exemplified in (12c).

Surányi assumes that the clausal negation particle is a phrasal category in Hungarian, and in neutral sentences it immediately precedes the finite verb, just like VMs. For details, see Surányi (2003). He does not assume a NegP functional projection (and V-to-Neg movement as a consequence). Instead, he claims that sentential negation is merged at the left periphery of TP. In particular, it can fill a specifier position of TP, and thereby satisfy the 'EPP' feature of T (just like a VM). From this it follows that in such a configuration the VM cannot raise to Spec,TP. Compare (13) with (12).

(13) a. $[_{TP}$ NEG $[_{T}$ V] $[_{AspP}$ XP_{VM} $[_{Asp}$ $\cancel{V}]$ […]]]

b. *Nem küldte el ~~küldte~~ a level-et.*
not sent.3SG PRT the letter-ACC
"He didn't send the letter."

Surányi goes on to assume that identificational focus (id-focus) also targets the same Spec,TP position as sentential negation and VMs. It is a widely held view that the preverbal focused constituent in Hungarian is interpreted as id-focus: it identifies a designated member (or designated members) of a set to the exclusion of all the other members of a given set, see É. Kiss (1992), for instance. Surányi assumes that id-focus is also capable of satisfying T's EPP requirement, which is empirically supported by the preverbal complementarity of the three elements: the VM cannot occur preverbally in the presence of the id-focus, see (14) and (15).

(14) $[_{TP}$ FOC_{ident} $[_{T}$ V] $[_{AspP}$ XP_{VM} $[_{Asp}$ $\cancel{V}]$ […]]]

(15) *$[_{TP}$ FOC_{ident} $[_{T'}$ $XP_{VM}]$ $[_{T}$ V] $[_{AspP}$ $\cancel{XP_{VM}}$ $[_{Asp}$ $\cancel{V}]$ […]]]
**A CIKK-ET el küldte János.*
the paper-ACC PRT sent.3SG John.NOM
"It's the PAPER that John sent."

Surányi emphasises the fact that although he assumes that id-focus can satisfy the 'EPP' feature of T, he does not assume that the movement of id-focus is actually triggered by that feature. Instead, it is triggered by its semantics: it must occupy that position because it is an identificational predicate. This movement to Spec,TP must be overt, because that is how the corresponding phonological requirement, the Stress-Focus Correspondence can be satisfied: a focus constituent contains the prosodically most prominent syllable in its domain (Surányi 2011: 177). The movement makes possible the avoidance of a more costly operation: stress shift.

Basing his argument on the fact that in his approach the overt movement of id-focus to the left edge of the TP is fundamentally triggered by semantic and phonological factors (and not by the EPP satisfaction requirement), Surányi claims that NEG can be base-generated in Spec,TP, thereby satisfying the EPP, and id-focus can (or, rather, must) move to the outer specifier of TP, see (16).

(16) $[_{TP}$ FOC_{ident} $[_{T'}$ NEG] $[_{T}$ V] $[_{AspP}$ XP_{VM} $[_{Asp}$ $\cancel{V}]$ […]]]
A CIKK-ET nem küldte el.
the PAPER-ACC not sent.3SG PRT
"It's the paper that he did not send."

When NEG precedes a focused constituent, Surányi assumes that the latter is in Spec,TP and the former is left-adjoined to TP, see (17).

(17) $[_{TP}$ NEG $[_{TP}$ FOC$_{ident}$ $[_{T}$ V$]$ $[_{AspP}$ XP$_{VM}$ $[_{Asp}$ $\cancel{V}]$ $[\ldots]]]$
Nem *A CIKK-ET* *küldte* *el.*
not the paper-ACC sent.3SG PRT
"It's not the paper that he sent."

His evidence for the possibility of adjoining NEG to TP is the fact that NEG can also precede the TP in a neutral sentence in which a VM occupies the Spec,TP position, see (18).

(18) *Nem el küldte a cikk-et (hanem meg írta*
not PRT sent.3SG the paper-ACC but PRT wrote.3SG
a jelentés-t).
the report-ACC
"He did not send the paper, but wrote up the report instead."

He remarks that this NEG adjunct does not simply negate a proposition: it also expresses a contrast that may be implicit or explicit, see the bracketed continuation of the sentence in (18). Surányi claims that the same generalisation holds for the focused version in (17). In a footnote he mentions that (18) can also be taken to involve an instance of pars pro toto focus movement of the VM constituent, in which case the example in (18) calls for the same analysis as (17). On the notion of pars pro toto focus movement, see Fanselow (2004), and on this movement type in Hungarian, see Kenesei (1998).

Surányi comments that in the constructions in (17) and (18) the negation adjunct does not receive main prominence: for phonological purposes the 'core' TP (without adjuncts) counts as the relevant i-phrase; thus, the constituent in its specifier position is its left edge. The negation adjunct obligatorily receives pre-nuclear stress in (18), and in (17) this is one of the two options. In this case NEG has either pre-nuclear or nuclear stress, just like (universal) quantifiers in this TP-adjoined position. Surányi's explanation for NEG possibly getting nuclear stress is as follows. These quantifiers are ordinary foci, that is why they have nuclear stress. When such a TP-adjoined quantifier is followed by id-focus in Spec,TP, the former has main prominence because it is (ordinary) focus, and the latter also has main prominence because it is id-focus in the specifier of the 'core' TP. Given that the id-focus is in the domain of the ordinary focus, its stress is reduced relative to the stress of the ordinary focus. Surányi claims that NEG in the TP-adjoined position followed by id-focus in Spec,TP can optionally have the same ordinary focus status and prominence as a quantifier, see (17). He does not raise (and, thus, does not answer) the question of why this ordinary focus status and prominence is not available to NEG when it precedes a VM in Spec,TP in a neutral sentence, see (18).

Surányi points out and exemplifies in a footnote that (inner) Spec,TP negation and TP-adjoined negation can co-occur, see (19) and (20).

(19) *Nem nem emailezte el.*
not not emailed.3SG PRT
"He didn't not email it."

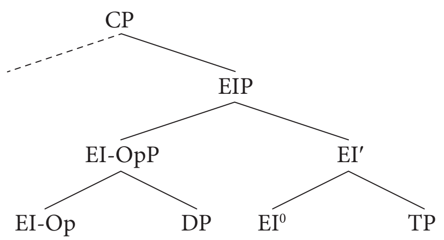
(20) *Nem* A CIKK-ET *nem emailezte el.*
not the paper-ACC not emailed.3SG PRT
"It's not the paper that he did not email."

Broekhuis & Hegedűs (2009) also assume that foci and VMs are in complementary distribution. They are moved into the preverbal position, and the trigger of the movement is phonological: the verb needs to be unstressed and the preverbal position is stressed. Obviously, there is only one such preverbal position, irrespective of the question of which head position the verb occupies in the given configuration, so the two potential occupant categories are in complementary distribution. For an alternative stress-driven approach to focus movement, see Szendrői (2001, 2003, 2004).

In this context it is noteworthy that É. Kiss (2002: 83), on solid cartographic MP grounds, argues against collapsing focused and VM constituents, because this would make it impossible to associate an invariant interpretation with a single syntactic position. Thus, she also argues against her own previous analysis in É. Kiss (1992) implicitly. Again, as I claim several times in this book, it is one of the strengths of the architecture and assumptions of LFG that this can be carried out in a principled manner. Also note that Surányi's approach is also flexible in this respect in a principled fashion.

As regards the triggers of the movement of an ordinary or *wh-* focused constituent into the designated preverbal A-bar focus position (whether in a GB model or in MP's Checking Theory), the most typically assumed features are as follows: [+foc], [+wh], [+id] (= identificational), and [+exh] (= exhaustive). As I pointed out above, the 'host projection' is very often the FocP functional category, but not necessarily. Other functional (or non-functional) categories can also be involved, e.g., CP, IP, TP or VP. It is interesting in this respect that Horvath (2007) uses the special merger of the latter two features in such a way that she introduces the categories of EIP clausal functional projection and EI-OpP (= Exhaustive Identification Operator Phrase). Consider their positions in her Hungarian sentence structure in (21). In Horvath (2013) she analyses Hungarian *wh*-questions in this structural setup by employing [EI] and [Q] features. She assumes that EI-Op always carries the former feature, and additionally it can also bear the latter.

(21)



From the present perspective, É. Kiss' (1994b) discussion of foci in Spec,VP is especially significant. She uses the following two examples (1994b: 132). I keep the format, the glossing and the translations of these examples intact.

(22) a. [$_{VP}$ *JÁNOS* [$_{V'}$ *ette meg a süteményt*]]
John ate PERF the cookie
"JOHN ate the cookie."

b. [$_{VP}$ *Egy 'autó* [$_{V'}$ *állt meg a ház előtt*]]
a car stopped PERF the house in-front-of
"A car stopped in front of the house."

É. Kiss (1994b: 132–133) makes the following observations. (22a) can only be felicitously used as an answer to the question *Who ate the cookie?* By contrast, (22b) can also answer this question: *What happened?* (22a) expresses identification with exclusion. By contrast (22b) expresses identification only. More precisely, (22b) is ambiguous, because it could also be used as an answer to *What stopped in front of our house?* The focused constituent in (22a) is interpreted contrastively, the assumption being that in the given situation there was a closed set of persons potentially capable of eating the cookie. By contrast, in the case of (22b) no closed set of entities can be naturally assumed who could have performed the act of stopping in front of the house. Therefore, here we are dealing with an open set. The focus operator performs its identificational function without the exclusion operation.

These assumptions by É. Kiss are important because they present a finer-grained picture of the nature of Hungarian preverbal focus, contrary to the rather widely and firmly held view in the relevant GB/MP literature to the effect that this designated focus position is strongly associated with contrastivity/exhaustivity/exclusion (in addition to identification).

As regards the treatment of VMs, I pointed out above that there were some earlier GB approaches that assumed that VMs were base-generated preverbally, see Horvath (1986) and Brody (1990), for instance. Fundamentally, since É. Kiss (1992) it has been assumed that VMs are complements of the verb and they are base-generated postverbally, and they move into a preverbal position. Analyses differ widely in two respects. (1) What triggers/motivates this movement? (2) What is the phrasal category for the landing site? Let me only highlight some salient GB/MP solutions. É. Kiss (1992, 1994a) assumes that the landing site is Spec,VP, just like for ordinary focused constituents, and the trigger is the focus feature [+F]. I point out several times in this book that this uniform focus treatment of all elements ending up in Spec,VP, including all (clearly) non-focused VMs, is a serious shortcoming of É. Kiss' (1992, 1994a) approach. It is equally important that already in this approach the aspectual (perfectivising) role of preverbs is also assumed. É. Kiss (2002) separates foci and VMs in such a way that she assumes that the former end up in Spec,FocP and the latter land in Spec,AspP, determining the aspectual properties of the sentence. Thus, the AspP functional projection even categorially encodes a semantic property of the sentence. Obviously, the movement of VMs to Spec,AspP is triggered by their aspect-marking potential: they are perfectivisers. However, É. Kiss (2004) makes this VM picture more sophisticated: VMs in general are secondary predicates, and some of them are aspectualisers (those expressing goal or termination can encode telicity in the designated position). Csirmaz (2006) and É. Kiss (2006) also subscribe to this view: AspP hosts VMs that are telicisers, and PredP hosts all VMs, because all of them are predicative in nature. All these analyses adopt Zwart's (1993) and Koster's (1994) analyses of similar phenomena in Dutch. They employ the PredP projection for hosting predicative elements and attracting the verb to Pred^0.

É. Kiss (2006) augments the predicative analysis of VMs so as to cover focusing as well. The fundamental idea is that VMs and focus compete for the preverbal position because focus is also an instantiation of predication: identificational predication. This goes back to Higgins' (1979) claim that focus movement is predicate movement.

Broekhuis & Hegedűs (2009) propose an alternative analysis of predicative movement, based on Broekhuis' (2008) analysis of locative inversion in terms of movement of Small Clause predicates. The central idea is as follows. Predicate movement in Hungarian is triggered by the ϕ-features on the verb. The landing site is Spec,VP, and the goal is to establish object-agreement. This agreement could be established at a distance. However, there is an additional requirement to the effect that the finite verb should be unstressed, which is expressed as an OT-constraint. This requirement triggers movement, which overrules long-distance agree. Hegedűs (2013) adopts the crucial ingredients of these previous analyses, but she goes further in a uniform Small-Clause-based approach, and she identifies predicate movement into a preverbal position as movement for the sake of complex predicate formation, by capitalising on the assumption that VMs are secondary predicates.

In Table 2.2 I summarise the crucial aspects of various analyses of the relationship between foci and VMs at different stages of the development of the GB/MP line of generative linguistic investigation. I do not include the accounts by É. Kiss

(1981), Horvath (1986) and Marácz (1989), because they make by now untenable (general) GB assumptions about the position of focus in Hungarian: [XP,S], [XP,V′] and [XP,CP], respectively. On Szendrői's (2001, 2003) and Hunyadi's (1996, 1999, 2002) prosody-driven approach to focusing and scope-taking in Hungarian, see § 4.1 in Chapter 4. In Table 2.2 I have tried to use (or change) category labels in a way that should make the comparison of the essential aspects of the analyses easier. I also include some aspects, for completeness' sake, which were only implied by, or inferred from, the general features of the analysis in question.

Table 2.2 Some GB/MP treatments of VMs and foci

Author	**Focused constituent**	**Verbal modifier**	**Remarks**
É. Kiss (1992)	complementary distribution in a single position Spec,VP		a major problem: ordinary VMs in neutral clauses assumed to have the [+focus] feature
Brody (1990)	Spec,FocP	[VM,V+]	the cohead- / X^0-like status of VM is problematic, base-generation ↔ É. Kiss (1999): head-movement analysis of VMs to V^0
É. Kiss (2002)	complementary distribution of alternative functional projections Spec,FocP	Spec,AspP	a special in-between solution to the complementarity issue: the preverbal position is the same and not the same
É. Kiss (2004), Csirmaz (2004, 2006)	Spec,FocP	Spec,AspP + Spec,PredP	VM: aspect encoding and complex predicate formation
É. Kiss (2006)	special complementary distribution in two extended v*P projections: Spec,FocP and Spec,PredP		rationale: id-focus is also predicational
Surányi (2011)	Spec,TP partial complementary distribution (also involving NEG) in a single position (Spec,TP)	Spec,AspP (possibly) → Spec,TP	VM: aspectual Spec,TP: EPP satisfied by id-focus/VM/NEG
Hegedűs (2013)	Spec,FocP	Spec,VP	VM: complex predicate formation, feature-checking and stress-avoidance by the verb, see Broekhuis & Hegedűs (2009)

2.1.2 GASG

As I pointed out in § 1.1.2.2 in Chapter 1, GASG has been designed to be a fully lexical, morpheme-based grammar. It even dispenses with syntactic phrase structure representation. Instead, it captures the word order properties of sentences within and across languages by Optimality Theory-style ranking parameters. For some general comments on Optimality Theory, see the last two paragraphs of § 1.1.1. For further details of the architecture and principles of GASG and for references, see § 1.1.2.2. Here I only show Szilágyi's (2008: 181) analysis of (23) with a focused constituent (represented in SMALLCAPS) in Figure 2.1. In the discussion of this analysis, I only highlight those aspects that are directly relevant for our current purposes. For instance, I do not represent all the other rank parameters that are irrelevant for us. For these aspects and further details, see Szilágyi (2008).

(23) *Péter* EGY *TORTÁ-T* *hozott* *be* *a* *szobá-ba.*
Peter.NOM a cake-ACC brought.3SG in the room-into
"Peter brought a cake in the room."

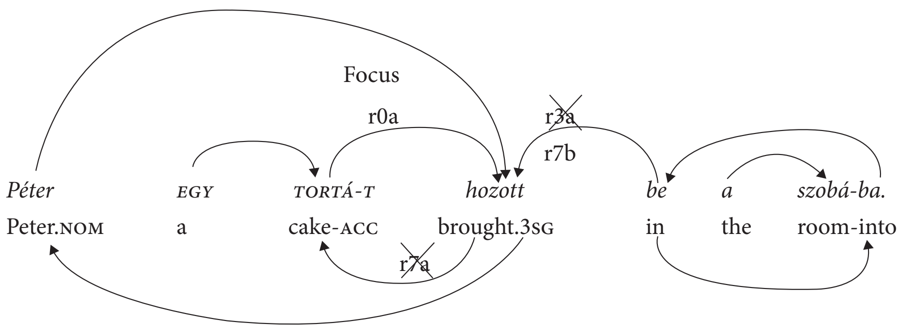


Figure 2.1 Szilágyi's (2008) analysis of (23)

The word order ranking parameters are such that a VM like *be* "in" must immediately precede the verb in neutral sentences, because it has a stronger (i.e., lower) rank number than other complements (or adjuncts) of the finite verb. In Figure 2.1 this rank is *r3a*. However, the (phonetically null) Focus morpheme has an even stronger (i.e., lower) rank number: *r0a*, and it overrides the VM's preverbal rank, that is why *r3a* is represented as cancelled and rewritten as *r7b*. Parallel to this, the intrinsic rank of the *tortát* "cake.ACC" constituent is *ra7*, and the Focus operator overwrites it to *r0a*. Szilágyi's (2008) analysis then postulates a zero Focus morpheme whose fundamental role is to 'reshuffle' the ordering requirements imposed on the constituents of the given sentence, compare *r3a* vs. *r7b* for *be* "in", and *r0a* vs. *r7b* for *tortát* "cake.ACC".

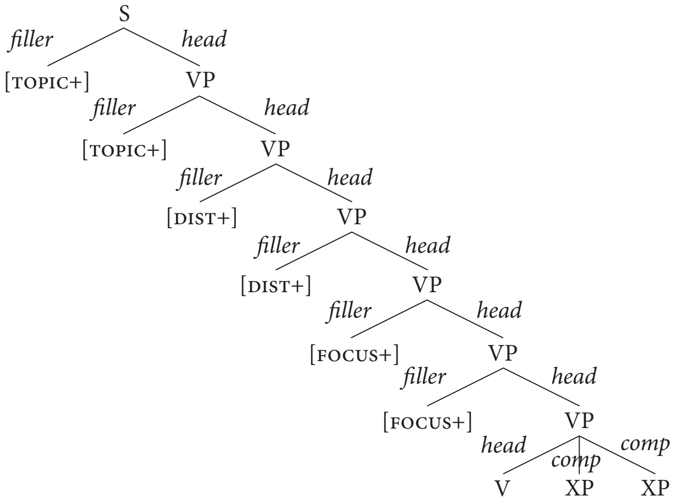
Notice that Szilágyi's (2008) phonetically null Focus morpheme is fundamentally different from GB's/MP's empty categories. Despite this fact, I found this zero morpheme solution somewhat strange in the light of the architecture and principles of GASG, so I asked Gábor Alberti (the main architect of the theory) about the ontological status of a null morpheme in their system. Below is what he replied (Alberti, personal communication, February 2016 – my translation, TL).

> Indeed, ReALIS intends to be realistic in the sense of not assuming empty words/morphemes. If such a thing emerges in an implementation, this is a temporary solution. For instance, in certain languages focusing can be expressed by overt morphemes, while in other languages we are not after an empty morpheme (which should invisibly hide 'somewhere' and rearrange word order around itself). Instead, we need to discern a dominant manifestation of a strong requirement and/or a special intonational relation. NB: pronouns like *én* "I.NOM", *téged* "you.SG.ACC", etc. signal the presence of operator relationships in Hungarian and not persons, as person encoding is provided by inflection.

2.1.3 HPSG

As noted in § 1.1.2.3, HPSG is also a very strongly lexicalist model; however, it also makes crucial use of phrase structure representation. In this framework, Szécsényi (2009, 2011, 2013) has developed an analysis of Hungarian finite and non-finite sentences. He postulates the structure shown in (24) for Hungarian finite sentences.

(24)



Following the MP tradition in this respect, he assumes that a VM, which is a complement of the verb, makes up a complex predicate with that verb. In his analysis, a VM occupies a special, designated VP-initial position, immediately preceding the verb. Not only a preverb, but other (designated) complements of the verb can have this VM status; for obvious reasons, in each individual case only a single element can function as a VM. Szécsényi identifies this designated element by a special feature CAR (standing for 'verb-carrier', a term borrowed from Kálmán & Rádai (1998)). This feature points to one of the verb's complements in its complement list. For instance, on his account the lexical form of the verb *hozott* "brought" in the example in (23) in the previous section has four complements: the subject, the object, the oblique argument, and the preverb *be* "in". The CAR feature points to this preverb (in the case of a neutral sentence), and, consequently, the preverb occupies the VP-initial position. Szécsényi treats focusing as a lexical process. Its essence is that the verb gives the focus feature (F-GIVE) to one of its complements or adjuncts. At the same time, the CAR feature must be (or must become) empty. See Szécsényi's (2011) schematised Focus Selecting Lexical Rule in (25).

(25)
$$\begin{bmatrix} \text{COMPS} & \langle \ldots, \boxed{1}\,[\text{FOCUS} -], \ldots \rangle \\ \text{F-GIVE} & \boxed{2} \\ \text{CONTENT} & \alpha \end{bmatrix}$$
$$\Downarrow$$
$$\begin{bmatrix} \text{COMPS} & \langle \ldots, \boxed{1}\,[\text{FOCUS} +], \ldots \rangle \\ \text{CAR} & \text{none} \\ \text{F-GIVE} & \boxed{2} \oplus \langle \boxed{1} \rangle \\ \text{CONTENT} & \beta \end{bmatrix}$$

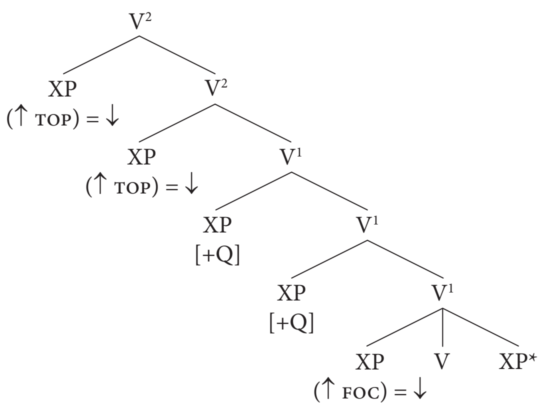
Notice that in this approach the focus and the VM occupy two distinct syntactic positions: the former is VP-adjoined and the latter is VP-initial. Their complementarity is encoded by the rule in (25).

2.2 On some previous LFG(-compatible) analyses of Hungarian sentence structure

In this section I briefly discuss (i) pure LFG analyses, (ii) analyses cast in the framework of LFG combined with Optimality Theoretic (OT) constraints, and (iii) pure OT analyses claimed to be compatible with an LFG-style GEN (generator) component, which generates an infinite number of input candidate structures to be processed by OT constraints. For some general comments on Optimality Theory, again, see the last two paragraphs of § 1.1.1.

Börjars, Payne & Chisarik (1999) offer some general considerations against functional projections like TopP and FocP (à la GB/MP) for languages like Hungarian and some hints at a possible LFG alternative with an extended verbal projection in which word order regularities are capturable by means of OT style constraints. They claim that the assumption that discourse functions are not necessarily associated with the specifier positions of functional projections allows an analysis of Hungarian in which quantifier phrases and topics are positioned within an extended verbal projection, avoiding the postulation of functional projections without heads. They propose that Hungarian sentences are VP projections, as in (26), and they suggest that the immediately preverbal occurrence of the focused constituent should be captured in terms of Optimality Theoretic constraints. The superscripts in V^1 and V^2 encode X-bar syntactic levels.

(26)



There is no discussion at all of VMs and their complementarity with focused phrases in Börjars et al. (1999).

Adopting the basic representational assumptions and ideas of Börjars et al. (1999), in their Optimality Theory framework Payne & Chisarik (2000) develop an analysis of Hungarian preverbal syntactic phenomena: the complementarity of constituent question expressions, focused constituents, the negative marker and verbal modifiers.

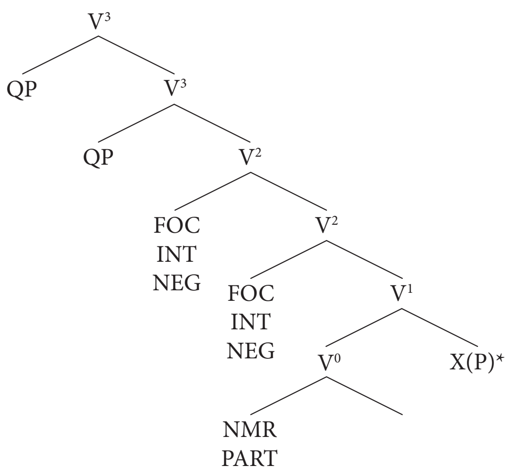
Although OT is compatible with a variety of generative frameworks, including LFG and GB/MP, Payne & Chisarik's preferred model is LFG (2000: 206 fn. 10). This makes the discussion of their analysis here all the more important and at the relevant points I compare their account with my approach in this chapter and in Chapters 3, 4 and 5. They use the following abbreviations: FOC = positive or negative focused phrase, INT = interrogative phrase, NEG = negative phrase, NMR = negative marker, and PART = (aspectual) particle, representing the entire class of VMs. NEG subsumes the following four types: INQ = inherently negative quantifier (e.g. *kevés* ‘few’), INA = inherently negative adverb (e.g. *ritkán* ‘seldom’), NUQ = negated universal quantifier (e.g. *nem mindenki* ‘not everyone’), and NCI = negative concord item (e.g. *senki* ‘nobody/anybody’).

Notice that for Payne & Chisarik (2000) NEG does not subsume ordinary constituent negation. They simply assume that FOC can have affirmative and negative (negated) variants. Nor does the NEG symbol stand for the negative particle, because they represent it as NMR, and they assume that it is associated with the verbal head (even when the Spec,VP position is not filled) as in É. Kiss’ (1994a) approach, for instance. When I present my analysis, I claim that it is an intuitively more plausible option, at least from an LFG perspective, to assume that the negative marker can also fill Spec,VP. For a similar assumption in an MP framework, see Surányi (2011), briefly discussed in § 2.1.1.

After presenting the basic empirical facts, Payne & Chisarik (2000) give a critical overview of three major types of approaches in the GB/MP tradition: (i) a VP analysis without functional projections like F(oc)P, as in É. Kiss (1992, 1994a), for example, (ii) unarticulated FP analysis, with a single functional projection, see Brody (1990, 1995), for instance, and (iii) articulated FP analysis, with multiple functional projections, see Puskás (1994, 1998), among others.

The essence of Payne & Chisarik’s (2000) analysis is as follows. They assume the overall structure in (27) for the relevant portion of a Hungarian sentence.

(27)



They do not postulate an ordinary VP constituent; instead, following Börjars et al. (1999), they employ a multilevel projection of the verb. In agreement with É. Kiss (1994a), among others, they assume free word order in the postverbal domain (regulated, to a considerable extent, by semantic, prosodic and information structure factors in the form of tendencies). They propose the ranking of OT constraints with respect to the preverbal position shown in (28). The {ALIGN NCI, IN SITU} part of the ranking is intended to capture the generalisation that, among the NEG types, NCIs only optionally compete for the verb-adjacent, i.e., immediately preverbal, position.

(28) ALIGN INT > ALIGN FOC > ALIGN NEG > {ALIGN NCI, IN SITU}

This analysis captures the following basic Hungarian syntactic facts.

If there is a question phrase in the sentence then this constituent will occupy the designated preverbal position, and not a focused constituent or a negative phrase. Recall that in Payne & Chisarik's (2000) analysis, a negative phrase (NEG) has four types: INQ, INA, NUQ and NCI. In these examples an NCI is used. Compare the sentences in (29) and (30).

(29) *Melyik könyv-et olvasta el* CSAK JÁNOS? INT-FOC
which book-ACC read.PAST.3SG VM only John.NOM
*CSAK JÁNOS *olvasta el melyik könyv-et?* FOC-INT
only John.NOM read.PAST.3SG VM which book-ACC
"Which book did ONLY JOHN read?"

(30) *Melyik könyv-et nem olvasta el senki?* INT-NCI
which book-ACC not read.PAST.3SG VM nobody.NOM
**Senki nem olvasta el melyik könyv-et?* NCI-INT
nobody.NOM not read.PAST VM which book-ACC
"Which book did nobody read?"

If a focused constituent and a negative phrase compete, the former wins out, cf.:

(31) CSAK EZT A KÖNYV-ET *nem olvasta el senki.* FOC-NCI
only this the book-ACC not read.PAST VM nobody.NOM
**Senki nem olvasta el* CSAK EZT A KÖNYV-ET. NCI-FOC
nobody.NOM not read.PAST VM only this the book-ACC
"Nobody read ONLY THIS BOOK."

The alignment ranking in (28) is proposed to capture the complementarity of INT, FOC and NEG below V^2 in Payne & Chisarik's (2000) structure in (27). They treat the NMR *nem* "not" and verbal modifiers separately in the following way. They assume that both NMR and VMs are morphologically incorporated into the verb when they precede it. The authors take preverbs to be the prototypical representatives of this categorially heterogeneous class, and they use the PART label for them. On the basis of É. Kiss (1994a), they mention the following additional VM types: postpositions, bare non-referential nouns, bare resultative adjectives and bare infinitives.

NMR and PART are also in complementary distribution in a position dominated by V^0, see (27), and the former is stronger in the competition.

In order to capture the word order facts also involving the V^0 domain, Payne & Chisarik (2000) augment the constraint hierarchy in (28) in the following way.

(32) ALIGN INT > ALIGN FOC > ALIGN NEG > {ALIGN NCI, IN SITU} >
ALIGN V^0 > ALIGN NMR >ALIGN INCORP > {ALIGN V | *INCORP}

The extension aligns V^0 first if there are not stronger candidates in the preceding portion of the hierarchy, and the priority of the negative marker over the VM is encoded by the ALIGN NMR > ALIGN INCORP order. INCORP stands for the preverbal morphological incorporation of VMs.

My remarks on Payne & Chisarik's (2000) analysis are as follows. Agreeing with both Börjars et al. (1999) and Payne & Chisarik (2000), I share the LFG-style rejection of functional categories like F(oc)P and TopP, for details, see § 2.3.1.2 below.

On the basis of the argumentation and considerations presented in § 2.3.2, I maintain that the postulation of a VP constituent with a single specifier position is feasible and tenable, and the relevant phenomena can be captured in a fully LFG framework, and it could also be captured in an OT (or OT-LFG) approach.

The NEG label very strongly invokes the notion of genuine (syntactic and/or morphological) negation. However, Payne & Chisarik's (2000) NEG basically subsumes 'semantic negation': INQ, INA and negative concord items (NCIs), which themselves do not encode negation. In this group, NUQs are formally (and semantically) really negated elements (and they are substantially different from all the other elements in this group in their distributional properties). Thus, this NEG label is rather misleading here. Moreover, if morphosyntactic negation is taken seriously, the authors' INT > FOC > NEG hierarchy calls for some clarification and explanation. The reason for this is that an ordinary negated constituent has priority over an ordinary focused constituent, cf.:

(33) a. *NEM A KÖNYV-ET* *olvasta* *el* *CSAK JÁNOS*.
not the book-ACC read.PAST.3SG VM only John.NOM
b. **CSAK JÁNOS* *olvasta* *el* *NEM A KÖNYV-ET.*
only John.NOM read.PAST.3SG VM not the book-ACC
ca. "It wasn't the book such that it was only John that read it."

Naturally, NEG in this OT hierarchy can be used in the way the authors do (with appropriate remarks); however, the contrast in (33) has to be captured in this framework as well. In the authors' approach, both *nem a könyvet* "not the book" and *csak János* "only John" in (33) are treated as FOC elements, and this ±neg dimension in this domain is not at all addressed.

In my opinion the most serious problem with Payne & Chisarik's (2000) analysis is their treatment of VMs (and, to a smaller extent, the treatment of NMR) for the following reasons. Referring to É. Kiss (1994a), they assume that both VMs and

NMR are optionally morphologically incorporated into the verb. When they are left-adjacent to the verb, they are incorporated, and elsewhere they are independent syntactic elements.

First of all, É. Kiss (1994a) only assumes semantic incorporation of VMs even when they are preverbal, and she claims that even preverbally they are syntactically separate elements (occupying the Spec,VP position in her system).

Secondly, É. Kiss (1994a) does not incorporate the negative marker morphologically, either. Instead, she adjoins it to the verbal head. By contrast, É. Kiss (1992) left-adjoins her NEG to V′. Obviously, É. Kiss' (1994a) solution is an instance of head-adjunction, and É. Kiss' (1992) treatment is phrasal adjunction. Of course, morphological incorporation could be an alternative solution, but this would require argumentation and supporting evidence. In Chapter 3, I argue in a detailed fashion against the incorporation analysis of VMs in general.

Even if we accept the morphological incorporation treatment, it raises a conceptual problem: Payne & Chisarik's (2000) alignment rules mix two dimensions, a syntactic level and a morphological level. This is a rather marked solution the nature of which would call for some independent support and it would only be an appealing alternative if no other (less marked) solution was available. This latter requirement, however, does not seem to be satisfied, as I now explain.

Even if we disregard the syntax-morphology-mix issue and accept the analysis, it is important to see that Payne & Chisarik (2000) assume two distinct positions for VMs and FOC constituents. From this it follows that there is no radical conceptual difference between their idea and the (un)articulated GB/MP style FP analyses they criticise. They explicitly state that their alignment hierarchy has been designed to capture the preverbal complementarity of INT, FOC, NEG *and* VMs in such a way that VMs are the weakest candidates. Then it is rather questionable why VMs are assumed to occupy a different position at a distinct level of representation.

Payne & Chisarik (2000) thus subscribe to a popular view of the distribution (and complementarity) of focused constituents and question expressions, on the one hand, and VMs, on the other hand. They assume that (i) the two types occupy two distinct preverbal syntactic positions, and (ii) VMs are head-adjoined to the simplex verb and incorporation takes place, and, as a consequence, (iii) the complementarity of the two types has to be captured by special means. As I argue in detail in Chapter 3, the treatment of all types of VMs along the head-adjunction and incorporation lines is counterintuitive and untenable, because (i) some types are clearly maximal projections (so the postulation of head-adjunction is unavailable), and (ii) some types clearly defy the assumption of any notion of incorporation. This is a general problem for any approach along these lines. However, as far as I can see, OT, Payne & Chisarik's (2000) chosen framework, would naturally provide the appropriate principles and devices to capture this famous complementarity in an intuitively more plausible way. It would be worth considering the development of an OT analysis by postulating a single designated preverbal position and assuming that all the relevant constituents compete for this position and that various violable constraints regulate their complementarity in that position. In Chapter 3, I present an LFG analysis along the single designated position lines (with a system of various disjunctions of functional annotations), and it seems to me that this approach could also be translated into OT terms.

Mycock (2006) develops a detailed and comprehensive typological analysis of constituent questions in her LFG framework. She analyses Hungarian as a representative of the multiple syntactic focusing type. She only postulates those aspects of an LFG style syntax of Hungarian which are directly relevant to her account of *wh*-questions in this language. Below I discuss her basic hypotheses that are important from the perspective of this book.

She adopts some central ingredients of É. Kiss' (1981, 2002) empirical generalisations. For instance, the topic-predicate articulation of sentences and the quantifier field in the left periphery of the predicate phrase.

Relying on É. Kiss (1981), she also assumes that a VM and the verb make up a word both morphologically and phonologically, and they also constitute a single unit semantically. She does not go into any details about VMs. In Chapters 3 and 4, I argue against this view of VMs, including the preverb.

In the spirit of É. Kiss (1981), and also in accordance with É. Kiss (1992, 1994a), and contrary to É. Kiss (2002), Mycock assumes that a preverbal focused constituent occupies the Spec,VP position, and she does not adopt a F(oc)P view, which is also in line with general LFG assumptions about functional projections, see the discussion of Börjars et al. (1999) above.

She points out that several GB/MP analyses of Hungarian assume that only the question phrase adjacent to the verb is in Spec,VP, and all the other question phrases function as universal quantifiers adjoined to VP, see É. Kiss (1994a, 2002), Horvath (1998), Lipták (2001) and Puskás (2000). However, by referring to Surányi (2006), Mycock claims that this universal quantifier analysis is to be rejected, and she proposes that *all wh*-phrases should be assumed to occupy the Spec,VP position (on a multiple specifier view). It is also noteworthy in this connection that Gazdik (2012) claims that non-verb-adjacent *wh*-phrases need to be treated as topics.

In Chapter 4, I discuss, in detail, Mycock's (2010) very important experimental phonological results and generalisations pertaining to a great number of Hungarian construction types, including foci, VMs, quantifiers, negation and (multiple) questions, and I present my formal LFG analysis of all these phenomena.

Gazdik (2012), capitalising on Gazdik & Komlósy (2011), outlines an LFG analysis of Hungarian finite sentence structure, predominantly driven by discourse functional assumptions and considerations. Below is a summary of the most important ingredients of her approach.

Following (and somewhat extending) recent approaches to discourse functions (DFs), she breaks them down into feature values, see Table 2.3. Hocus is a special notion, see Kálmán (1985) and Kálmán (2001). Gazdik gives the following description (2012: 66–67). Hocus is assumed to be the counterpart in neutral sentences of ordinary focus in non-neutral sentences. The two sentence types have radically different ('focus' vs. 'neutral') intonation patterns. Both focus and hocus strictly occur immediately preverbally, and they constitute a phonological word with the verb, which loses even its word-initial stress. Both express identification; however, focus expresses the exhaustive/exclusive type of identification. Therefore, focus needs a special context, for instance, a question-answer or a correction situation, while hocus can be used without any special context, in 'out-of-the-blue' sentences. For further details and examples, see Gazdik (2012).

Table 2.3 Gazdik's (2012) classification of DFs

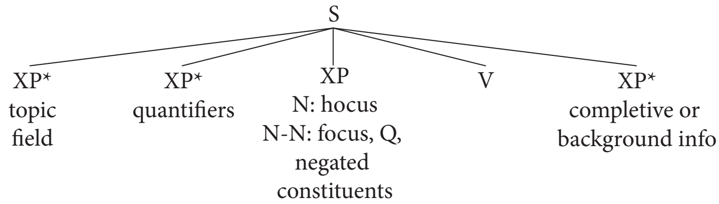
+PROMINENT		−PROMINENT	
+discourse-linked	*−discourse-linked*	*+discourse-linked*	*−discourse-linked*
thematic shifter, contrastive topic, question word (Q)	focus, hocus, question word (Q)	completive information	background information

Gazdik claims that Hungarian sentences do not even have a VP constituent, i.e., they are flat, except that she does admit a V′ constituent in one of the two major sentence structure types she distinguishes, see below.

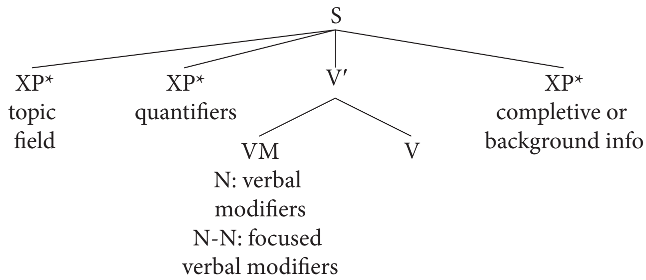
As regards the nature of the immediately preverbal position, which Gazdik calls prominent preverbal position (PPP), she points out that there are two basic theoretical possibilities. (i) It can be assumed that it accommodates focus, hocus, question words and verbal modifiers. (ii) It can also be assumed that the first three occupy this position and verbal modifiers occur in a different position, in which case the complementarity of PPPs and VMs needs to be ensured by additional rules. While she admits that both solutions can be argued for, she chooses the second option.

Relying heavily on Kálmán's (2001) descriptive characterisation of word order in Hungarian sentences, and on the basis of her choice shown in the previous paragraph, Gazdik postulates two sentence structure types, and she assumes that both structures are available to both neutral (N) and non-neutral (NN) sentences, and N and NN sentences are distinguished by their different prosodic behaviours.

(34)



(35)



I basically sympathise with Gazdik's general treatment of DFs. I agree that all these functions need to be handled at a distinct representational level: in information-structure. However, as noted in Chapter 1, for simplicity of exposition, in this book I simply follow the classical LFG convention of representing TOPIC and FOCUS in f-structure. DF issues are at the forefront of current LFG investigations (see, for instance, Mycock 2013, Mycock & Lowe 2014, and Lowe & Mycock 2014), and in this light the notion of hocus, which Gazdik adopts from Kálmán (2001), has to be carefully studied, and it has to be explored how it can be accommodated in the newly emerging DF-system. My preliminary impression is that its treatment could be channelled into the treatment of informational (as opposed to identificational) focus. I intend to explore this dimension in future work.

As far as Gazdik's rejection of the VP constituent in Hungarian sentence structure is concerned, I do not share her view, and in § 2.3.2.2 I defend the postulation of VP and I posit it in a general parametric context from an LFG perspective.

While it has to be appreciated that Gazdik basically concentrates on the discourse functional dimension of Hungarian sentences (as the title of her paper also indicates) and the truly syntactic aspects are sketchy, these aspects are rather problematic, and, therefore, I think they seriously weaken the overall approach. Gazdik does not give any justification for choosing the PPP vs. V′ duality of structure. This duality account is tantamount to subscribing to the split focus–VM view, fundamentally assuming distinct syntactic positions for these two major constituent types.

Gazdik herself admits that special additional rules need to be introduced for ensuring the preverbal complementarity of the two constituent types. She does not even offer a hint as to how this could be carried out in her system, which can turn out to be a non-trivial task.

Gazdik practically multiplies Hungarian sentence structure variants by assuming that both the PPP version and the V′ version are available in both neutral and non-neutral sentences. This gives us four variants altogether, which makes the entire setup somewhat suspicious, allowing for redundancy and making the task of capturing basic instances of complementarity rather challenging. For instance, the preverbal PPP in a V′-less structure can be focused (as opposed to a hocus constituent sitting in that position), and a VM below V′ can also be optionally focused, which yields two distinct preverbal syntactic focus positions.

Following the general descriptive tradition, Gazdik uses the umbrella term VM rather vaguely. In an appropriate LFG (or other generative theoretical) representation, the VM symbol is more than questionable (it is not an appropriate syntactic category to begin with). In addition, the real categories it subsumes in Gazdik's rather informal presentation are so diverse that they themselves would call for a detailed and differential (i.e., individuated) treatment: preverbs, (obligatorily) bare nouns and fully-fledged XPs are lumped together.

Gazdik also subscribes to the widely accepted, and definitely untenable, sweeping generalisation that a (preverbal) VM and a verb always make up a complex predicate and form a lexical unit. The notion of complex predicate is typically not satisfactorily defined (if at all) in various approaches. Moreover, it is more than questionable whether in Gazdik's 'goal secondary predicate' example in (36) *Szegedre* "to Szeged" and the verb are analysable as a lexical unit in any (generative) linguistically meaningful sense.

(36) *'János* ***'Szegedre*** *utazott.*
John Szeged.SUBL travel.PST
"John travelled to Szeged."

This is example (6) in Gazdik (2012: 62). I have left everything (including the apostrophes, bolding, which simply identifies the VM constituent, and the glosses) in (36) above intact. The apostrophes indicate ordinary word-initial stress. The absence of an apostrophe in front of the verb shows that *Szegedre* and *utazott* constitute a single phonological word. However, it would be highly implausible to assume that they also make up a lexical unit.

In Laczkó & Rákosi (2008–2013), our implemented grammar, we employ a modified version of É. Kiss' (1992) sentence structure. The most important features of this grammar implementation from the perspective of this book are as follows.

Not only quantifiers but also sentence adverbs, ordinary topics and contrastive topics follow the adjunction pattern, and the adjunctions of these three different categories in the topic field can freely intermingle.

As regards the treatment of the Spec,VP position, the current version of our grammar is rather limited. As is well-known and as has also been pointed out above, this position can be occupied by a whole range of different types of VMs (see the discussion above) and, at least in several approaches, including É. Kiss (1992, 1994a), for instance, by focused constituents, and by *wh*-expressions (in complementary distribution); however, our implemented grammar posits only a focused constituent or a preverb belonging to VMs in Spec,VP (no question expressions and no other types of VMs). We assume that the preverb (having the syntactic category PRT) is a non-projecting word in the sense of Toivonen (2001). From the complementarity of the two categories it also follows that a PRT can never be focused in this implementation. Thus, the current version of our implemented grammar is far from being complete. My fundamental aim in this book is to develop a much more comprehensive LFG-theoretical analysis of finite clauses in Hungarian. Hopefully, this will make two significant contributions to our XLE grammar as well. First, it will establish solid LFG theoretical foundations for the implemented grammar, and, second, it will contribute to improving and advancing this implemented grammar by proposing important XLE-specific details of the analysis.

2.3 Towards an exocentric LFG account of Hungarian finite sentences

In this section, I first argue against assuming an LFG-style IP for the structural-categorial representation of Hungarian sentences (§ 2.3.1) against the background of the LFG analysis of several other languages (at least partially) along the IP lines, see § 1.1.1 in Chapter 1. Then I present my S-based alternative, which is closest in spirit to É. Kiss' (1992) GB approach (§ 2.3.2).

2.3.1 Against the IP approach

In this section, I discuss the rather controversial category of auxiliaries in Hungarian and propose a possible treatment for them in the syntax of Hungarian sentences in LFG. I argue that although LFG uses the functional category I for auxiliaries in languages like English and Russian, for example, and although there are verbal elements in Hungarian that satisfy all the basic criteria of auxiliarihood, they should be taken to belong to the (ordinary) lexical category V. This approach is motivated by the following considerations. Despite the fact that the relevant elements could justify the postulation of I (just like in English and Russian) even according to the principles of LFG, the (uniform) syntactic behaviour of these elements and other (lexical) verbs with respect to designated positions in Hungarian sentence structure makes the use of I untenable. Thus, Hungarian auxiliaries proper and other (more or less) auxiliary-like elements are best handled as special subclasses of verbs, requiring appropriate lexical representations.

The structure of this section is as follows. First, I highlight some significant aspects of the literature on Hungarian auxiliaries (§ 2.3.1.1). Then, for the sake of comparison, I briefly discuss the use of the functional category I in the analysis of English and Russian sentences in LFG and in the Chomskyan mainstream (§ 2.3.1.2). Next, I outline a way of treating auxiliaries in my LFG syntax of Hungarian with particular attention to focused constituents and verbal modifiers (§ 2.3.1.3). Finally, I make some interim concluding remarks (§ 2.3.1.4).

2.3.1.1 *On Hungarian auxiliaries*

Kenesei (2000, 2008) offers an excellent critical overview of the three most fundamental approach types to Hungarian auxiliaries, and applies a battery of tests for the definition of this category in this language. Below, I summarise his assessment of previous accounts and his proposal.

A. The traditional, descriptive approaches, represented by Keszler (1995) and M. Korchmáros (1997) among others, simply give a list of what they consider auxiliaries. These are rather mixed lists containing, for instance, *fog* "will", *van* "be" and *marad* "remain". Kenesei remarks that these approaches do not apply any formal-distributional criteria at all, and they only refer to the 'values' of the elements in this category: they perform functions similar to those of bound inflectional morphemes.
B. Another approach, saliently represented by Kálmán et al. (1989), employs very strict formal-distributional criteria. The three most important ones are as follows. (1) These elements are, as a rule, combined with an infinitival verb. (2) In a neutral sentence, i.e., in a sentence containing no heavily stressed preverbal focused constituent, the infinitive without a preverb has to precede the auxiliary immediately (and the auxiliary loses its ordinary word initial stress). (3) In a neutral sentence, if the infinitive has a preverb, the auxiliary comes between the preverb and the infinitival verb. Given that this approach only uses these distributional diagnostics and that several kinds of verbal elements exhibit the relevant properties, the list of 'auxiliaries' has 19 items, including *kíván* "wish", *óhajt* "desire" and *szándékozik* "intend".
C. Generative approaches, represented by É. Kiss (1987, 1992) for instance, assume that there are no auxiliaries in Hungarian at all. All verbal elements belong to the category V, and it is in the lexical specifications of individual verbs that their 'auxiliary-like' distributional behaviour, see (B) above, and their semantic-argument-structural properties have to be captured.

Kenesei's (2000) main concern is as follows. In (A), the criteria are too loose. In (C), there are no criteria at all. In (B), there are very few criteria, and, therefore, too many ordinary verbs are relegated to the category of auxiliaries. Then Kenesei gives a (selected) list of auxiliary properties taken from Heine (1993). It contains 18 items, some of which are interrelated. He argues that the following five criteria are crucial for identifying Hungarian auxiliaries.

– Their paradigms are defective.
– They cannot function as semantic predicates of sentences.
– They cannot be complements of other predicates.
– They cannot be nominalised.
– In their presence, the main verb is in its infinitival form.

After applying these five diagnostics, Kenesei (2000) concludes that there are three verbal elements in Hungarian that satisfy all of them: *fog* "will", *szokott* (literally: "was accustomed [to]", meaning: general present habituality despite the past tense morphology), and *talál* (literally: "find" meaning: "happen to"), see (37). In the gloss INF stands for 'infinitival suffix'. In this example, the auxiliaries intervene between the infinitival verb and its preverb. Kenesei also notes that *talál* has weaker auxiliary properties inasmuch as it can have both present and past tense forms and it is also compatible with the *-na/-ne* conditional mood suffix and the *-hat/-het* potentiality suffix. Kenesei (2008), on the basis of thematic considerations, adds two further elements in their epistemic use: *kell* "must" and *szabad* "possible". He claims that these five elements make up a closed class of auxiliaries in Hungarian, and he assumes that they belong to the general verbal category (V) and they represent an independent subclass there: V_{Aux}.

(37)	*János*	*ki*	*fog*	*me-nni.*
	John.NOM	out	will.3SG	go-INF
			szok-ott	
			be.accustomed-PAST.3SG	
			talál-t	
			find-PAST.3SG	

"John will go out / (usually) goes out / happened to go out."

For the sake of cross-linguistic comparison, Kenesei (2008) offers an overview of the properties of English auxiliaries. He presents the relevant facts in a generalised generative linguistic representation in the following way.

(38)	a.	C	Subject	Infl	[$_{VP}$ *have*	[$_{VP}$ *be*$_{Progr}$	[$_{VP}$ *be*$_{Pass}$	VP …]]]
	b.		*Jim*	*may*				*write*
	c.			*may*	*have*	*been*		*writing*
	d.			*has*	←*e*			*written*
	e.			*is*		←*e*	*being*	*written*
	f.	*has*		←*e*	←*e*	*been*		*writing*
	g.	*did*		←*e*				*write*
	h.			*to*	*have*			*written*
	i.			*to*			*be*	*written*

He points out that it is modal auxiliaries like *may, can, will*, etc. and the *do* of ‘do-support’ that must be taken to belong to the category Infl because they are in complementary distribution in that position, and when they are present in a sentence, they undergo movement to the complementiser (C) position in questions. The other auxiliaries, the perfective *have*, the progressive *be* and the passive *be*, are best treated as verbs subcategorising for a VP constituent in a particular, hierarchical fashion, as shown in (38). These other auxiliaries can only occupy the Infl position (by movement in this approach) if it is not filled by an Infl element (a modal auxiliary or *do*), and then they can be negated like an Infl, and they can move to C.

Bresnan et al. (2016) also deal with these auxiliary facts (see § 1.1.1). Given that LFG fundamentally rejects syntactic movement operations in general and movement of the sort exemplified in (38) in particular, their solution is to assume that the finite forms of *have* and *be* belong to the Infl category and their non-finite forms are Vs. LFG’s lexical representational principles and its commitment to the Strong Lexicalist Hypothesis, which assumes that all morphological processes (both derivation and inflection) are lexical, can naturally accommodate this solution.

It is noteworthy that Komlósy (1989) criticises É. Kiss’ (1983) model partially on the basis of different stress and word order properties of a great number of verbs in Hungarian. Thus, the stress and word order diversity is present in Hungarian not only in the case of verbs that are combinable with infinitival constructions. Pelyvás (1998) remarks that the elements identified by Kálmán et al. (1989) as ‘central’ and ‘secondary’ auxiliaries on the basis of their stress and word order behaviour cannot be characterised with respect to their cognitive-semantic properties, in particular, in terms of epistemic grounding. He observes that out of the 89 verbal elements examined and classified into 6 different categories by Kálmán et al. (1989), with only the first two being real auxiliary categories (central and secondary), there are only 11 that can be considered epistemic grounding predicates. Out of the 19 elements in the first two categories, only 8 are epistemic grounding predicates, and there are such predicates in the clearly non-auxiliary categories as well. It is important in this connection that on cognitive linguistic grounds Pelyvás (1998) claims that even English auxiliaries exhibit varying degrees of auxiliarihood, and this category is better viewed as radial (i.e., it has prototypical organisation) rather than discrete. Let me add that Kenesei's (2000, 2008) discussion of the relevant Hungarian elements also invokes the notion of gradient. Furthermore, Kenesei (2001) and Rákosi (2006) also distinguish the category of semi-auxiliaries, although they use different criteria. These details are not relevant here. Rákosi (2006) offers an illuminating discussion of a variety of approaches to various uses of Hungarian auxiliary-like elements, including his own view (see § 5.6 and Chapter 6 in his work). Crucial for my present purposes is that we can safely identify at least three verbal elements (in certain uses) which satisfy all the relevant and widely acknowledged criteria for auxiliarihood, and this fact could, in principle, justify the postulation of the functional category I in Hungarian in an LFG framework.

2.3.1.2 *On the functional category I in English and Russian in GB and LFG*

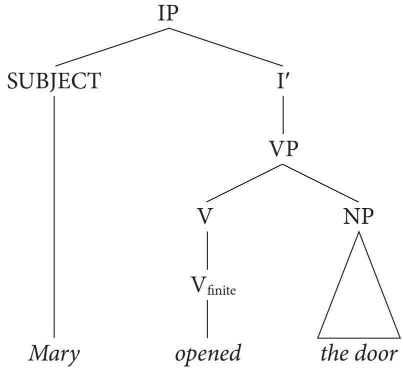
As regards the treatment of auxiliaries in English, Kenesei's (2008) characterisation in (38) uses the classical GB phrase structural and categorial system. However, in recent versions of MP, the I functional category is no longer used (it has exploded and proliferated); instead, a whole range of other functional categories (and their X-bar projections) have been introduced: T(ense), Agr(eement), Mood, Mod(ality), Asp(ect), Voice, etc. From this it follows that the relevant verbal elements in (38) can find their respective categorial labels in the new system.

By contrast, as I pointed out in § 1.1.1, mainstream LFG frameworks still standardly admit only three functional categories: I and C for sentences and D for noun phrases. It is important to repeat here that this theory has always allowed both endocentric (CP, IP) and exocentric (S) sentence structures. It assumes that the choice between them is another dimension of parametric variation: there are languages with only endocentric sentences, there are also exocentric languages, and, as a third option, there are mixed languages. Similarly, in certain languages noun phrases are best treated as NPs, in others they are more amenable to the DP analysis. For details, see Falk (2001), Bresnan et al. (2016), Dalrymple, Lowe & Mycock (2019) and § 1.1.1.

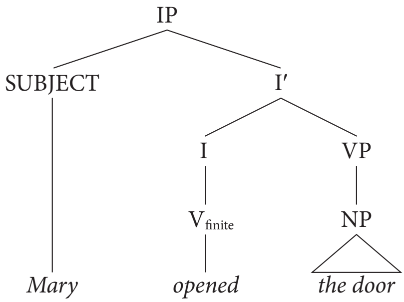
Börjars et al. (1999) offer an important discussion of the possible special treatments of I(P) structures that the principles of LFG allow, concentrating on sentences which contain a finite verb and no auxiliary. They schematise the two possibilities as in (40a,b).

(39) *Mary opened the door.*

(40) a.



b.



The basic motivation and justification for the postulation of the IP node in a language with the relevant properties (e.g., English) is that the (configurational) encoding of the subject function can be carried out in the general (i.e., generative-theory-neutral) manner: Spec,IP. Given that LFG rejects syntactic movement operations, including V-to-I movement, one transparent solution, presented in (40b), is to insert the finite verb in the I head position. This is possible in LFG for the following reasons. (1) It can be naturally assumed that finite verbs belong to the category I. (2) The principle of the economy of expression admits phrasal projections without a head position, see Bresnan et al.'s (2016) definition in (23) in § 1.1.1 in Chapter 1, repeated here as (41) for convenience.

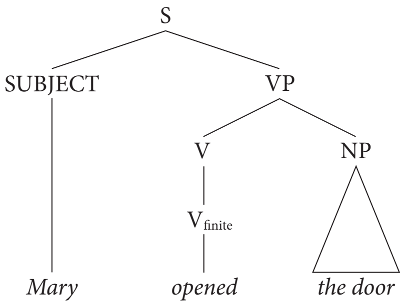
(41) *Economy of Expression:*
All syntactic phrase structure nodes are optional and are not used unless required by independent principles (completeness, coherence, semantic expressivity). (Bresnan et al. 2016: 90)

The VP in (40b) is necessarily headless. According to Börjars et al. (1999), this is a head-movement-mimicking solution, without real movement but with the same effect. The other alternative, shown in (40a), is to assume a headless IP (again, the economy principle makes this a legitimate step in LFG).

Börjars et al.'s (1999) main point is that although these possibilities are available in LFG, the postulation of IP in a language requires particular circumspection. They remark that complementisers in clauses such as *that* and determiners like *the* in noun phrases are sufficiently distinct from verbs and nouns, respectively, and this justifies their separate categorial status. The category I is considerably different. To begin with, it is used to represent auxiliaries (which can be taken to belong to a special subclass of verbs) and to represent clusters of grammatical features like tense and agreement that are not verbs and they are spelt out in particular linear positions, for instance in second position as in the analysis of Warlpiri by Austin & Bresnan (1996). Although LFG's conception of functional categories is potentially rather restrictive, its principle of Specialisation allows lexical categories that are marked for special functional features to be taken to be functional categories, and as such, to occupy a functional category head position. For some analyses along these lines, see Kroeger (1993), King (1995) and Sells (1998).

In the light of the foregoing considerations, it is noteworthy that Bresnan et al. (2016) give an exocentric analysis of a sentence like (39), see (42). Interestingly, Dalrymple et al. (2019) analyse this type as in (40a).

(42)

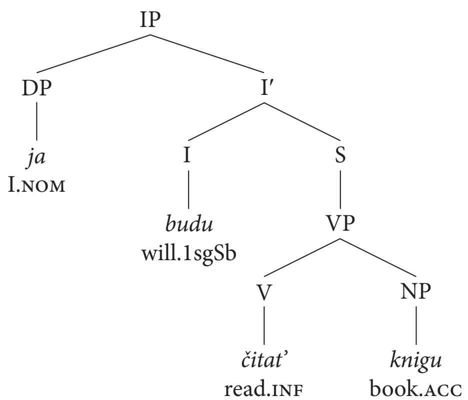


It is a fundamental difference between LFG and GB or MP that the former respects the Lexical Integrity Principle (LIP): in this framework any syntactic position can only be occupied by a syntactic atom: a word. No bound morphemes are allowed to live independent syntactic lives. Moreover, as partially follows from LIP, in LFG the postulation of the existence of any one of the three functional categories in a particular language is an empirical issue: there has to be at least one word in that language that can be plausibly taken to belong to the given functional category. For instance, in English all the three functional categories are justified: C (*that*), I (*may*) and D (*the*). In § 1.1.1, I pointed out that Bresnan et al. (2016), for example, assume the same category labels as Kenesei (2008) in (38), naturally without the movement part of the analysis.

The V treatment of *have* and the two *be*-s requires a marked solution in both frameworks, because the VP complements of these Vs are non-thematic, as opposed to the complements of ordinary lexical Vs. In Kenesei's framework, these elements do not have a theta-grid, that is, they do not assign theta roles. In Bresnan et al.'s (2016) system, they do not have a PRED feature, that is, they do not have real semantic content, let alone an argument structure. They are annotated in c-structure as functional coheads with their complement VP. They make their aspectual or voice contribution, while the true verbal semantic content is contributed by the V functional head of the VP functional cohead.

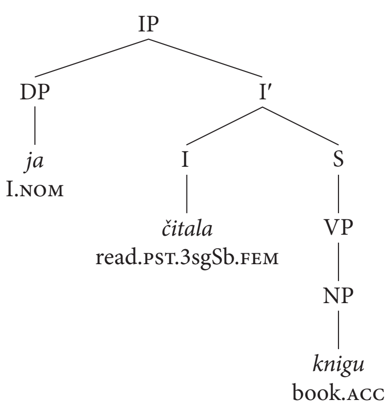
In King's (1995) LFG analysis, Russian makes use of both configurational and case-marking principles of function specification. It is an internal subject language, which means that it has two subject positions: one in S and another in Spec,IP. S is the complement of I, which is the category of finite verbs and V is the category of infinitives. The specifier of IP can have the TOPIC function, which (by default identification) is also a subject position (one of the two subject positions), compare (43) and (44).

(43)



"I will read a book."

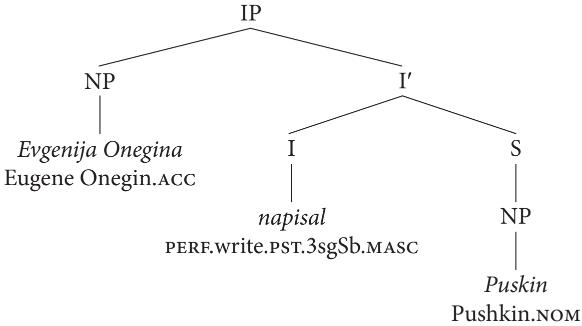
(44)



"I was reading a book."

In addition, the Spec,IP position can be filled by a non-subject. Russian solves this problem by employing the case (dependent-marking) strategy of function specification, in addition to the configurational strategy, see (45).

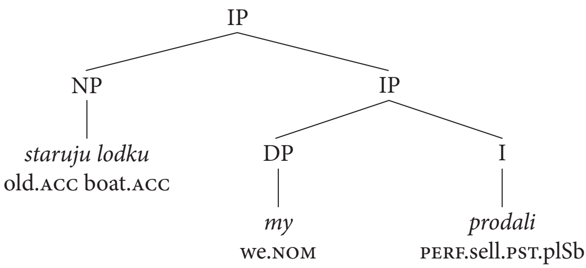
(45)



"Pushkin wrote *Eugene Onegin*."

While Spec,IP can be either TOPIC or FOCUS, a constituent adjoined to IP can only be TOPIC in Russian, see (46).

(46)



"The old boat, we sold."

Recall that in § 1.1.1 I used (43) to demonstrate that there are LFG analyses that employ both IP and S for the categorial representation of clausal constituents within one and the same language.

2.3.1.3 *On the treatment of auxiliaries in an LFG syntax of Hungarian*

In this section, capitalising on the discussions in § 2.3.1.1. and § 2.3.1.2, I present the most important conclusions we can make about developing an LFG syntax of Hungarian finite simple sentences in general and the treatment of Hungarian auxiliaries in this system in particular. My main claim is that although there are clearly auxiliaries in Hungarian, which could, in principle, justify the postulation of an IP category in Hungarian, there are strong arguments against employing IP and assuming that auxiliaries are Is.

Kenesei (2000, 2008) shows that there are at least five verbal elements in Hungarian that must be considered to be auxiliaries, at least in one of their uses, on the basis of all major and generally acknowledged and widely used criteria. This fact would justify assuming them to represent the category I in this language. Given that the postulation of CP is unquestionable (there are complementisers like *hogy* "that" in this language and the relevant word order facts are also appropriate), the sentence could be taken to have the CP-IP phrasal–categorial articulation. It is noteworthy already at this point that Kenesei himself suggests that these five auxiliaries are best treated as Vs making up a subgroup of Vs with special properties that have to be encoded in their lexical representations.

As discussed in § 2.2, in LFG, provided that there is at least one word that can be demonstrated to exhibit the properties of a finite auxiliary, the postulation of IP is motivated if its specifier position is associated with a distinct function. For instance, in English it is the subject (grammatical) function, and in Russian it is a discourse function. Now, it is widely assumed that there is no empirical evidence for a designated subject position in Hungarian. By contrast, the Russian discourse functional pattern could be taken to lend rather strong support to employing an IP as the LFG counterpart of Brody's (1990) FP (Functional Projection) and more recent accounts' F(oc)P (Focus Phrase), see, for instance, É. Kiss (2002). However, below I argue that even this use of the IP has no empirical support, and, therefore, it has to be rejected.

The IP approach to Hungarian sentence structure, following the Russian pattern, would have the following aspects to it. We could assume that its specifier position hosts focused constituents, and only focused constituents, excluding ordinary (non-focused) VMs. In addition, it would have to be assumed that (finite) auxiliaries and finite verbs can occupy the I head position, just like in Russian. There would be, however, at least three serious problems with this scenario.

Firstly, it can be shown that a whole range of clearly unfocused VMs can also immediately precede an auxiliary, i.e., on this account they can also occupy the Spec,IP position. Obviously, these elements are the VMs of the infinitival complements of the auxiliary. Consider the examples in (47)–(49), illustrating three salient VM types. Recall that contrary to the standard Hungarian spelling convention, following É. Kiss (2002) and Laczkó & Rákosi (2011), among others, I spell the preverb and the verb as two separate words even when the former immediately precedes the latter. This is because we assume that the two elements occupy distinct syntactic positions.

(47) a. *János be rúg-ott.*
John.NOM in kick-PAST.3SG
"John got drunk."

b. *János be fog rúg-ni.*
John.NOM in will.3SG kick-INF
"John will get drunk."

(48) a. *János pali-ra ve-tte Péter-t.*
John.NOM paul-onto take-PAST.3SG Peter-ACC
"John made a fool of Peter."

b. *János pali-ra fog-ja ve-nni Péter-t.*
John.NOM paul-onto will-3SG.DEF take-INF Peter-ACC
"John will make a fool of Peter."

(49) a. *János könyv-et olvas-ott a villamos-on.*
John.NOM book-ACC read-PAST.3SG the tram-on
"John was reading a book (= was book-reading) on the tram."

b. *János könyv-et fog olvas-ni a villamos-on.*
John.NOM book-ACC will.3SG read-INF the tram-on
"John will be reading a book (= will be book-reading) on the tram."

In (47a) the preverb *be* "in" is used in an absolutely non-compositional complex predicate (particle verb construction, PVC). It does not receive heavy (= focus) stress, and the whole intonation pattern is typical of neutral sentences. In (47b), the combination of the preverb, the auxiliary and the infinitive exhibits exactly the same properties. This is the unmarked use and interpretation of both sentences in (47). It is to be noted that in (47a,b) the preverb can occasionally receive focus stress as well. In such a case the interpretation of the construction is that of verum focus: "John DID get drunk", i.e., the speaker emphasises the truth of the statement. However, the main point from our perspective is that the alleged Spec,IP position can also be filled by a non-focused VM. In (48), the VM is an idiom chunk (*palira* "paul.onto"). Needless to say, it cannot receive focus stress and focus interpretation in its own right. Still it can occupy the hypothesised Spec,IP position. In this case, too, occasionally the idiom chunk in both (48a) and (48b) can receive heavy focus stress; however, in this case, too, this can only encode verum focus: "John DID make a fool of Peter". The examples in (49) illustrate exactly the same scenario, but this time the VM is a bare noun object.

Secondly, as is demonstrated in a detailed and comprehensive fashion by Kálmán et al. (1989), and as is particularly emphasised by Kenesei (2000, 2008), there are several finite lexical verbs, taking infinitival complements, that share the above behaviour with auxiliaries, i.e., in neutral sentences they must be preceded by the VM of their infinitival complement. However, a great number of other finite verbs, also taking infinitival complements, reject this pattern, and they require their infinitival complements to be preceded by their own VMs. Compare the following examples.

(50) *János be akar-t rúg-ni.*
John.NOM in want-PAST.3SG kick-INF
"John wanted to get drunk."

(51) *János pali-ra szeret-né ve-nni Péter-t.*
John.NOM paul-onto like-COND.3SG.DEF take-INF Peter-ACC
"John would like to make a fool of Peter."

(52) a. **János be utál rúg-ni.*
John.NOM in hate-PRES.3SG kick-INF
"John hates to get drunk."
b. *János utál be rúg-ni.*
John.NOM hate-PRES.3SG in kick-INF
"John hates to get drunk."

(53) a. **János pali-ra imád-ja ve-nni Péter-t.*
John.NOM paul-onto love-PRES.3SG.DEF take-INF Peter-ACC
"John loves to make a fool of Peter."
b. *János imád-ja pali-ra ve-nni Péter-t.*
John.NOM love-PRES.3SG.DEF paul-onto take-INF Peter-ACC
"John loves to make a fool of Peter."

The problem then is that there is a split between two groups of finite verbs. One group patterns with the auxiliaries and the other does not. This is rather suspicious, because we do not find such a split either in English or in Russian: all auxiliaries and all finite verb forms share the same general properties as heads of IPs.

Thirdly, infinitival constructions also exhibit the same duality of preverbal constituents. These constituents can be either focused phrases or VMs. Compare the following examples.

(54) a. *János szeret-ne újság-ot olvas-ni.*
John.NOM like-COND.3SG newspaper-ACC read-INF
"John would like to read a newspaper (= to newspaper-read)."
b. *János szeret-ne ÚJSÁG-OT olvas-ni (és nem KÖNYV-ET).*
John.NOM like-COND.3SG newspaper-ACC read-INF and not book-ACC
"John would like to NEWSPAPER-read (and not BOOK-read)."
c. *János ÚJSÁG-OT szeret-ne olvas-ni (és nem KÖNYV-ET).*
John.NOM newspaper-ACC like-COND.3SG read-INF and not book-ACC
"John would like to NEWSPAPER-read (and not BOOK-read)."

In (54a) the infinitival construction contains a bare noun VM preceding the infinitive. In (54b) the same bare noun receives focus stress and interpretation. As (54c) shows, the focused element can also precede the finite verb. In the Spec,IP = focus approach, the type exemplified by (54b) would inevitably lead to assuming that infinitival constructions are also IPs. Then, however, the fundamental 'I = (finite) auxiliary or finite verb' aspect of the analysis would collapse. It is important to point out that following from the different principles and assumptions of LFG and GB/MP, the facts discussed above, which would defy an LFG-style IP analysis of focus constructions, would also be problematic for a GB/MP-style approach, albeit for a different reason. In the classical version of GB both finite and non-finite clauses are treated as IPs, which would be an advantage, see the discussion above; however, in that framework the Spec,IP position is reserved for subjects and not for foci by default. I think this explains primarily why alternative solutions have been developed in this theory. É. Kiss (1992) assumes that the Spec,VP position is the focus position, which, as I remarked above, is problematic, because she is forced to collapse foci and VMs in an unprincipled manner. Since the introduction of functional categories in addition to IP and CP at the clausal level, the standard treatment has been the postulation of a functional projection that hosts a focused constituent in its specifier position: Spec,F(oc)P. For an overview of various alternatives along these general lines, see É. Kiss (2002). Given that the IP approach in LFG is implausible, as above, and no additional functional categories are admitted in the theory, an LFG account needs to employ a basic S/VP configuration. For a brief overview of a variety of analyses, see § 2.2.

In § 2.3.2, I develop a detailed LFG analysis of focus and VM constructions. I argue that É. Kiss' (1992) unorthodox GB approach can be adapted and accommodated in LFG in a theory-internally principled manner, thanks to the architecture and assumptions of this model. It is a representational (i.e., non-derivational) theory with several parallel structural components. One and the same c-structure position (node) can be associated with alternative annotations providing the mapping (linking) to other relevant levels of representation. I claim that the Spec,VP position can be assigned the functional annotations in (55), among others which are not relevant here. In addition, the general property of Hungarian verbs that they themselves can be focused is also shared by verbal elements in their truly auxiliary use, and, furthermore, they also exhibit uniform behaviour with respect to negation facts.

(55) $\{(\uparrow \text{FOCUS}) = \downarrow$
$\mid (\downarrow \text{CHECK\_VM}) =_c +\}$

This disjunction encodes the fact that the constituent in the given position is either a focus or a VM, and in a fuller analysis the two disjuncts are also combined with additional annotations providing the appropriate linkage to the corresponding elements in prosodic structure.

Two notational remarks are in order here. The first is that both the topic and the focus discourse functions are represented in LFG as sets because more than one of them can occur within the same clause: $\downarrow \in (\uparrow \text{TOPIC})$ and $\downarrow \in (\uparrow \text{FOCUS})$. In this book I use the set representation for topics. As regards foci, I predominantly concentrate on preverbal focus, which is a special type of foci, and in my analysis I use a distinct function label for this type: VM-FOCUS in the Spec,VP position. In anticipation of this aspect of my approach I already here use the singular (↑ FOCUS) = ↓ annotation, as in (55).

The second notational remark is XLE-specific in nature. Technically, the true complementarity in the case of disjunctions like (55) has to be encoded in such a way that in the second disjunct the negation of the first is also included:

(55′) {(↑ FOCUS) = ↓
| ~(↑ FOCUS)
(↓ CHECK _VM) $=_c$ +}

For simplicity of exposition, I usually leave these negative existential constraints out.

In the second disjunct in (55), I use the XLE-style CHECK featural device. Its essence is that these CHECK features come in pairs: there is a defining equation and it has a constraining equation counterpart. The members of these pairs can be associated with lexical items and with c-structure nodes. These CHECK feature pairs can ensure that two elements will occur together in a particular configuration. For an example of this, see Laczkó & Rákosi's (2011) treatment of Hungarian particle verb constructions, in which the simplex verb and the preverb are marked by corresponding CHECK features in their respective lexical forms. In Chapter 3 I also use this device in my analysis of such Hungarian complex predicates.

Alternatively, these CHECK features can also encode that a particular element needs to occur in a designated position. It is this property that I utilise in (55). The (↓ CHECK _VM) $=_c$ + constraining annotation requires the presence of a constituent which (or the head of which) is lexically associated with the defining counterpart: (↑ CHECK _VM) = +. Preverbs are intrinsically associated with this annotation. In Chapter 3 I analyse other kinds of VMs by assuming that the verbal predicate involved specifies that its designated argument should be associated with this feature. For instance, *érkezik* "arrive" and the *vesz* "take" predicate of the idiom *palira vesz valakit* "make a fool of somebody" are verbs which require a designated VM element in Spec,VP in neutral sentences: *érkezik* requires its oblique argument (as its VM) to fill this position, while the designated VM of *vesz* is the idiom chunk. In a non-neutral clause the same position is occupied by a focused constituent as usual. The simplified lexical forms of these two predicates are given in (56) and (57).

(56) *érkezik*, V (↑ PRED) = 'arrive < SUBJ, OBL >'
{(↑ FOCUS)
| (↑ OBL CHECK _VM) = +}.

(57) *vesz*, V (PRED) = 'make-a-fool-of < SUBJ, OBJ > OBL'
(↑ OBL FORM) = PALIRA
{(↑ FOCUS)
| (↑ OBL CHECK _VM) = +}.

The representation in (57) encodes that the verb has two semantic arguments, the subject and the object, and the oblique constituent is only a formal complement having no semantic content: only a form feature.

In the spirit of Kenesei's (2008) claim that Hungarian auxiliaries should be taken to be Vs (constituting a special subgroup), and in the vein of Bresnan et al.'s (2016) treatment of the non-modal auxiliaries *have* and *be*, we can assume that *fog* "will", for instance, is a verb with the following lexical entry.

(58) *fog*, V (↑ TENSE) = future
(↑ SUBJ NUM) = SG
(↑ SUBJ PERS) = 3
{(↑ FOCUS)
| (↑ CHECK_VM) = +}.

It has no PRED feature (i.e., no semantic content). It contributes the future value for the TENSE feature of the VP (and, consequently, of the entire sentence) as well as the values for the number and person features of the subject. It can be assumed that, in addition to the past and present (or, rather, non-past) values of the TENSE feature, which have morphosyntactic encoding, *fog* is a syntactic encoder of the future value. In addition, it requires a focused constituent or a VM in Spec,VP. The 'subclass' property of auxiliaries like *fog* in Kenesei's sense is reflected by the fact that they have no PRED feature. Actually, they can be seen as a subsubclass: they belong to the large subclass of Vs that require the Spec,VP position to be occupied by either a focused constituent or a VM, and within this subclass, there are two subsubclasses: that of lexical verbs like *érkezik* "arrive" and idiomatic *vesz* "take" and that of auxiliaries like *fog* "will" and *szokott* "habitual present".

Finally, let me point out that it would also be possible to develop an LFG analysis of neutral VM and non-neutral focus clauses in such a way as to mimic the generally advocated GB/MP approach. We could assume two distinct positions for foci and VMs. The most natural way of implementing this would be to posit that the VM is in Spec,VP and focus is the first XP left-adjoined to VP. It would be possible to capture their complementarity with appropriate annotations and constraints. However, intuitively, the complementarity is most naturally handled by postulating a single designated position, and LFG's principles and architecture make it possible to encode the contrasting functional, word order and prosodic properties of the two constituent types by employing appropriate sets of disjunctive annotations associated with the same node.

2.3.1.4 *Interim conclusions*

In this section (§ 2.3.1), capitalising on Kenesei (2000, 2008), I pointed out that there are at least five verbal elements that can be unquestionably regarded as auxiliaries, and this, in theory, would make it possible to employ the IP category in general, and to treat non-neutral, focus constructions in this setting in particular. However, on the basis of empirical and theory-internal considerations, I argued that the IP approach would be implausible and highly problematic. Instead, I subscribed to the exocentric S/VP framework, endorsing an analysis which postulates that foci and VMs are in complementary distribution in Spec,VP. Although it would be possible, even in this LFG approach, to assume two distinct positions for VMs and foci: Spec,VP and left-adjunction to VP, respectively, it is more intuitive and more in the spirit of LFG to employ a single designated position associated with alternative sets of annotations. In this approach, in accordance with Kenesei's (2008) generalisation, I assume that Hungarian auxiliaries are Vs, and their special properties, just like the similar special properties of a large group of lexical verbs, have to be encoded in their lexical forms.

2.3.2 An S analysis in an LFG framework

The objective of this section is twofold. First, I present the essential ingredients of the first most comprehensive LFG analysis of Hungarian finite clauses, designed to be XLE-implementable (§ 2.3.2.1). Second, I discuss what certain aspects of my approach can contribute to augmenting LFG's parametric space potentially available for the association of grammatical functions and discourse functions with c-structure positions (§ 2.3.2.2). For details of the treatment of constituents in Spec,VP, see Chapters 3 and 4. For an analysis of negation, see Chapter 5.

2.3.2.1 *The fundamental aspects of the analysis*

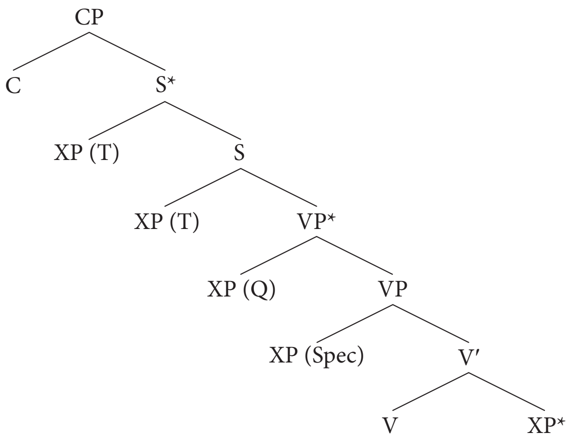
In the spirit of our implementational grammar, Laczkó & Rákosi (2008–2013), partially inspired by É. Kiss (1992), I assume the skeletal sentence structure in (59). This follows É. Kiss' (1992) GB structure, shown in (11) in § 2.1.1, with some differences.

Firstly, I do not assume an E (= expression) node for hosting left-dislocated contrastive topics. As I pointed out in § 2.1.1, more recent empirical evidence testifies that contrastive topics, ordinary topics and sentence adverbs can intermingle; thus, the structural separation of contrastive topics is no longer tenable.

Secondly, instead of a flat topic field, I assume a binary branching left-adjoined structure, which É. Kiss (1992) also does in the quantifier field. In (59), S* and VP* encode this binary branching, left adjoined structural organisation of the topic and quantifier domains.

Finally, in my structure, the nodes are associated with customary LFG functional annotations. In (59), I schematically represent the most crucial ones to be discussed in a detailed fashion below (T, Q, Spec).

(59)



This overall structure is fully in the spirit of the fundamental aspects of the structural approach in Laczkó & Rákosi's (2008–2013) HunGram, except that in that implemented grammar, following the standard XLE practice in order to enhance parsing and generation efficiency, we employ a whole range of specific c-structure node labels, see § 2.3.3.

Table 2.4 gives an overview of the essential features of the disjunctive annotations associated with the topic field, the quantifier zone and the Spec,VP position, schematically represented in (59). The annotations associated with the quantifier field and the Spec,VP position are part of my new proposal, and it is left for future research to test their implementability in our HunGram grammar and to efficiently implement them.

Table 2.4 Basic functional annotations in the left periphery

T: **topic** **sentence adverb**	**Q:** **quantifier** ***wh*-constituent**	**Spec:** **focus** ***wh*-constituent** **verbal modifier**
{(↑ GF) = ↓ {↓ ∈ (↑ TOPIC) | ↓ ∈ (↑ CONTR-TOPIC)} | ↓ ∈ (↑ ADJUNCT) (↓ ADV-TYPE) $=_c$ SENT}	(↑ GF) = ↓ {(↓ CHECK _QP) $=_c$ + | (↑ CHECK _VM-INTER) $=_c$ + (↓ CHECK _QP-INTER) $=_c$ +}	{(↑ GF) = ↓ (↑ FOCUS) = ↓ | (↑ GF) = ↓ (↓ CHECK _VM-INTER) $=_c$ + (↑ CHECK _VM-INTER) = + | {(↑ GF) = ↓ | ↑ = ↓} (↓ CHECK _VM) $=_c$ +}

As I have mentioned above, I assume a binary branching, left-adjoined structure in the topic field as well, contrary to É. Kiss' (1992) flat structure. My main motivation for this is that in this way we can capture instances of coordination with shared topic or sentence adverbial constituents, illustrated in (60), in a more intuitive and a much more implementable way. The linearly last (rightmost) topic or sentence adverb occurs in the clause-initial position dominated by S, and all the others are iteratively left-adjoined to S, see (59). This is similar to King's (1995) treatment of multiple topics in Russian: the linearly last topic is in Spec,IP, and all the others are left-adjoined to IP.[2]

(60) *Pali tegnap a könyvet oda adta Évának, és a fotót*
Paul.NOM yesterday the book.ACC VM gave Eve.to and the photo.ACC
el küldte Katinak.
VM sent Kate.to
"Yesterday Paul gave the book to Eve and sent the photo to Kate."

The annotations in the topic field are rather straightforward. The first main disjunct encodes the following: the relevant constituent bears a particular grammatical function, and, in addition, it has one of the two topic functions. The second main disjunct is for sentence adverbs. The first line states that it always has an adjunct function, and the constraining equation in the second line only admits adverbs of the sentential type (so specified in their lexical forms).

Let me now comment on the annotations I propose for the quantifier field. As I discuss in a detailed fashion in Chapter 4, there are two major ways of treating multiple constituent questions. The wider-spread view is that it is always a single question phrase (the one closest to the verb) that occupies the Spec,VP position, and all other question phrases are VP-adjoined in the quantifier field. The alternative stance is that all question phrases are in Spec,VP, for details and references, see Chapter 4. In the analysis I propose here, I subscribe to the former view.

A constituent in this field bears a grammatical function, and (following from the previous point) it is either a quantifier or a question phrase. This is encoded by the disjunction. In the two disjuncts I use CHECK features, see § 2.3.1.3.

In the first disjunct, the constraining CHECK feature equation requires a constituent containing an element that is (inherently) specified as a quantifier. QP is

2. É. Kiss (1992: 89–91) points out that either the iteratively binary branching solution or her flat structure can capture the relevant coordination phenomena. She does not particularly argue for choosing the latter, and she only mentions that in that approach the shared (non-repeated) topics or sentence adverbs have to be assumed to be gapped. Interestingly, É. Kiss (1994a) uses the other strategy. One of the motivations for this could be the fact that in this work she postulates a TP (TenseP) instead of S. Thus, her TP based solution is similar in spirit to King's (1995) IP treatment.

mnemonic of this category. The defining CHECK feature equation counterpart is included in the lexical entries of the quantifier elements involved, see the generalised lexical form representation in (61).

(61) L (quantifier) …
$((\mathrm{GF}^{*}\uparrow)\ \mathrm{CHECK\ \_QP}) = +.$

For the explanation of this annotation, we need to discuss two important function representational devices in LFG: inside-out function application and functional uncertainty.

LFG standardly uses outside-in function application. This means that the ↑ metavariable at the beginning of (possibly a sequence of) function labels designates the outermost f-structure that contains a possibly embedded, hierarchical arrangement of f-structures. For instance, the functional description in (62a) yields the f-structure representation in (62b), i.e., we follow a functional path from the outermost f-structure (outside-in). However, it is also possible to go in the other direction. For example, in the functional description in (63a) the metavariable *after* GF points to the f-structure that contains this GF, so here the path is inside-out. As a result, in the corresponding f-structure representation the given ATTRIBUTE–value pair does not belong to the f-structure of the GF, instead, it belongs to the f-structure containing the GF, see (63b). Note that the position of the arrow encodes the directionality of the path: ↑ x means outside-in and x ↑ stands for inside-out.

(62) a. $(\uparrow \mathrm{GF\ ATTRIBUTE}) = \mathit{value}$

b.
$$f1 \left[\begin{array}{l} \mathrm{GF}\ [\mathrm{ATTRIBUTE}\ \ \mathit{value}] \\ \\ [\ldots] \end{array}\right]$$

(63) a. $((\mathrm{GF}\uparrow)\ \mathrm{ATTRIBUTE}) = \mathit{value}$

b.
$$f1 \left[\begin{array}{l} \mathrm{GF}\ [\ldots] \\ \\ [\mathrm{ATTRIBUTE}\ \ \mathit{value}] \end{array}\right]$$

These outside-in and inside-out paths can contain a (potentially unlimited) hierarchical sequence of grammatical functions: ($\uparrow \mathrm{GF}^{*}$) and ($\mathrm{GF}^{*}\uparrow$), this is the encoding of functional uncertainty, introduced by Kaplan & Zaenen (1989) for the treatment of long-distance dependencies like '*wh*-movement'. By dint of this device LFG can model filler–gap relationships along grammatical functional paths instead of employing c-structural movement operations.

The reason why this CHECK feature in (61) is expressed in the ($\mathrm{GF}^{*}\uparrow$) inside-out functional uncertainty relation is that a quantifier can be (multiply) embedded in a constituent, and it will still turn the entire constituent into a quantified phrase which is required (and allowed) to occupy the designated quantifier position.[3] It is for the very same general reason that in the generalised lexical form of question words in (64) the inside-out functional uncertainty notation is employed.

The second disjunct in the Q field in Table 2.4 regulates the occurrence of additional question phrases in multiple constituent questions. The combination of the (↑ CHECK _VM-INTER) $=_c$ + and the (↓ CHECK _QP-INTER) $=_c$ + constraining equations guarantees that this position can be occupied by an interrogative expression (second equation) if and only if the Spec,VP position is already occupied by another interrogative expression (first equation). The defining equation counterpart of the first equation is associated with the Spec,VP position, see below, while the defining counterpart of the second equation is included in the lexical forms of question words, see (64). Question words are assumed to have the generalised lexical form shown in (64). The annotations encode the following properties respectively.

- These elements are interrogative pronouns.
- They occur in constituent questions (STMT-TYPE is short for statement type).
- They occur in sentences that do not contain a focused constituent. This captures the fact that, on the one hand, question phrases and ordinary focused constituents are in complementary distribution, aspiring to the same Spec,VP position, and, on the other hand, even when one or several of them do not occur in Spec,VP that position has to be occupied by another question expression (and not a focused constituent).[4]
- They are constrained to occurring in the Spec,VP or the (VP-adjoined) quantifier positions.

3. A technical remark is in order here. It is very often necessary to constrain the domain of an uncertainty path which is absolutely unlimited in the (GF* ↑) notation. This restriction can be encoded by using off-path constraints. They delimit the range of an actual path by stating that it must not contain a particular f-structure attribute or value. For instance, if we want to capture the fact that the quantified constituent must occur in the most deeply embedded finite clause in a complex sentence, which is the case here, then we can associate the following off-path constraint with the definition of its path in (61): ~(→ TENSE). This prevents the path from containing a TENSE feature.

4. It is a widely discussed exception that the question word *miért* "why" behaves differently: it can occur in a VP-adjoined position when Spec,VP is occupied by a focused constituent. This calls for a special treatment which I include in my detailed analysis of (multiple) constituent questions in Chapter 4. However, it should be obvious already at this point that the ~((GF* ↑) FOCUS) negative existential constraint has to be removed from the lexical form of this particular question word, and in the annotations associated with the VP-adjoined position the simultaneous presence of an ordinary focused constituent has to be optionally encoded, but all this has to be appropriately constrained to questions containing *miért* "why".

(64) L (wh-word) …
(↑ PRON-TYPE) = interrogative
((GF* ↑) STMT-TYPE) = *wh*-interrogative
~((GF* ↑) FOCUS)
{((GF* ↑) CHECK _VM-INTER) = +
| ((GF* ↑) CHECK _QP-INTER) = +}.

And now I turn to the annotations I associate with the Spec,VP position. The three main disjuncts encode the complementary distribution of focused constituents, question phrases and VMs, respectively.

The first disjunct is straightforward. However, a (repeated) reminder is in order. Although I subscribe to the very strong recent view in LFG that discourse functions are to be uniformly represented in i-structure, for the sake of simplicity of exposition here I apply the classical LFG representation of TOPIC and FOCUS in f-structure.

In the second disjunct, the first (constraining) CHECK feature equation requires the presence of a question phrase in this designated position. Its defining counterpart is included in the lexical forms of question words, see (64). The second, defining CHECK feature equation serves as the licensor of the occurrence of question phrases in the quantifier field. Consequently, its constraining counterpart is associated with the VP-adjoined position. This equation licenses the presence of one or more question phrases in that (possibly iterated) position. From the perspective of question phrases in the quantifier position: they can only occur there if the Spec,VP position is filled by a question phrase.

The third disjunct handles VMs. The defining counterpart of its constraining CHECK feature equation is included in the lexical forms of the elements that can occupy this position in neutral sentences (in non-focused sentences and non-constituent-question sentences). The ↑ = ↓ functional head annotation in the disjunction is for preverbs, while the (↑ GF) = ↓ annotation is for all the other types of VMs. In Chapter 3, I present a detailed analysis of various types of VMs.

In § 1.2 I showed that templates in LFG-XLE are very useful short-hand representations for (sets of) functional annotations making it easier to implement and to understand complex rules. In Table 2.6 I 'rewrite' the functional annotations in Table 2.4 by introducing the templates in Table 2.5.

Table 2.5 Introducing templates

Annotations	Templates
$(\uparrow$ GF$) = \downarrow$	@(TOPIC)
$\{\downarrow \in (\uparrow$ TOPIC$)$	
$\mid \downarrow \in (\uparrow$ CONTR-TOPIC $\}$	
$\downarrow \in (\uparrow$ ADJUNCT$)$	@(SENT-ADV)
$(\downarrow$ ADV-TYPE$) =_c$ SENT	
$(\uparrow$ GF$) = \downarrow$	@(QP)
$(\downarrow$ CHECK _QP$) =_c +$	
$(\uparrow$ GF$) = \downarrow$	@(QP-INTER)
$(\uparrow$ CHECK _VM-INTER$) =_c +$	
$(\downarrow$ CHECK _QP-INTER$) =_c +$	
$(\uparrow$ GF$) = \downarrow$	@(FOCUS)
$(\uparrow$ FOCUS$) = \downarrow$	
$(\uparrow$ GF$) = \downarrow$	@(VM-INTER)
$(\downarrow$ CHECK _VM-INTER$) =_c +$	
$(\uparrow$ CHECK _VM-INTER$) = +$	
$\{(\uparrow$ GF$) = \downarrow$	@(VM)
$\mid \uparrow = \downarrow \}$	
$(\downarrow$ CHECK _VM$) =_c +$	

Table 2.6 Templatic annotations in the left periphery

T: **topic** **sentence adverb**	**Q:** **quantifier** ***wh*-constituent**	**Spec:** **focus** ***wh*-constituent** **verbal modifier**
{ @(TOPIC) | @(SENT-ADV) }	{ @(QP) | @(QP-INTER) }	{ @(FOCUS) | @(VM-INTER) | @(VM) }

2.3.2.2 *On c-structure positions and functional annotations*

My proposed analysis of Hungarian finite clauses poses three problems for standard LFG assumptions about c-structure–function associations. However, in this section, I claim that the relevant Hungarian phenomena and my analysis can be seen as providing evidence for augmenting the cross-linguistic, parametric space for these structure–function correspondences.

Consider the following quotes, with (26c) from § 1.1.1 in Chapter 1 repeated here as (65b) for convenience.

(65) a. Functional categories are specialised subclasses of lexical categories which have a syncategorematic role in the grammar (such as marking subordination, clause type, or ***finiteness***). (Bresnan et al. 2016: 104)

b. Specifiers of functional categories are the grammaticalised discourse functions. (Bresnan et al. 2016: 105)
c. Modifier phrases fill the specifier of a lexical category. (Dalrymple 2001: 71)

In § 2.3.1, I argued extensively against postulating I(P) in Hungarian. However, there is evidence for a designated preverbal position which can be occupied by a focused constituent (in complementary distribution with other constituent types), and this position is best analysed as Spec,VP. It is clearly a highly distinguished position, and the postulation of a VP (and a specifier within it) makes the treatment of quantifiers as VP-adjoined constituents feasible. In addition, coordination facts can also be straightforwardly captured by means of the Spec,VP analysis. The entire 'post-focus' portion of a sentence can be conjoined. This can be neatly treated by assuming that the relevant portion of the sentence is a V′ constituent, and we are dealing with V′-coordination. The problem then is that the designated focus position is not in the specifier of either a CP or an IP, cf. the second quote from Bresnan et al. (2016) in (65b); moreover, the assumption that it is in Spec,VP goes against the generalisation expressed in the quote from Dalrymple (2001) in (65c).

I propose that this problem can be solved in the following way. Both CP and IP are regarded as extended functional projections of the verb, for discussions, see § 10.3 of King (1995) and Bresnan et al. (2016: 103–104). We can assume that it is fundamentally the specifier positions of the projections of the verb (whether lexical: VP or functional: CP, IP) that can (optionally) host constituents with discourse functions.[5]

It is noteworthy in this respect that this is not the first instance in which a basic structure-function generalisation needs to be augmented. As I showed in § 1.1.1 in Chapter 1, Bresnan et al. (2016: 109–111) discuss a similar case. The original assumption was this: "Complements of lexical categories are the non-discourse argument functions", quoted in (26d) in § 1.1.1. However, for the appropriate treatment of English examples like *Mary may have been running*, the following needed to be added: '… or f-structure coheads'. This made it possible to assume that progressive *be* and the *-ing* VP it subcategorises for (i.e., its complement) can be made functional coheads. My claim is that if a generalisation about the complements of lexical categories can be augmented on solid empirical grounds, then this, in principle, can be an option in the case of the specifiers of lexical categories – under similar circumstances. Eventually, it may turn out that it is only verbs (VPs) that call for, or admit, this augmentation cross-linguistically.

5. My anonymous reviewer has made the following comment on this proposal: "Note that strict OV languages might be relevant cross-linguistically and boost this argument for focus in VP."

Consider the generalisation quoted in (36) in § 1.1.1: "The daughters of S may be subject and predicate" (Bresnan et al. 2016: 115). I propose, on the basis of my analysis, that this generalisation should be modified in the following way.

(66) The daughters of S may be subject/topic and predicate.

This modification receives independent support from the following rule from Bresnan & Mchombo (1987).

(67) $$\mathrm{S} \rightarrow \begin{pmatrix} \mathrm{NP} \\ (\uparrow \textsc{subj}) = \downarrow \end{pmatrix}, \begin{pmatrix} \mathrm{NP} \\ (\uparrow \textsc{topic}) = \downarrow \end{pmatrix}, \begin{pmatrix} \mathrm{VP} \\ \uparrow = \downarrow \end{pmatrix}$$

On the basis of (67), 'subject and/or topic' seems even more appropriate than 'subject/topic' in (66).

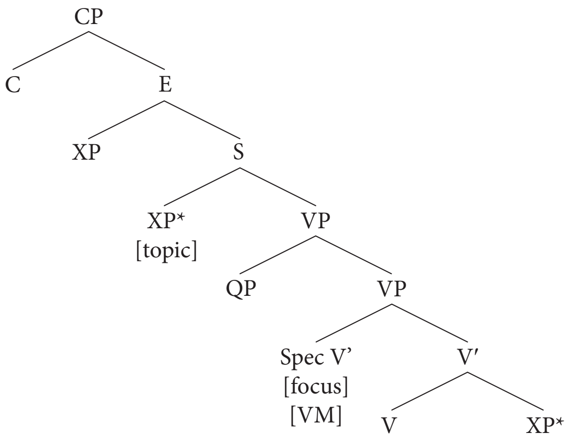
Gazdik (2012) rejects the postulation of a VP in Hungarian by referring to Dalrymple's (2001) generalisation: a VP is justified if it does not contain the subject. However, in the light of my analysis and argumentation above, I think it is reasonable to modify this generalisation. The modified version could run as follows: a VP can contain a subject if the XP in [$_S$ XP VP] is a topic. This would require all other occurrences of VP to be subjectless. In this scenario, the following three parametric options seem to emerge across languages: (i) strictly VP-external subject (English), (ii) VP-internal subject in a designated position (Russian), and (iii) VP-internal subject without a designated position (Hungarian).

2.3.3 Implementational issues

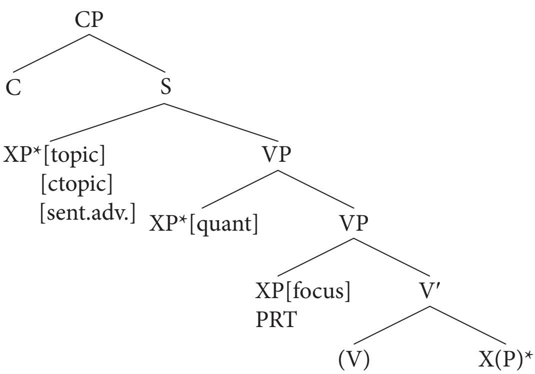
In our HunGram implementational LFG grammar (Laczkó & Rákosi 2008–2013), we 'translate' É. Kiss' (1992) GB analysis of Hungarian finite sentences into general LFG terms. This implementationally tested 'theoretical outline' served as a reliable point of departure for me to develop my fully-fledged LFG-theoretic analysis, which I am presenting in this book.

In Laczkó & Rákosi (2008–2013) our aim was the HunGram (ParGram) implementation of the LFG-style constituent structural representation of the most crucial aspects of a simple finite sentence in Hungarian shown in (69). Compare it with the skeletal representation of É. Kiss' (1992) model in (11) in § 2.1.1 repeated here as (68).

(68)



(69)



Some remarks on (69) are in order here. É. Kiss (1992) assumes that when there is more than one quantifier constituent preverbally, they are individually and iteratively adjoined to the VP. As opposed to this, in her analysis ordinary topics and sentence adverbs are dominated by S in a flat structural configuration, and contrastive topics are treated as left-dislocated elements between C and S, dominated by the E(xpression) node. By contrast, in our implemented grammar not only quantifiers but also sentence adverbs and both types of topics follow the adjunction pattern, and the adjunctions of these three different categories can freely intermingle.

As regards the treatment of the Spec,VP position, the current version of our grammar is rather limited. As is well-known, this position can be occupied by a great variety of categories of varying complexity, collectively (and loosely) called verbal modifiers (vms) and, at least in several approaches (including É. Kiss (1992, 1994a) and ours), by focused constituents, and by *wh*-expressions (in complementary distribution); however, our grammar posits only a focused constituent or a preverb belonging to vms (no question expressions and no other types of vms).

We assume that the preverb (having the syntactic category PRT) is a non-projecting word (in the sense of Toivonen (2001)). From the complementarity of the two categories it also follows that a PRT can never be focused in our approach. I devote Chapter 3 to the analysis of verbal modifiers. I hope that my results will provide solid grounds for augmenting our implementational grammar in this domain.

The reason why the verb is in parentheses in (69) is that our grammar also covers verbless clauses, containing NP or AP predicates. In such cases there is no (empty) V position in our c-structure representation, in accordance with standard LFG assumptions. The symbol X(P)* below V′ in (69) encodes that a non-projecting word (a PRT, in particular) can also follow the verb. In a basic way, we also model VP- and V′-negation.

Although our point of departure is the generalised, LFG-style c-structural approach shown in (69), in our implementation of this grammar, following the practice of the implemented grammars of other languages in the ParGram community, we use a whole range of specific c-structure categories with 'individuated', mnemonic labels, which enhances the efficiency of the parser. Figure 2.2 gives a quasi-hierarchical overview of the most important labelled categories. Notice, however, that they are employed to reduce the search space of the parser, and their ontological status is radically different from various functional projections in the Chomskyan paradigm.

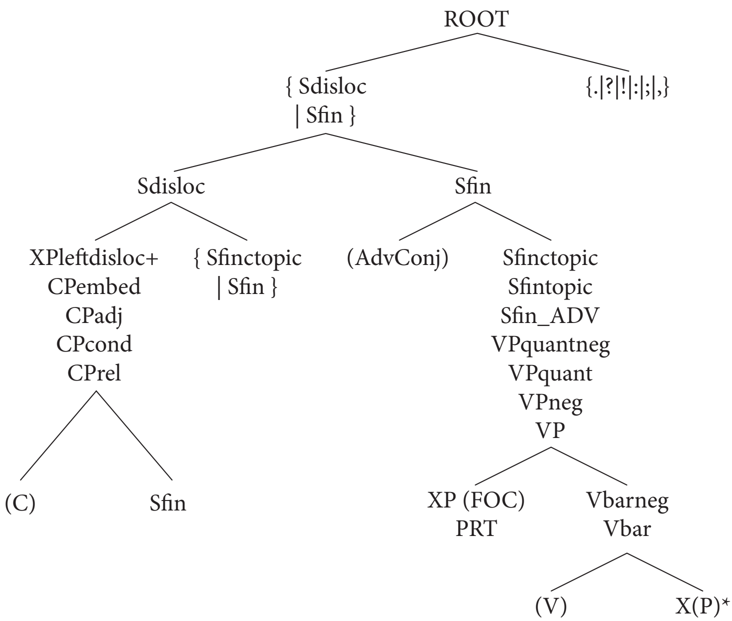


Figure 2.2 HunGram's labelled categories

The values of the ROOT rule have the following important function: if the parser is prompted to analyse a construction, and no specific phrasal category is given in the command then the parser will automatically attempt to analyse the string according to the categorial values specified in the ROOT rule: Sdisloc and Sfin in our case. In addition, the rule also handles the punctuation marks at the end of the root categories. The two root categories in our grammar are complex sentences beginning with an embedded clause (Sdisloc, short for 'dislocated sentence') or ordinary finite sentences (Sfin), which themselves may contain embedded sentences.

The Sdisloc version obligatorily contains at least one embedded sentence (CP) of various types (the + symbol stands for 'at least one', as opposed to the Kleene star, which means: any number, possibly null) and a finite clause either with a contrastive topic or without it: {Sfinctopic|Sfin}. A CP consists of an optional or obligatory C (depending on the CP type) and a finite clause (Sfin). A finite clause (Sfin) can be introduced by a conjunction (AdvConj) and it can have three major types: containing a contrastive topic (Sfinctopic), an ordinary topic (Sfintopic) or a sentence adverb (Sfin_ADV). These types can freely intermingle. A finite clause may contain various types of VP projections with different adjunction properties.

As noted above, a focused constituent and a PRT are in complementary distribution in Spec,VP. Sentence negation is possible even with a focused constituent. In this case the negative particle is between the focus and the verb. Our Vbarneg rule adjoins the negative particle to the V′ constituent. Above, I have also explained the parentheses around the V and around the P in X(P)* below V′: in this way, we can handle verbless clauses and the possible postverbal occurrence of a PRT, a non-projecting word.

For a simplified demonstration of how our HunGram analyses the sentence in (62) in Chapter 1, repeated here for convenience as (70), see (63) in § 1.2 in that chapter.

(70)	*A*	*fiú*	*meg#lát-t-a*	*a*	*lány-t.*
	the	boy.NOM	PERF#see-PAST-3SG. DEF	the	girl-ACC
	"The boy caught sight of the girl."				

2.4 Conclusion

Below, first I make general concluding remarks (§ 2.4.1), and then I add two implementational remarks (§ 2.4.2).

2.4.1 General remarks

In this chapter I presented the crucial aspects of an LFG (and XLE-implementable) analysis of the preverbal portion of Hungarian finite clauses. The structural representation was largely motivated by É. Kiss (1992) and Laczkó & Rákosi (2008-2013). I argued for S and against IP (and I also postulated CP). I employed a hierarchical, binary branching, adjunction structure for the topic field, in addition to a similar setup in the quantifier field. In this analysis I handled all the question phrases other than the question phrase immediately preceding the verb in multiple constituent questions as occupying VP-adjoined positions in the quantifier field. It is a future research task to develop a detailed analysis of the three major quantifier types when they occur in the preverbal quantifier zone. I assume that focused constituents, verbal modifiers and the (verb-adjacent) question phrase are in complementary distribution in Spec,VP.

On the basis of the analysis proposed in this chapter, I suggest that LFG's parametric space that is potentially available to c-structure–function associations should be augmented along the following lines. The Spec,VP position should be allowed to host the FOCUS discourse function. In general terms, this amounts to assuming that the specifier of a lexical category can be either a modifier or a DF. Furthermore, The XP in [$_S$ XP VP] can also be a topic, in addition to a subject. In such cases the VP can also contain a subject.

In this chapter I have only developed the essential ingredients of my LFG-XLE analysis of the preverbal domain of Hungarian finite sentences by (i) discussing the most salient non-LFG generative accounts of the relevant phenomena, and (ii) positing this approach in the context of the architecture and fundamental principles of LFG. In the subsequent chapters, I develop detailed accounts of a whole range of relevant phenomena in this general framework:

– various types of verbal modifiers: Chapter 3;
– operators (focus, *wh*-phrases, and quantifiers) Chapter 4;
– negation: Chapter 5;
– copula constructions: Chapter 6.

2.4.2 Implementational remarks

Although it can cover the types of constructions I discussed above, the current version of our implemented grammar is not constrained enough: it very often produces a considerable number of undesired additional parses (which it presents as valid alternatives). At this stage, its lexicon is not large and detailed enough. Many sentences do not get the right parse because the words they contain do not have lexical forms appropriately associated with the features that are indispensable for the correct analysis. Several important aspects of simple finite clauses are not covered, e.g., (multiple) *wh*-questions, various VM types, etc.

My fundamental aim in this book is to develop the crucial aspects of a comprehensive LFG-theoretical analysis of the preverbal domain of finite clauses in Hungarian. At the same time, this will also serve as the necessary theoretical underpinning of our implemented grammar. In addition, I think that a great number of the details of this approach will considerably contribute (whether directly or indirectly) to improving and advancing this implemented grammar, see the attested implementational dimensions of Chapters 3 through 6.

CHAPTER 3

Verbal modifiers

In this chapter I present the crucial aspects of an LFG and XLE-implementable analysis of the major types of Hungarian verbal modifiers. In accordance with the general approach outlined in Chapter 2, I assume that focused constituents, verbal modifiers and the verb-adjacent question phrase are in complementary distribution in Spec,VP. I show that VMs can also be focused, and, depending on their nature, they can be used to express two kinds of focus: identificational focus and verum focus. I distinguish two major types of VMs: preverbs belong to the first type, and the rest of VMs to the other type. I treat both compositional and non-compositional particle-verb constructions (PVCs) lexically, with both the verb and the preverb having their respective lexical forms with appropriate functional annotations and cross-referencing, including the use of CHECK features. The preverb and the verb are analysed as functional coheads in both PVC types. All the other VMs, with their own grammatical functions, are assumed to be lexically selected by their verbs in these verbs' lexical forms. Depending on the nature of the VM involved, the verb can impose various constraints on it. Finally, I report the successful implementation of this LFG-theoretic approach in our HunGram platform.

The chapter has the following structure. In § 3.1, I concentrate on PVCs. First I offer a critical overview of major generative approaches and then I present my alternative approach. In § 3.2 I develop a comprehensive analysis of the most important types of other VMs. This is followed by concluding remarks in § 3.3.

3.1 On particle-verb constructions

PVCs have been in the forefront of generative linguistic investigation across languages and across theoretical frameworks for decades. One of the most remarkable manifestations of this is Dehé et al. (2002), which comprises a detailed presentation of the most crucial problems to be addressed, a highly informative overview of the most salient types of analyses, and several papers of varying theoretical persuasions. These papers propose analyses of a wide range of PVC phenomena in a variety of languages, with Dutch, Hungarian, English, German, and Swedish among them. For additional discussions and analyses, see Booij & Marle (2003).

As is well-known, PVCs pose the following fundamental challenge for approaches that aim at being appropriately formal, explicit and principled. These constructions exhibit mixed (or, rather, contradictory) lexical and syntactic properties. Furthermore, their analysis necessarily raises issues typically addressed in the treatment of the more general domain of complex predicates, see, for example, Alsina, Bresnan & Sells (1997).

Hungarian PVCs have been analysed from various perspectives and in several different descriptive as well as generative theoretically or implementationally oriented frameworks, see, for instance, Komlósy (1985, 1992, 1994), Ackerman (1987, 2003), Horvath (1986), É. Kiss (1987, 1992, 2002, 2004, 2005, 2006), Brody (1990, 1995), Piñón (1993), Ackerman & Webelhuth (1993), Ackerman & Lesourd (1997), Csirmaz (2004, 2006), Kiefer & Ladányi (2000), Surányi (2009a, 2009b, 2009c, 2011), Broekhuis & Hegedűs (2009), Forst et al. (2010), Laczkó & Rákosi (2011), Rákosi & Laczkó (2011), Hegedűs (2013), Laczkó (2013), Laczkó & Rákosi (2013) and the references in these works.

The structure of this section is as follows. First, I present the most important types and aspects of GB/MP treatments of PVCs, the overwhelming majority of which being strictly syntactic in nature (§ 3.1.1). Then I show the traits of strictly lexicalist accounts (§ 3.1.2) and some previous LFG(-compatible) analyses (§ 3.1.3). This is followed by the discussion of a mixed approach, which treats non-compositional PVCs lexically and compositional (productive) PVCs syntactically (§ 3.1.4). Finally, I develop my own fully lexicalist alternative (§ 3.1.5).

3.1.1 GB and MP treatments of PVCs

É. Kiss (1994a) offers a very informative discussion of the 'preverb problem', with most of her empirical generalisations going back as far as Soltész (1959). Then she develops a strictly syntactic analysis of PVCs. This approach can be considered an epitome of the most crucial shared aspects of the assumptions underlying the sweeping majority of GB and MP accounts of these phenomena.

É. Kiss (1994a) points out that preverbs, the prototypical members of the heterogeneous class of VMs, are traditionally analysed as belonging to the category of adverbs, and they have the following distinguishing traits. Below I cite É. Kiss' examples with her glosses.

a. The preverb and the verb that selects it make up a single lexical unit that can be input to lexical word formation processes: *fel-tesz* "up-put [assume]"; *feltétel* "assumption".
b. The preverb and the verb make up a single semantic unit. Their meaning is often non-compositional, e.g., *be-rúg* "get drunk" [*lit.* "in-kick"].

c. If the preverb immediately precedes the verb, they form a single phonological unit.
d. The preverb is a separate syntactic atom: it can move on its own, see (1). Notice that in this example the preverb moves up into the matrix clause.

(1) *Fel*$_i$ *kell*, *hogy hív-ja-m* t$_i$.
up needs that call-SUBJUNC-I(.him)
"It is necessary that I call him up."

The fundamental question is whether the analysis of PVCs should be based on properties (a)–(c), which suggest their unity, or whether it should be based on property (d), which suggests that the preverb and the verb are two separate syntactic elements. É. Kiss also remarks that property (c) does not appear to be decisive: any constituent occupying the immediately preverbal Spec,VP position forms a single phonological unit with the verb, i.e., whether the preverb and the verb are taken to be one or two syntactic atoms, property (c) falls out. As regards properties (a), (b), and (d), they are the same in the case of idioms as well. Consider É. Kiss' examples.

(2) a. *Mari-t be-húzt-ák a cső-be.*
Mary-ACC in-pulled-they the tube-into
"They tricked Mary." [*lit*. "They pulled Mary into the tube."]
b. *Mari-t cső-be húzt-ák.*
Mary-ACC tube-into pulled-they
"They tricked Mary." [*lit*. "They pulled Mary into the tube."]

Behúz a csőbe or *csőbe húz* make up a single lexical unit; moreover, the *csőbe húz* version can serve as input to event nominalisation.

(3) *A csőbehúzás nem sikerült.*
the pulling_into_tube not succeeded
"The tricking did not succeed."

The combination of these elements forms a single semantic unit, too, with a non-compositional meaning. The parts of the idiom, however, are syntactically independent: they do not need to be adjacent. Notice that in (4) the preverbal element of the idiom precedes the finite matrix verb.

(4) *Be akar-ják húz-ni Mari-t a cső-be.*
in want-they pull-INFIN Mary-ACC the tube-into
"They want to pull Mary into the tube."

É. Kiss goes on to point out that despite their lexical and semantic unity, idioms have never been analysed as syntactic units dominated by a single V (or V′) node. On these grounds, she adopts a similar treatment for PVCs. She assumes that the preverb is an idiomatically selected complement of the verb. It has no argumental role, and it functions as a predicative complement. Its role is comparable to that of the adverb in the phrase *behave well*.

É Kiss assumes that in D-structure the preverb is one of the XPs generated postverbally as sisters to the V and to each other, and its category is $[_{\text{AdvP}}$ [Adv]]. This accounts for why its postverbal position is basically free, except that unstressed, pronominal or clitic-like elements are more felicitous if ordered immediately after the V in V′, cf.:

(5) a. *Imre tavaly ismerkedett meg Erzsi-vel.*
Imre last_year got_acquainted PREV Lisa-with
"Imre got acquainted with Lisa last year."
b. ?*Imre tavaly ismerkedett Erzsi-vel meg.*
c. *Imre tavaly ismerkedett vele meg.*
Imre last_year got_acquainted with_her PREV
"Imre got acquainted with her last year."

In É. Kiss' system, if the preverb is one of the postverbal constituents, it is a potential target of her Focus Movement operation. This captures the complementary distribution of the preverb and a focused XP in preverbal position. If the preverb is moved into Spec,VP then there is naturally no room there for another focus, too. Note that in the examples below, in addition to movement to Spec,TP there is also a topicalisation movement to Spec,TP (*Imre*, the subject, moves there).

(6) a. $[_{\text{TP}}$ *Imre*$_i$ $[_{\text{VP}}$ *Erzsi-vel*$_j$ $[_{\text{V}'}$ *ismerkedett meg* t_i t_j]]]
Imre Lisa-with got_acquainted PREV
"It was Lisa who Imre got acquainted with."
b. $[_{\text{TP}}$ *Imre*$_i$ $[_{\text{VP}}$ *meg*$_j$ $[_{\text{V}'}$ *ismerkedett Erzsivel* t_i t_j]]]
"Imre got acquainted with Lisa."

Notice that on É. Kiss' account the movement of the preverb (just like that of any other VM type) is also an instance of focus movement, and it is assumed that this movement, in a sense, blocks the movement of an ordinary constituent to be focused. I think this complementarity issue can be viewed differently. We can assume that if there is a constituent to be focused (i.e., to receive the [+F] feature from the verb in Spec,VP) and there is also a preverb (or any other VM) in the postverbal domain then it is the former that will be moved into the preverbal position, and the 'default' VM type focus movement is blocked. In addition, note that if É. Kiss assumes that both an ordinary constituent to be focused and a VM are potential foci then she would need an explicit (perhaps OT style) rule to ensure that the presence and movement of the former blocks the movement of the latter. Compare the two views above in this context. At several points in this book I claim that it is implausible to assume that VMs in Spec,VP are always and necessarily focused constituents. É. Kiss herself changed her view (1992, 1994a) and as of É. Kiss (2002) at least she has assumed that VMs and foci do not occupy the same preverbal position.

É. Kiss (1994a) also addresses the following issue. It may appear implausible to analyse the two sentences in (6) in basically the same way, because their interpretations clearly differ: (6a) involves focusing, while (6b) is a neutral sentence. In her description, in the Spec,VP of (6a) *Erzsivel* expresses identification with exclusion, whereas in (6b) *meg* in the Spec,VP merely carries an emphasis, which is understood as the emphasis on the whole prefixed V. The relevant details of her analysis are as follows. She assumes a single [+F] feature (thus, my remarks in the previous paragraph are still valid), and it expresses either identification with exclusion or identification. In the latter case, this identification percolates up to the entire VP. Then É. Kiss makes the following additional remark. Just like other adverbials occupying the Spec,VP position, a preverb can also function as an operator expressing identification with exclusion. For this an explicit contrast is needed: the context has to provide a set of two (or more) contrasted elements, and one of them can be identified through the exclusion of the other(s). This is only possible when the preverb expresses direction:

(7) *János* *nem* [$_{VP}$ *KI* [$_{V'}$ *szaladt*]], *hanem* [$_{VP}$ *BE* [$_{V'}$ *szaladt*]]
John not out ran but in ran
"John did not run OUT, but he ran IN."

I think the biggest general problem with É. Kiss' (1994a) approach is that a PREV + V complex can systematically behave in two different ways, compare (8) and (9). *Meg* 'PERF' is a perfectivising preverb. In (8) it does not receive any special focal stress, it simply makes up a phonological word with the verb, and the entire sentence has the regular, neutral sentence level prosody intonation pattern. By contrast, in (9) *meg* receives heavy (focal) stress, and the sentence has an intonation pattern typical of sentences containing a focused constituent. Given that *meg* is not a (meaningful) directional preverb, on É. Kiss' account here we are dealing with a [+F] encoding identification *without* exclusion. Such a construction is also often referred to as VP-focus or verum focus. Thus, É. Kiss' focus theory covers the case of (9). However, as far as I can tell, it fails to cover (8), which does not seem to involve any aspect of focusing. If one still wanted to assume that (8) was also an instance of VP/verum (identificational) focusing, then the challenge would be to capture the obvious differences between the two 'ID-foci' in (8) and (9).

(8) *János* *meg* *érkez-ett* *Debrecen-be.*
John.NOM PERF arrive-PAST.3SG Debrecen-into
"John arrived in Debrecen."

(9) *János* *MEG* *érkez-ett* *Debrecen-be.*
John.NOM PERF arrive-PAST.3SG Debrecen-into
"John DID arrive in Debrecen."

On the basis of these considerations, it seems understandable why later GB and MP approaches (including those developed by É. Kiss) account for the preverbal complementarity of VMs and foci by postulating different syntactic positions for them, and by capitalising on the aspect encoding or complex predicate forming potential of VMs. By contrast, one of the main claims of this book is that LFG's architecture and assumptions make it possible to capture this VM vs. focus complementarity by postulating a single designated preverbal position (in the spirit of the what-you-see-is-what-you-get principle).

From the perspective of this book, É. Kiss' (1994b) discussion of foci in Spec,VP is also very important. She uses the following two examples (1994b: 132). I keep the format, her glossing and the translations of these examples.

(10) a. [$_{VP}$ *JÁNOS* [$_{V'}$ *ette meg a süteményt*]]
John ate PERF the cookie
"JOHN ate the cookie."

b. [$_{VP}$ *Egy 'autó* [$_{V'}$ *állt meg a ház előtt*]]
a car stopped PERF the house in-front-of
"A car stopped in front of the house."

É. Kiss makes the following observations. Whereas (10a) can only function as a reply to the question *Who ate the cookie?*, (10b) can also answer the following question: *What happened*? While (10a) encodes identification with exclusion, (10b) only expresses identification. More precisely, (10b) is ambiguous, because it could also be used as an answer to *What stopped in front of our house?* The focus of (10a) receives a contrastive interpretation because it is assumed that the situation described in the sentence involves a closed set of individuals who can be assumed to have been the potential consumers of the given cookie. By contrast, in the case of (10b), it is very likely that there is no closed set of relevant entities in the relevant discourse domain that could have performed the act of stopping in front of the house. Given that the set is open, the identification operation performed by the focus operator is not coupled with an exclusion operation; so no contrast is implied.

On the basis of the foregoing discussion of É. Kiss (1994a, 1994b) the following 'focusing picture' emerges in her 1994 approach.

a. identification of the constituent in Spec,VP with exclusion: (6a) and (10a)
b. identification of the VP: (6b)
c. identification of the constituent in Spec,VP without exclusion: (10b)

Later (a) was separated from the rest and became the standard id/exhaustive focus type. As I pointed out above, (b) is actually Janus faced. (1) When there is no focus stress, this is an instance of an ordinary VM + V combination, and a syntactically and semantically different (non-focused) analysis was developed along the aspectual/complex-predicate lines. (2) When there is focus stress, we are dealing with VP-focusing. The (c) type does not seem to have received due theoretical attention. Prosodically and semantically it seems to manifest a clearly distinct focus type, which can be taken to be presentational focus, and it can be regarded as different from 'real' id-focus without exclusion. It can be argued that this construction type is the last (and weakest) type on the following focus scale.

(11) (i) id-focus with exclusion > (ii) id-focus without exclusion > (iii) presentational focus

In § 2.1.1 in Chapter 2 I discussed some salient GB and MP analyses of VMs and foci, and offered a comparative overview of their most important aspects in Table 2.2, which I repeat here as Table 3.1 for convenience. It is worthwhile taking a repeated look at this table, this time concentrating on the most significant variants of the analysis of VMs in the GB/MP tradition. For the details of the discussion, see § 2.1.1.

The most important ingredients of these approaches (either in isolation or in various combinations) are as follows. VM movement to a preverbal position is triggered or motivated by:

- the focus [+F] feature (abandoned rather early),
- incorporation,
- the encoding of aspect,
- complex predicate formation,
- the stress-avoidance of V.

Let me also make three general remarks on these approaches. First of all, they are strictly syntactic. Secondly, they aim to uniformly (and syntactically) treat both compositional and non-compositional VM + V combinations. Finally, although it is generally assumed that VMs (both compositional and non-compositional, both preverbs and other VM types) are complements of the lexical verb, some of them are fully-fledged, referential arguments, it is not clear what the essence is of the process called complex predicate formation. The crucial properties of the assumed (types of) complex predicates are usually not spelled out formally. More generally, when I present my LFG analysis of Hungarian VMs, I discuss this complex predicate formation issue, and I argue that it is not plausible or feasible (from a relatively theory-neutral perspective) to assume a uniform complex predicate formation process for the treatment of this wide variety of VM + V combinations.

Table 3.1 Some GB/MP treatments of VMs and foci

Author	Focused constituent	Verbal modifier	Remarks
É. Kiss (1992)	complementary distribution in a single position Spec,VP		a major problem: ordinary VMs in neutral clauses assumed to have the [+focus] feature
Brody (1990)	Spec,FocP	[VM,V+]	the cohead- / X^0-like status of VM is problematic, base-generation ↔ É. Kiss (1999): head-movement analysis of VMs to V^0
É. Kiss (2002)	complementary distribution of alternative functional projections Spec,FocP	 Spec,AspP	a special in-between solution to the complementarity issue: the preverbal position is the same and not the same
É. Kiss (2004), Csirmaz (2004, 2006)	Spec,FocP	Spec,AspP + Spec,PredP	VM: aspect encoding and complex predicate formation
É. Kiss (2006)	special complementary distribution in two extended v*P projections: Spec,FocP and Spec,PredP		rationale: id-focus is also predicational
Surányi (2011)	Spec,TP partial complementary distribution (also involving NEG) in a single position (Spec,TP)	Spec,AspP (possibly) → Spec,TP	VM: aspectual Spec,TP: EPP satisfied by id-focus/ VM/NEG
Hegedűs (2013)	Spec,FocP	Spec,VP	VM: complex predicate formation, feature-checking and stress-avoidance by the verb, see Broekhuis & Hegedűs (2009)

At the end of this section, I discuss some important parts of Hegedűs (2013), because it offers a very useful critical assessment of several GB and MP analyses of VMs, including copula constructions, the topic of Chapter 6 of this book. Moreover, although briefly, it also reflects on alternative lexicalist views. In addition, it manifests a recent instance of a 'small clause and complex predicate formation' type approach to these phenomena.

Hegedűs starts the relevant discussion with a few comments on some lexicalist approaches to VMs, in particular, on Ackerman (1987) and Ackerman & Webelhuth (1998). She, agreeing with many other researchers, including É. Kiss (1994a, 2002), admits that cases of non-compositionality and the fact that a great number of VM + V combinations can systematically and productively serve as input to word formation processes (which, according to many theories, are considered to be genuine lexical processes) can be taken to support the lexical derivation of a VM + V and its insertion under a V^0 head in the syntax. However, agreeing with others again, she points out that the syntactic separability of the VM and the V strongly argues against this kind of lexicalist treatment. Let me remark that in the next section (§ 3.1.2) I give a detailed description of this (LFG-compatible) lexicalist approach developed in Ackerman (1987, 2003), Ackerman & Webelhuth (1993, 1998), Ackerman & Lesourd (1997), Ackerman, Stump & Webelhuth (2011), among others, and I point out that Hegedűs' main criticism no longer holds. The new, additional aspect of this approach, in a general inferential-realisational (i.e., paradigmatic) morphological framework, is the concept of the analytic word as a possible lexical item. This is used in an explicit and formal system of lexical representation, which admits analytic lexical forms (morphological objects) consisting of a combination of more than one syntactic atom. In § 3.1.4 and § 3.1.5, I show that our LFG-XLE approach to the non-compositional cases (at least), which is also lexicalist fundamentally, employs a considerably different formal mechanism to achieve the same goal: the VM and the V have distinct lexical entries; however, their semantic unity and syntactic separability are captured by means of a suitable checking and cross-referencing mechanism, see Forst, King & Laczkó (2010), Laczkó & Rákosi (2011), Rákosi & Laczkó (2011), Laczkó & Rákosi (2013), and Laczkó (2013). For details and examples, see § 3.1.2.3.

Hegedűs' other major objection to the lexicalist approach is the 'immense productivity' of VM + V combinations. She writes:

> It is not only the case that they are productive, they are generally semantically transparent, too. It is indeed hard to imagine that all these elements form separate lexical entries, and even if idiomatic ones do, it does not necessarily imply that the structures are not formed in the syntax, since even the idiomatic ones have transparent syntactic structures. (Hegedűs 2013: 19)

Let me make three remarks on these common claims in this context.

First of all, it is highly dependent on theoretical persuasion how an approach envisages and formalises the division of labour among various components of grammar in general, and among the lexicon, syntax and morphology in particular. As is well-known, the major models of the Chomskyan mainstream themselves also show considerable variation in this respect.

Secondly, as pointed out in § 1.1.2.4, fundamentally LFG subscribes to the Strong Lexicalist Hypothesis, which means that it even handles all inflectional morphological phenomena in its lexical component, in addition to derivation. However, this does not mean that all (regular) inflected morphological forms of words have 'separate lexical entries' in Hegedűs' sense. Instead, LFG uses lexical redundancy rules to capture productive morphological processes, whether they are inflectional (for instance the marking of tense and agreement on verbs) or derivational. For example, LFG handles clause-level passivisation by means of a lexical redundancy rule that creates a passive participial form from an active transitive input verb in the lexicon, see Bresnan (1982b). Thus, LFG has a well-developed, coherent theory and practice of treating absolutely productive (morphological) phenomena lexically, which can be taken to be a feasible alternative to the syntactic approach Hegedűs subscribes to.

Thirdly, as regards the treatment of non-productive, non-compositional VM + V combinations, Hegedűs' repeated point is valid. These do need some sort of lexical specification or encoding of their idiomatic aspects (possibly in a separate lexical entry), but this should not mean that their pieces should not be combined in the syntax, i.e., the classic comparative reference to the treatment of ordinary idiomatic expressions is also valid. Thus, Hegedűs rightly argues against fully lexically combining VMs and their verbs, see Ackerman's (1987) early, pioneering proposal. However, as noted above, this approach has been successfully developed further, and the principled introduction of the notion of an analytic lexical word solves this problem in a plausible way, see Ackerman (2003) and Ackerman et al. (2011), for instance. In § 3.1.4 and § 3.1.5 I present alternative lexicalist solutions for the analysis of PVCs in an LFG-XLE framework, and in § 3.2 I develop a generalised approach to all major types of VM + V combinations in this vein. Let me note in passing that, as far as I can see, researchers in the GB/MP tradition have paid much less attention to formally capturing the behaviour of non-productive, non-compositional VM + V combinations.

Hegedűs' next argument against the lexicalist treatment is that there are VM + V combinations (other than PVCs) that are not likely to be lexical, because the VM in them has a phrasal status: it is modifiable. Consider her examples (2013: 20).

(12) a. *Mari teljesen őrült-nek tartja János-t.*
Mari completely crazy-DAT considers János-ACC
"Mary considers John completely crazy."

b. *Anna millió darab-ra törte a vázá-t.*
Anna million piece-SUB broke.3SG the vase-ACC
"Anna broke the vase to a million pieces."

She claims that in the case of such examples it is implausible to assume that these modifiable secondary predicates and the verb are created in the lexicon as a syntactically simplex unit. Let me make the following remarks on this argument.

In general, Ackerman & Lesourd (1997), Ackerman (2003), and Ackerman et al. (2011) are not explicit regarding the treatment of PVC-type phenomena in their inferential-realisational framework. In particular, they do not address the issues of the treatment of non-PVC-types of VMs. As far as I can see, the types Hegedűs exemplifies in (12) would pose serious problems not only for a classical lexicalist approach like Ackerman (1987), which Hegedűs argues against, but also for the more recent, inferentially-realisationally augmented model. The main reason for this is that intuitively it would really not be feasible to assume that a verb like *tör* "break" and the noun *darabra* "to pieces" in (12b) make up any kind of (analytic-paradigmatic) lexical word, forming a sort of a complex predicate similar to a PVC. First of all, the verb and the noun have a well-established predicate-argument relationship: the noun is an ordinary (resultative secondary predicate) argument of the verb. In LFG it is standardly analysed as a constituent having the XCOMP grammatical function. It would be most unusual to assume that all the words in this particular predicate-argument relation make up an analytical lexical word. Given the clearly phrasal status of the argument, an analysis along the incorporation lines would also seem untenable (especially in the light of the systematic syntactic independence of the two elements). The feasibility of the classical lexical-incorporational treatment is further weakened by the fact that these secondary predicate VMs are case-marked. The type illustrated in (12a) poses the same problem: the verb *tart* "consider" selects *őrültnek* "crazy.DAT" as its predicative argument. This case is even more complex, because in addition to the adjectival phrase (*teljesen őrültnek*) being the XCOMP argument of the verb (*tart*) the accusative noun phrase, *Jánost* "John.ACC", is a non-thematic OBJ of the verb. For the classical LFG treatment of 'raising' and 'equi' predicates in English, see Bresnan (1982b), and for a short discussion see § 1.1.1. Thus, I also think that this VM + V type cannot be feasibly analysed in a lexical inferential-realisational fashion. My suspicion is that the advocates of the inferential-realisational model themselves would not analyse such VMs along their lexical-paradigmatic lines. Recall that Ackerman (1987) proposed a uniform (strictly) lexical analysis of all major VM types and, by contrast, the overwhelming majority of GB/MP approaches, including Hegedűs (2013), treat these phenomena (strictly) syntactically. In my LFG-XLE analysis to be presented in § 3.2 I capture all the crucial aspects of VMs by lexical means; however, the degree of lexicality in the encoding of the relevant features varies considerably across VM types.

My LFG-XLE alternative is an analysis in which the predicates and their secondary predicate arguments in (12) get exactly the same treatment as other predicates and their similar arguments, except for one important difference. The predicate has the same type of argument structure, its argument receives its customary grammatical function: XCOMP. However, predicates like those in (12) have an additional specification in their lexical forms: they require their XCOMP argument to occupy the Spec,VP position in neutral sentences. This is how I capture the VM status of these constituents. For further details, see § 3.2. This is the only lexical aspect of the analysis of this VM type (and some similar types).

In this connection, in § 3.2 I argue against the rather widely-accepted GB/MP assumption that VMs, as a rule, make up complex predicates with their verbs (and this triggers VM movement into the preverbal position in general). I claim that only certain VM + V types should be analysed as complex predicates in any suitably defined sense of the term.

Finally, Hegedűs points out that the case-marking of the VM in certain types also poses problems for a lexicalist approach. "The fact that Hungarian secondary predicates bear inherent case makes a lexical analysis even less feasible, because case-marking is not possible within compounds" (2013: 20), see the forms of the secondary predicates in (12) above: *őrült-nek* "crazy-DAT" and *darab-ra* "piece-SUB".

Obviously, this argument by Hegedűs is a relatively strong one against the early, classical lexicalist approach along the lines of Ackerman (1987), which she argues against in general. However, I do not think this argument by itself would have a real weight against the inferential-realisational version, given that in this model two syntactic atoms make up a single analytic lexical word.

As should be straightforward from the foregoing discussion, these case-marking facts are not at all problematic for my approach to be developed in § 3.2, because my analysis of the relevant VM types is 'syntactic' fundamentally, and the only lexical aspect is the constraint that the VM argument must precede the verb in neutral sentences. Not only is it the case that the presence of case marking in these types is not problematic for my approach but fully compatible with it (or, in a sense, follows from it).

Hegedűs mentions that Broekhuis & Hegedűs (2009) developed an alternative analysis of predicative movement. It capitalised on Broekhuis' (2008) analysis of locative inversion in the frame of movement of Small Clause (SC) predicates, actually remnant SCs, on the basis of Moro (1997). The essence of Broekhuis' (2008) proposal is that the subject and the predicate within a SC are in an agreement relationship, and the movement of either of them can be triggered by a probe that attracts ϕ-features, compare (13a) and (13b).

(13) a. *The baby carriage rolled down the hill.*
b. *Down the hill rolled the baby carriage.*

When a verbal predicate has a SC complement, either the subject or the predicate of the SC can be moved to check ϕ-features. Locative inversion manifests a case when the predicate of the SC (to be more precise, the remnant SC without the subject) moves into the subject position, because the subject is to be presented as the focus of the clause in such sentences, and it has to remain in situ, because in English foci are to be aligned to the right edge of the clause in order to be stressed. Broekhuis & Hegedűs (2009) assume that predicate movement in Hungarian is triggered by the verb's ϕ-features; thus, the landing site of this movement is Spec,VP and the goal is to establish object-agreement. Hegedűs emphasises that this agreement could also be established at a distance; however, Broekhuis & Hegedűs also postulate that there is an OT-style constraint to the effect that the finite verb should be unstressed. This requirement triggers movement to Spec,VP and it overrules the long-distance agree option. Hegedűs (2013) takes over the following components of this analysis.

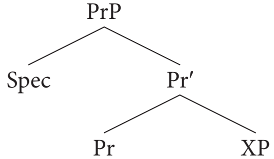
- SC-predicates (or, possibly, remnant SCs) are moved.
- The landing site is Spec,VP.
- The agreement relation within the SC makes the movement possible, but it is made obligatory by a different property.

Hegedűs admits that stress avoidance is an important factor, but in her new analysis the need for complex predicate formation is even more crucial. She points out that subject-predicate relationships have fundamental semantic and syntactic aspects to them, and Svenonius (1994), Moro (1997), and Dikken (2006) provide useful overviews of traditional logical and linguistic theories in this domain. The notion of a small clause has been a pivot in generative linguistic investigations pertaining to subject-predicate relations. Given that in her analysis SCs have a central role, Hegedűs highlights several crucial stages and factors in the history of SCs. Here I only briefly discuss what is relevant from the perspective of this book.

Stowell (1981, 1983) proposes that the maximal projection of every lexical category can contain a subject in its specifier position, in other words, all the maximal projections of lexical categories are potential SCs. By contrast, Williams (1980) rejects the notion of SC in the Stowellian sense, and represents subject-predicate relations at a post-surface-structural level that he calls Predicate Structure. For him subjects are external arguments.

Bowers (1993) reconciles Stowell's (1981, 1983) Small Clause Theory and Williams' (1980) Predication Theory conflict. He proposes a special functional projection: Predicative Phrase (PrP), see (14), and he claims that by the help of this functional layer all predicative relations can be represented in a unified fashion (whether they come from main clauses or SCs).

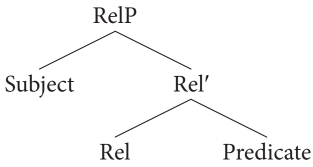
(14)



Spec,PrP is the subject (external argument) position, and the complement is the predicate. This representation satisfies Williams' (1980) condition that the subject should c-command the predicate, and, at the same time, Stowell's (1981, 1983) SC-constituency is also preserved. The predicative XP can belong to any lexical category.

Dikken (2006) postulates a structural relation between subject and predicate similar to that in Bowers (1993), see (15). He assumes that predication is asymmetrical and it is mediated by a functional head called Relator. However, there is also a major difference between the two approaches. In Bowers' theory Pr is a new functional head. By contrast, Dikken's Relator is more abstract, and the function of a 'relator' can be instantiated by a variety of heads that connect predicates and their subjects.

(15)



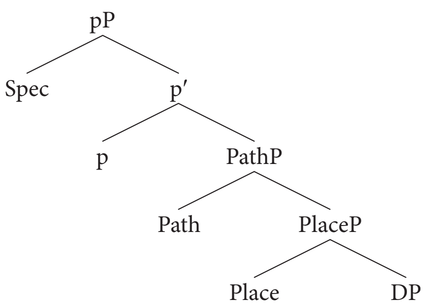
Stowell (1991) proposes a radically different (upside-down) approach to complex predicate formation. He assumes that the SC-structure is the underlying one, and complex predicates are derived by restructuring. Complement SCs are restructured and their predicate forms a complex predicate with the verb during the derivation. There is some LF requirement that makes restructuring necessary, and there is also a parametric difference: in some languages restructuring takes place at LF, while in others, e.g., in Italian, it takes place at Surface Structure. Hegedűs adopts this approach, and she proposes that Hungarian also belongs to the Italian-type languages in this regard, and predicate movement to the preverbal position instantiates Small Clause restructuring and complex predicate formation.

Hegedűs subscribes to Dikken's (2006) RelP theory. The RelP projection in the analysis of the relevant Hungarian phenomena can be nominal, adjectival or adpositional in nature. Her motivations for the SC approach are as follows.

> The conceptual argument for assuming SCs is that it provides a means to represent subject–predicate relations in a uniform manner, and can be translated into LF straightforwardly. Empirically, their constituency is not easy to test in many cases …. Conceptually, complex predicate formation makes a "reanalysis" possible in the sense that the argument structures of the matrix predicate and the SC predicate are united. The empirical argument for complex predicates is that the participating predicates behave as constituents under some tests (especially movement tests).
> (Hegedűs 2013: 42)

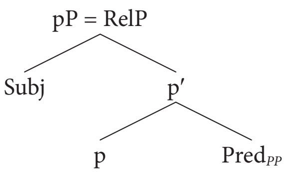
The most crucial aspects of Hegedűs' (2013) analysis of PVCs are as follows. She assumes that the preverb is base-generated as part of the PP postverbally: particles belong to the extended projection of PPs: pP, whose generalised structure is as follows.

(16)



This is a ‘prepositional relator phrase’ in the sense of Dikken (2006).

(17)



In the case of the relevant construction types, part of this pP is moved to the Spec,VP position in neutral sentences. These movements are all instantiations of Hegedűs' syntactic complex predicate formation rule. She aims at a uniform analysis, so she assumes that even the movement of the particle is of the phrasal movement type. Consider her examples in (18).

(18) a. *Az egér be-szaladt az ágy alá.*
the mouse in-ran the bed under.to
"The mouse ran under the bed."
b. *Az egér az ágy alá szaladt.*
the mouse the bed under.to ran
"The mouse ran under the bed."

She outlines the following analysis. In both cases, at the beginning of the derivation there is a pP postverbally. The difference between (18a) and (18b) is that in the former there is an overt p head, *be* "in", which takes an optional PP complement, see (19), while in the latter this head is empty. In the first case, the pP is vacated, that is, its PP complement is postposed and the remnant pP, which only contains the p head, moves to Spec,VP. In the second case, the entire empty-headed pP undergoes this movement.

(19) [$_{pP}$ *be* [$_{PP}$ *az ágy alá*]]
in the bed under.to

For her unified analysis to work, Hegedűs has to prove that the movement of the particle, a word-like element, to Spec,VP is also an instance of phrasal movement. Her argumentation runs as follows. In the examples in (20), the modifiers *egyenesen* "straight" and *teljesen* "completely" must precede the particle in preverbal position; therefore, they must have been pied-piped by the particle.

(20) a. *Az egér egyenesen be-szaladt az ágy alá.*
the mouse straight in-ran the bed under.to
"The mouse ran straight under the bed."
b. *Az autó egyenesen neki-hajtott a kerítés-nek.*
the car straight to-drove the fence-ALL
"The car drove straight into the fence."
c. *Mari teljesen be-verte a szöget a fal-ba.*
Mari completely into-hit the nail.ACC the wall-ILL
"Mary hammered the nail completely into the wall."

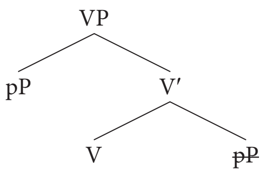
I do not find this argument convincing on the basis of these examples. My interpretation of all three is that the two adverbs modify the VP (or at least the VM + V complex) rather than just the particle. Consider the following example.

(21) *Én nem nem kedvel-em Kati-t hanem …*
I not not like-PRES.1SG.DEF Kate-ACC but
"It is not the case that I don't like Kate, but … "
a. … *egyenesen utál-om őt.*
straight hate-PRES.1SG.DEF her
" … I definitely hate her."
b. … *teljesen meg-vet-em őt.*
completely PERF-throw-PRES.1SG.DEF her
" … I completely despise her."

I think the most natural interpretation of these examples is that the adverbs *teljesen* "completely" and *egyenesen* "straight" modify the VP (in a VP-adjoined position). In the case of *utál* "hate" there is no particle to begin with, while *meg-vet* PERF-throw "despise" is an absolutely non-compositional PVC: the particle *meg*, which solely has a perfectivising role in present day Hungarian does not even make the verb (or the resulting PVC) perfective; thus, we can safely conclude that the adverb does not modify this *meg* only. Thus, *meg-vet* PERF-throw "despise" is an even better example of a non-compositional PVC than the most often used example, also cited from É. Kiss (1994a) above: *be-rúg* "get drunk" [*lit*. "in-kick"]: in this latter case, the non-compositionally used particle, *be* "in", at least has a perfectivising role. Hegedűs claims that when the particle is clearly resultative, in that there is no related PP in the clause, its modifier needs to be preverbal. In this respect particles behave in the same way as other resultative phrases. Consider her examples in (22).

(22) a. *A gyerekek teljesen szét-szedték a játékot.*
the children completely apart-took the toy.ACC
"The children took the toy completely apart."
b. *A kovács teljesen lapos-ra kalapálta a vasat.*
the smith completely flat-SUB hammered the iron.ACC
"The smith hammered the iron completely flat."

Hegedűs points out that the preverb in (22a) and the resultative phrase in (22b) share the same properties, which means that particle movement does not involve head movement of the p out of the SC, but movement of the whole pP, where the complement PathP or PlaceP is stranded, just like the complement of adjectival predicates is stranded in copula clauses. See her schematised representation in (23).

(23)


In my opinion this argument, which is similar in nature to the previous one, is not very strong, either. The claim here, too, is that although the p head *szét* "apart" has no complement, it can take a modifier; thus, this combination is a phrase (a pP), and this is moved to Spec,VP. First of all, my intuition is the same as in the case of the previous examples in (21): in my interpretation, *teljesen* "completely" in (22a) modifies the entire VP, which contains *szét* "apart". However, my reading of (22b) is that the same adverb really modifies the adjective *laposra* "flat.SUB", and we are dealing with an AP. I think this contrast between (22a) and (22b) is supported by the following pair of examples.

(24) A. *A gyerekek szét-szedték a játékot?*
the children apart-took the toy.ACC
"Did the children take the toy apart?"
B. *(??Teljesen) Szét.*
completely apart

(25) A. *A kovács lapos-ra kalapálta a vasat?*
the smith flat-SUB hammered the iron.ACC
"Did the smith hammer the iron flat?"
B. *(Teljesen) Lapos-ra.*
completely flat-SUB

If the two 'resultative types' were really fully parallel, as Hegedűs claims, we would expect (24B) to be as acceptable as (25B). This does not seem to be the case, and in my opinion this can be explained by assuming that *teljesen* "completely" does not modify *szét* "apart".

Despite these remarks I do not question the plausibility of assuming that particles exhibit phrasal behaviour. My main claim is that I do not find Hegedűs' modifiability arguments convincing. In § 3.1.4.2, I discuss the categorial and phrasal issues of the treatment of Hungarian preverbs in an LFG-XLE framework, with special attention to Toivonen's (2001) theory of non-projecting words.

Hegedűs has a separate section on 'variation and the "duplication" pattern'. Consider one of her examples in (26).

(26) *Valaki* *rá-lépett* *a* *lábam-ra*.
someone onto-stepped.3SG the foot.1SG-SUB
"Someone stepped on my foot."

The crucial property of this pP type is that the spatial (directional) p head is a morphological cognate of the suffixal postposition in the PP complement, cf. *rá-* and *-ra* in (26). First, Hegedűs briefly mentions two lexical treatments.

> Under one analysis, the particle forms a lexical unit with the verb, and it is the complex that takes an oblique case marked DP (cf. Kálmán & Trón 2000 and Laczkó & Rákosi 2013, who deal with this type of data). Since I have been advocating a movement based approach to particle-verb units in the previous section (based on the fact that particles can form complex pPs with the postverbal PPs), I try to incorporate these pieces of data under a syntactic approach as well.
> (Hegedűs 2013: 120)

Then she offers a short critical overview of some previous MP analyses along the following lines.

É. Kiss (2002) proposes that there are two coindexed PPs in this PVC type. The preverb is an argument PP and the other PP is a coindexed adjunct. This coindexing is a kind of agreement relationship, which is an explanation for the almost identical morphological forms.

In Ürögdi's (2003) copy theory approach the preverb is taken to be the spellout of the formal features of the PP, and, consequently, it has no lexical content in its own right. The morphological (near-)identity of the preverb and the suffix in the PP is due to the fact that they spell out the same features.

In Surányi's (2009a,b,c) alternative copy-theory-based analysis the preverbal and the postverbal elements are members of a movement chain, and they spell out different parts of the same phrase after chain reduction has taken place.

Hegedűs' joint criticism of these three approaches is that all of them face empirical problems, which have mostly to do with variation: the optionality/obligatoriness of the particle. She makes the following concluding remarks.

> The alternation patterns that we observed here can be explained by the function of the particle in the clause. Complex predicate formation can be obtained by moving the particle, or, when the particle is morphologically unexpressed, the PP into the preverbal position. In both cases, however, we are dealing with movement of a predicative pP. When exactly the particle can remain unexpressed is subject to future research but it seems to be determined by the selecting verb and its lexical properties. (Hegedűs 2013: 122–123)

Let me make the following comments on all this. Hegedűs criticises the previous MP (i.e., syntactic) approaches by claiming that they have problems with capturing the optionality/obligatoriness of the particle in these constructions. However, she herself does not present any details of an alternative analysis that could be taken to show that her approach fares any better in this respect. She leaves this to future research. She only points out that this variation is likely to be capturable in terms of the nature of the verb and its 'lexical properties'. When she refers to our lexicalist approach in Laczkó & Rákosi (2013), her only comment is that her framework is syntactically oriented and she sets out to develop an analysis in this component of the grammar. I believe that our lexicalist approach does not suffer from what Hegedűs claims to be a shared shortcoming of the alternative syntactic approaches. Ironically, this seems to include her own approach at this stage of development. Moreover, the previous quote from her seems to imply that indirectly Hegedűs herself assumes that the relevant aspects of these phenomena call for an (at least partially) lexical treatment, which is exactly the main trait of our approach.

3.1.2 Lexicalist treatments of PVCs

In this section, I first discuss a variety of lexicalist approaches to complex predicates cross-linguistically (§ 3.1.2.1). Then I offer a brief overview of three salient lexical approaches to PVC phenomena outside the LFG framework: GASG in § 3.1.2.2, HPSG in § 3.1.2.3, and Realisation-Based Lexicalism (RBL), subscribing to the inferential-realisational view of morphology, in § 3.1.2.4. My general comment on each is that, as far as I am aware of existing analyses of the phenomena under investigation in these frameworks, they are not explicit, but all of them seem to have the potential, i.e., suitable lexicalist architecture, principles and formal devices, for the development of detailed and coherent analyses of the relevant phenomena.

3.1.2.1 *Lexicalist approaches to complex predicates*

In Laczkó & Rákosi (2013) we discuss the most important aspects of our LFG-XLE treatment of PVCs in Laczkó & Rákosi (2011) and Rákosi & Laczkó (2011) both from a cross-theoretical and from an LFG-theoretical perspective. We compare the nature of our analysis with alternative treatments of complex predicates in the LFG tradition.

We point out that PVC formation is a derivational process: typically a new argument structure is brought about, either compositionally or non-compositionally. In this connection the first general issue is how morphological processes are handled in a particular framework in the light of the following theoretical options.

– The Strong Lexicalist Hypothesis (SLH) holds that all morphological processes (both derivation and inflection) have to be treated in the lexical component of the grammar.
– The Weak Lexicalist Hypothesis (WLH) assumes that derivation is lexical and inflection is syntactic.
– The Non-Lexicalist Hypothesis (NLH) treats both major types of morphological processes in the syntactic component.

As is well-known, in the mainstream Chomskyan tradition, at different stages and in various models, there have been analyses in the spirit of all the three approaches. The classical architectural design of LFG subscribes to SLH, which is still widely accepted in the LFG community. However, there are also alternative LFG approaches, equipped with the necessary formal apparatus, that do accommodate syntactic complex predicate formation affecting argument structure under certain circumstances. We can find an interesting debate on the locus of handling complex predicates based on several independent phenomena in a variety of languages in Alsina et al. (1997). Two papers in that volume are of special importance from our present perspective: Alsina (1997) and Ackerman & Lesourd (1997).

In Alsina's (1997) view, complex predicate formation can take place either in the lexicon or in the syntax. He claims that this difference has no effect on the argument structure of the complex predicate, but only on its wordhood. He makes a comparison between causative constructions in Chichewâ (a Bantu language) and Catalan (a Romance language). In his analysis these constructions are basically identical as far as their argument structures are concerned, but they differ in that the causative predicate is expressed by a single word in Chichewâ, and by two distinct words in Catalan. He demonstrates that this difference is manifested by the contrasting behaviour of causative complex predicates in these languages as regards phenomena relevant to distinguishing morphological structures from syntactic structures. Alsina takes this to support the claim that predicatehood does not necessarily coincide with morphological integrity, as opposed to the fundamental assumptions of lexicalist theories, including LFG. He argues that such a theory should be modified by enabling it to accommodate complex predicate (and, ultimately, argument structure) formation either in the lexicon or in the syntax. He works out an LFG account of the relevant phenomena along these lines. In addition, Butt (1997), in the same volume, analyses Urdu permissive constructions in a similar syntactic complex predicate formation vein.

Ackerman & Lesourd (1997), also in Alsina et al. (1997), very strongly advocate a strict and uniform lexicalist approach to all kinds of complex predicate formation resulting in argument structure alterations, irrespective of the number and nature of possible syntactic properties that certain complex predicate types in individual languages may have. Discussing some Hungarian PVCs, they argue for a strictly lexicalist treatment of complex predicates even in cases when the pieces of certain predicate types are definitely and predictably separable in the syntax. They claim that such a complex predicate type manifests a basic theoretical conflict between two widely accepted assumptions.

a. the lexicalist approach to derivation: only lexical rules may have an effect on lexical semantics, polyadicity, case government, etc.
b. the lexical integrity hypothesis: parts of a (morphological) word are not separable syntactically

They propose a solution in which (a) is non-violable and (b) is radically weakened: although it is the default scenario, in their system a morphological word can consist of more than one syntactic atom as a marked option. On the basis of these assumptions, they demonstrate their cross-linguistic, typological view of handling complex predicates in Table 3.2 (Ackerman & Lesourd 1997: 100) by also reflecting on, and taking issue with, Alsina's (1997) analysis of Chicheŵa and Catalan causative complex predicates.

Table 3.2 A typology of complex predicates

	Chicheŵa	**Hungarian**	**Catalan**
lexical information	sem-structure a-structure gf-structure	sem-structure a-structure gf-structure	sem-structure a-structure gf-structure
morphological form	synthetic morphological object: $[X\ Y]_V$	analytic morphological object: $[X]_{Prt}$, $[Y]_V$	non-morphological object: $[X]_V$, $[Y]_V$
syntactic expression	single syntactic atom: $[X\ Y]_V$	two syntactic atoms: $[X]_{Prt}$, $[Y]_V$	two syntactic atoms: $[X]_V$, $[Y]_V$

They point out that É. Kiss (1987) offers a GB account that can be taken to be lexical in nature. Its essence is that the particle+verb combination is a V^0 element in the lexicon and its peculiarity is that it is exempt from the otherwise obligatory morphological process called bracket erasure. In É. Kiss's notation, it has the following lexical representation: $[[\text{Prev}]\ [V^0]]_{V^0}$. This is roughly comparable to Ackerman & Lesourd's (1997) notion of an analytic lexical form. By contrast, Alsina (1997) and Butt (1997) solve this dilemma in the opposite way: they maintain (b) and weaken (a). In this connection the crucial general point from our present perspective is that tenable analyses of PVCs may differ considerably, because some aspects of the designs of their respective frameworks are different, cf. the foregoing brief discussion of SLH, WLH and NLH. Furthermore, and even more significantly, when there is a conflict between certain basic assumptions, the fundamental aspects of competing accounts may be dependent on the directionality of their conflict resolution.

The most important aspects of Ackerman & Lesourd's (1997) approach are as follows. Hungarian PVC complex predicate formation and causative complex predicate formation both in Chicheŵa and in Catalan are strictly lexical processes, because they affect the semantics and argument structure of the derived complex predicate (and grammatical function distribution is also affected), see the *lexical information row* in Table 3.2.

Among the predicate types at hand, the Chicheŵa causative predicate represents the default scenario, which would not pose any problems for an ordinary generative framework: this predicate is a one-word verb, a morphologically complex word, and it is one syntactic object: the stem and the affix never get separated in the syntax.

The Hungarian PVC complex predicate exhibits the special, marked case: it is one morphological word consisting of two syntactic atoms (words).

The Catalan causative complex predicate represents the other extreme: the two elements of the predicate are distinct words both morphologically and syntactically. However, given that their combination results in a new argument structure, they need to be represented in the same lexical entry.

In Table 3.3 Ackerman et al. (2011: 332) provide a taxonomic overview of how various lexicalist frameworks handle complex predicates with mixed lexical and syntactic properties. See Ackerman et al. (2011) for the details of their discussion of the approaches referred to in Table 3.3.

Table 3.3 Taxonomy of lexicalist approaches

Approach	**(1) Morphological integrity**	**(2) Lexical modification**	**(3) Morpholexical inflection**	**(4) Unary expression**
Classical LFG and HPSG (Bresnan 1982b; Pollard & Sag 1987)	Yes	Yes	Yes	Yes
Some recent views in LFG and HPSG (Hinrichs & Nakazawa 1989, 1994); (Alsina 1992, 1997; Butt 2003; Müller 2006)	Yes	No	Yes/ No	Yes
Realisation-based lexicalism	Yes	Yes	Yes	No

The definitions of the four criteria in Table 3.3 are shown in Table 3.4 (Ackerman et al. 2011: 326). Note that the combination of (2) and (3) characterises the morphological approach referred to as the Strong Lexicalist Hypothesis (cf. classical LFG and HPSG). (2) alone characterises the Weak Lexicalist Hypothesis (cf. GB). If neither (2) nor (3) is observed, the approach is non-lexicalist (cf. MP).

Table 3.4 Definitions of criteria (1)–(4) in Table 3.3

(1)	*Principle of morphological integrity:* Syntactic mechanisms neither make reference to a word form's proper subparts nor are able to create new word forms in constituent structure.
(2)	*Principle of lexical modification:* The lexical properties (meaning, argument structure, grammatical function inventories, and case government patterns) associated with a lexeme are fully determined by lexical stipulation together with rules of lexeme derivation and cannot be altered by items of the syntactic context in which a realisation of that lexeme appears.
(3)	*Principle of morpholexical inflection:* The morphosyntactic content associated with a lexeme's realisation is fully determined by lexical stipulation together with rules of inflectional morphology and cannot be altered by items of the syntactic context in which a realisation appears.
(4)	*Principle of unary expression:* In syntax, a lexeme is uniformly expressed as a single morphophonologically integrated and syntactically atomic word form.

I do not deal here with challenges posed by inflectional phenomena, so column (3) is not directly relevant here. However, my view and my treatment of periphrastic inflectional phenomena in Hungarian are essentially the same as my view and my treatment of periphrastic PVCs in Hungarian to be presented in § 3.1.5.[1]

As should also be clear from the foregoing discussion, the crucial challenge for lexicalist frameworks is to choose between allowing derivation to take place in the syntax as a marked option: *No* in (2), and admitting analytic (periphrastic) lexical (morphological) objects as a marked option: *No* in (4). The inferential-realisational approach subscribes to the latter option.

I point out in § 3.1.4 and § 3.1.5 that Forst et al. (2010), Laczkó & Rákosi (2011), Rákosi & Laczkó (2011) and Laczkó & Rákosi (2013) develop LFG-XLE analyses in

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1. In Laczkó (2015b) I developed an inferential-realisational LFG-XLE analysis of the periphrastic Hungarian irrealis mood exemplified in (i).

(i)	*János*	***sétál-t***	***vol-na***	*a*	*park-ban.*
	John.NOM	walk-PAST.3SG.INDEF	be-COND	the	park-in
	"John would have walked in the park."				

The paradigm of this mood in Hungarian consists of two syntactic atoms: a lexical verb in the past tense, inflected for person, number and (in)definiteness, and an invariant form of the copula marked for conditional mood.

which productive, compositional PVCs are handled syntactically (*No* in (2)), and they have a special lexical treatment of non-productive, non-compositional PVCs. By contrast, in Laczkó (2013) I argue for a uniform lexical treatment of both major PVC types (*Yes* in (2)).

The special property of those LFG-XLE analyses mentioned in the previous paragraph that do not assume syntactic complex predicate formation (*Yes* in (2)) is that they do not employ analytic (periphrastic) lexical entries; instead, they apply cross-referencing devices that combine a preverb and a verb in the given PVC configuration, with respect to meaning, argument structure and all the other properties of this complex predicate, including the forms and functions of its arguments. Thus, in the strict sense of the term they have *Yes* in (4), too.

3.1.2.2 *Generative Argument Structure Grammar on Hungarian VMs*

I gave a general introduction to GASG in § 1.1.2.2. Here I briefly present how Szilágyi (2008) treats in this framework VMs and foci and their interaction in Hungarian. Below I use her examples in their original forms.

The basic assumption is that aspect must be expressed immediately preverbally by a suitable argument, typically by a preverb: (27a), or by a bare noun phrase: (27b). Sometimes the verb itself can perform this function: (27c).

(27) a. *Péter* *megírta* *a* *leckét*.
Peter.NOM Perf+write.Past3Sg the homework.ACC
"Peter has written the homework."
b. *Már* *három hete* *újságot* *árulok*.
already three week newspaper.ACC sell.1Sg
"I have been selling newspapers for three weeks already."
c. *Péter* *csalódik* *Mariban*.
Peter.NOM get_disappointed.3Sg Mary.INESS
"Peter gets disappointed in Mary."

Another important GASG claim, shared by many other approaches, is that Hungarian preverbs are complements of their verbs. In this system, preverbs have two word order rank parameters. In (28a), which is a neutral sentence, the preverb *el* "away", because it has a strong parameter, has to precede the verb *indul* "get started". Only the preverb receives stress and it makes up a phonological word with the stressless verb. In (28b′) and (28b″), by contrast, the preverb follows the verb, due to the fact that the rank parameter of a focused constituent (*horgászni* and *Péter*, respectively) is stronger than the strong parameter of the preverb. Therefore, in the case of such focused sentences the weaker rank parameter of the preverb is employed, and, as a consequence, it occurs after the verb.

(28) a. *Péter elindul horgászni.*
Peter.NOM away+go3Sg fish.INF
"Peter goes fishing."

b′. *Péter ’horgászni indul el.*
Peter.NOM fish.INF go-3Sg away
"Why Peter goes away is that he will fish."

b″. *’Péter indul el horgászni.*
Peter.NOM go.3Sg away fish.INF
"It is Peter who goes fishing."

For an additional example of a GASG analysis of the VM vs. focus ranking competition, see § 1.1.2.2.

Although the GASG approach to VMs is rather underdeveloped at this stage, as far as I am aware, it has a fully suitable theoretical and detailed formal apparatus that can serve as an efficient framework for accommodating the analysis of all major VM types in Hungarian. As a lexicalist theory, it is very close in spirit to LFG; therefore, the solutions the two frameworks make available are very similar in nature. For instance, in my LFG analysis in § 3.2, I also lexically encode the fact that the preverb of particle verb constructions must immediately precede the verb in neutral sentences (in my system, it must occupy the Spec,VP position), and in a non-neutral, focused sentence this position is not available to it, because it is occupied by the focused constituent. I encode this complementary distribution information with suitable functional annotations in the lexical form of the preverb and disjunctive functional annotations associated with the Spec,VP position.

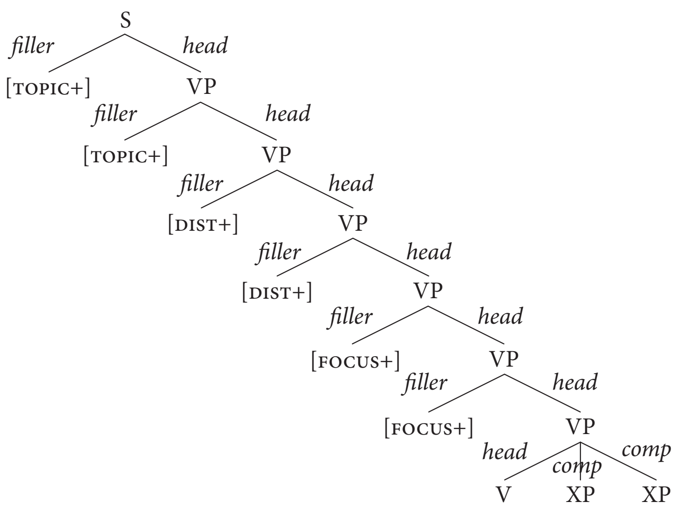
I find the sweeping generalisation in the current analytical state of affairs in GASG that preverbs are, as a rule, also complements of the verb (just like all other VM types) problematic. In § 3.1.4 and § 3.1.5, I present (versions of) an LFG-XLE approach in which it is assumed that preverbs and verbs in PVCs make up complex predicates in the true and strict sense of the term. At the same time, I believe that the inventory of GASG's formal devices makes the development of an alternative approach along these complex predicate formation lines available in principle.

3.1.2.3 *Head-Driven Phrase Structure Grammar on Hungarian VMs*

In § 2.1.3, I offered an overview of the essential aspects, from the perspective of this book, of Szécsényi's (2009, 2011, 2013) HPSG analysis of Hungarian finite and non-finite sentences. For convenience, here I repeat the part of the discussion in that section which is directly relevant to a possible treatment of Hungarian VMs in HPSG.

Szécsényi postulates the structure shown in (29) for Hungarian finite sentences.

(29)



Following the MP tradition in this respect, he assumes that a VM, which is taken to be a complement of the verb, makes up a complex predicate with that verb. In his analysis, a VM occupies a special, designated VP-initial position, immediately preceding the verb. Not only a preverb, but other (designated) complements of the verb can have this VM status; for obvious reasons, in each individual case only a single element can function as a VM. Szécsényi identifies this designated element by a special feature CAR (standing for 'verb-carrier', a term borrowed from Kálmán & Rádai (1998)), and assumes that this element must occupy the VP initial position in neutral sentences. Szécsényi treats focusing as a lexical process. Its essence is that the verb gives the focus feature (F-GIVE) to one of its complements or adjuncts. At the same time, the CAR feature must be (or must become) empty. See Szécsényi's (2011) schematised Focus Selecting Lexical Rule in (30).

(30)

$$\begin{bmatrix} \text{COMPS} & \langle \ldots, \boxed{1}[\text{FOCUS} -], \ldots \rangle \\ \text{F-GIVE} & \boxed{2} \\ \text{CONTENT} & \alpha \end{bmatrix}$$

$$\Downarrow$$

$$\begin{bmatrix} \text{COMPS} & \langle \ldots, \boxed{1}[\text{FOCUS} +], \ldots \rangle \\ \text{CAR} & \textit{none} \\ \text{F-GIVE} & \boxed{2} \oplus \langle \boxed{1} \rangle \\ \text{CONTENT} & \beta \end{bmatrix}$$

On this account the focus and the VM occupy two distinct syntactic positions: the former is VP-adjoined and the latter is VP-initial. Their complementarity is encoded (constrained) by the rule in (30).

My comments on Szécsényi's HPSG approach to VMs are very similar to my comments on Szilágyi's (2008) GASG approach in the previous section. At this stage, Szécsényi's account is also rather underdeveloped, as far as I can see. At the same time, it is obvious that this model also provides a suitable theoretical and formal apparatus for an analysis of all major VM types in Hungarian. As a lexicalist theory, it is very close in spirit to LFG; therefore, the (potential) solutions the two frameworks make available are very similar in nature. As I pointed out in § 1.1.2.3 in Chapter 1, it is even more lexical than LFG.

I find Szécsényi's sweeping generalisation that preverbs are, as rule, also complements of the verb (just like all other VM types), problematic, see my comment on Szilágyi's (2008) same generalisation in the previous section. In § 3.1.4 and § 3.1.5, I present (versions of) an LFG-XLE approach in which it is assumed that preverbs and verbs in PVCs make up complex predicates in the true and strict sense of the term, and this holds not only for non-compositional PVCs (in the case of which the postulation of a predicate-complement relationship is highly implausible) but also for productive, compositional PVCs. In my opinion HPSG's formal devices would make the development of an alternative approach along these complex predicate formation lines available in principle.

I think that in his HPSG framework Szécsényi would not be forced to assume that VMs and foci occupy distinct syntactic positions (in the spirit of the mainstream MP view), and he could capture their complementarity (intuitively) more straightforwardly by assuming a single position for which the two elements compete.

Kálmán & Trón (2000) informally outline the basic ingredients of an HPSG style analysis of 'agreeing PVCs', i.e., PVCs whose preverb is formally (morphologically) identical, or very similar, to the case suffix of an oblique argument of the PVC. The particles in this PVC type are also called 'reduplicating particles', see § 3.1.4.2.

3.1.2.4 *Realisation-Based Lexicalism on Hungarian VMs*

In their RBL approach, Ackerman (2003) and Ackerman et al. (2011) adopt the notion of Ackerman & Webelhuth's (1998) 'Morphological Expression' and they employ the following realisation principles (L stands for lexeme).

(31) a. 'Synthetic realisation principle'
Where the realisation *w* of <L,δ> is a synthetic member of category X, *w* may be inserted as the head of XP.

b. ‘Periphrastic realisation principle’
Where the realisation w_1w_2 of <L,δ> is periphrastic and w_1 and w_2 belong to the respective categories X and Y, w_1 and w_2 may be inserted as the heads of the respective nodes X(P) and Y(P).
[δ = either morphosyntactic or derivational properties]

Crucially, in this approach both inflectional processes and derivational processes are treated in a paradigmatic-realisational fashion, see the interpretation of δ in square brackets in (31b). In particular, PVC-formation, a derivational process, whether compositional or non-compositional, can be analysed in a uniform and coherent manner in this system. Also note that in the case of PVCs this principle makes the treatment of the preverb as a phrasal projection available in principle. The X^0 vs. XP status of the preverb is one of the central issues in the analysis of PVCs across theories.

Furthermore, this system allows both the synthetic (= concatenational) and the analytic (= juxtapositional) realisation of predicates with certain featural compositions. In the analysis of PVCs, for instance, the preverb and the verb can be realised as either one (morphologically complex) syntactic atom (Concat) or two distinct syntactic atoms (Juxtap). Consider Table 3.5 (Ackerman et al. 2011: 350).

Table 3.5 The treatment of PVCs in Ackerman et al. (2011)

Lexeme	**Root**	**Sample content cell**	**Realisation of SCC**
OLVAS ‘read’	*olvas*	<OLVAS, {1sg pres def}>	*olvas-om*
<FEL,OLVAS> ‘read aloud’	Concat (*fel, olvas*) (= *felolvas*) Juxtap (*fel, olvas*) (= [*fel olvas*])	<<FEL, OLVAS>,{1sg pres def}>	Concat (*fel, olvas-om*) (= *felolvasom*) Juxtap (*fel, olvas-om*) (= [*fel olvasom*])
<OLVAS, caus> ‘cause to read’	*olvas-tat*	<<OLVAS, caus>{1sg pres def}>	*olvas-tat-om*
<<FEL,OLVAS>, caus> ‘cause to read aloud’	Concat (*fel, olvas-tat*) (= *felolvas-tat*) Juxtap (*fel, olvas-tat*) (= [*fel olvastat*])	<<<FEL, OLVAS>, caus> {1sg pres def}>	Concat (*fel, olvas-tat-om*) (= *felolvastatom*) Juxtap (*fel, olvas-tat-om*) (= [*fel olvastatom*])

I think that assuming that finite PVCs like *fel#olvasom* “I read out” can (also) have a synthetic (concatenational) realisation is not feasible for the following reason. It allows, or rather requires, the insertion of this synthetic form under V^0. From this it follows that this form could be preceded by a (preverbal) focused constituent, contrary to fact. Compare (32a) and (32b).

(32) a. *A VERS-ET olvas-om fel.*
the poem-ACC read-PRES.3SG up
"I read out THE POEM."
b. **A VERS-ET fel-olvas-om.*
the poem-ACC up-read-PRES.3SG
"I read out THE POEM."

The juxtapositional analysis of *fel#olvasom* "I read out" naturally captures the fact that a preverbal focused constituent forces the particle to occur postverbally, as in (32a). As I point out several times in this book, all the works in the RBL paradigm that I am aware of, and which discuss Hungarian PVCs in particular and VMs in general, are rather sketchy, and they concentrate on arguing for and outlining the formal lexical (lexemic) treatment of analytic morphological objects. For instance, they do not spell out how they can capture the preverbal complementarity of VMs and foci.

The concatenational analysis of *fel#olvasom* "I read out" should also admit (32b) as a grammatical sentence, which it is not. Of course, there may be a way of excluding (32b) in this RBL approach as well, but this issue is not at all addressed in these works.[2] Irrespective of what the actual solution could be, I think it would be a simpler and more straightforward solution to prevent finite PVCs (and VMs in general) from having synthetic (concatenational) lexical forms. At the same time, I share the view that alternative concatenational forms of non-finite PVCs also need to be postulated. In this book I do not deal with nominalisation phenomena or non-finite (participial and infinitival) constructions. I leave these areas to future research. Here I confine myself to illustrating some crucial facts and informally outlining a possible treatment. Compare the examples in (33) and (34) with one another and with the examples in (32).

(33) a. *Elkerülhetetlen volt A VERS-ET olvas-ni fel.*
unavoidable was the poem-ACC read-INF up
"It was unavoidable to read out THE POEM."
b. *Elkerülhetetlen volt A VERS-ET fel-olvas-ni.*
unavoidable was the poem-ACC up-read-INF
"It was unavoidable to read out THE POEM."

2. Farrell Ackerman (p.c., April 2016) made the following comment. "Even if concatenated variants were placed under V^0s, there is no reason why the obvious systemic generalisation that there can only be a single VM per V would not outlaw the relevant examples here." As I emphasise above, I readily admit that there may be a solution in this approach, too; however, this inevitably and (in my view) unnecessarily complicates the analysis.

(34) a. **Elkerülhetetlen volt* A VERS *olvas-ás-a fel.*
unavoidable was the poem.NOM read-DEV-POSS.3SG up
"The reading out of THE POEM was unavoidable."

b. *Elkerülhetetlen volt* A VERS *fel-olvas-ás-a.*
unavoidable was the poem.NOM up-read-DEV-POSS.3SG
"The reading out of THE POEM was unavoidable."

The following generalisations suggest themselves on the basis of the examples in (32), (33) and (34). The root lexemes of PVCs have both concatenational and juxtapositional realisations. When they undergo morphological processes, it depends on the type of the suffix whether both realisations can serve as input to the relevant process, or just one of them. In the latter case, it depends on the type of the suffix whether it accepts the concatenational or the juxtapositional form. Finite inflectional morphology takes the juxtapositional version, see (32). The infinitival suffix, *-ni*, glossed as INF, accepts either realisation, see (33). The Hungarian 'adverbial' participial suffix *-vA* behaves similarly. The (complex) event nominaliser, *-Ás*, glossed as DEV, takes the concatenational variant, see (34). The Hungarian 'adjectival' participial sufixes *-Ó, -(V)(t)t* and *-AndÓ* behave similarly.

All this can be represented in the formalism of Table 3.5 as shown in Table 3.6.

Table 3.6 PVCs, morphological processes and juxtaposition and/or concatenation

Lexeme	Root	Sample content cell	Realisation of SCC
<FEL,OLVAS> "read aloud"	Concat (*fel, olvas*) (= *felolvas*) Juxtap (*fel, olvas*) (= [*fel olvas*])	<<FEL, OLVAS>, {1sg pres def}>	Juxtap (*fel, olvas-om*) (= [*fel olvasom*])
<FEL,OLVAS> "read aloud"	Concat (*fel, olvas*) (= *felolvas*) Juxtap (*fel, olvas*) (= [*fel olvas*])	<<FEL, OLVAS>, {INF}>	Concat (*fel, olvas-ni*) (= *felolvasni*) Juxtap (*fel, olvas-ni*) (= [*fel olvasni*])
<FEL,OLVAS> "read aloud"	Concat (*fel, olvas*) (= *felolvas*) Juxtap (*fel, olvas*) (= [*fel olvas*])	<<FEL, OLVAS>, {DEV}>	Concat (*fel, olvas-ás*) (= *felolvasás*)

Notice that both in this (modified) RBL approach and in my LFG-XLE analysis to be developed in future work, the variation in the relevant set of phenomena exemplified in (32), (33) and (34) can be captured by dint of a very simple lexical solution along the lines of Table 3.6. By contrast, a mainstream MP approach needs to employ a rather complex syntactic apparatus to capture the same linguistic facts. I keep emphasising this syntax vs. lexicon discrepancy between MP and alternative lexicalist analyses throughout this book, by always admitting that both approaches have the attested potential for capturing the relevant generalisations in explicit and coherent ways, and the fundamental difference between them is due to dissimilar architectural assumptions.

At the end of this section, let me make some general remarks on the relevant aspects of RBL from the perspective of the treatment of Hungarian PVCs on the basis of Ackerman (2003) and Ackerman et al. (2011). Both papers, especially the latter, fundamentally concentrate on what general arguments PVCs provide for the strictly lexicalist, realisation-based, paradigmatic approach. Neither develops an analysis of Hungarian PVCs.

As a crucially lexicalist theory in the relevant respects, RBL is very close in spirit to the classical version of LFG; therefore, the potential solutions the two frameworks make available are very similar in nature. In § 3.1.5 I point out that this similarity is the fullest in the case of my new LFG-XLE approach.

In § 3.1.5 I present my new analysis of Hungarian PVCs and compare it to some relevant aspects of Ackerman's (2003) approach to PVCs and VMs, so I defer the discussion of the details of his analysis to that section. Let me anticipate two crucial issues of this comparison.

One of the key differences between these two lexical approaches is that, following the LFG-XLE line of Forst et al. (2010), Laczkó & Rákosi (2011), Rákosi & Laczkó (2011) and Laczkó & Rákosi (2013), I do not employ analytic (periphrastic) lexical entries. Instead, the preverb and the lexical verb have their respective lexical forms and they are combined by special LFG-XLE cross-referencing devices.

Just like many other lexical and syntactic approaches, Ackerman (2003) appears to aim at a uniform analytic lexemic treatment of all VM types in Hungarian. In § 3.1.5 and § 3.2, I strongly argue against such a view. In § 3.2, I spell out my LFG-XLE analysis of the major VM types. The crucial aspect of this account is that various VM types exhibit varying degrees of lexicality, and I claim that my formal analysis feasibly and suitably captures the relevant facts.

I have discussed the RBL framework at great length for the following reasons. This approach addresses the challenges posed by PVCs for formal theoretical analysis from the perspective of lexicalist theories in general and LFG in particular. It proposes a truly lexical solution in the spirit of classical LFG, and rejects a major alternative solution: weakening LFG's morphological commitment to the Strong Lexicalist Hypothesis and (exceptionally) allowing derivation to take place in the syntax.

3.1.3 On some LFG(-compatible) views of PVCs

In this section I sketch how researchers dealing with Hungarian in an LFG or LFG-compatible, i.e., Optimality Theoretic (OT), framework view PVCs and VMs in general. I discuss previous detailed LFG-XLE analyses in § 3.1.4 and point out that they also subscribe to weakening SLH. By contrast, my new proposal to be presented in § 3.1.5 is very close in spirit to the RBL approach in this respect. Practically, it is an alternative way of theoretically and implementationally formalising a strictly lexicalist approach in the SLH vein.

As I showed in § 2.2 in detail, in their Optimality Theoretic framework, Payne and Chisarik (2000) outline an analysis of Hungarian preverbal syntactic phenomena: the complementarity of constituent question expressions, focused constituents, the negative particle and verbal modifiers. Here I briefly reiterate my critical remarks on their treatment of VMs and focus. I discuss further details, mostly pertaining to their handling negation, in Chapter 5.

Referring to É. Kiss (1994a), Payne and Chisarik (2000) assume that both VMs and NMR are morphologically incorporated into the verb optionally. When they are left-adjacent to the verb, they are incorporated, and elsewhere they are independent syntactic elements. There are two problematic aspects of this view. First of all, É. Kiss (1994a) only assumes semantic incorporation of VMs even when they are preverbal, and she claims that even preverbally they are syntactically separate elements, occupying the Spec,VP position in her system. Secondly, É. Kiss (1994a) does not incorporate the negative marker morphologically, either. Instead, she adjoins it to the verbal head. By contrast, É. Kiss (1992) left-adjoins her NEG to V′. É. Kiss' (1994a) solution is an instance of head-adjunction, and É. Kiss' (1992) treatment is phrasal adjunction. For more on this, see Chapter 5.

Naturally, morphological incorporation could be an alternative solution, but this would require argumentation and supporting evidence. In § 3.2.2, I argue in a detailed fashion against the incorporation analysis of VMs in general. One of my main arguments is that some VM types are unquestionably maximal projections (XPs).

Even if we accept the morphological incorporation treatment, it raises a conceptual problem: Payne & Chisarik's (2000) alignment rules mix two dimensions, a syntactic level and a morphological level. This is a rather marked solution the nature of which would call for some independent support, and it would be an appealing alternative if no other (less marked) solution was available. And this latter requirement does not seem to be satisfied, see the next paragraph.

Even if we disregard the syntax-morphology-mix issue and accept the analysis, it is important to see that Payne & Chisarik (2000) do assume two distinct positions for VMs, on the one hand, and for INT, FOC and NEG, on the other hand. From this it follows that there is no radical conceptual difference between their idea and the GB/MP style FP analyses they criticise. They explicitly state that their alignment hierarchy has been designed to capture the preverbal complementarity of INT, FOC, NEG *and* VMs in such a way that VMs are the weakest candidates. Then it is rather questionable why VMs are assumed to occupy a different position at a distinct level of representation.

As far as I can see, OT, Payne & Chisarik's (2000) chosen framework, would naturally provide suitable principles and devices to capture this famous complementarity in an intuitively more plausible way. An alternative OT analysis could be to postulate a single designated preverbal position and to assume that all the relevant constituents compete for this position and various violable constraints regulate their complementarity in that position. In this chapter I present an LFG analysis along the single designated position lines (with a system of various disjunctions of functional annotations), and it seems to me that this approach could also be translated into OT terms.

Following a widely held view, Mycock (2006, 2010), just like Payne & Chisarik (2000), assumes that a VM and the verb make up a word both morphologically and phonologically, and they also constitute a single unit semantically. Naturally, my critical remarks on Payne & Chisarik's (2000) similar assumptions apply here, too. Mycock does not go into any detail about VMs. Chapter 4 is based on my extensive discussion of Mycock's (2010) view of the preverbal domain of Hungarian finite sentences. In that chapter I make some additional VM-related observations.

In § 2.2, I offered a detailed discussion of Gazdik's (2012) LFG analysis of Hungarian finite sentence structure, predominantly driven by discourse functional assumptions and considerations. Here I confine myself to briefly repeating those parts of my assessment of her approach that are directly relevant for the appreciation of her view of preverbs and VMs in general.

Following the general descriptive tradition, Gazdik uses the umbrella term VM rather vaguely. In a suitable LFG (or other generative theoretical) representation, the VM symbol is more than questionable (it is not an appropriate syntactic category to begin with), and the real categories it subsumes in Gazdik's rather informal presentation are so diverse that they themselves call for a detailed and differential, i.e., individuated, treatment, instead of lumping together preverbs, obligatorily bare nouns and fully-fledged XPs.

Gazdik also shares the widely spread, and definitely untenable, sweeping generalisation that a (preverbal) VM and a verb always make up a complex predicate and form a lexical unit. The notion of complex predicate is typically not satisfactorily defined (if at all) in various approaches in general and in Gazdik's in particular. For instance, it is questionable whether in her 'goal secondary predicate' example in (36) in § 2.2 in Chapter 2, repeated here as (35) for convenience, *Szegedre* "to Szeged" and the verb are analysable as a lexical unit in any (generative) linguistically meaningful sense.[3]

(35) *'János **'Szegedre** utazott.*
John Szeged.SUBL travel.PST
"John travelled to Szeged."

In addition, Gazdik subscribes to the split focus–VM view, assuming distinct syntactic positions for these two major constituent types.

3.1.4 Previous LFG-XLE treatments of Hungarian PVCs

In § 3.1.4.1, I offer detailed discussion of Forst et al.'s (2010) LFG-XLE proposal for the treatment of compositional PVCs in German, English and Hungarian. In § 3.1.4.2, I present the most important aspects of the analysis of four Hungarian PVC types in the spirit of this proposal in Laczkó & Rákosi (2011) and Rákosi & Laczkó (2011). I spell out my new, alternative proposal in § 3.1.5.

3.1.4.1 *Forst et al. (2010) on PVCs in English, German and Hungarian*

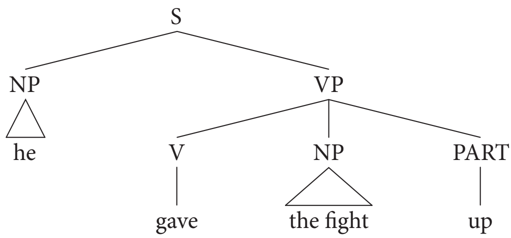
In Forst et al. (2010) we first show how current English and German ParGram (i.e., XLE) grammars handle PVCs. In the English ParGram LFG the particle and the verb have their respective lexical entries, because they are distinct syntactic atoms. In the verb's lexical form all the relevant features of the entire PVC are encoded, and the particle, which is assumed to have the PART category, only contributes a FORM feature with its lexical entry. In the lexical form of the verb it is also constrained that it requires the presence of a particle having exactly the necessary FORM feature. Consider the analysis of (36) in (37)–(39) from Forst et al. (2010: 232).

(36) *He gave the fight up.*

(37) a. *give* V (↑ PRED) = '%NewPred < (↑ SUBJ) (↑ OBJ) >'
(↑ PRT-FORM) $=_c$ up
@(CONCAT %stem # (↑ PRT-FORM) %NewPred).
b. *up* PART (↑ PRT-FORM) = up.

3. As regards the treatment of VMs, Farrell Ackerman (p.c., April 2016) made the following important remark. "All of this is contingent on operating definitions of complex predicates. What one would like to know is how best to characterise the whole disparate class of VM V constructions, possibly independently of whether they are all 'complex predicates'. Maybe thinking of this as a construction type with many different types of realisations would be a way to go, including complex predicates." I fully agree. In § 3.2.2, I outline a formal LFG analysis of VMs along exactly the same lines.

(38)



(39)

$$\left[\begin{array}{ll} \mathrm{PRED} & \text{‘give\#up} < \mathrm{SUBJ}, \mathrm{OBJ} > \text{’} \\ \mathrm{SUBJ} & \left[\begin{array}{ll}\mathrm{PRED} & \text{‘he’}\end{array}\right] \\ \mathrm{OBJ} & \left[\begin{array}{ll} \mathrm{PRED} & \text{‘fight’} \\ \mathrm{SPEC} & \left[\begin{array}{ll}\mathrm{DET} & [\,\mathrm{PRED}\ \text{‘the’}\,]\end{array}\right]\end{array}\right]\end{array}\right]$$

The first line in (37a) encodes that a ‘new predicate’ is created, and its argument structure is < (↑ SUBJ) (↑ OBJ) >. The second line constrains this to the presence (in the syntax) of a particle having the FORM value *up*. The third line is a special (CONCAT) template in XLE which creates the required value for the PRED feature by combining the verb (i.e., the stem) and the particle (form), connected by the hash mark (#), to indicate their syntactic separability. Notice that this is a merely formal (mechanical) XLE way of specifying the value of the PRED feature of the PVC. In the case of non-compositional PVCs, as in this example, it is simply not the case that we combine (‘concatenate’) the meaning of *give* and that of *up*. Despite this fact, it is interesting that both English and Hungarian, these two genetically unrelated languages, use exactly the same PVC setup in this particular case (the V PART orders are reversed): *give#up – fel#ad*.

A reminder is in order here. It is one of the representational conventions of LFG that the strictly semantic part of the value of the PRED feature of a lexical form is simply indicated (i.e., represented in the true sense of the word) by repeating the morphological form of the word in (SMALL)CAPS at the beginning of the inverted commas section. (In XLE we do not use (SMALL)CAPS.) For instance, *kill* would need a semantic description along the following (still relatively informal) lines: (↑ PRED) = ‘X CAUSE (Y DIE) …’, but instead of this in the syntactic representations, i.e., f-structures, we use the following shorthand notation: (↑ PRED) = ‘KILL …’. In this context then the CONCAT template of XLE produces this shorthand representation of the PVC in the functional structure of the sentence it occurs in, with the hash mark indicating the syntactic independence of the two morphological pieces (see the f-structure in (39)). Let me also illustrate this point with an often cited, absolutely non-compositional Hungarian PVC: *be#rúg* in#kick “get drunk”. The semantically appropriate representation of the relevant part of the lexical form of this PVC would be something like this: (↑ PRED) = ‘X GET DRUNK…’, but we employ the following notation instead: (↑ PRED) = ‘BE#RÚG …’. The notation is produced by the CONCAT template.

The fourth line contains the lexical form of the particle *up*. The particle in this representation has no semantic content, i.e., no PRED feature. It only has a FORM feature, and its value is ‘up’. Recall that the verb *give* requires the presence of this particular particle form in the syntax, see the second line in (37a): (↑ PRT-FORM) $=_c$ up. This is the standard way of treating non-compositional PVCs in the LFG-XLE tradition.

This treatment of PVCs is very close in spirit to the RBL style lexicalist approach discussed in § 3.1.2.4, with one major formal difference: it does not employ analytic word forms; instead, all the relevant information is encoded in the lexical form of the verb including the constraint that it has to co-occur with a particular particle word. This special apparatus makes the crucially lexical treatment of PVCs possible in such a way that the use of periphrastic lexemes can be avoided. Thus, this approach has *Yes* even in column (4) in Table 3.3 in § 3.1.2.4 (as opposed to RBL’s *No* in that slot). The significance is that this approach can keep all the lexicalist aspects of the classical LFG view, see the second row in Table 3.3. Of course, to achieve this goal, a special cross-referencing apparatus is required. However, this FORM constraining device has always been independently available in LFG; see, for instance, the classical treatment of idiom chunks in Bresnan (1982b).

German, like Hungarian, also has separable PVCs. In addition, when the separable particle immediately precedes the verb, they are spelt as one morphological word (= syntactic atom). Consider the following examples from Forst et al. (2010: 233).

(40) a. *Er lud seine Kusine ein.*
he loaded his cousin in
“He invited his cousin.”
b. **Er ein#lud seine Kusine.*
he in#loaded his cousin
“He invited his cousin.”

(41) *Er wird seine Kusine ein#lud.*
he will his cousin in#loaded
“He will invite his cousin.”

In Forst et al. (2010) we make the following comments on the current German ParGram LFG. Given the above (spelling) facts, the finite-state morphology of the German grammar analyses PVCs like *einlud* in (41) as a single word; therefore, it has a separate lexical form:

(42) einlud ⇔ ein#laden +V .13 .Sg .Past .Ind

The hash mark signals the (word-internal) boundary between the particle and the verb. In this way separable particles are distinguished from non-separable verbal prefixes in German.

For the analysis of sentences containing PVCs with their two parts separated in the syntax, the finite-state morphology needs two distinct lexical forms, as in (43), Forst et al. (2010: 233).

(43) a. lud ↔ laden +V .13 .Sg .Past .Ind
b. ein ↔ ein +VPRE

It is thanks to the CONCAT template (in the latter case) that the f-structures of both (40a) and (41) will be the same as regards the representation of the PRED value of the sentence (Forst et al. 2010: 234):

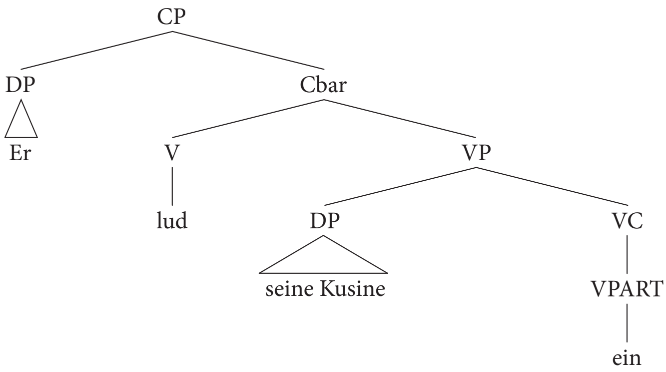
(44)
$$\begin{bmatrix} \text{PRED} & \text{‘ein\#laden} < \text{SUBJ, OBJ} > \text{’} \\ \text{SUBJ} & \begin{bmatrix} \text{PRED} & \text{‘er’} \end{bmatrix} \\ \text{OBJ} & \begin{bmatrix} \text{PRED} & \text{‘Kusine’} \\ \text{SPEC} & \begin{bmatrix} \text{POSS} & [\,\text{PRED} \;\; \text{‘er’}] \end{bmatrix} \end{bmatrix} \\ \text{TENSE} & \text{past/future} \end{bmatrix}$$

We argue that even when the particle immediately precedes the verb in German and Hungarian, the two morphemes should be analysed as two words, two syntactic atoms, just like in the English XLE grammar. We point out that SMOR, an alternative finite-state German morphology developed by Schmid, Fitschen & Heid (2004), can be used for such a purpose. It yields the following morphological analysis of *einlud*.

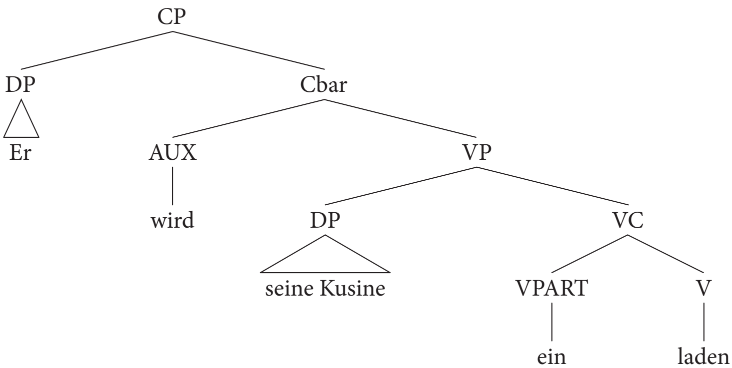
(45) einlud ⇔ ein <VPART> laden <+V> <13> <Sg> <Past> <Ind>

With such a morphological analysis the XLE grammar is capable of separating the two morphemes as two syntactic atoms making up a syntactic verbal complex. Consider the c-structures of (40a) and (41) in (46) and (47), respectively, Forst et al. (2010: 235).

(46)



(47)



In (47) the particle (VPART) and the verb (V) make up a syntactic verbal complex, as opposed to the standard German ParGram LFG in which they are under V as one morphological word and one syntactic atom.

Next, in Forst et al. (2010) we show that an XLE analysis along these lines can also be applied to the similar Hungarian phenomena. The main point here is that in the case of the HunGram finite-state morphological analyser, too, it is possible to 'identify' the particle as the first morpheme to be separated syntactically. Consider my example in (48), which makes the English–Hungarian comparison straightforward (*fel#ad* up#give "give up").

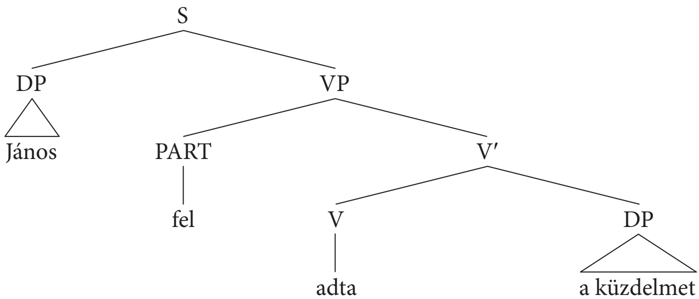
(48) felad ⇔ fel +Prefix+ ad +Verb +PresInd +Indef +Sg +3P

The important point here is that the preverb *fel* is tagged in a special way: +Prefix+ (the final + symbol is its distinguishing property), which makes its identification and separation possible. As the example in (48) demonstrates, all the other tags only have initial + symbols. Consider our c-structure and f-structure representations of (49a) in (50) and (51), and those of (49b) in (52) and (53), respectively, Forst et al. (2010: 237). Notice that *János* "John" is the topic of (49a) and it is the focus of (49b).

(49) a. *János fel ad-ta a küzdelm-et.*
John.NOM up give-PAST.3SG.DEF the fight-ACC
"John gave up the fight."

b. *JÁNOS ad-ta fel a küzdelm-et.*
John.NOM give-PAST.3SG.DEF up the fight-ACC
"JOHN gave up the fight."

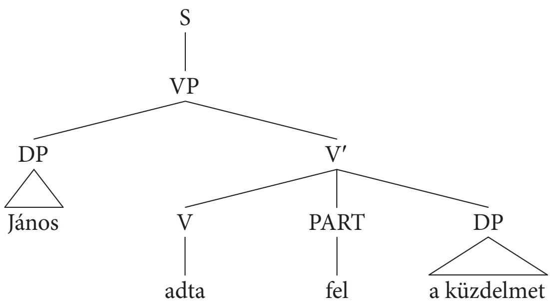
(50)



(51)

$$\left[\begin{array}{ll} \text{PRED} & \text{‘fel\#ad < SUBJ, OBJ >’} \\ \text{TOP} & \left[\begin{array}{ll}\text{PRED} & \text{‘János’}\end{array}\right]1 \\ \text{SUBJ} & [\ \ ]1 \\ \text{OBJ} & \left[\begin{array}{ll}\text{PRED} & \text{‘küzdelem’}\\ \text{DEF} & +\end{array}\right]\end{array}\right]$$

(52)



(53)
$$\left[\begin{array}{ll} \textsc{pred} & \text{‘fel\#ad} < \textsc{subj}, \textsc{obj} > \text{’} \\ \textsc{foc} & \left[\begin{array}{ll} \textsc{pred} & \text{‘János’} \end{array}\right]1 \\ \textsc{subj} & [\ \ ]\,1 \\ \textsc{obj} & \left[\begin{array}{ll} \textsc{pred} & \text{‘küzdelem’} \\ \textsc{def} & + \end{array}\right] \end{array}\right]$$

In Forst et al. (2010) our main claim is that non-compositional and non-productive PVCs should be treated radically differently in LFG-XLE from compositional and productive PVCs. The former are best analysed along the lexical lines presented above (the FORM feature of the preverb and the CONCAT template are the crucial ingredients of this analysis). By contrast, the latter rather call for a syntactic treatment, with the preverb having a PRED, rather than a FORM, feature (contrary to the current English and German ParGram practice, which employs a uniform lexical treatment of both major PVC types). One of the most important motivations for this sharp distinction is that productive PVCs can be analysed ‘on the fly’ automatically and straightforwardly in the syntax, without previously and lexically encoding them. We distinguish five basic types of productive PVCs and show the formal details of analysing them along these syntactic lines through German examples for the most part. We argue that this treatment can naturally be extended to the corresponding English and Hungarian PVC phenomena in the English and the Hungarian ParGram grammars. We distinguish the following five PVC types, and we outline LFG-XLE analyses for them.

a. the particle is an oblique adverbial
b. the particle is an adjunct adverbial
c. the particle is a resultative argument
d. the particle is an aspect marker
e. the particle has an argument-changing role

Out of these five types, only (e) is important from our current perspective, so here I only summarise our proposed analysis of this type. For the discussion and analysis of the other four types, see Forst et al. (2010).

We analyse the German example in (54).

(54) *Lauf* *dem* *Glück* *nicht* *länger* *hinterher!*
run-IMP.2SG the.DAT happiness not longer after
“Don’t run after happiness any longer.”

At least in German and Hungarian, particles even in their productive use are capable altering the argument structure of the lexical verb. See, for instance, Stiebels (1996) for German and Ackerman (1987, 2003) for Hungarian. In the German example in (54) the particle *hinterher* "after" subcategorises for a dative argument, expressed by *dem Glück* "the happiness" in this sentence.

Our analysis of this PVC type was motivated by Butt, King & Maxwell III's (2003) and Butt & King's (2006) XLE treatment of complex predicates and causative constructions, respectively. The essence of the account is complex predicate composition in the syntax. The productively used particle has an argument structure in which its first argument slot is 'open', see (55a). In a sense, the %ARG1 notation in that slot prepares this particle predicate for 'accommodating' the lexical verb (with its own argument structure) as the first argument.

(55) *lexical entries*
  a. *hinterher* VPART ($\uparrow$ PRED) = 'hinterher < %ARG1, ($\uparrow$ OBJ$_\Theta$) >'.
  b. *laufen* V ($\uparrow$ PRED) = 'laufen < ($\uparrow$ SUBJ) >'.

For the basic c-structure representation of German sentences containing separable particles, see (47) and (48) above. When the particle and a verb like *laufen* "run" are inserted in the c-structure, a special combination of functional annotations will trigger complex predicate formation, see (56).

(56) *c-structure rules*

a. VC $\rightarrow$	(VPART>)	(V)	
	$\uparrow = \downarrow$	$\uparrow$ /PRED/OBJ$_\Theta$ = $\downarrow$ /PRED ($\uparrow$ PRED ARG1) = ($\downarrow$ PRED)	
b. Cbar $\rightarrow$		V	(VP)
		$\uparrow$ /PRED/OBJ$_\Theta$ = $\downarrow$ /PRED ($\uparrow$ PRED ARG1) = ($\downarrow$ PRED)	$\uparrow = \downarrow$

The XLE operation we employ is called 'restriction'. Given that it is assumed that the particle is the main predicate, it receives the customary functional head annotation ($\uparrow = \downarrow$). The restriction operator is the / symbol. It 'restricts out' the features and functions on the left-hand side of the equation symbol, and adds ('restricts in') those on the right-hand side, see the first annotation associated with the lexical verb: $\uparrow$ / PRED/OBJ$_\Theta$ = $\downarrow$ /PRED. The second annotation, ($\uparrow$ PRED ARG1) = ($\downarrow$ PRED), makes the verb (with its remaining argument structure, i. e., with its SUBJ argument) the first argument of the main (particle) predicate. This is the crucial formal aspect of this syntactic complex predicate formation process. Notice that the particle does not assign any grammatical function to the lexical verb: this is a deeper, semantics-based operation on argument structure composition (in the syntax). The result of this complex predicate formation operation is represented in the PRED value in the f-structure of (54) in (57): 'hinterher < 'laufen < (↑ SUBJ) >', (↑ OBJ_{Θ}) >'. The first argument of *hinterher* is *laufen* with its SUBJ argument, and the second argument of *hinterher* is its own thematically restricted object argument: OBJ_{Θ}.

(57)
$$\left[\begin{array}{ll}
\textsc{pred} & \text{'hinterher < 'laufen < (}\uparrow \textsc{subj}\text{) >', (}\downarrow \textsc{obj}_{\Theta}\text{) >'} \\
\textsc{subj} & \left[\begin{array}{ll} \textsc{pred} & \text{'pro'} \end{array}\right] \\
\textsc{obj}_{\Theta} & \left[\begin{array}{ll} \textsc{pred} & \text{'Glück'} \\ \textsc{spec} & \left[\begin{array}{ll} \textsc{det} & \left[\begin{array}{ll} \textsc{pred} & \text{'die'} \end{array}\right] \end{array}\right] \end{array}\right] \\
\textsc{adjunct} & \left\{\begin{array}{l} \left[\begin{array}{ll} \textsc{pred} & \text{'nicht'} \end{array}\right] \\ \left[\begin{array}{ll} \textsc{pred} & \text{'lang'} \end{array}\right] \end{array}\right\}
\end{array}\right]$$

The Hungarian counterpart of this German construction is shown in (58), an example from Laczkó & Rákosi (2011).

(58) *A macska át szaladt az asztal-on.*
the cat.NOM across ran.3SG the table-on
"The cat ran across the table."

In this PVC the particle *át* "across" strictly prescribes the presence of an OBL argument with superessive case marking. In Laczkó & Rákosi (2011) we offer a detailed analysis of this type. For a discussion, see § 3.1.4.2.

3.1.4.2 *A HunGram account of four Hungarian PVCs*

In Laczkó & Rákosi (2011) we explore the tenability and implementational applicability of the approach proposed by Forst et al. (2010).[4] In this vein, we give a detailed analysis of both the compositional and the non-compositional uses of two Hungarian spatial PVC types and report its successful implementation. Consider the following examples of the first type.

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4. This discussion of Laczkó & Rákosi (2011) is a revised and augmented version of § 2.2 in Laczkó (2013: 380–383).

(59) *A rák ki mász-ott a folyó-ból.*
the crab.NOM out crawl-PAST.3SG the river-out.of
"The crab crawled out of the river."

(60) *Az elnök ki fej-ez-te együttérzés-é-t.*
the president. NOM out head-Vsuf-PAST.3SG sympathy-his-ACC
"The president expressed his sympathy."

The sentence in (59) is an example of the compositional use of the preverb *ki* "out", while (60) illustrates an utterly non-compositional use, because the simplex verb form *fejezte* does not exist on its own. We assume that preverbs are non-projecting words in the sense of Toivonen (2001), and their syntactic category is PRT (short for particle). In using this PRT category, we also follow the practice of the English and German implementational grammars. For the analysis of (59) we need the following lexical forms for the preverb and the verb (only the relevant details are indicated in these XLE style implementational representations).

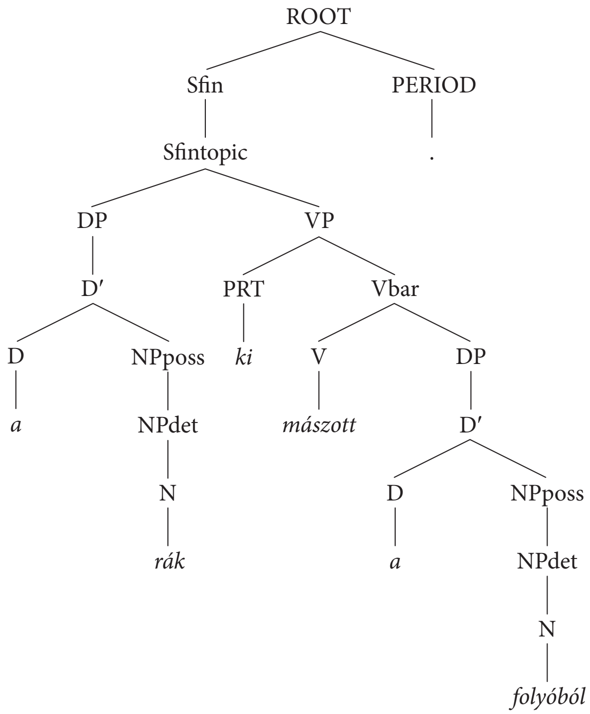
(61) a. *mászik* V (↑ PRED) = 'crawl < (↑ SUBJ) (↑ OBL) >'.
b. *ki* PRT (↑ PRED) = 'out < %ARG1, (↑ OBL) >'.

The verb *mászik* "crawl" has its regular lexical entry. It is a two-place predicate with a subject and a goal oblique argument. The preverb *ki* "out" in its compositional use is also a two-place predicate: it takes a verb as its first argument and a source oblique second argument. In c-structure, the preverb, analysed as the main predicate, has the customary functional head annotation, while the verb has a set of annotations containing the restriction operator encoded by the / symbol. For further details, see Laczkó & Rákosi (2011). The interplay of these annotations results in syntactic complex predicate formation, represented in f-structure. The PRED feature in the f-structure of (59) has the following value.

(62) 'ki < 'mászik < [rák], NULL >', [folyó] >'.

The preverb (*ki* "out") is the main predicate, and it has a 'nested' argument structure. Its first argument is the verb (*mászik* "crawl") with its own embedded two-place argument structure. For more on XLE's restriction operator, see § 5.4 in Forst et al. (2010) and the previous section in this book. The verb's first argument is the subject (*rák* "crab"), and its second (oblique) argument, a goal argument, receives the zero grammatical function (NULL), as it has been 'restricted out'. The preverb's second argument is a source oblique (*folyó* "river"). The important point here is that the verb *mászik* "crawl" is strictly incompatible with a source argument. Our XLE grammar produces the analysis shown in (63) and (64), with irrelevant details omitted.

(63)



(64)

$$\left[\begin{array}{ll}
\textsc{pred} & \text{‘ki < ‘mászik < [rák], } \textsc{null} \text{ >’, [folyó] >’} \\[2ex]
\textsc{subj} & \left[\begin{array}{ll} \textsc{pred} & \text{‘rák’} \\ \multicolumn{2}{l}{\textsc{case}\ \text{nom},\ \textsc{def}\ +,\ \textsc{num}\ \text{sg},\ \textsc{pers}\ 3} \end{array}\right] \\[2ex]
\textsc{obl} & \left[\begin{array}{ll} \textsc{pred} & \text{‘folyó’} \\ \multicolumn{2}{l}{\textsc{case}\ \text{elative},\ \textsc{def}\ +,\ \textsc{num}\ \text{sg},\ \textsc{pers}\ 3} \end{array}\right] \\[2ex]
\textsc{topic} & \{[\text{rák}]\} \\[2ex]
\textsc{tns-asp} & [\textsc{mood}\ \text{indicative},\ \textsc{tense}\ \text{past}]
\end{array}\right]$$

In the case of non-compositional spatial PVCs, in Laczkó & Rákosi (2011) we also adopt Forst et al.'s (2010) XLE approach. For instance, in the analysis of (60) we employ the following lexical forms for the independently non-existing verb and the preverb.

(65) *fejez* V (↑ PRED) = '%FN < (↑ SUBJ) (↑ OBJ) >'
(↑ CHECK _PRT-VERB) = +
(↑ PRT-FORM) $=_c$ ki.
@(CONCAT (↑ PRT-FORM) # stem %FN).

(66) *ki* PRT (↑ PRT-FORM) = ki
(↑ CHECK _PRT-VERB) $=_c$ +.

In the XLE notation, the %FN symbol in (65) expresses the value of the PRED feature without its argument structure, see the first line. Within angle brackets in the same line, the argument structure of this non-compositional PVC is given: it is a two-place predicate taking a subject and an object argument. The second line contains one of the two members of a CHECK feature pair. This member is defining and the other, in the lexical form of the particle in (66), is constraining. The essence of this _PRT-VERB type CHECK feature is that it requires that the two elements involved must co-occur in a PVC configuration. The third line constrains that the form of the preverb in this particular instance has to be *ki* ("out"). The fourth line calls XLE's concatenation (CONCAT) template. The function of this template is to formally combine (concatenate) the two elements, the preverb form and the verbal stem, in a string connected by the hash mark. This string serves as %FN, the value of the PRED feature without the argument structure.[5] So in our analysis of (60), the PRED feature has the following value representation in f-structure (where *elnök* = president, *együttérzés* = sympathy).

(67) 'ki#fejez < [elnök], [együttérzés] >'

As regards the lexical form of the preverb in (66), notice that in this use it has no PRED feature, it only has a FORM feature (whose value is *ki*), see the first line in its lexical form. The second line is the other (constraining) side of the CHECK _PRT-VERB coin. In c-structure, the preverb and the verb are functional coheads.

The other PVC type we analyse in Laczkó & Rákosi (2011) is illustrated in (68). This is an example of the compositional use of the PVC.

(68) *János* *át* *lép-ett* *a* *kerítés-en.*
John.NOM across step-PAST.3SG the fence-on
"John stepped over the fence."

5. This XLE concatenation process is radically different from that assumed by Ackerman et al. (2011). In their system concatenation means the creation of a synthetic form, a morphologically complex word. By contrast, the XLE device only brings about a string in the value of the PRED feature of a complex predicate in f-structure, and the elements corresponding to the two pieces of the string (flanking the hash mark) are still two free morphemes, that is, two independent syntactic atoms in c-structure.

The discussion here is rather brief, because the only relevant difference between this type and the previous one, or, more precisely, the only property this type has and the other type lacks, is that in this case the preverb, even when it is used compositionally, strictly constrains the case form of its oblique argument. Consequently, we propose the following lexical forms for the preverb and the verb as used in (68).

(69) *át* PRT XLE (↑ PRED) = 'across < %ARG1 (↑ OBL) >'
(↑ OBL CASE) $=_c$ superessive.

(70) *lép* V XLE (↑ PRED) = 'step < (↑ SUBJ) (↑ OBL) >'.

The example in (68) is directly comparable to that in (59). The two lexical entries in (69) and (70), again, are directly comparable to (61b) and (61a), respectively. The difference between the two PVC types is captured by the constraining equation in (69).

It is also important to note that in this PVC type, too, we find the same instances of non-compositionality as in the former PVC type. For instance, it stands to reason that (71) is straightforwardly comparable to (60). Consequently, (71) allows and requires the same sort of analysis as we propose for (60).

(71)	*János*	*át*	*lép-ett*	*a*	*problémá-n.*
	John.NOM	across	step-PAST.3SG	the	problem-on
	"John got over the problem."				

In Rákosi & Laczkó (2011) we develop an XLE analysis of two further types of PVCs, again, fundamentally in the spirit of Forst et al. (2010). Their shared trait is that their preverb inflects for person and number when used in a pro-drop configuration, i.e., when the oblique argument of the PVC is not expressed by a separate constituent. The types that we concentrate on are exemplified in (72) below.

(72)	a.	*Rá*	*ugrott-ál*	*az*	*asztal-ra.*
		onto.3SG	jumped-2SG	the	table-onto
		"You jumped onto the table."			
	b.	*Mögé*	*ugrott-ál*	*az*	*asztal-nak.*
		to.behind.3SG	jumped-2SG	the	table-DAT
		"You jumped behind the table."			

(72a) contains what is often referred to as a 'reduplicating particle'. Elsewhere such a particle functions as a case marker, and in the PVC it is part of a dependency with a lexical noun phrase that bears the same case morphology as that spelled out by the particle (with some possible but irrelevant phonological differences). What we dub 'possessive particles' function as postpositions elsewhere, and, when used as particles, they license an associate in dative case in the dependency, as in (72b). In the case of both types, the inflectional pro-drop is obligatory in the first and second person and optional in the third. For instance, when the goal argument of the *ugrik* "jump" PVC type in (72a) is 1sg, the form exemplified in (73a) must be used, and when the goal argument of the *ugrik* "jump" PVC type in (72b) is 1sg, the form exemplified in (73b) must be used.

(73) a. *rá-m*
onto-1sg
"on me"
b. *mögé-m*
to.behind-1sg
"behind me"

Here I confine myself to a brief overview of our analysis of the reduplicating type. This is the more interesting type from the perspective of the XLE treatment of PVCs. The essence of this relevance is as follows. In Forst et al. (2010) we assume that this PVC type can be used compositionally and productively, and, consequently, in such cases it should be analysed along the syntactic complex predicate formation via restriction lines. By contrast, on the basis of our findings about the behaviour of these reduplicating PVCs, in Rákosi & Laczkó (2011) we claim that even the productive-looking cases are fraught with idiosyncrasies, and, therefore, a lexical analysis along the concatenational lines is more suitable. For our treatment of the possessive type, see Rákosi & Laczkó (2011). We argue that this type is a rather marked (and speaker-dependent) construction, and it calls for a special lexical treatment. For details, see § 4 in Rákosi & Laczkó (2011).

In our analysis of the reduplicating PVC type, we capitalise on a relatively widely-held view in the literature (for an overview, see § 3 in Rákosi & Laczkó 2011). We distinguish between the ordinary reduplicating particle use and the pronominal particle use of one and the same form. Consequently, on our account the particle *rá* is assumed to function as a phrasal pronominal element in (74a), and we treat the reduplicating particle in (74b) as a special agreement marker that became entirely bleached, losing all its semantic content. Our proposal is very close in spirit to that of Ackerman (1987, 1990, 2003).

(74) a. *Rá ugrott-ál.*
onto.3sg jumped-2sg
"You jumped onto it/her/him."
b. *Rá ugrott-ál az asztal(-ok)-ra.*
onto.3sg jumped-2sg the table(-pl)-onto
"You jumped onto the table(s)."

We assume the following lexical representation for the pronominal particle in (74a).

(75) *rá:* Pron (↑ PRED) = 'pro'
(↑ CASE) = sublative
(↑ PERS) = 3
(↑ NUM) = SG.

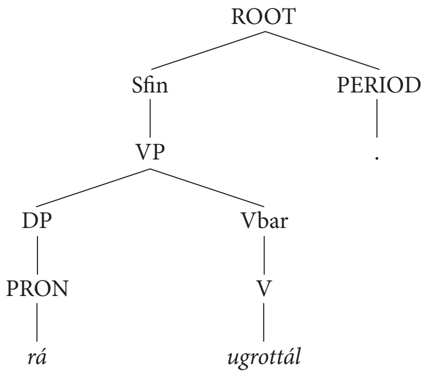
The entire lexical form is treated as a pronoun that projects a DP, rather than a PP. We follow Bartos (1999), among others, in making a categorial distinction between inflected case suffixes and inflected postpositions, which are assumed to project a PP. Moreover, in this representation the case suffix itself does not have a PRED feature, but only a CASE feature, which can possibly be interpreted compositionally in semantic structure. This is the current state of affairs in our XLE-implementation, but nothing crucial hinges on this particular assumption. The essence of our argumentation and the analysis would not change if we handled these inflecting case markers as P-elements with a PRED feature, taking lexical or pronominal P-objects.

The lexical forms for the reduplicating particle and the lexical verb are given in (76a) and (76b), respectively.

(76) a. *rá*: PRT (↑ PRT-FORM) = rá
(↑ OBL PERS) $=_c$ 3
(↑ OBL CASE) $=_c$ sublative
(↑ CHECK _PRT-VERB) $=_c$ +.
b. *ugrik*: V (↑ PRED) = 'rá#ugrik < (↑ SUBJ) (↑ OBL) >'
(↑ PRT-FORM) $=_c$ rá
(↑ CHECK _PRT-VERB) = +
@(CONCAT (↑ PRT-FORM) # %stem %FN).

The particle in this use is a non-projecting category (PRT). Given that it is compatible with either singular or plural associates, see (74b), we take it to be underspecified for the NUMBER feature, which is formally expressed here as the absence of this feature. The particle constrains two properties of the oblique associate: its PERSON and CASE features. It is in this respect that these reduplicating particles can be considered special agreement markers. As (76a) and (76b) show, the particle is specified to form a PVC with the verb (and vice versa) via the 'CONCAT template, CHECK feature and PRT-FORM specification' machinery employed by Forst et al. (2010) and Laczkó & Rákosi (2011). This machinery automatically ensures that the PRT-FORM and the PRED 'match', so that no other checking needs to be done. Our implemented grammar analyses (74a) as shown in (77) and (78), and it analyses (74b) as shown in (79) and (80).

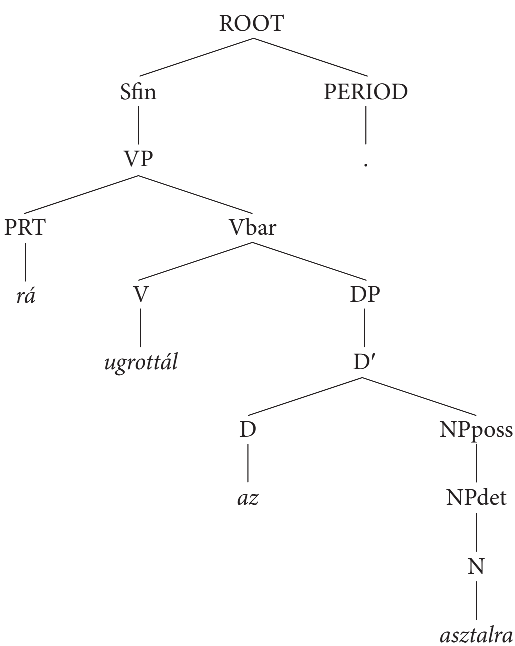
(77)



(78)

$$\left[\begin{array}{ll}
\textsc{pred} & \text{‘ugrik < [}\textsc{subj}\text{:pro}_1\text{], [pro}_2\text{] >’} \\
\textsc{subj} & \left[\begin{array}{l} \textsc{pred}\ \text{‘pro’} \\ \textsc{num}\ \text{sg},\ \textsc{pers}\ 2 \end{array}\right] \\
\textsc{obl} & \left[\begin{array}{l} \textsc{pred}\ \text{‘pro’} \\ \textsc{case}\ \text{sublative},\ \textsc{num}\ \text{sg},\ \textsc{pers}\ 3,\ \textsc{pron-type}\ \text{pers} \end{array}\right] \\
\textsc{focus} & \left[\text{pro}_2\right] \\
\textsc{tns-asp} & \left[\textsc{mood}\ \text{indicative},\ \textsc{tense}\ \text{past}\right]
\end{array}\right]$$

(79)



(80)

$$\left[\begin{array}{ll}
\textsc{pred} & \text{‘rá\#ugrik < [}\textsc{subj}\text{:pro], [asztal] >’} \\
\textsc{subj} & \left[\begin{array}{l} \textsc{pred}\ \text{‘pro’} \\ \textsc{num}\ \text{sg},\ \textsc{pers}\ 2 \end{array}\right] \\
\textsc{obl} & \left[\begin{array}{l} \textsc{pred}\ \text{‘asztal’} \\ \textsc{case}\ \text{sublative},\ \textsc{def}\ +,\ \textsc{num}\ \text{sg},\ \textsc{pers}\ 3 \end{array}\right] \\
\textsc{check} & \left[\begin{array}{l} \textsc{prt-verb}\ + \end{array}\right] \\
\textsc{tns-asp} & \left[\begin{array}{l} \textsc{mood}\ \text{indicative},\ \textsc{tense}\ \text{past} \end{array}\right] \\
\textsc{prt-form} & \text{rá}
\end{array}\right]$$

We give the following justification for treating even the productive-looking uses of reduplicating PVCs lexically. Most of these combinations (with respect to both types and tokens) are non-compositional, and quite a lot of idiosyncrasy is involved as to whether this kind of reduplication is obligatory, possible or unavailable for a verbal host. Fundamentally, it is the inherent aspectual feature of the particle that regulates the combinations. For instance, the particle *rá* “onto” is telic in nature. Consequently, it is usually obligatory if the resulting complex is telic (81a), and it is not available if the intended meaning of the verbal complex is atelic (81b). Despite all this, the particle can be optional in some telic complexes (82a), and it can even be obligatory in some atelic ones (82b).

(81) a. *Nem jövök *(rá) a megoldás-ra.*
not come.1SG onto.3 the solution-onto
“I cannot figure out the solution.”

b. *Nem tartozik (*rá) Kati-ra.*
not belongs onto.3 Kate-onto
“It does not concern Kate.”

(82) a. *Nem rivallt-am (rá) Kati-ra.*
not yelled-1SG onto.3 Kate-onto
“I did not yell at Kate.”

b. *Nem szorul-ok *(rá) Kati-ra.*
not press-1SG onto.3 Kate-onto
“I stand in no need of Kate[’s help].”

We assume then that it is justified to treat reduplicating constructions, whether compositional or non-compositional, lexically. In doing so, we follow previous analyses that handle these particles as derivational elements, see, for instance, É. Kiss (1998a) and Ackerman (1987, 1990, 2003). Thus, one of the key points here is that reduplicating PVCs are often fully compositional; however, they are far from being productive, which calls for a lexical approach.

At this point let me briefly compare our approach and the RBL approach, discussed in detail in § 3.1.2.4.

In the case of non-compositional PVCs both approaches propose a fully lexical treatment, thereby respecting classical LFG's subscription to the Strong Lexicalist Hypothesis. RBL employs the notion of analytic morphological object, as a marked option for lexical form representation. Our approach, by contrast, employs an apparatus which is capable of maintaining the 'one lexical item – one morphological word – one syntactic atom' correspondence in such a way that it can still capture the marked behaviour of (non-compositional) PVCs. For this purpose, it applies a system of devices: efficient cross-referencing between distinct lexical items via suitable constraining equations and CHECK-features. The analysis has been successfully tested implementationally, which is a rather strong indication of its feasibility.

In the case of compositional and productive PVCs the two approaches are radically different. RBL strictly maintains its lexicalist view (in actual fact, fundamentally it applies a uniform treatment of both major PVC types). Our approach, by contrast, employs a syntactic complex predication formation device, thereby violating the Strong Lexicalist Hypothesis. The essence of my new proposal for the analysis of productive PVCs in the next section (§ 3.1.5) is that even they should be treated lexically. In this way, my new XLE approach can also uniformly respect the Strong Lexicalist Hypothesis, just like RBL.

3.1.5 My alternative LFG-XLE analysis of PVCs

The essence of the modification of the approach developed by Forst et al. (2010), Laczkó & Rákosi (2011), and Rákosi & Laczkó (2011) that I propose now is that even productive PVCs should be lexically treated.[6] This modification has the advantage that classical LFG's subscription to the Strong Lexicalist Hypothesis can be maintained in the domain of complex predicates represented by Hungarian PVCs. In this section, first I show a possible way in which such an approach can be developed in an LFG-XLE framework (§ 3.1.5.1). Then I explore what arguments processes involving PVCs provide for or against the lexical vs. syntactic treatment of compositional PVCs (§ 3.1.5.2).

6. This section is a substantially modified version of Laczkó (2013).

3.1.5.1 *A possible lexical treatment of PVCs in an XLE grammar*
Let us take a second look at our previous examples in (59) and (60) in § 3.1.4.2, repeated here as (83) and (84), respectively, for convenience. The former is compositional and the latter is non-compositional.

(83) *A rák ki mász-ott a folyó-ból.*
the crab.NOM out crawl-PAST.3SG the river-out.of
"The crab crawled out of the river."

(84) *Az elnök ki fej-ez-te együttérzés-é-t.*
the president. NOM out head-Vsuf-PAST.3SG sympathy-his-ACC
"The president expressed his sympathy."

Given that in Laczkó & Rákosi (2011) we analyse non-compositional PVCs lexically and compositional PVCs syntactically, if one seeks to develop an account of the latter along lexical lines then it is almost inevitable that the analyses of the two types will share important aspects. Below I show that this is really the case to a remarkable extent.

First of all, note that the true counterpart of complex predicate formation in the syntax via restriction would be complex predicate formation via restriction in the lexicon. This process would involve sublexical structures within a morphologically complex word. However, this option is not available exactly because of the syntactic separability of the verb and the preverb. This fact very strongly moves us towards some crucial ingredients of the analysis of non-compositional PVCs.

I propose the following lexical form for the preverb.

(85) *ki* PRT
(↑ PRT-FORM) = ki
(↑ CHECK _PRT-VERB) $=_c$ +
{(↑ FOCUS)
| (↑ CHECK _VM) $=_c$ +}
((↑ DIR) = out).

It is a 'shared' lexical form for both the non-compositional and the compositional uses. Its crucial property is that even in the compositional use it has no PRED feature, it only has a FORM feature, just like in the non-compositional use, see (66) in § 3.1.4.2. Compare this with the argument-taking predicate representation in (61b) on the syntactic account in § 3.1.4.2. The other (by now) uniform trait of the preverb in both uses is that it is constrained to a PVC configuration, see the _PRT-VERB CHECK feature in the second line, and compare this with the representations in (66) and (61b). I have added the disjunction between the focus annotation and the _VM CHECK feature in the third and fourth lines on the basis of my treatment of the preverbal complementarity of VMs and foci in Chapter 2. It is the optional (↑ DIR) = out equation that differentiates between the compositional and non-compositional uses of the preverb. The idea is that in the compositional use, it encodes this spatial-directional feature, it explicitly contributes this feature to the entire PVC, and in the non-compositional use it does not. On this lexical account, the preverb itself cannot have a PRED feature, because in the syntax there is no restriction operation: both the preverb and the verb have the functional head annotation, i.e., they are functional coheads. In this respect, they are treated in the same way as non-compositional PVCs, and only one of them can have a PRED feature (which is a general LFG constraint on functional coheads).

I assume the following lexical forms for the two relevant simplex verbs.

(86) *fejez* V
(↑ PRED) = '%FN < (↑ SUBJ) (↑ OBJ) >'
(↑ CHECK _PRT-VERB) = +
(↑ PRT-FORM) $=_c$ ki
~(↑ DIR)
@(CONCAT (↑ PRT-FORM) # stem %FN).

(87) *mászik* V
(↑ PRED) = 'out < 'crawl < (↑ SUBJ) NULL >' (↑ OBL) >'
(↑ CHECK _PRT-VERB) = +
(↑ PRT-FORM) $=_c$ ki
(↑ DIR) $=_c$ out.

Not surprisingly, the lexical form of the simplex verb in the non-compositional use of the PVC on this uniform account has not changed much, compare (65) in § 3.1.4.2 and (86). The only difference is that in (86) I have added a negative existential constraint: the preverb does not encode a directional feature.

For obvious reasons, the lexical form of the simplex verb in the compositional use of the PVC on this uniform account has changed rather dramatically, compare (61a) in § 3.1.4.2 and (87). The representation in (87) follows the non-compositional strategy to a great extent. To begin with, it encodes the PRED feature of the entire PVC. Now it is constrained to a PVC configuration, and it prescribes that in this meaning the form of the preverb has to be *ki* "out". As opposed to the simplex verb in the non-compositional use, here it requires the presence of the directionality feature (to be contributed by the preverb). The other difference is that here there is no CONCAT template. Instead, I assume a PRED feature representation whose details are identical to the result of restriction in the former syntactic predicate composition analysis, see the second line in (87) and compare it with (61b) and the PRED value in (62) in § 3.1.4.2. For this account to work, we need a special lexical redundancy rule responsible for creating (87) from the ordinary lexical form of this motion predicate, shown in (61a) in § 3.1.4.2. This approach, mimicking the result of the syntactic restriction operation, has a marked aspect. The main predicate "out" has no lexical form that could serve as input to this derivational process. In a loose sense, a particular type of conversion takes place which introduces a 'superordinate' predicate whose 'dummy' morphological exponence is a morpheme with special properties: it has no PRED feature on its own, its actual contribution is just a directionality feature, and it is a syntactic atom. A reminder is in order here: this marked aspect of the analysis is the consequence of the behaviour of PVCs: the syntactic separability of the two pieces. That is why the restriction operator as we know it cannot work in the lexicon.

Inevitably, there emerges a potential problem for this approach: preverbs in their compositional use can be foci or contrastive topics, see (88), where the preverb *ki* "out" has the contrastive topic discourse function.

(88)	*Ki*	*a*	*rák*	*mász-ott*	*a*	*folyó-ból.*
	out	the	crab.NOM	crawl-PAST.3SG	the	river-out.of

ca. "As regards out(crawling) it was the crab that crawled out of the river."

My response is the following. First of all, note that the preverbs of absolutely non-compositional PVCs can also occur independently, on their own, in short answers, for instance, despite the fact that semantically they are definitely empty, with no PRED feature. Consider the following dialogue.

(89)	A.	*Ki*	*fejez-ted*	*a*	*vélemény-ed-et?*
		out	head.Vsuf-PAST.2SG	the	opinion-your-ACC
		"Did you express your opinion?"			
	B.	*Ki.*			
		out			
		"Yes[, I did]."			

Naturally, a constituent's use as a contrastive topic (or focus) does require some meaningful content. In this new approach, although the preverb does not function formally as the main predicate of the sentence, in its compositional use it does have some semantic contribution: it encodes directionality, hence its focus/contrastive topic potential. This is the significance of, and rationale behind, my employing the directionality feature in the lexical form of the preverb.

In the next section, I address the following question: on what basis can the choice between the lexical and the syntactic predicate composition accounts be made?

3.1.5.2 *On the choice between the syntactic and the lexical accounts*

At a general level, the pros and cons are as follows. The syntactic account gives up classical LFG's adherence to the Strong Lexicalist Hypothesis, which is a disadvantage. At the same time, it can elegantly capture the special behaviour of these PVCs: it employs a coherent device for complex predicate formation in the syntax. Moreover, it has an extremely favourable implementational merit. These productive PVCs can be parsed 'on the fly': no lexical aspect is needed. This reduces the burden on the lexical component of a large scale XLE grammar to a great extent, see Forst et al. (2010). By contrast, the lexical account respects the Strong Lexicalist Hypothesis. It basically follows the treatment of non-compositional PVCs and supplements it with a special lexical redundancy rule for the generation of a 'transparent' PRED feature value. Its implementational disadvantage is that it requires the generation and storage of each PVC in the lexical component, which can be a serious hindrance for a robust XLE grammar.

At this point let me take further facts and criteria into consideration. Fundamentally, I concentrate on the relevance of various types of productive derivational processes PVCs (whether compositional or non-compositional) can undergo. This is an issue Forst et al. (2010) and Laczkó & Rákosi (2011) do not address and leave for future research. Below I discuss three processes: causativisation, event nominalisation, and preverb reduplication.

3.1.5.2.1 *Causativisation*

PVCs, like ordinary verbal predicates, readily undergo causativisation. Consider (90) and (91). The former exemplifies an intransitive compositional PVC and its causative counterpart, while the latter shows a transitive non-compositional PVC and its causative version. The empirically and intuitively correct generalisation is that both the non-compositional and the compositional PVCs are in the scope of the causative morpheme.

(90) a. *A fiú ki mász-ott a folyó-ból.*
the boy.NOM out crawl-PAST.3SG the river-out.of
"The crab crawled out of the river."

b. *Ki mász-at-tam a fiú-t a folyó-ból.*
out crawl-CAUS-PAST.1SG the boy.ACC the river-out.of
"I made the boy crawl out of the river."

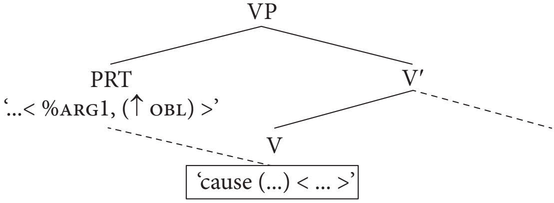
(91) a. *Az elnök ki fej-ez-te az együttérzés-é-t.*
the president. NOM out head-Vsuf-PAST.3SG the sympathy-his-ACC
"The president expressed his sympathy."

b. *Ki fej-ez-tet-tem az elnök-kel az*
out head-Vsuf-CAUS-PAST.1SG the president-with the
együttérzés-é-t.
sympathy-his-ACC
"I made the president express his sympathy."

In theory, in the case of non-compositional PVCs this can be properly captured in the CONCAT type lexical analysis proposed by Forst et al. (2010) and Laczkó & Rákosi (2011), and also adopted here. We can causativise the lexical form of the simplex verb (containing the entire value of the PRED feature of the PVC) just like the lexical form of any ordinary verb, and at the same time the derived form will inherit the CONCAT apparatus from the input verb (the CONCAT template itself and the PRT-FORM constraint).[7]

If compositional PVCs are also treated lexically, in fundamentally the same manner as non-compositional ones as shown in the previous section, then their causativisation can also be handled along the same lines, so the empirically and intuitively justified uniformity can be achieved. However, on the 'syntactic complex predicate formation via restriction' account this seems to be impossible for the following reason. In Hungarian, the causative morpheme is strictly bound: it is a derivational suffix. From this it follows that in this approach the simplex verb has to be causativised in the lexicon, and this form with its PRED will combine with the preverb in the syntax. Thus, the causative simplex verb will be the first argument (that is, it will be in the scope) of the preverb, rather counterintuitively. Consider the abstract representation of this scenario in (92). For a similar argument for a lexicalist treatment from an RBL perspective, see Ackerman (2003).

(92)



I think this is a serious problem for the syntactic analysis, and it is made more serious by the fact that there are several absolutely productive derivational processes which can follow one another in a series. One example is given in (93).

7. For instance, this device can be a metarule macro or the lexical type of restriction. This is an issue to be explored carefully from an XLE perspective, which I cannot deal with here.

(93) *a* *fiú* *ki* *mász-at-gat-ás-a* *a* *folyó-ból*
the boy.NOM out crawl-CAUS-ITER-DEV-his the river-out.of
ca. "repeatedly making the boy crawl out of the river"

The problem is that the PVC is best interpreted as being in the scope of the causative suffix (CAUS), this combination should be in the scope of the iterative suffix (ITER), and this new combination should be in the scope of the deverbal nominalising suffix (DEV). However, in the syntactic approach it is the simplex predicate and its hierarchically growing suffixed counterparts that ultimately undergo complex predicate formation via restriction with the preverb. This fact makes the syntactic approach rather implausible. One way out would be to allow ordinary suffixal derivation (e.g., causativisation and nominalisation) also to take place in the syntax of Hungarian. This, however, would even more seriously undermine classical LFG's view of morphology in a different respect: it would allow bound morphemes to live independent syntactic lives in a GB/MP fashion. The nominalising morpheme cannot be treated as either a clitic or a phrasal suffix, because – among other things – it is affected by the rules of vowel harmony, which is only characteristic of word-level bound morphemes.

3.1.5.2.2 *Nominalisation of PVCs*

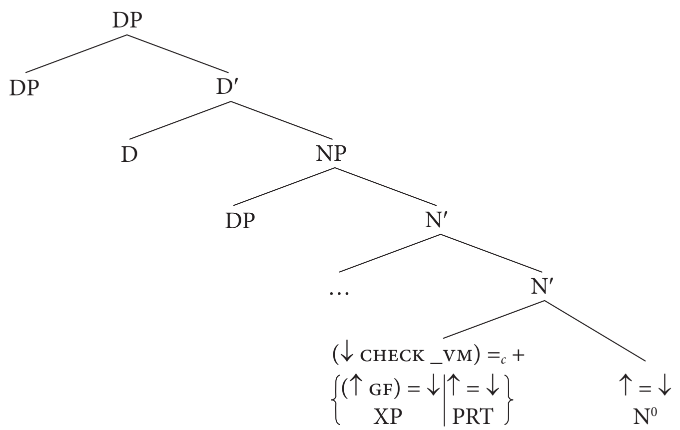
One of Ackerman's (2003) central arguments for treating Hungarian PVCs lexically is that they can serve as input to event nominalisation. His fundamental generalisation is as follows. "Phrasal predicates generally become synthetic morphological entities when they undergo category changing derivation" (2003: 9). Consider, for instance, the nominalised counterpart of (90), one of our previous examples.

(94) *a* *fiú* *ki* *mász-ás-a* *a* *folyó-ból*
the boy.NOM out crawl-DEV-his the river-out.of
"the boy's crawling out of the river"

Before discussing the treatment of the nominalisation of PVCs, let me point out that in this section my approach is along the same general lexical lines as Ackerman's. I adopt Forst et al.'s (2010) and Laczkó & Rákosi's (2011) lexical treatment of non-compositional PVCs, and I argue for a similar lexical account of compositional PVCs (contra Forst et al. 2010 and Laczkó & Rákosi 2011).

In my analysis of the nominalisation of PVCs, my most crucial assumption is that these derived forms are not synthetic morphological entities (contra Ackerman's claim). On the basis of Laczkó (2000, 2003), I postulate that Hungarian DPs have the following (skeletal) structure.

(95)



The key idea here is that I assume a special position below the lower N' which I take to correspond to the Spec,VP position in the verbal domain. Furthermore, I postulate that this position is available to the overwhelming majority of the VMs in the verbal domain, e.g., to preverbs with the functional head annotation and a range of designated arguments with their respective grammatical functions. My main motivation for this structure is that among these designated arguments there are also clearly maximal projections, which can also be referential. For a preliminary version of this idea, in comparison with Szabolcsi's (1994) GB solution, see Laczkó (2000).

Let us first take a look at one of Ackerman's own examples (2003: 28), where TRANS glosses the translative case suffix.

(96) a. *szabályszerű-vé válik*
regular-TRANS become
"become regular"
b. *szabályszerű-vé vál-ás*
regular-TRANS become-DEV
"becoming regular"

Ackerman's claim is that in this case, too, nominalisation results in the 'incorporation' of the VM element, that is, the nominalised version becomes a synthetic morphological entity (just like in the case of the nominalisation of PVCs). Notice, however, that the adjective *szabályszerű* "regular" can be modified, and this results in an AP, for instance: *meglepően szabályszerű* "surprisingly regular". This weakens the tenability of the lexical incorporation analysis considerably, because it does not seem to be plausible to lexicalise a (possibly infinite) number of accidental adverb + adjective combinations like this. Furthermore, the verbal predicate in (96a) can also take a full referential DP in translative case as its complement, see the examples in (97).

(97) a. *Pál* *Éva* *barát-já-vá* *vált.*
Paul.NOM Eve.NOM friend-her-TRANS became
"Paul became Eve's friend."
b. *Pál-nak* *az* *Éva* *barát-já-vá* *vál-ás-a*
Paul-DAT the Eve.NOM friend-her-TRANS become-DEV-his
"Paul's becoming Eve's friend"

I think it would be even more implausible to assume that the referential possessive DP (*Éva barátja* "Eve's friend") incorporates into a synthetic morphological entity as a result of nominalisation.

This phenomenon manifests a very old problem for approaches to VM constituents which aim at a uniform analysis of all these elements (given their complementarity and their fundamentally similar syntactic positional behaviour in neutral, focused and negative clauses). I have just shown that a uniformly lexical/morphological treatment is not feasible.

In this discussion I have simplified the argumentational picture, as Farrell Ackerman (p.c., April 2016) rightly points out, referring to Sapir's (1911) and Sadock's (1980, 1986) discussion of noun incorporation in American languages and Greenlandic Eskimo, respectively. The crucial issue is that in these languages there is strong empirical evidence that noun incorporation takes place; however, the incorporated noun can be modified 'from outside', i.e., by a constituent outside the word containing the incorporated noun. In § 1.1.1 I briefly discussed the example in (20), repeated here for convenience.

(20) *Angisuu-mik* *qimmeq-arpoq.*
big-INST dog-have.3SG
"He has a big dog."

As a reminder: *-arpoq* "have" is a verbalising suffix attaching to noun stems. In this example it combines with *qimmeq* "dog", that is, in the relevant sense, the noun incorporates into a verbal element, a bound morpheme. The adjective in instrumental case *angisuu-mik* "big-INST", as a separate word, modifies the incorporated noun. Sadock (1980) analyses this as an instance of syntactic word formation, i.e., noun incorporation in the syntax. By contrast, given that classical mainstream LFG subscribes to the Strong Lexicalist Hypothesis, Simpson (1991), in this framework, develops a lexical treatment. Its essence is that sublexical functional annotations are assigned to the two morphemes: the verbalising suffix is a two-place predicate, receiving the functional head annotation, while *qimmeq* "dog" is its oblique argument, receiving the customary OBL annotation. Furthermore, *angisuu-mik* "big-INST" has a functional annotation to the effect that it is an adjunct of the oblique argument. Ackerman's main point is that examples like (96) in Hungarian can be analysed along the same 'lexical incorporation' lines, and here, too, it is not a problem if the incorporated adjective (in translative case) is modified by an adverb 'from outside'. My response, briefly reiterating two of my major arguments in Laczkó (2000, 2003), is as follows. (1) My approach straightforwardly captures the 'VM + V ~ VM + N' parallel, including the full complementarity of all types of VMs in the nominal domain. (2) It avoids the problem of having to assume that in the case of certain VM types fully referential maximal projections are lexically incorporated. For an overview of the major types of referential XP VMs, see § 3.2.1. Let me now add that my 'non-lexical-incorporation' approach is also superior to the 'lexical-incorporation' alternative from a formal-categorial point of view. Let us take another look at (96). On the 'lexical-incorporation' account, the adjective is 'buried' within a noun. If this adjective takes modification, the modifier must be an adverb. In this configuration, however, the adverb formally modifies a noun, and these two categories are incompatible under normal circumstances. Informally, we can describe this situation in the following way. The prenominal occurrence of the adverb is exceptionally licensed by the presence of an incorporated element within the noun. Or, to put it differently, the adverb can 'look into' the noun and it can see that its 'modifyee' is based within that word. I do not mean to claim that such a scenario is unacceptable. My main point is that my 'non-lexical-incorporation' analysis does not need to be marked at all in this respect: the adverb modifies the adjectival head in an AP, and this AP occupies the customary prenominal VM position in my system. Finally, consider the following quote from Farrell Ackerman. "I actually don't think that nominalisation of incorporated elements with the V is as easy to dismiss as you suggest. Especially, since Hungarian distributions appear to parallel those found elsewhere and catalogued as early as Sapir's classic article. On the other hand, there seems little question that there are all sorts of VM V type constructions in Hungarian, and they range from those that challenge the boundary between syntactic and lexical and that, accordingly, it would be great to have a mechanism that can address them in their variety" Farrell Ackerman (April 17, 2016). Let me make two comments. (1) For my view of the pros and cons of the lexical incorporation approach, see the foregoing discussion. (2) As regards the treatment of this variety of VMs, in § 3.2. I aim at outlining such a mechanism in my LFG-XLE framework.

The other logical possibility is to treat all these VMs and their verbal or nominalised companions as distinct syntactic atoms consistently. My approach does exactly this.

Now let us take a look at the details of my analysis of examples like (94). Of the two VM options in (95), it is the PRT version that is invoked. Given that in my new lexical analysis of productive, compositional PVCs I use the CONCAT device, the preverb has the same lexical form as in the non-compositional use in (85), repeated here as (98) for convenience.

(98) *ki* PRT
(↑ PRT-FORM) = ki
(↑ CHECK _PRT-VERB) $=_c$ +
{(↑ FOCUS)
| (↑ CHECK _VM) $=_c$ +}
((↑ DIR) = out).

As regards the lexical form of the main verb, now I apply the CONCAT template, see (99), and compare it with (65) and (87).

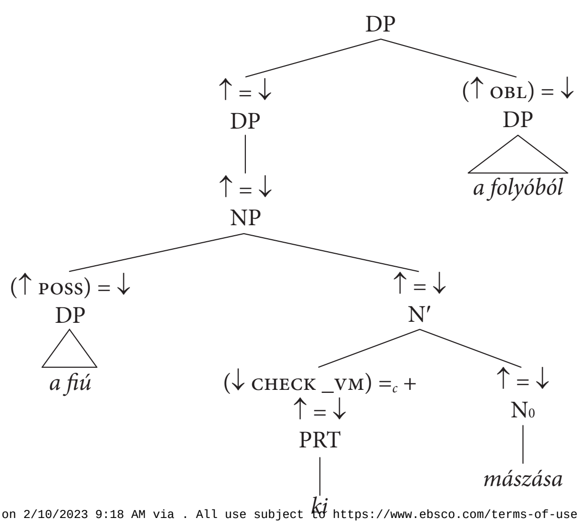
(99) *mászik* V
(↑ PRED) = '%FN < (↑ SUBJ) (↑ OBL) >'
(↑ CHECK _PRT-VERB) = +
(↑ PRT-FORM) $=_c$ ki
(↑ DIR)
@(CONCAT (↑ PRT-FORM) # stem %FN).

From the lexical form of the simplex verb shown in (99) a lexical redundancy rule creates its event nominal counterpart by changing its syntactic category and replacing the SUBJ grammatical function of the first argument of the verb with the POSS function.

(100) *mászás* N
(↑ PRED) = 'crawl < (↑ POSS) (↑ OBL) >'
(↑ CHECK _PRT-VERB) = +
(↑ PRT-FORM) $=_c$ ki
(↑ DIR) $=_c$ out.

The simplified c-structure representation of (94) is shown in (101). Here I assume without justification that the oblique argument following the noun head is right-adjoined to the DP. For a discussion, see Laczkó (2003).

(101)



The corresponding (simplified) f-structure is as follows.

(102)
$$\left[\begin{array}{ll} \text{PRED} & \text{`ki\#mászás} < (\uparrow \text{POSS})\ (\uparrow \text{OBL}) >\text{'} \\ \text{POSS} & [\text{“a fiú”}] \\ \text{OBL} & [\text{“a folyóból”}] \\ \text{CHECK \_PRT-VERB} & + \\ \text{PRT-FORM} & \text{ki} \end{array}\right]$$

There are two fundamental differences related to the VM position in DPs as opposed to VPs. (i) This position cannot have the (↑ FOCUS) annotation in DPs. (ii) A preverb (PRT) can only occupy this position in DPs as a rule. It cannot follow the noun head, nor can it target any other pre-head position. These facts can be captured in an LFG framework in terms of DP-specific c-structure rules, functional annotations and appropriate lexical specifications for complex event nominals along the lines I proposed in Laczkó (2003, 2013).

3.1.5.2.3 *Preverb reduplication*

This is an absolutely productive process even in the case of non-compositional PVCs. Consider two of our previous examples, (59) and (60), this time with reduplicated preverbs. The PVC is compositional in (103) and non-compositional in (104).

(103)	*A*	*rák*	*ki-ki*	*mász-ott*	*a*	*folyó-ból.*
	the	crab.NOM	out-out	crawl-PAST.3SG	the	river-out.of
	“The crab crawled out of the river from time to time.”					

(104)	*Az*	*elnök*	*ki-ki*	*fej-ez-te*	*az*	*együttérzés-é-t.*
	the	president. NOM	out-out	head-Vsuf-PAST.3SG	the	sympathy-his-ACC
	“The president expressed his sympathy from time to time.”					

In Ackerman's (2003) terminology, preverb reduplication introduces the following aspectual feature: intermittently repeated action (IRA), see the translations of (103) and (104). Relying on Kiefer (1995/1996), he makes the following generalisations. Preverb reduplication brings about a synthetic morphological object. Their main test is negation, the observation being that the reduplicated preverb cannot occur postverbally when the verb is preceded by the negative particle, which is the way of negating ordinary PVCs.

My comment on Kiefer's and Ackerman's generalisation to the effect that reduplicated preverbs make up a synthetic morphological unit is that it is incorrect. The reason for this is that if this combination was really a complex morphological entity and a single syntactic atom then it should be inserted under a V^0 node and it should be negatable as an ordinary verb. This can only be stipulated in the context of their generalisation. I claim that the empirically correct generalisation is that a reduplicated preverb is constrained to occupying the Spec,VP position. This single constraint captures the (negative) negation facts, which makes it more tenable than the 'Kiefer-Ackerman' approach. A further and related problem is that the reduplicated preverb can get 'very far' from its base verb in the syntax. Consider the following example.

(105) *A rák ki-ki akar mász-ni a folyó-ból.*
the crab.NOM out-out wants crawl-INF the river-out.of
"The crab wants to crawl out of the river from time to time."

In this sentence the reduplicated preverb occurs in the Spec position of a VP headed by a verb different from its own simplex verb within the PVC.

If the PV-PV–V complex is an ordinary synthetic V^0, as is assumed by Kiefer and Ackerman, then, in addition to the impossibility of the negative particle's preceding this V, it is also puzzling why no focused constituent can precede it, either, in the regular Spec,VP position. Consider (106). This construction is a reliable test because Hungarian *csak* "only" constituents obligatorily occupy the Spec,VP focus position.

(106) **Csak a rák ki-ki mászott a folyó-ból.*
only the crab.NOM out-out crawled the river-out.of
"It was only the crab that crawled out of the river from time to time."

This fact also follows from my alternative analysis: no focusing is possible because the designated position is occupied by the reduplicated preverb.

All this having been said, the following legitimate question arises. Why are reduplicated preverbs constrained to the Spec,VP position? My tentative answer is that they are capable of enforcing their aspectual content in that position, but this issue requires further investigation. It is noteworthy in this context that É. Kiss (1992), in her GB framework, assumes that certain (phonetically null) aspectual operators occupy the Spec,VP position. In addition, it is to be noted that at least for some speakers the postverbal occurrence of a reduplicated preverb is also acceptable (György Rákosi, p. c., July 14, 2013); thus, in their grammar reduplicated PVCs provide even more spectacular evidence for their non-synthetic nature.

My analysis of PVCs with reduplicated preverbs is as follows. The lexical form of the simplex verb has to be modified minimally: in addition to the simple form of the preverb, it also has to admit the reduplicated version disjunctively: see (107) below and compare it with (87).

(107) *mászik* V
(↑ PRED) = 'out < 'crawl < (↑ SUBJ) NULL >' (↑ OBL) >'
(↑ CHECK _PRT-VERB) = +
(↑ PRT-FORM) $=_c$ {ki | ki-ki}
(↑ DIR) $=_c$ out.

A lexical redundancy rule creates a lexical form for the reduplicated version of the preverb, and it brings about two changes with respect to the lexical form of the input preverb, in addition to the obvious FORM feature change. (i) It eliminates the two-member disjunction by removing the (↑ FOCUS) disjunct, thereby constraining the reduplicated preverb to a VM position. (ii) It introduces a special aspectual feature which, following Ackerman (2003), I informally represent as IRA (intermittently repeated action). Compare the lexical form of the simple preverb in (98), repeated here as (108a) for convenience, with that of the reduplicated counterpart in (108b).

(108) a. *ki* PRT
(↑ PRT-FORM) = ki
(↑ CHECK _PRT-VERB) $=_c$ +
{(↑ FOCUS)
| (↑ CHECK _VM) $=_c$ +}
((↑ DIR) = out).

b. *ki-ki*, PRT
(↑ PRT-FORM) = ki-ki
(↑ ASPECT) = IRA
(↑ CHECK _PRT-VERB) $=_c$ +
(↑ CHECK _VM) = +
((↑ DIR) = out).

Ackerman (2003) rejects Kiefer's (1995/1996) claim that reduplicated PVCs cannot undergo category changing derivation. Ackerman is right. Consider the nominalised counterpart of (103).

(109)	*a*	*rák*	*ki-ki*	*mász-ás-a*	*a*	*folyó-ból*
	the	crab.NOM	out-out	crawl-DEV.its	the	river-out.of

"the crab's crawling out of the river from time to time"

My treatment of this nominalisation is very simple. The lexical form of the reduplicated preverb is the same: (108b), and the relevant lexical redundancy rule nominalises the modified lexical form of the simple verb given in (107).

3.1.5.3 *Interim conclusion*

In this section I have revisited crucial LFG theoretical and XLE implementational issues related to the treatment of spatial PVCs in Hungarian. I compared, in detail, the lexical-realisational approach advocated by Ackerman (2003) and Ackerman et al. (2011), among others, with an LFG-XLE approach developed by Forst et al. (2010), Laczkó & Rákosi (2011) and Rákosi & Laczkó (2011).

As regards the latter two papers, I added some important aspects to their analyses, and I proposed a significant modification. I argued that compositional PVCs should also be treated lexically in a manner similar to the treatment of non-compositional PVCs, and I presented a possible way of carrying this out.

I pointed out that one of the advantages of this uniform lexical treatment is that classical LFG's view of the distribution of labour between the lexical and the syntactic components of grammar can be maintained. In a footnote in Laczkó (2013), on which this section is based, I point out that one of the anonymous reviewers of that paper criticises my approach by claiming that I sacrifice the productivity of compositional PVCs by trying to adhere to the Strong Lexicalist Hypothesis despite the fact that it has been demonstrated for phenomena in some languages that this hypothesis is vulnerable. My answer in that footnote is as follows.

> I myself think that a linguistic phenomenon may call for a syntactic analysis in violation of the SLH (in Laczkó & Rákosi 2011, we argued for such a solution). However, in the present paper, on the basis of further investigation, my claim is that additional crucial facts more strongly support a lexical treatment. Moreover, I do not 'sacrifice' productivity: I simply capture it in the lexical component of grammar. So in this case the SLH is not the motivation or aim driving my (re)analysis; instead, it is just a welcome consequence, making this account one degree less marked, given the general assumptions of LFG.
>
> (Laczkó 2013: 395–396 fn. 21)

In this section I also showed how various morphological processes (often consecutively) involving PVCs can be handled (e.g., causativisation, nominalisation, and preverb reduplication).

Finally, it is a favourable aspect of our LFG-XLE approaches that their apparatus makes it possible to adhere to the classical notions of a morphological word and a syntactic atom to a great extent.

3.2 A general approach to verbal modifiers

In this section, first I present the major VM types (§ 3.2.1). Then I develop my analysis of these VMs (§ 3.2.2).

3.2.1 Major VM types

Below I exemplify the most important types of VMs, which I analyse in this section, and I also point out their relationship to focusing. For an overview with empirical generalisations, see Komlósy (1985). Consider the examples in (110)–(117).

(110) preverb:
Ma Péter fel hívta János-t.
today Peter.NOM up called John-ACC
"Today Peter called up John."

(111) focused constituent:
Ma Péter JÁNOS-T hívta fel.
today Peter.NOM John-ACC called up
"Today Peter called up JOHN (and not Joe, for instance)."

(112) unfocused bare/reduced (object) argument:
Ma Péter újság-ot olvasott.
today Peter.NOM newspaper-ACC read.PAST
"Today Peter read a newspaper / newspapers (= did newspaper-reading)."

(113) focused bare/reduced (object) argument:
Ma Péter ÚJSÁG-OT olvasott.
today Peter.NOM newspaper-ACC read.PAST
"Today Peter read A NEWSPAPER / NEWSPAPERS (= did NEWSPAPER-reading, as opposed to book-reading, for example.)"

(114) unfocused designated (oblique) XP argument:
Ma Péter a városunk-ba érkezett.
today Peter.NOM the city.our-into arrived
"Today Peter arrived in our city."

(115) focused designated (oblique) XP argument:
Ma Péter A VÁROSUNK-BA érkezett.
today Peter.NOM the city.our-into arrived
"Today Peter arrived IN OUR CITY (and not in Pécs, for instance)."

(116) unfocused small clause XCOMP argument:
Ma Péter piros-ra festette a kapu-t.
today Peter.NOM red-onto painted the gate-ACC
"Today Peter painted the gate red."

(117) idiom chunk:
Ma Péter pali-ra vette János-t.
today Peter.NOM paul-onto took John-ACC
"Today Peter made a dupe of John." (*pali* "paul" = dupe)

(110) and (111) demonstrate the most famous preverbal complementarity in Hungarian: the particle of a PVC and a focused constituent are in complementary distribution. Practically, any argument or adjunct can be focused.

Various groups of verbs require one of their designated arguments to precede them in a reduced (typically, bare) form in neutral sentences. These bare nouns are usually singular in form, and they are underspecified (or, rather, unspecified) for number. In (112), the verb *olvas* "read" takes a bare object argument as its VM. Certain other verbs take their bare subject, and yet others take their bare oblique argument as their VM, see (118) and (119), respectively.

(118) *Víz ment a szemembe.*
water.NOM went the eye.1SG.into
"Water got into my eyes."

(119) *János moziba ment.*
John.NOM cinema.into went
"John went to the cinema."

There are also a great number of verbs like *érkezik* "arrive" in (114) that require a clearly fully-fledged XP as their oblique VM. Verbs with different argument structures can belong here. In (114) there is an intransitive verb, while in (120) below there is a transitive one, and both require an oblique XP VM.

(120) *János az asztalra tette az üveget.*
John.NOM the table.onto put the bottle.ACC
"John put the bottle on the table."

As I emphasise at various points in this book, the fact that maximal projections can also function as VMs questions all analyses of any theoretical persuasions which assume that VM + verb combinations are uniformly complex predicates with a lexical unit status. In an important sense, preverb VMs in particle verb constructions and fully-projected oblique XP VMs represent the two extreme points on a scale of various types of VMs.

(116) exemplifies a small clause XCOMP VM, and (117) demonstrates that the predicate of an idiomatic expression can also require its idiom chunk to function as a VM.

Practically any constituent can be focused, in which case it prevents a VM from occurring preverbally. It is important to note, however, that preverbal VMs themselves can receive focus stress and interpretation. Two such cases are exemplified in (113) and (115). In the former a bare object noun VM is focused, and in the latter an oblique XP VM is the focused constituent. As the extended translations show, ordinary focusing, as in (111), and VM focusing, as in (113) and (115), can express what is generally called identificational focus, i.e., exhaustive identification with exclusion. However, a VM can only function as an identificational focus if it is meaningful enough, for obvious reasons: if it is not meaningful, nothing can be identified and other entities or properties excluded. For instance, the preverb in (110) is used in a non-compositional particle verb construction; therefore, it cannot function as an identificational focus. However, it can receive the usual focus stress. Compare (110) and (121). As the English translation shows, here we are dealing with a different kind of focus, standardly called 'verum focus' (or 'VP focus'): the truth value of the entire statement is emphatically verified. The very same holds for the focused counterpart of (117), see (122).

(121) *Ma* *Péter* FEL *hívta* *János-t.*
today Peter.NOM up called John-ACC
"Today Peter DID call up John."

(122) *Ma* *Péter* PALI-RA *vette* *János-t.*
today Peter.NOM paul-onto took John-ACC
"Today Peter DID make a dupe of John."

It is to be noted that if a sentence does not contain either a VM or a focused constituent, the verb itself can receive focus stress. In this case, an ambiguity may arise. (1) The meaning of the verb can be interpreted as being 'identificationally focused'. (2) The sentence expresses verum focus. Consider (123). This potential ambiguity extends to all other cases of identificationally focused VMs.

(123) *Péter* IMÁDJA *János-t.*
Peter.NOM adores John-ACC
i. "Peter ADORES John (does not only like him)."
ii. "Peter DOES adore John."

King (1997) develops an LFG treatment of subtypes of focusing in which only parts of phrasal constituents are focused. This approach can be used for the analysis of the (i) reading in (123).

3.2.2 Towards a comprehensive LFG analysis of VMs

The presentation of my account below follows the order in which these VM types were introduced and exemplified in § 3.2.1.

3.2.2.1 *Preverbs*

As I discussed in a detailed fashion in § 3.1.4.2, in Laczkó & Rákosi (2011) we analyse certain types of Hungarian spatial particle verb constructions (PVCs). Capitalising on Laczkó (2013), in § 3.1.5 above I revisited this PVC analysis, and on the basis of evidence from (morphological) causativisation, nominalisation and preverb reduplication I argued for a uniform lexicalist treatment of both non-compositional and compositional PVCs.

3.2.2.2 *Reduced arguments*

Consider (112), repeated here as (124) for convenience.

(124) *Ma* *Péter* *újság-ot* *olvasott.*
today Peter.NOM newspaper-ACC read.PAST
"Today Peter read a newspaper / newspapers (= did newspaper-reading)."

Recall from § 3.2.1 that certain verbs, e.g. *olvas* "read" in (124), also permit the plural form of the bare noun, and a verb may select arguments other than the object argument to be expressed as a bare noun VM, as in (118) and (119), where a subject and an oblique are realised in this way, respectively.

The analysis runs as follows. A verb like *olvas* "read" optionally allows (or, rather, requires) its object to be expressed by a bare noun in neutral sentences. This has to be encoded in the lexical form of such a predicate by means of a set of optional annotations, as in (125).

(125) *olvas*, V (↑ PRED) = 'read < SUBJ, OBJ >'
((↑ OBJ NUMBER) $=_c$ SG
~(↑ OBJ REF-INDEX)
{(↑ FOCUS)
| (↑ OBJ CHECK _VM) = +}).

This set of optional annotations encodes the following. The predicate allows for a reduced object argument. The morphological form of its object is singular obligatorily: (↑ OBJ NUMBER) $=_c$ SG and it is unspecified for 'semantic' number; and, therefore, it is non-referential, see the English translation of (124). This is captured by the following negative existential constraint: ~(↑ OBJ REF-INDEX), where REF-INDEX is short for referential index. This reduced argument must occur in the Spec,VP position: (↑ OBJ CHECK _VM) = +, unless the sentence contains a focused constituent, which can be any phrase, including the reduced argument itself. The reason why the additional alternative lexical specification is needed is twofold. On one hand, it is only a set of verbs that can have this option. On the other, the reduced argument can occur anywhere in a non-neutral sentence, so its special form and interpretation cannot be suitably captured solely by c-structural (positional and annotational) means. These two crucial observations hold for the analysis of all the other VM types to be presented below.

3.2.2.3 *Oblique arguments*

Consider (114), repeated here as (126), and the simplified lexical form of the verb *érkezik* "arrive" in (127).

(126) *Ma* *Péter* *a* *városunk-ba* *érkezett.*
today Peter.NOM the city.our-into arrived
"Today Peter arrived in our city."

(127) *érkezik*, V (↑ PRED) = 'arrive < SUBJ, OBL >'
{(↑ FOCUS)
| ~(↑ FOCUS)
(↑ OBL CHECK _VM) = +}.

The analysis of this VM type is similar to that of the reduced argument VM type with the following differences. In this case, the VM requirement is obligatory in neutral sentences. Consequently, there are no additional constraints on the designated oblique argument, because in neutral sentences it must occupy the preverbal VM position. As I mentioned in § 3.2.1, this type seriously questions any analysis of VMs assuming that a VM and the verb make up a lexical unit, along some vaguely defined complex predicate and/or incorporation lines. In § 3.2.1, I also pointed out that a verb taking this VM type can be either intransitive, as in (126) or transitive, see example (120), repeated here as (128), and the lexical form of the verb *tesz* "put" in (129).

(128) *János* *az* *asztal-ra* *tette* *az* *üveg-et.*
John.NOM the table-onto put the bottle-ACC
"John put the bottle on the table."

(129) *tesz*, V (↑ PRED) = 'put < SUBJ, OBJ, OBL >'
{(↑ FOCUS)
| ~(↑ FOCUS)
(↑ OBL CHECK _VM) = +}.

3.2.2.4 *Small clause* XCOMPS

Consider (116), repeated here as (130).

(130) *Ma* *Péter* *piros-ra* *festette* *a* *kapu-t.*
today Peter.NOM red-onto painted the gate-ACC
"Today Peter painted the gate red."

In this example, the verb requires an XCOMP, expressed by a case-marked AP, to have the VM status in neutral sentences. Its lexical form is the same in nature as that of *tesz* "put" in the previous type (except for the OBL vs. XCOMP contrast). Compare (129) and (131).

(131) *fest*, V (↑ PRED) = 'paint < SUBJ, OBJ, XCOMP >'
(↑ OBJ) = (↑ XCOMP SUBJ)
{(↑ FOCUS)
| ~(↑ FOCUS)
(↑ XCOMP CHECK _VM) = +}.

3.2.2.5 *Idiom chunks*

Consider (117), repeated here as (132), and the lexical form of the verb *vesz* “take” as used in this idiomatic expression in (133).

(132) *Ma Péter pali-ra vette János-t.*
today Peter.NOM paul-onto took John-ACC
“Today Peter made a dupe of John.”

(133) *vesz*, V (↑ PRED) = ‘take < SUBJ, OBJ > OBL’
(↑ OBL FORM) = PALIRA
{(↑ FOCUS)
| ~(↑ FOCUS)
(↑ XCOMP CHECK _VM) = +}.

Note that the oblique VM type transitive predicate *tesz* “put” in (133) and the oblique idiom chunk VM type transitive predicate *vesz* “take” follow the same pattern, except that in the case of the former the oblique VM is a semantic argument, whereas in the case of the latter it is just a formal (non-semantic) oblique constituent.[8]

3.3 Conclusion

3.3.1 General remarks

In this chapter, I have presented the crucial aspects of an LFG (and XLE-implementable) analysis of the major types of Hungarian verbal modifiers. In accordance with the general approach outlined in Chapter 2, I assume that focused constituents, verbal modifiers and the verb-adjacent question phrase are in complementary distribution in Spec,VP. Following from the main topic of this chapter and for simplicity of exposition, here I only formally modelled the complementarity and interaction of VMs and focusing.

I have shown that VMs can also be focused, and, depending on their nature, they can be used to express two types of focus: identificational focus and verum focus. I distinguish two major types of VMs: preverbs belong to the first type, and

8. Idioms like this seem to make it necessary to assume that occasionally even the ‘semantically restricted’ OBL function can be assigned to a non-semantic constituent. The relevant classic LFG generalisation is that only the SUBJ and OBJ grammatical functions are specified as [−r], i.e., semantically unrestricted, and only they can be assigned to non-semantic constituents. It appears to me that an easy way out would be to assume that OBLS are semantically restricted when they are assigned to constituents with a PRED feature (i.e., semantic constituents), but they can also be assigned to constituents with only a FORM feature. I leave it to future research to explore the ramifications of this assumption in LFG.

the rest of VMs to the other type. In the analysis I have proposed in § 3.1.5, I treat both compositional and non-compositional PVCs lexically, with both the verb and the particle having their respective lexical forms with appropriate functional annotations and cross-referencing, including the use of CHECK features. The particle and the verb are analysed as functional coheads in both PVC types. All the other VMs, with their own grammatical functions, are lexically selected by their verbs in these verbs' lexical forms. Depending on the nature of the VM involved, the verb can impose various constraints on it.

I argue against assuming that all VM + verb pairs are lexical units or combinations, and when the VM immediately precedes the verb, obligatory syntactic incorporation takes place in some (theory-dependent) form. Three comments are in order here.

Firstly, some VM + verb pair types must really be treated as lexical combinations, because they have a shared meaning and argument structure. In my approach, PVCs (of both major types) and idioms belong here. However, even in these cases 'lexical combination' means separate, suitably annotated and cross-referenced lexical items which occupy distinct syntactic positions even when the VM immediately precedes the verb. This means that I reject the idea of syntactic incorporation in these instances as well.

Secondly, in the case of all the other VMs, the relationship between the VM and its verb is fundamentally syntactic, except that (i) the verb requires its designated VM argument to occupy the Spec,VP position in neutral sentences, and (ii) the verb may, in general, specify the features the VM needs to exhibit. Notice, however, that (i) already calls for a lexical encoding of this VM requirement in the verb's lexical form, because the VM–verb syntactic dependency is very often verb-specific, although there are also certain verb types, with particular semantics and argument structure, that typically behave similarly in this respect.

Thirdly, the LFG-style encoding of the VM–verb relationship in the verb's lexical form makes it possible to capture the felicitous co-occurrence of the two elements and the required properties of the VM in both neutral and focused sentences without employing any syntactic movement operation.

VMs and focused constituents aspire to the Spec,VP position. The widely assumed, basic generalisation is that in the non-neutral vs. neutral sentence binary distinction, focused constituents occupy this designated position in the former setup and VMs occupy it in the latter. In the case of neutral sentences, the extremely strong tendency is that if the verb is combined with a particle then the particle has the VM status. There are, however, some exceptions. Consider the examples in (134) and (135).

(134) *A város a folyó két partján terül el.*
the city.NOM the river.NOM two bank.POSS.3SG.on spreads VM
"The city lies on both banks of the river."

(135) *A férfi gyógyszert vett be.*
the man.NOM medicine.ACC took VM
"The man took medication."

In both these examples, there is a PVC; however, it requires an argument (and not the particle) to occupy the Spec,VP position in neutral sentences. In (134), the VM is a designated oblique XP argument, and in (135), it is a bare noun object. Such examples strengthen a favourable aspect of the lexical treatment of VMs along the lines proposed in this chapter: the special behaviour of predicates is best captured by lexical means.

In future work I plan to explore in detail what motivates or triggers the occurrence of a constituent in the immediately preverbal position from the perspective of focusing. My initial hypothesis is as follows; naturally it is based on several crucial aspects of a variety of approaches.

The 'common denominator' is that the preverbal constituent and the verb make up a phonological word (unit) with the verb losing its ordinary word-initial stress completely or to a considerable extent. This syntactic adjacency and phonological pattern of the two elements can serve two distinct purposes. On the one hand, the preverbal constituent receives a remarkable degree of prosodic salience, which enables it to encode a designated type of discourse salience: focusing. On the other hand, when the verb definitely makes up a lexical unit with a syntactically separable element (an obviously marked but not at all uncommon option across languages) as in the case of PVCs and idioms, this lexical unity can be naturally encoded by this configuration in neutral sentences. Given that there is always only one finite verb in a clause, and, therefore, only one prosodically salient position, the two purposes cannot be simultaneously satisfied under normal circumstances. This is the cause of the famous preverbal complementarity. Naturally, discourse salience enjoys priority. I think it is for this reason that approaches postulating a single designated syntactic position, in combination with the what-you-see-is-what-you-get principle, can be considered more feasible intuitively.

On the basis of my discussion of some previous approaches in this chapter, I claim that a sweeping generalisation to the effect that the motivation for, or the trigger of, the occurrence of a constituent in Spec,VP is complex predicate formation is not well-founded (especially) because the term 'complex predicate' is vaguely defined (if at all). I also claim that a general (uniform) syntactic incorporation analysis in the case of VMs is not feasible either. Of course, there are VM types in which the VM and the verb clearly make up a lexical unit (a complex predicate in this sense), see PVCs and idioms, for instance; however, even in these cases the VM should not be analysed as incorporated into the verb in the syntax.

The generalisation I intend to explore is that the 'common denominator' of the behaviour of all VMs is that they are lexically specified. At one end of the scale we have PVCs and idioms (lexical but not syntactic complex predicates), and at the other end we find verbs that require one of their designated XP arguments to occupy the preverbal position in neutral sentences. In this case, only this requirement is encoded in the verb's lexical form. It stands to reason to assume that such verbs create a special 'presentational focus' configuration for their designated argument in a neutral sentence. In an important sense, the properties of this VM type yield an additional motivation for assuming that focused constituents and VMs occupy the very same syntactic position in complementary distribution: an ordinary VM in a neutral sentence exhibits presentational focus behaviour, a borderline case between the two domains.

3.3.2 Implementational issues

I have discussed the implementational dimension of the treatment of PVCs, the central, most extensively and most intensively investigated type of VMs in Hungarian, in a detailed fashion in § 3.1.4 and § 3.1.5. The challenge is to capture the mixed lexical and syntactic properties of PVCs in a formally and implementationally satisfactory manner. On the basis of these two sections, the following general remarks can be made.

The essence of Forst et al.'s (2010) proposal for XLE grammars for English, German, and Hungarian is as follows. Non-compositional and non-productive PVCs should be treated lexically, as in the current ParGram grammars of English and German (the central XLE device being concatenation). Compositional and productive PVCs, by contrast (and contrary to the existing English and German XLE grammars), should be treated syntactically (the crucial XLE device being restriction, making complex predicate formation in the syntax possible).

In Laczkó & Rákosi (2011) and Rákosi and Laczkó (2011), we adopt this mixed (lexical and syntactic) approach in our analysis of the four major PVC types in Hungarian in our HunGram. Capitalising on Laczkó (2013), in § 3.1.5 I have developed a modified approach to these Hungarian PVCs, which treats even compositional and productive PVCs in Hungarian lexically. The crucial (shared) device for handling both productive and non-productive PVCs in Hungarian is concatenation (and there is no syntactic complex predicate formation via restriction). As should be obvious from § 3.1.5.2, the HunGram implementation of the analysis I propose for all the other major VM types in Hungarian is straightforward and unproblematic.

CHAPTER 4

Operators

In Chapter 2, I developed the essential aspects of a comprehensive LFG analysis of the preverbal portion of Hungarian finite clauses. I proposed a general formal apparatus for treating constituents in the topic field, in the quantifier zone and in the specifier position of the VP.

In this chapter I develop an LFG-XLE approach to regular and special combinations of operators in the preverbal zone: focused constituents, question phrases and universal quantifiers. I present a detailed LFG-XLE analysis of eleven Hungarian construction types involving constituents in the post-topic and preverbal zone: in the XP,VP quantifier position and in the Spec,VP focus/VM position, concentrating on VMs, focused constituents, universal quantifiers and (multiple) *wh*-questions. In addition to the basic structures that are analysed in all major generative approaches to this domain of Hungarian sentence structure, I also develop a coherent account of two marked constructions that call for special treatments in all approaches.

I base my discussion on a detailed critical overview of Mycock (2010) for the following reasons. Firstly, this work reports the results of very important experimental research (based on elicited spoken data) exploring the syntax-prosody interface with respect to encoding prominence in Hungarian. Secondly, it offers an assessment of previous alternative approaches. Thirdly, it covers a wide range of phenomena, and posits its account in an LFG framework. Finally, although I fundamentally agree with the general lines of Mycock's approach, I disagree with her analysis of certain construction types. I point out that in these cases her views are shared by other researchers, so when I discuss these details I have a chance to argue in a generalised fashion against similar proposals in the literature.

The structure of this chapter is as follows. First, I present Mycock's (2010) critical overview of some salient previous accounts of the correspondence between syntactic focus and prosodic prominence (§ 4.1). Next, I discuss Mycock's (2010) approach (§ 4.2), then develop my alternative analysis (§ 4.3). This is followed by a few concluding remarks (§ 4.4).

4.1 Mycock (2010) on Szendrői (2003), É. Kiss (2002) and Hunyadi (2002)

The syntax-prosody interface has been widely researched, see for instance, Selkirk (1984, 1986, 1995), Vogel & Kenesei (1987), Vogel (1988), É. Kiss (2002), Hunyadi (2002), and Szendrői (2003). Mycock (2010) discusses three salient types of approaching the correspondence between syntactic focus (= syntactically encoded prominence) and prosodic prominence, represented by Szendrői (2003), É. Kiss (2002), and Hunyadi (2002). She tests them against experimental results.

Mycock presents her findings based on and documented with pitchtracks, which are the representations of experimentally recorded intonational contours of utterances. For instance, Figure 4.1 shows the pitchtrack of (1). In this sentence, *János* (John.NOM), the topic, has its characteristic high pitch, while *mindenkit* (everyone.ACC), the universal quantifier (∀), receives the heaviest stress H+L (high and low), and the rest of the sentence, including the focused constituent, *Annának* (Anna.DAT) is unstressed (its intonation is at the low level). As we will see throughout this chapter, one of the main functions of such intonation patterns is to encode semantic scope relations.

(1) *János* *mindenkit* *Annának* *mutatott* *be.*
John.NOM everyone.ACC Anna.DAT introduced VM
"It was to Anna that John introduced everyone."

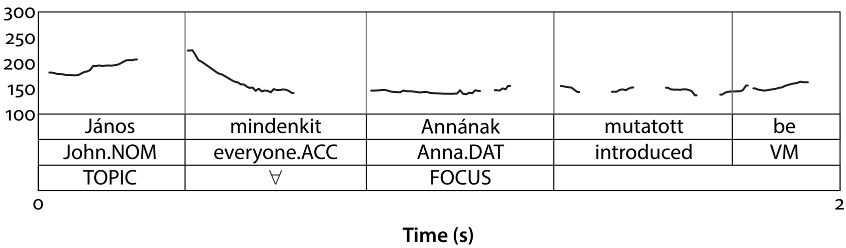


Figure 4.1 Pitchtrack of (1), Mycock (2010: 278)

In the rest of this chapter, I do not generally show Mycock's pitchtrack of the sentence under discussion, instead I indicate the crucial aspects of the intonation pattern of the given sentence as shown in (1′) for (1), where H = high, H+L = high+low and L = low.

(1′) H H+L L
János *mindenkit* *Annának* *mutatott* *be.*
John.NOM everyone.ACC Anna.DAT introduced VM
"It was to Anna that John introduced everyone."

Szendrői (2003) defines her Stress-Focus Correspondence Principle in the following way. "The focus of a clause is a(ny) constituent containing the main stress of the intonational phrase, as determined by the stress rule" (2003: 47). The essence of this proposal (couched in a Minimalist framework) is that the Stress-Focus Correspondence Principle is satisfied by moving a constituent to Spec,FP, that is, this is an instance of stress-driven movement.

Mycock points out that an empirically testable prediction of this approach is that a constituent in Spec,FP, a syntactic focus position, must bear the main stress. Any data not conforming to this prediction will seriously weaken the hypothesis. Mycock refers to É. Kiss (2009b) and Hunyadi (2002), who claim that this hypothesis is in fact weakened: when a universal quantifier precedes a focused constituent, the former receives the main stress. Mycock adds that this criticism is also empirically supported by her findings. See (1) and its pitchtrack in Figure 4.1 above. I fully agree with Mycock's criticism, and I also think that this construction type seriously undermines the feasibility of Szendrői's hypothesis as a general account of focusing in Hungarian. The problem is that *Annának* (Anna.DAT) is the focused constituent, and Szendrői's rule would require it to receive the heavy stress, but in actual fact it is the universal quantifier that bears this stress.

É. Kiss (2002) expresses her Stress-Predicate Edge Alignment rule as follows. "The first obligatory stress, which also represents the heaviest grammatical stress in the sentence, falls on the first major constituent of the predicate. (In Hungarian, phrasal stress – similar to word stress – falls on the left edge)" (2002: 11). This hypothesis makes a prediction different from Szendrői's: the first constituent in the predicate will receive the main stress, whether it is a focused constituent or not. Mycock points out that this is another testable claim: if a universal quantifier precedes a focused constituent, it is predicted that the former will bear the main stress. Thus, it correctly captures the fact attested by Figure 4.1. However, Mycock argues that interrogative sentences in which there is more than one question phrase and declarative sentences in which a distributive quantifier precedes negation pose a challenge for this approach. She supports this claim by the pitchtracks of (2) and (3), respectively.

(2)	H	H	H+L	L	
	Ki	*kit*	*kinek*	*mutatott*	*be?*
	who.NOM	who.ACC	who.DAT	introduced	VM

"Who introduced whom to whom?"

Here it is the linearly last, immediately preverbal question word that receives the main stress.

(3) H H+L L

Mindenki *nem* *dicsérte* *Annát.*

everyone.NOM not praised Anna.ACC

"It is not the case that everyone praised Anna."

Here the main stress falls on the negative particle (and not the universal quantifier). On the basis of these considerations, Mycock concludes that É. Kiss' Stress-Predicate Edge Alignment approach also has serious shortcomings.

When I am discussing Mycock's analysis in § 4.2, I demonstrate that the prosodic behaviour of multiple questions is more complex than is shown in (2). Her own elicited data manifest variation among speakers with respect to which question word receives the H+L accent. Although it is true that the default pattern is the one presented in (2), i.e., the main stress falls on the immediately preverbal question word, there are also attested cases in which the first question word bears the main stress, see § 4.2. This fact by itself weakens the force of the criticism considerably.

When I am developing my alternative analysis in § 4.3, I point out that the above-mentioned attested prosodic variation in multiple questions lends strong support to my proposed distinction between predication and predicate in Hungarian sentence articulation, the former being the post-topic portion of the sentence, beginning with the leftmost VP-adjoined constituent, and the second being the VP, both understood in the structural context of É. Kiss' (1992) classical analysis. If this approach proves tenable, it can contribute to maintaining É. Kiss' (2002) alignment rule modified in a principled fashion: Stress-Predicate Edge Alignment → Stress-Predication/Predicate Edge Alignment.

Mycock's second objection to É. Kiss' (2002) approach based on the construction type presented in (3) is not valid. She seems to be under the impression that the universal quantifier is in the operator zone (i.e., in the predicate) and it is 'de-stressed' in this position to prosodically satisfy the scope encoding requirements: it is interpreted as being in the scope of the negative particle. However, the universal quantifier in (3) is definitely not in the predicate portion of the sentence. It is a contrastive topic. This is supported by its contrastive topic prosody and by the fact that topics or sentence adverbs can follow it. For instance, in (4), a version of (3), the sentence adverb *szerencsére* "luckily" follows the universal quantifier. This means that *mindenki* "everyone" is in the topic field and not in the operator zone.

(4) *Mindenki* *szerencsére* *nem* *dicsérte* *Annát.*

everyone.NOM luckily not praised Anna.ACC

"Luckily, it is not the case that everyone praised Anna."

For more on this and its relevance to my alternative analysis, see § 4.3.

Hunyadi (2002) proposes the following Stress-Scope Correspondence generalisation.

> There exists a systematic relation between the semantics of a sentence and its prosody, with prosody being the feature of Phonetic Form one of whose primary functions is the expression of the operator-scope relation in the semantic-logical representation of a sentence. (Hunyadi 2002: 19)

The main hypothesis is that within the same intonational phrase the stress-bearing head has wide scope over the rest of the operators. It is a crucial aspect of this approach that no reference is made to syntactic structure, i.e., stress and stress reduction in the Intonational Phrase (IntP) encode scope relations without, and independently of, syntax. Mycock (2010) points out that examples in which the main-stress-bearing element in an IntP was not the widest-scoping operator would manifest evidence against this hypothesis. A further problem would be posed by examples in which the widest-scoping interpretation of an operator was determined by its designated syntactic position alone (and not its stress).

Mycock observes that her experimental results support the two main aspects of Hunyadi's (2002) approach. (i) The operator that has widest scope receives greatest prosodic prominence (that is, it bears the H+L accent). (ii) The scope of this operator is the meaning of the IntP in which it occurs. At the same time, on the basis of Jackson (2008), Mycock rejects a crucial property of Hunyadi's analysis: he assumes that all constituents receive initial stress and then some of them undergo stress reduction. Mycock points out that this is a theoretical problem, because Hunyadi has to introduce a special rule: Neutralisation (Hunyadi 2002: 104) to achieve the most common prosodic pattern to be associated with the predicate of a non-neutral sentence that contains a postverbal universal quantifier. This means that the analysis cannot naturally capture the unmarked status of this prosodic pattern. In addition, Mycock claims that the fact that Hunyadi's approach models the relationship between prosody and semantics but does not offer a defined mapping between syntax and semantics leads to problems in the case of constructions in which linear order has a decisive role in the determination of relative scope, as observed by É. Kiss (2002) and Jackson (2008). Consider the following examples from É. Kiss (1998b: 16), cited by Jackson (2008: 90) and Mycock (2010: 290). The expressions in SMALLCAPS receive the H+L accent.

(5) a. *CSAK KÉT LÁNY választ-ott CSAK EGY KÖNYV-ET.*
only two girl.NOM choose-PAST.3SG only one book-ACC
"There were only two girls who chose only one book."
only 2 > only 1
#"There was only one book which only two girls chose."
only 1 > only 2

b. CSAK EGY KÖNYV-ET *választ-ott* CSAK KÉT LÁNY.
only one book-ACC choose-PAST.3SG only two girl.NOM
"There was only one book which only two girls chose."
only 1 > only 2
#"There were only two girls who chose only one book."
only 2 > only 1

Mycock agrees with Jackson's criticism, the essence of which is that Hunyadi's system is forced to admit that syntax (or linear order, at least) has a role to play in scope assignment. This, however, is tantamount to denying the cornerstone of Hunyadi's approach, the assumption that scope is computed more or less directly from prosodic structure.

4.2 Mycock's (2010) analysis

On the basis of her observations and comments on Szendrői's (2003) and É. Kiss' (2002) approaches, summarised in § 4.1, Mycock rejects them. She fundamentally accepts Hunyadi's hypothesis; however, she modifies it in two crucial respects. (i) She assumes an entirely different mechanism of associating prosodic patterns with utterances. (ii) She postulates that in addition to Hunyadi's prosody–semantics connection a separate (parallel) syntax–semantics connection also has to be modelled.

As regards prosodic pattern generation, based on general theoretical considerations, Mycock rejects Hunyadi's uniform initial stress assignment to constituents and subsequent neutralisation (stress reduction) for achieving basic prosodic patterns. Instead, she introduces a rule of tune–text association. Her generalisation, on the basis of her elicited data, is that the characteristic tune of the predicate in a Hungarian non-neutral sentence can be modelled as in (6), where H+L stands for the point of greatest prosodic prominence, i.e., the main stress, and brackets indicate optionality.

(6) Non-Neutral Predicate Tune
(H) H+L L

Mycock's rules are as follows (2010: 289).

(7) NON-NEUTRAL PREDICATE TUNE–TEXT ASSOCIATION RULE
In the Intonational Phrase that follows an Intonational Phrase mapping to a topic, associate a H+L accent with the first stressed syllable (i.e., the leftmost stressed syllable) in the Phonological Phrase which realises the widest scoping operator or the sorting key in a multiple CQ; associate L with the final syllable; and associate H with the initial syllable, if there are any preceding the one which bears the H+L accent.

(8) PROSODY–SCOPE CORRESPONDENCE
When an operator α takes scope over an element β, α is prosodically prominent (i.e., bears H+L) and β is associated with a L monotone, a H monotone, or no tone at all, i.e., where the Kleene star denotes that β may occur zero or more times and brackets indicate optionality:

$$\begin{array}{llllll} \text{tones} & \left(\begin{array}{c}\text{H}\\ \beta\end{array}\right) & \begin{array}{c}\\ \beta^*\end{array} & \begin{array}{c}\text{H+L}\\ \alpha\end{array} & \begin{array}{c}\\ \beta^*\end{array} & \begin{array}{c}\text{L}\\ \beta\end{array} \end{array}$$

As regards modelling the relations between prosody and semantics, on the one hand, and between syntax and semantics, on the other hand, Mycock (2010) argues that LFG provides an appropriate framework for formally capturing the facts and empirical generalisations. She employs the following levels of representation as directly relevant to analysing her experimental data.

Table 4.1 The parallel levels of representation in LFG, Mycock (2010: 292)

Level of structure	Type of linguistic information
s-string	lexical items
p-string	phonological words
c(onstituent)-structure	surface syntactic representation
f(unctional)-structure	abstract grammatical functions (e.g., subject, object) and features
p(rosodic or phonological)-structure	phonological and prosodic features
i(nformation)-structure	information packaging (discourse functions)
s(emantic)-structure	meaning

She depicts the relevant levels and correspondence relations she assumes as in Figure 4.2.

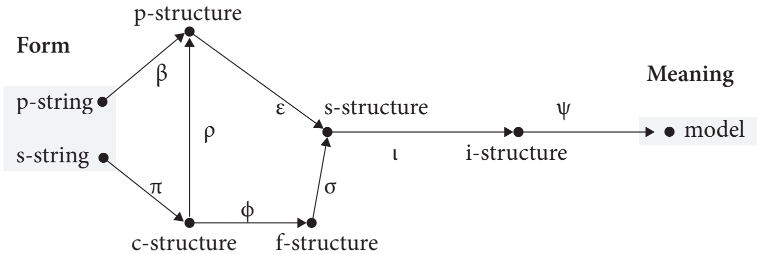


Figure 4.2 Levels and correspondence relations in the LFG projection architecture, Mycock (2010: 292)

Mycock's central claim is that, thanks to the parallel levels of representation in the LFG architecture, the scope relations to be computed in s-structure can be independently encoded in two distinct components of this grammar: (i) p-structure, linked to s-structure directly via ε-mapping, and (ii) c-structure, directly linked to f-structure via ϕ-mapping, which, in turn, is linked to s-structure via σ-mapping. Obviously, p-structure to s-structure mapping is Mycock's LFG counterpart of Hunyadi's (2002) approach. Her rules are spelt out in (6), (7) and (8) above. At the end of § 4.1 I pointed out that É. Kiss (2002), Jackson (2008) and Mycock (2010) criticise Hunyadi (2002) for not accommodating the modelling of the syntax–semantics correspondence in cases when scope relations are attestably encoded syntactically. Mycock's c-structure → f-structure → s-structure mapping is, thus, her LFG style expansion of Hunyadi's approach. Her basic generalisation is the following (Mycock 2010: 291).

(9) SYNTAX–SCOPE CORRESPONDENCE
If an OPERATOR *α* precedes OPERATOR *β*, *α* outscopes *β*.

The standard LFG implementation of this rule is as follows. Linear precedence in c-structure is mapped to f-structure as f-precedence, defining a precedence-like relation at this level, and this f-precedence relation is further mapped to s-structure, where scope relations are computed based on this information. For the formal details of the f-precedence mapping rule, see Bresnan (2001: 195), for instance.

On the basis of her elicited data, Mycock makes the following additional observation and generalisation. In the majority of cases syntax and prosody encode congruent information about scope relations in Hungarian. When they are in conflict, prosody overrides syntax in indicating which operator scopes widest, i.e., Prosody–Scope Correspondence takes precedence over Syntax–Scope Correspondence. Mycock assumes that (3) in § 4.1 supports this generalisation. In this example, the universal quantifier precedes the negative particle, but the latter bears the main stress, and it has the quantifier in its scope, i.e., prosody wins out.

Now let us take a closer look at Mycock's analysis. Below I present those generalisations of hers which are directly relevant to the main themes of this section, and I make some comments on them.

She assumes that VM-verb complexes make up a single unit morphologically, phonologically and semantically. According to her standard orthography reflects this fact. The large categorial (and, consequently, behavioural) diversity of elements collectively called VMs is not at all a central issue for her. This is manifest in her apparent reduction of VMs to verbal prefixes in her examples and discussions. By contrast, in § 3.2 in Chapter 3 I offer an overview and an LFG-XLE analysis of the major types of VMs by also reflecting on previous LFG and GB/MP analyses. For an analysis and useful literature overview, see É. Kiss (2002). In accordance with the mainstream GB/MP approaches, I assume that even verbal prefix VMs are independent syntactic atoms, and they do not combine with their verbs morphologically, but rather combine with them lexically, see § 3.1.5. In my analysis, they occupy the same Spec,VP position as other VMs and focused constituents. It is noteworthy that several LFG (or LFG-compatible, i.e., OT) analyses make morphological and semantic (incorporational) assumptions about VM–verb combinations similar to Mycock's, see, for instance, Ackerman's (1987) and Gazdik's (2012) LFG approach and Payne & Chisarik's (2000) OT account. Even if we disregard the additional challenges posed by other types of VMs and concentrate on verbal prefixes, an immediate problem for the morphological unit analysis is the famous preverbal complementarity of focused constituents, the negative particle and the verbal prefix.

Adopting the widely accepted empirical generalisation, Mycock states that the immediately preverbal position is associated with the focus function. Then she adds that when this position is occupied by a constituent, a VM cannot intervene between it and the verb; therefore, the VM has to occur postverbally. Capturing this fact in a principled formal way seems to become insurmountable if one assumes that the VM and the verb make up one morphological word and, consequently, one syntactic atom occupying the V^0 syntactic position. Mycock (2010) does not address this issue.

Next, Mycock points out that, as opposed to preverbal focus, universal quantifiers never occur in the preverbal focus position, and the VM appears preverbally. I think it is not clear in this approach why quantifiers (in a non-focus position) admit (morphological!) preverbal VMs, while focused constituents reject them. It seems that quantifiers cannot look into or regulate the morphological composition of a V^0, while focus can. By contrast, if one assumes that the verbal prefix is in complementary distribution with focus then the contrast between QP VM V^0 and QP Foc V^0 VM straightforwardly follows.

Mycock (2010: 268) presents the distribution of constituents in Hungarian sentences as follows.

(10) (Topic*) $[\underbrace{\text{((neg) Distributive Quantifier*) ((neg) focus) (neg)}}_{\text{OPERATOR FIELD}}\ \text{V (XP*)}]_{\text{PRD}}$

She adds that although multiple foci are possible in a declarative sentence, only one focused constituent is admitted in the preverbal focus position. All other focused constituents appear postverbally, and they are prosodically prominent. By contrast, if there are multiple question words in an ordinary Hungarian constituent question eliciting a pair-list answer, all of them must appear immediately preverbally. Then Mycock points out that there are analyses, e.g., Lipták (2001) and É. Kiss (2002), which assume that those question phrases which are not immediately preverbal ('higher question phrases') are distributive quantifiers occupying these designated quantifier positions. Referring to Surányi (2003), who claims that these question phrases do not need to be interpreted exhaustively in all cases, she also rejects this view. Consequently, she classifies Hungarian as a 'multiple focusing language', in which multiple question constituents can be syntactically focused before the verb, see (11). Her additional generalisation is that non-interrogative and interrogative foci may not co-occur in this preverbal position, see (12a,b), unless they are understood as being embedded under a performative, see Varga (1982). When a focused constituent appears in a constituent question, the non-interrogative appears postverbally, and it is prosodically prominent, see (12c).

(11) *János* *ki-t* *ki-nek* *mutat-ott* *be?*
John.NOM who-ACC who-DAT introduce-PAST.3SG VM
"Who did John introduce to who?"

(12) a. *[*János*]$_{FOCUS}$ [*ki-t*]$_{FOCUS}$ *mutat-ott* *be* *Anná-nak?*
John.NOM WHO-ACC introduce-PAST.3SG VM Anna-DAT
b. **[Ki-t]*$_{FOCUS}$ [*János*]$_{FOCUS}$ *mutat-ott* *be* *Anná-nak?*
who-ACC John.NOM introduce-PAST.3SG VM Anna-DAT
(a,b): "Who did John introduce to Anna?"
c. [*Ki-t*] *hív-ott* *fel* *JÁNOS?*
who-ACC call-PAST.3SG VM John.NOM
"Who did John call?"

Mycock (2010), partially motivated by Surányi (2003), assumes that all preverbal question phrases make up one cluster of a special focused constituent. She does not elaborate on this issue here. However, in Mycock (2006), where she makes the same assumption, she offers a detailed discussion and demonstration of the formal details. Her fundamental claim is that focus at i-structure has to be divided into (at least) two types: 'interrogative' and 'non-interrogative'. She proposes the following rule for constituent question focus (CQF).

(13) C-STRUCTURE RULE OF HUNGARIAN CQF

$$\mathrm{VP} \rightarrow \begin{array}{cc} \mathrm{XP}^{*} & \mathrm{V}' \\ (\uparrow \mathrm{GF}^{*}) = \downarrow & \uparrow = \downarrow \\ (\downarrow \mathrm{PARAM}) \in (\uparrow_{\iota}\ \mathrm{FOCUS\ interrog}) & \end{array}$$

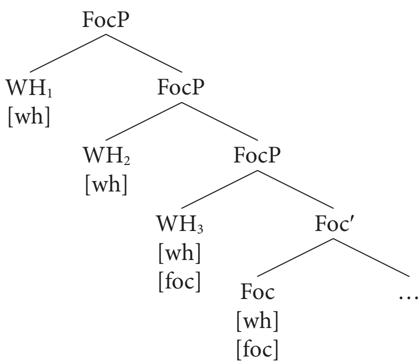
She adds that the complementary distribution of interrogative and non-interrogative focus constituents can be attributed to the impossibility of having one c-structure position (i.e., Spec,VP) simultaneously associated with two different kinds of focus: FOCUS 'interrog' and FOCUS 'non-interrog'.

I can see the following problems here. Although literally Mycock speaks about a single focus position that may be filled by several question phrases (contra a single non-interrogative focus), her rule in (13) rather generates a flat multiple (Spec,VP) configuration parametrically constrained to the interrogative focus type at i-structure; that is, it is not the idea of a single, multiply filled focus position that has been formalised. That idea would require different and special phrase-structure rules. I sympathise with (13) and think that it is more motivated and feasible than the single focus position idea, and its non-interrogative focus counterpart can be easily spelled out, see (14).

(14) $$\mathrm{VP} \rightarrow \begin{array}{cc} \mathrm{XP} & \mathrm{V'} \\ (\uparrow \textsc{gf}) = \downarrow & \uparrow = \downarrow \\ (\downarrow \textsc{param}) \in (\uparrow_{\iota}\ \textsc{focus}\ \text{non-interrog}) & \end{array}$$

And the two rules can be collapsed in such a way that the XP* and the XP (with their annotational specifications) are inserted disjunctively. It is interesting to compare the structural aspects of Mycock's and Surányi's approaches. They both make the same general assumption in two different frameworks (LFG and MP, respectively): all question phrases are focused constituents. Surányi assumes multiple (focused) specifiers. In Surányi (2007) he postulates a Focus projection with the specifiers and the Foc head associated with the feature distributions as in (15) below.

(15)



In Surányi (2011) he does not employ functional projections like FocP and NegP; instead, he develops an interface-based MP account. His skeletal structure is shown in (16).

(16) $[_{\mathrm{TP}}\ \mathbf{Spec^*}\ [[_{\mathrm{T}}\ \mathbf{V}]\ [_{\mathrm{AspP}} \ldots]]]$

Naturally, Surányi (2011) is considerably closer in spirit to LFG than Surányi (2007), because although it uses the standard MP functional projections like TP and AgrP, it postulates no FocP.

Earlier I pointed out that the assumption that higher question phrases occupy the same positions as distributive quantifiers (despite the fact that their semantics is different) is problematic from a GB/MP perspective, and it is not at all problematic in an LFG framework. In § 4.3, my main claim is that both constituent types are operators, and, therefore, can legitimately occupy the same syntactic positions. It does not matter that their prosodic behaviour and their interpretation differ.

The assumption of the strict complementarity of single non-interrogative focus and possibly multiple interrogative focus is a crucial aspect of Mycock's system. However, there are three special construction types that clearly violate this prohibition, which, in my opinion, seriously undermines the tenability of this approach.

Although it is unquestionable that the sentence in (12a) is ungrammatical under normal circumstances, as Mycock rightly points out, in a special context it is fully acceptable. Let us imagine a situation in which a speaker is informed that Peter has introduced Kate to Anna, but (s)he is aware that János has also introduced someone to Anna. If (s)he wants to inquire about the details of this instance of introduction, (s)he can say (17a) and continue by asking the question in (17b), which is basically the same as the otherwise unacceptable question in (12a).

(17) a. *Tud-om, hogy Péter* [*ki-t*]$_{\text{FOCUS}}$ *mutatott be Anná-nak* …
know-PRES.1SG that Peter.NOM who-ACC introduced VM Anna-DAT
"I know who Peter introduced to Anna … "
b. … *de* [*János*]$_{\text{FOCUS}}$ [*ki-t*]$_{\text{FOCUS}}$ *mutat-ott be neki?*
but John.NOM who-ACC introduce-PAST.3SG VM to.her
" … but who did JOHN introduce to her?"

In (12a) *János* is clearly a focused constituent. It receives the H+L accent (stealing it from the preverbal question phrase), and, in addition to not having (contrastive) topic prosody, it cannot intermingle with other (contrastive) topics or sentence adverbs. For instance, it is impossible to insert constituents like *tegnap* "yesterday" or *a parkban* "in the park" between *János* "John" and *kit* "who.ACC". Mycock points out that the acceptable counterpart of the construction in (12a), which is unacceptable under normal circumstances, is a structure in which the focused constituent, receiving its prosodic prominence, occurs postverbally, and she exemplifies this with (12c). The minimal pair counterpart of (12a) would be (18).

(18) [*Ki-t*] *mutat-ott be Anná-nak JÁNOS?*
who-ACC introduce-PAST.3SG VM Anna-DAT John.NOM
"Who did JOHN introduce to Anna?"

Although Mycock's acceptability generalisation about the contrast between (12a) and (18) harmonises with a widely held view in the literature, I think the real picture is considerably different. In my view both constructions have exactly the same acceptability or grammaticality status. The reason for this is that (18) is as unacceptable or ungrammatical as (12a) without an appropriate context. So if (12a) is starred without a suitable context, (18) also has to be starred without a suitable context. In my opinion this is the real generalisation, and this generally holds for discourse functions (DFs). The question at hand is the degree of the constructability of DFs. As regards the relationship between these two alternative constructions, I view it as similar to the well-known preverbal and postverbal occurrence of universal quantifiers, compare (19) and (20).

(19) *Mindenki* *János-t* *hív-ta* *fel.*
everyone.NOM John-ACC call-PAST.3SG.DEF VM
"Everyone called John."

(20) *János-t* *hív-ta* *fel* MINDENKI.
John-ACC call-PAST.3SG.DEF VM everyone.NOM
"Everyone called John."

(19) is the standard pattern. The universal quantifier precedes and outscopes the focused constituent, and we know from Mycock's (2010) empirical study that it is more prominent prosodically as well. When the quantifier occurs postverbally, there are two possibilities. (1) It receives no scope-taking prosodic prominence, and it is within the scope of the focused constituent: "It holds for John (and for nobody else) that everybody called him". (2) It receives scope-taking prosodic prominence (this is indicated by SMALLCAPS in (20)) and it scopes over the focus, and the interpretation of the sentence is the same as that of (19). It is also noteworthy that the postverbal variant, in which the universal quantifier is in the scope of the focus, also has a preverbal counterpart:

(21) *Mindenki* *János-t* *hív-ta* *fel.*
everyone.NOM John-ACC call-PAST.3SG.DEF VM
"It holds for John that everybody called him up."

Notice that the sequence of the constituents in (21) is the same as that in (19); however, the status of the universal quantifier is different. It is in a topic position in (21), as opposed to the quantifier position in (19), it receives contrastive topic prosody, and, consequently, the focus has scope over it. As regards the crucial construction type in (12a), it exhibits the combination of a non-interrogative focus and an interrogative focus (strictly banned by Mycock's system), the former taking prosodic and scope prominence over the latter. True, this construction type needs a special context for it to be felicitous, but when these contextual requirements are satisfied, it is always absolutely acceptable. Any approach aiming at a full coverage of the relevant data needs to characterise it, which appears to pose a considerable problem for Mycock's approach. She could argue that this focus is different, it is contrastive focus and not (exhaustive) id-focus, so it is exempt from her ban on the co-occurrence of interrogative and non-interrogative focus, because her generalisation only targets the id-type of non-interrogative focus. Even so, her approach would face the following challenges. On the one hand, if she assumed that this special non-id-focus was also in a Spec,VP position, her +interrogative vs. –interrogative focus rule would still need some modification. On the other hand, if she assumed that this special focus was outside the VP then, on the basis of the distribution facts I pointed out above, she would have to put it in a quantifier position. This would be a less special, less marked solution in her approach; however, it would still run against one of her underlying assumptions: she consistently separates (universal) quantifiers and ±interrogative foci syntactically by positing all instances of the latter in Spec,VP. Compare this scenario with the approach I am developing in this chapter. I postulate a single Spec,VP position for an always single non-interrogative id-focus, for a single interrogative focus (question word) or for the final (immediately preverbal) interrogative focus in multiple *wh*-sentences. In addition, I assume that the VP-adjoined position is available not only to (universal) quantifiers but also to other operators: absolutely productively to additional (non-final) question words, and, rather exceptionally, to contrastive focus in questions containing a question word in Spec,VP. I argue that my system can more naturally accommodate the treatment of this marked phenomenon. For a mirror image of this relationship, i.e., a question word followed by negative focus, see the next paragraph – which is an absolutely regular, productive pattern.

The second problem, which appears to me to be equally insurmountable, given Mycock's (2010) fundamental assumption of the incompatibility of interrogative and non-interrogative foci, is this. Referring to Horvath (1995), Koopman & Szabolcsi (2000), and Kenesei (2009), she points out that when a non-interrogative focus is negated, another focus may precede it. This preceding focus may be either non-interrogative or interrogative. She gives the following interrogative example.

(22) [*Ki-t*]$_{\text{FOCUS}}$ *nem* [*János*]$_{\text{FOCUS}}$ *hív-ott* *fel?*
who-ACC NEG John.NOM call-PAST.3SG VM
[lit. "Who did not John call?"]
("Who was called by someone other than John?")

This absolutely productive construction type contains a non-preverbal interrogative focus and a preverbal (negated) non-interrogative focus, violating Mycock's ban on the co-occurrence of the two focus types. A negated non-interrogative focus is still a non-interrogative focus. So Mycock exemplifies and discusses this construction type, but she does not present it as being problematic, and, therefore, does not address the issue from this perspective.

It is also noteworthy that the two special cases of the banned co-occurrence of interrogative and non-interrogative foci I have shown here are mirror images of each other: non-interrogative focus + interrogative focus vs. interrogative focus + negated non-interrogative focus.

In my analysis in § 4.3, I emphasise the importance of Mycock's experimental results: she has attested two distinct prosodic patterns associated with the construction type in (22). I argue that this alternation lends further support to my approach.

Let us now consider the following example.

(23)	*Péter*	*miért*	*ANNÁ-T*	*hívta*	*fel?*
	Peter.NOM	why	Anna-ACC	called	up
	"Why did Peter call ANNA?"				

Miért "why" is the only question word in Hungarian which is compatible with a non-negated preverbal focus. Also note that *Anna*, the focus in (23), could also be negated. Note that this is a special subcase of the general pattern exemplified in (22).

It is important to emphasise the fact that all the three construction types require a special treatment in any generative approach I am aware of. I have pointed out above that in my view the construction types exemplified by (17b), (21) and (22) pose serious challenges for Mycock's generalisation to the effect that interrogative foci and non-interrogative foci are strictly incompatible, i.e., they cannot co-occur. By contrast, in § 4.3 I argue that my approach provides a more principled and flexible general setting for accommodating all three construction types, combined with the devices necessitated by the marked properties of the constructions: special functional annotations, constraining equations and CHECK features in the c-structure representation and in certain lexical forms.

Before discussing Mycock's (2010) analyses, I present the fundamental aspects of her overall LFG framework. Consider the following sentence from Mycock (2006, 2010).

(24)	H	H+L	L		
	[*János*]$_{\text{TOPIC}}$	[*KI-NEK*]$_{\text{FOCUS}}$	mutat-t-a	be	Mari-t?
	John.NOM	who-DAT	introduce-PAST-3SG	VM	Mary-ACC
	"Who did John introduce Mary to?"				

Mycock (2006) postulates the following constituent question formation rule.

(25)

	(		)*		
VP →		XP		XP	V′
		(↑ GF*) = ↓		(↑ GF*) = ↓	↑ = ↓
		↓ ∈ (↑ FOCUS)		↓ ∈ (↑ FOCUS)	**[interrog-scope]**
		(↓ PARAM)		(↓ PARAM)	
		question phrase		***question phrase***	
Qcontour →		PW		PW	PW*
		↙ $_{\beta TONE}$ = H		↙ $_{\beta TONE}$ = fall	↙ $_{\beta PR}$ = c
		(FOCUS ↗)		↙ $_{\beta PR}$ = e	↗ = ↙
		(PARAM ↗)∈(ζFOCUSinterrog Q)		(FOCUS ↗)	
		↗ = ↙		(PARAM ↗)∈(ζFOCUSinterrog Qs)	
				[Qs]	
				↗ = ↙	

Figure 4.3 shows the relevant portion of Mycock's (2006) c-structure and p-structure representation of (24).

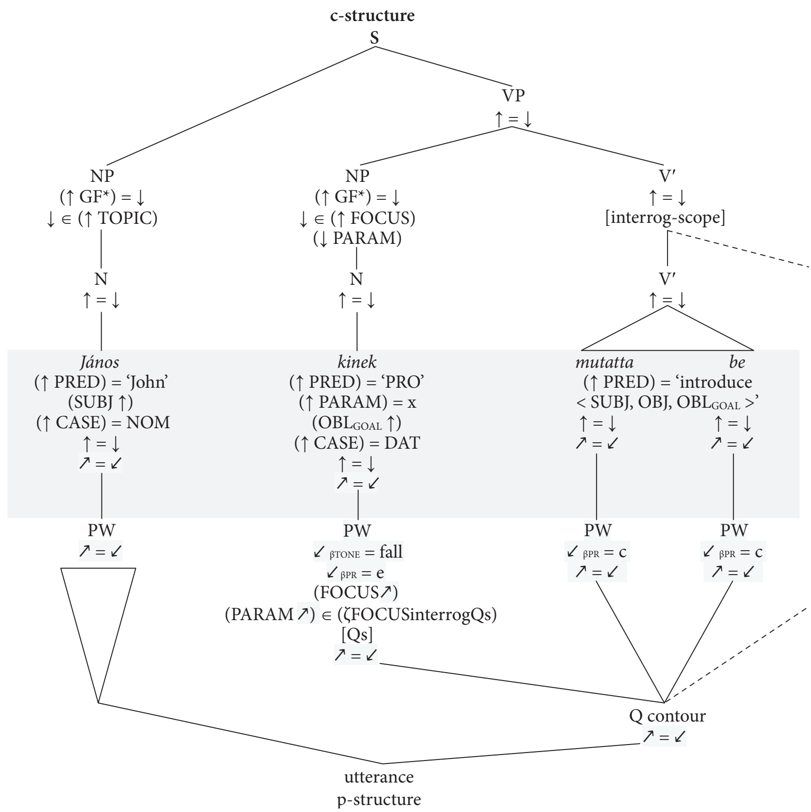


Figure 4.3 Mycock's (2006: 237) c-structure and p-structure for (24)

The two structures, associated with the s-string, consisting of lexical items, and the p-string, consisting of phonological words, are given in a parallel fashion. In this way, syntax-prosody (mis)matches can be efficiently represented. This approach is further developed in Dalrymple & Mycock (2011). From the perspective of this book, the crucial annotations in the two structures are those that encode the following facts. (1) In the Spec,VP position the constituent is associated with the focus discourse function, see $\downarrow \in (\uparrow \textsc{focus})$ in the c-structure representation. (2) This constituent also has prosodic prominence: $\swarrow \beta\text{tone} = \text{fall}$, and its focus type is interrogative: $(\textsc{focus} \nearrow)$ and $(\textsc{param} \nearrow) \in (\swarrow \xi\ \textsc{focus}\ \text{interrog Qs})$, see the p-structure encoding. Note that Mycock (2006) uses the following p-structure elements in the representation in Figure 4.3: utterance – Q contour – phonological word (PW). For alternative LFG approaches to prosody and the prosody-syntax and the prosody-semantics interface, see, for instance, Butt & King (1998), O'Connor (2006), Bögel et al. (2009, 2010), Dalrymple & Mycock (2011), and Mycock & Lowe (2013). I do not deal here with additional prosodic aspects and details of my analysis. I simply assume that they can be formally expressed and integrated in the overall account along the general lines of Mycock (2006) or Dalrymple & Mycock (2011).

Now consider Mycock's (2006: 238) f-structure and i-structure analysis of (24) in (26) and (27), respectively.

(26) f-structure

$$\left[\begin{array}{ll}
\textsc{pred} & \text{`introduce} < \textsc{subj}, \textsc{obj}, \textsc{obl}_{\textsc{goal}} > \text{'} \\
\textsc{tense} & \textsc{past} \\
\textsc{focus} & \left[\begin{array}{ll} \textsc{pred} & \text{`}\textsc{pro}\text{'} \\ \textsc{param} & x \\ \textsc{case} & \textsc{dat} \end{array}\right] \\
\textsc{top} & \left[\begin{array}{ll} \textsc{pred} & \text{`John'} \\ \textsc{case} & \textsc{nom} \end{array}\right] \\
\textsc{subj} & \\
\textsc{obj} & \left[\begin{array}{ll} \textsc{pred} & \text{`Mary'} \\ \textsc{case} & \textsc{acc} \end{array}\right] \\
\textsc{obl}_{\textsc{goal}} &
\end{array}\right]$$

(27) i-structure

$$\left[\begin{array}{ll} \textsc{focus} & \left[\text{interrog} \quad [\ \text{Qs} \quad x\ ]\right] \\ \textsc{top} & \left\{\ [\ \text{'John'}\ ]\ \right\} \\ \textsc{back.inf} & \left\{\begin{array}{l} [\ \text{'introduce'}\ ] \\ [\ \text{'Mary'}\ ] \end{array}\right\} \end{array}\right]$$

Notice that Mycock represents the grammaticalised discourse functions topic and focus both in f-structure and i-structure. The focus type is encoded in i-structure (linked to the focus function in f-structure via the *x* variable). In addition to focus and topic, the i-structure also contains a third discourse functional category: BACK.INF = background information. As I pointed out in Chapter 1, I also subscribe to the view that discourse functions should be represented in i-structure; however, for simplicity of exposition in this book I include them in my f-structures, as in the earliest version of LFG.

Consider Mycock's (2010) overview of the intonation patterns she attested in her experimental research in Table 4.2. The rightmost column indicates the numbers of the examples of the relevant construction types to be discussed below.

Table 4.2 General patterns of intonation, Mycock (2010: 285)

Predicate					
	Operator field				
QP	FOCUS		VERB	POSTVERBAL FIELD	**Example**
---------	focus		*verb*	*VM DO LOC*	(28)
---------	NEG + focus		*verb*	*VM*	(29)
---------	single Q-phrase		*verb*	*VM DO*	(30)
∀	-----------------------------		*VM + verb*	*SUBJ*	(31)
∀	-----------------------------		*NEG + verb*	*DO*	(32)
NEG+∀	-----------------------------		*verb*	*VM SUBJ*	(33)
∀	focus		*verb*	*VM*	(40)
---------	**Q1**	Q final	*verb*	*VM DO*	(41)
---------	**Q1 Q2**	Q final	*verb*	*VM*	(42)
---------	**Q1**	NEG + focus	*verb*	*VM*	(43a)
---------	Q1	NEG + focus	*verb*	*VM*	(43b)

A dashed line indicates that no constituent occupies the relevant syntactic position. The point of prosodic prominence (a sharply falling pitch accent H+L at the left edge of the first phonological word) is represented by shading; the low plateau which follows it is indicated by italics; any high (H) monotone preceding the H+L accent is indicated by bold.

Below I discuss Mycock's examples of the construction types in Table 4.2. They are identified by the symbols of the constituents that occur in her Operator Field and the verb: ∀ = universal quantifier, NEG = negative particle, FOC = focus, Q = question phrase, V = verb. I also indicate the intonational properties of these examples, based on Mycock's (2010) pitchtracks.

(28) FOC V

H H+L L

[*János*]$_{\text{TOPIC}}$ [*ANNÁ-NAK*]$_{\text{FOCUS}}$ *mutat-t-a* *be*
John.NOM Anna-DAT introduce-PAST-3SG VM

L

Mari-t *a* *mozi-ban.*
Mary-ACC the cinema-INE

"John introduced Mary to ANNA at the cinema."

This is the basic syntactic and prosodic alignment of prominence: the focused constituent in Spec,VP receives H+L pitch accent. As regards the treatment of the relationship between foci and VMs, recall that at the beginning of this section I pointed out that Mycock's (2010) system does not provide an immediate explanation for why the VM has to occur postverbally in the presence of a preverbal focus. The reason for this is that she assumes that the VM and the verb make up a single morphological word (i.e., syntactic atom), and, thus, a focus and a VM are not in complementary distribution; thus, their 'preverbal' complementarity has to be stipulated.

(29) NEG FOC V

H H+L L

János *NEM*=[*Mari-t*]$_{\text{FOCUS}}$ *hív-t-a* *fel.*
John.NOM NEG=Mary-ACC call-PAST-DEFO.3SG VM

[lit. "John called not MARY."]
("John called someone other than Mary.")

This is the standard pattern of constituent negation. An ordinary negated constituent must obligatorily occupy the focus position, and, as the representations show, this construction follows exactly the same syntactic and prosodic alignment pattern as the usual focus construction type, cf. (29) and (28).

(30) Q V

H	H+L	L		
[*János*]$_{\text{TOPIC}}$	[*KI-NEK*]$_{\text{FOCUS}}$	*mutat-t-a*	*be*	*Mari-t?*
John.NOM	who-DAT	introduce-PAST-3SG	VM	Mary-ACC

"Who did John introduce Mary to?"

This is another uncontroversial pattern both syntactically and prosodically. If there is a single question phrase in a Hungarian constituent question, it unquestionably occupies the focus position: it has exactly the same syntactic and prosodic properties as a non-interrogative focused constituent. Compare the intonation patterns of (30) and (28). The question phrase – focus prosodic parallel is also supported by Mády's (2012) findings from the focus side. Also consider the following quote from Gyuris & Mády (2013).

> The tonal description for *wh*-interrogatives based on this experiment is identical to the analysis given in Mycock (2010: 284). […] Hungarian *wh*-interrogatives have an intonation pattern that is very similar to that of declaratives with narrow focus: they contain a falling pitch accent on the focus and a low phrase-final boundary.
> (Gyuris & Mády 2013: 353)

For the results of an experimental study of the prosody of Hungarian polar questions, also reflecting on Mycock (2010), see Mády & Szalontai (2014).

(31) ∀ VM V

H+L	L	
MINDENKI-T	*fel-hív-ott*	*János.*
everyone-ACC	VM-call-PAST.3SG	John.NOM

"For every *x*, *x* = person, John called *x*."

In this construction type there is a universal quantifier, and the VM occurs 'preverbally'. As I pointed out in my criticism of Mycock's analysis at the beginning of this section, and also in the discussion of (28), she assumes that a 'preverbal' VM makes up a morphological word with the verb, and, thus, this morphological complex occupies the V^0 position. This is also reflected in her structural representation of (31) in Table 4.2: the quantifier fills the regular operator position, the Spec,VP focus position is empty, and the VM+V complex is in V^0. One of my earlier critical remarks still holds: how can Mycock explain why a focused constituent obligatorily ousts the VM from its 'embedded' preverbal morphological position, while the preverbal universal quantifier systematically fails to do so? Naturally, if we assume instead that VMs and foci compete for the same Spec,VP position, these facts fall out. The quantifier and the VM can co-occur preverbally, because they are in two adjacent positions. Recall that in Mycock's analysis focus in Spec,VP is also part of her 'operator field'. In this example there is no focus, and the VM combines with the verb morphologically (below V^0). It will be very important to compare this intonation pattern with that of a corresponding construction in (34), which also contains a focused constituent.

(32) ∀ NEG V

H	H+L	L
Mindenki	NEM=*dicsér-t-e*	*Anná-t.*
everyone.NOM	NEG=praise-PAST-3SG	Anna-ACC

"Not everyone praised Anna."

Consider the following quote from Mycock.

> Preverbal universal quantifier – *nem* sequences … are typically ungrammatical in Hungarian because the linear order of the operators does not correspond to their relative scopes, i.e. a distributive quantifier cannot take scope over negation. However, researchers including Szabolcsi (1997) and Kenesei (2009) have pointed out that with appropriate intonation, this order of operators is grammatical because the distributive quantifier is interpreted as scoping below negation … the universal quantifier *mindenki* bears a H(igh) monotone, while the familiar H+L accent occurs at the left edge of the phonological word NEM=*dicsérte* 'not praised'; the rest of the constituents are realised as a low plateau … Thus prosody 'rescues' this sentence by providing information crucial to its interpretation which is not contributed by the syntax. (Mycock 2010: 279)

When I criticised a major aspect of Mycock's criticism of É. Kiss' approach in § 4.1, I pointed out that Mycock misinterprets the relevant facts. It is not the case that the quantifier is in the operator field. Instead, its properties are, in all relevant respects, identical to those of a contrastive topic.[1]

– It can intermingle with (contrastive) topics and sentence adverbs. For instance, the sentence adverb *szerencsére* "luckily" can be inserted between the universal quantifier and the negated constituent in (32).
– The quantifier is in the scope of the negative operator. This narrow scoping is a fundamental characteristic of contrastive topics.
– The quantifier does not bear the H+L accent.

1. Louise Mycock (p.c., January 2016) points out that conclusive prosodic support for this claim would be pitchtracks of sentences containing a longer universal quantifier phrase that clearly bears the distinctive intonational contour associated with a contrastive topic in Hungarian. Thus, exploring this issue needs to be left for future research.

These three features together lead to the following conclusion. This is not a construction type relevant to Mycock's (2010) approach, because she concentrates on the syntactic and prosodic encoding of prominence in the operator field, and the quantifier here is not in this field. From this it follows that the behaviour of this construction is not an argument against É. Kiss' (2002) approach. On this account then there is no syntax-prosody misalignment: we are dealing with the standard syntactic and scopal behaviour of a contrastive topic expressed by a quantifier. Given that the scope of Mycock's experimental research was different, in her examples and pitchtracks we do not find any other examples of (the prosody of) contrastive topics, so we cannot compare the prosody of the quantifier in (32) with that of another, independently attested contrastive topic. However, if we compare the quantifier's prosody in (32) with that of topics in other examples investigated by Mycock, we can minimally conclude that it has the general characteristics of ordinary topics, and in my judgement it could pass as the prosody of a contrastive topic.

(33) NEG ∀ V

H+L	L		
NEM=mindenki-t	*hív-ott*	*fel*	*János.*
NEG=everyone-ACC	call-PAST.3SG	VM	John.NOM

[lit. "John called not everyone."
("Not everyone was called by John.")

This construction contains a negated universal quantifier and no (additional) focused constituent. The negated quantifier exhibits all the prosodic properties of an ordinary negated constituent, which must obligatorily occupy the Spec,VP position: such a constituent cannot occur anywhere else in a sentence. In Chapter 5, I assume that the negation of a universal quantifier is a special case of constituent negation, because it has two syntactic positions available. (i) When there is no (other) focused constituent in the sentence, the negated quantifier must follow suit: it must fill the Spec,VP focus position designated for negated constituents. (ii) A negated universal quantifier's extra option is that it can occupy its regular operator position provided that the focus position is filled by another (possibly negated) constituent (see 34a) or the negative particle alone (see 34b).

(34) a.

Nem	*mindenki-t*	*(nem)*	*János*	*hív-ott*	*fel.*
NEG	everyone-ACC	NEG	John.NOM	call-PAST.3SG	VM

ca. "It does not hold for everyone that it was (not) John who called them."

b.

Nem	*mindenki-t*	*nem*	*hív-ott*	*fel*	*János.*
NEG	everyone-ACC	NEG	call-PAST.3SG	VM	John.NOM

ca. "It does not hold for everyone that John did not call them."

Although in the unmarked case a non-negated universal quantifier occupies its regular operator position and has a focused constituent in its scope, it is also possible for it to occur postverbally, and if it receives the appropriate prosodic prominence in that position, it can take scope over the preverbal focus. Compare (35) and (36).

(35) *MINDENKI-T* [*János*]$_{\text{FOCUS}}$ *hív-ott* *fel.*
everyone-ACC John.NOM call-PAST.3SG VM
"For every *x*, *x*=person, JOHN called *x*."

(36) [*János*]$_{\text{FOCUS}}$ *hív-ott* *fel* *MINDENKI-T.*
John.NOM call-PAST.3SG VM everyone-ACC
"For every *x*, *x*=person, JOHN called *x*."

The latter option is not available to a negated universal quantifier (or any negated constituent in the postverbal domain). Compare (36) and (37).

(37) *(**Nem*) [*János*]$_{FOCUS}$ *hív-ott* *fel* *NEM MINDENKI-T.*
NEG John.NOM call-PAST.3SG VM NEG everyone-ACC
ca. "It does not hold for everyone that it was (not) John who called them."

From this we can conclude that a negated universal quantifier basically follows the general principles of constituent negation. It cannot occur as freely as its non-negated version, but has to target the designated focus position for ordinary negated constituents, and its only privilege is that it can occupy its usual operator position if and only if the focus position is filled by another element.

It is an additional and strong argument for assuming that an immediately preverbal negated universal quantifier is in Spec,VP, as in my analysis, and not in its regular operator position, as in Mycock's approach, that in this way we can explain why a negated universal quantifier forces a VM to occur postverbally, as opposed to its non-negated version. Compare (31) and (33), repeated here for convenience as (38) and (39), respectively, without the indication of the intonation patterns.

(38) *MINDENKI-T* *fel-hív-ott* *János.*
everyone-ACC VM-call-PAST.3SG John.NOM
"For every *x*, *x*=person, John called *x*."

(39) *NEM=mindenki-t* *hív-ott* *fel* *János.*
NEG=everyone-ACC call-PAST.3SG VM John.NOM
[lit.] "John called not everyone."
("Not everyone was called by John.")

In the next construction type a non-negated universal quantifier co-occurs with a focused constituent, see (40).

(40) ∀ FOC V

H+L	L		
MINDENKI-T	[*János*]$_{\text{FOCUS}}$	*hív-ott*	*fel.*
everyone-ACC	John.NOM	call-PAST.3SG	VM

"For every *x, x*=person, JOHN called *x*."

This is a crucial construction in two related respects from the perspective of my analysis to be presented in § 4.3. (i) It is comparable to (38) in which there is a 'preverbal' VM. (ii) We are dealing here with two operators in Mycock's operator field, and the universal quantifier steals the customary prosodic prominence from the focused constituent. As a consequence, in both (38) and (40) the universal quantifier receives the H+L tone.

Mycock compares (38) and (40) in the following way.

> This same intonational pattern is found in a sentence which includes both a universal quantifier and a preverbal focused constituent. However, prosodic prominence does not align with syntactic focus in such an utterance …. Rather, the sharp fall in pitch occurs at the left edge of the distributive quantifier *mindenkit* "everyone" and the syntactic focus *János* is realised as part of the following low plateau (40).
> (Mycock 2010: 278)

In § 4.3, I claim that the prosodic properties of these constructions lend additional support to two aspects of my analysis. First, I assume that the Spec,VP position hosts focused constituents and VMs in complementary distribution: both types co-occur with a non-negated universal quantifier left-adjoined to the VP. Second, I make a predication vs. predicate distinction: either the left edge of the predication, the leftmost VP-adjoined operator, or the left edge of the predicate, i.e., the Spec,VP, can receive prosodic prominence – the construction in (40) instantiates the former, and an ordinary focused construction instantiates the latter. As I point out and exemplify below, the choice between the two options is regulated partially by the lexical properties of the constituents involved and partially by the intended scope relations.

At this stage of the discussion, let me summarise the (non-)co-occurrence in the preverbal domain of the following operators: universal quantifier (∀), focus (Foc) and negative particle (NEG), see Table 4.3. Compare it with the relevant rows of Mycock's (2010) Table 4.2 above.

Table 4.3 The distribution of ∀, Foc and NEG in the preverbal domain

	Topic field	Operator field	Spec,VP	V	Postverbal field
(a)		∀	VM	V	
(b)			NEG-∀	V	VM
(c)	∀		NEG	V	VM
(d)	*NEG-∀		NEG	V	VM
(e)		∀	Foc	V	VM
(f)		*∀	NEG-Foc	V	VM
(g)		*∀	NEG	V	VM
(h)		NEG-∀	Foc	V	VM
(i)		NEG-∀	NEG-Foc	V	VM
(j)		NEG-∀	NEG	V	VM

The unacceptability of some combinations is due to scope constraints.

- In a neutral sentence, a universal quantifier precedes a preverbal VM: (a).
- In a neutral sentence, a negated universal quantifier precedes the verb, and a VM must occur postverbally: (b).
- A universal quantifier can be in the scope of negation (as a contrastive topic), but a negated universal quantifier cannot: (c)–(d).
- A universal quantifier can have focus in its scope: (e), but it cannot have negation in its scope: (f)–(g).
- A negated universal quantifier can have both focus and negation in its scope: (h)–(j).

The example in (41) and that in (2) from § 4.1, repeated as (42), demonstrate the same construction type: in Hungarian constituent questions more than one question phrase can precede the verb immediately (or, more precisely, when there is more than one question phrase in a sentence, all of them must immediately precede the verb in an uninterrupted sequence).

(41) Q Q V

H	H+L	L		
[*Ki*]$_{\text{FOCUS}}$	[*KI-NEK*]$_{\text{FOCUS}}$	*mutat-t-a*	*be*	*Mari-t?*
who.NOM	who-DAT	introduce-PAST-DEFO.3SG	VM	Mary-ACC

"Who introduced Mary to who?"

(42) Q Q Q V

H	H	H+L	L	
Ki	*kit*	*kinek*	*mutatott*	*be?*
who.NOM	who.ACC	who.DAT	introduced	VM

"Who introduced whom to whom?"

The essence of Mycock's proposal about this construction type is as follows. The constituent bearing the main stress marks the right edge of some sort of a unit that it forms with preceding phrases bearing the H monotone, i.e., they together form a single predicate-initial constituent the right edge of which is marked by the salient H+L accent. Mycock follows Varga (2002: 37–38) in assuming that in these Hungarian sentences a H monotone points to the H+L pitch accent which immediately follows it because it is only the latter that is significant in prosodic terms. Mycock's claim, on the basis of consultations with native speakers, is that in the case of multiple questions the final question word is the most important: it expresses what the question is about, i.e., the main information gap; therefore, it can be identified as the sorting key. She proposes that the linearly final question word having the sorting key status with its characteristic intonational pattern encodes that interrogative operators scope widest. Thus, prosody and syntax together mark sorting key status in spoken Hungarian.

In the first part of this section, I have already discussed some formal syntactic issues pertaining to the assumption that all preverbal question phrases make up a single cluster in the Spec,VP position. As I pointed out in § 4.1, according to Mycock this prosodic pattern of multiple questions undermines É. Kiss' (2002) Stress-Predicate Edge Alignment hypothesis, because in Mycock's analysis the entire question phrase cluster is at the beginning of the predicate; however, it is the last constituent that receives the H+L pitch accent, thereby violating É. Kiss' alignment rule. For a detailed critique of Mycock's view, see the relevant part of § 4.1. For my analysis, one of whose favourable 'side-effects' is that it also offers a principled way of maintaining É. Kiss' hypothesis by augmenting it, see § 4.3.

This cluster of question phrases is assumed to form a single (H H+L) prosodic unit, and as such it receives a uniform (general) questioning focus DF interpretation, and the immediately preverbal question phrase with its H+L pitch accent is held responsible for encoding this by making the whole unit prosodically significant. While the salient marking of the right edge of this proposed syntactic and prosodic unit is straightforward, one wonders how the left edge of this cluster can be prosodically delimited (identified). It seems to me that the contours of topics and non-final question phrases are basically identical.[2] Consider the following minimal

2. This, however, would require further empirical research, as has been pointed out by Louise Mycock (p.c., January 2016). Also see Mycock's (2010) remarks to the same effect.

pair in Figures 4.4 and 4.5, containing examples and pitchtracks taken from Mycock (2010: 280–281).

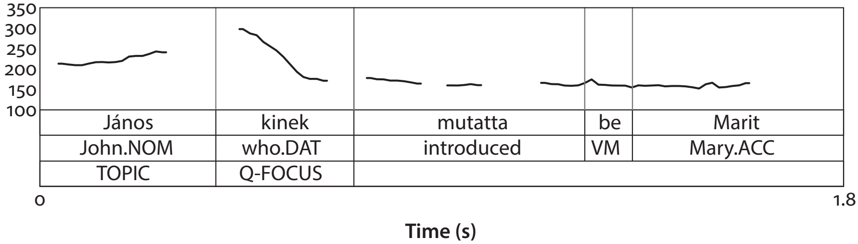


Figure 4.4 Pitchtrack of (30) *János kinek mutatta be Marit?*

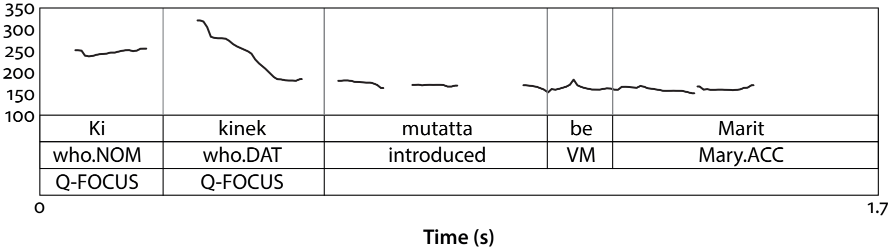


Figure 4.5 Pitchtrack of (41) *Ki kinek mutatta be Marit?*

Mycock's topic *János* "John", in (30) in Figure 4.4 seems to have the same prosody as her question-focus *ki* "who" in (41) in Figure 4.5. By pointing this out, I do not mean to say that non-final question phrases are syntactic topics, but I think their prosodic behaviour is also compatible with a syntactic analysis in which they are outside the VP, i.e., the final question phrase is in Spec,VP and all the others precede the VP, as in Lipták's (2001) and É. Kiss' (2002) analysis and in mine to be presented in § 4.3. There I claim that this alternative analysis is also supported, at least indirectly, by the fact that Mycock (2010) has attested additional, although much less frequent, alternative prosodic patterns associated with multiple constituent questions, with possibly different interpretations.

The fundamental function of the prosodically salient final question phrase in Mycock's approach is to encode that 'interrogative operators scope widest', i.e., the entire cluster receives the wide-scoping question-focus interpretation. In addition, she assumes that in the domain of question-focus discourse functions the final question phrase has the distinguished sorting key status. Although in § 4.3 I find Mycock's general view that in terms of their discourse functional properties question phrases can be separately classified along the same lines as ordinary non-interrogative constituents (focus, topic, completive information, background information) very plausible, it seems clear that she erroneously takes the final question phrase to have the sorting key status, despite the 'aboutness' aspect elicited from her informants.

First of all, for instance, both Surányi (2006, 2007) and Gazdik (2012) claim that it is the non-final question phrases in Hungarian that function as sorting keys. Surányi's generalisation is that they are topics semantically, but not syntactically, sitting in Spec*,FocP or Spec,TP. This assumption is supported by the fact that in answers to multiple questions, the constituents responding to non-final question words are topics, and the constituent in Spec,VP, responding to the final question word is undoubtedly the focus. Interestingly, Gazdik considers them to be topics both semantically and syntactically. In § 4.3, I agree with Surányi's take on this issue. In my analysis, non-final question phrases are topics semantically, but syntactically they are in the operator field in VP-adjoined positions.

Secondly, the final question phrase is best analysed as Mycock's questioning focus. For her classification of question word types, see Mycock (2013). It has long been assumed that one of the basic functions (interpretations) of a non-interrogative focused constituent is to reply to the focused, i.e., immediately preverbal, question phrase in an overt or implicit constituent question in an 'exhaustively identifying' fashion. For instance, Bródy & Szendrői (2011) propose that this exhaustive interpretation connects question-answer pairs in which the focused final question phrase in the interrogative sentence and the focused constituent in the answer are formally related by the EXH (exhaustivity) operator. I also agree with this general question-answer correspondence in the focus position, although my LFG analysis is inevitably radically different from Bródy & Szendrői's (2011) MP account. From this it follows that I also reject the assumption that the final question phrase in Hungarian sentences has the sorting key discourse function. Instead, it has the questioning focus status.

Thirdly, as I pointed out above, the prosody of non-final question phrases looks identical to that of topics. If this is empirically attested, it will lend considerable support to their interpretation as topics, i.e., sorting keys.

The last construction type in Mycock's (2010) Table 4.2 is (43).

(43) Q NEG FOC V

[*János*]$_{\text{TOPIC}}$	[*ki-nek*]$_{\text{FOCUS}}$	*NEM*=[*Mari-t*]$_{\text{FOCUS}}$	*mutat-t-a*	*be?*
John.NOM	who-DAT	NEG=Mary-ACC	introduce-PAST-3SG	VM

[lit.] "Who did John introduce not MARY to?"
("Who did John introduce someone other than MARY to?")

In Table 4.2, in the case of the sentence in (43) two numbers are indicated: (43a) and (43b). This is due to the fact that the sentence can have two partially different intonation patterns, as the shading that represents heavy stress shows in the table and as the pitchtracks represent in Figure 4.6 (Mycock 2010: 284).

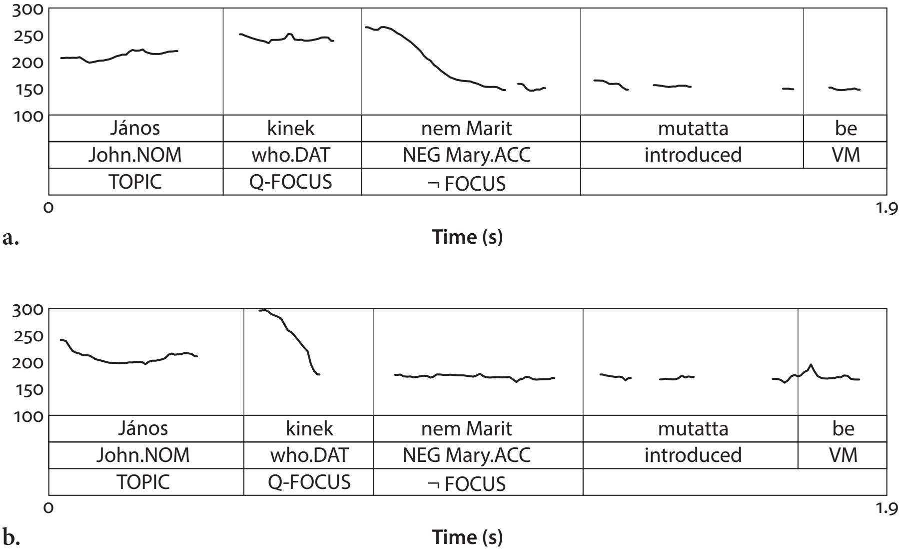


Figure 4.6 Two pitchtracks of (43) *János kinek nem Marit mutatta be?*

When discussing the general aspects of Mycock's analysis, I pointed out that one of its cornerstones is the assumption that a single-constituent non-interrogative focus and a possibly multiple-constituent interrogative focus are in strict complementary distribution: they cannot co-occur or intermingle. Despite this fact, Mycock mentions a construction type in which there is a non-interrogative focus + interrogative focus, see (17) and its discussion. She discards this by saying that a special context is required for its acceptability. Even so any approach should offer an analysis of this construction as well, and it seems to pose a serious challenge for Mycock because of the above-mentioned strict complementarity assumption. Furthermore, the construction type in (43) is absolutely grammatical, it is attested, discussed and even analysed by Mycock; however, she does not elaborate on this major problem. She only mentions that a question phrase and a non-interrogative focus can occur together preverbally if the latter, immediately preceding the verb, is negated. Louise Mycock (p.c., January 2016) clarified this for me by explaining that she originally assumed (but did not say explicitly) that the fact that NEG, an operator of a different type, is also involved in this construction type, is an important factor. Even so her fundamental 'interrogative focus vs. non-interrogative focus complementary distribution' generalisation would need considerable revision.

In my account in § 4.3, I emphasise the significance of Mycock's experimental findings: she has attested two distinct prosodic patterns associated with the construction type in (43), and I claim that this alternation yields further support to my analysis.

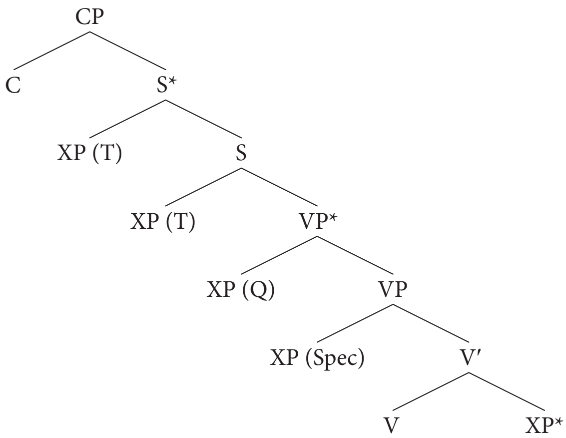
4.3 My alternative analysis

In this section first I highlight those aspects of my framework that are relevant for the treatment of the constructions discussed in this chapter (§ 4.3.1). Then I develop the analysis of eleven construction types containing operators (§ 4.3.2–§ 4.3.12). Finally, I summarise the crucial ingredients of my approach (§ 4.3.13).

4.3.1 Major aspects of my approach

In (59) in Chapter 2 I posited the generalised sentence structure, repeated here as (44).

(44)



I associated the following functional annotations with constituents in the topic field, in the operator field and in Spec,VP in Table 2.4, repeated here as Table 4.4.

Table 4.4 Basic functional annotations in the left periphery

T: **topic** **sentence adverb**	**Q:** **quantifier** ***wh*-constituent**	**Spec:** **focus** ***wh*-constituent** **verbal modifier**
$\{(\uparrow \text{GF}) = \downarrow$ $\{\downarrow \in (\uparrow \text{TOPIC})$ $\mid \downarrow \in (\uparrow \text{CONTR-TOPIC})\}$ $\mid \downarrow \in (\uparrow \text{ADJUNCT})$ $(\downarrow \text{ADV-TYPE}) =_c \text{SENT}\}$	$(\uparrow \text{GF}) = \downarrow$ $\{(\downarrow \text{CHECK\_QP}) =_c +$ $\mid (\uparrow \text{CHECK\_VM-INTER}) =_c +$ $(\downarrow \text{CHECK\_QP-INTER}) =_c +\}$	$\{(\uparrow \text{GF}) = \downarrow$ $(\uparrow \text{FOCUS}) = \downarrow$ $\mid (\uparrow \text{GF}) = \downarrow$ $(\downarrow \text{CHECK\_VM-INTER}) =_c +$ $(\uparrow \text{CHECK\_VM-INTER}) = +$ $\mid \{(\uparrow \text{GF}) = \downarrow$ $\mid \uparrow = \downarrow\}$ $(\downarrow \text{CHECK\_VM}) =_c +\}$

The analysis developed so far is sketchy in two important respects. (i) It only covers the most basic construction types, and shows how they can be analysed in an LFG framework. (ii) Even in this limited domain, it does not deal with ungrammaticality most probably due to the general incompatibility of certain types of operators. Consequently, the account in its current form leads to massive overgeneration. The analysis below is designed to be more comprehensive and more adequate in both respects.

Fundamentally, I subscribe to Mycock's (2006, 2010) LFG framework presented in § 4.2 in general and with respect to her formal treatment of the syntax–prosody interface in particular. However, my assumptions about several construction types to be analysed here considerably differ from Mycock's. Consequently, certain key aspects of our analyses will be radically different.

Consider Table 4.5, which summarises the similarities and differences between Mycock's (2010) view of the basic syntactic properties of the constructions under investigation, see Table 4.2 in § 4.2, and my alternative view.

Table 4.5 Comparison of Mycock's (2010) and my syntactic analysis

Mycock (2010)				Laczkó (this section)			
Predicate				Predication			
Operator field				Operator field	Predicate		
QP	**FOCUS**		**V**	**QP**	**Spec,VP**	**V**	
---------	focus		V	---------	focus	V	(28)
---------	NEG+focus		V	---------	NEG+ focus	V	(29)
---------	single Q-phrase		V	---------	single Q-phrase	V	(30)
∀	------------------------		VM+V	∀	VM	V	(31)
∀	------------------------		NEG+V	------- (!)	NEG	V	(32)
NEG+∀	------------------------		V	---------	NEG+∀	V	(33)
∀	focus		V	∀	focus	V	(40)
---------	Q1	Q final	V	Q1	Q final	V	(41)
---------	Q1 Q2	Q final	V	Q1 Q2	Q final	V	(42)
---------	Q1	NEG+focus	V	Q1	NEG+focus	V	(43a)
---------	Q1	NEG+focus	V	Q1	NEG+focus	V	(43b)

As the top of Table 4.5 demonstrates, Mycock subscribes to the widely assumed basic sentence articulation in Hungarian shown in Table 4.6, where phrase-structurally the verb heads a VP, focus is in Spec,VP and the postverbal field is dominated by V′. The actual structural treatment of quantifiers is not stated (whether they are VP-adjoined or they are sisters of VP).

Table 4.6 Mycock's (2010) sentence articulation

TOPIC FIELD	PREDICATE			
	operator field		verb	*postverbal field*
	quantifiers	focus		

By contrast, I assume the following alternative articulation.

Table 4.7 My alternative sentence articulation

TOPIC FIELD	PREDICATION			
	operator field	*predicate*		
	quantifiers	±focus	verb	*postverbal field*

In my view, too, focus is in Spec,VP. However, I assume that all VM types are also in Spec,VP in complementary distribution with focus (contra Mycock 2010); that is why I have ± preceding focus in Table 4.7. In addition, in my approach, constituents in the operator field are left-adjoined to VP. As mentioned in § 4.1, this alternative sentence articulation can contribute to augmenting syntactic and prosodic alignment. For instance, É. Kiss' (2002) alignment rule can be modified in a principled fashion: Stress–Predicate Edge Alignment → Stress–Predication/Predicate Edge Alignment, which will result in larger alignment coverage.[3] Recall from § 4.1 that in É. Kiss' alignment generalisation in her topic–predicate articulation approach the heaviest grammatical stress in the sentence falls on the left edge of the predicate, which begins with the (possibly extended) VP(-adjoined) portion of the sentence after the topic field. There are at least two phenomena that can be naturally reconciled with É. Kiss' rule by means of my predication vs. predicate distinction. The first has to do with multiple questions and the second is related to the preverbal co-occurrence of a universal quantifier and a focused constituent.

On the basis of her experimental findings, Mycock (2010) comments that it is a problem for É. Kiss' generalisation that in multiple questions, in which there is a series of question phrases, the main stress typically falls on the last *wh*-phrase. Let me point out, however, that Mycock herself has experimental results that show

3. But, of course, the system is more complex because of the added disjunction. Louise Mycock (p.c., January 2016) raised the following legitimate question in this connection. Why is it desirable to have a larger degree of alignment, given that massive misalignment is a feature of the syntax-prosody interface (see Dalrymple & Mycock (2011))? My naive and intuitive answer is that it is an advantage of the complex system of language from the perspective of both production (generation) and processing (parsing) if elements in two modules are aligned at an interface, and, thereby 'reinforce' each other.

that in multiple questions there is also an alternative (although considerably less frequent) intonation pattern in which it is the first *wh*-phrase that receives heavy stress. My predication vs. predicate distinction can reconcile this complexity of the data with É. Kiss' original idea because it provides two possible edges for her alignment rule: the left edge of the predication and the left edge of the predicate.

Another phonological generalisation, also attested by Mycock's (2010) experimental study, is that when the sentence contains a universal quantifier followed by a focused constituent it is the quantifier that receives the main stress. By contrast, when any other quantifier precedes a focused constituent, it is always the latter that the main stress falls on. In the augmented predication/predicate dimension both cases can be captured along the left edge alignment lines. Naturally, the main stress distribution needs to be spelt out.

Let us now compare Mycock's (2010) approach and mine to the nine construction types in Table 4.5.

(28) FOC V
The two analyses are the same: the constituents receiving prosodic prominence are in the syntactically designated Spec,VP focus position.

(29) NEG FOC V
The two analyses are the same: the constituents receiving prosodic prominence are in the syntactically designated Spec,VP focus position.

(30) Q V
The two analyses are the same: the constituents receiving prosodic prominence are in the syntactically designated Spec,VP focus position.

(31) ∀ VM V
a. *Mycock:* the quantifier is in QP; the Spec,VP position, which is reserved for focused constituents in her approach, is empty; the VM morphologically combines with the verb (i.e., both elements are under V^0).
b. *Laczkó:* the quantifier is in QP here, too; the Spec,VP position is also a standard position for VMs, so the VM occupies this position; and the simplex verb is under V^0.

(32) ∀ NEG V
a. *Mycock:* the quantifier is in QP; the Spec,VP position, which is reserved for focused constituents in her approach, is empty; and the negative particle procliticises to the verb under V^0.
b. *Laczkó:* the quantifier is *not* in QP here, as I argued above: it is in a (contrastive) topic position preceding the QP, hence the '---- (!)' representation in Table 4.5; the Spec,VP position is also a standard position for the negative particle, so NEG occupies this position, and the simplex verb is under V^0.

(33) NEG ∀ V
   a. *Mycock:* the negated universal quantifier is in its regular ('cartographic') QP position; Spec,VP is empty; and the verb is in V^0.
   b. *Laczkó:* the negated universal quantifier is in Spec,VP, just like any ordinary negated constituent, which must be focused as a rule; and the verb is in V^0. As I have pointed out in the discussion above, a negated universal quantifier can only occupy the QP position if the Spec,VP position is filled by a non-negated focused constituent.

(40) ∀ FOC V
   The two analyses are the same: the universal quantifier, receiving the H+L prosodic prominence, is in QP; the focused constituent is in its usual Spec,VP position, but this time without its usual H+L accent; and the verb is in V^0.

(41) Q Q V
   a. *Mycock:* all the question phrases make up one cluster that occupies the Spec,VP focus position.
   b. *Laczkó:* it is always the final (immediately preverbal) question phrase that occupies the Spec,VP position; and all the non-final question phrases are in the operator field, in left-VP-adjoined positions. On empirical generalisations about the possible ordering and scope relations among various types of quantifiers and operators (including focus, *wh*-words and negation) in the preverbal domain, see É. Kiss (1992) and Kálmán (2001), among others.

(42) Q Q Q V
   a. *Mycock:* see (41a).
   b. *Laczkó:* see (41b).

(43) Q NEG FOC V
   a. *Mycock:* the (non-immediately-preverbal) question phrase and the negated (non-interrogative) focus make up a cluster, which is the focused unit in Spec,VP.
   b. *Laczkó:* only the negated (non-interrogative) focus is in Spec,VP; and the (non-immediately-preverbal) question phrase is in a left-VP-adjoined position (in the operator field). The dissimilarity between the two variants in (43a) and (43b) is that different preverbal constituents receive prosodic prominence, the H+L pitch accent.

In the following sections I develop this new (modified and augmented) analysis of both the basic construction types and the special types that pose a challenge for any formal approach in the generative tradition. I proceed in the following way. For the sake of easy comparability, I first analyse the construction types in the order in which they appear in Mycock's table, Table 4.2 in § 4.2, and then I present the analysis of the additional special constructions discussed in § 4.1 and § 4.2.

4.3.2 The *FOC V* type

(28) [*János*]$_{\text{TOPIC}}$ [*ANNÁ-NAK*]$_{\text{FOCUS}}$ *mutat-t-a* *be* *Mari-t*
John.NOM Anna-DAT introduce-PAST-3SG VM Mary-ACC
a *mozi-ban.*
the cinema-INE
"John introduced Mary to ANNA at the cinema."

Other than my remarks on my earlier account, I have nothing to add about the treatment of constituents in the topic field; thus, the analysis of the topic constituent *János* "John" is as usual. In this example there is no constituent in the operator field. The oblique argument, *Annának* "to Anna" is the focus in the Spec,VP position. In Table 4.8, I show the relevant annotations in my previous account and those in my new analysis.

Table 4.8 Functional annotations for focus in Spec,VP

Chapter 2	**This section**
Spec,VP	**Spec,VP**
(↑ GF) = ↓ (↑ FOCUS) = ↓ *template:* @(FOCUS)	(↑ GF) = ↓ (↑ VM-FOCUS) = ↓ {(↓ VM-FOCUS-TYPE) = exh [↗ = ↙, ρ: erad] | (↓ VM-FOCUS-TYPE) = id [↗ = ↙, ρ: level] | (↓ VM-FOCUS-TYPE) = pres {[↗ = ↙, ρ: level] | [↗ = ↙, ρ: erad]}} *template:* @(VM-FOCUS)

In the new analysis, too, (↑GF) = ↓ is the standard generalised grammatical function annotation as in my previous analysis. The (↑ FOCUS) = ↓ annotation in the previous analysis is radically augmented here. In the previous, rudimentary approach I only modelled one focus type in this single designated Spec,VP position, the generally assumed exhaustive type. In the new, augmented analysis (still concentrating on the preverbal domain in Hungarian sentences) I also treat a construction type in which a focused constituent occurs in the operator field, preceding a question phrase in Spec,VP. Therefore, the two foci (the 'standard' one in Spec,VP and this other one in this special construction) need to be distinguished. My solution is that I label the standard focus as VM-FOCUS and all other occurrences of foci (in either the preverbal or the postverbal domain) simply as FOCUS. I use the 'VM' prefix in the function label to indicate that the focused constituent in this Spec,VP position competes with VMs. In addition, VMs, too, can be focused there.

Partially motivated by Kálmán et al. (1984), Kálmán (1985, 2001) and Gazdik (2012), I distinguish three types of focus that constituents can be associated with: ordinary exhaustive focus, presentational focus and identificational focus, the third one roughly corresponds to Kálmán's (2001) and Gazdik's (2012) 'hocus', see § 2.2. And there is also a special, additional type, often called verum focus, whose function is to verify the truth of a statement, see § 3.1.1 and § 3.2.1. In the case of this focus type (which is also often called VP-focus), too, the H+L accent falls on the constituent in Spec,VP if that position is filled. If it is not filled, the verb is stressed, because in that case it is the first element at the left edge of the VP. I assume that all the three 'constituent focus' types can be expressed in Spec,VP.

According to Kálmán et al. (1984), Kálmán (1985, 2001) and Gazdik (2012) neutral sentences have level prosody and non-neutral sentences have an eradicating stress pattern. Given that what they call hocus (with a kind of identificational function) occurs in level-prosody sentences, they assume that hocus belongs in the neutral sentence domain. By contrast, for me basic word order properties are more criterial than prosodic features for determining the correct syntactic analysis. In particular, if in a sentence type a potential VM would occur postverbally I consider that sentence type non-neutral. All the three constituent focus types occur in what I define as non-neutral sentences, which in my approach come in either level-prosody or eradicating stress varieties. Exhaustive focus, as a rule, aligns with the eradicating pattern, while hocus always occurs in a level prosody sentence, see Kálmán et al. (1984) and Kálmán (1985, 2001), among others. The reason for this is simple: since both focus types strictly require the postverbal VM environment, it is their sentences' distinct prosodic properties that distinguish them. Depending on the context, *Annának* "to Anna" in (28) can be interpreted as either exhaustive focus or hocus, with eradicating or level prosody, respectively. As regards the prosody of presentational focus, I am not aware of any empirical studies. My own intuition is that it is compatible with both prosodic patterns. In the representation of my new analysis in Table 4.8 I use the [$\nearrow$=$\swarrow$, ρ: level/erad] notation as an informal, short-hand representation for a complete set of prosodic annotations along the lines of Mycock's (2006) approach. The ρ symbol stands for c-structure– p-structure linking.[4] The labels 'level' and 'erad' stand for the prosodic properties of the con-

4. Such a representation is no longer compatible with the approach further developed in Dalrymple & Mycock (2011) and Mycock & Lowe (2013), which propose a strict division between prosody and syntax. However, in this book the informal representation of the interface relations between syntax and prosody in terms of Mycock's (2006) system serves my expository purposes in a reader-friendly way.

stituent in this position in level-prosody and eradicating-stress sentence types, respectively. Recall that in Mycock's (2010) analysis it has the characteristic H+L accent, in Mycock's (2006) representation it has the ↙ βTONE = fall annotation.

In § 2.3.2.1 in Chapter 2 I explained and exemplified the use of templates in LFG-XLE. For instance, I proposed that for the (↑ GF) = ↓ and (↑ FOCUS) = ↓ pair of annotations the @(FOCUS) template shorthand can be used, see the left column in Table 4.8. As the right column in Table 4.8 demonstrates, in this chapter the new sets of annotations will be more (and more) complex. For this reason, I make substantial use of templates here, too. As a first step, in what follows I use the @ (VM-FOCUS) template for the entire set of new functional annotations, see the right column in Table 4.8.

4.3.3 The *NEG FOC V* type

(29) *János* *NEM*=[*Mari-t*]$_{\text{FOCUS}}$ *hív-t-a* *fel.*
John.NOM NEG=Mary-ACC call-PAST-3SG VM
[lit.] "John called not MARY."
("John called someone other than Mary.")

This is an example of constituent negation. I assume that the negated phrase occupies the Spec,VP focus position. In Chapter 5 I develop an LFG-XLE analysis of negation in Hungarian, including this negation type as well, see § 5.1.4.1. Given that the intonation pattern of constituent negation follows that of the exhaustive focus type, the annotations in this case need to be supplemented with the [↗ = ↙, ρ: erad] prosodic annotation, see the right column in Table 4.8 in § 4.3.2.

4.3.4 The *Q V* type

(30) [*János*]$_{\text{TOPIC}}$ [*KI-NEK*]$_{\text{FOCUS}}$ *mutat-t-a* *be* *Mari-t?*
John.NOM who-DAT introduce-PAST-3SG VM Mary-ACC
"Who did John introduce Mary to?"

In Chapter 2 I used the annotations and the template standing for them shown in Table 4.9. Recall that the first CHECK feature annotation encodes that a single question phrase must occupy the Spec,VP position. The second CHECK feature is needed for the treatment of multiple constituent questions, see § 2.3.2.1 and § 4.3.9.

The only difference between my previous and current analyses is that in the latter I also indicate the exhaustive focus type eradicating prosody of the constituent and, thereby, of the sentence. Consequently, the @(VM-INTER_2) template, which I will use henceforth, contains this prosodic encoding as well, see the right column in Table 4.9.

In order for the content of a particular version of modified templates to be identifiable in what follows, I number the template labels consecutively: @(TEMPLATE), @(TEMPLATE_2), @(TEMPLATE_3), etc. Compare the two VM-INTER template labels in Table 4.9.

Table 4.9 Functional annotations for a single question phrase in Spec,VP

Chapter 2	**This section**
Spec,VP	**Spec,VP**
(↑ GF) = ↓ (↓ CHECK _VM-INTER) $=_c$ + (↑ CHECK _VM-INTER) = + *template:* @(VM-INTER)	(↑ GF) = ↓ (↓ CHECK _VM-INTER) $=_c$ + (↑ CHECK _VM-INTER) = + [↗ = ↙, ρ: erad] *template:* @(VM-INTER_2)

4.3.5 The ∀ *VM V* type

(31) *MINDENKI-T fel-hív-ott János.*
everyone-ACC VM-call-PAST.3SG John.NOM
"For every *x*, *x* = person, John called *x*."

Recall that this is Mycock's (2010) example with her representation of the particle+verb combination as a single word; and also recall that in my approach the particle is an independent word occupying the Spec,VP position, just like other VM constituents. The universal quantifier *mindenki* "everyone" is in the operator field in both Mycock's and my analysis. For the details of my analysis of VMs in general and particle verb constructions in particular, see Chapter 3.

Compare my annotations associated with the VM constituent in Spec,VP in Chapters 2 and 3 with my augmented annotations here in Table 4.10. Also compare my annotations associated with the universal quantifier in VP-adjoined position in Chapters 2 and 3 with my augmented annotations here in Table 4.11.

Table 4.10 Functional annotations for VMs in Spec,VP

Chapters 2 & 3	**This section**
Spec,VP	**Spec,VP**
{(↑ GF) = ↓ | ↑ = ↓} (↓ CHECK _VM) $=_c$ + *template:* @(VM)	{(↑ GF) = ↓ | ↑ = ↓} (↓ CHECK _VM) $=_c$ + [↗ = ↙, ρ: level] *template:* @(VM_2)

Recall that in my previous analysis the constraining CHECK feature guarantees that only elements lexically specified as VMs can occupy this position in a 'neutral' sentence. The $\uparrow = \downarrow$ functional head annotation is for preverbs and the ($\uparrow$ GF) = $\downarrow$ annotation is for all the other VM types. These annotations are retained in my new analysis as well. However, here I also indicate the characteristic prosodic properties of VMs under normal (i.e., level prosodic) circumstances.

Table 4.11 Functional annotations for universal quantifiers in XP,VP

Chapters 2 & 3	**This section**
($\uparrow$ GF) = $\downarrow$	($\uparrow$ GF) = $\downarrow$
($\downarrow$ CHECK _QP) $=_c$ +	($\downarrow$ CHECK _QP) $=_c$ +
template:	[$\nearrow = \swarrow$, ρ: erad]
@(QP)	*template:*
	@(QP_2)

In my previous analysis, the annotation is very simple and schematic. As I pointed out, the universal quantifier (or the constituent containing a universal quantifier) has some grammatical function: ($\uparrow$ GF) = $\downarrow$, and the constraining CHECK feature ensures that only (quantifier) elements that are appropriately specified lexically can appear in this position.[5] My new analysis schematically indicates the prosodic properties of the quantifier: [$\nearrow = \swarrow$, ρ: erad], see the right column in Table 4.11. This encoding indicates that the universal quantifier gets the H+L pitch accent in this neutral construction type with VMs. In the discussion of the analysis of (40) in § 4.3.8, I will repeat the empirical generalisation that even when a universal quantifier is followed by focus, it is the former that receives the H+L accent.

4.3.6 The ∀ *NEG V* type

(32) *Mindenki* NEM=*dicsér-t-e* *Anná-t.*
everyone.NOM NEG=praise-PAST-3SG Anna-ACC
"Not everyone praised Anna."

Recall from § 4.3.1 that Mycock (2010) assumes, on the one hand, that the universal quantifier in (32) is in the operator field, and, on the other, that the negative particle phonologically and morphologically combines with the verb: she puts the *nem=V* complex under V^0. By contrast, I argue that, on the one hand, the universal quantifier has all the properties of a contrastive topic, and, thus, it occupies a position in the topic field, and, on the other, the negative particle is in the Spec,VP position.

5. A reminder is in order here: in this book I only deal with universal quantifiers. I leave the treatment of other types of quantifiers to future research.

This construction manifests predicate (or clausal) negation. I offer a detailed LFG-XLE analysis in Chapter 5. Its essence is as follows. My main argument for positing that the negative particle (NEG) is in Spec,VP is its complementarity with the other elements competing for this position: focused constituents, question phrases and VMs. Consequently, I assume that in addition to the disjunctive annotations for the other three types of elements targeting the Spec,VP position, a fourth disjunct needs to be included with the following XLE style annotations, see Table 4.12.

Table 4.12 Functional annotations for NEG

Spec,VP
↓ ∈ (↑ ADJUNCT)
(↓ ADJUNCT-TYPE) = neg
(↑ VM-FOCUS) = ↓
(↓ VM-FOCUS-TYPE) = neg
[↗ = ↙, ρ: erad]
template:
@(VM-NEG)

In my treatment of the negative particle, the central idea is that it has exactly the same specifications, whether it is involved in constituent negation, see § 4.3.3 above, or predicate negation. It modifies either a constituent or the predicate as an adjunct, and it contributes the semantics of negation. These generalisations are encoded by the two ADJUNCT annotations in Table 4.12.

I also assume that NEG in Spec,VP has the FOCUS function, see the two FOCUS annotations in Table 4.12.[6] My motivation for this is twofold. First, the negative particle's prosody is identical to that of an ordinary focused constituent, as the relevant pitchtracks from Mycock's (2010) study testify. Second, in the current version of our HunGram grammar, the complementarity, in this construction type, of the negative particle and the VM can be implemented in a straightforward way: the general rule is that the VM targets the Spec,VP position provided that it is not occupied by a focused element, and the negative particle is one such element.

These annotations need to be supplemented with the encoding of prosodic information. Given that the negative particle follows the same prosodic pattern as the standard (exhaustive) focus, the [↗ = ↙, ρ: erad] annotation is appropriate here, see Table 4.12.

6. Naturally, this view makes it necessary to augment the generally assumed inventory of focus types. I leave exploring the details and ramifications of this approach to future research.

4.3.7 The *NEG* ∀ *V* type

(33) NEM=*mindenki-t* *hív-ott* *fel* *János.*
NEG=everyone-ACC call-PAST.3SG VM John.NOM
[lit.] "John called not everyone."
("Not everyone was called by John.")

Recall from § 4.3.1 that Mycock assumes that in the case of (33) the negated universal quantifier is in its regular QP position, the focus position is empty, and, despite this fact, the VM occurs postverbally. By contrast, my claim is that a negated universal quantifier can only occupy its canonical QP position if and only if the Spec,VP position is filled by a non-negated focused constituent. This immediately explains the postverbal occurrence of the VM. Note that in Mycock's analysis the negated universal quantifier receives the H+L pitch accent, because it is a universal quantifier in its canonical position, while in my analysis it receives this accent because it is a negated constituent in the focus position, that is why it is associated with the [↗ = ↙, ρ: erad] annotation.[7] From this it also follows that in my approach *nem mindenkit* "not everyone.ACC" in (33) is analysed in exactly the same way as *nem Marit* "not Mary.ACC" in (29) in § 4.3.3.

4.3.8 The ∀ *FOC V* type

(40) *MINDENKI-T* [*János*]$_{\text{FOCUS}}$ *hív-ott* *fel.*
everyone-ACC John.NOM call-PAST.3SG VM
"For every *x*, *x* = person, JOHN called *x*."

Recall from § 4.3.1 that Mycock (2010) and I analyse this construction in the same way syntactically.

As has been pointed out several times above, it is a special prosodic property of this construction type that the universal quantifier 'steals' the H+L pitch accent from the exhaustive focus. This can be captured in my system in the following way. It needs to be ensured that the two designated constituents 'see each other' from their respective positions. The representational strategy is the same as in my treatment of multiple questions: I use CHECK feature pairs. The key idea here is that the

7. It would be interesting to explore experimentally, by using minimal pairs, whether a non-negated universal quantifier and its negated counterpart exhibit exactly the same prosodic behaviour, and whether the negated quantifier has exactly the same prosodic properties in the following two configurations: NEG+∀ verb and NEG+∀ focus verb. If there is an observable difference, that would lend additional support to my analysis. However, if there is no discernible contrast, that would not necessarily support Mycock's view.

CHECK feature in the quantifier position ensuring (constraining) that only (universal) quantifiers can occur in that position, (↓ CHECK _QP) $=_c$ +, is supplemented with a defining CHECK feature with an up-arrow, (↑ CHECK _QP) = +, whose constraining counterpart, (↑ CHECK _QP) $=_c$ +, is associated with the exhaustive focus in Spec,VP. In the case of multiple questions, it is the immediately preverbal question phrase in Spec,VP that receives a similar pair of CHECK features: (↓ CHECK _VM-INTER) $=_c$ + and (↑ CHECK _VM-INTER) = +. The latter licenses additional question phrases in the quantifier position, see Table 2.4 and the relevant discussion in § 2.3.2.1 in Chapter 2, and Table 4.15 in the next section (§ 4.3.9).

Table 4.13 Annotations in XP,VP for the prosody of the co-occurrence of universal quantifiers with exhaustive focus

(↑ GF) = ↓	→	(↑ GF) = ↓
(↓ CHECK _QP) $=_c$ +		(↓ CHECK _QP) $=_c$ +
[↗ = ↙, ρ: erad]		(↑ CHECK _QP) = +
template:		[↗ = ↙, ρ: erad]
@(QP_2)		*template:*
		@(QP_3)

The disjunctive combination of this constraining CHECK feature with the regular eradicating stress annotation associated with exhaustive focus will have the following effect. In the unmarked case the focused constituent will have eradicating stress, but there will be no prosodic annotation, i.e., there will be no eradicating stress, associated with the focus if there is a universal quantifier in XP,VP.

Table 4.14 Annotations in Spec,VP for the prosody of the co-occurrence of universal quantifiers with exhaustive focus

(↑ GF) = ↓	→	(↑ GF) = ↓
(↑ VM-FOCUS) = ↓		(↑ VM-FOCUS) = ↓
(↓ VM-FOCUS-TYPE) = exh		(↓ VM-FOCUS-TYPE) = exh
[↗ = ↙, ρ: erad]		{[↗ = ↙, ρ: erad]
		| ~[↗ = ↙, ρ: erad]
		(↑ CHECK _QP) $=_c$ +}

The disjunction part of the annotations is to be interpreted in the following way. The first disjunct is the prosodic annotation I have used so far. The second disjunct encodes that exhaustive focus has no eradicating stress: ~[↗ = ↙, ρ: erad] if there is a universal quantifier in XP,VP: (↑ CHECK _QP) $=_c$ +. In this case the quantifier will receive eradicating stress, see Table 4.13.

I include the foregoing annotational modifications in the two relevant templates. In the case of the quantifier, see @(QP_3) in the right column in Table 4.13. In the case of the focused constituent in Spec,VP, I include the new disjunct in the right column in Table 4.14 in the (VM-FOCUS-TYPE) = exh disjunct of the @(VM-FOCUS) template in Table 4.8 in § 4.3.2, and the new template label is @(VM-FOCUS_2).

4.3.9 The $Q^* + Q\ V$ type

(41) [*Ki*]$_{\text{FOCUS}}$ [*KI-NEK*]$_{\text{FOCUS}}$ *mutat-t-a* *be* *Mari-t?*
who.NOM who-DAT introduce-PAST-3SG VM Mary-ACC
"Who introduced Mary to who?"

(42) [*Ki*]$_{\text{FOCUS}}$ [*ki-t*]$_{\text{FOCUS}}$ [*KI-NEK*]$_{\text{FOCUS}}$ *mutat-ott* *be?*
who.NOM who-ACC who-DAT introduce-PAST.3SG VM
"Who introduced who to who?"

Recall that Mycock (2010) and I analyse multiple constituent questions rather differently. The fundamental difference is that Mycock assumes that all question phrases, forming a cluster, occupy the Spec,VP focus position, see the indication of FOCUS in her examples in (41) and (42), while I posit that it is solely the final question phrase that occurs in Spec,VP, and all the other (non-final) ones are in VP-adjoined quantifier positions. (41) is Mycock's example, showing the essence of her analysis: both question phrases are marked as being focused. It is the immediately preverbal (final) question phrase that receives the H+L accent. In the spirit of my current analysis, the annotations for the question phrase in Spec,VP need to be supplemented with the customary prosodic information characteristic of exhaustive focus: [$\nearrow = \swarrow$, ρ: erad], see the right column in Table 4.9 in § 4.3.4 repeated in Table 4.15.

Table 4.15 Basic functional annotations for the treatment of multiple questions

XP,VP	Spec,VP
(↑ GF) = ↓	(↑ GF) = ↓
(↑ CHECK _VM-INTER) $=_c$ +	(↓ CHECK _VM-INTER) $=_c$ +
(↓ CHECK _QP-INTER) $=_c$ +	(↑ CHECK _VM-INTER) = +
template:	[$\nearrow = \swarrow$, ρ: erad]
@(QP-INTER)	*template:*
	@(VM-INTER_2)

4.3.10 The *Q NEG FOC V* type

(43) [*János*]$_{\text{TOPIC}}$ [*ki-nek*]$_{\text{FOCUS}}$ *NEM*=[*Mari-t*]$_{\text{FOCUS}}$ *mutat-t-a* *be?*
John.NOM who-DAT NEG=Mary-ACC introduce-PAST-3SG VM
[lit.] "Who did John introduce not MARY to?"
("Who did John introduce someone other than MARY to?")

In § 4.2, I pointed out that although Mycock deals with this construction type in a detailed fashion, she does not mention that it contradicts one of the cornerstones of her approach: she assumes that the Spec,VP position can be filled by either a single non-interrogative focused constituent or by one or more interrogative focused constituents. Thus, the two focus types are in strict complementary distribution. This basic principle is obviously violated here.

In the approach I develop in this book, this construction type can be treated along the following lines. Fundamentally, the special occurrence of the question phrase needs to be encoded in the annotations for multiple questions associated with the quantifier position, see Table 4.16.

Table 4.16 Modification of the functional annotations for question phrases in XP,VP

(↑ GF) = ↓ (↑ CHECK _VM-INTER) $=_c$ + (↓ CHECK _QP-INTER) $=_c$ + *template:* @(QP-INTER)	→	(↑ GF) = ↓ {(↑ CHECK _VM-INTER) $=_c$ + (↓ CHECK _QP-INTER) $=_c$ + | (↑ VM-FOCUS-TYPE) $=_c$ exh (↑ CHECK _QP-INTER) $=_c$ + (↓ CHECK _QP-INTER) $=_c$ + {[↗ = ↙, ρ: erad] ~($↑_ρ$ VM-FOCUS [↗ = ↙, ρ]) = erad | ~[↗ = ↙, ρ: erad] ($↑_ρ$ VM-FOCUS [↗ = ↙, ρ]) = erad}} *template:* @(QP-INTER_2)

Recall that in my earlier treatment of multiple constituent questions, see Table 4.4 in § 4.3.1, I use the annotations shown in the left column of Table 4.16. Two constraining CHECK features ensure that a question phrase can occur in this quantifier position: (↓ CHECK _QP-INTER) $=_c$ +, if the Spec,VP position is occupied by another question phrase: (↑ CHECK _VM-INTER) $=_c$ +. In order to cover the special construction type in (43), this treatment needs to be augmented by the disjunction shown in the right column of Table 4.16. Its first disjunct is the previous set of annotations for multiple questions (see the left column again), and the second disjunct handles the special construction. The annotational strategy is basically the same here, too. A question phrase is licensed to occur in the quantifier position: (↓ CHECK _QP-INTER) $=_c$ +, if the Spec,VP position is occupied by a designated constituent type. Here this designated constituent is an exhaustive focus: (↑ VM-FOCUS-TYPE) $=_c$ exh. The prosodic disjunction in this second disjunct formally captures Mycock's (2010) empirical findings: either the question phrase in the quantifier position (first prosodic disjunct) or the negated exhaustive focus in Spec,VP receives the H+L pitch accent (i.e., eradicating stress).

All this has to be coupled with a modification in the annotations associated with the exhaustive focus in Spec,VP. Recall that the exhaustive focus, as a rule, gets eradicating stress, except when it is preceded by a universal quantifier, in which case it is the universal quantifier that receives eradicating stress. I captured this by the modified annotations in Table 4.14 in § 4.3.8. In Table 4.17, I modify those annotations to also cover the prosodic behaviour of the question phrase + negated exhaustive focus construction.

Table 4.17 Modification of prosodic annotations in Spec,VP for the exhaustive focus preceded by a universal quantifier or a question word

(↑ GF) = ↓ (↑ VM-FOCUS) = ↓ (↓ VM-FOCUS-TYPE) = exh {[↗ = ↙, ρ: erad] | (↑ CHECK _QP) $=_c$ +}	→	(↑ GF) = ↓ (↑ VM-FOCUS) = ↓ (↓ VM-FOCUS-TYPE) = exh {[↗ = ↙, ρ: erad] | (↑ CHECK _QP) $=_c$ + | (↑ CHECK _QP-INTER) = +}

Recall that in the case of the 'universal quantifier + focus' construction type I formally encoded that the two elements 'see each other' by using an up-arrow defining CHECK feature associated with the universal quantifier: (↑ CHECK _QP) = +, and an obligatory constraining CHECK feature associated with the exhaustive focus, and if this feature match requirement is satisfied then the focus has no eradicating stress (and the quantifier has this stress as usual), see the second disjunct in the left column in Table 4.17. In the case of our 'question phrase + negative focus' construction, I also employ an up-arrow defining CHECK feature associated with the question phrase in Spec,VP: (↑ CHECK _QP-INTER) = +, and its constraining counterpart, (↑ CHECK _QP-INTER) $=_c$ +, is included in the prosodic disjunction of annotations associated with the focus, see the right column in Table 4.17. The scenario is the same: the focus has no eradicating stress, or, more precisely, it is not specified for eradicating stress here, if the Spec,VP position is filled by a question phrase (third disjunct). The distribution (i.e., alternation) of eradicating stress is encoded by the annotations associated with the question phrase in the right column in Table 4.16. I add this to template @(VM-FOCUS_2) introduced in § 4.3.8 and the new, augmented version is labelled as @(VM-FOCUS_3).

Notice that the analysis as developed so far is incomplete in an important respect: it does not capture the fact that the non-interrogative exhaustive focus constituent has to be negated for it to be able to license the occurrence of a question word in the VP-adjoined position. I propose that this needs to be encoded in the lexical forms of question words. Consider the generalised lexical form for question words in (64) in § 2.3.2.1 in Chapter 2, which I repeat here as (45) in a modified version: on the basis of the discussion, Footnote 3 in Chapter 2, of the problematic nature of the ~((GF* ↑) FOCUS) annotation with respect to some additional construction types as well as a new, comprehensive view of ±*wh* discourse functions, I have removed it from (45).

(45) L (wh-word) …
(↑ PRON-TYPE) = interrogative
((GF* ↑) STMT-TYPE) = wh-interrogative
{((GF* ↑) CHECK _VM-INTER) = +
| ((GF* ↑) CHECK _QP-INTER) = +}.

In the disjunction the first (defining) CHECK feature encodes that a question word can be inserted in the Spec,VP position, because the constraining CHECK feature counterpart is (disjunctively) associated with this position. The second disjunct states the same about the insertion of a question word in the VP-adjoined quantifier position in the same formal fashion. The required co-occurrence of the question word in the VP-adjoined position and a *wh*-phrase or an exhaustive focus in the Spec,VP position is encoded by the CHECK feature annotations associated with these two designated positions as shown in Table 4.16 and Table 4.17. The fact that the exhaustive focus must be negative can simply be encoded by a negative polarity constraint in the lexical forms of question words, see (45′).

(45′) L (wh-word) …
(↑ PRON-TYPE) = interrogative
((GF* ↑) STMT-TYPE) = wh-interrogative
{((GF* ↑) CHECK _VM-INTER) = +
| ((GF* ↑) CHECK_QP-INTER) = +
((GF* ↑) VM-FOCUS POL) $=_c$ neg}.

This is the last construction type Mycock (2010) investigated in her empirical study, included in Table 4.2 in § 4.2. In § 4.3.11 and § 4.3.12 I analyse two additional and related constructions which pose problems of various degrees for generative approaches in general, and insurmountable problems for Mycock's approach in particular, see § 4.2.

4.3.11 The *miért FOC V* type

This construction type is closely related to the previously discussed type. Consider (23) from § 4.2, repeated here as (46) for convenience.

(46) *Péter miért* ANNÁ-T *hívta fel?*
Peter.NOM why Anna-ACC called up
"Why did Peter call ANNA?"

In Hungarian, *miért* "why" is the only question word which can precede a non-negated focus (and it is also compatible with negated focus, like all the other question words): '*miért* + (non-)negated focus'.[8] For obvious reasons, this special construction, involving one particular question word, poses exactly the same fundamental problem for Mycock's approach as the general 'question word + negated focus' construction discussed above. It is also obvious that the *miért* construction calls for an exceptional treatment in any approach.

My analysis of this special case in the LFG approach here is very simple and as minimal as possible. Capitalising on my treatment of the *Q NEG FOC V* type presented in the previous section, all I need to do is to encode in the lexical form of *miért* "why" that when it is in an XP,VP position it imposes no polarity constraint on the co-occurring exhaustive focus in Spec,VP. Thus, instead of the negative polarity constraint in the lexical forms of all other question words, see the last annotation in (45′) in the previous section, in the lexical form of *miért* only an existential constraint is needed: it simply requires the presence of an exhaustive focus, irrespective of its polarity, see the last annotation in (46). The exhaustive

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8. As is well-known, *miért* "why" is homonymous with *mi-ért* "for what" [*lit*. "what-for"]. Actually, the two are etymologically and semantically related, but speakers do not seem to be aware of this. *Mi-ért* "for what" [*lit*. "what-for"] is an ordinary question word in all respects. It is a distinguishing feature of *miért* "why" that it has an alternative phonological form, typically used in colloquial or casual speech: *mért* "why".

Given that *miért* "why" can also occupy the Spec,VP position, some sentences can be ambiguous:

(i) *János miért fizetett tíz dollár-t?*
John.NOM (a) why paid ten dollar-ACC
(b) for.what
(a) "Why did John pay ten dollars?"
(b) "For what did John pay ten dollars?"

English has a similar kind of ambiguity when *for* and *what* are combined: *What did you come here for?*

type of the focus is encoded in the c-structure representation, see Table 4.16 in the previous section.

(46) *miért* …
(↑ PRON-TYPE) = interrogative
((GF* ↑) STMT-TYPE) = wh-interrogative
{((GF* ↑) CHECK _VM-INTER) = +
| ((GF* ↑) CHECK _QP-INTER) = +
((GF* ↑) VM-FOCUS)}.

4.3.12 The *FOC Q V* type

Consider the example in (17) in § 4.2, repeated here as (47).

(47) a. *Tud-om, hogy Péter [ki-t]*$_{\text{FOCUS}}$ *mutatott be*
know-PRES.1SG that Peter.NOM who-ACC introduced VM
Anná-nak …
Anna-DAT
"I know who Peter introduced to Anna … "
b. … *de [János]*$_{\text{FOCUS}}$ *[ki-t]*$_{\text{FOCUS}}$ *mutat-ott be neki?*
but John.NOM who-ACC introduce-PAST.3SG VM to.her
" … but who did JOHN introduce to her?"

Recall from § 4.2 that Mycock (2010), on the basis of a rather general view in the literature, claims that the construction type exemplified in (47b) is ungrammatical without a special context that licenses it, see (47a). In § 4.2, I also agreed that this construction needs a special context. At the same time, I pointed out that its counterpart in which the focus occurs postverbally, and which everybody considers absolutely grammatical, is context-dependent to exactly the same extent. For this reason, if a grammar handles the postverbal focus counterpart, it also has to handle this special construction. In the GB/MP literature, the treatment of the occurrence of postverbal focus has received considerable attention, see É. Kiss (1998b), for instance, and the references therein. Obviously, the *Q V FOC* configuration is one of the relevant phenomena. However, I am not aware of any fully developed GB/MP analysis of the *FOC Q V* construction. For discussion, see Bródy & Szendrői (2011) and Horvath (2013).

Given that Mycock (2010) excludes this construction from her investigation, she does not reflect on the potential problem it may pose for her general approach. However, from her representation of the relevant examples it seems that this construction is problematic for her because here, too, non-interrogative and interrogative foci co-occur, contrary to her basic complementary distributional generalisation. This seems to be a problem for her analysis even if we appreciate her remark that in this case a special, contrastive non-interrogative focus is involved (Louise Mycock p.c., January 2016), see above. As pointed out in § 4.2, this problematic *FOC Q V* structure is the mirror image of the other fundamentally problematic type discussed above: *Q NEG FOC V*.

In the current LFG approach this construction type can be analysed in the following way. The focused constituent is in an XP,VP quantifier position and the question phrase is in Spec,VP. We need a set of additional disjunctive annotations for the focused constituent which allow it to occupy the quantifier position and make this dependent on the presence of a question phrase in Spec,VP, see Table 4.18.[9]

Table 4.18 Focus annotations in XP,VP

↓ ∈ (↑ FOCUS)
(↓ FOCUS-TYPE) = exh
(↑ CHECK _VM-INTER) $=_c$ +
[↗ = ↙, ρ: erad]
template:
@(QP-FOCUS)

The first annotation simply introduces a general focus function: ↓ ∈ (↑ FOCUS). The second annotation specifies its type as exhaustive focus: (↓ FOCUS-TYPE) = exh. And this combination is dependent on Spec,VP being filled by a question phrase: (↑ CHECK _VM-INTER) $=_c$ +. As a focused element, this constituent receives its eradicating stress: [↗ = ↙, ρ: erad]. The basic functional annotations generally associated with the question phrase in Spec,VP do not need any modification or augmentation; however, it needs to be encoded that in this construction type the question phrase is obligatorily devoid of its eradicating stress. Recall that so far I have discussed and analysed two constructions in which the focused phrase in Spec,VP does not receive its usual eradicating stress. (1) When it is an ordinary focused constituent and it is preceded by a universal quantifier it never gets this stress. (2) When it is a question phrase and it is preceded by another question phrase then either of them can get this stress. In the construction type under investigation the situation is the same as in (1): when a (contrastive) focus precedes the question word in Spec,VP the latter

9. In Table 4.18 I simply use the 'exh(austive)' focus type specification, but on the basis of the vast amount of literature on Hungarian focusing phenomena, the augmentation of the parametric space for focus types is needed and justified, which should include information focus, contrastive focus, verum focus, etc. I will explore this in future work.

never gets eradicating stress (and it is in the scope of this focus). In my system, this can be captured as shown in Table 4.19. Above, I proposed the annotations in the left column of Table 4.19 below for treatment of the ordinary occurrence of a question phrase in Spec,VP, see Table 4.15 in § 4.3.9 and its discussion.

Table 4.19 Modification of functional annotations for the treatment of question phrases in Spec,VP preceded by focus

Spec,VP	→	**Spec,VP**
(↑ GF) = ↓		(↑ GF) = ↓
(↓ CHECK _VM-INTER) $=_c$ +		(↓ CHECK _VM-INTER) $=_c$ +
(↑ CHECK _VM-INTER) = +		(↑ CHECK _VM-INTER) = +
[↗ = ↙, ρ: erad]		{[↗ = ↙, ρ: erad]
template:		| (↑ FOCUS-TYPE) $=_c$ exh}
@(VM-INTER_2)		*template:*
		@(VM-INTER_3)

Here I follow the same strategy as in the two special cases above: (1) and (2). I include the eradicating stress prosodic annotation in a disjunction whose second disjunct requires there to be an exhaustive focus in the sentence, in which case the question phrase does not receive its usual eradicating stress, because the focus in XP,VP receives it. Note that the (↑ FOCUS-TYPE) $=_c$ exh annotation guarantees that the exhaustive focus will not be in Spec,VP: it will be elsewhere in the sentence, for instance in XP,VP, see Table 4.18. Furthermore, notice that this treatment can also handle the possible postverbal occurrence of the focus. Technically this works in the following way. The combination of the FOCUS discourse function and the H+L prosodic feature is optionally associated with postverbal constituents.

4.3.13 Summary of my analysis

First, Tables 4.20–4.26 give an overview of the annotational templates introduced in § 4.3.2–§ 4.3.12. In the tables, under the template labels I indicate the numbers of the sections in which the given templates were introduced, and the newly added annotations are in bold. After this I summarise the crucial aspects of my LFG-XLE analysis of the eleven constructions containing operators. Finally, in a c-structure representation I show all the relevant disjunctive sets of annotations in their templatic format.

Table 4.20 @(VM-FOCUS) in Spec,VP

@(VM-FOCUS)	(↑ GF) = ↓
[4.3.2]	(↑ VM-FOCUS) = ↓
	{(↓ VM-FOCUS-TYPE) = exh
	[↗ = ↙, ρ: erad]
	| (↓ VM-FOCUS-TYPE) = id
	[↗ = ↙, ρ: level]
	| (↓ VM-FOCUS-TYPE) = pres
	{[↗ = ↙, ρ: level]
	| [↗ = ↙, ρ: erad]}}
@(VM-FOCUS_2)	(↑ GF) = ↓
[4.3.8]	(↑ VM-FOCUS) = ↓
	{(↓ VM-FOCUS-TYPE) = exh
	{[↗ = ↙, ρ: erad]
	| ~[↗ = ↙, **ρ: erad**]
	(↑ CHECK _QP) $=_c$ +}
	| (↓ VM-FOCUS-TYPE) = id
	[↗ = ↙, ρ: level]
	| (↓ VM-FOCUS-TYPE)=pres
	{[↗ = ↙, ρ: level]
	| [↗ = ↙, ρ: erad]}}
@(VM-FOCUS_3)	(↑ GF) = ↓
[4.3.10]	(↑ VM-FOCUS) = ↓
	{(↓ VM-FOCUS-TYPE) = exh
	{[↗ = ↙, ρ: erad]
	| ~[↗ = ↙, ρ: erad]
	| (↑ CHECK _QP) $=_c$ +
	| **(↑ CHECK _QP-INTER) = +**}
	| (↓ VM-FOCUS-TYPE) = id
	[↗ = ↙, ρ: level]
	| (↓ VM-FOCUS-TYPE) = pres
	{[↗ = ↙, ρ: level]
	| [↗ = ↙, ρ: erad]}}

Table 4.21 @(VM-INTER) in Spec,VP

@(VM-INTER)	(↑ GF) = ↓
[2.3.2.1]	(↓ CHECK _VM-INTER) $=_c$ +
	(↑ CHECK _VM-INTER) = +
@(VM-INTER_2)	(↓ CHECK _VM-INTER) $=_c$ +
[4.3.4]	(↑ CHECK _VM-INTER) = +
[4.3.9]	**[↗ = ↙, ρ: erad]**
@(VM-INTER_3)	(↑ GF) = ↓
[4.3.12]	(↓ CHECK _VM-INTER) $=_c$ +
	(↑ CHECK _VM-INTER) = +
	{[↗ = ↙, ρ: erad]
	| **(↑ FOCUS-TYPE) $=_c$ exh**}

Table 4.22 @(VM) in Spec,VP

@(VM)	{(↑ GF) = ↓
[2.3.2.1]	| ↑ = ↓}
	(↓ CHECK _VM) $=_c$ +
@(VM_2)	{(↑ GF) = ↓
[4.3.5]	| ↑ = ↓}
	(↓ CHECK _VM) $=_c$ +
	[↗ = ↙, ρ: level]

Table 4.23 @(VM-NEG) in Spec,VP

@(VM-NEG)	↓ ∈ (↑ ADJUNCT)
[4.3.6]	(↓ ADJUNCT-TYPE) = neg
	(↑ VM-FOCUS) = ↓
	(↓ VM-FOCUS-TYPE) = neg
	[↗ = ↙, ρ: erad]

Table 4.24 @(QP) in XP,VP

@(QP)	(↑ GF) = ↓
[2.3.2.1]	(↓ CHECK _QP) $=_c$ +
@(QP_2)	(↑ GF) = ↓
[4.3.5]	(↓ CHECK _QP) $=_c$ +
	[↗ = ↙, ρ: erad]
@(QP_3)	(↑ GF) = ↓
[4.3.8]	(↓ CHECK _QP) $=_c$ +
	(↑ CHECK _QP) = +
	[↗ = ↙, ρ: erad]

Table 4.25 @(QP-INTER) in XP,VP

@(QP-INTER)	(↑ GF) = ↓
[4.3.9]	(↓ CHECK _QP) $=_c$ +
@(QP-INTER_2)	(↑ GF) = ↓
[4.3.10]	{(↑ CHECK _VM-INTER) $=_c$ +
	(↓ CHECK _QP-INTER) $=_c$ +
	| (↑ VM-FOCUS-TYPE) $=_c$ exh
	(↑ CHECK_QP-INTER) $=_c$ +
	(↓ CHECK _QP-INTER) $=_c$ +
	{[↗ = ↙, ρ: erad]
	~($↑_ρ$ VM-FOCUS [↗ = ↙, ρ]) = erad
	| ~[↗ = ↙, ρ: erad]
	($↑_ρ$ VM-FOCUS [↗ = ↙, ρ]) = erad}}

Table 4.26 @(QP-FOCUS) in XP,VP

@(QP-FOCUS) [4.3.12]	$\downarrow \in$ ($\uparrow$ FOCUS) ($\downarrow$ FOCUS-TYPE) = exh ($\uparrow$ CHECK _VM-INTER) $=_c$ + [$\nearrow = \swarrow$, ρ: erad]

A general feature of my analysis of all the constructions is that in my annotations I model their prosodic properties as well.

A. *FOC V*. In the analysis of this construction type I argued that at least three types of focus should be distinguished: (i) exhaustive, (ii) identificational, and (iii) presentational. I encoded this in the @(VM-FOCUS) template, see Table 4.20. The type of focus in this particular construction is exhaustive.
B. *NEG FOC V*. This construction manifests constituent negation. The negated constituent has all the properties of exhaustive focus, and it occupies the Spec,VP position. I spell out the formal details of my analysis in § 5.1.4.1 in Chapter 5 on negation.
C. *Q V*. This is the single *wh*-question type. The *wh*-constituent sits in Spec,VP, which is ensured by a CHECK feature, and it has the same prosodic properties as the exhaustive focus. See @(VM-INTER_2) in Table 4.21.
D. ∀ *VM V*. I use CHECK features to encode that preverbally the universal quantifier occupies a VP-adjoined position, see @(QP_2) in Table 4.24. The verbal modifier occupies the Spec,VP position, see @(VM_2) in Table 4.22.
E. ∀ *NEG V*. This construction is a type of predicate negation. In my analysis the negative particle is in Spec,VP, and it shares several properties with exhaustive focus, including their prosody, see @(VM-NEG) in Table 4.23. For further details of my LFG-XLE treatment of predicate negation, see § 5.1.4.6.
F. *NEG* ∀ *V*. In my view this is an instance of the constituent negation of the universal quantifier and therefore I analyse it in the same way as the *NEG FOC V* type. Recall that it is a privilege of universal quantifiers that they can be involved in constituent negation in situ, i.e., in their VP-adjoined position as well provided that the Spec,VP position is filled by exhaustive focus. This is the version of the ∀ *FOC V* type in (G) below in which the universal quantifier is negated.
G. ∀ *FOC V*. In this type the universal quantifier and the focus occupy their designated positions, VP,VP and Spec,VP, respectively. They have their regular annotations, and these are supplemented with the encoding of the prosodic fact that here the universal quantifier steals the H+L tone from the focus, see @(QP_3) in Table 4.24 and @(VM-FOCUS_2) in Table 4.20.

H. *Q* + Q V*. This is the multiple *wh*-question type. In my analysis the *wh*-constituent immediately preceding the verb is in Spec,VP and all the other preceding *wh*-phrases are in VP-adjoined quantifier positions. I capture the co-occurrence of these constituents in these two designated positions by the help of CHECK features, see @(QP-INTER) in Table 4.25 and @(VM-INTER_2) in Table 4.21.

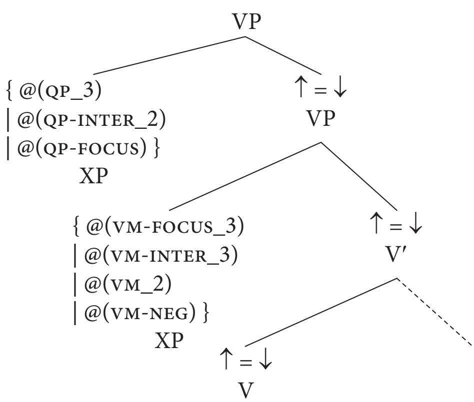
I. *Q NEG FOC V*. The special property of this construction is that a *wh*-constituent occupies a VP-adjoined position; however, the Spec,VP position is not filled by another *wh*-phrase as in type (H). Instead, it is filled by an obligatorily negated focus. In this case, too, I make substantial use of the CHECK feature device. I also capture the two possible intonation patterns formally: either the *wh*-constituent or the negated focus can receive the H+L tone. For the annotational details, see @(QP-INTER_2) in Table 4.25 and @(VM-FOCUS_3) in Table 4.20.

J. MIÉRT *FOC V*. This exceptional construction is only available to a single question word: *miért* "why". This *wh*-word can occupy the VP-adjoined position whether the Spec,VP position is filled by a negated focus, as in (I) above, or a non-negated focus. I encode this special property of *miért* "why" in its lexical form. All the annotations in c-structure are the same as in my analysis of (I).

K. *FOC Q V*. For the treatment of this other exceptional construction type I use a set of additional annotations in VP,VP, see @(QP-FOCUS) in Table 4.26 and I add a disjunct to the annotations in Spec,VP, see @(VM-INTER_3) in Table 4.21.

In (48) I present the templatic annotations I have introduced in my LFG-XLE analysis of the eleven construction types containing operators.

(48)



4.4 Conclusion

In this chapter, I have developed a detailed LFG-XLE analysis of eleven Hungarian construction types involving constituents in the post-topic and preverbal zone: in the XP,VP quantifier position and in the Spec,VP focus/VM position. In addition to the basic structures that are analysed in all major generative approaches to this domain of Hungarian sentence structure, I also developed coherent accounts of some marked constructions that call for special treatments in all approaches. The most important aspects of my comprehensive analysis are as follows.

I assume that there are four major constituent types immediately preceding the verb in the Spec,VP position in complementary distribution:

- a verbal modifier (VM),
- a focused constituent (including negated constituents, which, in turn, include negated universal quantifiers),
- the question phrase in a single constituent question, or the final question phrase in a multiple constituent question,
- the negative particle.

In all the four types, only a single constituent can occupy this designated position: in a multiple constituent question all the non-final question phrases are in quantifier positions.

In the basic construction types, universal quantifiers and non-final question phrases occupy a (possibly iteratively) VP-adjoined position: XP,VP. I call these XP,VP positions the 'operator field', distinct from the Spec,VP position, which I consider a special designated position, typically occupied by operators, but not always: various kinds of VMs are not operators in the strict sense of the word.

I distinguish between the predicate, which is the VP, obviously subsuming the Spec,VP position, and predication, which subsumes the operator field (one or more VP-adjoined constituents) and the predicate.

In LFG's overall non-derivational, parallel-representational framework, and in the spirit of its what-you-see-is-what-you-get principle, I assume that the aforementioned four constituents compete for the same designated Spec,VP position, and I capture their complementarity by disjunctive sets of functional annotations. I also use disjunctive sets of (possibly disjunctive sets of) annotations to capture the complementarity of constituents in the XP,VP position. In the overwhelming majority of the constructions under investigation (universal) quantifiers and question phrases occupy this position.

In addition to the regular LFG(-XLE) annotational apparatus, I make crucial use of XLE's CHECK features (both in c-structures and in lexical forms) to capture the complementarity of various constituents in a particular position, on the one hand, and to encode inevitable instances of context-sensitivity, on the other hand: certain constituents need to 'see each other' from their respective positions.

I use exactly the same strategy and devices in the analysis of highly marked, special constructions: 'question phrase + neg-focus + verb' and 'focus + question phrase + verb'.

My analysis is XLE-implementable, and this has been successfully tested in the case of the syntactic behaviour of several constructions under investigation. This analysis incorporates the crucial syntax-prosody interface properties of the constructions. In LFG's parallel representational model, the full prosodic dimension can be formally encoded along the lines of Mycock's (2006) approach.

CHAPTER 5

Negation from an XLE perspective

In an LFG-XLE setting, a natural course of the analysis of a particular phenomenon is as follows: first we make the pertinent empirical generalisations, next develop an appropriate LFG-theoretic account, and then we implement this account in XLE. A successful implementation is a very reliable test for the tenability and feasibility of the analysis. There is, however, an alternative scenario. After making the relevant empirical generalisations, we can start by capturing them in our XLE grammar. When this is successfully completed, we can formally convert the XLE implementation into an ordinary LFG analysis that only uses devices that have been adopted in the LFG paradigm outside XLE as well. As noted in § 1.2, XLE uses several implementation-specific devices to enhance parsing and generation speed and efficiency. This chapter is a case study in the sense that it demonstrates the first two stages of this alternative route: empirical generalisations followed by implementation.

The motivation for this direction was that in HunGram the treatment of negation was the next and most urgent task, so I developed this new part of our XLE grammar, see Laczkó (2014c, 2015a,c). At the same time, handling negation was (and still is) one of the most debated and unsettled issues in the ParGram community.[1] In this chapter I concentrate on the basic facts of negation in Hungarian. I capitalise on É. Kiss' (1992) insightful empirical generalisations and several aspects of her GB analysis. I present a detailed XLE analysis of the relevant facts that has been successfully tested in our implementational platform, but leave the XLE → LFG conversion to future research.

I make use of the standard XLE devices: special syntactic categories for the negative markers involved: NEG and SEM, and specifically labelled phrasal projections: YPsnem and YPsem. I use the non-projecting categories PRT and NEG in both head-adjunction and phrasal configurations. In my analysis of Hungarian, I apply all the three modes of treating negation phenomena in the ParGram tradition and

1. "The novel discussion at the ParGram meeting 2015 in Warsaw, which was substantiated by a talk by Tibor Laczko on Hungarian negation, led to the insight that maybe what one should do is to adopt the differentiated treatment put forward by the Hungarian grammar.", https://wiki.uni-konstanz.de/pargram/index.php?title=Main_Page&wteswitched=1&veaction=edit. This presentation is Laczkó (2015a) in the references.

I suggest that this three-way system could be employed cross-linguistically in other ParGram approaches as well.

The structure of this chapter is as follows. In § 5.1, I discuss the syntax of the major types of constituent and predicate negation with a brief overview of the relevant literature from my perspective, and then propose an XLE treatment. In § 5.2, I modify and augment this LFG-XLE analysis by developing an account of the special uses of the two main negative markers (*nem* "not" and *sem* "also not"), capturing their interaction with negative concord items, and presenting a formal treatment of the two negative suppletive variants of the copula. In § 5.3, I make some concluding remarks.

5.1 Types of negation

In § 5.1.1, I present the basic facts and empirical generalisations pertaining to types of negation. In § 5.1.2, I show why it is untenable in LFG to assume a GB/MP style NegP functional projection. At the same time, the discussion in these sections makes it possible for me to present the most important aspects of É. Kiss' (1992, 1994a) classical NegP-less GB treatment of negation and É. Kiss' (2002) analysis of negation capitalising on MP's notion of NegP as a functional projection. In § 5.1.3, I discuss Payne and Chisarik's (2000) OT account of negation (and focus) phenomena, the only LFG-compatible analysis of negation in Hungarian that I am aware of. In § 5.1.4, I develop my general LFG-XLE framework for the analysis of negation, which is filled with details in § 5.2, concentrating on both negative particles, *nem* and *sem*, and their relations to negative concord items. In order to avoid confusion with verbal particles, which belong to verbal modifiers, following Payne & Chisarik's (2000) terminology (see § 5.1.3), I refer to negative particles as 'negative markers', abbreviated as NMR.

5.1.1 The basic facts

In this section, I present and exemplify the basic empirical generalisations that need to be captured in a theoretically oriented approach. I rely heavily on É. Kiss' (1992) overview of the relevant facts.

There are two types of negation: constituent negation and predicate negation. The latter is also often referred to as clause or sentence negation.

As shown in § 4.3.3, when an ordinary constituent is negated, it must obligatorily occupy the preverbal focus position. Such a constituent cannot occur anywhere else in the sentence. When a universal quantifier (UQ) is negated, there are two scenarios. When there is no other focused constituent in the sentence, the negated quantifier constituent must occupy the Spec,VP position, just like any ordinary negated constituent. Alternatively, when there is a focused constituent in the sentence, the negated quantifier constituent has to be left-adjoined to the VP, just like ordinary non-negated quantifiers.

Predicate negation comes in two varieties. (i) The NMR can immediately precede the verb, and the NMR may or may not be preceded by a focused constituent. If it is preceded by a focused constituent, that constituent may or may not be negated. (ii) The NMR can precede a focused constituent. Given this range of variants, double or even triple negation is also possible.

Consider the following examples, illustrating these construction types. The sentences contain a verbal particle to demonstrate the fact that when a negated constituent immediately precedes the verb, it occupies the customary focus position (at least in descriptive terms), because foci and verbal particles are in complementary distribution preverbally. In the examples focused constituents are in SMALLCAPS.

(1) neutral affirmative sentence
Péter *fel* *hívta* *a* *barátjá-t.*
Peter.NOM up called the friend.his-ACC
"Peter called up his friend."

(2) non-neutral affirmative sentence (with focus)
Péter *A* *BARÁTJÁ-T* *hívta* *fel.*
Peter.NOM the friend.his-ACC called up
"It was his friend that Peter called up."

(3) ordinary constituent negation
Péter *NEM* *A* *BARÁTJÁ-T* *hívta* *fel* *(, hanem* *ÉVÁ-T*
Peter.NOM not the friend.his-ACC called up but Eve-ACC
hívta *fel).*
called up
"It wasn't his friend that Peter called up (but it was Eve that he called up)."

(4) UQ negation without focus (= ordinary constituent negation)
Péter *NEM* *MINDENKI-T* *hívott* *fel.*
Peter.NOM not everybody-ACC called up
"It wasn't everybody that Peter called up."

(5) UQ negation with focus
Nem *mindenki-t* *PÉTER* *hívott* *fel.*
not everybody-ACC Peter.NOM called up
"It is not true for everybody that it was Peter that called them up."

(6) predicate negation, without focus, the NMR precedes the verb
Péter *nem* *hívta* *fel* *a* *barátjá-t.*
Peter.NOM not called up the friend.his-ACC
"Peter didn't call up his friend."

(7) predicate negation with focus, the NMR precedes the verb
PÉTER nem hívta fel a barátjá-t.
Peter.NOM not called up the friend.his-ACC
"It was Peter who didn't call up his friend."

(8) predicate negation, with focus, the NMR precedes the focus
Péter nem A BARÁTJÁ-T hívta fel (, hanem AZ APJÁ-NAK
Peter.NOM not the friend.his-ACC called up but the father.his-DAT
küldött email-t).
sent email-ACC
"It is not true that it was his friend that Peter called up (but it was his father that he sent an email to)."

É. Kiss (1992) emphasises that (8) is a very special construction type: two VPs with their respective foci are contrasted, and the first VP is negated.

(9) double negation: constituent & predicate
Péter NEM A BARÁTJÁ-T nem hívta fel.
Peter.NOM not the friend.his-ACC not called up
"It wasn't his friend that Peter didn't call up."

(10) triple negation: UQ, constituent & predicate
Nem mindenki-t NEM PÉTER nem hívott fel.
not everybody-ACC not Peter.NOM not called up
"It is not true for everybody that it wasn't Peter that didn't call them up."

On the basis of (3) and (8), the word order of certain sentences can be ambiguous between ordinary constituent negation and (VP-type) predicate negation, respectively. This ambiguity is typically resolved prosodically. In VP-type predicate negation, the NMR is unstressed, as a rule. In the case of constituent negation in focus, the default prosodic pattern is that the NMR carries the main stress of the constituent.[2]

Note at this point that É. Kiss (1992) also makes these basic generalisations about (3) and (8); however, in later work, for instance É. Kiss (2002, 2015), she subscribes to the by now apparently generally held MP view to the effect that there is no constituent negation in the focus position. Instead, in her analysis, in the case of (3) a NegP dominates an FP, and the NMR occupies the Neg head position and it takes the FP as its complement, and the focused constituent sits in Spec,FP.

2. The widely held generalisation is that in the case of (3) it is always the negative marker that receives the heavy stress and the focused constituent is unstressed, see É. Kiss (2002), Mycock (2010) and Surányi (2011), for instance. Mycock (2010) also presents the pitchtrack of a relevant example, see (29) in § 4.2. However, at least for some speakers, myself included, (3) can have an alternative stress pattern as well: the NMR is unstressed and the constituent following it is stressed. Naturally, this can be taken to be a blend of the two distinct patterns of (3) and (8). In this case a genuine ambiguity may arise, but the context usually disambiguates the sentence.

Thus, the NMR and the focus do not make up a constituent, for further details, see § 5.1.2. By contrast, in the case of (8) the assumption is that the FP is not dominated by a NegP; instead, a NegP is adjoined to it. Practically, this is another instance of constituent negation.

É. Kiss (2002) presents the following arguments for assuming that there is no constituent negation in the focus position, and I comment on these arguments from an LFG perspective below.

Szabolcsi (1980, 1981) pointed out that the unstressed verb after the focused constituent does not necessarily express presupposed information. É. Kiss (2002) gives an example similar to (8). Compare (8) with (3). In the latter, the verb does express presupposed information. I agree that (8) should be analysed in such a way that the entire verbal constituent containing the focus is negated, whether this constituent is an FP, see É. Kiss (2002), or a VP, see É. Kiss (1992) and my LFG analysis in § 5.1.4. However, I think that (3) is best analysed along the lines of É. Kiss (1992), by assuming constituent negation in the focus position, which I also subscribe to in § 5.1.4, for the following reasons. This analysis neatly captures the fact, even in terms of the classical c-command relations, that in (3) it is only the negated constituent that is in the scope of the negative marker, whereas in (8) the entire FP/VP is in its scope. In addition, the behaviour of the negated universal quantifier provides an extremely strong argument for assuming constituent negation in the focus position, see (4) and (5). The most plausible empirical generalisation is that universal quantifier negation is always constituent negation. When there is no other focused element in the sentence, it must occupy the focus position, which is the only option for ordinary negated constituents, see (4). When the focus position is filled, the negated universal quantifier can occupy its regular quantifier position, see (5). The main point here is that it does not seem feasible to analyse (4) in such a way that the non-negated universal quantifier is in the focus position, separated from the NMR, and the NMR is the head of the NegP, taking the FP as its complement. The reason for this is that positive universal quantifiers are banned from the focus position. Interestingly, É. Kiss (2002) herself postulates that negated universal quantifiers, in the absence of an ordinary focused constituent, occupy the Spec,FP position.

Olsvay (2000) claimed that if we assumed that the NMR and the focused element made up a single focused constituent, just like ordinary non-negated foci and *wh*-constituents, we could not explain why an ordinary focused constituent or a *wh*-constituent can stay behind the verb in multiple focus or multiple *wh*-sentences, while a negated ('focus') constituent cannot. I think this is a purely MP-theory-internal argument. Moreover, even in this status, it is not particularly strong, because in this framework it is legitimate (and very often desirable) to assume combinations of features for the satisfaction of several requirements. For instance, É. Kiss (2002) assumes that negated universal quantifiers have both the [+distributive] and the [+focus] features, see the discussion of (17) below. Another example is Surányi's (2007: 237) proposal that a *wh*-constituent checks both its [+wh] and [+foc] features in Spec,FocP. In addition, at a later stage in MP the [+neg] feature was also introduced, and if it is assumed that a negated constituent has both [+foc] and [+neg] features to check, and this is only possible in Spec,FP then there is a feasible theory-internal solution to the problem. See a discussion of Surányi's (2002) analysis along these general lines in § 5.2.

É. Kiss (2002) claims that the strongest argument for the negative phrasal head status of the focus-negating NMR is that it shares fundamental properties with the VP-negating NMR, which is analysed as the head of NegP. In the first place, it licenses the same kind of negative pronominal elements beginning with the morpheme *se*-. Compare her examples in (11a) and (11b). I cite her examples below in their original form with just minor glossing adjustments.

(11) a. *Senki* *nem* [$_{VP}$ hívta fel a FELESÉGÉT]
nobody not called up the wife.3SG.ACC
"Nobody called up his wife."
b. *Senki* *nem* [$_{FP}$ A FELESÉGÉT hívta fel]
nobody not the wife.3SG.ACC called up
"Nobody called up HIS WIFE."

When they are immediately preceded by a *se*-pronoun, both the focus-negating *nem* and the VP-negating *nem* are interchangeable with the *sem* NMR, cf. (12a) and (12b).

(12) a. *Senki* *sem* [$_{VP}$ hívta fel a feleségét]
nobody not called up the wife.3SG.ACC
"Nobody called up his wife."
b. *Senki* *sem* [$_{FP}$ A FELESÉGÉT hívta fel]
nobody not the wife.3SG.ACC called up
"Nobody called up HIS WIFE."

By contrast, when the NMR negates a prefocus universal quantifier, see (13a), it does not license a negative pronoun, and does not alternate with *sem*, see (13b) and (13c), respectively.

(13) a. *Nem* mindenki A FELESÉGÉT hívta fel.
not everybody the wife.3SG.ACC called up
"Not everybody called up HIS WIFE."
b. **Soha* *nem* mindenki A FELESÉGÉT hívta fel.
never not everybody the wife.3SG.ACC called up
"Never did everybody call up his wife."

c. **Soha sem* mindenki A FELESÉGÉT hívta fel.
never not everybody the wife.3SG.ACC called up
"Never did everybody call up his wife."

On the basis of these generalisations, É. Kiss claims that the negation of the universal quantifier is significantly different from the negation of VP and FP. Her conclusion is that the VP-negating and the FP-negating NMR heads a NegP and takes the VP or the FP as its complement. As opposed to this, the negative marker negating *mindenki* "everybody" in (13a) is involved in constituent negation, and is adjoined to the quantified noun phrase.

As regards the parallels between (11a) and (11b), on the one hand, and (12a) and (12b), on the other hand, an alternative generalisation for capturing them can be that *senki nem/sem* "nobody not" are special negated constituents that occupy the same Spec,FP or Spec,VP position, the choice depending on the overall functional categorial assumptions of our approach.

It is true that the negative marker *nem* negating a universal quantifier does not alternate with *sem*, and it does not license a negative concord item (NCI) preceding it. It is also feasible to assume with É. Kiss (2002) that in this case we are dealing with the constituent negation of the universal quantifier. However, the relevant facts can also be interpreted in the following way. Both *senki nem/sem* "nobody not" and *nem mindenki* "not everybody" are manifestations of constituent negation fundamentally, and they behave similarly but not in exactly the same way. In the presence of an ordinary focused constituent, they are in the regular quantifier position and they are involved in run-of-the-mill constituent negation. In the absence of an ordinary focused constituent they occupy the Spec,FP/VP position, and they behave partially differently. They are similar in that they express constituent negation, and they differ in that *senki nem/sem* "nobody not" can also license negative concord items, while *nem mindenki* "not everybody" cannot.

From the previous observation it also follows that the negative markers *nem* and *sem* have partially different roles in (11a) and (12a), on the one hand, and in (11b) and (12b), on the other. As these examples show, they can license one or more negative concord items to their left in both construction types, but it is only in the (11b)–(12b) types that they can also license negative concord items to their right. Compare the examples in (14) and (15) in which I have added negative concord items to É. Kiss' sentences in (11) and (12), respectively.

(14) *Senki nem/sem* [$_{VP}$ hívta fel a feleségét soha]
nobody not called up the wife.3SG.ACC never
"Nobody ever called up his wife from anybody's place."

(15) *Senki* *nem/sem* [$_{FP}$ A FELESÉGÉT hívta fel *soha]
nobody not the wife.3SG.ACC called up never
"Nobody ever called up HIS WIFE from anybody's place."

From LFG's what-you-see-is-what-you-get perspective the simplest and most straightforward empirical generalisation is that in (11a), (12a) and (14) the string *senki nem/sem* is in the focus position, in Spec,VP in my approach, and it is the occurrence of the negative marker in the focus position that enables it to license negative concord items to its right as a rule. This is related to my assumption, to be explicated in § 5.1.4.6 below, that in the case of predicate negation without a focused constituent, see (6) above, the negative marker occupies the Spec,VP position.

It is a very important additional fact that ordinary, i.e., non-negative-polarity, constituents can also be combined with *sem* (and only with *sem*, excluding *nem*), and, as a result, *sem* turns an ordinary constituent into an NCI, with roughly the same distribution as *NCI + sem* combinations. For a detailed discussion, see § 5.2. Compare (12a,b) with (16a,b).

(16) a. *Péter* *sem* [$_{VP}$ hívta fel a feleségét]
Peter not called up the wife.3SG.ACC
"Peter didn't call up his wife, either."
b. *Péter* *sem* [$_{FP}$ A FELESÉGÉT hívta fel]
Peter not the wife.3SG.ACC called up
"Peter didn't call up HIS WIFE, either."

From an LFG perspective, again, the simplest and most feasible generalisation is to assume that in both examples *Péter sem* is a constituent having the NCI status, thanks to the presence of *sem*. As discussed in detail in § 5.2, the difference between *nem* and *sem* is that the former is the simple negative marker "not", while the latter has an additional meaning component "also": *sem* = "also + not", contrary to É. Kiss' glossing of *sem* as "not" in (12). In other words, *sem* is the negative counterpart of *is* "also". The particles *is* "also" and *sem* "also.not" enable an ordinary constituent to occur in the quantifier field. This is the reason why *sem* has the potential of converting an ordinary constituent into an NCI.

In the case of (16) it would be highly counterintuitive to take *sem* to be a VP- or FP-negating NMR that licenses the occurrence of an ordinary constituent (*Péter* "Peter") in a quantifier position. Another solution would be to assume that initially we have the following string of elements: *Péter is nem* "Peter also not", where *Péter is* is a constituent in the quantifier field and *nem* is the 'standard' VP/FP negating NMR, and the two particles get merged morphologically in the course of the derivation. A third possible treatment is to assume a *Péter sem nem* "Peter also not" sequence and then to delete *nem* on account of haplology. For a discussion of some

MP analyses, supplemented with diachronic facts, see § 5.2. Such assumptions and analyses would be definitely untenable in our LFG framework, and not very plausible from a relatively theory-neutral perspective. If, in the spirit of LFG, we assume that *Péter sem* is a constituent, then in our approach the best generalisation is that in the case of (16b) it occupies a VP-adjoined quantifier position, while in (16a) it is a focused constituent in Spec,VP. Furthermore, if we treat the construction types in (16) along these lines, it stands to reason that *NCI* + *nem/sem* combinations can be analysed similarly in the name of uniformity and economy of analytical devices. This is what I present in § 5.2.

Interestingly, É. Kiss (2002) herself makes the following assumptions about non-negated and negated universal quantifiers. A non-negated universal quantifier fills the Spec,DistP position. When there is a focused constituent in the sentence, the negated universal quantifier occupies the same position. By contrast, in a sentence without a focused constituent the negated universal quantifier is in Spec,FP. Consider her examples and representations (2002: 135).

(17) a. [$_{\text{DistP}}$ Mindenki [$_{\text{AspP}}$ fel hívta a feleségét]]
everybody up called the wife.3SG.ACC
"Everybody called up his wife."

b. [$_{\text{FP}}$ Nem mindenki hívta fel a feleségét]
not everybody called up the wife.3SG.ACC
"Not everybody called up his wife."

c. *[$_{\text{DistP}}$ Nem mindenki [$_{\text{AspP}}$ fel hívta a feleségét]]
not everybody up called the wife.3SG.ACC
"Not everybody called up his wife."

d. [$_{\text{DistP}}$ Nem mindenki [$_{\text{FP}}$ A FELESÉGÉT hívta fel]]
not everybody the wife.3SG.ACC called up
"For not everybody was it his wife that he called up."

In her analysis, the negated universal quantifier has both the [+focus] and the [+distributive] features, and it checks that feature overtly which is closer to its base generated position. Thus, if there is no focused constituent in the sentence, it can land in Spec,FP; otherwise it overtly ends up in Spec,DistP. The bottom line here is that even in É. Kiss' (2002) approach universal quantifier negation is always constituent negation, and in focusless sentences the whole negated constituent occupies the focus position; practically, it is the focused constituent. I think this aspect of her analysis would automatically justify the assumption that ordinary negated constituents occupy the same position, along the lines of É. Kiss' (1992) analysis, for instance. This would make the treatment of constituent negation one degree more uniform. Of course, an appropriate featural mechanism would be necessary, but it seems to me that it could be straightforwardly accommodated in this framework.

For instance, as I pointed out above, Surányi (2007) assumes that both [+foc] and [+wh] are checked in Spec,FocP. It could be a logical augmentation to assume that a [+neg] feature is also checked in that position.

In this section I have made basic empirical generalisations about negation from my LFG perspective. In § 5.1.4 I develop my LFG-XLE analysis by relying on these generalisations. In § 5.2 I augment this by a proposal for treating NCIs in this approach.

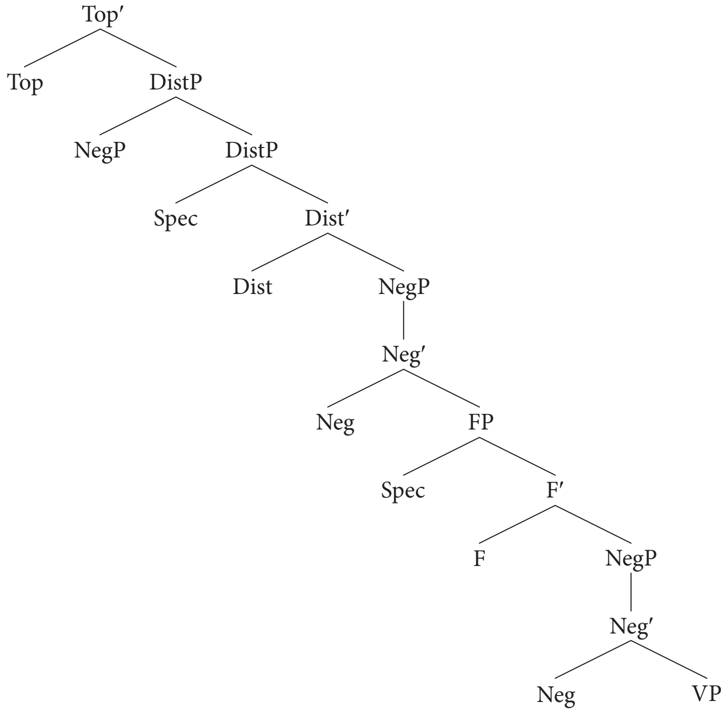
5.1.2 On functional categories and NegP: LFG-theoretic considerations

In current versions of MP, additional functional projections for quantifiers (DistP) and negation (NegP) are also standardly assumed. These categories are also alien to the general spirit of LFG. Basically, in accordance with fundamental views in the MP tradition, they are employed to encode operator properties by syntactic (cartographic) means. If we take a closer look at these functional projections in É. Kiss (2002), for instance, from an LFG perspective, then we can make the following observations. DistP would be incompatible with the relevant LFG assumptions, given the fact that MP postulates an obligatorily covert Dist head and posits quantified expressions in Spec,DistP; see my discussion of Börjars, Payne & Chisarik (1999) in § 2.2. The treatment of negation is more complex. É. Kiss (2002), for example, assumes a NegP which can perform VP-negation, focus negation (FP-negation) or quantifier-negation (DistP-negation), and two (or, as an extreme case, all the three) negation types can co-occur in a single clause, which means two (or three) NegP projections headed by the negative marker *nem* "not", taking one of the aforementioned functional projections as a complement in each Neg projection. The overt head criterion is satisfied here; however, I am not aware of any LFG analysis of negation in any language employing the NegP functional projection, although at first sight this could be made to work. On closer examination, however, it turns out that no matter to what extent and in what particular way we try to accommodate MP's functional projections approach in the treatment of negation, it will always remain incompatible with LFG's architecture. Consider the following possible alternatives for the sake of argument and comparison, crucially based on very important claims and assumptions in Börjars et al. (1999).

As a 'null-hypothesis starter', the first attempt could be to import the MP-style multiple functional head c-structure in (19), in the spirit of É. Kiss (2002), for instance, for the modelling of a sentence with triple negation: quantifier, focus and predicate (VP) negation. This structure would handle the sentence in (18), an example from É. Kiss (2002: 131). (19) is my structural representation in accordance with É. Kiss' (2002) assumptions, because she does not analyse this particular example structurally.

(18) *Nem* mindenki *nem* A FELESÉGÉVEL *nem* táncolt.
not everybody not the wife.3SG.with not danced
"It wasn't true for everybody that it wasn't his wife that he didn't dance with."

(19)

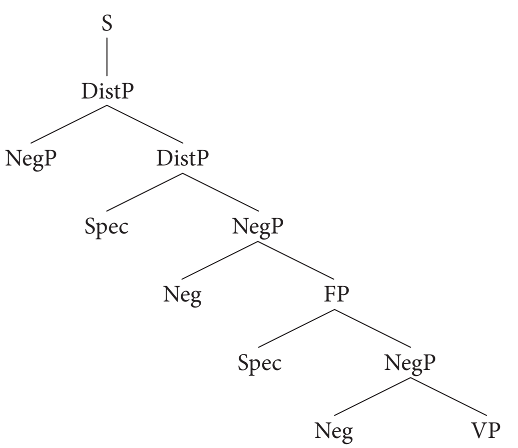


As this representation shows, for FP and VP negation É. Kiss assumes a dominating NegP in which the Neg head takes these constituents as its complements. By contrast, she handles universal quantifier negation in the form of constituent negation, in which the NegP adjoins to DistP.

In accordance with one of the classic LFG views, Börjars et al. (1999), the justification for the three functional projections in (19) varies to a great extent if it is dependent on the existence of a free morpheme as a functional head. NegP is perfectly justified: it can be taken to be headed by the negative marker *nem* "not", in other words, it can be assumed that this word projects a functional phrase and it takes an XP as its complement. The other extreme in this pool of potential functional projections is DistP: it can never be headed by an overt element if, following the MP treatment, we assume that quantifier expressions, as a rule, occupy the Spec,DistP position. To put it very simply: there is no morpheme (not even a bound morpheme) in Hungarian that could be taken to occupy the Dist head position. This is not at all a theory-internal problem for MP, but it is an insurmountable problem in the classical LFG view. The status of FP is a more complex issue. Strictly speaking, there is no morpheme in this case, either, whether free or bound, that could be taken to head this functional projection. In other words, in Hungarian there is no evidence whatsoever for the existence of a focus marker, whether a free or a bound morpheme. In addition, it is rather customary in LFG to identify a constituent as having a designated discourse function in the specifier position of a justifiable functional projection, typically and admittedly: IP and CP, see the discussion in § 2.2. However, in § 2.3.1, I argued that although at first sight Hungarian seems to provide evidence for IP, in addition to DP and CP, because there are a few auxiliaries in this language as well, a careful examination of the relevant facts does not support the postulation of this functional category in this language. My claim is that FP is not even identical to IP in Hungarian. At this stage of the discussion, we can state that in terms of being headed by an overt element, NegP is fully justified, DistP is never justified, and FP is dubious. It is never justified as a focus projection, and although it appears justifiable as an inflectional projection (IP), which could have a discourse functional specifier, there are serious arguments against such an LFG approach.

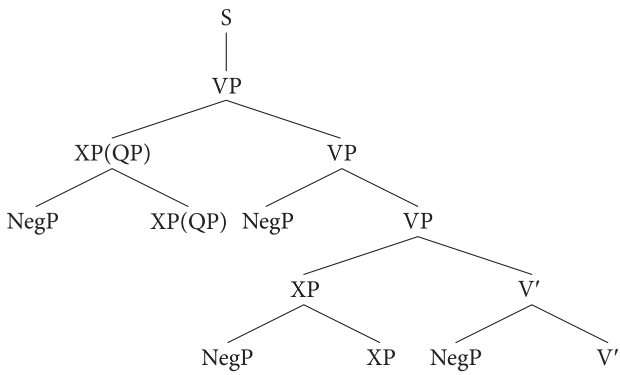
Börjars et al. (1999) also point out that LFG's principles of Specialisation and Economy allow functional projections justified by the discourse function of the constituent that occurs in their specifier position, without any free or bound morphological support from the potential head position. At the same time, they warn against this line of analysis, pointing out that it can easily lead to a proliferation of functional projections reminiscent of those in MP. If, for the time being and for the sake of argument, we disregard this important warning, and we assume that the filling of the specifier position of a hypothesised functional projection justifies the existence of that projection, then the structure in (19) can be modified as in (20). In this representation, I have omitted superfluous X′ nodes in the spirit of LFG's economy principle.

(20)



Before turning to LFG-specific comments, in (21) I show the most likely analysis of (18) in É. Kiss' (1992) GB framework. This is the most likely analysis because É. Kiss does not analyse complex examples like (18). The reason why I present these details and my remarks here is that the account I develop in my LFG approach will be very close in spirit to É. Kiss' (1992) analysis, which I find much more intuitive theory-neutrally than É. Kiss' (2002) MP analysis, among other MP analyses.

(21)



The most important difference between É. Kiss' (1992) structure in (21) and É. Kiss' (2002) representation in (19) is that the former does not employ NegP as a customary functional projection; however, it assumes that the negative marker (Neg) always has a phrasal status on its own: NegP. É. Kiss (1992) sharply distinguishes predicate (or sentence) negation and constituent negation. In both types of negation, the NegP is adjoined to a phrasal constituent: an XP or an X′, and it always has scope over the sequence it c-commands.

Predicate negation comes in two varieties. (i) The NegP can be adjoined to V′ (whether the Spec,VP position is filled or not). (ii) It can be adjoined to VP when the Spec,VP position is filled by a focused constituent.

In the case of ordinary constituent negation, NegP is adjoined to the constituent involved, and this combination obligatorily occupies the Spec,VP position as a focused constituent.

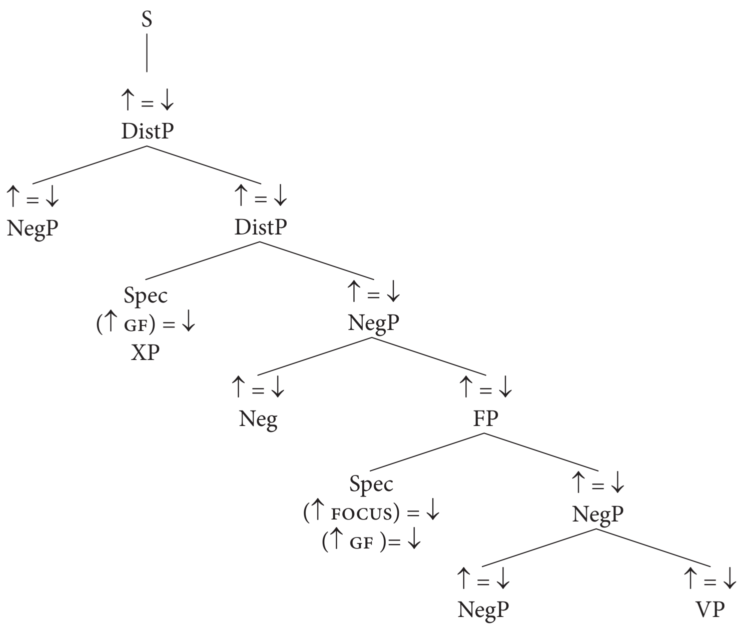
Although É. Kiss (1992) does not discuss quantifier negation, it is clear that in her framework this has to be treated as a special case of constituent negation in the following sense: when there is no (other) focus constituent in the sentence, the negated quantifier constituent must occupy the Spec,VP position (just like any ordinary negated constituent), and when there is (another) focused constituent in the sentence, the negated quantifier constituent has to be adjoined to the VP, just like ordinary non-negated quantifiers.

É. Kiss (1994a) is a modified version of É. Kiss (1992). The only difference is in the nature of Neg-V adjunction: the former head-adjoins the negative marker to the verb as opposed to NegP adjunction to V′ in the latter.

On É. Kiss' (1992) account the classic scope–c-command relations are neatly captured, see (21). In the case of constituent negation, whether ordinary or quantifier negation, it is only the constituent involved that is c-commanded by the NegP and only this constituent is in the scope of negation. The rest of the sentence is outside its scope. In the case of predicate negation it is always the portion of the sentence following the NegP and, at the same time, c-commanded by the NegP, that is in the scope of negation. That is, when the NegP is adjoined to VP, the entire VP (including the focused constituent in Spec,VP) is in the scope of negation, and when the NegP is adjoined to V′, it is only this V′ constituent that falls in the scope of negation. For instance, the focused constituent in Spec,VP, which c-commands the NegP, is outside the scope of negation. On É. Kiss' (1994a) 'head-adjunction to the verb' account, it has to be assumed additionally that this head-adjunction enables the Neg head to have the same c-commanding potential as the verb head.

As regards the structural-categorial representation in (20), at first sight it seems that it could even be a reasonable LFG c-structure representation, provided that we endorse the licensing of a functional projection on the basis of the mere existence of a potential constituent type targeting the specifier position of the hypothetical functional projection. However, if we take a closer look at how the nodes in this representation can be associated with functional annotations, it turns out that the entire approach along these lines is simply incompatible with LFG's (otherwise carefully developed, principled and widely attested) representational and annotational apparatus. Consider the most likely annotations to be associated with the relevant nodes in (22).

(22)



It is not only an LFG-specific c-structure representational problem that the phrase structure rules required for (22) would lead to massive overgeneration, unless appropriately constrained (or stipulated), for the following reasons. To begin with: there are two strictly different NegPs: one for ordinary constituent negation and universal quantifier negation, which always consists of the negative marker head, and another having the classical functional category status: it must be the complement of another (functional) projection and it itself must have a designated complement type, see (19). It is easy to see that the É. Kiss (1992, 1994a) style GB analysis does not have to face this challenge. It assumes a single NegP version, and fundamentally all types of negation are instances of constituent negation. In the case of ordinary constituent negation, NegP is left-adjoined to a constituent, and only this constituent is in the (c-commanded) scope of negation; while in the case of predicate negation it is left-adjoined to a VP or a V′ constituent, and, therefore the entire VP or V′ is in its (c-commanded) scope. The constituent negation of the DistP in (19) is fundamentally similar to É. Kiss' (1992) constituent negation.

The functional annotations in the c-structure demonstrated in (22) are the most feasible ones if we want to get a valid f-structure representation. As a rule, the Neg heads require the functional head annotation. The functional projections (NegP, DistP, FP) also need the functional head annotation in order for the grammatical and/or discourse functional annotations of the constituents they contain to be properly mapped into f-structure. Given these functional annotational necessities, the negative concord feature encoded by each distinct Neg head 'percolates up' (by the transitivity of these functional annotations) to the overall f-structure of the sentence. Practically, if the sentence contains more than one NegP then its f-structure is provided with more than one negative concord value. I can see two rather severe and related problems with this scenario.

In LFG it is standardly assumed that matching values of features are unifiable with the sole exception of PRED feature values. In this view the polarity feature also has unifiable values, which means that even if two (or more) negative concord values 'percolate up', they get unified and the f-structure of the sentence will be left with a single (unified) value, i.e., one or more values will be 'lost'.[3]

From an LFG perspective, the combination of DistP as a functional projection with its constituent negation treatment is also untenable in MP's strictly

3. However, in her review (26 March 2019) Tracy Holloway King called my attention to a possible technical way out. "LFG (in particular XLE but as a reflection of an extension of the theory) does allow a way to keep values from unifying by declaring them as 'instantiated' features (indicated in XLE by a trailing underscore on the value, e.g., NEG = +_). Most LFG analyses assume that PRED is the only instantiated feature. However, in English, particles are generally treated as instantiated to avoid them appearing multiple times in a sentence: *Mary threw out the trash; Mary threw the trash out; *Mary threw out the trash out*. It would be reasonable to treat negation in this way, especially given its strong semantic contributions."

hierarchically embedded arrangement of functional projections. The only feasible LFG alternative for handling these functional categories (if they were admitted by the theory) would be to assume that DistP and the other functional projection NegP or FP were not in a subordinate structural relation, and DistP was not the functional head of the sentence; instead, it had its own grammatical function.

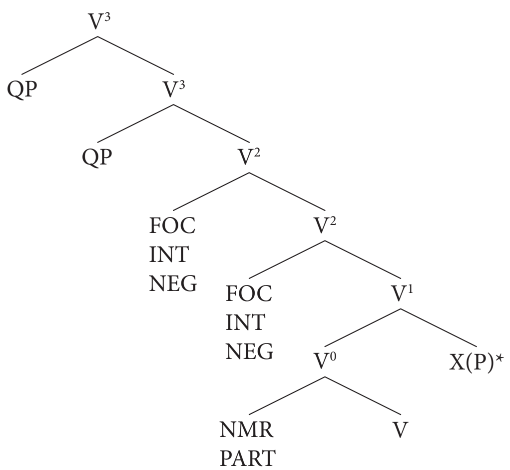
É. Kiss (2002) analyses the sentence in (18) as containing FP negation and VP negation (in the relevant sense, two varieties of predicate negation). By contrast, in my LFG analysis of negation in Hungarian a sentence like (18) is better analysed in the spirit of É. Kiss (1992, 1994a). Depending on the context, the negation in the middle can be treated in two different ways: either as constituent negation in É. Kiss' (2002) Spec,FP or É. Kiss' (1992, 1994a) Spec,VP or as predicate negation, taking the form of FP negation in É. Kiss' (2002) framework or VP negation, with the NegP adjoined to it, as in É. Kiss' (1992, 1994a) framework.

5.1.3 On Payne & Chisarik (2000)

In § 2.2 and § 3.1.3, I discussed in detail Payne & Chisarik's (2000) OT-LFG analysis of Hungarian preverbal syntactic phenomena: the complementarity of constituent question expressions, focused constituents, the negative marker (NMR) and verbal modifiers. Here I confine myself to reiterating, and commenting on, only those aspects of the account that are directly related to the treatment of negation, for further details, including the relevant examples, see Chapters 2 and 3.[4]

Payne & Chisarik (2000) assume the overall structure in (23) for the relevant portion of a Hungarian sentence.

(23)



4. This is the only LFG(-compatible) analysis of negation in Hungarian I am aware of other than my own previous work.

In their notation, INT stands for interrogative phrase, NMR represents the negative marker, FOC is short for focus, and NEG subsumes the following four types: INQ = inherently negative quantifier (e.g., *kevés* "few"), INA = inherently negative adverb (e.g., *ritkán* "seldom"), NUQ = negated universal quantifier (e.g., *nem mindenki* "not everyone"), NCI = negative concord item (e.g., *senki* "nobody/anybody"). They propose the following ranking of OT constraints with respect to the preverbal position.

(24) ALIGN INT > ALIGN FOC > ALIGN NEG > {ALIGN NCI, IN SITU}

This alignment ranking is designed to capture the complementarity of INT, FOC and NEG below V^2 in (23). Payne & Chisarik (2000) treat the NMR *nem* "not" and verbal modifiers separately in the following way. They assume that both NMR and VMs are morphologically incorporated into the verb when they precede it. They take preverbs to be the prototypical representatives of this categorially heterogeneous class, and they use the PART label for them. NMR and PART are also in complementary distribution in a position dominated by V^0, see (23), and the former is stronger in the competition. The {ALIGN NCI, IN SITU} part of the ranking is intended to capture the generalisation that, among the NEG types, NCIs only optionally compete for the verb-adjacent position. The NEG label very strongly invokes the notion of genuine (syntactic and/or morphological) negation. However, Payne & Chisarik's (2000) NEG basically subsumes 'semantic negation': INQ, INA and negative concord items (NCIs). In this group, NUQs are formally and semantically really negated elements, and they are substantially different from all the other elements in this group in their distributional properties. Thus, this NEG label is rather misleading here. Moreover, if morphosyntactic negation is taken seriously, the authors' INT > FOC > NEG hierarchy calls for some clarification and explanation. The reason for this is that an ordinary negated constituent has priority over an ordinary focused constituent, cf.:

(25) a. *NEM A KÖNYV-ET olvasta el CSAK JÁNOS.*
not the book-ACC read.PAST VM only John.NOM

b. **CSAK JÁNOS olvasta el NEM A KÖNYV-ET.*
only John.NOM read.PAST VM not the book-ACC
ca. "It wasn't the book such that it was only John that read it."

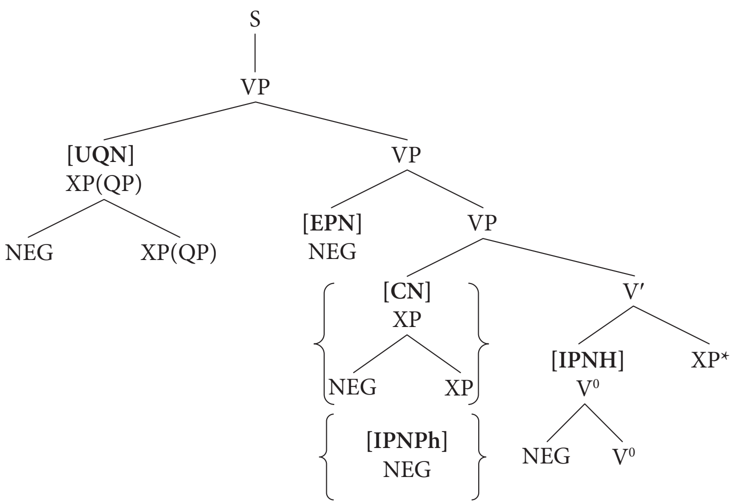
Even if NEG is used in the way the authors do (with appropriate remarks), the contrast in (25) would need to be captured in this framework as well. In Payne & Chisarik's (2000) analysis, both *nem a könyvet* "not the book" and *csak János* "only John" in (25) are treated as FOC elements, and this ±neg dimension in this domain is not at all addressed.

In § 2.2 I argue that the most serious problem with Payne & Chisarik's (2000) analysis is the way they treat VMs and NMR. They refer to É. Kiss (1994a) when they assume that both VMs and NMR are morphologically incorporated into the verb when they immediately precede it. As noted there, É. Kiss (1994a) only assumes semantic, and not morphological, incorporation of immediately preverbal VMs, i.e., on her account they are syntactically separate elements preverbally as well, occurring in the Spec,VP position. Furthermore, É. Kiss (1994a) does not incorporate the negative marker morphologically, either: she adjoins it to the verbal head. I also point out that even if we accept the morphological incorporation treatment, it raises a conceptual problem: Payne & Chisarik's (2000) alignment rules mix two dimensions, a syntactic level and a morphological level. This is a rather marked solution the nature of which would call for some independent support, and it would be an appealing alternative if no other (less marked) solution was available. And this latter requirement does not seem to be satisfied.

5.1.4 Towards an LFG-XLE analysis of negation

In this section I outline my analysis of negation in the platform of our HunGram implementational framework. I basically adopt É. Kiss' (1994a) structural approach to negation in her GB framework, see the schematic representation in (26).

(26)



The abbreviations in square brackets indicate the types of negation: [UQN] = universal quantifier negation, [EPN] = (VP)external predicate negation, [CN] = constituent negation, [IPNPh] = (VP)internal predicate negation, phrasal adjunction, [IPNH] = (VP)internal predicate negation, head-adjunction. The curly brackets signal the complementarity of [CN] and [IPNPh].

The four negation positions are empirically justified; however, all four cannot be simultaneously filled. Double negation is quite frequent, triple negation is very rare, quadruple negation is non-existent. The main reason for these facts has to do with the increasing difficulty of processing multiple negation. Given that the adjunction of the negative marker to a VP with an obligatory focus is relatively rare, the combination of this construction type with a preceding VP-adjoined negated universal quantifier would be even more marked. So far, I have not come across any attested example of this kind. For this reason, I have simplified the phrase structure rules of my implemented grammar in such a way that the two VP-adjoined negative constituents are in complementary distribution. However, the efficient implementation of their non-complementary relation would not cause any technical problems, either.

As noted above, É. Kiss' (1992) analysis is different in one significant respect: it assumes that in the case of [IPN], a NegP is adjoined to V′. This approach is more uniform in the sense that it posits a phrasal status for the negative marker in all the positions in which it occurs. It does not seem to be possible to choose between the two adjunction strategies in the [IPN] type on an empirical basis. Below I discuss some LFG-specific considerations that favour the head-adjunction analysis in the spirit of É. Kiss (1994a), which allows the use of the negative marker as either a Neg or a NegP.

LFG's flexible assumptions about categories and their potential phrasal vs. non-phrasal status allow for the following three scenarios in the analysis of the negative marker in Hungarian. First, it uniformly projects an XP (= NegP). This would be in accordance with É. Kiss' (1992) account. Second, it can be used in the syntax as either an X^0 or an XP category; and, thus, it can be either head-adjoined or phrase-adjoined. This would be in the spirit of É. Kiss (1994a) in GB and Toivonen (2001) in her treatment of particles in LFG. Third, it can be assumed to be a uniformly non-projecting word (capable of occurring in both X^0 and XP positions), cf. the treatment of particles in English, German and Hungarian in Forst, King & Laczkó (2010). Given the fact that this Hungarian negative marker does not seem to exhibit any phrasal behaviour in its own right, e.g., it can never be modified, I adopt the third treatment here, and this is what I implemented to test my analysis. Nothing crucial hinges on this particular aspect of my account, and both other solutions are fully tenable both LFG-theoretically and implementationally; I have also tested their implementability. My choice of the third option was simply motivated by economy considerations: there is no empirical evidence for a phrasal projection of the negative marker.[5]

5. In future work, I plan to develop an LFG analysis of several Hungarian 'small categories' that are arguably best treated as non-projecting words along these lines: verbal particles, *csak* "only", *ne* "not" in prohibitions, *nem* "not", *is* "also", *sem* "also no", *volna* (the marker of irrealis mood), -*e* (the yes-no question marker), etc.

In my implemented rules, I use the special NEG category label, as opposed to Laczkó & Rákosi's (2008–2013) ADV, which contributes greatly to parsing parsimony.

As (26) shows, in my analysis NEG can occupy three major types of syntactic positions: it can be in Spec,VP and it can also be either head-adjoined or phrase-adjoined. In all three cases, it has the ADJUNCT annotation.

My lexical form for the negative marker is as follows.[6]

(27) *nem* NEG * (↑ PRED) = 'nem'
(↑ ADJUNCT-TYPE) = neg.

The special NEG category, the specific phrase structure rules and the functional annotations in this analysis jointly ensure full parsing efficiency. The implemented grammar only produces the expected parses in the case of all the negated constructions under investigation.

Let me now present the crucial ingredients of the analysis of each construction type. For convenience, below I repeat the relevant examples from § 5.1.1.

5.1.4.1 *Ordinary constituent negation*

As has been demonstrated in § 5.1.1, standard constituent negation targets the preverbal position, Spec,VP in É. Kiss' (1992, 1994a) and my analysis, see [CN] in (26) and the relevant example in (3). If an ordinary constituent is negated, this is the only syntactic position available to it.

(3)	*Péter*	*NEM A*	*BARÁTJÁ-T*	*hívta*	*fel.*
	Peter.NOM	not the	friend.his-ACC	called	up

"It wasn't his friend that Peter called up."

In my analysis of this construction type, I use the following c-structure rules. I augment the { XP | PRT } disjunction with the following disjunct for the Spec,VP position.

6. An implementational remark is in order here. A regular lexical form contains the acronym XLE after the category specification, which prompts the implemented grammar to use the information provided by the fst morphological analyser. By contrast, the * symbol in (27) blocks the fst, and the grammar only uses the information included in the lexical form of the given word. This is the simplest way of introducing a special category. The fact that the fst cannot see and analyse the negative marker is no problem at all, given that this word has only a single morphological form.

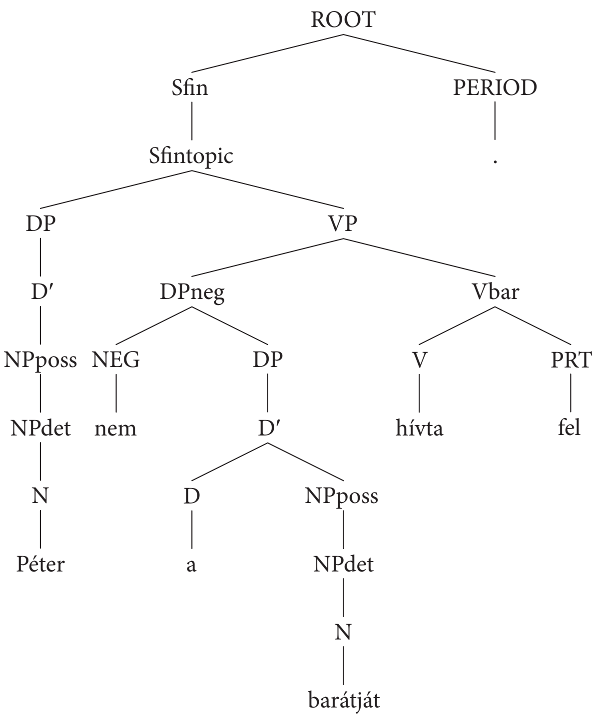
(28) XPneg: (↑ GF) = ↓
(↑ FOCUS) = ↓.

In addition, I have the following c-structure rule for negated constituents.

(29) XPneg → NEG: @(ADJUNCT);
XP.

Consider the c-structure and the f-structure of (3) in (30) and (31), respectively. In this chapter, all the c-structure and f-structure representations are the (minimally simplified) representations my implemented grammar produces. As (30) shows, only the negated OBJ DP is in the scope of the negative marker: the marker is represented as the negative adjunct of the OBJ. The negated constituent has the FOCUS DF, which is an empirically correct generalisation.

(30)



(31)

$$
{}_{111}\left[\begin{array}{ll}
\textsc{pred} & \text{‘fel\#hív < [1:Péter], [52:barát] >’} \\
\textsc{subj} & {}_{1}\left[\begin{array}{ll} \textsc{pred} & \text{‘Péter’} \\ \textsc{case} & \text{nom, } \textsc{def} \text{ +, } \textsc{num} \text{ sg, } \textsc{pers} \text{ 3} \end{array}\right] \\
\textsc{obj} & {}_{52}\left[\begin{array}{ll}
\textsc{pred} & \text{‘barát < [52-}\textsc{poss}\text{:pro] >’} \\
\textsc{poss} & \left[\begin{array}{l} \textsc{pred} \text{ ‘pro’} \\ \textsc{num} \text{ sg, } \textsc{pers} \text{ 3, } \textsc{pron-type} \text{ null} \end{array}\right] \\
\textsc{adjunct} & \left\{\left[\begin{array}{l} \textsc{pred} \text{ ‘nem’} \\ \textsc{adjunct-type} \text{ neg} \end{array}\right]\right\} \\
\textsc{check} & [\ \_\textsc{poss-morph}\ +\ ] \\
\textsc{case} & \text{acc, } \textsc{def} \text{ +, } \textsc{num} \text{ sg, } \textsc{pers} \text{ 3}
\end{array}\right] \\
\textsc{topic} & \{[1\text{:Péter}]\} \\
\textsc{focus} & [52\text{:barát}] \\
\textsc{check} & [\ \_\textsc{prt-verb}\ +\ ] \\
\textsc{tns-asp} & [\ \textsc{mood} \text{ indicative, } \textsc{tense} \text{ past }] \\
\textsc{prt-form} & \text{fel, } \textsc{stmt-type} \text{ decl}
\end{array}\right]
$$

5.1.4.2 *UQ negation without focus*

As (4) demonstrates, a negated universal quantifier can also occur in the Spec,VP position, i.e., this is also an instance of ordinary constituent negation.

(4) *Péter* *NEM MINDENKI-T* *hívott* *fel.*
Peter.NOM not everybody-ACC called up
ca. "It doesn't hold for EVERYBODY that Peter called them up."

The treatment is the same, although in a fully developed analysis it has to be constrained that non-negated universal quantifiers are banned from this position, i.e., they cannot be focused. For instance, if we replace *nem mindenkit* "not everybody.ACC" with *mindenkit* "everybody.ACC", the sentence will become ungrammatical.

5.1.4.3 *UQ negation with focus*

When there is an ordinary focused constituent present, which obligatorily fills the Spec,VP position, the negated universal quantifier can, and it must, occupy a VP-adjoined position in the quantifier zone, see [UQN] in (26) and the example in (5).

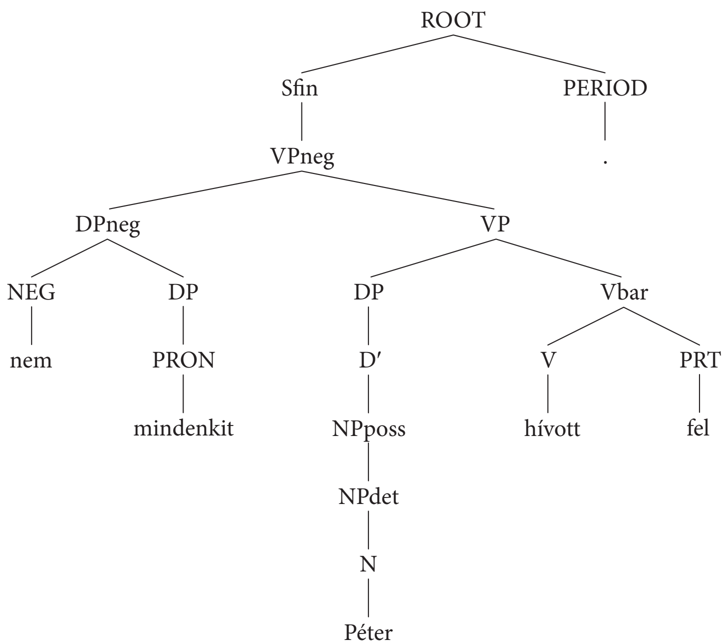
(5) *Nem mindenki-t* *PÉTER* *hívott* *fel.*
not everybody-ACC Peter.NOM called up
"It is not true for everybody that it was Peter that called them up."

I employ the following VP-adjunction rule.

(32) VPneg → XPneg: ($\uparrow$ GF) = $\downarrow$
($\uparrow$ FOCUS)
($\downarrow$ QUANT-TYPE) $=_c$ universal;
VP.

The annotations associated with XPneg capture the relevant empirical generalisations. Only negated universal quantifiers can be adjoined to the VP, and the VP has to contain a focus. Consider the c-structure and f-structure of (5) in (33) and (34), respectively.

(33)



(34)

	PRED	'fel#hív < [49:Péter], [24:pro] >'
	SUBJ	49 [PRED 'Péter' ; CASE nom, DEF +, NUM sg, PERS 3]
	OBJ	24 [PRED 'pro' ; ADJUNCT { 2 [PRED 'nem' ; ADJUNCT-TYPE neg] } ; CASE acc, DEF –, NUM sg, PERS 3, PRON-TYPE quant, QUANT-TYPE universal]
	FOCUS	[49:Péter]
	CHECK	[_PRT-VERB +]
	TNS -ASP	[MOOD indicative, TENSE past]
111	PRT-FORM	fel, STMT-TYPE decl

5.1.4.4 *Predicate negation with focus, the* NMR *precedes the focus*

Structurally, I treat this type as É. Kiss (1992, 1994a): I assume that NEG is adjoined to VP, see the [EPN] constituent in (26) and the example in (8).

(8)	*Péter*	*nem*	*A*	*BARÁTJÁ-T*	*hívta*	*fel.*
	Peter.NOM	not	the	friend.his-ACC	called	up

“It is not true that it was his friend that Peter called up.”

I use the phrase structure rule in (35) in this case.

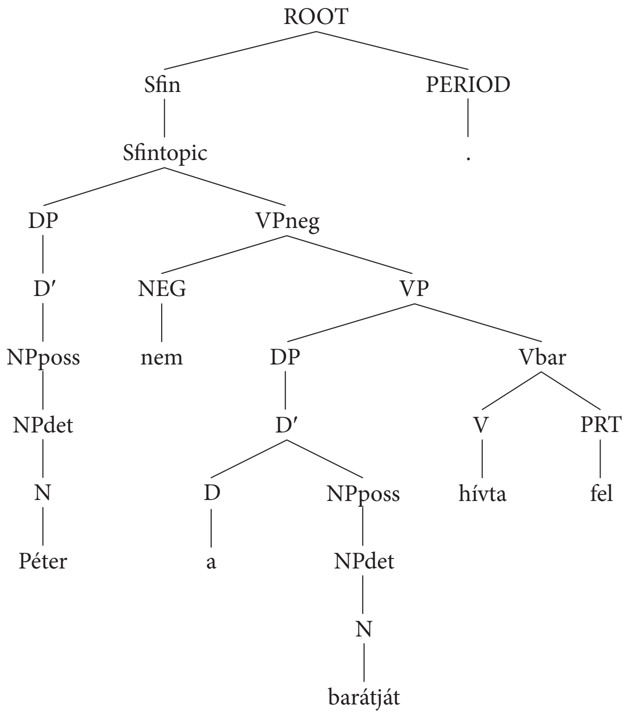
(35) VPneg → NEG: @(ADJUNCT)
(↑ FOCUS);
VP.

As noted in the discussion of (26) at the beginning of § 5.1.4, although it is possible, in principle, to have the combination of VP-adjoined universal quantifier negation and VP-adjoined predicate negation, no real examples have been attested; therefore, in the current version of my implemented grammar I use the two VP-adjunction rules in complementary distribution by collapsing (32) and (35) disjunctively, see (36).

(36) VPneg → { NEG: @(ADJUNCT)
(↑ FOCUS)
| DPneg: @(DP-GF)
(↑ FOCUS)
(↓ QUANT-TYPE) $=_c$ universal }
VP.

Consider the c-structure and f-structure of (8) in (37) and (38), respectively.

(37)



(38)

	PRED	'fel#hív < [1:Péter], [52:barát] >'
	SUBJ	1 [PRED 'Péter'; CASE nom, DEF +, NUM sg, PERS 3]
	OBJ	52 [PRED 'barát < [52-POSS:pro] >'; POSS [PRED 'pro'; NUM sg, PERS 3, PRON-TYPE null]; CHECK [_POSS-MORPH +]; CASE acc, DEF +, NUM sg, PERS 3]
	TOPIC	{[1:Péter]}
	ADJUNCT	30 { [PRED 'nem'; ADJUNCT-TYPE neg] }
	FOCUS	[52:barát]
	CHECK	[_PRT-VERB +]
	TNS-ASP	[MOOD indicative, TENSE past]
111	PRT-FORM	fel, STMT-TYPE decl

Notice that in the f-structure representation the sentence is in the scope of the negative marker (neg-ADJUNCT). A reminder from § 5.1.1 is in order. A sentence can be ambiguous between ordinary constituent negation and the VP-adjunction type of predicate negation, cf. (3) and (8).

5.1.4.5 *Predicate negation with focus, the NMR precedes the verb*

I handle this type, illustrated in (7), as É. Kiss (1994a) does, as opposed to É. Kiss (1992).

(7) *PÉTER nem hívta fel a barátjá-t.*
Peter.NOM not called up the friend.his-ACC
"It was Peter who didn't call up his friend."

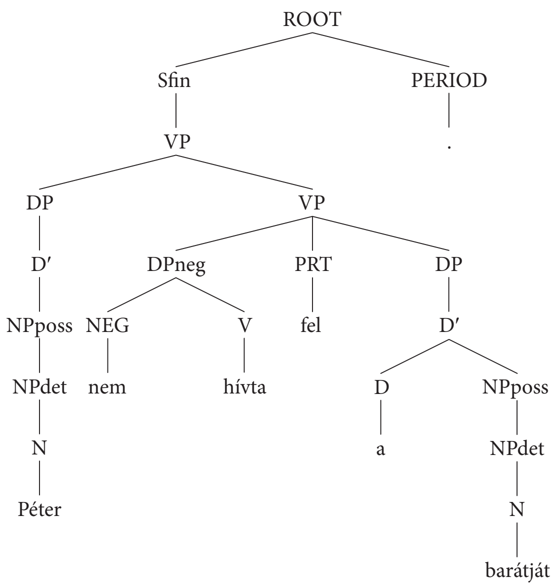
É. Kiss (1994a) head-adjoins Neg^0 to V^0, and here I make the same assumption, see the [IPNH] constituent in (26). The adjunction of NegP to V′ would also be an absolutely legitimate solution; moreover, it can even be someone's preferred solution in LFG if, in cases like this, they reject the idea of head-adjunction in general and the notion of non-projecting words in particular.[7]

My head-adjunction rule is as follows.

(39) Vneg → NEG: @(ADJUNCT)
(↑ FOCUS);
V.

Consider the structures for (7) in (40a) and (40b).

(40) a.



7. In the GB and MP tradition the statuses of the two solutions in É. Kiss (1992) and É. Kiss (1994a) have kept changing. Originally both were legitimate in their respective GB contexts. Later adjunction was only acceptable as either head (X^0) adjunction or maximal projection (XP) adjunction. In this new light É. Kiss' (1992) solution would have been out. In the MP paradigm of functional projections, both adjunction treatments are outdated. The current standard approach is the postulation of a NegP whose Neg head takes the constituent to be negated as its complement, see É. Kiss (2002), for instance.

b.

```
[PRED         'fel#hív <[1:Péter], [97:barát] >'
 SUBJ          [PRED   'Péter'
             1  CASE   nom, DEF +, NUM sg, PERS 3]
 OBJ           [PRED     'barát < [52-POSS:pro] >'
                POSS     [PRED 'pro'
                          NUM sg, PERS 3, PRON-TYPE null]
                CHECK    [ _POSS-MORPH + ]
            97  CASE acc, DEF +, NUM sg, PERS 3]
 ADJUNCT       {[PRED 'nem'
            30   ADJUNCT-TYPE neg]}
 FOCUS         [1:Péter]
 CHECK         [ _PRT-VERB + ]
 TNS -ASP      [ MOOD indicative, TENSE past ]
111 PRT-FORM   fel, STMT-TYPE decl]
```

5.1.4.6 *Predicate negation without focus, the NMR precedes the verb*

In this type of predicate negation, when (at least in descriptive terms) the negative marker seems to be in complementary distribution with VMs and other Spec,VP elements, there is no focused constituent or *wh*-phrase in the sentence, the negative marker precedes the verb and the VM must occur postverbally, see the example in (6).

(6) *Péter nem hívta fel a barátjá-t.*
Peter.NOM not called up the friend.his-ACC
"Peter didn't call up his friend."

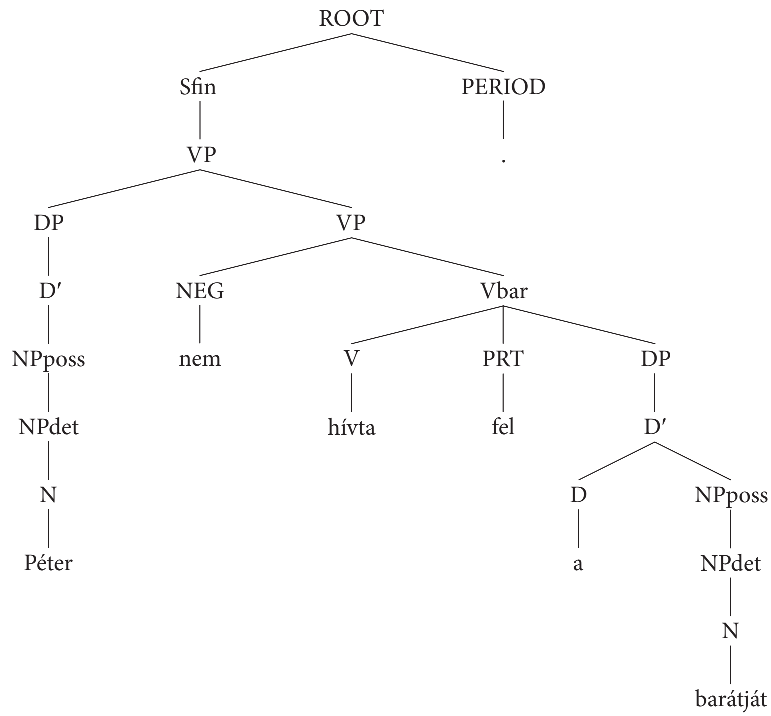
In É. Kiss' (1992, 1994a) analysis of this type the Spec,VP position is not filled (by either a focused constituent or a *wh*-phrase), and NegP/Neg is adjoined to V′/V^0. É. Kiss claims that the reason why a VM occurs (i.e., remains) in its base-generated postverbal position is that it has to be in the scope of negation. Although this solution could be accommodated in my LFG account, here I propose that in these constructions the NegP occupies the Spec,VP position. My main motivation for this is that it most straightforwardly captures the complementarity of all four major types of preverbal constituents, which is in full accord with LFG's what-you-see-is-what-you-get principle.

The relevant rule is very simple. I augment the Spec,VP functional annotational disjunction introduced in Chapter 4 with a disjunct shown as the last one in a simplified representation in (41).

(41) { "VM"
| XP: (↑ GF) = ↓
(↑ FOCUS) = ↓
| XPneg: (↑ GF) = ↓
(↑ FOCUS) = ↓
| NEG: @(ADJUNCT)
(↑ FOCUS) = ↓}

Consider the structures for (6) in (42a) and (42b).

(42) a.



b.

$$
{}_{111}\left[\begin{array}{ll}
\textsc{pred} & \text{‘fel\#hív < [1:Péter], [97:barát] >’} \\
\textsc{subj} & {}_{1}\left[\begin{array}{ll} \textsc{pred} & \text{‘Péter’} \\ \textsc{case} & \text{nom, } \textsc{def} +, \textsc{num} \text{ sg, } \textsc{pers} \text{ 3} \end{array}\right] \\
\textsc{obj} & {}_{97}\left[\begin{array}{ll} \textsc{pred} & \text{‘barát < [52-}\textsc{poss}\text{:pro] >’} \\ \textsc{poss} & \left[\begin{array}{l} \textsc{pred} \text{ ‘pro’} \\ \textsc{num} \text{ sg, } \textsc{pers} \text{ 3, } \textsc{pron-type} \text{ null} \end{array}\right] \\ \textsc{check} & [\ \textsc{\_poss-morph} +\ ] \\ \multicolumn{2}{l}{\textsc{case} \text{ acc, } \textsc{def} +, \textsc{num} \text{ sg, } \textsc{pers} \text{ 3}} \end{array}\right] \\
\textsc{topic} & \{[\text{1:Péter}]\} \\
\textsc{adjunct} & \left\{ {}_{30}\left[\begin{array}{l} \textsc{pred} \text{ ‘nem’} \\ \textsc{adjunct-type} \text{ neg} \end{array}\right] \right\} \\
\textsc{focus} & [\text{30:nem}] \\
\textsc{check} & [\ \textsc{\_prt-verb}\ +\ ] \\
\textsc{tns-asp} & [\ \textsc{mood} \text{ indicative, } \textsc{tense} \text{ past}\ ] \\
\textsc{prt-form} & \text{fel, } \textsc{stmt-type} \text{ decl}
\end{array}\right]
$$

Notice that in this case I assume that NEG in Spec,VP is focused. On the one hand, I think this is plausible intuitively (NEG typically gets heavy stress), and, on the other hand, I need this specification for the proper treatment of the postverbal occurrence of VMs, the fundamental assumption being that VMs and focused constituents are in complementary distribution preverbally. For a discussion of experimental prosodic evidence provided by Mycock (2010), see § 4.2 in Chapter 4.

5.2 Negative markers and licensing negative concord items

In § 5.1.4, I outlined an LFG analysis of constituent and predicate negation in the LFG-XLE model I am developing in this book. I focused on c-structural, functional and lexical representational issues, and I deferred the development of further aspects of the analysis to this section. So here I (i) develop an account of the special uses of negative markers, (ii) capture their interaction with negative concord items (n-words), and (iii) present a formal treatment of the two negative suppletive variants of the copula. In addition, I argue for a particular distribution of labour in my approach for the three standard XLE devices for handling negation phenomena across languages.

5.2.1 On *nem, sem* and negative concord items

In § 5.2.1.1, I first present the basic facts. In § 5.2.1.2, I briefly discuss a few GB and MP approaches that are directly relevant for the purposes of this chapter. In § 5.2.1.3, I make my XLE style empirical generalisations to be formally captured in § 5.2.2.

5.2.1.1 *Some basic facts*

Let me start with an overview of Hungarian pronouns with two sets of examples in Table 5.1. The first part of the compounds in the first two columns encodes the universal or existential aspect, and the second carries the specific pronominal content: 'person, thing, place, etc.'. This second member is typically the corresponding interrogative pronoun in present day Hungarian. Negative concord pronouns consist of an allomorph of the *se(m)* negative marker and the usual interrogative pronominal second member. They can never occur in a positive clausal environment (as opposed to English negative pronouns): they must always be licensed by a negative marker. This means that Hungarian manifests a negative concord language. In what follows, I call these negative concord items n-words (NWs).

Table 5.1 The system of Hungarian pronouns

UNIVERSAL	EXISTENTIAL	NEGATIVE CONCORD
minden-	***vala-***	***se-***
minden-ki every-who "everybody"	*vala-ki* some-who "somebody"	*sen-ki* no-who "nobody"
minden-hol every-where "everywhere"	*vala-hol* some-where "somewhere"	*se-hol* no-where "nowhere"

Consider the examples in (43) and (44), illustrating the basic Hungarian facts.

(43) *János* *(*nem*) *látott senki-t.*
John.NOM not saw #nobody-ACC
"John didn't see anybody." or "John saw nobody."

(44) *Senki* *(*nem*) *látott senki-t.*
#nobody.NOM not saw #nobody-ACC
"Nobody saw anybody."

Given that Hungarian n-words have negative morphological forms, I gloss them with the combination of the hash mark and the corresponding English negative pronouns, e.g., *senki-t* "#nobody-ACC", as in (43) and (44). As the customary **(nem)* representation indicates, (43) and (44) are ungrammatical if the negative marker is missing from these sentences. Note that the negative marker licenses both the n-word preceding it, which is a special case, and the n-word following it, which is the regular situation.

Let me now turn to the types and distribution of negative markers. In addition to the ordinary negative marker *nem* "not", which we have been dealing with so far, there is another, special NMR meaning "also_not", which has two forms: *sem* and *se*. The two forms have exactly the same meaning and distribution, and the only difference between them is that the latter is more informal, and typically it occurs in casual speech. For this reason, I discuss and represent them jointly by using the *sem* form.

The *sem* variant transparently reflects the relationship between the meaning and the etymology of this NMR: *is* "also" + *NEM* "not" → *SEM*. É. Kiss (2011) points out that the original forms of the two elements were *es* and *nem*, and they got merged. The former later developed into *is* "also", an additive particle, and into *és* "and", a conjunction. *Sem*, in turn, developed into a minimising particle, the negative counterpart of *is*, and into s*em*… *sem*…, a correlative pair of conjunctions. For further details, see É. Kiss (2011).

There is one more negative marker: *ne* "not". Its use is constrained to imperative, subjunctive and optative sentences. In these sentences it has the same distribution and the same basic negative concord licensing potential as *nem* "not". I leave the analysis of negative concord in these sentence types (covering the distribution of all the other negative markers) and the XLE implementation of this analysis to future work.

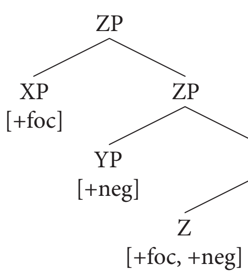
5.2.1.2 *On some GB and MP approaches*

The GB/MP literature on negation in Hungarian in general and on the treatment of negative concord items in particular is enormous. For a variety of analyses, see É. Kiss (1992, 1994a, 2008, 2011, 2015), and the references therein. Here I only concentrate on É. Kiss (2011), because it is directly relevant to my analysis to be developed in this chapter in several respects.

É. Kiss (2011) discusses *sem* from both diachronic and synchronic perspectives. She claims that neither traditional descriptive works nor generative approaches have provided a satisfactory analysis yet. In the latter domain, she offers a critical overview of previous accounts in É. Kiss (1983, 1992, 2008), Olsvay (2000, 2006) and Surányi (2002). As regards É. Kiss (1983, 1992, 2008) and Olsvay (2000), their central idea is haplology: under certain circumstances *nem* is deleted. Surányi (2002) makes the following two main critical remarks on haplology approaches in general. (1) They cannot explain why in the preverbal domain there cannot be more than one *sem* expression, while this is possible postverbally. (2) Haplology does not work in the same configuration when *sem* is used as a conjunction.

Next, I summarise É. Kiss' critique of Surányi (2002) at greater length, as this discussion is very important for the purposes of this chapter. Surányi assumes that *sem*, as opposed to pronouns like *senki* "#nobody" and *soha* "#never", has a negative force, because historically it contains *nem* "not". Both *sem* and *nem* compete for the same specifier position in the functional projection ZP, which hosts both focus and negation. If the Z head has both [foc] and [neg] features then ZP has two specifiers:

(45)



Consider the following examples from É. Kiss (2011).

(46) [$_{ZP}$ *JÁNOS*$_{foc}$ [$_{ZP}$ *nem*$_{neg}$ [$_{Z'}$ *aludt*]]]
John.NOM not slept
"It was John who didn't sleep."

In this sentence *nem* checks the [neg] feature of Z and the focused constituent preceding it checks the [foc] feature of Z.

(47) *[$_{ZP}$ *CSAK MA*$_{foc}$ [$_{ZP}$ *senki sem*$_{foc,neg}$ [$_{Z'}$ *jött*]]]
only today #nobody also.not came
"It was only today that nobody came."

(48) [$_{ZP}$ *Senki sem*$_{neg}$ [$_{ZP}$ *MA*$_{foc}$ [$_{Z'}$ *jött*]]]
#nobody also.not today came
"It was today that nobody came."

In (47) *senki sem* checks both features of Z; therefore, no other focus can precede this constituent; hence the ungrammaticality of this sentence. By contrast, if the focus immediately precedes Z, it checks Z's [foc] feature and the *sem* expression, preceding the focus, can check Z's [neg] feature, as in (48). In Surányi's approach *sem* expressions in the postverbal domain must form a chain with negation in Spec,ZP encoded by either a *nem* or a *sem* expression, they cannot occur there on their own.

É. Kiss makes the following critical remark on Surányi (2002). Surányi's account cannot handle double negation, i.e., cases when a negated verb is preceded by a negated focus, because (45) allows only one focus and one negative expression. According to Surányi, in constructions exemplified in (49a) and in (50a) focus negation is metanegation. However, É. Kiss claims that this view is hardly tenable because the constituent preceding the focus behaves in exactly the same way in the case of double negation as it does in the case of single negation: for instance, the negative marker can be replaced by *sem* in this case, too. Compare (49a) with (49b) and (50a) with (50b). É. Kiss points out that on Surányi's account in (49a) and in (50a) Z's [neg] feature is checked by *nem* and its [foc] feature is checked by the focused constituent; and, thus, there is no explanation for the occurrence of the *sem* expression preceding the focus.

(49) a. *János-t sem* [$_{ZP}$ *KATI*$_{foc}$ [$_{ZP}$ *nem*$_{foc}$ [$_{Z'}$ *látja meg*]]]
John-ACC also.not Kate.NOM not sees VM
"It doesn't hold for John, either, that it is Kate who does not catch sight of him."

b. *János-t sem* [$_{ZP}$ *KATI*$_{foc}$ [$_{Z'}$ *látja meg*]]]
John-ACC also.not Kate.NOM sees VM
"It doesn't hold for John, either, that it is Kate who catches sight of him."

(50) a. *Senki-t* *sem* [ZP *KATI*foc [ZP *nem*foc [Z' *lát* *meg*]]]
#nobody-ACC also.not Kate.NOM not sees VM
"It doesn't hold for anybody that it is Kate who does not catch sight of them."
b. *Senki-t* *sem* [ZP *KATI*foc [Z' *lát* *meg*]]]
#nobody-ACC also.not Kate.NOM sees VM
"It doesn't hold for anybody that it is Kate who catches sight of them."

On the basis of the testimony of Hungarian codices, É. Kiss (2011) describes the development of (the functions of) postmodifying *sem* in the following steps (after the *es+nem* merger).

(51) a. *sem* XP VM V
b. *sem* XP VM *nem* V
c. *sem* XP *nem* V VM
d. XP *sem* V VM
e. *nem* V VM XP *sem*

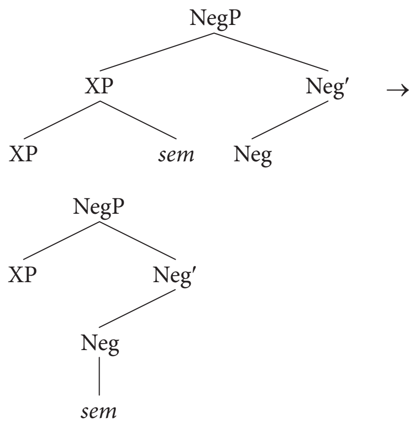
(51a): originally, *sem* premodified the constituent it was combined with, and this combination could function as a focus phrase. In the case of indefinite pronouns, a further merger took place, see the negative concord items in Table 5.1. (51b): after a while the negative force of *sem* got lost and was reinforced by the negative marker preverbally, and the verbal modifier (VM) preceded this sequence. (51c): the negated verb and the VM reversed their order. (51d): *sem* became a postmodifying element, and its preverbal position coincided with the preverbal position of the negative marker, cf. (51c) and (51d). É. Kiss claims that *sem* in (51a) and in (51d) has the function of a negative marker, in addition to its minimising particle function, whereas in (51b,c,e) it is solely a minimising particle. (51d) represents the current situation.

É. Kiss (2011) points out that all the following properties of *sem* can be inferred from its history depicted in (51). As a minimising particle, *sem* has three roles. First, it is the counterpart of *is* "also" in a negative environment. Second, it is an obligatory particle of indefinite expressions in the scope of negation (*egy ember sem* "not a (single) man", *egyszer sem* "not (even) once"). Third, it is an optional particle of *se*-pronouns, see the negative concord column in Table 5.1. It is a 'modifying particle', hence its unstressed clitic status. It is licensed by a negative marker to its left. Given the characteristics of Hungarian sentence structure, from this it follows that it can only occur postverbally.

In the preverbal domain, an expression can be modified by *sem* if *sem*, keeping its minimising particle status and its prosody, can occupy the position of the negative marker (*nem*), in which case *sem* (additionally) acquires the function of a negative marker, thereby making the presence of the negative marker (*nem*) superfluous. When there is a string of *se*-pronouns in the preverbal domain, this reanalysis as a negative marker is only available to a single occurrence of the minimising particle *sem*: in a position adjacent to the Neg head, practically always at the right edge of the *se*-pronoun string.

Consider the generalised representation in (52) in the spirit of É. Kiss (2011).

(52) a. b.



In É. Kiss' (2011) view then the enclitic *sem* of a *sem* phrase 'gets associated' with the head of a focus negating or verb negating NegP. É. Kiss (2015) informally describes the non-occurrence of *nem* in the following way. "When *sem* appears in an immediately preverbal … or prefocus … position, the negative marker licensing it is not spelled out (or, putting it differently, it merges into *sem*), as a consequence of which *sem* is interpreted as the negative marker" (2015: 221).

5.2.1.3 *XLE-style empirical generalisations*

My analysis is based on the following generalisations about the distribution of the negative markers and negative concord items. These generalisations observe the standard what-you-see-is-what-you-get principle of LFG and XLE, and I exemplify them in § 5.2.2.

The ordinary negative marker *nem* precedes the constituent that it combines with (by being left-adjoined to it): *nem^XP*), see (26) in § 5.1.4. In the distributional schemas I use the following symbols: NW = intrinsic n-word, XP = any constituent other than NW, YP = { XP | NW }. *Sem* is right-adjoined to its respective constituent. In addition to its combinability with intrinsic n-words: *NW^sem*, *sem* turns ordinary constituents into derived n-words: *XP^sem = n-word*. Intrinsic n-words (but not ordinary constituents) can also be combined with *nem* (also right-adjoined to them): *NW^nem*. Table 5.2 presents my classification of n-words.

Table 5.2 Classification of n-words

N-WORD		
intrinsic		derived
simple	complex	XP + *sem*
NW	NW + *sem/nem*	
senki	*senki sem*	*Péter sem*
'#nobody'	*senki nem*	'also not Peter'

Table 5.3 offers an overview of the distribution of NWs alone, NWs combined with *sem* or *nem*, and XPs converted into n-words by *sem*.

Table 5.3 Distribution of n-words

PREVERBAL DOMAIN		VERB	POSTVERBAL DOMAIN
VP-adjoined	Spec,VP		
{ NW* YP^snem | NW* } const. neg.	YP^snem const. neg. & clause neg.		{ YP^sem | NW } const. neg.
YP^snem: { NW^*sem* | NW^*nem* | XP^*sem* }			
YP^sem: { NW^*sem* | XP^*sem* }			

An n-word can appear without a right-adjoined negative marker postverbally, see NW in the rightmost column of the table, naturally in the presence of an appropriate preverbal negative concord licensor, see (43). Even in such a postverbal configuration, it can be combined with *sem*, right-adjoined to it, see the NW^sem disjunct of YP^sem. Postverbally, *nem* cannot right-adjoin to it. For instance, in (43) we could have *senki-t se(m)* "#nobody-ACC also_not". This version would be more emphatic, given the semantics of *sem*. Thus, in this case the contribution of *sem* is adding emphasis in the sense of "not even". This latter case and all the others are instances of what I loosely and informally call overt constituent negation, in which the negative marker (*sem* or *nem*) right-adjoins to the target constituent, see Table 5.3 for the distributional facts of right-adjunction. The main empirical generalisation here is that the negative marker in these configurations does not license the occurrence of other n-words in the sentence.

Sem is also capable of converting an ordinary noun phrase, i.e., a non-n-word, into an n-word, see the second disjunct of YP^sem. This constituent is the negative (i.e., negatable) counterpart of YP^*is* ('YP^also').

In both the VP-adjoined position and the Spec,VP position, an intrinsic n-word can be combined with either *sem* or *nem* in such a way that the NMR is right-adjoined to it; see the first two disjuncts of YP^snem. Furthermore, in both the VP-adjoined position and the Spec,VP position, a non-n-word can be converted into a derived n-word by right-adjoining *sem* to it. *Nem* cannot be used in this role.

When an intrinsic or derived n-word appears in Spec,VP, simultaneous constituent and predicate negation takes place: it licenses additional n-words postverbally. In this case, several n-words can be licensed in VP-adjoined positions; however, they must not be combined with *sem* or *nem*.

When an intrinsic or derived n-word appears in a VP-adjoined position, only constituent negation takes place, and these negative concord items licensed by *sem* or *nem* take scope over other operators to their right.

In the VP-adjoined domain a *sem/nem*-negated intrinsic n-word can be preceded by one or more other (strictly non-negated) intrinsic n-words: NW* YPsnem.

5.2.2 An XLE analysis

Let me start this section with the discussion and analysis of (inherent or derived) n-words in the postverbal domain. Consider the examples in (53). As these examples and (43) illustrate, n-words can occur postverbally if and only if they are licensed by a negative marker. *Sem* can turn an ordinary noun phrase constituent into a derived n-word, compare (53a) and (53b). Only *sem* can right-adjoin to an intrinsic n-word in this domain, and *nem* cannot be used: (53c), as opposed to the preverbal domain. An intrinsic n-word can be used on its own (without being combined with a right-adjoined negative marker): (53d).

The sentences in (43) and (53) are ambiguous. *János* "John.NOM" can be interpreted as (i) the focus, or (ii) the topic of the sentence. In my approach the negative marker *nem* is a non-projecting word capable of occupying head-adjoined and phrasal positions. In § 5.1.4.5, in my analysis of (i) I assume that *János* "John.NOM" occupies the regular Spec,VP focus position and the negative marker is left-adjoined to V^0, and in the case of (ii) in § 5.1.4.6 I assume that *János* "John.NOM" is in a topic position, and the negative marker is in Spec,VP. This assumption is strongly supported by the fact that the VM appears postverbally. See the schematic structural representation in (26) in § 5.1.4.

(53) *János* *(*nem*) *lát* *meg*…
John.NOM not sees VM
a. *egy lány-t.*
a girl-ACC
b. *egy lány-t sem.*
a girl-ACC also_not
c. *senki-t sem* / **nem.*
#nobody-ACC also_not not
d. *senki-t.*
#nobody-ACC
"John doesn't catch sight of a. a girl." [+specific]
b. a girl, either." [−specific]
c. anybody at all."
d. anybody."

É. Kiss (2015) points out that constructions like (53a) and (53b) are radically different. If a [−specific] indefinite noun phrase occurs postverbally in the scope of a negative marker, it must be combined with a right-adjoined *sem*: (53b). Otherwise it will be interpreted as a [+specific] indefinite noun phrase: (53a).

Nem in Spec,VP and *nem* in the V^0-adjoined position manifest the default, basic configurations for the licensing of n-words. The simplest case of this is when an intrinsic n-word occurs postverbally on its own. Recall that in § 5.1.4 I assume that the negative marker in all its five major uses, whether involved in predicate negation or constituent negation, has its own PRED feature and it has the ADJUNCT function. When the negative marker is involved in predicate negation (in Spec,VP or in a V^0-left-adjoined position), it is the entire f-structure of the clause that it is an adjunct of, while in the case of constituent negation it is an adjunct of the negated constituent, XPneg in my XLE representation. The crucial question from this perspective is how we can encode the n-word licensing potential of the negative marker in the relevant cases, and the lack of this potential in the rest of the cases.

This question needs to be posited in the larger context of treating negation phenomena in the ParGram community, which has been (and has remained) an unsettled issue from the perspective of uniformity since 2006. For detailed discussions, see Rákosi (2013) and Laczkó (2015c). Below are the most important aspects of this issue that are immediately relevant for us.

There are languages in which negation is encoded by a particle, an independent word, e.g., English, Polish and Hungarian. In others, a bound morpheme, a negative suffix is used, e.g., in Turkish. In certain others, both strategies are employed, e.g., in Wolof and Indonesian. On the basis of these morphological properties, the following intuitive solution suggested itself on the ParGram lines. (1) If the negative marker is an independent word, it can be assumed that it has a PRED feature and it functions as a special negative adjunct. (2) If it is a bound morpheme, then it is naturally analysed as an element without a PRED feature that contributes the NEG+ feature.

It needs to be pointed out right away that LFG's basic assumptions also naturally accommodate the opposite view: (i) a free morpheme only contributing a feature value, and (ii) a bound morpheme encoding a PRED feature. I think it was primarily due to this principled flexibility of the LFG architecture that ParGram grammars[8] went in radically different directions in the treatment of negation phenomena. This whole issue was even more complex and challenging in the case of languages which employ both the free and the bound morpheme strategies, see the discussion below.

In the English and Hungarian XLE grammars the negative markers are analysed as special negative adjuncts with their own PRED feature, see § 5.1.4 for Hungarian. Interestingly, the Polish XLE grammar (in its 2014 version) employed the NEG+ implementational option. For a modified analysis, see Przepiórkowski & Patejuk (2015). The Turkish XLE grammar, because of the affixal nature of the relevant element, assumes that it has no PRED feature, and it only contributes the NEG+ feature. Although Wolof has both strategies, the current Wolof XLE grammar uniformly applies the NEG+ analysis. By contrast, while Indonesian, too, makes use of both strategies, the Indonesian XLE grammar has uniformly implemented the neg-adjunct analysis. In addition to the neg-adjunct and NEG+ devices, there is a third alternative: the negative specification of polarity: POL = negative. For instance, the English ParGram grammar uses this for the analysis of the following construction type: *I had no time.* The particle *no* has its own PRED feature, it is treated as a quantifier and it encodes the negative value for the POL(arity) feature.

In this general ParGram context, I augment my XLE analysis of constituent and predicate negation in § 5.1.4 along the following lines, in order to capture n-word phenomena as well. The encoding of the relevant domain for licensing n-words is a syntactic issue in Hungarian that needs to be modelled in c-structure and f-structure from the perspective of both parsing and generation. I keep the neg-adjunct treatment of the negative marker. The fundamental generalisations are as follows. In all the five basic uses analysed in § 5.1.4, it has a constituent negating function. When it is left-adjoined to any non-verbal constituent in Spec,VP or a universal quantifier in $[XP\ VP]_{VP}$, ordinary constituent negation takes place: it is an adjunct of the given constituent, it negates it, but for obvious reasons it cannot scope out of the constituent; therefore, it cannot have a scope-taking, n-word licensing function. When it left-adjoins to the verbal head (V^0) or when it occupies

8. For information on and links to XLE grammars of individual languages, visit the following site: https://wiki.uni-konstanz.de/pargram/index.php?title=Main_Page&wteswitched=1&veaction=edit#Links_to_ParGram_Groups.

the Spec,VP position, it has the n-word licensing potential. See the relevant configurations in (26) § 5.1.4.

In § 5.1.4.4 I distinguish a third type of predicate negation: VP negation, when the negative marker left-adjoins to a whole VP, whether Spec,VP is occupied by a focus or a VM. Note, however, that the NMR in this use is not an n-word licensor. Compare (54) with (53b), for instance. In (54) a verbal particle fills the Spec,VP position.

(54) *János nem meg lát valaki-t / *senki-t, hanem fel hív valaki-t.*
John.NOM not VM sees somebody-ACC / #nobody-ACC but VM calls somebody-ACC
"It is not the case that John catches sight of somebody, instead, he calls up somebody."

These facts have the following consequences. It would not be appropriate to encode the n-word licensing effect of the negative marker by including the following specification in its lexical form (in one way or another): when it is an adjunct of any projection of a verb, it automatically contributes a feature to the f-structure of the clause that licenses n-words. Instead, this has to be structurally encoded in the V^0-adjoined and Spec,VP cases. Note that in all three configurations the negative marker is an adjunct of the entire clause, but it is not capable of licensing n-words when it left-adjoins to a VP.

It is important to note that in the case of n-word-licensing VP negation the negative marker only has scope over the VP, it cannot scope to the left, so topics are not in its scope: they have wide scope. In an important sense then this is an instance of constituent negation: VP-negation. The scope relationships can be straightforwardly captured by some version of LFG's f-precedence device, see, for instance, Falk (2001), Bresnan et al. (2016), and Dalrymple, Lowe & Mycock (2019). The aforementioned facts also provide an additional argument against analysing this negation type by means of the NEG+ feature, because such a feature cannot naturally be involved in f-precedence relationships.

In addition to the foregoing considerations, there is a further fact that lends considerable support to the neg-adjunct analysis: VP-negation and predicate negation of the Spec,VP type can be combined. Let us take a look at the following sentence.

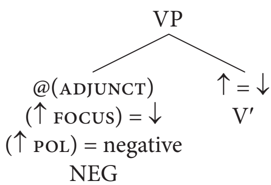
(55) *János nem* NEM *lát meg senki-t, hanem* NEM *hív fel senki-t.*
John.NOM not NOT sees VM #nobody-ACC but NOT calls VM #nobody-ACC
"It is not the case that John doesn't catch sight of anybody; instead, he does not call anybody up."

The most natural way of modelling the sensitivity of n-words to the presence of a domain licensed by the negative marker is by making their occurrence dependent on a feature introduced by the negative marker. Recall that in the ParGram inventory currently there are three devices used for handling negation facts: neg-adjunct, NEG+ and POL = negative. As pointed out above in a different context, it would not be an appropriate solution to constrain the appearance of n-words to the presence of neg-adjunct in the f-structure of the clause, because it is there in the case of VP negation as well, but VP negation does not license n-words. I think that the most natural feature here is POL = negative. This device can be used to encode negative scope. The POL = negative feature could be treated in XLE either as an ordinary feature or as CHECK feature. I use the former solution because it more straightforwardly captures the fact that n-words and their licensors, the negative markers, are in various semantic scope relations, for details, see É. Kiss (2015), for instance. CHECK features, by contrast, simply ensure syntactic well-formedness by checking certain constellations of constituents.

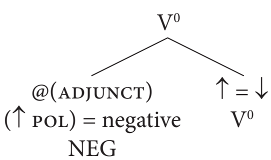
I also think that the NEG+ device is most felicitously used for affixal negation, as in the Turkish ParGram grammar. I would find it counterintuitive to assume that a bound morpheme, attached to the verb stem, encodes a neg-adjunct.

On the basis of the above considerations, in this augmented approach I maintain my treatment of the negative marker in § 5.1.4 as regards its lexical representation, see (27) in that section. I assume that its n-word licensing potential must be associated with two of its possible syntactic occurrences: in the V^0-adjoined position and in Spec,VP. See the representations in (56a) and (56b) below.

(56) a.



b.



The first two annotations in Spec,VP and the first annotation in the V^0-adjoined position are the same as in my earlier analysis in § 5.1.4, and I have simply added the (↑ POL) = negative annotation, which n-words are to be represented as being sensitive to. In other words, the appropriate environment for n-words is c-structure-annotationally encoded. Naturally, it also has to be encoded that the following (inherent or derived) n-words can occur in the postverbal domain:

XP^sem, NW^sem and NW, see (53b), (53c) and (53d), respectively. In the current version of HunGram I have implemented the first two cases by the following two phrase structure rules. I use the YP label, because the relevant range of categories is DP, ADVP and PP, and XP is reserved for a larger, more general range of categories in other syntactic positions.[9]

(57) Vbar → V
YPsem: @(YP-GF)
(↑ POL) $=_c$ negative.

This encodes the fact that one of the possible sisters of V below V′ is a special constituent with the YPsem label. Such labelling is rather standard in the XLE tradition: it even mnemonically signals the nature of this constituent: an ordinary constituent is combined with the right-adjoined *sem* NMR. Such specific c-structure labels contribute to parsing and generation efficiency. @(YP-GF) is the usual template for the range of grammatical functions this constituent can have, and crucially the constraining equation restricts the occurrence of this constituent to the presence, in the f-structure of the clause, of the POL = negative feature-value pair.

(58) YPsem → YP
SEM: @(ADJUNCT).

This rule encodes the fact that any constituent can be combined with a right-adjoined element of category SEM with an adjunct function. The lexical form of *sem* is given in (59). Recall that the other variant of this NMR, *se*, behaves in the same way in all possible respects; therefore, it has exactly the same lexical form.

9. In this analysis I only cover negative concord in finite clauses and leave developing an account of negation in non-finite (infinitival) clauses to future work. One of the differences will be that the polarity annotation for the YPsem constituent in the Vbar of an infinitival clause will contain an extended path: (↑ XCOMP* POL) $=_c$ negative. This will encode the fact that a negative marker in an appropriate licensing position in the finite matrix clause has the entire infinitival clause in its negative concord scope. Consider the following example.

(i) *Kati nem akar meg lát-ni senki-t.*
Kate.NOM not wants VM see-INF #nobody-ACC
"Kate doesn't want to catch sight of anybody."

Here the n-word object of the infinitive is licensed by the negative marker in the Spec,VP position of the finite matrix clause.

Given that YPsem can be buried deeper in a DP, for instance, it can be the possessor constituent in a possessive DP, we need a way to ensure that the 'sem' information passes up properly. This has not been implemented yet. In XLE it can be formalised by using complex (labelled) categories. I am grateful to Tracy Holloway King for pointing this out to me.

(59) *sem* SEM (↑ PRED) = 'sem'
(↑ ADJUNCT-TYPE) = neg.

It is worthwhile comparing the rules and representations of ordinary constituent negation with the *nem* NMR in my analysis in § 5.1.4 and those of this special constituent negation with *sem*. At the beginning of § 5.4 I gave the lexical form for *nem* in (27), which I repeat here as (60) for convenience.

(60) *nem* NEG (↑ PRED) = 'nem'
(↑ ADJUNCT-TYPE) = neg.

My phrase structure rule for constituent negation in (29) in § 5.1.4.1 is repeated as (61) below. XP here ranges over all the major non-verbal categories: DP, PP, AP and ADVP.

(61) XPneg → NEG: @(ADJUNCT);
XP.

The formal parallels between (58) and (61), on the one hand, and between (59) and (60), on the other, are straightforward. In addition, they are also similar semantically: they are used to express constituent negation in these configurations.

As (53d) illustrates, an intrinsic n-word can also occur in the postverbal negative concord domain on its own, without the support of *sem*. I have implemented this with the following annotated phrase structure rule.

(62) Vbar → V
XP: @(XP-GF)
{ (↓ POL-TYPE) ~= negative
| (↓ POL-TYPE) $=_c$ negative
(↑ POL) $=_c$ negative }.

In the second line, the @(XP-GF) template is the usual grammatical function specification for postverbal constituents. In my system, the polarity of n-words is negatively specified: (↑ POL-TYPE) = negative. On the basis of this, the disjunction in the third and fourth lines encodes the following: the XP is not an n-word ***or*** if it is an n-word, the f-structure of the clause must contain the POL = negative feature-value pair. For this analysis to work, I use the following V^0-left-adjunction, i.e., Vneg, rule.

(63) Vneg → NEG: @(ADJUNCT)
(↑ FOCUS PRED FN) ~= nem
(↑ FOCUS POL-TYPE) ~= negative
(↑ POL) = negative;
V.

@(ADJUNCT) is the usual adjunct template. The negative constraint in the second line ensures that the Spec,VP position and this NEG position cannot be simultaneously filled by the negative marker. Given that I use the neg-adjunct treatment of the negative marker, this makes it very convenient and straightforward for me to encode this constraint, because I can negatively indicate the PRED value without argument structure, i.e., PRED FN, of the NMR in the focus position. This would be much more complicated in a NEG+ approach. The constraint in the third line encodes the fact that in this configuration Spec,VP cannot be occupied by an n-word. The reason for this is that, as I show next, when an n-word occupies the focus position, *sem* or *nem* must be right-adjoined to it, and this complex encodes the negative concord licensing feature-value pair as well (POL = negative), and in this case V^0-left-adjunction is blocked. Finally, the equation in the fourth line introduces the negative concord domain.

Consider the examples in (64), (65) and (66).

(64) *János sem lát meg senki-t.*
John.NOM also_not sees VM #nobody-ACC
"John does not catch sight of anybody, either." or:
"Neither / Not even John catches sight of anybody."

(65) *Senki senki-vel nem/sem lát meg senki-t.*
#nobody.NOM #nobody-with not/also_not sees VM #nobody-ACC
"Nobody catches sight of anybody with anybody (at all)."

(66) *Senki senki-vel nem/sem* KATI-T *látja meg* (**senki-nél*).
#nobody.NOM #nobody-with not/also_not Kate-ACC sees VM #nobody-at
"Nobody catches sight of KATE with anybody at anybody's place."

These examples illustrate the following empirical generalisations. *Sem* can turn an ordinary constituent into a derived n-word by right-adjoining to it, and when this combination occupies the Spec,VP it functions as a negative concord licensor, see (64).

When an intrinsic n-word in Spec,VP is combined with either *nem* or *sem*, also right-adjoined to it, the same negative concord licensing takes place. In this case, left-VP-adjoined n-words are also licensed by this NW^sem/nem; however, in such positions they must not be combined with *sem* or *nem*, see (65).

In the VP-adjoined domain a *sem/nem*-negated intrinsic n-word can be preceded by one or more other (strictly non-negated) intrinsic n-words: NW* $\text{YPsnem}_{[\text{NW}]}$, see (66).

My rules for the treatment of (64) and (65) are as follows.

(67) VP → YPsnem: (↑ POL) = negative;
Vbar.

Just like in the postverbal domain, where I use YPsem, in the preverbal domain, too, I use a special c-structure category: YPsnem. The major difference between them is that the postverbal variant can only contain *sem*, while the preverbal one can also contain *nem* if it is right-adjoined to an intrinsic n-word. The only annotation associated with YPsnem is the marking of the negative concord domain. All the other aspects are encoded in the c-structure rule for YPsnem in (68).

(68) YPsnem → { YP: @(YP-GF)
{ (↑ FOCUS) = ↓ | (↑ FOCUS) }
(↓ POL-TYPE) ~= negative
SEM
| YP: @(YP-GF)
(↓ POL-TYPE) $=_c$ negative
{ (↑ FOCUS) = ↓ | (↑ FOCUS) }
{ SEM
| NEG } }.

In the first main disjunct I model the combination of an ordinary constituent and *sem*. The NMR can only be *sem* (*nem* is excluded). The (↓ POL-TYPE) ~= negative constraint makes sure that only ordinary (i.e., non-n-word) constituents are involved. The { (↑ FOCUS) = ↓ | (↑ FOCUS) } disjunction handles the distribution of YPsnem. It can only occur in the preverbal domain in two positions: (a) in Spec,VP, see the first disjunct: it will be the focused constituent, and (b) in XP,VP, see the second disjunct: it requires the presence of focus elsewhere (i.e., in Spec,VP). Note that in this version of the implemented grammar I only employ the general FOCUS discourse function label as opposed to distinguishing several subtypes, as in Chapter 4.

In the second main disjunct the (↓ POL-TYPE) $=_c$ negative equation constrains this configuration to n-words. The function of the { (↑ FOCUS) = ↓ | (↑ FOCUS) } disjunct is the same as that of the similar disjunct in the first main disjunct. Finally, the { SEM | NEG } disjunction encodes the fact that either *sem* or *nem* can right-adjoin here.

The relevant c-structure rule for (66) is as follows.

(69) VPquantneg → { YPsnem: (↑ FOCUS)
(↑ FOCUS PRED FN) ~= nem
(↑ FOCUS POL-TYPE) ~= negative
| YP+: (↓ POL-TYPE) $=_c$ negative;
YPsnem: (↓ PRON-TYPE)
(↑ FOCUS)
(↑ FOCUS PRED FN) ~= nem
(↑ FOCUS POL-TYPE) ~= negative }
VP.

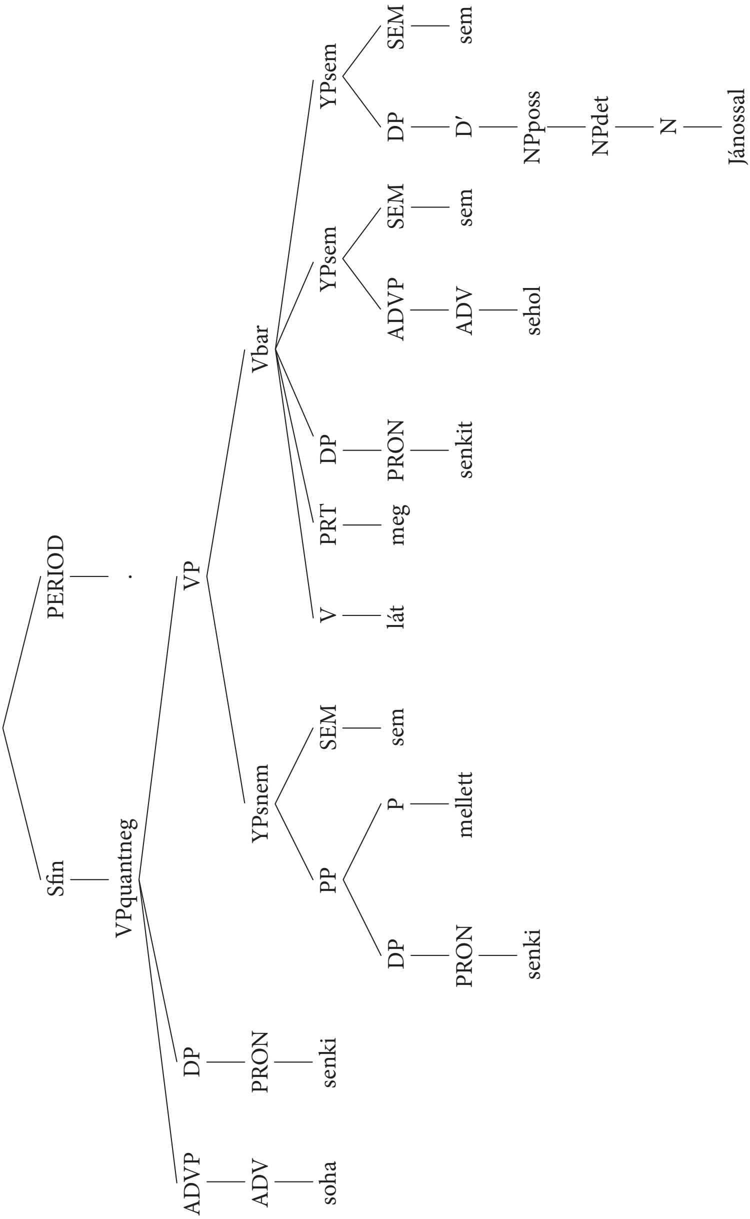
The first disjunct in the disjunction handles the case in which there is only a single derived (i.e., non-pronominal) or non-derived n-word in the adjoined position. (↑ FOCUS) encodes the fact that YPsnem can be VP-adjoined if there is a focused constituent in Spec,VP. (↑ FOCUS PRED FN) ~= nem expresses the fact that this constituent is not the negative marker. (↑ FOCUS POL-TYPE) ~= negative means that this YPsnem cannot co-occur with YPsnem in Spec,VP. In the second disjunct YP+ with its (↓ POL-TYPE) $=_c$ negative annotation encodes the fact that optionally the single obligatory YPsnem can be preceded by one or more n-words. This captures the generalisation that the occurrence of n-words in a VP-adjoined position is conditional on the presence of a single YPsnem phrase, i.e., it is in this way that YPsnem licenses an n-word in a pre-VP position. This is the current implemented encoding of n-word licensing in this configuration, which seems to be the simplest solution, and the most efficient one from the perspective of both parsing and generation. Notice, however, that in this case the n-words preceding YPsnem are not licensed by the (↑ POL) = negative feature; instead, the presence of a right-adjacent, negated n-word is the licensor. In future work, I will return to this issue by also taking other possible LFG-XLE solutions into consideration and assessing their strengths and weaknesses. At this stage I simply point out that YPsnem in the VP-adjoined position is not a negative concord licensor for the VP domain (at least in the version of Hungarian I am modelling, which I also speak). This fact may yield independent motivation for treating this case differently.

Now consider the example in (70) and its c-structure representation in (71).

(70) *Soha senki senki mellett sem lát meg senki-t*
#never #nobody.NOM #nobody beside also_not sees VM #nobody-ACC
sehol sem János-sal sem.
#nowhere also_not John-with also_not
"Nobody catches sight of anybody anywhere beside anybody ever also without John."

In this sentence a YPsnem constituent occupies the Spec,VP position, and it licenses the two VP-left-adjoined n-words as well as the postverbal negative concord items: an n-word on its own (DP), an n-word combined with *sem* (the first YP) and an ordinary constituent combined with *sem*.

(71)


ROOT
Sfin
PERIOD
.
VPquantneg
ADVP
ADV
soha
DP
PRON
senki
VP
YPsnem
PP
DP
PRON
senki
P
mellett
SEM
sem
Vbar
V
lát
PRT
meg
DP
PRON
senkit
YPsem
ADVP
ADV
sehol
SEM
sem
YPsem
DP
D′
NPposs
NPdet
N
Jánossal
SEM
sem

In my XLE rules, the label *snem* is meant to indicate the following: *sem* or *nem*. Let me point out in this connection that it is one of the most controversial empirical and theory-sensitive issues whether it can be assumed that *senki sem* "#nobody also_not" and *senki nem* "#nobody not" have an isomorphic structure or not (i.e., whether *nem* is also really right-adjoined to the n-word). In my generalisations and analysis here, I assume this isomorphism. My main preliminary motivations for an approach along these 'isomorphic structure' lines are as follows.

From an LFG what-you-see-is-what-you-get perspective, the two constructions can be taken to occupy the same two preverbal positions: the Spec,VP focus position and the VP-adjoined quantifier position. A plausible explanation for why *XP^sem* and *NW^sem* can occur postverbally and *NW^nem* cannot is that the latter is fundamentally an ordinary instance of constituent negation, due to the presence of *nem*, and pure constituent negation is strictly and generally excluded from the postverbal domain. By contrast, *sem* fundamentally has a minimising particle (quantifier-licensing or quantifier-creating) status. That is why a constituent it postmodifies as an enclitic (whether it is an n-word or an ordinary constituent) can occur postverbally, provided that it is in the scope of preverbal negation.

Both constituent types, i.e., both *senki sem* "#nobody also_not" and *senki nem* "#nobody not", can be assumed to express constituent negation in both the VP-adjoined position and the Spec,VP position. In addition, both of them also encode predicate negation in Spec,VP.

As noted in § 5.1.1, it is an apparently widely accepted generalisation in MP approaches that in the case of what É. Kiss (1992) analysed as constituent negation in the focus position, that is, the negative marker and the modified expression make up a constituent in the focus position, focus phrase (FP) negation takes place. The negative marker projects a NegP, and it takes the FP as its complement, and the NMR sits in the Neg head position and the negated constituent is in Spec,FP. It is an additional empirical generalisation that it is the NMR that carries the main stress (and the focused constituent is stressless, i.e., they make up a phonological word). Crucially, when a focused constituent is preceded by an *NW+nem* combination, *nem* is obligatorily unstressed, just like *NW+sem* and *XP+sem* in this configuration, and in all their other occurrences. Consider a shorter version of (15) from § 5.1.1, repeated here as (72).

(72) *Senki* *nem/sem* [$_{FP}$ A FELESÉGÉT hívta fel]
#nobody not the wife.3SG.ACC called up
"Nobody called up HIS WIFE."

In my opinion this lends considerable prosodic support to the claim that *nem* makes up a constituent with NW, and in this *NW+nem* combination it has the same enclitic particle status as *sem* in *NW+sem*.

Finally, below I show how I extended this implemented analysis of negative concord to the two negative suppletive forms of the copula *van* "be". As is well-known, in the existential, locative and possessive uses of the copula the indicative, present tense, 3SG and 3PL forms are: *nincs* "not.be.PRES.3SG", *nincsenek* "not.be.PRES.3PL", *sincs* "also_not.be.PRES.3SG", *sincsenek* "also_not.be.PRES.3PL". For a detailed discussion, see Chapter 6.

Consider the following examples.

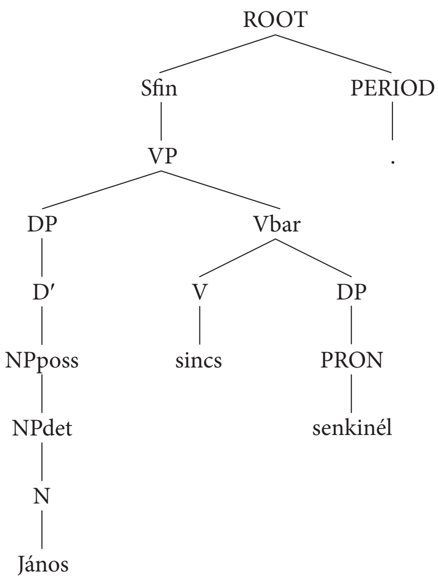
(73) *János / JÁNOS nincs senki-nél.*
John.NOM John.NOM not.be.3SG #nobody-at
"John/JOHN isn't at anybody's place."

(74) *JÁNOS sincs senki-nél.*
JOHN.NOM also_not.be.3SG #nobody-at
"JOHN isn't at anybody's place, either."

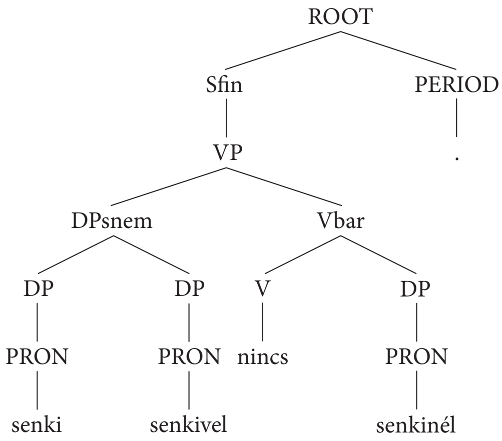
(75) *Senki SENKI-VEL nincs / sincs senki-nél.*
#nobody.NOM #nobody-with (also_)not.be.3SG #nobody-at
"Nobody is at anybody's place with anybody (either)."

As (73) shows, if a constituent precedes *nincs*, the sentence is ambiguous, and the constituent can be interpreted as either the topic or the focus of the sentence. (74) demonstrates the fact that the constituent preceding *sincs* must be interpreted as the focus. (75) illustrates the fact that an n-word can be combined with either *nincs* or *sincs*, cf. its combinability with either *nem* or *sem*. I only show the c-structures of (74) and (75) in (76) and (77), respectively. In the latter, I present the *nincs* version.

(76)



(77)



The crucial aspects of my analysis are as follows. I use the following lexical form for *nincs*.

(78) *nincs* V (↑ PRED) = 'nincs < SUBJ, OBL >'
(↑ POL) = negative
(↑ NEG) = +
{ ~(↑ FOCUS)
| (↑ FOCUS)
(↑ FOCUS PRED FN) ~= nem }.

In the PRED value I give the actual (singular) form of the copula: *nincs*. The argument structure is that for the locative use of the copula. This word itself encodes negative polarity. Notice that this phenomenon is a strong argument from Hungarian for the dual neg-adjunct and NEG+ approach that I am proposing here for the following reason. Typically, negation in Hungarian is marked by a syntactic atom, a negative marker, which in certain configurations also introduces a negative concord domain (but not always even in the case of predicate negation). However, these suppletive forms merge the usual copula features, predicate negation and the negative concord feature. This can be taken to be an extreme instance of the affixal encoding of negation and negative concord. For this reason, in the lexical forms of *nincs* and *sincs* I use the NEG+ feature. It would be highly counterintuitive (although it would, of course, be technically possible) to handle this along the neg-adjunct lines, by using the usual neg-adjunct annotations. *Sincs* has the same lexical form, except that it requires the Spec,VP position to be filled obligatorily by a focused element: an n-word or an ordinary constituent; thus, instead of the disjunction in (78) it only has the (↑FOCUS) annotation, as opposed to the ±FOCUS disjunction in (78) for *nincs*.

I also need to modify my YPsnem rule, because in these copula constructions the YPsnem constituent must not contain *nem/sem*, because negation is encoded by the special negative forms of the copula *nincs/sincs*. This can be captured by adding the following disjunct, which itself contains two disjuncts, to the YPsnem rule.

(81) YPsnem → YP: @(YP-GF)
(↑ FOCUS) = ↓
{ (↓ POL-TYPE) $=_c$ negative
{ (↑ PRED FN) $=_c$ nincs
| (↑ PRED FN) $=_c$ sincs }
(↑ POL) $=_c$ negative
| (↓ POL-TYPE) ~= negative
(↑ PRED FN) $=_c$ sincs
(↑ POL) $=_c$ negative }.

The peculiarity of this disjunct is that the rule does not contain SEM or NEM: it simply rewrites YPsnem as YP for intrinsic n-words and for ordinary constituents, see the values of the (↓ POL-TYPE) attribute in the two disjuncts. Both disjuncts are constrained to a special negative concord environment, see (↑POL) $=_c$ negative, in which the predicate is *nincs* or *sincs* in the case of intrinsic n-words and *sincs* in the case of ordinary constituents, which is captured by the (↑PRED FN) $=_c$ nincs/sincs equations.

5.3 Conclusion

In this chapter, after presenting the basic negation facts in Hungarian and discussing some salient non-LFG generative approaches (§ 5.1.1–§ 5.1.3), I proposed a general LFG-XLE framework for the treatment of the fundamental types of negation (§ 5.1.4) by capitalising on É. Kiss' (1992) empirical generalisations and on the key structural aspects of her GB analysis. Then in § 5.2, I modified and augmented this LFG-XLE analysis by (i) developing an account of the special uses of negative markers, (ii) capturing their interaction with negative concord items, and (iii) presenting a formal treatment of the two forms of the two negative suppletive variants of the copula.

In order to ensure parsing and generation efficiency, I made use of the standard XLE devices: special syntactic categories: NEG and SEM, and specifically labelled phrasal projections: YPsnem and YPsem.

I argued for using all the three modes of treating negation phenomena in the ParGram tradition in the analysis of Hungarian.

In the spirit of Forst et al. (2010) and Laczkó & Rákosi (2011), I use the non-projecting categories PRT and NEG in both head-adjunction and phrasal configurations. This is different from Toivonen's (2001) proposal. She assumes that certain categories in Swedish have projecting and non-projecting variants. The non-projecting versions are head-adjoined to the verb and the projecting versions have the regular phrasal behaviour. Note that this approach could also be straightforwardly accommodated in my analysis: head-adjoined NEG vs. phrasal NEGP. However, I am not aware of any phrasal projection property of the negative marker; that is why I treat it uniformly as a non-projecting word. Moreover, technically it would also be possible to do without the non-projecting treatment. Instead of assuming that the negative marker is left-head-adjoined to the verb when the focus position is filled by a constituent: NEG^V^0, one could assume that NEGP left-adjoins to V′. For instance, in her GB framework, É. Kiss (1992) has a V′-adjunction analysis, and in É. Kiss (1994a) she assumes V^0-adjunction.

In general, the special functional categories NEM and SEM, and the specifically labelled phrasal nodes YPsnem and YPsem could also be dispensed with. It would be possible to assume that negative markers are adverbs and they project ADVPs, and these (special) ADVPs occupy the positions my non-projecting NEGs and SEMs occupy. Naturally, such an approach would conform to standard X-bar-syntactic assumptions and conventions to a greater extent. The cost would be that a more complex system of constraining equations and CHECK features would be needed to prevent overgeneration from the perspective of both parsing and generation. I will address such general aspects of possible alternative approaches, also including the use of non-projecting words. One of the most likely conclusions of my investigation will be that LFG's architecture and assumptions make it possible to capture generalisations about such complex phenomena in an explicit and principled way based on the trade-off between c-structure and f-structure representations.

CHAPTER 6

Copula constructions and functional structure

The analysis of various types of copula constructions (CCs) within and across languages poses a considerable number of challenges for formal approaches, including a variety of generative models. My fundamental goal in this chapter is to develop the first comprehensive LFG analysis of the five most important types of copula constructions in Hungarian.

The most significant general aspects of my approach are as follows. I subscribe to the view that the best LFG strategy is to examine all CCs individually and to allow for diversity and systematic variation both in c-structure and in f-structure representations across and even within languages. This means that I reject the alternative strategy, which is the uniform PREDLINK approach at the f-structure level. In addition, I argue against the XCOMP analysis of CCs in Hungarian. Instead, I apply the following analysis types to these CCs. (1) The copula is a functional cohead without a PRED feature. (2) The copula is a two-place predicate. Its first argument has the SUBJ function, and its second argument is a PREDLINK or an OBL.

I posit this analysis in the following cross-theoretic and theory-internal context. On the one hand, I highlight what the formal-strategic differences are between MP and LFG approaches to CCs. On the other hand, I explore what types of LFG analyses have been proposed in general, and what the role of f-structure representation is in these analyses in particular.

I concentrate on the five major types of Hungarian CCs exemplified in (1)–(5), using this classification and these examples in my LFG analysis in § 6.3.

(1) *Az igazgató okos/tanár volt.* [attribution or classification]
the director.NOM clever/teacher.NOM was
"The director was clever / a teacher."

(2) *Az igazgató volt a szóvivő.* [identity]
the director.NOM was the spokesperson.NOM
"The director was the spokesperson."

(3) *Az igazgató a szobá-ban volt.* [location]
the director.NOM the room-in was
"The director was in the room."

(4) *Voltak boszorkány-ok (a Föld-ön).* [existence]
were witch-PL.NOM the Earth-on
"There were witches (on the Earth)."

(5) *Az igazgató-nak volt szóvivő-je.* [possession]
the director-DAT was spokesperson-his.NOM
"The director had a spokesperson."

The structure of this chapter is as follows. In § 6.1, I pave the theoretical and comparative empirical way for the discussion and analysis of Hungarian CCs by presenting some salient approaches to the major types of English CCs. In § 6.2, I discuss in detail Hegedűs' (2013) treatment of a range of Hungarian CC types. This is a recent and fully developed MP approach. I relate it to several general MP assumptions as well as to some alternative MP accounts of Hungarian CCs. In § 6.3, I present my LFG analysis of the five Hungarian CC types shown in (1)–(5). I conclude in § 6.4.

6.1 On English CCs and aspects of their GB/MP analyses

English CCs are typically classified in the following way: predicational, see (6), specificational, see (7), equative, see (8), and existential, see (9).

It is generally assumed that all the three sentences in (6a–c) attribute a property to Mary, which is expressed by the adjectival, nominal and prepositional phrases, respectively.

(6) a. *Mary is smart.* [predicational]
b. *Mary is a student.*
c. *Mary is in the kitchen.*

The main difference between the specificational sentences in (7) and the equational sentences in (8) is as follows. In the former it is only the DP *Mary* that is referential, and the other constituent, *the best competitor*, is non-referential, despite the fact that it is expressed by a definite DP. By contrast, in (8) both constituents are referential.

(7) a. *Mary is the best competitor.* [specificational]
b. *The best competitor is Mary.*

(8) a. *The Morning Star is the Evening Star.* [equative]
b. *The Evening Star is the Morning Star.*

In the case of existential CCs like those in (9) the fundamental analytical question is whether *there* is a genuine expletive or it is a meaningful argument of some sort in the structure. For a discussion of a variety of views and an account, see Hartman (2008).

(9) a. *There is a book on the table.* [existential]
b. *There are witches.*

The classification of these English CCs and my classification of the Hungarian types in (1)–(5) compare in the following way. My attribution/classification examples in (1) correspond to the two predicational types in (6a,b). For reasons to be explained in § 6.3, I analyse the locative use of the predicate differently (and separately) from the 'predicational' use, cf. (3) and (6c). In addition, I also assume that the existential use of the copula is closely related to the locative use, which is a distinct type in my view. My identity type is the same as the English equative type. In addition, I assume that the Hungarian counterpart of the English specificational type is only a subtype of my attribution/classification type. For a brief comparison of the English and Hungarian specificational variants, see below. There I discuss Moro's (1997) and Heycock & Kroch's (2002) analyses. Furthermore, as Hungarian expresses possession by a CC at the clause level, the possessive use of the copula also needs to be distinguished. I show the similarities and differences between the Hungarian types exemplified in (1)–(5) and the English ones illustrated in (6)–(9) in Table 6.1. The question mark in (9a?) indicates that there are differing analyses of this construction type, see the overview of approaches to English below.

Table 6.1 Copula constructions in Hungarian and English

Hungarian		*English*	
attribution or classification	(1)	predicational	(6a,b)
		specificational	(7)
identity	(2)	equative	(8)
location	(3)	predicational	(6c)
existence	(4)	existential	(9a?) (9b)
possession	(5)	–	

As I show in § 6.3, I analyse Hungarian possessive CCs differently from Szabolcsi's (1992) classical and seminal GB analysis, the fundamental claim of which is that these sentences contain an existential copula which has a possessive DP (subject) argument, and the dative-marked possessor is obligatorily extracted from this DP.

In what follows I only highlight those salient aspects of GB/MP analyses of English CCs that are directly relevant for the purposes of this chapter, either from the perspective of a GB/MP and LFG comparison or from the perspective of similarities and differences between certain English and Hungarian CC types. This summary capitalises on Hegedűs' (2013) overview, and it also discusses her MP analysis.

Stowell (1978) proposes that English *be* should be analysed as a raising verb that takes a Small Clause (SC) complement whose structural subject is raised to the subject position of the matrix clause. See the skeletal representation of (6a-c) in this vein in (10a-c), respectively. As I point out in § 6.3, Bresnan (1982b) gives an LFG style raising predicate analysis of the copula in English passive sentences.

(10) a. *be* [$_{\text{SC/AP}}$ *Mary smart*]
 b. *be* [$_{\text{SC/NP}}$ *Mary a student*]
 c. *be* [$_{\text{SC/PP}}$ *Mary in the kitchen*]

It is a fundamental question in generative approaches whether there is only one *be* in English, or in languages in general. The two major views are as follows.

There is only one *be* and one underlying structure, and the different uses of the copula (see the CC types above) can be captured by different syntactic derivations. As I point out below, Hegedűs (2013) and Dikken (2006), among others, subscribe to this view.

The other view is that there are two *be*-s, and here, too, different transformations are needed to generate all the CC types. This especially holds for languages like Hungarian, in which the constituents of these CC types exhibit partially and remarkably different syntactic behaviours, see § 6.3. Heycock & Kroch (1999) argue that in English equative sentences *be* connects two DPs, and both DPs can be shown to be referential, which makes such a CC different from predicative CCs. In equative CCs, thus, there is no predication relation between the two DPs: they are both arguments of *be*. My LFG analysis of identity CCs will be similar in spirit.

Hegedűs (2013), capitalising on Heycock & Kroch (1999), points out that it is only referential DPs that can take non-restrictive relative clause modification. Consider her predicational and specificational vs. equative examples, in (11), (12) and (13), respectively.

(11) a. **John is a doctor, who is always very helpful.*
 b. *John, who is always very helpful, is a doctor.*

(12) a. *The best candidate is John, who is my friend.*
 b. **The best candidate, who is my friend, is John.*

(13) *Spiderman, who is a superhero, is Peter Parker, who is a journalist.*

Given the definiteness of *the best candidate* in (12), specificational CCs seem to be an in-between type in the predicational vs. equative contrast; however, its non-referentiality fundamentally lumps specificational and predicational CCs together.

Moro (1997) assumes that specificational copular sentences involve inversion around the copula ('inverse copular structures'): the predicate of the SC-complement of *be* moves to the subject position. In this approach (7a) is an ordinary instance of subject-to-subject raising, and (7b) is its inverse counterpart, in which the predicate of the SC is raised. Dikken (2006) makes a similar generalisation: we can analyse the relevant CCs by postulating a single *be* and a single underlying structure involving SC-complements to *be*, and their typological contrasts are dependent on whether the subject or the predicate of the SC is raised to the matrix subject position, cf. canonical vs. inverse copular sentences. Heycock & Kroch (2002), among others, assume that in specificational copular clauses it is for informational structural reasons that inverse, i.e., predicate, movement to the matrix subject position takes place: the predicate is the topic and the subject is the focus (new information). In Dikken's (2006) view, in equative sentences there are no such informational structural differences; instead, the trigger of the movement is the satisfaction of the Extended Projection Principle (EPP).

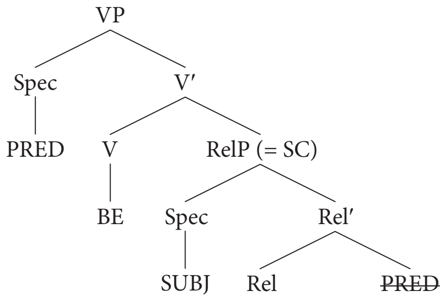
6.2 Hegedűs (2013) on Hungarian CCs

In this section I discuss Hegedűs' (2013) account of the most basic types of Hungarian CCs at relatively great length for the following reasons. First, it is a detailed MP analysis of these Hungarian CCs. The only major type missing from her picture is the possessive CC, which I also analyse in § 6.3. Second, it adapts the two crucial aspects of the mainstream cross-linguistic MP approach to copular and predicative constructions: the postulation of small clauses, see the previous section, and complex predicate formation. Third, it provides an excellent basis for a GB/MP vs. LFG comparison.

In Chapter 3, dealing with VMs, I offered a detailed discussion of Hegedűs' (2013) overall approach to various types of VMs and the GB/MP views she capitalises on, along the SC and syntactic complex predicate formation lines, see § 3.1.1. Here I only present the most fundamental aspects of her analysis of Hungarian CCs in this general SC–complex predicate approach. Her main claim in the case of copular clauses exemplified in (1)–(3), i.e., attribution/classification, identity and location, is that the predicate of the SC-complement of the copula moves into the preverbal position in the course of the derivation of the clause and forms a syntactically complex predicate with the copula. By contrast, existential sentences are treated differently: in their case there is no complex predicate formation with the SC-predicate. In Hegedűs' view, this structural dissimilarity correlates with the difference between categorical statements and thetic sentences in the sense of Kuroda (1972). She adds that it is a further difference between existential sentences and locative clauses that the former require that the verbal element be focused, while the latter do not require this. On the basis of Broekhuis & Hegedűs (2009), she also claims that in the case of non-neutral sentences there is no complex predicate formation in the derivation.[1]

Hegedűs schematises her complex predicate formation analysis as in (14) below (2013: 61).

(14)



Hegedűs argues that in all Hungarian CCs there is a copula selecting a SC and it sits in V for two reasons. (i) Predicates in copular sentences manifest typical VM behaviour. (ii) This can be used to capture the variation between copular and existential/locative sentences, and, she adds, BE appears to be lexical in existential sentences.

As regards the treatment of sentences without an overt copula, Hegedűs assumes that the copula is present in the structure in these cases as well, but it is not spelt out when the default present tense 3rd person features are encoded by the adjectival or nominal predicate. In the third person, there is full agreement between the subject and the nominal or adjectival predicate, and this licenses a silent copula. Hegedűs claims that the reason why the copula has to be spelt out in copular clauses with PP predicates is that PPs cannot express number agreement, while AP and NP predicates can. Compare (15a,b) with (15c). These sentences are the Hungarian counterparts of the English copular sentences in (6a–c).

(15) a. *Mária* *okos.*
Mary.NOM smart.SG
"Mary is smart."
b. *Mária* *diák.*
Mary.NOM student.SG
"Mary is a student."

---

1. As I discussed in § 3.1.1 in Chapter 3, she points out that in the MP literature there are two main views of predicate movement in Hungarian: the trigger is semantic or syntactic complex predicate formation (the latter being motivated by feature checking requirements). For the details of the comparison of the two views, see that chapter. These details do not concern us in this book, given that LFG rejects either type of syntactic operation, and it uses lexical and syntactic annotational devices to capture the relevant facts and empirical generalisations, see § 3.2.2 in Chapter 3 and § 6.3 in this chapter.

c. *Mária a konyhá-ban van.*
Mary.NOM the kitchen-in is
"Mary is in the kitchen."

MP approaches vary considerably with respect to the treatment of the absence of overt copulas and the category of the copula. For instance, É. Kiss (2002), on the basis of some contrastive topicalisation facts, assumes that when there is no overt copula, which is a V categorially, there is no verbal projection, either; there is only a matrix SC (AP or NP) in the sentence. By contrast, Dalmi (2010), who distinguishes two BEs, claims that there is always a copula in a CC, which occupies the T head position as an inflectional element, and, consequently, there is a zero copula in seemingly verbless sentences. Kádár (2006) proposes a different analysis of sentences without an overt copula. She assumes that the subject is adjoined to predicative APs and NPs. No VP is projected but TP is projected. She posits an SC only in her analysis of specificational/equative sentences. Categorially it is a Predicative Phrase, and the Pred head mediates between the subject and the predicate. In her approach, too, the copula is generated in the T head position in specificational sentences, and it is covert when there are no features to spell out. For a more detailed discussion of these alternative MP views, see Hegedűs (2013).

As regards specificational sentences, which contain two definite DPs, Hegedűs (2013) points out that the referentiality and the predicative nature of these DPs are the central issues. For instance, Enç (1991) assumes that definite DPs are referential by definition. By contrast, Williams (1983), among others, claims that their referentiality vs. non-referentiality is dependent on what environment they occur in. Hegedűs subscribes to the latter view. Compare her examples (2013: 64).

(16) a. *János az utolsó jelölt volt.*
John the last candidate was
"John was the last candidate."
b. *Az utolsó jelölt most ment haza.*
the last candidate now went home
"The last candidate has just gone home."

She emphasises the fact that *az utolsó jelölt* "the last candidate" is predicated about *János* "John" in (16a), while it is the referential subject of (16b). Then, accepting Kádár's (2006) generalisation to the effect that Hungarian specificational CCs are non-neutral sentences, she shows that it is possible to draw a parallel between English and Hungarian specificational sentences. Consider her examples (2013: 64).

(17) a. *John was the best candidate.*
b. *The best candidate was John.*

(18) a. *JÁNOS volt a legjobb jelölt.*
John was the best candidate
"The best candidate was John."

b. *A legjobb jelölt JÁNOS volt.*
the best candidate John was
"The best candidate was John."

As was noted in § 6.1, it is a rather generally held MP view that English specificational sentences, see (17b), are inverse copular constructions: it is predicate raising and not subject raising that takes place in them, see Moro (1997), Heycock & Kroch (2002), and Dikken (2006), among others. This has an information structural motivation. The movement of *the best candidate*, the predicate of the SC, to the matrix subject position makes it, at the same time, the topic of the sentence. Hegedűs claims that in the Hungarian counterparts of the English specificational sentence in (17b) the subject DP occupies the preverbal focus position (18a,b) and the predicate DP occurs either postverbally (18a) or preverbally as a contrastive topic (18b).

According to Hegedűs, both (18a) and (18b) are specificational CC counterparts of the English sentence in (17b). Note, however, that the parallel is not entirely complete. On the one hand, (17b) seems to contain an ordinary topic (coinciding with the subject), while (18b) is clearly a contrastive topic. On the other hand, in (18a) the SC predicate has no discourse function. Also note that the Hungarian counterpart of the non-inverse CC in (17a) is as follows.

(19) *János a legjobb jelölt volt.*
John the best candidate was
"John was the best candidate."

Here the subject, *János* "John", is not focused: it is an ordinary topic. The predicate, *a legjobb jelölt* "the best candidate", has the customary VM status, although it can also be focused, just like several other VMs, see Chapter 3. This is clearly shown by the fact that it can be put in the following set of VMs.

(20) *János jelölt volt.*
John candidate was
"John was a candidate."

(21) *János jó (jelölt) volt.*
John good candidate was
"John was a good candidate / good."

(22) *János jobb (jelölt) volt (, mint …).*
John better candidate was than
"John was a better candidate / better (than …)."

(19′) *János a legjobb (jelölt) volt.*
John the best candidate was
"John was the best (candidate)."

(20) is a predicational CC with a bare nominal predicate. (21) is a predicational CC with a nominal predicate modified by an adjective or with an adjectival predicate. (22) is a predicational CC with a nominal predicate modified by an adjective or with an adjectival predicate (the adjective is in its comparative form). (19′) is a predicational CC with a definite DP nominal predicate modified by an adjective or with a special adjectival predicate, the adjective is in its superlative form. This set of examples shows that the specificational CC in (19) is somewhere between predicational and equative CCs.

Now consider Hegedűs' (2013: 65) further examples of the intricacies of specificational CCs.

(23) a. *A LEGJOBB JELÖLT lesz az elnök.*
the best candidate will.be the president
"The best candidate will be the president."
b. *AZ ELNÖK lesz a legjobb jelölt.*
the president will.be the best candidate
"The president will be the best candidate."

(24) a. *A LEGJOBB JELÖLT lesz Hamlet.*
the best candidate will.be Hamlet
"The best candidate will be (= play) Hamlet."
b. *A legjobb jelölt Hamlet lesz.*
the best candidate Hamlet will.be
"The best candidate will be Hamlet."

Hegedűs makes the following three comments.

In DP-be-DP CCs in which both DPs are definite descriptions, i.e., neither of them is a proper name, either can function as the predicate, and, consequently, either can be the subject. It is the DP in the structural focus position that is taken to be the subject. Thus, although both (23a) and (23b) are possible, their interpretations are different. In (23a) *a legjobb jelölt* "the best candidate" is the subject and *az elnök* "the president" is the predicate. In this scenario, the person turning out to be the best candidate will become the president. In (23b) we find the mirror image of the previous scenario.

(24a) illustrates the fact that even a proper name can be coerced into a predicative interpretation. The definite description *a legjobb jelölt* "the best candidate" is the referential focused subject of the sentence, just like in (23a), and the proper name *Hamlet* is interpreted as a role.

(24b), the ordinary predicational version, in which *Hamlet* is preverbal, is multiply ambiguous information structurally. If *a legjobb jelölt* "the best candidate" is referential, i.e., it has the subject function in its SC, it is the topic of the sentence, and *Hamlet* is the predicate of the SC, and in the matrix clause it is an ordinary or a focused VM. Alternatively, if *a legjobb jelölt* "the best candidate" is used predicatively in its SC, it can only have a contrastive topic discourse function, and *Hamlet*, the referential subject of the SC, is the focused subject of the matrix clause.

Next, Hegedűs (2013) points out that the ordinary vs. inverse predicational nature of an English SC can be tested by embedding it under a *consider*-type verb, see Doron (1988), among others. Compare her examples.

(25) a. *I consider John (to be) the best candidate.*
b. *I consider the best candidate* *(*to be*) *John.*

The essence of this diagnostic is that a canonical predicational CC admits a bare SC as the complement of the matrix verb (25a), while in the inverse version *be* must always be present (25b). Hegedűs remarks and exemplifies that this test works somewhat differently in Hungarian, see her examples below.

(26) a. *JÁNOS-T tartom a legjobb jelölt-nek.*
John-ACC consider.PRES.1SG the best candidate-DAT
"I consider John the best candidate."
b. *A LEGJOBB JELÖLT-ET gondolom János-nak.*
the best candidate-ACC think.PRES.1SG John-DAT
"I believe the best candidate to be (named) John."

(27) a. *A LEGJOBB JELÖLT-ET tartom az elnök-nek.*
the best candidate-ACC consider.PRES.1SG the president-DAT
"I consider the best candidate the president."
b. *AZ ELNÖK-ÖT tartom a legjobb jelölt-nek.*
the president-ACC consider.PRES.1SG the best candidate-DAT
"I consider the president the best candidate."

Hegedűs (2013) emphasises the fact that even in an equative sentence one of the two referential DPs (both of which can be modified by non-restrictive relatives) functions as the subject and the other functions as the predicate. She points to a diagnostic proposed by Hartmann & Hegedűs (2009) the essence of which is that if we make the equative SC the complement of a *consider*-type predicate then the object DP will be identified as the subject of the SC and the dative-marked DP will be taken to be the predicate of the SC. Consider her examples (2013: 68).

(28) *[$_{\text{TopP}}$ *Pókember-nek* [$_{\text{FocP}}$ *Peter PARKER-T tartottuk*]].
Spiderman-DAT Peter Parker-ACC considered.1PL
"We considered Peter Parker to be Spiderman."

(29) [$_{CT}$ *Pókember-nek* [$_{FocP}$ *Peter* PARKER-T *tartottuk*]].
Spiderman-DAT Peter Parker-ACC considered.1PL
"As for being Spiderman, we considered Peter Parker to be that."

The essence of their test is as follows. The dative-marked DP can only be the contrastive topic of the sentence containing *tart* "consider" (29), and it cannot be its ordinary topic (28). "This is due to the fact that regular, but not contrastive, topics have to be referential and specific, so the fact that the dative-marked DP can only be a contrastive topic is explained if it is predicative" (Hegedűs 2013: 68). I think this test is valid; however, it seems to me that *Pókember-nek* "Spiderman-DAT" has not become less referential and less specific than when it is used in an ordinary equative CC, in the case of which Hegedűs, too, assumes that both DPs are referential. For this reason, I reckon a better way of describing these facts would be along the following lines. From the referentiality and specificity requirements imposed on regular topics it naturally follows that they cannot be predicative at the same time. Now the really distinguishing property of the non-subject of an equative SC is that it is referential and specific, and, at the same time it is also predicative. And it is this latter feature that blocks its use as a regular topic.

Next, Hegedűs claims that if we subscribe to É. Kiss' (2006) observation to the effect that referential definite expressions always receive an identificational interpretation when they are in a predicative position (which she also assumes to comprise the focus position), we may have an explanation for the difference between equatives and the other nominal predicational structures. Its essence is as follows. Predicational and specificational clauses always contain a non-referential predicate, even in cases when this predicate is a DP. Equatives, by contrast, have two referential DPs, so no matter which DP occurs preverbally, it will have an identificational interpretation, which is the interpretation we also associate with focus. According to Hegedűs, the fact that equatives have no neutral interpretational variant can be attributed to the referentiality of the DPs, while the focus requirement on the subject of specificational clauses is just the way the sentence type itself is identified. It is only predicational sentences that are neutral, and, consequently, they exhibit predicate movement and complex predicate formation between the copula and the nominal predicate in surface structure.

I think the above generalisations about the grammatical relations in equative sentences are not entirely correct. The reason for this is that they typically concentrate on 3rd person DPs. However, if we consider other persons, a partially different picture of equative sentences in Hungarian emerges. It is always the subject DP that occurs preverbally in a sentence which can be taken to have the most natural word order. In this case it does not have the typical id-focus stress and interpretation, see the examples in (30).

(30) a. *Ez jó munkamegosztás volt.*
this good division_of_labour was
"This was a good division of labour."
b. *Én voltam az igazgató, te voltál a titkár, és Kati*
I was the director you.SG were the secretary and Kate.NOM
volt a tolmács.
was the interpreter
"I was the director, you were the secretary, and Kate was the interpreter."

In the context of (30a), (30b) is naturally interpretable in such a way that in the three clauses *én* "I", *te* "you.SG" and *Kati* "Kate" have the ordinary topic function, because for the hearer this can be just a reminder of a past situation which is familiar to them anyhow. It is an important requirement that the pronouns in these constructions must always be overt: no pro-drop is possible. This fact lends additional support to my claim that in these constructions the preverbal occurrence of a pronoun is possibly but not necessarily an instance of focusing: we have no choice but to use the pronoun. By contrast, in cases of real pro-drop the widely accepted generalisation is that a droppable pronoun is typically used overtly for discourse functional purposes. At least in my idiolect, on this reading these DPs do not have (contrastive) id-focus stress and interpretation. I would say that they rather have a VM status or a presentational focus status, or a hocus status, in the sense of Kálmán (2001), among others. Additionally, the id-focus stress and interpretation is an option in this case, too, and then the other DP can also occupy the preverbal, id-focus position. Compare (31a) and (31b).

(31) a. *ÉN voltam az igazgató (, és nem te).*
I was the director and not you.SG
"It was me who was the director (, and not you)."
b. *Én AZ IGAZGATÓ voltam (, és nem a titkár).*
I the director was and not the secretary
"I was THE DIRECTOR (, and not the secretary)."

Evidence for the subject status of the DP in the preverbal position in a non-id-focus construction is provided by examples in which the DP in question is 3rd person and the other DP is a 1st or 2nd person pronoun. The English counterpart seems to be acceptable, which can be explained by the fact that in this way the pronoun can occupy an end-focus position.

(32) **Az igazgató/IGAZGATÓ volt én/te.*
the director was I/you.SG
"The director/DIRECTOR was me/you.SG."

More generally, the subject choice in equative constructions in Hungarian is constrained by the person features of the DPs: 1st = 2nd > 3rd. Although I have the equals sign between 1st and 2nd, it seems to be the case that in a non-id-focus construction, if *én* "I" and *te* "you.SG" are involved, the subject function of the 1st person pronoun is preferred. In an id-focus context the 2nd person subject is also fully acceptable. A 3rd person DP (whether ordinary or pronominal) cannot be the subject if the other DP is a 1st or 2nd person pronoun, see (32). Moreover, if two 3rd person DPs are involved, and one of them is ordinary and the other is pronominal, the latter will have the subject function.

Let me also point out that I do not find the *Peter Parker & Pókember* 'Spiderman' type examples of equative sentences in (28) and (29) the best examples, because in this story Peter Parker, in an important sense, plays a role, and this is similar to an actor's playing the part of Hamlet on the stage, for instance. Of course, the two cases, actor and Hamlet, and Peter Parker and Spiderman, are not fully identical, because if we place ourselves in the context of the fictitious story of the latter, the two 'players' can be viewed as two distinct 'individuals' on a par in that particular world, and we equate them when we find it out that the same person 'embodies' them. Fiction produces several examples of this kind; another famous story is that of Zorro. My main point here is that both Spiderman and Zorro in these stories are 'roles' which 'ordinary(-looking) people' perform in their 'other lives', and it is a crucial aspect of these stories that the people in them are generally not aware of these dualities. It is also noteworthy in this context that one of the most frequently cited examples of equative sentences, *Morning Star & Evening Star*, see (8a,b) above, actually manifests another special case: there is a single entity and it goes by two different names, and an equative CC simply spells out this identity.

I think the sentences in (33) and (34) are much more appropriate examples of ordinary equative CCs.

(33) *2013-ban a tanszék vezető-je volt az intézet igazgató-ja (is).*
2013-in the department head-its was the institute director-its also
"In 2013 the head of the department was (also) the director of the institute."

(34) *2013-ban az intézet igazgató-ja volt a tanszék vezető-je (is).*
2013-in the institute director-its was the department head-its also
"In 2013 the director of the institute was (also) the head of the department."

In these examples the two definite descriptions are absolutely on a par, whether they are taken to describe a particular function or to refer to a particular individual, cf. the crucial referential vs. non-referential issue. My main claim is that the statuses of the two DPs are exactly the same, and in an equative CC we can identify either the two functions or the two referents. What I definitely reject is the assumption that the semantic status of the non-subject, i.e. the DP used predicatively, gets changed. My main claim, agreeing with Heycock & Kroch (1999), among others, see § 6.1, is that 'equative BE' is radically different from all other BEs in that it is a genuine two-place predicate, and it has a real equative role of referentially or functionally identifying its two arguments. Semantically, the two arguments are exactly the same, and it is only a strong syntactic requirement that there has to be a subject, and a single subject, in the sentence. From this it follows that I do not agree with an MP analysis that assumes that even in the case of equative CCs BE is a predicate that selects an SC, and in the SC the two arguments can alternate between the subject and the predicate roles. In such an approach the fundamental idea would be that these two choices involve two distinct semantic roles of the two constituents: subject vs. predicate, very often identified as referential vs. non-referential. In the deep structure representation the SC configuration is supposed to encode a semantic distinction along these lines. This seems to me to be rather implausible. Strictly semantically speaking the two DPs are exactly the same, either referentially or functionally, and it is only a purely syntactic requirement that in this construction as well there must be a subject–predicate functional division, which is further (morphosyntactically) regulated by the person and number features of the two constituents.

In (33) *a tanszék vezetője* "the head of the department" is the subject and *az intézet igazgatója* "the director of the institute" has a special function. According to the standard MP assumption, it has a predicative function. By contrast, sharing Heycock & Kroch's (1999) view, I assume that BE is the (only) predicate and *az intézet igazgatója* "the director of the institute" is the second argument of BE, which is a two-place predicate expressing equality. We can draw a straightforward parallel between the equative BE as a two-place predicate and the following two adjectival predicates in Hungarian: *egyenlő* "equal" and *azonos* "identical".

(35) *2013-ban a tanszék vezető-je azonos volt az intézet*
2013-in the department head-its indentical was the institute
igazgató-já-val.
director-its-with
"In 2013 the head of the department was identical to the director of the institute."

In § 6.3, adopting Butt et al.'s (1999a) rather widely accepted LFG-XLE treatment of such constituents, I analyse the non-subject constituent as having the PREDLINK grammatical function. In (33) and (34) the two constituents have the reverse functional distributions. My main claim is that neither constituent is more referential or less referential, more predicative or less predicative in either (33) or (34). Furthermore, as I claimed in connection with the example in (30b) above, at least in my idiolect, the preverbal subject in these equative CCs is not necessarily a focused constituent,[2] as opposed to É. Kiss' (2006) and Hegedűs' (2013) assumption to the contrary, see above. I think the examples in (33) and (34) even more clearly support this view. Either of them can be said 'out of the blue' with an intonation pattern typical of neutral sentences and without any presupposition of any contrast, which would be necessary for an ID-focus interpretation in the majority of GB and MP approaches.

Hegedűs (2013) distinguishes three types of BE + SC combinations in which the SC is a PP categorially (whether realised by a postpositional phrase or a case-marked noun phrase): copular clauses, locative sentences, and existential sentences. Consider Hegedűs' (2013: 80) example in (36).

(36) *A macska a tető-n van.*
the cat the roof-SUP is
"The cat is on the roof."

She points out that É. Kiss (1995b) assumes that the preverbal PP in sentences like (36) is always focused, which is the explanation for why existential BE does not have to respect the Definiteness Effect (DE): focusing neutralises the DE. Hegedűs, however, argues that although the focus treatment of this PP is a possibility, the sentence can also have a neutral interpretation. Recall that I make a similar claim in the case of equative CCs as well, contra É. Kiss (2006) and Hegedűs (2013), among others. Hegedűs' evidence comes from the two different ways in which (36) can be negated.

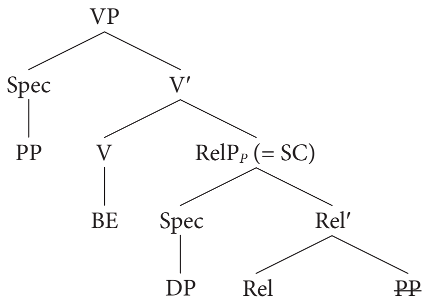
(37) a. *A macska nincs a tető-n.*
the cat isn't the roof-SUP
"The cat isn't on the roof."
b. *A macska nem a tető-n van (, hanem a fá-n).*
the cat not the roof-SUP is but the tree-SUP
"The cat is not on the roof (but in the tree)."

(37a) is the negation of the neutral version of the sentence, while (37b) is the negation of the focused version. In Hegedűs' view the sentence in (36) is not an existential construction, but a predicational copular clause, and such clauses have definite subjects. She does not ascribe this to there being a different BE in this sentence but to the fact that after the PP has been moved to the preverbal position, the main predication is about being in a certain location and not about existence. She proposes that predicative PPs move to the preverbal position for the sake of

2. My anonymous reviewer makes the following comment, which I readily accept. "It is not a regular subject that is/can be topicalised, which makes it a little bit different from other constructions with a definite referential subject. As a consequence a pronominal subject cannot be pro-dropped."

forming a complex predicate with the verb, just like nominal and adjectival predicates. Semantically, this sentence type is a predication about an entity and, consequently, it is a categorical statement (cf. Kuroda 1972). Consider Hegedűs' (2013: 80) representation of predicate movement in (38), which results in a complex predicate, and the subject of the SC becomes the subject of the PP + V complex as well.

(38)



As a consequence, the opposite of the DE emerges here: a constraint that the subject should be specific. For instance, (39) cannot be said out of the blue, and it is only felicitous if a specific cat is involved in its interpretation.

(39) *Egy macska a tető-n van.*
a cat the roof-SUP is
"A (certain) cat is on the roof."

Hegedűs concludes that such copular clauses differ from both existential and locative clauses by being categorical statements. They express predication about a logical subject, and this logical subject has to be specific.

Hegedűs assumes then that existential sentences are not categorical: they are thetic. Categorical sentences make statements about properties of individuals, e.g., copular sentences have this function, see the foregoing discussion. Thetic sentences, by contrast, describe/present situations. Hegedűs claims that both examples in (40) are thetic existential sentences.

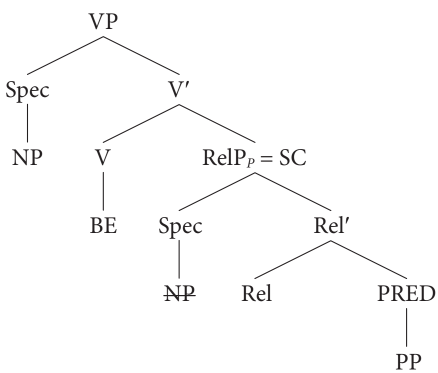
(40) a. *Van egy macska a tető-n.*
is a cat the roof-SUP
"There is a cat on the roof."
b. *(Egy) Macska van a tető-n.*
a cat is the roof-SUP
"There is a cat on the roof."

Hegedűs states that the bare noun in (40b) has the status of a VM (on account of its complementarity with focus), although in her analysis this bare noun is the subject of predication in the SC. The (40b) construction type, as opposed to the (40a) type, is grammatical if there is a PP in the sentence. Compare her examples in (41).

(41) a. *Vannak egyszarvúak.*
are unicorns
"There are unicorns."
b. **Egyszarvúak vannak.*
unicorns are
"There are unicorns."
c. *Vannak egyszarvúak a kert-ben.*
are unicorns the garden-INE
"There ARE unicorns in the garden."
d. *Egyszarvúak vannak a kert-ben.*
unicorns are the garden-INE
"There are unicorns in the garden."

Hegedűs says that the type exemplified in (41a,c) is the 'true' existential sentence, and the type exemplified in (41d) is a locative sentence with a predicative PP. According to Hegedűs, their distinguishing properties are as follows. Existential sentences require verb focus. The existential interpretation is due to the focusing of the verb: although the existential meaning of the copula is rather bleached, focusing reinforces this lexical meaning with its contrastive aspect. By contrast, in locative sentences the copula can be taken to be a positional unaccusative verb, and it is not focused. In neutral locative sentences bare nominals must occupy the VM position, which is the general characteristic of bare nominals in sentences containing verbs other than the copula. Generally, indefinite nominals can occur postverbally as well, but they have to be preverbal in locative sentences, and sentences containing unaccusative verbs. Hegedűs (2013: 83) proposes the following analysis for these locative sentences.

(42)



The syntactic subject of the SC in this configuration is the nominal, and syntactically the PP functions as the predicate in the embedded predication.

Let me make some comments on Hegedűs' (2013) approach to BE sentences in Hungarian. She subscribes to general MP efforts to reduce the number of base-generated constructions as much as possible in the treatment of (potentially) related phenomena in the name of uniformity and universality, and to derive the surface differences between various construction types transformationally. Consequently, following Williams (1983), Heggie (1988), Moro (1997), and Dikken (2006), among others, she assumes that there is only one BE in the lexicon of Hungarian, and she derives all BE sentences from a base-generated configuration in which BE is an unaccusative verb taking a SC complement. The following general question immediately arises about this analysis. What triggers and regulates the processes that bring about all the desired constructions, and only them? For instance, is there an 'Input LF' in the sense of Bobaljik & Wurmbrand (2012)? Otherwise it would seem rather ad hoc and accidental that exactly the 'desirable' constructions are generated, with all their specific properties. My claim is that a different, lexically based approach is more plausible in general, and my LFG analysis to be presented in § 6.3 is a feasible instantiation of such an approach in particular. In addition, LFG's architecture is also appropriate for accommodating a semantics based trigger for the relevant processes – for modelling actual sentence generation by speakers.

Hegedűs (2013: 39) says that she does not analyse preverbal bare nominals because they do not follow the general small clause pattern she assumes for all the construction types she investigates. Thus, she excludes constructions like those in (43), because they have been analysed as cases of (semi-)incorporation, see, for instance, É. Kiss (1994b), Maleczki (2001) and Farkas & de Swarts (2003).

(43) a. *Péter-nek láz-a van.*
Peter-DAT fever-POSS.3SG is
"Peter has fever."
b. *Péter újságot olvas a kertben.*
Peter newspaper.ACC reads the garden.INE
"Peter is reading a newspaper/newspapers in the garden."

I think the exclusion of the (43b) type is justifiable, because it seems to represent a construction rather different from the types investigated by Hegedűs.[3] As regards the (43a) type, it would be good to see how she would analyse it for the following reasons. It seems that this is a rather productive construction type, consider the additional examples in (44) and 45).

3. Even so, it would be interesting to see how she envisages its analysis for two reasons. (1) Several times, she refers to Komlósy's (1994) generalisation to the effect that bare (i.e., non-referential) nominals are secondary predicates. Under this assumption the following question arises. Could the bare accusative nominal in (43b) not be analysed as forming a complex predicate with the verb? If not, why? (2) This bare nominal is a VM according to Hegedűs as well. It would be informative to see her view of the analysis of such (other types of) VMs for a more complete picture.

(44) *Péter-nek* a. *szerencsé-je* *volt az autó-val.*
Peter-DAT luck-POSS.3SG was the car-with
b. *pech-je*
mischance-POSS.3SG
c. *problémá-ja*
problem-POSS.3SG
"Peter had (a) good luck (b) bad luck (c) a problem with the car."

(45) *Péter-nek* a. *influenzá-ja* *van.*
Peter-DAT influenza-POSS.3SG is
b. *szifilisz-e*
syphilis-POSS.3SG
c. *csaskáliá-ja*
csaskália-POSS.3SG
"Peter has (a) influenza (b) syphilis (c) csaskália."

As these examples show, in certain semantic domains this is a productive construction type. The strongest piece of evidence for this is that a nonsense word like *csaskália* in (45c) for the name of an imaginary illness can also occur in this structure. Intuitively, these constructions would naturally call for a kind of a complex predicate analysis, rather than incorporation, because the preverbal elements can easily be phrasal. For instance, in (44a) *szerencséje* "luck.POSS.3SG" could be modified in the following way: *nagyon nagy szerencséje* "very big luck.POSS.3SG". In addition, given the fact itself that this construction type contains BE, it would be very important to see how Hegedűs analyses other types of BE structures. In the same spirit, this construction is a special instance of possessive clauses, which generally contain BE as the verbal element in Hungarian. It would also be interesting to see Hegedűs' assumptions about possessive sentences in general, and the status/function of BE in particular. It may well be the case that Hegedűs subscribes to Szabolcsi's (1992, 1994) analysis of Hungarian possessive sentences, but she does not state this. On Szabolcsi's widely accepted GB account, these sentences contain an existential BE which has a possessive noun phrase as its argument, and, because of the Definiteness Effect, the dative possessor moves out of the noun phrase (DP) to make the definite DP indefinite. The following remarks are in order. Szabolcsi (1992: 106) leaves the investigation of the following construction type to future research, because its word order and its intonation are different from those of ordinary possessive sentences.

(46) *Péter-nek jó természet-e van.*
Peter-DAT good nature-POSS.3SG is
"Peter has a good disposition."

Notice that this is exactly the productive pattern exemplified by (43a), (44a–c) and (45a–c). Szabolcsi also points out that she has no explanation for why the extracted possessor must obligatorily become the topic of a possessive sentence. É. Kiss (2014) calls attention to a problematic aspect of Szabolcsi's analysis, and she offers an alternative solution. The problem is that it is not plausible to assume that if we move a constituent out of a definite noun phrase, this can turn that noun phrase into an indefinite one. In § 6.3, I propose an analysis which assumes a possessive BE with two arguments and I refer back to these remarks.

Hegedűs' claim that 'true' existential sentences are acceptable without a locative PP needs to be made more precise, because there seems to be a constraint on this: countable nouns must be used in the plural, as singular forms are unacceptable without a PP. Compare (47) with (41a). Notice that in the English translation I use the plural form of the noun to render the existential reading. In addition, recall from Chapter 3 that bare nouns in Hungarian, especially when they are used in a VM function, are unspecified for number, so (47) is felicitous even when more than one unicorn 'exists' in the forest.

(47) *Van egyszarvú* *(*az erdő-ben*).
is unicorn the forest-in
"There are unicorns (in the forest)."

When I am presenting my LFG analysis, I point out that constraints like this can be naturally handled in a lexicalist approach.

I find the SC approach attractive in the MP framework in general, because it is flexible enough to accommodate the movement of either of the two components of the SC into the preverbal position. However, some aspects of the analysis are not fully convincing for me. For instance, Hegedűs makes a sharp distinction between the following two construction types. Compare (36) and (40b), repeated here as (48) and (49), respectively.

(48) *A macska a tető-n van.*
the cat the roof-SUP is
"The cat is on the roof."

(49) *(Egy) Macska van a tető-n.*
a cat is the roof-SUP
"There is a cat on the roof."

In Hegedűs' analysis, (48) is a 'copular clause', in which the PP is predicative, and it forms a complex predicate with the verb in neutral sentences. By contrast, (49) is a 'locative clause', because in this case the non-referential, often bare, noun (phrase) occupies the preverbal position in neutral sentences, and it does not make up a complex predicate with the verb, and the sentence has an existential reading. For me, from an LFG perspective, the locative PP has exactly the same function and status, and I find the copular vs. locative clause distinction unconvincing.

In my LFG analysis in § 6.3, I make a sharp distinction between NP+BE and AP+BE constructions, on the one hand, and PP+BE constructions like (49), on the other hand. Although I admit that the uniform SC and complex predicate formation analysis of all the three types by Hegedűs makes sense and can be naturally accommodated in her MP framework, I think it is a more correct generalisation that in the case of NP/AP copular clauses of the predicational/specificational types these categories are the real predicates, and the copula simply gives morphosyntactic support, while PP-s are selected by a different BE with an argument structure. It is a two-place locative predicate.

I think the semantics and behaviour of equative copular clauses justifies a special treatment of BE in them. It is the copula itself that introduces the relevant identity relation between two entities. Thus, it is best analysed as another two-place predicate. In my LFG account, therefore, I take it to be the main predicate of the sentence, as opposed to Hegedűs' analysis, in which one of the two referential DPs functions as the predicate, which is rather counterintuitive, theory-neutrally speaking, and the other is its subject.

I also think that the BE in existential sentences is, again, different enough from other BEs for us to treat it distinctly. First of all, it has its special 'exist' semantics and it is obligatorily stressed. In addition, it is closely related to locative BE: in my analysis both are two-place predicates, and their first argument is a theme and the second argument is a locative. This correspondence is also manifest indirectly in Hegedűs' approach. She assumes that the existential reading can be expressed by 'true' existential sentences or 'locative' sentences.

In addition to the BE-sentence types analysed by Hegedűs, I also develop an account of possessive sentences. I show that the BE in possessive sentences and the BE in equative copular sentences have two significant properties in common: they are genuine main predicates with two arguments, and they assign the same two LFG style grammatical functions to these two arguments.

From my comments above, it should be straightforward that in my LFG analysis I posit several lexical forms for BE, and I encode the peculiarities of the constructions in which they occur in these lexical forms. Fundamentally, I distinguish three main types of BE (with subtypes).

- BE without argument structure in copular AP/NP predicational sentences, including the specificational type
- locative BE as a two-place predicate in existential and locative sentences
- identificational BE as a two-place predicate in equative and possessive sentences

6.3 Towards developing an LFG analysis of Hungarian CCs

In this section, I propose the outlines of the first comprehensive LFG analysis of the five most salient Hungarian CCs, partially reflecting on and capitalising on empirical and theoretical generalisations and analyses in the relevant LFG literature, e.g., Butt et al. (1999a), Dalrymple, Dyvik & King (2004), Nordlinger & Sadler (2007), Attia (2008), and Sulger (2009, 2011).[4] This may also result in a meaningful typological and theoretical contribution to LFG's understanding and handling CCs across languages.

The structure of this section is as follows. In § 6.3.1, I offer a brief overview of the main LFG approaches to CCs. In § 6.3.2, first I present my view of how CCs are best treated in an LFG framework, and then I develop my analysis of the five Hungarian CC types exemplified in (1)–(5) at the beginning of this chapter.

6.3.1 Fundamental LFG approaches

The two main general LFG strategies for the treatment of CCs across languages are best illustrated by Butt et al. (1999a) and Dalrymple et al. (2004). In the former approach, CCs are handled in a uniform manner functionally. The copula is always taken to be a two-place predicate, and the two arguments it subcategorises for have the following two grammatical functions. There is a subject (SUBJ), which is uncontroversial in any analysis of these constructions, and the other constituent is uniformly assigned a special, designated function designed for the second, postcopular argument of the predicate: PREDLINK. By contrast, in Dalrymple et al.'s (2004) approach, the 'two-place predicate and SUBJ & PREDLINK' version is just one of the theoretically available options. In addition, they postulate that the copula can be devoid of meaning (and, hence, argument structure) and it can serve as a pure carrier of formal verbal features: tense and agreement. Finally, it can also be a one-place predicate of the 'raising' type: assigning the XCOMP function to its propositional argument and also assigning a non-thematic SUBJ function. When the postcopular constituent has the PREDLINK function, it is closed in the sense that if it has a subject argument, this argument is never realised outside this constituent. For obvious reasons, the XCOMP and the PREDLINK types involve two semantic and functional levels (tiers): the copula selects the relevant constituent as an argument. By contrast, when the copula is a mere formative, the two elements are at the same level (tier): the postcopular constituent is the real predicate and the copula only

4. This section is a considerably modified and augmented version of Laczkó (2012).

contributes morphosyntactic features. In LFG terms, they are functional coheads. All this is summarised in Table 6.2.

Table 6.2 Three types of copular constructions

POSTCOPULAR CONSTITUENT		
open		**closed**
main PRED, the copula is a formative: functional coheads (single-tier)	XCOMP of the copula main PRED: 'be < XCOMP > SUBJ' (double-tier)	PREDLINK of the copula main PRED: 'be < SUBJ, PREDLINK >' (double-tier)

In (51), (52) and (53) I show schematically how the English sentence in (50) can be analysed along these three different lines.

(50) *She is small.*

(51)
$$\begin{bmatrix} \textsc{pred} & \text{`small} < (\uparrow \textsc{subj}) >\text{'} \\ \textsc{tense} & \text{present} \\ \textsc{subj} & \text{“she”} \end{bmatrix}$$

(52)
$$\begin{bmatrix} \textsc{pred} & \text{`be} < (\uparrow \textsc{xcomp}) > (\uparrow \textsc{subj})\text{'} \\ \textsc{tense} & \text{present} \\ \textsc{subj} & \text{“she”} \\ \textsc{xcomp} & \begin{bmatrix} \textsc{pred} & \text{`small} < (\uparrow \textsc{subj}) >\text{'} \\ \textsc{subj} & \end{bmatrix} \end{bmatrix}$$

(53)
$$\begin{bmatrix} \textsc{pred} & \text{`be} < (\uparrow \textsc{subj}) (\uparrow \textsc{predlink}) >\text{'} \\ \textsc{tense} & \text{present} \\ \textsc{subj} & \text{“she”} \\ \textsc{predlink} & \text{“small”} \end{bmatrix}$$

One of the most important properties of this approach is that it allows for diversity both in c-structure and in f-structure. Dalrymple et al. (2004) propose these three analytical possibilities and assume that there can be variation across languages and also across constructions within the same language. Only a careful analysis of any single CC in any language can reveal which type it belongs to. Falk (2004) and

Nordlinger & Sadler (2007) subscribe to this view and develop their respective analyses in this spirit. By contrast, Attia (2008), inspired by Butt et al. (1999a), argues for a generalised PREDLINK approach to CCs within and across languages. Naturally, this means diversity in c-structure and robust uniformity in f-structure, and, for obvious reasons, it radically simplifies the analysis of CCs in the realm of grammatical relations and f-structure. In this sense I consider this PREDLINK approach 'light'. In addition, the single-tier (formative) use of the copula is also 'light' in an obviously different sense.[5] As I point out when I present my analysis, the PREDLINK lightness in this domain inevitably puts the burden of capturing significant differences of various kinds between CCs on other components of grammar.

6.3.2 Analysis of the five Hungarian CC types

Before presenting the details, I discuss the most important general aspects of my analysis.

My approach is along the lines, i.e., analytical philosophy, pursued by Dalrymple et al. (2004), Falk (2004), and Nordlinger & Sadler (2007), as opposed to the path argued for and followed by Butt et al. (1999a), Attia (2008) and Sulger (2009, 2011). This means that I find it more appropriate to allow for variation in terms of categories, functions, and construction types within and across languages in the CC domain rather than to develop a generalised and unified analysis for the overwhelming majority of CCs within and across languages. In my view, this is more in the spirit of LFG. I consider it is more appealing intuitively, and, furthermore, it is my conviction that the variation and the variety Hungarian CCs exhibit call for a varied and multidimensional treatment.

Naturally, this is not to deny the tenability and potential advantages of the unified approach ('PREDLINK light'); however, I show that in the case of the investigation of CC phenomena we gain much more by accommodating rich parametric variation in several dimensions. My claim is that although it is elegant to have a uniform treatment at f-structure, it is also the job of f-structure to efficiently feed semantics, and my approach is more useful in this respect. At this point I would also like to emphasise the fact that I do not reject the PREDLINK analysis as such: in the case of two Hungarian CCs (out of the five discussed in this chapter) I myself develop a PREDLINK account.

5. The title of Laczkó (2012), on which this section is based, *On the (un)bearable lightness of being an LFG style copula in Hungarian*, was inspired by the title of Kundera (1985).

In addition to the PREDLINK (or OBL) double-tier strategy, I also employ the single-tier (functional cohead) version. It is important in this connection that in some Hungarian CCs the copula must be absent in certain cases. Such a fact by itself is taken to justify the single-tier analysis in a number of approaches. However, my claim is that the possibility/necessity of having the zero copula (at least in certain paradigmatic slots) is neither a sufficient nor a necessary condition for a single tier analysis. Consider the following two sides of this ±zero-copula-coin.

In § 6.3.2.1 and § 6.3.2.2 I concentrate on CC types that exhibit exactly the same copula-absence behaviour; however, I analyse the former in the single-tier, functional cohead manner, while I develop an analysis of the latter along the double-tier, PREDLINK lines.

The obligatory presence of the copula does not necessarily rule out the single-tier analysis, see the more recent LFG analysis of English passive constructions, in which the copula is merely a formative element without a PRED feature. For instance, Bresnan (2001) adopts this analysis, as opposed to the classical XCOMP analysis in Bresnan (1982b).

Contrary to Dalrymple et al. (2004), and the views of the overwhelming majority of LFG practitioners, I claim that there is no real need for the double-tier XCOMP analysis of CCs in general. I make this claim on the basis of Dalrymple et al.'s (2004) argumentation, by pointing out that it is not convincing, and on the basis of the relevant Hungarian facts. I hasten to add that I do not exclude the possibility that certain other CC phenomena may call for an XCOMP analysis as the most plausible, or maybe the only feasible, analysis.

Let us now take a look at Dalrymple et al.'s (2004) two arguments in favour of XCOMP in certain CCs.

Their first argument runs as follows. When the English copula is combined with an adjectival 'raising' predicate, the well-known control relationships can be captured by dint of the standard LFG control apparatus if the AP is assumed to have the XCOMP function, rather than the PREDLINK function. The crucial aspects of these two different analyses of (54) are shown in (55) and (56).

(54) *It is likely to rain.* (cf. *It seems to rain.*)

(55) a. *is*, V 'be < (↑ XCOMP) > (↑ SUBJ)'
(↑ SUBJ) = (↑ XCOMP SUBJ).
b. *likely,* A 'likely < (↑ XCOMP) > (↑ SUBJ)'
(↑ SUBJ) = (↑ XCOMP SUBJ).

(56) a. *is*, V 'be < (↑ PREDLINK) > (↑ SUBJ)'.
b. *likely,* A 'likely < (↑ COMP) > (↑ SUBJ)'
(↑ COMP SUBJ) = ((PREDLINK ↑) SUBJ).

As (56b) shows, only a rather unusual control equation could handle this relation on the PREDLINK account of the copula, while nothing special is required on the XCOMP account, see (55). I fully agree with Dalrymple et al. (2004) in that the PREDLINK analysis is too costly, and I find this an important argument against a uniform PREDLINK approach to CCs, contra Attia's (2008) claim to the contrary. However, notice that this is only an argument against the PREDLINK account: a simple single-tier analysis allows for exactly the same standard LFG way of capturing the relevant control relationships. Compare (57) and (58).

(57) a. *is*, V
(↑ TENSE) = present
(↑ SUBJ PERS) = 3
(↑ SUBJ NUM) = sg.
b. *likely,* A 'likely < (↑ XCOMP) > (↑ SUBJ)'
(↑ SUBJ) = (↑ XCOMP SUBJ).

(58) *seems*, V 'seem < (↑ XCOMP) > (↑ SUBJ)'
(↑ SUBJ) = (↑ XCOMP SUBJ)
(↑ TENSE) = present
(↑ SUBJ PERS) = 3
(↑ SUBJ NUM) = sg.

As these representations demonstrate, on this single-tier account, *is likely* (not surprisingly) gets exactly the same analysis as *seems:* the PRED feature is contributed by *likely* and *seem*, respectively, and the general morphosyntactic verbal features are provided by *is* and -*s*, respectively.

Dalrymple et al.'s (2004) second argument is based on subject-adjective agreement in languages like French and Norwegian. Consider their French examples in (59) and their two alternative representations capturing the relevant agreement facts in (60) and (61). Needless to say, the PREDLINK approach creates unnecessary complications, as shown in (61).

(59) a. *Elle* *est* *petite.*
she.F.SG is small.F.SG
"She is small."
b. *Il* *est* *petit.*
he.M.SG is small.M.SG
"He is small."

(60) *petite* A (↑ PRED) = 'small < (↑ SUBJ) >'
(↑ SUBJ NUM) $=_c$ sg
(↑ SUBJ GEND) $=_c$ fem.

(61) *petite* A (↑ PRED) = 'small'
((PREDLINK ↑) SUBJ NUM) $=_c$ sg
((PREDLINK ↑) SUBJ GEND) $=_c$ fem.

My comment is the same as in the case of the previous point: this is an absolutely valid argument against the PREDLINK analysis in such cases, but the single-tier analysis is at least as unmarked and straightforward in LFG terms as the XCOMP analysis. Moreover, it may even be taken to be more compelling inasmuch as the adjective imposes its agreement constraints on the subject of the sentence directly (and not through the mediation of an XCOMP style control relationship).

Let me also add that according to several LFG practitioners the XCOMP analysis of the copula in passive sentences in English type languages is no longer tenable. The main motivation for dropping the XCOMP analysis and replacing it with the single-tier, functional cohead analysis has been to represent the f-structures of passive sentences in copular passive languages like English and non-copular passive languages like Malayalam in a uniform fashion. The other motivation for such an analysis of auxiliaries is to ensure that the top level PRED of the f-structure should be identical for sentences irrespective of what tense and aspect features they have. In this way sentences like *He sings* and *He will be singing* have *sing* as the main PRED. This makes applications such as machine translation easier. I am grateful to Tracy Holloway King for pointing out this latter motivation to me.

As I have mentioned above, in my approach I employ both the single-tier analysis and the (double-tier) PREDLINK analysis. In the double-tier domain, however, I reject the use of the XCOMP analysis. At the same time, I also argue that in this latter domain it is reasonable to assume that in the case of certain CCs the second argument has the OBL (and not the PREDLINK) function. Notice that even with this additional grammatical function in my system the number of the fundamental types of CCs is smaller than that in Dalrymple et al.'s (2004) system. Consider:

(62) Dalrymple et al. (2004):
a. single-tier, functional cohead (open)
b. double-tier, PREDLINK (closed)
c. double-tier, XCOMP (open)

(63) here:
a. single-tier, functional cohead (open)
b. double-tier, PREDLINK or OBL (closed)

Before I present my analysis, I show the most essential features of the account of each type in (64).

(64) a. attribution/classification: single-tier, cohead (§ 6.3.2.1)
b. identity: double-tier, PREDLINK (§ 6.3.2.2)
c. location: double-tier, OBL (§ 6.3.2.3)
d. existence: double-tier, OBL (§ 6.3.2.4)
e. possession: double-tier, PREDLINK (§ 6.3.2.5)

6.3.2.1 *Attribution or classification*

Consider the following examples. (1) is repeated here for convenience.

(1) *Az igazgató okos/tanár volt.*
the director.NOM clever/teacher.NOM was
"The director was clever / a teacher."

(65) a. *Az igazgató tanár.*
the director.NOM teacher.NOM
"The director is a teacher."
b. *Én tanár vagyok.*
I.NOM teacher.NOM am
"I am a teacher."
c. *Az igazgató nem okos.*
the director.NOM not clever
"The director is not clever."
d. *Én nem vagyok okos.*
I.NOM not am clever
"I am not clever."

As (65a) shows, in this type the copula must be absent if the sentence is in the present tense and the subject is 3rd person singular. Compare it with (65b). The same holds for 3rd person plural subjects, which is not exemplified here. In these paradigmatic slots, negation is expressed by simply inserting the negative particle *nem*, see (65c), and compare it with (65d). It is a further property of this construction that in neutral sentences the NP or AP has to occupy the immediately preverbal, i.e., precopular, position. A reminder from Chapter 3 is in order. This is the famous VM position in Hungarian, occupied by separable preverbs, reduced or full arguments, secondary predicates, or idiom chunks. This preverbal position is only available to VMs in neutral sentences, because in non-neutral sentences the focused element must precede the verb immediately, and the VM, if there is one in the sentence, must follow the verb.

Let us consider predicative APs first. Given the fact that under certain circumstances the copula must be systematically absent, in the spirit of Dalrymple et al. (2004) and Nordlinger & Sadler (2007), we could immediately opt for a single tier analysis. However, as I pointed out in § 6.3.2 above, in my view this fact by itself is not a sufficient condition for a single-tier analysis, for further details, see § 6.3.2.2 below. Thus, in my approach, I need additional and independent support for this analysis. This evidence is provided by the fact that predicatively used adjectives in Hungarian clearly satisfy Dalrymple et al.'s (2004) criterion for a predicate capable of taking a subject argument. Consider the sentence in (66).

(66)	*János*	*okos-nak*	*tart-ja*	*Péter-t.*
	John.NOM	clever-DAT	hold-PRES.3SG	Peter-ACC
	"John considers Peter clever."			

This is unquestionably a functional control construction: the verb has a SUBJ and an XCOMP argument (realised by the predicative AP bearing dative case in this construction type) and it has a non-thematic OBJ, which can only obey the coherence condition if it functionally controls the AP's thematic SUBJ. It is further evidence for this single-tier analysis that in this construction type (the infinitival form of) the copula cannot even be inserted, as opposed to the English counterpart. Compare the Hungarian example and its English translation in (67).

(67)	*János*	*okos-nak*	*tart-ja*	(**le-nni*)	*Péter-t.*
	John.NOM	clever-DAT	hold-PRES.3SG	be-INF	Peter-ACC
	"John considers Peter to be clever."				

The analysis of the NP in this type as the main argument-taking predicate seems to be less intuitive and less unproblematic. In this connection, Attia (2008), agreeing with Dalrymple et al. (2004), for instance, claims that common nouns should not be taken to have an argument structure containing a subject argument. Dalrymple et al. (2004) point out that in Japanese adjectives can be used without the copula, but nouns cannot, and this provides partial motivation for them only to analyse adjectives as argument-taking predicates as opposed to nouns in Japanese CCs. By contrast, the corresponding Hungarian facts are partially different, which can justify a partially different approach. In Hungarian such predicative noun phrases can be involved in exactly the same functional control constructions as predicative APs, cf. (66) and (68), which lends considerable support to an analysis along these argument-taking lines. For instance, both categories have the same dative marking.

(68)	*János*	*géniusz-nak*	*tart-ja*	(**le-nni*)	*Péter-t.*
	John.NOM	genius-DAT	hold-PRES.3SG	be-INF	Peter-ACC
	"John considers Peter (to be) a genius."				

Also note that the nominal predicate must be non-specific. This fact enables us to define the required categorial environment for the predicative, argument-taking use of a noun: it must occur within an NP and never within a referring DP. In

(69) and (70), I show the most important lexical aspects of my analysis, using an XLE style formalism. Both lexical forms contain representations capturing the non-zero-copular use of these predicates, and I abstract away from the encoding (and constraining) of tense and agreement.

(69) *okos* A, { (↑ PRED) = 'clever < (↑ SUBJ) >'
(↑ NUM)
{ (↑ FOCUS)
| ~(↑ FOCUS) & (↑ CHECK _VM) = + }
| (↑ PRED) = 'clever'
~(↑ NUM) }.

The main disjunction encodes the predicative vs. the attributive uses of the adjective. In the vein of the majority LFG opinion, in the attributive representation the adjective does not subcategorise for a SUBJ argument, see the second main disjunct, but this is not relevant from our present perspective. It is a fundamental contrast between the two uses that the adjective always has a number feature in the former and never in the latter. The (↑ FOCUS) vs. ~(↑ FOCUS) disjunction captures the VM vs. FOCUS complementarity discussed in Chapter 3. The fact that in neutral (non-focused) sentences the predicative AP must precede the verb is ensured by an XLE CHECK feature. As a reminder, the essence of this device is that there is a pair of checking equations, and one of them is associated (typically in the lexical form) with the element involved and the other is typically associated with a constituent or position in which the element is constrained to occur. In our current case (↑ CHECK _VM) = + is included in the predicative part of the lexical form of an adjective, while (↓ CHECK _VM) $=_c$ + is associated with the preverbal position. The behaviour of these CCs is even more complex, because the predicative adjective itself can be the focused element. Without going into any details, let me only point it out here that this particular phenomenon can be captured along the lines proposed in King (1997).

(70) *tanár* N, { (↑ PRED) = 'teacher < (↑ SUBJ) >'
(↑ SPECIFIC) = –
@(~CAT_DP)
{ (↑ FOCUS)
| ~(↑ FOCUS) & (↑ CHECK _VM) = +}
| (↑ PRED) = 'teacher' }.

In (70), the main disjunction encodes the contrast between the predicative, argument-taking and the ordinary use of a noun. As noted above, non-specificity is intimately related to the predicative use, as is indicated in the first member of the disjunction, and there is also a constraining equation associated with the NP node in the preverbal position: (↓ SPECIFIC) $=_c$ –. The @(~CAT_DP) template restricts the category of the nominal predicate to NP by specifying that it cannot be DP. The function of the (↑ FOCUS) vs. ~(↑ FOCUS) disjunction in (70) is the same as in (69).

6.3.2.2 *Identity*

Consider the following examples. (2) is repeated here for convenience.

(2) *Az igazgató a szóvivő volt.* [identity]
the director.NOM the spokesperson.NOM was
"The director was the spokesperson."

(71) a. *Az igazgató a szóvivő.*
the director.NOM the spokesperson.NOM
"The director is the spokesperson."
b. *A szóvivő az igazgató.*
the spokesperson.NOM the director.NOM
"The spokesperson is the director."
c. *Az igazgató nem a szóvivő (volt).*
the director.NOM not the spokesperson.NOM was
"The director is/was not the spokesperson."
d. *A szóvivő nem az igazgató (volt).*
the spokesperson.NOM not the director.NOM was
"The spokesperson is/was not the director."

(72) a. *Én a szóvivő vagyok.*
I.NOM the spokesperson.NOM am
"I am the spokesperson."
b. *Én a szóvivő voltam.*
I.NOM the spokesperson.NOM was.1SG
"I was the spokesperson."
c. **A szóvivő én volt.*
the spokesperson.NOM I.NOM was.3SG
ca. "The spokesperson was me."

Recall from the discussion in § 6.2 that in this type two entities, typically expressed by definite 3rd person DPs, are equated, and as the examples in (71) show, often either of the two DPs can be taken to be the subject, agreeing with the copula. However, when one of the DPs is not in 3rd person (that is, when it is a 1st or 2nd person pronoun) only that DP can function as the subject, see (72). This type and the attribution/classification type share all of the following properties. The copula must be absent if the sentence is in the present tense, and the subject is 3rd person singular, see (71a,b), and the same holds for 3rd person plural subjects (which is not exemplified here). In these paradigmatic slots, negation is expressed by simply inserting the negative particle *nem*, see (71c,d). In this type, in neutral sentences, the non-subject constituent has to occupy the immediately preverbal (precopular) position.

I propose that this type is most appropriately analysed in a two-tier approach, despite the fact that the copula must be absent in the present tense, 3SG/PL paradigmatic slots. Thus, here I adopt Butt et al.'s (1999a) and Attia's (2008) analysis. The copula is a two-place predicate subcategorising for a SUBJ and a PREDLINK. Given the nature (semantics) of this construction type, the function (semantics) of this predicate is to equate (or, literally, link) two entities. As noted above, there are cases in which the two 3rd person definite DPs can take these two grammatical functions interchangeably. It also has to be encoded in the lexical form of this copula that if one of the DPs is not in 3rd person, then it must be the SUBJ and never the PREDLINK. The simplest and most straightforward way of carrying this out is to use the following negative constraint: $\sim(\uparrow \text{PREDLINK PERS}) = \{1 \mid 2\}$. In § 6.2, I pointed out that Heycock & Kroch (1999) argue that in English equative sentences *be* connects two DPs, and both DPs can be shown to be referential, which makes such a CC different from predicative CCs. In equative CCs, thus, there is no predication relation between the two DPs: they are both arguments of *be*. This is the fundamental assumption in my analysis as well.

Even when the copula is not present in the sentence in this type, I postulate that this unexpressed copula is the main predicate. I follow Dalrymple et al.'s (2004) analysis of a Russian construction in this vein, and I assume that the properties of the missing copula are introduced by LFG style (phrase-)structural means:

(73)

$$\begin{array}{lcccc}
\text{S} \rightarrow & \text{DP} & \text{VCop} \vee & \varepsilon & \text{DP} \\
 & (\uparrow \text{SUBJ}) = \downarrow & \uparrow = \downarrow & (\uparrow \text{PRED}) = \text{`be} < (\uparrow \text{SUBJ})\ (\uparrow \text{PREDLINK}) > \text{'} & (\uparrow \text{PREDLINK}) = \downarrow \\
 & & & (\uparrow \text{TENSE}) = \text{present} & \\
 & & & (\uparrow \text{SUBJ PERS}) =_c 3 & \\
 & & & (\uparrow \text{SUBJ NUM}) & \\
 & & & (\uparrow \text{SUBJ PERS}) = (\uparrow \text{PREDLINK PERS}) & \\
 & & & (\uparrow \text{SUBJ NUM}) = (\uparrow \text{PREDLINK NUM}) & \\
 & & & (\uparrow \text{SUBJ SPECIFIC}) =_c + & \\
 & & & (\uparrow \text{PREDLINK SPECIFIC}) =_c + &
\end{array}$$

In this rule the overt copula (VCop) is in complementary distribution with the special ε (epsilon) symbol, which does not appear in the c-structure representation as an empty category; instead, it contributes its annotations solely to the relevant f-structure. It has a PRED feature characteristic of the overt copula in this construction type. It introduces the present tense feature value. It constrains the person of the subject to 3 with either singular or plural number. The latter disjunction is encoded by the ($\uparrow$SUBJ NUM) existential constraint. The two arguments need to agree for person and number, and both of them have to be specific.

In all the other paradigmatic slots, the appropriate form of the copula encodes all the relevant functional information in its lexical entry, except that the annotations equating the person and the number features of the SUBJ and the PREDLINK in the case of the ε in (73) are not associated with the lexical form of the copula, because they do not need to match, see (72a,b).

6.3.2.3 *Location*

Consider the following examples. (3) is repeated here for convenience.

(74) *Az igazgató a szobá-ban van.*
the director.NOM the room-in is
"The director is in the room."

(3) *Az igazgató a szobá-ban volt.*
the director.NOM the room-in was
"The director was in the room."

(75) *Az igazgató nincs a szobá-ban.*
the director.NOM isn't the room-in
"The director isn't in the room."

(76) *Az igazgató nem volt a szobá-ban.*
the director.NOM not was the room-in
"The director wasn't in the room."

(77) *(Én) Nem vagyok a szobá-ban.*
I.NOM not am the room-in
"I am not in the room."

The most important properties of this CC are as follows.[6] The copula is normally overt even in the present.3SG/3PL cases, see (74) which exemplifies the present.3SG instance. As is usual in other CCs as well, ordinarily negation takes the form of combining the negative marker and the copula, see (76) and (77). However, in the present.3SG and present.3PL cases negation is expressed by special suppletive forms (*nincs* "isn't" and *nincsenek* "aren't"), see (75), which exemplifies the present.3SG variant. The subject constituent has to be specific, and, in neutral sentences, the locative constituent has to occupy the immediately preverbal (precopular) position, the VM position, see (3) and (74).

6. László Varga (p.c., December 2017) pointed it out to me that this CC can also be used to express location in time, see (i).

(i) *Az értekezlet délután lesz.*
the meeting.NOM afternoon will_be.3SG
"The meeting will be in the afternoon."

In theory, it would be possible to assign the PREDLINK function to this locative constituent. However, my alternative solution here is the OBL$_{\text{loc}}$ function on the basis of the following considerations. This CC expresses a genuine locative relationship; therefore, it is reasonable to feed semantics directly in terms of grammatical function choice and f-structure representation. Bresnan (2001) and Falk (2004) analyse corresponding locative CCs (in English and in Hebrew, respectively) in exactly the same fashion, assuming that the constituent in question has the OBL function. Furthermore, as I argue in the next section, the parallel between locative and existential CCs can be captured in a straightforward manner along these lines. In addition, although I myself do accept and use the PREDLINK function in the analysis of certain CC types, in my view this is really motivated and justifiable if it can be assumed that the copula has a genuine 'linking' function (semantics). Thus, I take this function (name) at face value. My account of identity CCs uses this function, see § 6.3.2.2, and I also use it in my analysis of possession CCs, see § 6.3.2.5.

I represent the lexical form of the locative copula in the following way.

(78) *van*, V (↑ PRED) = 'BE$_{\text{loc}}$ < (↑ SUBJ) (↑ OBL$_{\text{loc}}$) >'
(↑ SUBJ SPECIFIC) $=_c$ +
{ (↑ FOCUS)
| ~(↑ FOCUS)
(↑ OBL$_{\text{loc}}$ CHECK _VM) $=_c$ +}.

This copula is a two-place predicate, its SUBJ argument must be specific, and its second argument receives the OBL$_{\text{loc}}$ function. The disjunction in (78) encodes the following two options. (1) The sentence contains a focus, and then this constituent must occupy the preverbal position. (2) There is no focused constituent in the sentence (it is a neutral sentence) and then the OBL$_{\text{loc}}$ argument must occur in the preverbal VM position. Recall from Chapter 3 that a VM can also be focused, so here, too, the OBL$_{\text{loc}}$ argument can receive heavy stress preverbally, and then it will be interpreted as the focused constituent in the sentence.

This was the LFG analysis of the locative use of the Hungarian copula that I proposed in Laczkó (2012). Here I augment it in the light of my discussion of Hegedűs' (2013) account of the following construction types in § 6.2. In (79)–(81) I repeat her examples for convenience.

(79) *A macska a tető-n van.*
the cat the roof-SUP is
"The cat is on the roof."

(80) *(Egy) Macska van a tető-n.*
a cat is the roof-SUP
"There is a cat on the roof."

(81) a. *Vannak egyszarvúak.*
are unicorns
"There are unicorns."
b. *Egyszarvúak vannak.
unicorns are
"There are unicorns."
c. *Vannak egyszarvúak a kert-ben.*
are unicorns the garden-INE
"There ARE unicorns in the garden."
d. *Egyszarvúak vannak a kert-ben.*
unicorns are the garden-INE
"There are unicorns in the garden."

As noted in § 6.2, Hegedűs analyses the type in (79), which can be considered the basic locative type, as a copular construction with a PP predicate making up a complex predicate with BE in neutral sentences. In her system then (79) is treated in the same way as copular constructions with NP/AP predicates. Her (79) represents the same type as my (74) above.

(82) *A macska* a. *a tető-n volt.*
the cat the roof-SUP was
b. *ellenség*
enemy
c. *gyors*
fast
"The cat was (a) on the roof (b) an enemy (c) fast."

By contrast, as is obvious from § 6.3.2.1 and this section, I analyse this locative use of BE entirely differently from the combination of BE with NP/AP predicates. Hegedűs assumes that (81a) and (81c) represent true existential constructions. For my LFG analysis of the existential use of the Hungarian copula, see the next section (§ 6.3.2.4). Interestingly, Hegedűs assumes that (81d) manifests a third construction type: the 'locative', which is between the copular PP and the true existential type. In my opinion the rather sharp distinction between the copular PP type and the 'locative' type is not really feasible. Intuitively, both are naturally interpretable as locative fundamentally, and the difference between them as regards their syntactic behaviour is due to the specificity of the subject. If the subject is specific then in a neutral sentence the locative argument has the VM status, and if it is non-specific then this non-specific subject has to function as a VM.

This duality is very similar to the following case.

(83) a. *János* *be* *ve-tte* *a* *gyógyszer-t.*
John.NOM in take-PAST.3SG.DEF the medication-ACC
"John took the medication."
b. *János* *gyógyszer-t* *ve-tt* *be.*
John.NOM medication-ACC take-PAST.3SG.INDEF in
"John took medication."

In (83a) the object, *a gyógyszert* "the medication.ACC", is definite (specific), and it is the preverb *be* "in" that has to function as the VM in a neutral sentence. By contrast, in (83b), the object is a bare noun, *gyógyszert* "medication.ACC", and, consequently, non-specific; therefore, it has to be the VM in a neutral sentence.

In order to capture the behaviour of the (81d) type all I need to do in my LFG analysis is to modify the lexical form of *van* "be" in (78) in the following way.

(84) *van*, V (↑ PRED) = 'BE$_{loc}$ < (↑ SUBJ) (↑OBL$_{loc}$) >'
{ (↑ SUBJ SPECIFIC) $=_c$ +
{ (↑ FOCUS)
| ~(↑ FOCUS)
(↑ OBL$_{loc}$ CHECK _VM) $=_c$ + }
| (↑ SUBJ SPECIFIC) $=_c$ –
{ (↑ FOCUS)
| ~(↑ FOCUS)
(↑ SUBJ CHECK _VM) $=_c$ + } }.

The two main disjunctions encode the following. If the subject is specific then the OBL argument must occupy the VM position in a neutral sentence, and if it is non-specific then this non-specific subject must occur in the VM position in a neutral sentence.

6.3.2.4 *Existence*

Consider the following examples. (4) is repeated here for convenience.

(86) *Vannak* *boszorkány-ok* *(a* *Föld-ön).*
be.PRES.3PL witch-PL.NOM the Earth-on
"There are witches (on the Earth)."

(4) *Voltak* *boszorkány-ok* *(a* *Föld-ön).*
be.PAST.3PL witch-PL.NOM the Earth-on
"There were witches (on the Earth)."

(87) *Nincs-enek* *boszorkány-ok* *(a* *Föld-ön).*
be.PRES.NOT-3PL witch-PL.NOM the Earth-on
"There aren't witches (on the Earth)."

(88) *Nem voltak boszorkány-ok (a Föld-ön).*
not be.PAST.3PL witch-PL.NOM the Earth-on
"There weren't witches (on the Earth)."

In this CC, the copula, as a strict rule, must always be overt, even in the present.3SG/3PL cases, see (86), which exemplifies the present.3PL instance. As is usual in other CCs as well, ordinarily negation takes the form of combining the negative particle and the copula, see (88). However, in present.3SG/3PL negation is expressed by special suppletive forms (*nincs* "isn't" and *nincsenek* "aren't"), see (87), which exemplifies the present.3PL instance. The subject constituent must be non-specific. In reality, this CC does not occur in ordinary neutral sentences for the following reason. Even when there is no focused constituent, the copula itself is the first element and it receives focal stress, see (4) and (86). Very often, this CC does not contain an overt locative constituent, but even in that case the interpretation is that the (non-specific) subject exists in a particular world.

There are, thus, significant similarities and dissimilarities between location and existence CCs. They are as follows. In both types, the copula is best treated as a two-place predicate. In both types, the second argument is best assigned the closed $\mathrm{OBL_{loc}}$ function. In the location CC the argument is strictly obligatory, while in the existence CC it is absolutely optional. In the location CC the subject must be specific, while in the existence CC it must be non-specific. In neutral location CC sentences the $\mathrm{OBL_{loc}}$ argument must occupy the preverbal (precopular) VM position, while in ordinary existence CC sentences there is no VM option, to begin with, and the copula must receive focal stress.

In my analysis the existential copula has the lexical form shown in (89). Recall that in the LFG system ((↑ OBL)) represents the optionality of the oblique argument. When the constituent is not expressed in the given sentence, it is assumed to be existentially bound.

(89) *van*, V (↑ PRED) = 'BE$_{\mathrm{exist}}$ < (↑ SUBJ) ((↑OBL)) >'
(↑ SUBJ SPECIFIC) $=_c$ –
{ (↑ FOCUS)
| (↑ PRED FN) = (↑ FOCUS) }.

The first two lines should be straightforward on the basis of the discussion above. As regards the FOCUS disjunction, first of all, note that in this version of my grammar I only use the general FOCUS discourse function label, associated with Spec,VP, and I do not distinguish subtypes of FOCUS in that position. The disjunction in (89) reads as follows: (i) there is a focused constituent in the sentence, first disjunct, and (ii) the copula itself is in focus, second disjunct. The latter case is very special, because the copula is the (functional) head of the entire sentence, so if it received the FOCUS discourse function in the regular LFG way then this would mean that the entire sentence was in focus, i.e., the whole of it would bear the FOCUS function. However, it is just the predicate that is focused. This interpretation is encoded, in an XLE way, by the equation in the second disjunct. It is only the copula, its function name (FN), that is in focus, without its arguments. I have adopted this treatment of focusing predicates from King (1997).

6.3.2.5 *Possession*

Consider the following examples. (5) is repeated here for convenience.

(90) *Az igazgató-nak van szóvivő-je.*
the director-DAT is spokesperson-his.NOM
"The director has a spokesperson."

(5) *Az igazgató-nak volt szóvivő-je.*
the director-DAT was spokesperson-his.NOM
"The director had a spokesperson."

(91) *Az igazgató-nak nincs szóvivő-je.*
the director-DAT isn't spokesperson-his.NOM
"The director doesn't have a spokesperson."

(92) *Az igazgató-nak nem volt szóvivő-je.*
the director-DAT not was spokesperson-his.NOM
"The director didn't have a spokesperson."

(93) a. *az igazgató okos szóvivő-je*
the director.NOM clever spokesperson-his
"the director's clever spokesperson"
b. *az igazgató-nak az okos szóvivő-je*
the director-DAT the clever spokesperson-his
"the director's clever spokesperson"

In Hungarian, possession is expressed at the sentence level by this peculiar possession CC. First of all, it has a very special agreement pattern. The possessed noun phrase is the subject and its head is inflected in exactly the same way as the noun head of possessive DPs, that is, DPs containing possessor constituents. Compare all the sentence level examples in (5), (90), (91) and (92) with (93). The possessor in the CC is obligatorily expressed by a DP in the dative case, see (5), (90), (91) and (92). By contrast, within a DP expressing possession, the dative marking of the possessor is only an option, cf. (93a) and (93b). In the CC, the possessed noun phrase is always 3SG or 3PL, and it agrees with the copula in this respect. This is ordinary subject-verb agreement. However, this subject also agrees with the dative possessor for person and number in the same way as the possessed noun head agrees with the (nominative or dative) possessor within possessive DPs: compare, again, (5), (90), (91) and (92) with (93).

Some additional properties of this CC are as follows. The possessed noun phrase, the subject, is indefinite as a rule. The copula is strictly obligatory, just like the copula in existence CCs, see § 6.3.2.4. In ordinary possession CC sentences the dative possessor is typically a topic, and, more importantly, the copula always gets focal stress, just like the copula in existence CCs, see § 6.3.2.4. The negation pattern of the copula in this CC type follows that of the copula in location and existence CCs.

I claim that this special CC type is, again, best analysed along the PREDLINK lines. My intuitive assumption is that the function of the copula here is to link the possessor and the possessed entity at the clause level. In other words, the copula 'raises' the possessive relationship which can also be expressed within DPs to a sentential level.

I propose the following lexical form for the possession copula.

(94) *van*, V (↑ PRED) = 'BE_{poss} < (↑ SUBJ) (↑ PREDLINK) >'
possessee possessor
(↑ SUBJ DEF) $=_c$ –
(↑ PREDLINK CASE) $=_c$ dat
(↑ SUBJ PERS) $=_c$ 3
{ (↑ FOCUS)
| (↑ PRED FN) = (↑ FOCUS) }.

The first two equations about the indefiniteness of the SUBJ (possessee) and about the case constraint of the PREDLINK (possessor) should be straightforward. The third annotation restricts the person feature value of the SUBJ to 3. The FOCUS disjunction here is the same as I postulated in the case of the existence copula in the previous section.

A remark is in order about the very special agreement pattern between the subject and the dative argument in this CC. So far it has been typically assumed in the literature that the dative possessor argument is an OBL. However, this assumption has been criticised by pointing out that it is highly unusual across languages for an OBL to agree with the SUBJ, see, for instance, Szabolcsi (1992). Now, if we assume that the possessor has the PREDLINK function, this agreement relationship can be argued to be much more justified. It simply follows from the very nature of PREDLINK: it can (or rather must) enter into an agreement relationship with SUBJ.

As regards the agreement between the possessor having the PREDLINK function and the possessed SUBJ encoded by the morphology of the SUBJ, it can be captured along the following LFG-XLE lines. In possessive DPs the tags associated with the noun stem, encoded by the relevant inflectional elements, contribute the following types of equations: (↑ POSS PERS) = … and (↑ POSS NUM) = …. In this particular instance of PREDLINK-SUBJ agreement, we only have to introduce the following alternative annotations associated with the same tags: ((SUBJ ↑) PREDLINK PERS) = … and ((SUBJ ↑) PREDLINK NUM) = ….

In § 6.2 I pointed out that Hegedűs (2013) does not analyse the construction type she exemplifies with (43a), repeated here as (95) for convenience, because it is standardly treated as a case of (semi-)incorporation.

(95) *Péter-nek láz-a van.*
Peter-DAT fever-POSS.3SG is
"Peter has fever."

I made two comments on this. (i) This is an absolutely productive type in a particular semantic field, see my examples in (44) and (45) in § 6.2. (ii) An incorporation analysis is not very feasible, given that the element assumed to be incorporated can be freely modified, see the following example.

(96) *Péter-nek nagyon magas láz-a van.*
Peter-DAT very high fever-POSS.3SG is
"Peter has a very high fever."

In my system this construction can be analysed as a special subtype of possession CCs. The general characteristics are the same as in the case of the ordinary possession use of the copula, and the difference is that in a neutral sentence the subject functions as a VM, i.e., it must occupy the preverbal position. Compare the lexical representation of the copula as used in ordinary possession CCs in (94), repeated here, and its alternative specification when it is used in this construction type, shown in (97).

(94) *van*, V (↑ PRED) = 'BE_{poss} < (↑ SUBJ) (↑ PREDLINK) >'
possessee possessor
(↑ SUBJ DEF) $=_c$ –
(↑ PREDLINK CASE) $=_c$ dat
(↑ SUBJ PERS) $=_c$ 3
{ (↑ FOCUS)
| (↑ PRED FN) = (↑ FOCUS) }.

(97) *van*, V (↑ PRED) = 'BE_{poss} < (↑ SUBJ) (↑ PREDLINK) >'
possessee possessor
(↑ SUBJ DEF) $=_c$ –
(↑ PREDLINK CASE) $=_c$ dat
(↑ SUBJ PERS) $=_c$ 3
{ (↑ FOCUS)
| (↑ SUBJ CHECK _VM) = + }.

The only difference is in the second disjunct of the disjunction (the last annotation in both representations). In the ordinary possession use of the copula, when there is no other focused constituent, the copula must receive focal stress. By contrast, in this special construction type, in such a case the subject occupies the preverbal position, i.e., it has the VM status.

6.4 Conclusion

In § 6.1, I presented some salient approaches to the main types of English CCs. In § 6.2, I offered a detailed discussion of Hegedűs' (2013) MP analysis of several major Hungarian CC types. In addition, I related it to several MP assumptions about CCs across languages as well as to some alternative MP accounts of Hungarian CCs. In § 6.3, I developed the first comprehensive LFG analysis of the five most important types of copula constructions in Hungarian. The most significant general aspects of my approach are as follows. First, I subscribe to the view, advocated by Dalrymple et al. (2004) and Nordlinger & Sadler (2007), that the best LFG strategy is to examine all CCs individually and to allow for diversity and systematic variation both in c-structure and in f-structure representations across and even within languages. This means that I reject Butt et al.'s (1999a) and Attia's (2008) uniform PREDLINK approach at the f-structure level. Second, I argue against the two-tier, open, XCOMP analysis of CCs. Third, I employ the following analysis types.

- single-tier, functional cohead (open)
- double-tier, PREDLINK or OBL (closed)

Table 6.3 summarises the most important properties of the five Hungarian CCs and the crucial aspects of my analysis. I use the following abbreviations in this table: *cop* = copula; *attr/class* = attribution or classification; *PR3:cop* = is the copula present in the present tense and 3rd person paradigmatic slots; *PR3:neg* = how is negation expressed in pr3; *VM* = what element occupies the VM position (if any) in neutral sentences; *S* = SUBJ; *PL* = PREDLINK; *interch* = the two arguments' grammatical functions are interchangeable in 3rd person; *spec* = specific; *def* = definite; *FOC* = FOCUS; *agr* = agreement.

Table 6.3 Properties and analyses of Hungarian CCs

CC type	**3PR: cop**	**3PR: neg**	**copula's function**	**argument structure**	**VM**	**other traits**
attr/class	–	nem	formative	–	AP/NP	NP: –spec
identity	–	nem	predicate	< S, PL >	SUBJ	S: +spec, interch.
location	+	nincs	predicate	< S, OBL >	OBL	S: +spec
existence	+	nincs	predicate	< S, (OBL) >	–	S: –spec cop: FOC
possession	+	nincs	predicate	< S, PL >	–	S: –def S&PL agr. cop: FOC

Let me add at this point that my claim that the location CC has to be treated differently is further and independently supported by the fact that out of the five versions of the Hungarian copula analysed in this section, it is only the locative variant that has a productively used participial counterpart. Compare the location use in (98a) with the attribution use and the possession use in (98b) and (98c), respectively.

(98) a. *a szobá-ban lévő igazgató*
the room-in being director
literally: "the director being in the room"
b. **az okos lévő igazgató*
the clever being director
literally: "the director being clever"
c. **a szóvivő-je lévő igazgató*
the spokesperson-his being director
intended meaning: "the director having a spokesperson"

In addition to developing an LFG analysis of five Hungarian CCs, I also addressed the following two questions. (1) What are the formal-strategic differences between MP and LFG approaches? (2) What role should be attributed to f-structure representation in the analysis of various CC types in LFG? Below I summarise my answers to these questions.

Given the architectures, principles and assumptions of the two theories, they seriously constrain the analytical strategies available in general and in the treatment of CCs in particular. All MP approaches employ a complex syntactic apparatus. They assume a uniform invariant initial structure and they derive the various CC types by means of several syntactic operations. By contrast, in LFG no such syntactic operations are possible; consequently, a lexical treatment is needed. From this it automatically follows that the partially different behaviours of CCs have to be captured by assuming several appropriate lexical forms for BE in which we encode their respective syntactic properties.

It is also noteworthy in the context of this comparative discussion that although in this chapter I concentrated on and analysed the five major CC types in Hungarian, there are further attested productive (sub)types requiring additional or modified analyses. In the previous section I discussed one such subtype. Szabolcsi (1992), analysing possessive DPs and possessive sentences in a GB framework, also mentions this subtype, using the following example.

(99) *Péter-nek jó természet-e van.*
Peter-DAT good nature-POSS.3SG is
"Peter has a good disposition."

She leaves the investigation of this special subtype to future research, given that it does not follow the general word order and intonation pattern characteristic of ordinary possessive CCs. My main point is that this is an absolutely productive minor type calling for a systematic formal analysis. In my LFG approach I can easily accommodate this type, see the previous section. By contrast, a GB/MP approach needs to further augment its syntactic apparatus.

Let me repeatedly emphasise the fact that both these radically different approaches can handle the phenomena under investigation in a principled manner in their own systems. The choice between them in this case, just like in general, depends on which of them one considers to be a more plausible model of the competence of language users. My choice in this case, and in general, is LFG.

In § 6.3 I argued for the type of approach in the LFG framework that, on the one hand, employs several distinct lexical forms of BE (with different argument structures), and, on the other hand, partially following from this, it assumes that the f-structures of various CC types are different, which contrasts with the alternative view that postulates a uniform f-structure.

CHAPTER 7

Conclusion

Results and outlook

7.1 Introduction

In this book I have developed a new perspective on clausal syntax and captured its interactions with lexical and discourse function information by analysing Hungarian sentences. In addition, I have demonstrated ways in which grammar engineering implementations can provide insights into how complex linguistic processes interact.

I have discussed the most important phenomena in the preverbal domain of Hungarian finite clauses: sentence structure, operators, verbal modifiers, negation and copula constructions. On the basis of the results of earlier generative linguistic research, I presented the generally accepted empirical generalisations, and offered a detailed and comparative critical assessment of the most salient analyses in a variety of generative linguistic models. Then I argued for a fundamentally lexical approach to the relevant phenomena, and developed the first systematic analysis in the theoretical framework of Lexical-Functional Grammar. In addition, I implemented various crucial aspects of this analysis in the implementational platform of the theory, Xerox Linguistic Environment. With this work, I hope to have contributed to improving our understanding of the interaction of syntax, information structure and the lexicon. The implementational dimension had two interrelated functions. First, it served as a reliable testing ground for the theoretical analysis. Second, it demonstrated that implementation can be a very useful tool for exploring and understanding how complex linguistic systems work.

In the first chapter I showed the traits of my chosen theoretical framework, LFG, in systematic comparison with other generative linguistic frameworks, GB and MP, GASG and HPSG. Then I introduced XLE, the implementational platform of LFG. Below, I reiterate the most important concluding remarks from Chapters 2–6, supplemented with the identification of further important and related research avenues.

7.2 Chapter 2: The basic structure of Hungarian finite clauses

In this chapter, I presented the basic aspects of an LFG (and XLE-implementable) analysis of the preverbal portion of Hungarian finite clauses. The structural representation was largely motivated by É. Kiss (1992) and Laczkó & Rákosi (2008–2013). The crucial details of my analysis are as follows.

- I argue for S and against IP as the core sentential symbol (and also postulate CP).
- In this approach, I employ a hierarchical, binary branching, adjunction structure for the topic field, in addition to a similar setup in the quantifier field.
- I handle all the question phrases other than the question phrase immediately adjacent to the verb in multiple constituent questions as occupying VP-adjoined positions in the quantifier field.
- I assume that focused constituents, verbal modifiers and the (verb-adjacent) question phrase are in complementary distribution in Spec,VP.
- I suggest that LFG's parametric space that is potentially available to c-structure–function associations should be augmented along the following lines.
  - The Spec,VP position should be allowed to host the FOCUS discourse function. In general terms, this amounts to assuming that the specifier of a lexical category can be either a modifier or a DF.
  - The XP in [$_S$ XP VP] can also be a topic, in addition to a subject. In this case the VP can also contain a subject.
- My fundamental aim in this book was to develop the crucial aspects of a comprehensive LFG-theoretical analysis of the preverbal domain of finite clauses in Hungarian. At the same time, this also served as the necessary theoretical underpinnings of HunGram, our implemented grammar. In addition, I think that a great number of the details of this approach considerably contribute (directly or indirectly) to improving and advancing this implemented grammar, see the attested implementational dimensions of Chapters 3 through 6.

7.3 Chapter 3: Verbal modifiers

In this chapter, I presented the crucial aspects of an LFG (and XLE-implementable) analysis of the major types of Hungarian verbal modifiers. In accordance with the general approach outlined in Chapter 2, in my analysis I assume that focused constituents, verbal modifiers and the (verb-adjacent) question phrase are in complementary distribution in Spec,VP. Following from the main topic of this chapter and for simplicity of exposition, I only formally modelled the complementarity (and interaction) of VMs and focusing. The most important aspects of my analysis are the following.

- I showed that VMs can also be focused, and, depending on their nature, they can be used to express two types of focus: identificational focus and verum focus.
- I distinguish two major types of VMs: preverbs (verbal particles) belong to the first type, and the rest of VMs to the other type. I treat both compositional and non-compositional PVCs lexically, with both the verb and the particle having their respective lexical forms with appropriate functional annotations and cross-referencing, including the use of CHECK features. The particle and the verb are analysed as functional coheads in both PVC types. All the other VMs, with their own grammatical functions, are lexically selected by their verbs in these verbs' lexical forms. Depending on the nature of the VM involved, the verb can impose various constraints on it.
- I argue against assuming that all VM + verb pairs are lexical units or combinations, and when the VM immediately precedes the verb, (obligatory) syntactic incorporation takes place in some (theory-dependent) form. The most crucial aspects of my approach are as follows.
  - Some VM + verb pair types must really be treated as lexical combinations, because they have a shared meaning and argument structure. In my most recent approach, PVCs (of both major types) and idioms belong here. However, even in these cases 'lexical combination' means separate, appropriately annotated and cross-referenced lexical items that occupy distinct syntactic positions even when the VM immediately precedes the verb. This means that I reject the idea of syntactic incorporation in these instances as well.
  - In the case of all the other VMs, the relationship between the VM and its verb is fundamentally syntactic, except that (i) the verb requires its designated VM argument to occupy the Spec,VP position in neutral sentences, and (ii) the verb may, in general, specify the features the VM needs to exhibit. Notice, however, that (i) already calls for a lexical encoding, in the verb's lexical form, of this VM requirement, because the VM–verb syntactic dependency is very often verb-specific, although there are also certain verb types, with particular semantics and/or argument structure, that typically behave similarly in this respect.
  - The LFG-style encoding of the VM–verb relationship in the verb's lexical form makes it possible to capture the appropriate co-occurrence of the two elements (and the required properties of the VM) in both neutral and focused sentences without employing any syntactic movement operation.

- I discussed the implementational dimension of the treatment of PVCs, the central, most extensively and most intensively investigated type of VMs in Hungarian, in a detailed fashion. The challenge is to capture the mixed lexical and syntactic properties of PVCs in a formally and implementationally satisfactory manner. Here is a brief summary of the most important points.
  - The essence of Forst, King & Laczkó's (2010) proposal for XLE grammars for English, German, and Hungarian is as follows.
    - Non-compositional and non-productive PVCs should be treated lexically, as in the current ParGram grammars of English and German (the central XLE device being concatenation), as in existing English and German XLE grammars.
    - Compositional and productive PVCs, by contrast (and contrary to the existing English and German XLE grammars), should be treated syntactically (the crucial XLE device being restriction, making complex predicate formation in the syntax possible).
  - In Laczkó & Rákosi (2011) and Rákosi and Laczkó (2011), we adopt this mixed (lexical and syntactic) approach in our analysis of the four major PVC types in Hungarian in our HunGram.
  - Capitalising on Laczkó (2013), in § 3.1.5 in Chapter 3, I developed a modified approach to these Hungarian PVCs, which treats even compositional and productive PVCs in Hungarian lexically. The crucial (shared) device for handling both productive and non-productive PVCs in Hungarian is concatenation, and there is no syntactic complex predicate formation via restriction.
  - On the basis of § 3.1.5.2, my claim is that the HunGram implementation of the analysis I propose for all the other major VM types in Hungarian should be straightforward and unproblematic. This implementation is one of the imminent research goals in our HunGram project.

7.4 Chapter 4: Operators

In this chapter, first I offered a detailed discussion and critique of Mycock's (2010) analysis of the Hungarian operator field, supported by her substantial experimental research. Against this background, I presented a detailed LFG-XLE analysis of eleven Hungarian construction types involving constituents in the post-topic and preverbal zone: in the $[XP,VP]_{VP}$ quantifier position and in the Spec,VP focus/VM position. In addition to the basic structures that are analysed in all major generative approaches to this domain of Hungarian sentence structure, I also developed coherent accounts of some marked constructions that call for special treatments in all approaches. The most important ingredients of my comprehensive analysis are as follows.

- I assume that there are four major constituent types immediately preceding the verb in the Spec,VP position in complementary distribution:
  - a verbal modifier (VM)
  - a focused constituent (including negated constituents, which, in turn, include negated universal quantifiers)
  - the question phrase in a single constituent question, or the final question phrase in a multiple constituent question
  - the negative particle
- In the case of all the four types, only a single constituent can occupy this designated position: in a multiple constituent question all the non-final question phrases are in quantifier positions.
- In the basic construction types, quantifiers and non-final question phrases occupy a (possibly iteratively) VP-adjoined position: $[XP,VP]_{VP}$.
- I call these $[XP,VP]_{VP}$ positions the 'operator field', distinct from the Spec,VP position, which I consider a special designated position, typically occupied by operators, but not always: various kinds of VMs are not operators in the strict LFG sense of the word.
- I make a distinction between 'predicate', which is the VP, obviously subsuming the Spec,VP position, and 'predication', which subsumes the operator field (one or more VP-adjoined constituents) and the predicate.
- In LFG's overall non-derivational, parallel-representational framework, and in the spirit of its what-you-see-is-what-you-get principle, I assume that the aforementioned four constituents compete for the same designated Spec,VP position, and I capture their complementarity by disjunctive sets of functional annotations.
- I also use disjunctive sets of (possibly disjunctive sets of) annotations to capture the complementarity of constituents in the $[XP,VP]_{VP}$ position. In the overwhelming majority of the constructions under investigation (universal) quantifiers and question phrases occupy this position.
- In addition to the regular LFG(-XLE) annotational apparatus, I make crucial use of XLE's CHECK features (both in c-structures and in lexical forms) for two purposes: for encoding inevitable instances of context-sensitivity and for capturing the complementarity of various constituents in a particular position.
- I use exactly the same strategy and devices in the analysis of highly marked, special constructions: 'question phrase + neg-focus + verb' and 'focus + question phrase + verb'.

- My analysis is XLE-implementable, and this has been successfully tested in the case of the syntactic behaviour of several constructions under investigation.
- This analysis incorporates the crucial syntax-prosody interface properties of the constructions. In LFG's parallel representational model, the full prosodic dimension can be formally encoded along the lines of Mycock (2006) or Dalrymple & Mycock (2011).

7.5 Chapter 5: Negation

In this chapter, after presenting the basic negation facts in Hungarian and discussing some salient non-LFG generative approaches, I proposed a general LFG-XLE framework for the treatment of the fundamental types of negation by capitalising on É. Kiss' (1992) empirical generalisations and on the key structural aspects of her GB analysis. Then I modified and augmented this LFG-XLE analysis by developing an account of the special uses of the negative markers, capturing their interaction with negative polarity items, and presenting a formal treatment of the two forms of the two suppletive negative variants of the copula.

- In order to ensure parsing and generation efficiency, I made use of the standard XLE devices: special syntactic categories for the negative particles involved (NEG and SEM), and specifically labelled phrasal projections (YPsnem and YPsem).
- I argued for using all the three modes of treating negation phenomena in the ParGram tradition in the analysis of Hungarian.
- In the spirit of Forst et al. (2010) and Laczkó & Rákosi (2011), in my analysis I used the non-projecting categories PRT and NEG in both head-adjunction and phrasal configurations. However, technically it would also be possible to do without the non-projecting treatment. Instead of assuming that the negative particle is left-head-adjoined to the verb when the focus position is filled by a constituent: NEG^V^0, one could assume that NEGP left-adjoins to V′.
- In general, the special functional categories NEM and SEM, and the specifically labelled phrasal nodes YPsnem and YPsem could also be dispensed with. It would be possible to assume that negative particles are adverbs and they project ADVPs, and these (special) ADVPs occupy the positions my non-projecting NEGs and SEMs occupy. Naturally, such an approach would conform to standard X-bar-syntactic assumptions and conventions to a greater extent. The cost would be that a more complex system of constraining equations and CHECK features would be needed to prevent overgeneration from the perspective of both parsing and generation.

7.6 Chapter 6: Copula constructions and functional structure

In this chapter I analysed five Hungarian CCs by also addressing the following two general questions. (i) What are the formal-strategic differences between MP and LFG approaches? (ii) What role should be attributed to f-structure representation in the analysis of various CC types in LFG?

First, I presented some salient approaches to the fundamental types of English CCs. Next, I offered a detailed discussion of Hegedűs' (2013) MP analysis of several major Hungarian CC types. In addition, I related it to a variety of MP assumptions about CCs across languages as well as to some alternative MP accounts of Hungarian CCs. Then against this generative linguistic and cross-linguistic background, I developed the first comprehensive LFG analysis of the five most important types of copula constructions in Hungarian. The most significant general aspects of my approach are as follows.

- I subscribe to the view, advocated by Dalrymple, Dyvik & King (2004) and Nordlinger & Sadler (2007), that the best LFG strategy is to examine all CCs individually and to allow for diversity and systematic variation both in c-structure and in f-structure representations across and even within languages. This means that I reject Butt et al.'s (1999a) and Attia's (2008) uniform PREDLINK approach at the f-structure level.
- I argue against the two-tier, open, XCOMP analysis of CCs – at least in languages like Hungarian.
- I employ the following analysis types:
  - single-tier, functional cohead (open);
  - double-tier, PREDLINK or OBL (closed).
- On the basis of the discussion in this chapter, my answers to the questions about the difference between MP and LFG approaches to CCs and the role of f-structure in the LFG analysis of CCs are as follows.
  - Given the architectures, principles and assumptions of the two theories, they seriously constrain the analytical strategies available in general and in the treatment of CCs in particular. All MP approaches employ a complex syntactic apparatus. They assume a uniform invariant initial structure and they derive the various CC types by means of several syntactic operations. By contrast, in LFG no such syntactic operations are possible; consequently, a lexical treatment is needed. From this it automatically follows that the partially different behaviours of CCs have to be captured by assuming several appropriate lexical forms for BE in which we encode their respective syntactic properties. Let me point out that both these radically different approaches can handle the phenomena under investigation in a principled

manner in their own systems. The choice between these approaches in this case, just like in general, depends on which of them one considers to be a more plausible model of the competence of language users. Needless to say, my choice in this case, and in general, is LFG.

– In § 6.3, I argued for the type of approach in the LFG framework that, on the one hand, employs several distinct lexical forms of BE (with different argument structures), and, on the other hand, partially following from this, assumes that the f-structures of various CC types are different, which contrasts with the alternative view that postulates a uniform f-structure.

7.7 Some general final remarks

In this book I have developed the first systematic LFG analysis of the preverbal domain of Hungarian finite clauses and reported the successful implementational testing of various crucial aspects of this analysis. I concentrated on the fundamental construction types, and my main objective was to capture the basic generalisations about the phenomena under investigation in LFG in a principled and implementable way. Some parts of the analysis are detailed either LFG-theoretically or XLE-implementationally, or both ways, while some other parts only cover the basic facts, hopefully providing a solid basis for a detailed and comprehensive LFG analysis and its XLE implementation in our HunGram project. I hope that my results so far have made some meaningful contribution to LFG's and XLE's cross-linguistic coverage of the relevant phenomena and to the development of LFG's Universal Grammar.

It will be a new and related research project to develop an LFG-XLE treatment of the postverbal domain of finite clauses. In addition, in this book, I only dealt with universal quantifiers, and I left exploring the distribution and co-occurrence properties of other types of quantifiers and operators in the quantifier zone to future research. Furthermore, I also plan to investigate, in a detailed fashion, what motivates (or triggers) the occurrence of a constituent in the immediately preverbal position from the perspective of focusing. Another related research avenue will be to explore the behaviour of a range of 'small words' in Hungarian including preverbs, *csak* "only", *is* "also", *volna* (the marker of irrealis mood), and *-e* (the yes-no question marker), and to develop a (possibly generalised) LFG-XLE treatment.

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Author index

Subject index

The book presents a new perspective on clausal syntax and its interactions with lexical and discourse function information by analysing Hungarian sentences. It also demonstrates ways in which grammar engineering implementations can provide insights into how complex linguistic processes interact. It analyses the most important phenomena in the preverbal domain of Hungarian finite declarative and *wh*-clauses: sentence structure, operators, verbal modifiers, negation and copula constructions. Based on the results of earlier generative linguistic research, it presents the fundamental empirical generalisations and offers a comparative critical assessment of the most salient analyses in a variety of generative linguistic models from its own perspective. It argues for a lexical approach to the relevant phenomena and develops the first comprehensive analysis in the theoretical framework of Lexical-Functional Grammar. It also reports the successful implementation of crucial aspects of this analysis in the computational linguistic platform of the theory, Xerox Linguistic Environment.

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